

**CITY OF NEW YORK
DEPARTMENT OF CORRECTION**



**FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND
REQUIRED FOR:**

**AS NEEDED GENERAL CONSTRUCTION REQUIRMENTS CONTRACT
FOR VARIOUS NYC DEPARTMENT OF CORRECTION FACILITIES**

PROCUREMENT IDENTIFICATION NUMBER

PIN 072201801CPD

EPIN 072180001

**Acting Commissioner
Cynthia Brann**

INVITATION FOR BIDS

**THE CITY OF NEW YORK
DEPARTMENT OF CORRECTION
CONSTRUCTION CONTRACT**

**FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED
FOR:**

**AS NEEDED GENERAL CONSTRUCTION REQUIREMENTS
CONTRACT FOR VARIOUS NYC-DEPARTMENT OF CORRECTION
FACILITIES**

**PROCUREMENT IDENTIFICATION NUMBER (PIN): 072201801CPD
EPIN: 07218B0001**

NOTICE TO BIDDERS: (Instructions)

This bid document book is organized into Parts A - F, so that bidders can easily access information about the bid, the contract and related bid forms in an ordered sequence.

PART A: INFORMATION FOR BIDDERS

PART B: BID FORMS AND RELATED DOCUMENTS

PART C: DETAILED SPECIFICATIONS DESCRIBING SCOPE OF WORK

PART D: TERMS OF CONTRACT

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PART A: INFORMATION FOR BIDDERS

DEPARTMENT OF CORRECTION

The pages in each Part of this document are numbered consecutively. Prospective Bidders must examine the documents carefully. Before bidding, prospective Bidders must notify the agency contact person listed in Section 7 below, in writing, if pages are missing and request that these missing pages be furnished to them.

1. DESCRIPTION OF PROCUREMENT

A. The description and location of the services to be performed are as follows:

This project is a Requirements Contract for the General Construction Requirements Contract on Rikers Island, the Vernon C. Bain Center in the Bronx (Hunts Point), the Manhattan Detention Center (lower Manhattan), the Brooklyn House of Detention (downtown Brooklyn), and other DOC facilities that may be added during the term of this contract, collectively known as “DOC facilities.”

Work consist of furnishing all labor, materials, equipment and appliances, supervision, project management, necessary and required to completely execute the items specified herein. This is a “work order” based General construction requirement contract. During the term of the contract, the Department shall order all required GC work for all Departmental locations as specified by the Department.

B. The term for this service is: 730 Consecutive Calendar Days.

2. TIME AND PLACE FOR RECEIPT OF BIDS

A. The Department shall receive all sealed bids at the following location on or before the date and time set forth below:

New York City Department of Correction
Central Office of Procurement
75-20 Astoria Blvd., Suite 160, Conf. Rm. B
East Elmhurst, New York 11370

DATE:

TIME: _____ (*bid opening*)

B. It is the Bidder’s responsibility to assure that its bid is received at the bid location on or before the date and time of the scheduled bid opening and that the bid and all other documents requiring signature are signed and notarized.

C. The completed bid must be submitted in a sealed envelope on or before the time and at the place indicated above. The envelope must indicate:

- (1) The name of the person, firm or corporation presenting the bid;**
- (2) The bid opening date;**

- (3) The PIN number; and
- (4) The bid title.

D. Failure to comply with the instructions in this Section 2 may result in rejection of the bid.

3. **PROCUREMENT POLICY BOARD RULES**

This Bid document is subject to the Rules of the Procurement Policy Board of the City of New York (“PPB Rules”) effective September 1, 1990, as amended from time to time. In the event of a conflict between said Rules and a provision of any of these bid documents, then the Rules shall take precedence. A copy of the rules may be obtained by contacting the agency contact person for this project, or online at

<http://www.nyc.gov/html/mocs/ppb/html/home/home.shtml>

4. **DEFINITIONS**

The definitions set forth in the PPB Rules shall apply to this bid document.

5. **BID DOCUMENTS**

A. **Documents to be Included.** Except for titles, sub-titles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience) the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of the Contract and the bid documents.

- (1) The Advertisement for Bids;
- (2) The Information for Bidders;
- (3) The Bid;
- (4) The Contract;
- (5) The Procurement Policy Board Rules;
- (6) The Specifications and Description of the Work;
- (7) The Contract Drawings;
- (8) All addenda issued by the Department, regarding this request for bids, prior to the receipt of bids;
- (9) All provisions required by law to be inserted in this Contract, whether actually inserted or not;
- (10) Notice of Award;
- (11) Insurance Documents;

(12) Performance and Payment Bonds; and

(13) Notice to Proceed with Work (*Also known as the Commence Work Letter*).

B. General Conditions and Specifications. For particulars as to this procurement, including quantity and quality of the purchase, extent of the work or labor to be performed, delivery and performance schedule, and any other special instructions, prospective Bidders are referred to the bid material, the Detailed Specifications/Scope of Work and the General Condition Parts, which are attached to these bid documents.

C. Deposit for Copy of the Bid Documents. Prospective Bidders may obtain a copy of the bid documents by complying with the conditions set forth in the Advertisement for Bids. A Bid Book deposit is \$25 Dollars, must be in the form of a United States Post Office money order or a certified check, made payable to the order of the **Commissioner of Finance**, and drawn upon a state or national bank or trust company, or a check of such bank or trust company signed by a duly authorized officer thereof.

D. Additional Copies. Additional copies of the bid documents may be obtained, subject to the conditions set forth in the advertisement for bids.

6. PRE-BID CONFERENCE

A. The Department shall hold a pre-bid conference on the date and time and at the location set forth below:

TIME:

DATE:

PLACE: Bulova Corporate Center, Central Office of Procurement, Suite 160, Conf. Rm.

Site Visit will follow Pre-Bid Conference

B. Bidder attendance at this pre-bid conference is:
Mandatory [] Optional [X] **But Highly Recommended.**

Failure to attend a mandatory pre-bid conference shall be grounds for rejection of a bid.

C. Nothing stated at the pre-bid conference shall change the terms and conditions of the bid documents unless a change is made by a written amendment as provided in Section 8 below and in accordance with the PPB Rules.

D. Please notify the agency contact person listed in Section 7 below of the number of representatives from your firm that will attend the pre-bid conference when the bid solicitation documents are picked up.

7. **AGENCY CONTACT**

The agency contact person for this bid shall be:

NAME: Phillip Emmanuel Intatano
TITLE: Contract Manager
ADDRESS: 75-20 Astoria, Blvd., Suite 160
East Elmhurst, New York 11370
PHONE: (718) 546-0692
FAX NO: (718) 278-6205

Any questions or correspondence relating to this bid solicitation shall be addressed to the agency contact person.

8. **EXAMINATION OF PROPOSED CONTRACT**

A. **Request for Interpretation or Correction.** Prospective Bidders must examine the Contract documents carefully and before bidding must request the ACCO in writing for an interpretation or correction of every patent or latent ambiguity, inconsistency or error therein which should have been discovered by a reasonably prudent bidder. Such interpretation or correction, as well as any additional Contract provisions the ACCO may decide to include, will be issued in writing by the ACCO as an addendum to the Contract, which will be sent by mail or delivered to each person recorded as having received a copy of the Contract documents from the Agency Contact, and which also will be posted at the place where the Contract documents are available for the inspection of prospective Bidders. Upon such mailing or delivery and posting, such addendum shall become a part of the Contract documents, and binding on all Bidders, whether or not actual notice of such addendum is shown.

B. **Only the Agency Chief Contracting Officer's Interpretation or Correction Binding.** Only the written interpretation or correction given by the ACCO shall be binding, and prospective Bidders are warned that no other officer, agent or employee of the City is authorized to give information concerning, or to explain or interpret, the Contract.

9. **FORM OF BID**

A. Part B consists of the prescribed forms that must be submitted and must contain:

- (1) The name, residence and place of business of the person(s) making the bid;
- (2) The name of all persons interested therein, and if no other person is so interested, such fact must be distinctly stated;

- (3) A statement to the effect that it is made without any connection with any other person making a bid for the same purpose and that it is in all respects fair and without collusion or fraud;
- (4) A statement that no Council Member or other officer, employee or person whose salary is payable in whole or in part from the City Treasury is directly or indirectly interested therein or in the supplies, materials or equipment and work or labor to which it relates, or in any portion of the profits thereof;
- (5) A statement that the Bidder is not in arrears to the City or to any agency upon a debt, contract or taxes, and is not a defaulter as surety or otherwise upon any obligation to the City or to any agency thereof, except as set forth in the bid.

10. BIDDER'S OATH

- A. The bid shall be properly signed by an authorized representative of the Bidder and shall be verified by the written oath of the authorized representative who signed the bid that the several matters stated and information furnished therein are in all aspects true.
- B. A materially false statement willfully or fraudulently made in connection with the bid or any of the forms completed and submitted with the bid may result in the termination of any contract between the City and the Bidder. As a result, the Bidder may be barred from participating in future City contracts as well as be subject to possible criminal prosecution.
- C. Documents given to a subcontractor for the purpose of soliciting the subcontractor's bid shall include either a copy of the bid cover or a separate information sheet setting forth the project name, the contract number (if available), the contracting agency, and the project location.

11. SITE VISIT

- A. Pre-Bid Investigation: Where the work to be performed involves performance of services on City facilities, all Bidders are urged and expected to inspect the site where services are to be performed and to satisfy themselves as to all general and local conditions that may affect the cost of performance of the Contract. Bidders will be conclusively presumed to have full knowledge of any and all conditions on, about or above the site relating or affecting the performance of the work to be done under this Contract which were or should have been indicated to a reasonably prudent bidder. In no event will a failure to inspect a site constitute grounds for withdrawal of a bid after opening or for a claim after award of the Contract.
- B. Changed Conditions: Should the Contractor encounter during the progress of the work, subsurface conditions at the site materially differing from any shown on the Contract Drawings or as indicated in the specifications, or such subsurface

conditions as could not reasonably have been anticipated by the Contractor and were not anticipated by the City, which conditions will materially affect the cost of the work to be done under the Contract, Contractor must notify the Commissioner immediately and before any such conditions are disturbed. If the Commissioner finds that the conditions do so materially differ, or that they could not reasonably have been anticipated by the Contractor and were not anticipated by the City, the Contract may be modified with the Commissioner's written approval.

12. IRREVOCABILITY OF BID

The prices set forth in the bid cannot be revoked and shall be effective until the award of the Contract, unless the bid is withdrawn as provided for in Sections 16 and 19 below.

13. ACKNOWLEDGMENT OF AMENDMENTS

The receipt of any amendment to the Contract documents shall be acknowledged by the Bidder in its bid submission.

14. BID SAMPLES AND DESCRIPTIVE LITERATURE

Bid samples and descriptive literature shall not be submitted by the Bidder, unless expressly requested elsewhere in the Contract or Contract documents. Any unsolicited bid samples or descriptive literature which are submitted shall not be examined or tested and shall not be deemed to vary any of the provisions of this Contract.

15. PROPRIETARY INFORMATION/TRADE SECRETS

A. The Bidder shall identify those portions of its bid that it deems to be confidential, or include proprietary information or trade secrets, and shall provide justification why such materials should not be disclosed by the City. The Bidder shall clearly indicate all materials the Bidder desires to remain confidential by stamping the pages on which such information appears, at the top and bottom thereof with the word "Confidential." Such materials stamped "Confidential" must be easily separable from the non-confidential sections of the bid.

B. All such materials so indicated shall be reviewed by the Department and any decision not to honor a request for confidentiality shall be communicated in writing to the Bidder. For those bids which are unsuccessful, all such confidential materials shall be returned to the Bidder. Prices, makes, models or catalog numbers of the items offered, deliveries, and terms of payment shall be publicly available after bid opening regardless of any designation of confidentiality made by the Bidder.

16. PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS

A. A bid may be modified or withdrawn by written notice, received and signed for by the designated agency contact person in Part A, Paragraph 7, at the Central Office of Procurement, 75-20 Astoria Blvd., Suite 160, East Elmhurst, New York 11370, before the time and date set for the bid opening.

- B. If a bid is withdrawn in accordance with this Section the bid security, if any, shall be returned to the Bidder.

17. BID EVALUATION AND AWARD

- A. In accordance with the New York City Charter, the PPB Rules and the terms and conditions of the bid documents, this Contract shall be awarded, if at all, to the responsible Bidder whose bid meets the requirements and evaluation criteria set forth in the bid documents, and whose bid price is either the lowest responsive and responsible bid price, or, if the bid documents so state, the lowest responsive and responsible evaluated bid price. A bid may not be evaluated for any requirement or criterion that is not disclosed in the bid documents.
- B. No negotiations with any bidder shall be allowed to take place except under circumstances and in the manner set forth below. Nothing in this Section shall be deemed to permit a Contract award to a bidder submitting a higher quality item than that designated in the Invitation for Bid if that bid is not also the most favorable bid.
- C. Upon determination of the apparent lowest responsive and responsible bidder and prior to award, the ACCO may elect to open negotiations with the selected bidder in an effort to improve the bid to the City with respect to the price only. In the event the apparent lowest responsive and responsible bidder declines to negotiate, the Contracting Officer may elect to either award the contract to the apparent lowest responsive and responsible bidder, or may, upon written approval by the ACCO, reject all bids in accordance with the PPB Rules.

18. LATE BIDS, LATE WITHDRAWAL AND LATE MODIFICATIONS

Any bid received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. Any request for withdrawal or modification received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered.

19. WITHDRAWAL OF BIDS

- A. Except as provided for in Section 16 above, a Bidder may not withdraw its bid before the expiration of forty five (45) days after the date of opening of bids; thereafter, a Bidder may withdraw its bid only in writing and in advance of an actual award.

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- B. If within sixty (60) days after the execution of the Contract, the Commissioner fails to fix the date for commencement of work by written notice to the Bidder, the Bidder, at its option, may ask to be relieved of its obligation to perform the work called for by written notice to the Commissioner. If such notice is given, and the request to withdraw is granted, the Bidder waives all claims in connection with this Contract.

20. MISTAKES IN BIDS

A. Mistakes Discovered Before Bid Opening: A Bidder may correct mistakes discovered before the time and date set for bid opening by withdrawing or correcting the bid as provided in Section 16 above.

B. Mistakes Discovered Before Award: In accordance with the PPB Rules, if a Bidder alleges a mistake in its bid after bid opening and before award, the bid may be corrected or withdrawn upon written approval of the ACCO if the following conditions are met:

(1) Minor Informalities. Minor informalities in bids are matters of form rather than substance evident from the bid document, or insignificant mistakes that can be corrected without prejudice to other Bidders; that is, the effect on price, quantity, quality, delivery, or contractual conditions is negligible. The ACCO may waive such informalities or allow the Bidder to correct them depending on which is in the best interest of the City.

(2) Mistakes Where Intended Correct Bid is Evident. If the mistake and the intended correct bid are clearly evident on the face of the bid document, the bid shall be corrected to the intended correct bid and may not be withdrawn.

(3) Mistakes Where Intended Correct Bid is Not Evident. Mistakes may not be corrected after bid opening. A bidder may be permitted to withdraw a low bid where a unilateral error or mistake has been discovered in the bid and the ACCO makes the following determination:

(a) the mistake was known or made known to the agency prior to bidder selection or within three days after the opening of the bid, whichever period is shorter;

(b) the price bid was based on an error of such magnitude that enforcement would be unconscionable;

(c) the bid was submitted in good faith and the bidder submits credible evidence that the mistake was a clerical error as opposed to a judgment error;

(d) the error in bid is actually due to an unintentional and substantial arithmetic error or unintentional omission of a substantial quantity of work, labor, material, goods, or services made directly in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of the original work paper, documents, or materials used in the preparation of the bid sought to be withdrawn; and

(e) it is possible to place the City in the same condition that had existed prior to the receipt of the bid.

- A. Upon the approval of the ACCO, the bid may be withdrawn, and the bid bond or other security returned to the bidder. The contract shall either be awarded to the next lowest bidder or re-solicited pursuant to the PPB Rules. Under no circumstances shall a bid be amended or revised to rectify the error or mistake.
- B. Mistakes Discovered After Award. Mistakes shall not be corrected after award of the Contract except where the ACCO, subject to the approval of City Chief Procurement Officer (CCPO), makes a determination that it would be unconscionable not to allow the mistake to be corrected.
- C. Determinations Required. When a bid is corrected or withdrawn, or correction or withdrawal is denied, the ACCO shall prepare a determination showing that the relief was granted or denied in accordance with the PPB Rules.

21. TIED LOW BIDS

- A. When two (2) or more low responsive bids from responsible Bidders are identical in price, meeting all the requirements and criteria set forth in the bid documents, the ACCO will break the tie in the following manner in order of priority:
 - (1) Award to a certified New York City small, minority or woman-owned business entity Bidder;
 - (2) Award to a New York City Bidder;
 - (3) Award to a certified New York State small, minority or woman-owned business Bidder;
 - (4) Award to a New York State Bidder.
- B. If two (2) or more Bidders still remain equally eligible after application of Section A above, the award shall be made by a drawing by lot limited to those Bidders. The Bidders involved shall be invited to attend the drawing. A witness shall be present to verify the drawing and shall certify the results on the bid tabulation sheet.

22. REJECTION OF BIDS

- A. Rejection of Individual Bids. The ACCO may reject a bid if:
 - (1) The Bidder fails to furnish any of the information required pursuant to the bid documents; or if

- (2) The Bidder is determined to be not responsible pursuant to the PPB Rules; or if
- (3) The bid is determined to be non-responsive pursuant to the PPB Rules; or if
- (4) The bid, in the opinion of the ACCO contains unbalanced bid prices and is thus non-responsive, unless the Bidder can show that the prices are not unbalanced for the probable required quantity of such items, or if the imbalance is corrected pursuant to the PPB Rules.

B. Rejection of All Bids. The ACCO may reject all bids and may elect to re-solicit by bid or by other method authorized by the PPB Rules.

23. RIGHT TO APPEAL DETERMINATION OF NON-RESPONSIVENESS OR NON-RESPONSIBILITY AND RIGHT TO PROTEST SOLICITATION AND AWARD

The Bidder has the right to appeal a determination of non-responsiveness or non-responsibility and has the right to protest a solicitation and award, pursuant to the PPB Rules.

24. AFFIRMATIVE ACTION AND EQUAL EMPLOYMENT OPPORTUNITY

The bid solicitation is subject to applicable provisions of Federal, State and Local Laws and executive orders requiring affirmative action and equal employment opportunity.

25. VENDEX QUESTIONNAIRE

A. New York City Administrative Code Section 6-116.2 and the PPB Rules established a requirement that VENDEX questionnaires or an Affidavit of No Change, as appropriate, must be completed and submitted by all persons or entities seeking to do business with the City of New York. Generally, if this bid is one hundred thousand dollars (\$100,000) or more, or if this bid, when added to the sum total of all contracts, concessions and franchises the Bidder has received from the City and any subcontracts the Bidder has received from a City Contractor within the past twelve (12) months equals or exceeds one hundred thousand dollars (\$100,000) then VENDEX questionnaires must be completed by the Bidder. The VENDEX questionnaires consist of a Business Entity Questionnaire and a Principal Questionnaire, both of which are either included in the Bid documents or may be obtained by contacting the agency contact person listed in Section 7 above. The VENDEX questionnaire or the Affidavit of No Change must be completed and submitted to the Department before any award of the Contract may be made or before an approval is given for a proposed subcontractor. Detailed instructions regarding the completion of VENDEX questionnaires are included in the VENDEX package. Non-compliance with these submission requirements may result in the disqualification of the bid or vendor, disapproval of a subcontractor, subsequent withdrawal of approval for the use of an approved subcontractor, or the cancellation of the Contract after its award. Questionnaires need be completed only once every three (3) years, so long as a

prospective contractor, prior to the award, certifies that there has been no material changes in the information previously submitted. Any questions concerning the VENDEX questionnaires must be submitted to the ACCO or the agency contact person for this Contract.

B. VENDOR NAME CHECK FEE IMPLEMENTATION

Pursuant to Procurement Policy Board Rule 2-08(f)(2), the contractor will be charged a fee for the administration of the VENDEX system, including the Vendor Name Check process, if a Vendor Name Check review is required to be conducted by the Department of Investigation. The contractor shall also be required to pay the applicable required fees for any of its subcontractors for which Vendor Name Check reviews are required.

The fee(s) will be deducted from payments made to the contractor under the contract. For contracts with an estimated value of less than or equal to \$1,000,000, the fee will be \$175. For contracts with an estimated value of greater than \$1,000,000, the fee will be \$350.

26. COMPLAINTS ABOUT BID PROCESS

The New York City Comptroller is charged with the audit of Contracts in New York City. Any vendor who believes that there has been unfairness, favoritism or impropriety in the bid process should inform the Comptroller, Office of Contract Administration, One Centre Street, Room 1005, New York, NY 10007.

27. BID, PERFORMANCE AND PAYMENT SECURITY

A. General. The ACCO may require bid, performance or payment security, or all three (3), on any contract for goods or services (see Schedule "A" located in Part E).

B. Bid security.+ Each bid must be accompanied by bid security in an amount and type as specified in Schedule "A" (see Part E). The bid security shall assure the City of New York of the adherence of the Bidder to its bid, the execution of the contract and the furnishing of performance and payment bonds by the Bidder, if required. If a bid does not comply with the bid security requirements of this bid document, the bid may be rejected as non-responsive.

C. Bid security will be returned to bidders as follows:

(1) Within ten (10) days after the bid opening, the Comptroller will be notified to return the bid securities of all but the three (3) lowest Bidders. Within five (5) days after the award, the Comptroller will be notified to return the bid securities of the remaining two (2) unsuccessful Bidders.

(2) Within five (5) days after the execution of the Contract and acceptance of the Contractor's bonds, the Comptroller will be notified to return the bid security of the successful Bidder or, if no Performance and Payment bonds

are required, the Comptroller will be notified to return the bid security only after the sum retained under applicable provisions of the Contract equals the bid security.

- (3) Where all bids are rejected, the Comptroller will be notified to return the bid security of all Bidders at the time of rejection.

D. Performance and Payment Security. The performance and payment security, if required in the bid documents and in the amounts specified in Schedule “A” (see Part E), shall be delivered by the Contractor to the City within ten (10) days after the receipt of a Notice of Award. If a Contractor fails to deliver the required performance and payment security, then the award shall be rescinded, its bid security shall be enforced and the award of the Contract may be made to the next lowest responsive and responsible Bidder or the Contract may be rebid.

E. ACCEPTABLE SECURITY. Acceptable security for bids, performance and payment shall be limited to:

- (1) A one-time bond in a form satisfactory to the City;
- (2) A bank-certified check or money order; or
- (3) City bonds.

F. FORM OF BONDS. Security provided in the form of bonds must be prepared on the form of bonds authorized by the City of New York. Forms for bid, performance and payment bonds are included in the bid documents (*see Part B*). Such bonds must have as surety thereunder, such company or companies as are approved by the City of New York and authorized to do business in the State of New York.

G. POWER OF ATTORNEY. Attorneys-in-fact who sign bid, performance or payment bonds must file with each bond a certified copy of their power of attorney to sign said bond.

28. INSURANCE

Bidders are advised that the insurance requirements herein are regarded as a material term of this Contract. During performance and up to the date of final acceptance, including any maintenance and guaranty period, the Contractor must effect and maintain with insurance companies authorized and licensed to do business in the State of New York, the types and amounts of insurance specified in Schedule “A” (See Part E) of this Invitation for Bids. Pursuant to Section 57 of the New York State Worker’s Compensation Law, the bidder must submit proof of worker's compensation and disability benefits coverage to the ACCO prior to the execution of any contract resulting from this solicitation. ALL other required insurance documentation must also be submitted prior to commencement of work of this Contract.

29. FAILURE TO EXECUTE CONTRACT AND FURNISH SECURITY OR INSURANCE

If the successful Bidder fails to execute the Contract and furnish any required security and insurance, within (10) days after notice of the award of the Contract, the bid security of the successful Bidder or so much thereof as shall be applicable to the amount of the award made, shall be forfeited and retained by the City, and the successful Bidder shall be liable for and hereby agrees to pay on demand the difference between the price bid and the price for which such Contract shall be subsequently awarded, including the cost of any reletting less the amount of such bid security. No plea of mistake in such accepted bid shall be available to the Bidder for the recovery of the bid security or as a defense to any action based upon such accepted bid. Further, should the Bidder's failure to comply with this section cause any funding agency, body or group (Federal, State, City, public, private, etc.) to terminate, cancel or reduce the funding on this project, the Bidder in such event shall be liable also to the City for the amount of actual funding withdrawn by such agency, body or group on this project, less the amount of the forfeited bid security.

30. SALES, EXCISE AND FEDERAL TRANSPORTATION TAXES

Unless this Contract indicates otherwise, the City is exempt from the payment of any sales, excise or Federal transportation taxes. The bid price must be exclusive of such taxes and shall be so construed.

31. BIDDER QUALIFICATIONS - EVIDENCE OF ABILITY AND FINANCIAL QUALIFICATIONS

- A. Before or after Contract award, the City reserves the right to inspect the Bidder's plant or premises.
- B. The Bidder shall, upon request, submit evidence that will prove to the satisfaction of the Commissioner that the Bidder is qualified and able to furnish the services on which it bid and perform the services in the manner and time specified in the Contract. The Bidder shall also furnish evidence that it has secured the necessary licenses, permits or certificates, required by any legislative or regulatory body having jurisdiction, to carry on the business of furnishing the services on which the bid was submitted.
- C. The Bidder shall, upon request, provide complete financial statements prepared by a certified public accountant, which shall include without limitation, a certified balance sheet, revenue and expense sheet, fixed and capital assets, or other information concerning the Bidder's financial status for examination as may be required by the Department to ascertain Bidder's financial qualifications to perform the Contract.
- D. Bids will be accepted from any firm that has been in the business of providing comparable service to that specified herein, for at least the previous 3 years prior to the submission of their bids. Bidders shall further certify that they have performed in a satisfactory or better manner during the above referenced time period. In

addition, bidders shall certify that they employ a work force qualified to perform the specified services, as referenced in Part C.

- E. For verification purposes, the lowest apparent responsive and responsible Bidder shall submit the following within five (5) business days of receipt of a request for such from the Department:
1. Documentation that the Bidder has been in business for at least the previous 3-5 years, performing comparable work;
 2. Documentation that the Bidder is able to provide specially trained and qualified technicians to service/repair of Asphalt Paving.
 3. Business references from at least three clients having comparable premises, serviced by the Bidder, indicating that the work performed was of a satisfactory or better quality; and
 4. Information such as resumes, that provides the names and experience of the Bidder's employees and management that will be responsible for the specified work. If new employees are hired during the term of this contract to perform services for this Contract, the Contractor shall be responsible for providing the aforementioned information about said employee(s) to the Department, within five (5) business days of their hiring. All such new hires shall meet the requirements set forth in Part C, if any.
- F. If the evidence required in Sections 31(B) through 31(E) above is not furnished, or if, upon examination of such evidence or other inspection of the Bidder's plant or premises, it is found that the Bidder does not comply with the requirements set forth in this Contract, the Commissioner shall have the right to reject the bid in whole or in part. Should the non-compliance be discovered after the award is made, the Commissioner shall have the right to cancel and terminate this Contract and/or declare the Contractor in default, in addition to any other remedies provided by Contract or at law or equity.
- G. In addition to any other requirement of this Contract, the Commissioner may request the Bidder to submit a sworn statement or submit to an oral examination setting forth such information as may be deemed necessary by the Commissioner to determine the Bidder's ability and responsibility to perform the work and supply the services in accordance with the Contract.

**32. DEPARTMENT OF BUSINESS SERVICES, DIVISION OF LABOR SERVICES
(EMPLOYMENT REPORT)**

- A. **Who Must File A Complete Employment Report:** In accordance with Executive Order No. 50 (1980), as modified by Executive Order No. 108 (1986) and its implementing regulations, the filing of a completed Employment Report (ER) is a requirement of doing business with the City of New York if:

- (1) The Bidder has been identified as the lowest Bidder for a supply or service Contract or his/her proposal for supplies or services has been accepted; and
- (2) The Contract value exceeds fifty thousand dollars (\$50,000); and
- (3) The Bidder's firm employs fifty (50) or more people.

Each successful Bidder must file an ER if it meets each of these conditions. In addition, suppliers, subcontractors or vendors performing on the Contract who meet conditions (2) and (3) above, must also file an ER. The ER will be sent by the low bidder under separate cover.

B. Who must file a Less Than 50 Employees Certificate?

- (1) Any Contractor or any of its facilities performing on the Contract that has fewer than fifty (50) employees, although the Contract value exceeds fifty thousand dollars (\$50,000), need only submit a "Less Than 50 Employees Certificate."
- (2) Any Subcontractor, supplier or vendor to the prime Contractor performing on the Contract and any of its facilities performing on the Contract which have fewer than fifty (50) employees, need only submit the "Less Than 50 Employee Certificate," even if the Subcontract value exceeds fifty thousand dollars (\$50,000).

33. PROMPT PAYMENT

- A. The Prompt Payment provisions set forth in the PPB Rules in effect at the time of this solicitation will be applicable to payments made under a Contract resulting from this solicitation. The provisions require the payment to Contractors of interest on payments made after the required payment date except as set forth in the PPB Rules.
- B. The Contractor must submit a proper invoice to receive payment, except where the Contract provides that the Contractor will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.
- C. Determinations of interest due will be made in accordance with the provisions of the PPB Rules.

34. BIDS SHALL BE TYPEWRITTEN OR WRITTEN LEGIBLY IN INK

- A. Each Bidder shall submit its bid typewritten or written legibly in ink and shall sign the bid in ink. The signer shall initial in ink any and all erasures or alterations to the bid.

- B. If the bid price has been materially altered, alterations must be initialed in ink by the Bidder. If the alteration has not been initialed in ink, and can be severed from the other items in the bid, then that particular item only may be considered non-responsive.

35. APPROVAL OF CONTRACT

- A. This Agreement shall be neither binding nor effective unless and until it is registered with the Comptroller of the City of New York pursuant to the New York City Charter § 328.
- B. The requirements of this Section shall be in addition to, and not in lieu of, any approval or authorization otherwise required for this Agreement to be effective and for the expenditure of City funds.

36. PERFORMANCE EVALUATIONS

The Contractor is subject to an annual performance evaluation to be conducted by the Agency pursuant to the PPB Rules.

37. BID SHEETS

Please use the Bid Sheets in Part B of this Invitation for Bids document for your unit price quotations and projected total costs for the term of the Contract.

38. MINORITY OWNED AND WOMEN OWNED BUSINESS ENTITY (M/WBE)

If the contract resulting from this Invitation for Bids will be subject to M/WBE participation requirements under Section 6-129 of the Administrative Code of the City of New York, as indicated by the inclusion of Schedule B – M/WBE Utilization Plan (Attachment A) and the Participation Goals indicated in Part I thereof, proposers must complete the Schedule B – M/WBE Utilization Plan and submit it with their proposal. Please refer to the Schedule B – M/WBE Utilization Plan and the Notice to All Prospective Contractors (Attachment A) for information on the M/WBE requirements established for this solicitation and instructions on how to complete the required forms. If the proposer intends to seek a full or partial waiver of the Participation Goals on the grounds described in Section 10 of the Notice to All Prospective Contractors, including but not limited to, proposer’s intention to use its own forces to perform any or all of the required contract work would result in a failure to attain the Participation Goals, the proposer must request and obtain from the Agency a full or partial waiver of the Participation Goals (M/WBE Utilization Plan, Part III) in advance of proposal submission and submit the waiver determination with the proposal. Please note that if a partial waiver is obtained, the proposer is required to submit a completed Schedule B-M/WBE Utilization Plan based on the revised Participation Goals in order to be found responsive.

39. NO BLASTING

Unless otherwise permitted in the Plans and/or Specifications, no blasting will be allowed. The Contractor shall use line drilling or other methods acceptable to DOC.

40. LABOR LAW

Section 220 of the New York State Labor Law requires payment of the prevailing rate of wages when a public agency contract involves the employment of laborers, workers, or mechanics and concerns a public work. Public works projects are, as a general matter, public construction projects.

Labor Law 231 requires prevailing wages to be paid to each service employee under a contract in which the “principal purpose” is to furnish services through the use of building service employees. Labor Law 230(1) defines "building service employee" or “employee” as “any person performing work in connection with the care or maintenance of an existing building, or in connection with the transportation of office furniture or equipment to or from such building, or in connection with the transportation and delivery of fossil fuel to such building.” Labor Law section 231 does not require the payment of prevailing wages to service employees if the *principal purpose* of the contract is not to furnish services provided by building services employees.

41. IRAN DIVESTMENT ACT COMPLIANCE RIDER FOR NEW YORK CITY CONTRACTORS

A. The Iran Divestment Act of 2012, effective as of April 12, 2012, is codified at State Finance Law ("SFL") §165-a and General Municipal Law ("GML") §103-9. The Iran Divestment Act, with certain exceptions, prohibits municipalities, including the City' from entering into contracts with persons engaged in investment activities in the energy sector of Iran. Pursuant to the terms set forth in SFL §165-a and GML §103-g, a person engages in investment activities in the energy sector of Iran if:

- (1) the person provides goods or services of twenty million dollars or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or
- (2) the person is a financial institution that extends twenty million dollars or more in credit to another person, for forty-five days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created pursuant to paragraph (b) of subdivision three of Section 165-a of the State Finance Law and maintained by the Commissioner of the Office of General Services.

B. A bid or proposal shall not be considered for award nor shall any award be made where the bidder or proposer fails to submit a signed and verified bidder’s certification.

C. Each bidder or proposer must certify that it is not on the list of entities engaged in investment activities in Iran created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law. In any case where the bidder or proposer cannot certify that they are not on such list, the bidder or proposer shall so state and shall furnish with the bid or proposal a signed statement which sets forth in

detail the reasons why such statement cannot be made. The City of New York may award a bid to a bidder who cannot make the certification on a case by case basis if:

- (1) The investment activities in Iran were made before the effective date of this section (i.e., April 12, 2012), the investment activities in Iran have not been expanded or renewed after the effective date of this section and the person has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran:
or
- (2) The City makes a determination that the goods or services are necessary for the City to perform its functions and that, absent such an exemption, the City would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.

42. SUBCONTRACTOR REPORTING

- A. As of March 2013 the City has implemented a new web based subcontractor reporting system through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip. In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at that site. Additional assistance with PIP may be received by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.
- B. In order to obtain subcontractor approval under Article 11 of Part D or Article 17 of the Standard Construction Contract and PPB Rule § 4-13, Contractor is required to list the subcontractor in the system. For each subcontractor listed, Contractor is required to provide the following information: maximum contract value, description of subcontractor work, start and end date of the subcontract and identification of the subcontractor's industry. Thereafter, Contractor will be required to report in the system the payments made to each subcontractor within 30 days of making the payment. If any of the required information changes throughout the term of the contract, Contractor will be required to revise the information in the system.
- C. Failure of the Contractor to list a subcontractor and/or to report subcontractor payments in a timely fashion may result in the Agency declaring the Contractor in default of the Contract and will subject Contractor to liquidated damages in the amount of \$100 per day for each day that the Contractor fails to identify a subcontractor along with the required information about the subcontractor and/or fails to report payments to a subcontractor, beyond the time frames set forth herein or in the notice from the City. For construction contracts, the provisions of Article 15 of the Standard Construction Contract shall govern the issue of liquidated damages.
- D. Contractor hereby agrees to these provisions.

PART B: BID FORMS

- I. BIDDER INFORMATION**
- II. BIDDER REPRESENTATION AND WARRANTIES**
- III. BID SCHEDULE OF PRICES AND
SIGNATURE OF BIDDER AND AFFIDAVIT**
- IV. TAX AFFIRMATION**
- V. IRAN DIVESTMENT ACT CERTIFICATION**
- VI. BID BOND FORMS**

NOTICE

- Before bidding, Bidders must review, by personal examination or such other means as they may prefer, the nature and extent of the work required, detailed specifications, plans, agreement and location(s) of the proposed work. Bidders must determine and allow for all difficulties which may be encountered in the prosecution of the work.

**FAILURE TO COMPLETE THIS PART B IN DETAIL WILL RESULT IN REJECTION
OF YOUR BID**

No Further Text on This Page.

BID SHEET
PIN: 072201801CPD
EPIN: 072180001

The City of New York
Department of Correction
Bid for Furnishing All Labor and Material Necessary and Required For:

PIN NUMBER: 072201801CPD

Date of Bid: _____

I. BIDDER INFORMATION

Name of Bidder: _____

Contact Person: _____

Address: _____

Telephone Number: () _____

Fax Number: () _____

Type of Organization (Check one of the following boxes)

- Individual
- Unincorporated organization (e.g. partnership or joint-venture)
- Corporation

Place of Business of Bidder: _____

STREET ADDRESS

CITY	STATE	ZIP CODE
-------------	--------------	-----------------

If Bidder is a Corporation

Corporate Tax ID Number: _____

Jurisdiction of Incorporation: _____

Year of Incorporation: _____

Names and Home Addresses of the Following Officers:

President:

NAME: _____

ADDRESS: _____

BID SHEET
PIN: 072201801CPD
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Secretary:
NAME: _____
ADDRESS: _____

Treasurer:
NAME: _____
ADDRESS: _____

If Bidder is an individual

Residence of Bidder: _____
STREET ADDRESS

CITY	STATE	ZIP CODE
-------------	--------------	-----------------

* Social Security Number: _____ - _____ - _____

* *Under the Federal Privacy Act, 5 USC § 552a (1996), as amended from time to time, the furnishing of social security numbers on City Contracts is voluntary. Failure to provide a social security number will not result in a bidder's disqualification. The City will use social security numbers to identify bidders to ensure their compliance with laws, to assist the City in enforcement of laws and to provide the City with a means of identifying those businesses that seek City Contracts.*

If Bidder is a partnership

Employer Identification Number: _____

Names of Partners

Residence

If Bidder is a Joint Venture

Employer Identification Number: _____

Names of Joint Venturers

Residence

BID SHEET
PIN: 072201801CPD
EPIN: 072180001

II. BIDDER REPRESENTATIONS AND WARRANTIES

Each of the above-named Bidders hereby certifies, affirms and declares:

A. This Bidder is of lawful age and the only one interested in this bid and that no person, corporation or organization other than hereinabove named has any interest in this bid or in the Contract.

B. The Bidder and each person bidding on the Bidder's behalf do hereby certify, under penalty of perjury, that to the best of each such persons knowledge and belief:

The prices in this bid have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor or potential competitor; and

Unless otherwise required by law, the prices quoted in this bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder or to any competitor; and

No attempt has been made or will be made by the Bidder to induce any other person, partnership, corporation or organization to submit or not to submit a bid for the purpose of restricting competition; and

No member of the City Council, or other officer, employee or person whose salary is payable in whole or in part from the City Treasury is directly or indirectly interested in this bid or in the supplies, materials, equipment, work or labor to which it relates or in any of the profits thereof; and

This Bidder is not in arrears to the City of New York upon any debt, contract or taxes and is not a defaulter, as surety or otherwise, upon any obligations to the City of New York, and has not been declared not responsible, or disqualified by any agency of the City of New York or the State of New York, nor is there any proceeding pending relating to the responsibility or qualification of this Bidder to receive public contracts except _____

_____.

C. The Bidder has examined all parts of this Bid document, including but not limited to the Contract and the terms and conditions thereof, and if this bid is accepted as submitted, this Bidder shall execute the Contract as set forth herein.

BID SHEET
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- D. This Bidder has inspected the site where the services are to be performed and is satisfied as to all general and local conditions that may affect the cost of performance of the Contract.
- E. This Bidder is duly licensed to do business in the City of New York and the State of New York and the Bidder currently holds or agrees to obtain all necessary permits and other authorization required by law or regulation for performance of the Contract.
- F. This Bidder's attention has been specifically drawn to the equal employment provisions of the Contract and this Bidder warrants that it will comply with all the terms and provisions prescribed therein.
- G. This Bidder as an individual or as a member, partner, director or officer of the Bidder, if the same be a firm, partnership or corporation executes this document expressly warranting and representing that should this bid be accepted by the City and the Contract awarded to him, he and his subcontractors engaged in the performance of this Contract:
- Will comply with the provisions of Section 6-108 of the Administrative Code of the City of New York and the non-discrimination provisions of Section 220-e of the New York State Labor Law; and
 - Have complied with the provisions of the aforesaid laws since its effective date; and
 - Will post notices setting forth the requirements of the aforesaid laws, to be furnished by the City, in prominent and conspicuous places in each and every plant, factory, building and structure where employees engaged in the performance of the Contract can readily review them, and will continue to keep such notices posted until the supplies, materials, equipment, work labor and services required to be furnished or rendered by the Contractor have been finally accepted by the City.
- H. The Bidder, as an individual, or as a member, partner, director or officer of the Bidder, if the same be a firm, partnership or corporation, executes this document expressly warranting and representing that the Bidder is not disqualified under the provisions of Section 6-109 of the Administrative Code of the City of New York for the award of this Contract and that should this bid be accepted by the City and this Contract awarded to the Bidder, the Bidder and his subcontractors engaged in the performance of this Contract:

BID SHEET
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- Will comply with the provisions of Section 6-109 of the Administrative Code of the City of New York in relation to minimum wages and any other stipulations and rules and regulations applicable thereto; and
 - Have complied with the provisions of said Section 6-109 and said rules and regulations since their respective enforcement date insofar as applicable to the bidder and to his subcontractors.
- I. The Bidder as an individual, or as a member, partner, director or officer of the Bidder, by executing this document on behalf of such firm, partnership or corporation, represents and warrants that no payment, gift or thing of value has been made, given or promised to obtain this or any other Contract between the parties. The Bidder makes such representations and warranties to induce the City to enter into this Contract and the City relies upon such representations and warranties in the execution hereof. For breach or violation of such representations and warranties, the Commissioner shall have the right to annul this Contract without liability, entitling the City to recover all monies paid hereunder and the Bidder/Contractor shall not make claims for, or be entitled to recover any sum or sums due under this Contract. This remedy, if effected shall not constitute the sole remedy afforded the City for the falsity or breach nor shall it constitute a waiver of the City's right to claim damages or refuse payment or to take any other action provided for by law or pursuant to this Contract.
- J. The Bidder has visited and examined the site of the work and has examined the Contract in the form approved by the Corporation Counsel, and will execute the Contract and perform all its items, covenants and conditions and will provide, furnish and deliver all work, materials, supplies, equipment and all labor and material necessary or required for the completion of the Contract work, all in strict conformity with the Contract, in accordance with the schedule of prices appended hereto.
- K. The Bidder represents and warrants that it will not utilize tropical hardwoods as defined in Section 167-b of the New York State Finance Law in the performance of this Contract except as expressly permitted by the foregoing provisions of law.

All material, fixtures, supplies and equipment furnished under the Contract shall be new and unused, except as approved by the Agency or as specified and of standard first-grade quality and the best workmanship and design. The City encourages use of recycled products where practicable.

BID SHEET
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The Engineer's Estimate of Quantities included above is approximate only and is not to be considered as a binding feature of the Contract. Bidders are required to submit their bids upon the following express conditions which apply to and become part of every bid received. Bidders must satisfy themselves as to the accuracy of the foregoing estimate by personal examination of the location of the proposed work and surroundings thereof, and by such other means as they may prefer, and shall not, at any time after submission of their bids, dispute or complain of such estimate of Quantities of the Engineer's, nor assert that there was any misunderstanding in regard to quantity or kind of material to be furnished or work to be done. No error or misunderstanding of the Bidder shall affect the validity of the bid made or the Contract entered into hereunder.

The prices included in the bid sheets above are to be paid for the actual quantities of the several classes of Work covered in this Contract, and they cover the cost of all work, labor, material, tools, plant and appliances of every description necessary and required to complete the entire Work, as specified, and the removal of debris, temporary work and appliances. Should the dimensions of any part of the Work or the materials be less than those required by the Plans, the actual quantities only will be allowed for payment purposes.

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III. BID SCHEDULE OF PRICES AND SIGNATURE OF BIDDER AND AFFIDAVIT

BID WORK SHEET

CONTRACTOR'S ALL INCLUSIVE BID FACTORS

A. Labor

The Contractor shall submit one "all inclusive mark up factor for the overhead and profit factor (%)" which shall be applied to the OFFICE OF THE COMPTROLLER, CITY OF NEW YORK issued PREVAILING WAGE SCHEDULE for all tradesmen.

Factor A: All Inclusive Mark Up Factor for Labor

_____ %

Mark Up Factor In Words:

BID SHEET
PIN: 072201801CPD
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B. Material

The Contractor shall submit one “all inclusive mark up bid factor for the overhead and profit factor (%)” which shall be applied to all the materials procured under this contract.

Factor B: All Inclusive Mark Up Factor for all the Materials Procured Under the Contract

_____ %

Mark Up Factor In Words:

BID SHEET
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BID EVALUATION PROCEDURE:

The Bid shall be evaluated as per the methodology noted below, based on which a lowest, responsive and responsible bidder shall be selected.

	X	Y	Z
	Dollar Value Assigned for Bid Evaluation Purpose	All inclusive Mark-up Factor	Subtotal Bid Evaluation Dollar Value
Labor	\$6,000,000.00	Factor A _____ %	\$ _____
Material	\$3,000,000.00	Factor B _____ %	\$ _____
Total Bid Evaluation Dollar Value			\$ _____
Total Bid Evaluation Dollar Value In Words			

The DOC assigned dollar value and bid evaluation dollar value indicated above are not a binding feature of the contract. Such dollar values are for bid evaluation purpose only. The City can order any work above or beyond the dollar values.

Notes:

1. Any alteration of the Bid Format will result in a “non-responsive” bid determination.
2. Inclusion of disclaimer in the Bid will result in a “non-responsive” bid determination.

BID SHEET
PIN: 072201801CPD
EPIN: 072180001

SIGNATURE OF BIDDER AND AFFIDAVIT

Name of Bidder: _____

By: _____

Partner or Authorized Corporate Officer

Print Name

Print Title

Date: _____

FOR CORPORATIONS ONLY:

(Corporate Seal):

ATTEST: _____

Secretary of Corporate Bidder

Affidavit on following page must be subscribed and sworn to before a Notary Public.

PIN: 072201801CPD

EPIN: 072180001

AFFIDAVIT

STATE OF NEW YORK, COUNTY OF _____ ss:
_____ being duly sworn, says:

Note to Bidders: *Choose only one (1) of the following three (3) options. (Check box and complete)*

- Individual Bidder:
I am the person described in and who executed the foregoing bid and the several matters therein stated are in all respects true.
- Corporation Bidder:
I am the _____ of the above named corporation whose name is subscribed to and which executed the foregoing bid. I reside at _____ . I have knowledge of several matters therein stated, and they are in all respects true.
- Unincorporated Organization (*e.g. Partnership or Joint Venture*) Bidder:
I am a member of _____, the unincorporated organization described in and which executed the foregoing bid. I subscribed the name of the unincorporated organization thereto on behalf of such organization and the several matters therein stated are in all respects true.

(Signature of the person who signed the bid)

Print Name: _____
Print Title: _____

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public

PIN: 072201801CPD

EPIN: 072180001

V. **BIDDER'S CERTIFICATION OF COMPLIANCE WITH
IRAN DIVESTMENT ACT**

Pursuant to General Municipal Law §103-g, which generally prohibits the City from entering into contracts with persons engaged in investment activities in the energy sector of Iran, the bidder/proposer submits the following certification:

[Please Check One]

BIDDER'S CERTIFICATION

By submission of this bid or proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief, that each bidder/proposer is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law.

I am unable to certify that my name and the name of the bidder/proposer does not appear on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law. I have attached a signed statement setting forth in detail why I cannot so certify.

Dated: _____, New York
_____, 20__

SIGNATURE

PRINTED NAME

TITLE

Sworn to before me this
_____ day of _____, 20__

Notary Public

Dated

PIN: 072201801CPD

EPIN: 072180001

VI.

BID BOND FORMS

1. Each executed Bid Bond shall be accompanied by:
 - a) appropriate acknowledgments of the respective parties; and
 - b) an appropriate duly certified copy of the Power of Attorney or other certificate of authority where the bond is executed by agent, officer or other representative of the Principal and Surety; and
 - c) a duly certified extract from the by-laws or resolution of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued; and
 - d) a duly certified copy of the latest published financial statement of assets and liabilities of the Surety.

2. Affix Acknowledgments and Justification of Sureties.

PIN: 072201801CPD

EPIN: 072180001

BID BOND FORM

WE _____

_____ hereinafter
referred to as the “Principal,” and _____

_____ hereinafter referred to as the “Surety” are held and firmly bound to the CITY OF NEW YORK,
hereinafter referred to as the “City,” or to its successors and assigns, in the penal sum of

_____ (\$ _____) Dollars, lawful money of the United States of America, for
the payment of which said sum of money well and truly to be made, we and each of us bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally,
firmly by these presents.

WHEREAS, the Principal is about to submit (*or has* submitted) to the City the accompanying
bid, hereby made a part hereof, to enter into, a contract in writing for

_____.

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall not
withdraw said bid without the consent of the City for a period of forty-five (45) days after the
opening of bids and, in the event of acceptance of the Principal’s bid by the City the Principal
shall:

- A. Within ten (10) days after notification by the City, execute in triplicate and deliver to the
City all the executed counterparts of the Contract in the form set forth in the Contract
Documents, in accordance with the bid as accepted, and

PIN: 072201801CPD

EPIN: 072180001

- B. Furnish a Performance Bond and a Payment Bond, as may be required by the City for the faithful performance and proper fulfillment of the Contract, which bonds shall be satisfactory in all respects to the City and shall be executed by good and sufficient Sureties, and
- C. In all respects perform the Contract created by the acceptance of the bid as provided in the Information for Bidders, which is incorporated herein by reference or if the City shall reject the aforesaid bid then this obligation shall be null and void; otherwise it remains in full force and effect and the Surety shall fulfill its obligations under this Bid Bond.

In the event that the Principal's bid shall be accepted by the City and the Contract awarded to him, then the Surety hereunder agrees, subject only to the payment by the Principal of the premium therefore, if requested by the City, to write the aforementioned performance and payment bonds in the form set forth in the Contract documents.

It is expressly understood and agreed that the liability of the Surety for any and all claims under this Bid Bond shall in no event exceed the penal amount of this bid as stated herein.

In the event that the City accepts the Principal's bid, and either a Performance Bond, Payment Bond or both will not be required by the City on or before the thirtieth day after the date on which the City signs the Contract, there shall be no liability under the Bid Bond as to such Performance Bond or Payment Bond.

The Surety, for value received, hereby stipulates and agrees that the obligations of the Surety and its bond shall in no way be impaired or affected by any postponements of the date upon which the City will receive or open bids, or by any extensions of the time within which the City may accept the Principal's bid, or by any waiver by the City of any of the requirements in the bid documents. The Surety hereby waives notice of any such postponements, extensions, or waivers.

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IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers this ____ day of _____, 20__.

Principal (LS)

(Seal)

By: _____

Surety

(Seal)

By: _____

PIN: 072201801CPD

EPIN: 072180001

ACKNOWLEDGMENT OF CONTRACTOR—IF A CORPORATION

State of _____ County of _____ ss:

On this ___ day of _____, 20___, before me personally appeared _____

_____ to me known, who being by me duly sworn, did depose and say

that he /she resides at _____, that he/she is

the _____ of _____

_____, _____ the

corporation described in and which executed the foregoing instrument; that he/she knows the

seal of said corporation; that one of the seals affixed to said instrument is such corporate seal;

that it was so affixed by order of the directors of said corporation, and that he/she signed his/her

name thereto by like order.

Notary Public

ACKNOWLEDGMENT OF CONTRACTOR—IF A PARTNERSHIP

State of _____ County of _____ ss:

On this ___ day of _____, 20___, before me personally appeared _____

_____ to me known and known to me to be a member of the

firm of _____

the firm described in and who executed the foregoing instrument and he/she acknowledged to me

that he/she executed the same as and for the act and deed of said firm.

Notary Public

PIN: 072201801CPD

EPIN: 072180001

ACKNOWLEDGMENT OF CONTRACTOR—IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this ____ day of _____, 20__, before me personally appeared

to me known and known to me to be the person described in and who executed the foregoing instrument and he/she acknowledged to me that he/she executed same for the purpose herein mentioned.

Notary Public

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PART C: DETAILED SPECIFICATIONS/SCOPE OF WORK

(Note: See also Part E and Schedule “A” which contains the bonding and insurance requirements)

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THE CITY OF NEW YORK
DEPARTMENT OF CORRECTION (DOC)
75-20 Astoria Blvd., Suite 160
East Elmhurst, NY 11370



CYNTHIA BRANN
ACTING COMMISSIONER

Technical Requirements

General Construction – Work Order Based Requirements Contract

PIN 072201801CPD

WORK ORDER BASED –GENERAL CONSTRUCTION REQUIREMENTS CONTRACT FOR
VARIOUS NYC-DEPARTMENT OF CORRECTION FACILITIES

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Frank J. Doka
Deputy Commissioner

Frank Eilam
Assistant Commissioner

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SECTION 01000 – GENERAL CONDITIONS

1.01 SCOPE AND INTENT

A. **DESCRIPTION OF PROJECT:** This is a time and material requirements contract based on work orders. The contract is intended to provide general construction services on an as-needed basis throughout the term of the contract. Each work order will specify a detailed scope of work, including items such as labor, materials, equipment, appliances, appurtenances, and obtaining of regulatory agency approvals as necessary and required for the general construction work of this Contract for all DOC facilities including ancillary facility buildings. The department will utilize work orders to facilitate the work at various locations or facilities as required.

C. **OMISSION OF DETAILS:** All work called for in the Specifications applicable to each separate work order regardless if it is shown on the work order drawings/sketches or not, shall be required, and it shall be performed by the Contractor as though it was originally delineated or described.

D. Work not particularly specified in the Specifications nor detailed on the work order Drawings/sketches but required for completing the scope and its intent or required for the proper execution and completion of the work shall be performed by the Contractor.

E. The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best practice is to prevail and that only the best material and workmanship is to be used; and interpretation of the Specifications shall be made upon that basis.

F. **"DIRECTED," "REQUIRED," ETC.:** Wherever reference is made in the Contract to the work or its performance, the terms "directed," "required," "permitted," "ordered," "designated," "prescribed," "determined," shall imply the direction, requirements, permission, order, designation or prescription of the Commissioner.

G. **"APPROVED," ETC.:** "Approved," "acceptable," "satisfactory," and words of similar import shall mean and intend approved, acceptable or satisfactory to the Commissioner.

H. **CONFLICTS OF INTERESTS:** The Charter of the City of New York in relation to conflicts of interests (Art. 68) provided, among a number of safeguards that:

1. No employee or person whose salary is payable in whole or in part from the City treasury (Subdivision C.) shall accept any valuable gift, whether in the form of service, loan, thing or promise, or any other form from any person, firm or corporation which to his knowledge is interested directly or indirectly, in any manner whatsoever in business dealings with the City; and,

2. Any violation of any of the provisions of this section shall at the option of the

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Comptroller, render forfeit and void the Contract, work, business, sale or transaction affected.

3. Other sections of the City Charter, the Administrative Code and the Penal Law are applicable in implementing the basic conflicts of interest Section and under certain circumstances penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

4. Notice is hereby given that sections of the City Charter, the Administrative Code and the Penal Law alluded to herein shall apply under the terms of this Contract to circumstances relevant to conflicts of interest and shall be extended in application to subcontractors authorized to perform work, labor and services pursuant to this Contract and further, it shall be the duty and responsibility of the prime Contractor to so inform their respective subcontractors.

1.02 PROVISIONS REFERENCED WITH INFORMATION FOR BIDDERS AND AGREEMENT

A. PARTIAL PAYMENTS FOR MATERIALS IN ADVANCE OF THEIR INCORPORATION IN THE WORK PURSUANT TO ARTICLE 42 OF THE "STANDARD CONSTRUCTION CONTRACT": In order to better insure the availability of materials, fixtures and equipment when needed for the work the Commissioner may authorize partial payment for certain materials, fixtures and equipment, prior to their incorporation in the work, but only in strict accordance with and subject to all the terms and conditions set forth in the following sub-divisions numbered 1 to 16 inclusive, unless another method of payment is elsewhere provided in the Specifications for specified materials, fixtures or equipment.

1. The Contractor shall submit to the Commissioner a written request, in quadruplicate, for payment for materials purchased or to be purchased for which he desires to be paid prior to their actual incorporation in the work. The request shall be accompanied by a schedule of the types and quantities of materials, and shall state whether such materials are to be stored on or off the site.

2. Where the materials are to be stored off the site, they shall be stored at a place other than the Contractor's premises (except with the written consent of the Commissioner) and under the conditions prescribed or approved by the Commissioner. The Contractor shall set apart and separately store at the place or places of storage all materials and shall clearly mark same "PROPERTY OF THE CITY OF NEW YORK", and further, shall not at any time move any of said materials to another off-site place of storage without the prior written consent of the Commissioner. Materials may be removed from their place of storage off the site for incorporation in the work upon approval of the Resident Engineer.

3. Where the materials are to be stored at the site, they shall be stored at such locations as shall be designated by the Resident Engineer and only in such quantities as, in the opinion of the Resident Engineer, will not interfere with the proper performance of the work by the Contractor or by other Contractors then engaged in performing work on the site. Such

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materials shall not be removed from their place of storage on the site except for incorporation in the work, without the approval of the Resident Engineer.

4. INSURANCE

a. Storage Off-Site: Where the materials are stored off the site and until such time as they are incorporated in the work, the Contractor shall fully insure such materials against any and all risks of destruction, damage or loss including but not limited to fire, theft, and any other casualty or happening. The policy of insurance shall be payable - to the City of New York. It shall be in such terms and amounts as shall be approved by the Commissioner and shall be placed with a company duly licensed to do business in the State of New York. The Contractor shall deliver the original and one copy of such policy or policies marked "Fully Paid" to the Commissioner.

b. Storage On-Site: Where the materials are stored at the site, the Contractor shall furnish satisfactory evidence to the Commissioner that they are properly insured against loss, by endorsements or otherwise, under the policy or policies of insurance obtained by the Contractor to cover losses to materials owned or installed by him. The policy of insurance shall cover fire and extended coverage against windstorm, hail, explosion and riot attending a strike, civil commotion, aircraft, vehicles and smoke.

5. All costs, charges and expenses arising out of the storage of such materials, shall be paid by the Contractor and the City hereby reserves the right to retain out of any partial or final payment made under the Contract an amount sufficient to cover such costs, charges and expenses with the understanding that the City shall have and may exercise any and all other remedies at law for the recovery of such cost, charges and expenses. There shall be no increase in the contract price for such costs, charges and expenses and the Contractor shall not make any claim or demand for compensation therefor.

6. The Contractor shall pay any and all costs of handling and delivery of materials, to the place of storage and from the place of storage to the site of the work; and the City shall have the right to retain from any partial or final payment an amount sufficient to cover the cost of such handling and delivery.

7. In the event that the whole or any part of these materials are lost, damaged or destroyed in advance of their satisfactory incorporation in the work, the Contractor at his own cost, shall replace such lost, damaged or destroyed materials of the same character and quality. The City will reimburse the Contractor for the cost of the replaced materials to the extent, and only to the extent, of the monies actually received by the City under the policies of insurance hereinbefore referred to. Until such time as the materials are replaced, the City will deduct from the value of the stored materials or from any other money due under the Contract, the amount paid to the Contractor for such lost, damaged or destroyed materials.

8. Should any of the materials paid for the City hereunder be subsequently rejected or incorporated in the work in a manner or by a method not in accordance with the Contract and Specifications, the Contractor shall remove and replace such defective or improperly

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incorporated material with materials complying with the Contract and Specifications. Until such materials are replaced, the City will deduct from the value of the stored materials or from any other money due the Contractor, the amount paid by the City for such rejected or improperly incorporated materials.

9. Payments for the cost of materials made hereunder shall not be deemed to be an acceptance of such materials as being in accordance with the contract documents, and the Contractor always retains and must comply with his duty to deliver to the site and properly incorporate in the work only materials which comply with the contract documents.

10. The Contractor shall retain any and all risks in connection with the damage, destruction or loss of the materials paid for hereunder to the time of delivery of the same to the site of the work and their proper incorporation in the work in accordance with the contract documents.

11. The Contractor shall comply with all laws and the regulations of any governmental body or agency pertaining to the priority purchase, allocation and use of the materials.

12. When requesting payment for such materials, the Contractor shall submit with the partial estimate duly authenticated documents of title, such as bills of sale, invoices or warehouse receipts, all in quadruplicate. The executed bills of sale shall transfer title to the materials from the Contractor to the City (in the event that the invoices state that the material has been purchased by a subcontractor, bills of sale in quadruplicate will also be required transferring title to the materials from subcontractor to the Contractor).

13. Where the Contractor, with the approval of the Commissioner has purchased unusually large quantities of materials in order to assure their availability for the work, the Commissioner at his option, may waive the requirements of paragraph "12" provided the Contractor furnishes evidence in the form of an affidavit of the Contractor in quadruplicate, and such other proof as the Commissioner may require, that he is the sole owner of such materials and has purchased them free and clear of all liens and other encumbrances. In such event, the Contractor shall pay for such materials and submit proof thereof, in the same manner as provided in paragraph "12" hereof, within seven (7) days after receipt of payment therefor from the Comptroller. Failure on the part of the Contractor to submit satisfactory evidence that he has paid in full for all such materials shall preclude him from payments under the Contract.

14. The Contractor shall include in each succeeding partial estimate requisition a summary of materials stored which shall set forth the quantity and value of materials in storage, on or off the site, at the end of each preceding estimate period; the amount removed for incorporation in the work; the quantity and value of materials delivered during the current period and the total value of materials on hand for which payment thereof will be included in the current payment estimate.

15. Upon proof to the satisfaction of the Commissioner of the actual cost of such materials and upon submission of proper proof of title as required under paragraph "12" or "13"

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hereof, payment will be made therefore to the extent of 85%, provided however, that the cost so verified, established and approved shall not exceed the estimated cost of such materials included in the approved detailed breakdown estimate submitted in accordance with Article 40 of the Agreement; if it does, the City will pay only 85% approved estimated cost.

16. Upon the incorporation in the work of any such materials, which have been paid for in advance of such incorporation in accordance with the foregoing provisions, payment will be made for such materials incorporated in the work pursuant to Article 41 or Article 42 of the Agreement, less any sums paid pursuant to paragraph "15" herein.

1.05 PAYMENT AND PERFORMANCE GUARANTEES

A. RETAINAGE: To further assure the faithful and acceptable completion of this contract, the Department of Correction will withhold retainage of 5% of each work order certified for payment. The retainage shall be held until it is determined by the Department of Correction, that the Contractor completed the work order as required and has restored the work areas included in this contract to the satisfaction of the Department of Correction. The Department will release retainage upon acceptance of the work performed for each work order.

B. PAYMENTS MADE AND DUE TO SUBCONTRACTORS

1. The Contractor shall include on each payment requisition a separate breakout of all subcontract work including for each of the following:

- a. Date.
- b. Subcontractors Name.
- c. Value of Subcontract.
- d. Total Amount Previously Paid To Subcontractor for work previously requisitioned.
- e. Amount, including Retainage, to be paid to the Subcontractor for work included in the requisition.

2. In addition, the Contractor shall have subcontractors submit to the Department of Correction - Contract Management Office, a complete VENDEX Business and Principal Questionnaires for each subcontractor of \$100,000 or more.

C. CITY'S SET OFF RIGHTS: Nothing in this Contract shall limit the City's common law, equitable, and statutory rights of set-off. Such rights shall include, but not be limited to, the City's option to withhold, up to any amounts due and owing under this contract, any funds owed in accordance with City and/or State law. The City shall exercise its set-off rights in accordance

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with normal City practices, and in cases of set-off pursuant to an audit, the finalization of such audit by the City, its representatives, or the State Comptroller.

D. CHANGED CONDITIONS AND CONTRACT MODIFICATION

1. Government Rules and Regulations: Any contract or order resulting from this agreement affected by rules and regulations of the Government of the United States may be either modified to conform thereto or may be terminated without penalty to the Contractor, as shall be determined by the Commissioner in writing. Such modified contract or order shall be subject to audit by the Comptroller of the City of New York.

2. The Contractor is hereby advised that any contract modification, change order, amendment, or extra work done in advance of the required City approvals for such work, including but not limited to the registration of the change order with the Office of the Comptroller, is done solely at the risk of the Contractor.

E. PREVAILING WAGE RATES: The Contractor's attention is drawn to the fact that the New York State Prevailing Wage Laws, Section 220 and/or 230, as applies herein, shall be strictly enforced. There are four requirements for full contractor compliance with NYS Prevailing Wage Laws for its workers and its subcontractor's workers:

1. Proper Payment involves paying a worker the prevailing wages, benefits and supplemental wages, required for the type of work performed. The Contractor shall be required, with each payment request, to submit this information in the format approved by the City of New York.

2. Posting of the prevailing wages is required at the work site.

3. A Sign-In Sheet must include the signature of every worker at the site for each day of work. The workers shall sign that they understand that project is a public works projects covered under NYS Prevailing Wage Law. The Contractor shall submit the daily sign-in sheet, on a daily basis to the DOC Project Manager, in the City approved format.

4. Each of the Contractor's workers shall be given an information card about the prevailing wage requirements. At the time of distribution, the contractor shall have each worker sign a statement certifying that the worker has been advised of the prevailing wage requirements.

1.06 SHOP DRAWINGS

A. The Contractor shall promptly prepare and submit layout detail and shop drawings of such parts of the work as are indicated in the Specifications or as required. These shop drawings shall be made in accordance with the work order Drawings/sketches (if any), Specifications and Supplementary Drawings, if any, shall be accurate and distinct and give all the dimensions required for the fabrication, erection and installation of the work.

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B. SIZE OF DRAWINGS: The shop drawings, unless otherwise directed, shall preferably be on sheets of the same size as the Contract Drawings, with a 1/2-inch marginal space on each side and a 2-inch marginal space for binding on the left side.

C. SCOPE OF DRAWINGS: Shop drawings shall be numbered consecutively and shall accurately and distinctly represent the following:

1. All working and erection dimensions.
2. Arrangements and sectional views.
3. Necessary details, including performance characteristics, and complete information for making necessary connections with other work.
4. Kinds of materials including thicknesses and finishes. All other information required by the Commissioner.

D. TITLES AND REFERENCE: Shop drawings shall be dated and contain:

1. Name of the Project and Contract Number.
2. The descriptive names of equipment, or materials covered by the Drawings, and the classified item number or numbers, if any, under which it is, or they are required.
3. The locations or points at which materials, or equipment, are to be installed in the work.
4. Cross-references to the Section Number, detail number and paragraph number of the Contract Specifications.
5. Cross-references to the sheet number, detail number, etc., of the Contract Drawings.
6. In addition to the above requirements, the Shop Drawings shall bear a stamp having the following wording:

"The Contractor certifies that he has verified and supplemented the Contract Drawings by taking all required field measurements that said measurements correctly reflect all field conditions and that this Shop Drawing incorporates said measurements."

E. THE SUBMISSION OF SHOP DRAWINGS shall be accompanied by a letter of transmittal, in triplicate, containing the name of the Project, the name of the Contractor, the number of Drawings, titles and any other requirements. Re-submission of the same drawings shall bear the original number of the drawings and the original titles.

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F. PRELIMINARY SUBMISSION: The Contractor shall submit one (1) set of "Reproducible" shop drawings to the Commissioner or his representative for his approval. A satisfactory shop drawing will be stamped "Approved", be dated and one copy thereof will be returned to the Contractor by letter. Should the shop drawing not be approved by the Commissioner, he will return the original shop drawings with the necessary corrections and changes to be made indicated thereon.

G. REVISIONS: The Contractor must make such corrections and changes and again submit one (1) set of "Reproducible" drawings, for the approval of the Commissioner or his representative. The Contractor shall revise and resubmit the shop drawing as required by the Commissioner until approval thereof is obtained. However, shop drawings which have been stamped "Approved As Noted" shall be considered an "Approved" shop drawing and NEED NOT be revised and resubmitted. No work called for by the Shop Drawings shall be done until the approval of the said drawings by the Commissioner is given. In addition to the foregoing Shop Drawing transmissions, a copy of any Shop Drawing prepared by the Contractor which Shop Drawing indicated work related to, adjacent to, impinging upon, or affecting work to be done by other contractors, shall be transmitted to the contractors so affected.

H. VARIATIONS: If the shop drawings show variations from the Contract requirements because of standard shop practice, or other reasons, the Contractor shall make specific mention of such variations in his letter of submittal. Approval of the shop drawings shall constitute approval of the subject matter thereof only and not of any structural apparatus shown or indicated.

I. FINAL SUBMISSION: When approval of any shop drawing is obtained by the Contractor, he shall insert the date of the approval of the tracing and promptly furnish the Commissioner or his representative with eight (8) additional prints of the approved drawings. No work called for by the shop drawings shall be done until the approval of the said drawings by the Commissioner is given. In addition to the foregoing shop drawing transmissions, a copy of any shop drawing prepared by any of the prime Contractors which indicates work related to, adjacent to, impinging upon, or affecting work to be done by other contractors, shall be transmitted to the contractors so affected. These approved shop drawings shall be delivered to the DOC's Resident Engineer for distribution to the affected contractors at the job meetings and shall be so recorded in the minutes.

J. CATALOG CUTS: Except as otherwise prescribed herein, the submission of catalog cuts shall conform to the procedures specified for shop drawings.

1. Preliminary Submission: The Contractor shall submit three (3) sets of catalog cuts to the Commissioner or his representative for his approval. A satisfactory catalog cut will be stamped "Approved", be dated and one copy thereof will be returned to the Contractor by letter. Should the catalog cut not be approved by the Commissioner, he will return one set of such catalog cuts with the necessary corrections and changes to be made indicated thereon.

2. Revisions: The Contractor shall make such corrections and changes and again submit four (4) sets of the catalog cuts, in duplicate, for the approval of the Commissioner. The

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Contractor shall revise and resubmit the catalog cuts as required by the Commissioner until approval thereof is obtained. However, catalog cuts which have been stamped "Approved As Noted" shall be considered an "Approved" catalog cut and need not be revised and resubmitted.

3. Final Submission: When approval of any catalog cut is obtained by the Contractor, he shall insert the date of the approval and promptly furnish the Commissioner or his representative with four (4) additional sets of the approved catalog cuts.

K. RESPONSIBILITY OF CONTRACTOR: The approval of shop drawings will be general and shall not relieve the Contractor of responsibility for the accuracy of such shop drawings, nor for the proper fitting and construction of the work, nor of the furnishing of materials or work required by the Contract and not indicated on the shop drawings. Approval of shop drawings shall not be construed as approving departures from the Contract Drawings, Supplementary Drawings or Specifications.

L. SHOP DRAWING SCHEDULE: To enable the work to be transacted in an orderly and expeditious manner, the Contractor within ten (10) days after the date specified for the commencement of the work, unless otherwise directed by the "Commissioner", shall submit a proposed progress schedule showing the anticipated time of commencement and completion of the submission of shop drawings for each of the various operations to be performed under the Contract, as indicated in the Appendix 1 - "Shop Drawing Log".

1.07 RECORD DRAWINGS

A. Each Contractor shall prepare and maintain, during the progress of the work, an accurate record of the work as actually installed, on record drawings, on AutoCAD. These record drawings shall be made available to the DOC's Resident Engineer upon request. The Contractor's attention is particularly directed to the necessity of keeping accurate records of all subsurface and concealed work, so that the record drawings may contain this information in exact detail and location. Drawings should also show all connections, valves, gates, switches, cut-outs and similar operating equipment. Before substantial completion payment, each Contractor shall furnish to the Commissioner two (2) complete sets of record drawings, in full size, indicating all of the work and locations as actually installed; plus one (1) set of AUTOCAD CDs and a pdf version

B. All changes from contract drawings shall be conspicuously encircled and identified by change order number correlating to changes listed on "Title Sheet." The Contractor shall show within the encircled areas the work as actually installed.

1.08 SAMPLES OF MATERIALS

A. The Contractor shall submit to the Commissioner for approval, samples of all materials specified to be used in the project.

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1. For samples of materials involving electrical work of any nature, see the "General Electrical Requirements."

2. Samples shall be in triplicate, of sufficient size to show the quality, type, range of color, finish and texture of the material. However, in addition thereto, after approval, three (3) additional samples showing the material, color and texture of all interior finishes, including the finishes of exposed built-in equipment, trim, glazing, fittings and fixtures, etc., shall also be furnished. The sizes of these additional samples shall be as directed and acceptable to the Commissioner.

3. Each of the samples shall be labeled, bearing the name and quality of the material, the Contractor's name, date, Contract and project, and the related specification or drawing reference to the samples submitted.

4. A letter of transmittal, in triplicate, from the Contractor requesting approval must accompany all such samples.

5. Transportation charges to the Commissioner's office must be prepared on all samples forwarded.

6. Samples for testing purposes shall be in accordance with the requirements of the Specifications.

B. THE APPROVAL OF ANY SAMPLES will be given as promptly as possible, and shall be only for the characteristic color, texture, strength, or other feature of the material named in such approval, and no other. When this approval is issued by the Commissioner, it is done with the distinct understanding that the materials to be furnished will fully and completely comply with the Specifications, the determination of which may be made at some later date by a laboratory test or by other procedure. Use of materials will be permitted only so long as the quality remains equal to the approved samples and complies in every respect with the Specifications, and the colors and textures of the samples on file in the Office of the Commissioner, for the project.

1. The Commissioner will be the final judge as to acceptability of laboratory test data and performance in service of materials submitted.

1.09 EQUIVALENT QUALITY OF MATERIALS

A. All materials and equipment which are designated in the Specifications by a number in the catalog of any manufacturer or by a manufacturer's grade or trade name, are designated for the purpose of describing the article and fixing the standard or the quality and finish. Materials and equipment which are, in the opinion of the Commissioner, the equivalent to that specified, will be acceptable.

1.10 BULLETINS, OPERATING AND SERVICE MANUALS

A. Where the Contractor has submitted prints in the form of technical bulletins, operating

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and Service manuals, or other printed matter as a shop drawing, having diagrams or drawings thereon of a material or equipment installed in the work, he shall furnish three (3) sets thereof so that the Commissioner may have all the necessary information for the proper operation maintenance and repair of the material and equipment and the ordering of spare parts. All bulletins and operating and service manuals shall be compiled and indexed in the book form for each contract.

1.11 NOTICES, RULES AND PERMITS

A. The Contractor shall give all necessary notices, obtain all permits, etc., in connection with this work and comply with all rules and regulations of the State of New York and the City of New York affecting work of this type. These rules shall take precedence over any requirements of this specification where conflict occurs. This, however, shall not be interpreted as permitting the use of materials or equipment inferior to that specified unless such materials or equipment are specifically mentioned as violating the said rules and regulations.

B. The Contractor shall be responsible for obtaining the required approval of all departments having jurisdiction and shall make and file all required plans to obtain such approvals. S/he shall obtain all required Certificates of Inspection for his/her work and deliver them to the Commissioner.

C. All fees for permits, etc., required for the execution of this contract to final acceptance by the Commissioner of the work described herein shall be paid to the Contractor at cost upon presenting the actual invoices.

D. The Contractor shall make the necessary arrangements for, and obtain all work permits (Federal, State, and City) required for his work.

1.12 CERTIFICATES OF APPROVAL

A. The Contractor will be responsible for and shall obtain all final approvals for the work installed under the Contract, in the form of such certificates that are required by all City Agencies having jurisdiction over the work of the Contract.

B. All such certificates shall be forwarded to the Commissioner through the Resident Engineer before final acceptance of the work of the Contract.

C. Cost of approvals under jurisdiction of DOC are included in the work order. Approval and filings with all oversight agencies shall be compensated under the Article 26 (particularly, per Article 26.2 – Extra Work) in accordance with the NYC Standard Construction Contract included in the contract.

1.13 ACCEPTANCE TESTS

A. GOVERNMENTAL AGENCIES: All equipment and appliances furnished and installations made under the Contract shall conform to the requirements of the Specifications, and shall in no event be less than that necessary to comply with the minimum requirements of all governmental agencies having jurisdiction.

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- B. NOTICE OF TEST: Whenever the Specifications and/or any governmental agency having jurisdiction requires the acceptance test, the Contractor shall give written notice to all concerned of the time when these test will be conducted.
- C. ENERGY AND ETC. FOR TESTS: The City will furnish 120V power for small power tools, water, and light.
- D. The Contractor shall furnish labor and all other material and instruments necessary to conduct the acceptance tests at no additional cost to the City.
- E. CERTIFICATES: The final acceptance by the Commissioner shall be contingent upon the Contractor delivering to the Commissioner all necessary certificates evidencing compliance in every respect with the requirements of the agencies having jurisdiction.

1.14 PROGRESS PHOTOGRAPHS

- A. The Contractor shall provide an average of ten (10) photographs taken each month from the commencement of the Contract to the time of completion. Failure to provide required photos will result in a credit issued against the contractor.
- B. These photographs shall show as far as possible, the work completed within and on the exterior, of the structure. The first series of photographs shall be taken prior to the actual commencement of work at the site. In addition thereto before final payment, there shall be six (6) photographs taken of unobstructed views of the completed building or buildings and site, as directed by the Commissioner, after all scaffolding, hoists, shanties, field offices or other temporary work has been removed and final cleaning done.
- C. For demolition work included in the Contract there shall be four (4) photographs taken before commencement of demolition operation, four (4) at mid-point of operations and four (4) at the completion of demolition operations). The prints shall be 8" x 10" gloss finish, mounted with a 1" binding flap of muslin on the left side. They shall be marked on the back, with date of exposure, the title of the project and the specific location.

1.15 REMOVAL OF RUBBISH AND SURPLUS MATERIALS

- A. Rubbish shall not be thrown from the windows or other parts of the building. Mason's rubbish, dirt and other dust-producing material shall be wetted down from time to time.
- B. The Contractor shall sweep up and deposit, at a location designated on each floor by DOC's Resident Engineer, all of his rubbish, debris and waste materials, as it accumulates and when directed by the Resident Engineer. Wood crating shall be broken up, neatly bundled, tied and stacked ready for removal and be deposited, at a location designated on each floor by DOC's Resident Engineer.
- C. The Contractor shall remove all rubbish, etc., from the site of project. He shall remove

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from the designated locations all piles of rubbish, debris, waste material and wood crating as they accumulate and when directed by DOC's Resident Engineer, and shall cart them away from the site of the project. He shall employ and keep engaged for this purpose an adequate force of laborers.

D. At the conclusion of the work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away.

E. The Contractor shall thoroughly clean all equipment and materials furnished and installed and shall deliver over such materials and equipment undamaged in a bright, clean, and new appearing condition at time of substantial completion.

1.16 INSPECTIONS BY OTHER CITY AGENCIES

A. Just prior to substantial completion of this Project, the Commissioner may be required to file an application for a new or revised Certificate of Occupancy for the structure with the NYC Building Department.

B. In connection with the above mentioned application for a new or revised Certificate of Occupancy, and before certificates of final payments are issued, each Contractor will be required to arrange for all final inspections by the inspectional staff of the Department of Buildings or other City Agencies having jurisdiction, and secure all reports, certificates etc. by such inspection staff or other City Agencies, in order that the Certificate of Occupancy can be issued without delay. The Contractor shall be compensated when such filings actually take place for the project.

1.17 GUARANTY – WARRANTY

The Contractor shall guarantee its work, free of defects in materials, installation and operation (excluding routine maintenance) for a period of two (2) years (unless otherwise specified) after completion of the work. During this period the Contractor shall replace any such defective materials promptly and free of charge to the Department.

1.18 CONTRACTOR'S DAILY REPORTS

A. As soon as the Contractor has started work on the Project, he shall submit to the Resident Engineer written daily reports of the work performed the previous day by any of his employees, including the employees of his subcontractors.

B. The reports shall be prepared by the Contractor's Superintendent and shall bear his signature. Each report shall contain the following information:

1. The type of materials and/or major equipment being installed and the major construction equipment being used by the Contractor and/or Subcontractor and the total number of employees working in each category on that particular day.

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2. The names of the subcontractors working and the type of materials and/or major equipment being installed by each, together with the total number of employees working for each subcontractor on that particular day.

1.19 COMPLIANCE WITH OSHA REGULATIONS

A. These Contract Documents and the work hereby contemplated shall be governed, at all times, by the following Federal Laws:

1. William-Steinger Occupational Safety and Health Act of 1970, Public Law 91-596;
2. Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;
3. Part 1926 - Safety and Health Regulations for Construction, Chapter XVII of Title 29, Code of Federal Regulations.

B. The Contractor shall provide and maintain all necessary temporary closures, guardrails, and barricades to adequately protect all workmen and the public from possible injury. Any contractor requiring removal of these items shall be responsible for the replacement of same.

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Section 01010

Specific Requirements

PART 1 - GENERAL

1.1. SCOPE OF WORK

A. This is a “work order” based General construction requirement contract. During the term of the contract, the Department shall order all required GC work for all Departmental locations as specified by the Department. This is a requirements Contract.

B. The work shall consist of furnishing all labor, materials, equipment and appliances, supervision, project management, necessary and required to completely execute the items specified herein. The scope of work items shall include but not be limited to the following:

- 1) Demolition and Debris Removal (all types)
- 2) Earthwork, Excavation and shoring (all types)
- 3) Paving – Hot-mix Asphalt and Concrete
- 4) Drainage – Site & Storm
- 5) Landscape site work and planting
- 6) Concrete –cast in place, precast, cementitious toppings
- 7) Masonry
- 8) Metals – structural steel, framing, roof & floor decks, hand rails & railings and all metal used in building general construction
- 9) Wood & Plastics – Rough carpentry and millwork
- 10) Thermal & Moisture Protection – Building Insulation (all types), Fireproofing, fire stopping, re-roof prep, new roofs (all types including metal), flashing & sheet metal trim, gutters & accessories, roof specialties, roof hatches & sky lights and joint sealers
- 11) Doors & Windows – steel doors & frames, security hollow metal, crawl space access door, steel windows & screens, security windows & screens, finish & security hardware, glass & glazing
- 12) Finishes – Lath & Plaster, gypsum drywall, acoustical panel ceiling, security ceilings, tile, rubber & resilient tile flooring, carpet flooring, seamless resinous flooring, epoxy flooring, sanitary wall finishes, special coatings and paint removals

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- 13) Specialties – Toilet compartments, wall surface protection, fire extinguishers & cabinet and toilet accessories
- 14) Miscellaneous equipment & dock levelers
- 15) Conveying Systems – Elevators & wheel chair lifts
- 16) All other general construction (GC) work not specifically noted here but considered as GC work by industry norm
- 17) Site safety systems and all required tools and equipment to complete the work.

C. The Department will issue a "work order" when work is required. The "work order" will define the scope of work to be executed by the Contractor. This "work order" may include sketches which will further define the work details as needed. The Contractor shall also be required to submit shop drawings necessary to complete work for review and approval prior to the start of any construction.

D. The "work order" will also define the time of completion. A work schedule will be developed by the Department of Correction based on reasonable acceptable production levels. Unless there are any special circumstances, the Contractor will be required to meet this completion schedule.

1.2. TERM OF CONTRACT

A. The term of the Contract shall be 730 (Seven Hundred Thirty) Consecutive Calendar Days after the Notice to Proceed.

B. This work order based contract shall be done on a "time and material" basis . The total payments anticipated from this contract work shall not exceed Four million dollars (\$4,000,000) for the initial two (2) year term. However, DOC reserves the right to increase or decrease the total dollar amount.

C. RENEWAL OPTION: This contract shall have three one-year renewal options. Each renewal year shall have a not to exceed amount of two million dollars (\$2,000,000). The Commissioner reserves the right in his/her sole discretion to renew this Contract for the additional year(s), as set forth in Schedule "A", at the same terms and conditions.

ESCALATION: The Department shall endeavor to provide the Contractor sixty (60) days prior written notice of such renewal. Failure to provide such notice shall not prevent the Department from exercising this option to renew. The Contractor may request a cost escalation for the renewal periods based on the Consumer Price Index published by the U.S. Department of Labor, Bureau of Labor Statistics Series ID CUURAI0ISAO/CUURSA101SAO for AllUrban Consumers NY-NJ-CT. The Contract costs may be adjusted for each renewal year based on the Consumer Price Index (CPI) escalation – the percentage increase will be added to all the bid

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factors, respectively. The adjustment shall be based on the percentage change between the CPI for the twelve (12) preceding months the following is an example of escalation calculation:

CPI for Current period 136.0
Less CPI for previous period 129.9
Equals index point change 6.1
Divided by previous period CPI 0.047
Result multiplied by 100 0.047 x 100
Equals percent change 4.7

If a base bid factor percent is 115%, and the CPI increase is found to be 4.7, then the new base bid factor shall be $115\% \times 1.047 = 120.405\%$. In the unlikely event that the annual average of the index cited declines, the originally bid factors (%) shall be maintained for such year.

1.3. TIME & MATERIAL METHOD OF BIDDING

A. Labor Cost

1. For the "Time" or labor hour rate, the Contractor shall submit an all inclusive mark up factor "A" to be applied to the City of New York Comptroller Office prevailing wage schedule rate. This all inclusive mark up factor shall be applied to all of the trades noted on prevailing wage rate schedule. Trades not subject to prevailing wage may be submitted as subcontractors subsequent to contractor obtaining three quotes and conducting evaluation.
2. The all inclusive mark up factor shall include cost components such as: all direct and indirect costs including, but not limited to, factor related to salary cost paid to an employee above and beyond the Comptroller's published prevailing wages rates, shop and record drawings, common tools (including all accessories), use of tools, project management, project supervision and/or project foreman supervision cost, union dues and costs, computer equipment costs, traveling, travel time, transportation, , all insurance requirements as noted on Article 22 of NYC Standard Construction Contract, the items noted in the "Schedule A" of the General Conditions as well as the overhead and profit and all other related expenses.
3. The Work under this contract shall be governed by the Project Labor Agreement attached to and made part of this Contract.

B. Material Cost

1. The Second bid item shall be the materials cost procured by the contractor.
2. The Department may, at its option, furnish the parts and materials, or alternatively have the Contractor supply the parts and materials needed to accomplish a project. The Department shall reimburse the Contractor cost for parts in the following manner:
 - a. The Contractor's actual cost for parts and materials subject to paid invoices by the Contractor multiplied by all inclusive mark-up factor as shown in bid sheet.

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b. In case where it would be impossible for the Contractor to substantiate its actual cost for parts and material by invoice (Parts and material used were from Contractor stock, etc.), the Department shall use a current parts catalog list price less its current discount of 20% to establish cost to the Contractor plus its mark up as shown in its bid.

3. Payment for material = [All inclusive mark up factor B Bid Factor B)] x [Material Cost which is supported by paid invoices].

C. Payment for contractor's owned or rented Equipment

Payment for contractor owned or rented equipment shall be made in accordance with Article 26 of the NYC standard construction contract.

D. Reimbursable Cost

1. The items not covered by above items (A), (B) and (C) – such as oversight filing payment, etc., shall be paid as reimbursable cost. Such special services shall be reimbursed based on subcontractor quotes in accordance with Article 17 and Article 26 of the attached standard Construction Contract.

1.4. DOC SUPERVISION

A. The work shall be done under the supervision of a Project Manager from DOC. The Contractor shall refer to the DOC Project Manager any questions relating to conflicts in contract documents and any communications and/or requests from other oversight agencies or personnel regarding its work. Neither changes, nor extra work, shall be performed without written instructions from the DOC Project Manager.

B. As appropriate, the Architect of Record, Professional Design Consultant or DOC representative shall review and respond to required submittals.

1.5. FIELD MEASUREMENTS

A. It is the Contractor's sole responsibility to field verify all dimensions and conditions necessary for new work prior to the commencement of any work. The Contractor is responsible for the correct fit of all new work to existing conditions.

B. The Contractor, before commencing work, shall examine all adjoining work on which his work is in any way dependent for perfect workmanship according to the intent of the specifications.

C. The Contractor shall promptly inform the DOC Project Manager of conditions occurring in the work that conflict with work as shown on the plan/drawing or specified in the specifications. No "Waiver of Responsibility" for incomplete, inadequate or defective adjoining work will be considered unless notice has been filed by the Contractor and acceded to in writing by the Project Manager before the Contractor begins any part of the work.

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1.6. DETERMINATION OF WORK ORDER ASSIGNMENTS

- A. The Contractor shall within two (2) working days, respond to a telephone request to meet with the DOC Project Manager and/or any other DOC representative at the given location.
- B. The Contractor will be given verbal instructions and any available drawings for the work to be done in that building, to be followed by written authorization for the record. This written authorization will be in the form of a Work Order Letter or other document provided by the Project Manager. Work Order Assignments must be completed by the time indicated. Failure to complete work by the designated date plus authorized time extensions may result in the Contractor being assessed liquidated damages.
- C. The Contractor must supply sufficient crews of skilled workers, appropriate for the scope of work to complete the work order assignment in a timely manner.
- D. Note: Any reference to "drawings" and "plans" shall mean, but are not limited to, the drawings, plans, sketches, addendum, RFI clarification drawings, etc. given by the Project Manager to the Contractor at any projects' inception.

1.7. COMMENCEMENT OF WORK & DAILY ACTIVITY

- A. The Contractor shall provide reasonable notification to the Project Manager on projected start date to allow for access but shall not proceed until access is confirmed by the DOC project manager.
- B. The contractor shall keep the DOC project manager apprised of ongoing activities and on any change or deviation from standard installation or change to the agreed schedule. And must immediately report any accidents or incidents to the DOC Project Manager.
- C. The contractor shall make detailed daily reports of all activities and submit these to the DOC Project Manager not less frequently than weekly.
- D. During the course of the construction, the Contractor shall coordinate its daily work assignments with the DOC Construction Management Unit / Facility Maintenance & Repair Division In addition, daily work logs shall be kept for all work done by the Contractor and copies submitted to CMU no later than the following day.

1.8. CONSTRUCTION SERVICES

- A. After obtaining the required construction permits and approvals, the Contractor shall proceed with the Work. The Contractor shall observe the following requirements while carrying out the construction work.
 - 1. Asbestos Requirement: The Contractor shall notify DOC of any suspected asbestos contaminated areas encountered during the course of the site investigation. The Contractor is not responsible for any asbestos investigation or abatement work. The DOC will perform an asbestos investigation and abatement (if needed) of the involved areas

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prior to the Contractor beginning work in those areas.

2. Safeguards: The Contractor shall provide during the performance of the work, and in accordance with OSHA and all other applicable regulations, proper safeguards at the worksite for the prevention of any accidents, injury, or damage to persons or property.
3. Removal of Debris: The Contractor shall remove from Rikers Island and legally dispose of all debris resulting from the work required under this Contract. This shall include: construction debris, demolition debris, excavated soils, packaging, etc. Regarding site cleanliness, at the end of each workday the site shall be left in a condition which is acceptable to the Department.
4. Utilities: The Contractor shall be permitted to utilize the small amount of 120 volt electric power supply at Rikers Island, if available. However, the Contractor shall be responsible for providing all necessary extensions, switches, etc. to facilitate the usage of such electric power.

Regarding water for site work, the Contractor shall provide and utilize at its own expense, fresh water of a non-potable grade.

The Contractor shall be responsible for providing all other utilities not noted herein, including compressed air, generator power, etc. as required to fulfill the requirements of the Contract.

The Contractor shall provide temporary sanitary facilities for the Contract workers.

5. Daily work schedule: Normally, work is performed at Rikers Island, Monday through Friday between the hours of 7 AM to 3 PM. The Contractor should anticipate some limited downtime for DOC's security check at the beginning and end of the workday and on other non-specified periodic occasions. However, arrangements can be made as needed to permit the Contractor to work extended hours on-site. Note that the Contractor may work overtime to complete the project within the time allotted. However, there shall be no extra payment by the City for overtime differential wages. The shutdowns for this work shall be nights and weekends with prior arrangements with the facility.
6. Prior to beginning construction, the Contractor shall carefully lay out all its work. Where cutting, channeling, chasing, excavating and backfilling or drilling is necessary for the proper installation, support or anchorage of the Work specified under this Contract, the Work shall be carefully done by the Contractor. All cutting and patching shall be restored, by this Contractor, to no less than its former condition after the required installation.
7. Covering of Work: No device, or other work of any kind shall be covered or hidden from view before it has been examined or approved by the engineer, architect, and/or other authority having jurisdiction over the same. Any unfaithful or imperfect work or materials discovered shall be removed and corrected immediately after being condemned, and other work and materials furnished satisfactory to DOC.

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8. Painting: All exposed piping, steel hangers, and supports (related to the contractor's scope of work) are to be painted: primed and finish coated.
9. The Contractor shall be responsible for: work and equipment until finally inspected, tested, and accepted by DOC; protecting work against theft, injury or damage; carefully storing material and equipment received on site which is not immediately installed; closing open ends of work with temporary covers or plugs during construction to prevent entry of obstructing material. Once demolition has begun on any area, the Contractor shall provide temporary protection against leaks or damage from rainfall. The protection must be maintained until the new installation is fully completed and secured. The Contractor shall demolish at any time only quantities that he can secure and protect from rainfall.
10. Protection of Property: The Contractor shall be responsible for the preservation of all public and private property, along and adjacent to the work, and shall use every precaution necessary to prevent damage or injury thereto. The Contractor shall use suitable precautions to prevent damage to pipes, conduits and other underground structures or utilities, and shall carefully protect from disturbance or damage all property marks until an authorized agent has witnessed or otherwise referenced their location, and shall not remove them until so directed by the Department. Any damages to public or private property resulting from the work of the Contractor shall be repaired by the Contractor at no additional cost to the City. If such damages are not repaired by the Contractor forthwith, then the City shall employ other means to repair the damages, and the Contractor shall be held responsible for all associated costs incurred by the City in facilitating the repairs.
11. Coordination of utility connections: The scheduling of all connections to existing Rikers Island utilities shall be coordinated with, and approved in advance by, DOC.
12. The Contractor shall be required to conduct its activities in accordance with the "Special Conditions, Transportation of heavy material across Rikers Island Bridge and DOC Security Regulations". These special conditions are included in the boilerplate of this Contract
13. Construction Progress Meetings: During the course of construction, Progress meetings may be held as often as every two (2) weeks and will be held at a time and place agreed upon by DOC'S Representative. Other interested parties may attend when needed, e.g., subcontractors and representatives from suppliers, public utilities, and local government. The Contractor is required to be represented at all construction progress meetings by personnel possessing full knowledge of the project. If the Contractor's Representative fails to attend 2 scheduled meetings without prior approval, the Contractor will be directed to replace the current Contractor's Representative. Further incidents of non-attendance by the Contractor's Representative, will form the basis for review of the Contractor's responsible bidder status.

The meetings will be conducted by DOC'S Representative for the following purposes:

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- a. Review job progress, quality of Work, and approval and delivery of materials.
- b. Identify and resolve problems which impede planned progress.
- c. Coordinate the efforts of all concerned so that the project progresses on schedule to on time completion.
- d. Maintain a sound working relationship between the Contractor and DOC'S Representative and a mutual understanding of the project requirements.
- e. Maintain sound working procedures.

Pre-Installation Meetings (If required by DOC) . Pre-installation meetings will be held to review the specifications, drawings and approved submittals in preparation for start of a particular activity. The meetings shall be attended by NYCDOC'S Representative and the Contractor's Representative, including installer and representatives of manufacturers & fabricators involved in or affected by the installation and its coordination with other materials/trades. NYCDOC'S Representative shall schedule the meetings prior to the start of the work. The goal of these meetings is to ensure the quality of construction and to maintain the schedule.

14. Site Responsibility: The Contractor shall be responsible for work and equipment until finally inspected, tested, and accepted; protecting work against theft, injury or damage; and carefully storing material and equipment received on-site which is not immediately installed. The Contractor shall close open ends of work with temporary covers or plugs during construction to prevent entry of obstructing material.

The Contractor shall be fully responsible for all construction site health and safety. The Contractor shall be fully responsible for securing the work site in order to protect vehicular and pedestrian traffic in the vicinity. The Contractor shall observe all safety regulations of the Department of Transportation (DOT) and OSHA when working in vehicle-accessible streets on Rikers Island.

15. Operations of Others: During the time that the Contractor is performing the Contract, other trade contractors (electrical, mechanical, general contractors, etc.) will be engaged in other operations on or about the site, including vehicular traffic which shall remain uninterrupted.

The Contractor shall so plan and conduct its operations as to work in harmony with others engaged in the area of the site and not to delay, endanger or interfere with the operations of others, all in the best interests of the City and the public and as may be directed by the Engineer.

No portion of the Rikers Island infrastructure systems, including but not limited to, gas distribution, storm sewer, sanitary sewer, potable water, steam, electric power, may be interrupted or curtailed by the Contractor without prior approval of the Department of Correction for the specific systems and time periods involved.

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16. Interference: If the Contractor installs work so as to cause interference with the work of other trades or the normal operation of the facility, the Contractor shall make the necessary changes in its work to correct the condition, at no extra cost to the Department.

1.9. BILLING

A. The Contractor shall typically submit a bill for work done to DOC once a month which means not more often than once every thirty (30) days.

B. The Contractor shall notify the Project Manager on progress on each work site and also on pending completion for inspection review, approval and sign-off in order to process payment requests.

C. The Contractor must provide with its request for payment a daily time form that shall contain the following information on all invoices presented for payment:

1. Date of work performance, building address, location (i.e. Adjacent DOC Facility Location, etc.).
2. Nature of work performed.
3. Time spent to the nearest half-hour.
4. The signature on the Daily Log Sheet (daily time form) of a RE (or DOC representative) verifying the time and personnel.
5. Original paid invoices for materials furnished & Equipment rented.

1.10. PAYMENTS

A. Requests for payments shall be submitted to DOC on the appropriate Payment Requisition Forms with all required and/or requested documentation.

B. The Contractor shall prepare for review and approval by the Project Manager an advance "pencil copy" of the payment requisition, prior to submission of the invoice/payment package.

C. DOC will review the cost and approve request for payment as appropriate.

1.11. LATE INVOICES

A. The Contractor is expected to submit an invoice (payment package) within seventy five (75) days of performance of the work. Failure to promptly submit an invoice may impair payment since the City will only pay for work that can be verified as being satisfactorily completed.

1.12. LIABILITY FOR DAMAGE

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The Contractor shall be responsible for the preservation of all public and private property, along and adjacent to the Work, and shall use every precaution necessary to prevent damage or injury thereto. The Contractor shall use suitable precautions to prevent damage to pipes, conduits and other underground structures or utilities, and shall carefully protect from disturbance or damage all property marks until an authorized agent has witnessed or otherwise referenced their location, and shall not remove them until directed to do so by the Department.

Any damage to public or private property resulting from the work of the Contractor shall be repaired by the Contractor at no additional cost to the City. If such damage is not repaired by the Contractor forthwith, then the City shall employ other means to repair the damages, and the Contractor shall be held responsible for all associated costs incurred by the City in facilitating the repairs.

1.13. LIQUIDATED DAMAGES

A. The Contractor shall pay to DOC Liquidated Damages in accordance with Article 15 of the Standard Construction Contract and consistent with the schedule set forth below.

<u>Value of Specific Work Order</u>	<u>Daily Liquidated Damages Per Work Order</u>
\$10,001 - \$ 50,000	\$200/Day
\$50,001 - \$100,000	\$400/Day
\$100,001 - \$250,000	\$600/Day
\$250,001 - \$500,000	\$800/Day
\$500,001 and Over	\$1,000/Day

1.14. MEASUREMENT FOR MEASURABLE MATERIAL PAYMENT PURPOSES

- A. For purposes of payment, the square footage of the work shall be defined as the gross area within the boundaries defined by the DOC Project Manager.
- B. For purposes of payment, the linear footage of items measured for payment in linear feet shall be the actual measured linear footage of the installed item.

1.15. HOURS OF WORK

The Contractor shall follow the Office of the Comptroller City of New York 220 Prevailing Wage Schedule subject to the work hours stipulated in the PLA agreements. Regular working hours at the department of correction are 07:00 to 15:00. The contractor shall not perform any off-hours/overtime work without a written approval from DOC project manager.

1.16. RULES AND PERMITS

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1. The Contractor shall give any and all necessary notices, obtain any and all regularly required permits, pay any and all fees, in connection with its work, and comply with all rules and regulations of all New York City Agencies (such as Department of Buildings, Department of Environmental Protection, Fire Department, etc.) as well as other State of New York agencies governing work of this Contract. These rules shall take precedence over any requirements of these specifications where a conflict occurs.
2. The Contractor shall be responsible for obtaining the required approvals of all departments having jurisdiction and shall make and file all required applications to obtain such approvals. He shall obtain application for certificates of inspection for this work and deliver same to DOC for job site completed.

1.17. STORAGE OF MATERIALS

- A. All material, tools and equipment delivered to the job site shall be carefully stored, as directed by the City, and protected (tools & equipment shall be labelled with the contractors name). Damaged material shall not be used on the work.
- B. The Contractor shall be assigned certain parts of the building or the grounds about the building where he may store his materials and shall keep his materials within the space allotted to him. He shall be responsible for the protection and safeguarding of all his tools and materials and shall take every precaution to prevent fire from any cause whatsoever.
- C. DOC is not responsible for stored materials damaged or stolen.
- D. Arrangements for delivering materials shall be made in advance with the DOC Project Manager.

1.18. DRAWINGS AND SHOP DRAWINGS

- A. A Professional Design Consultant(s) or the DOC shall prepare all the project Construction Documents.
- B. The Contractor shall submit shop drawings as specified and/or required for review by the DOC Project Manager.
- C. Shop drawings shall be submitted timely to meet the schedule for the installation of the work.
- D. The Contractor is responsible for timely review and update of Coordinated Drawings with all other trades.

1.19. SAMPLES AND CATALOGUES

- A. The Contractor shall submit the following as required by the DOC Project Manager and as noted in the specific Sections:

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1. All Manufacturer's catalogues and samples showing assembly, assembly components, operation, tie-ins to other construction trades, finishes, and color of the specified materials and products.

B. In addition, the Contractor shall submit all catalogue or samples as specified hereinafter and/or as required by the DOC representative.

1.19. CONTRACTOR'S CONSTRUCTION SCHEDULE

A. **BAR-CHART SCHEDULE:** When requested, prepare a horizontal bar-chart type, Contractor's Construction Schedule. This schedule shall be submitted within seven (7) days after the date established for "Commencement of the Work." and/or as directed by the DOC Representative.

1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week.
2. Contractor shall update the work schedule periodically on a Monthly basis at a minimum and within each time bar, indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate Actual Completion.
3. Prepare the schedule in a digital format and an editable reproducible media, of sufficient width, to show data for the entire construction period.
4. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the work.
5. Indicate completion of a particular Work Order in advance of the date established with the DOC Representative for Substantial Completion. Indicate Date of Substantial Completion on the schedule to allow time for the DOC Project Representative to schedule substantial completion inspection to process the certification of Substantial Completion.

B. **PHASING:** On the schedule, show how requirements for phased completion to permit work by separate Contractors and partial occupancy by the Site Occupant(s) affect the sequence of work.

C. **WORK STAGES:** Indicate important stages of construction for each major portion of the work, including submittal review, testing and installation.

D. **AREA SEPARATIONS:** Provide a separate time bar to identify each major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.

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E. DISTRIBUTION: Following the DOC's Project Manager's response to the initial submittal, print and distribute copies to DOC required to comply with scheduled dates. Post copies in the Project Field Office.

F. SCHEDULE UPDATING: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made, Issue the updated schedule concurrently with the-report of each meeting.

1.20. SUPERINTENDENT/FOREMAN

A. The Contractor shall give personal attention to the work and shall employ and retain a competent foreman or superintendent at the premises while work is in progress. He shall keep copies of all plans and specifications at the work site. Instructions given by the Project Manager to such foreman (or head workman) or superintendent shall be considered as having been given to the Contractor. The cost of such superintendent/foreman shall be included in the all inclusive % mark up factor and shall not be billed separately.

B. In the event, under this Requirements Contract, more than one job site is progressing with work, the Contractor is responsible for maintaining a competent foremen or superintendent at the premises for each individual job site (per project).

1.21. CONTRACTOR IDENTIFICATION

A. Laminated and color-coded identification cards must be issued and carried by each worker, laborer or mechanic. The cards shall be laminated to prevent altering information. Identification cards are to be worn on the exterior clothing in a conspicuous location easily observable by the Project Manager.

B. Cards shall contain photograph and name of employee, trade, employer's name, employment starting date and authorizing signature of contracted company. Cards may not contain any official NEW YORK CITY, State or Federal logos nor imply that the bearer of card is a government worker.

C. The card must be presented upon request of any tenant where the worker is on service call or to building security or custodial personnel when performing maintenance or repair work.

1.22. MATERIALS

A. All material required for the work shall be new, unused, free from defects, of the best grade and quality, furnished in sufficient quantities to prevent delays and entirely satisfactory for the purpose intended. If a bid standard or equal is specified, the Contractor may offer a substitute which the Contractor certifies to be equal and the Contractor must offer proof acceptable to the City which, in its sole and absolute discretion, shall determine whether the substitute is equal in quality, performance and other essentials to the bid standard. If the Contractor fails to name a substitute, the Contractor will be required to furnish the standard.

1.23. REMOVED MATERIALS

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A. All removed materials not salvaged, stored or reinstalled as part of this Contract shall become the property of the Contractor except as directed by the City, and shall be removed from the premises as soon as possible.

B. The DOC Project Manager shall determine which materials shall be removed and salvaged to be stored and/or reinstalled.

1.24. INTERRUPTION OF SERVICE AND BUILDING FACILITIES

A. The Contractor shall not interfere with the normal functioning of the building or its occupants in the course of performing work, transporting or storing supplies, etc.

B. The breaking into existing work shall be done only after written approval has been received from the Project Manager.

1.25. PROTECTION

A. The Contractor shall patch or clean any surfaces damaged or disturbed as a result of its work at no additional cost to the City.

B. All work shall be carried on in a manner that will not cause possible danger to employees and with a minimum of noise. In any room (or area) where construction work is to be done, the Contractor shall cover all existing floor covering with building paper and keep it covered until construction work is finished. The Contractor shall also suitably protect any furniture, equipment, appliances or supplies that must remain in the room (or area) and shall carefully move the same, when necessary or as directed, and replace the same in the original location and position after the work is completed.

C. The Contractor will be required to move portable furniture, such as desks, lockers, single tier filing cabinets, bookcases and other equipment easily removed, to install flooring under them and replace in their original location. The Contractor will not be required to install flooring under large heavy stationary cabinets or bookcases unless they are moved by DOC. However, the Contractor is responsible to facilitate installations in and around the area.

D. Equipment or furniture located in the area and near the project shall be covered with polyethylene or fabric sheeting during the working phase to keep out dust and dirt.

1.26. CLEAN UP PROCEDURES

A. Debris must be removed as it accumulates at the end of each workday. The site must be kept clean, organized and free of clutter.

B. Upon completion of the project, accumulated dust shall be removed by vacuum cleaning of vertical and horizontal surfaces of walls, partition caps, furniture and equipment followed by wet mopping of the floor in the work area.

C. At the completion of the above operations, all furniture, files, equipment, etc. shall be

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replaced in their original location and position, or as directed by the DOC representative.

D. At the conclusion of the project, the Contractor shall remove the rubbish cans and all other debris resulting from its work, thoroughly clean its work and leave the area in perfect condition. No final payment shall be made unless the above requirements have been met to the satisfaction of DOC.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

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SECTION 01030 - MATERIALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017.

1.02 SUMMARY

- A. Work Included: As a material part of this Contract, per the direction of the Department of Correction, the Contractor shall be required to provide the Material portion of the work performed on a "Time and Material" basis.
- B. The Department of Correction, at its discretion, reserves the right to negotiate additional requirements and/or unit price items to expedite any work or task. These additional requirements will be issued by Change Order.
- C. The Department of Correction, at its discretion, reserves the right to supply parts (or materials) to the Contractor and direct the Contractor to install them. In the event City-owned parts (or materials) are used, the Contractor shall be paid only for their installation (i.e. "labor" or "time" portion of the work only).

1.03 DEFINITIONS

- A. "Materials" shall include, but not be limited to, all items and equipment to either complete a construction rehabilitation or alteration such as fixed seating, folding partitions, handicapped chair lifts, miscellaneous hardware, equipment rentals (e.g. cranes), finish items (e.g. prefabricated counter tops), reinforcement or maintenance items such as replacement of sidewalk steel gratings or installation of window guards.
- B. "Sundries" such as wire nuts, tapes, screws, bolts, and all other secondary items necessary and required to install a primary item or material will be considered part of the O&P factor. The Contractor shall not charge for these types of items separately. All sundries shall be included at no additional cost to the City.

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1.04 QUALITY ASSURANCE

A. All materials required by the Department of Correction shall be new, free from all defects, of the best grade and quality, and entirely satisfactory for the purpose intended and shall be furnished in ample quantities to prevent delays.

1.05 EXEMPTION

A. The City is exempt from the payment of sales and excise taxes and if a price for goods or materials is required as part of this solicitation, the price shall be adjusted to be net, exclusive of taxes, and shall be so construed.

B. Upon request the Department of Correction shall provide ST-119.1 "Exempt Organization Certification" to the Contractor.

1.06 SUBMITTALS

A. The Contractor shall submit all necessary samples, catalog cuts and information required for all items or substitutions for approval by the Department of Correction in its sole and absolute discretion.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. All materials and equipment shall be called for and specified by the Project Manager, Department of Correction representative and/or Design Consultant.

PART 3 - EXECUTION

3.01 EXAMINATION

A. The Contractor is responsible for verifying all field conditions and measurements and coordinating the same with the installation of the specified materials or equipment. The Contractor will immediately notify the Project Manager of any and all discrepancies, problems or concerns that potentially will delay the work.

B. Examine materials and equipment for damage or defects promptly upon delivery. Return damaged or defective products to the manufacturer for replacement.

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REQUIREMENTS CONTRACT

3.02 PREPARATION

A. Coordinate materials and the installation of each item specified with related materials and installation to ensure that each item is completely integrated and interfaced with related work.

3.03 MEASUREMENT AND PAYMENT

A. The Department of Correction shall reimburse the Contractor's cost for materials and consumables in the following manner:

B. The Contractor's actual, fair and reasonable cost for materials and consumables, as evidenced by an invoice, plus its bid percentage mark-up on material costs. Where the invoice shows a cost that is unreasonable, i.e. exceeds the industry standard, the Department of Correction reserves the right to disallow the excess and to reimburse only the amount the Contractor should have paid. The Contractor will be required to submit originals of its invoices to the Department of Correction with the appropriate requisition for payment forms; OR

C. In the case where it would be impracticable for the Contractor to substantiate his actual cost for materials and consumables by invoice (e.g. parts and material used were from Contractor stock), the Department of Correction shall use a current parts catalog, less the catalog's current discount to establish probable cost to the Contractor, and then shall apply the bid mark-up percentage.

END OF SECTION

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SECTION 01040 - LABOR

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 - General Requirements, Section 01010 - Specific Requirements and Section 01030 - Materials and Consumables, apply to this Section.

1.02 SUMMARY

- B. Work Included: As a Labor part of this Contract, per the direction of the Department of Correction, the Contractor s
- C. shall be required to provide the Labor portion of the work performed on a “Time and Material” basis.

B. Only competent and skilled labor shall be employed on this contract and paid at the prevailing wage rates. The Contractor shall abide by all laws, wages and benefits pursuant to Sections 220 and 230 of the New York State Labor Law. The Contractor is advised that such compliance will be closely monitored.

C. The Project Manager may request specific labor trades where work involved. The Worker shall be fully prepared with any tools and materials needed to complete the specific projects and/or tasks required.

1.03 QUALITY ASSURANCE

A. The trade types to be included, but not limited to, are as follows: Iron workers, welders, cement masons, cement concrete workers, bricklayers, riggers, mason tenders, metal workers, or any other trade required to complete assigned work at various buildings.

PART 2 - PRODUCTS

NOT USED

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PART 3 - EXECUTION

3.01 EXAMINATION

A. The Contractor is responsible for verifying all field conditions and measurements, and coordinating the same with the installation of the specified materials or equipment. The Contractor will immediately notify the Project Manager of any and all discrepancies, problems or concerns that potentially will delay the work.

3.02 PREPARATION

A. Coordinate all Time and Material work with that which is in progress, or as directed by the Department of Correction to avoid delays to the project.

3.03 DOCUMENTATION

A. For each trade and each day charged, the Contractor must provide a daily attendance sheet specifying the trade type, the date, building name/address, a description of the work or task, the actual worker's signatures with the time in and out and the Contractor's supervisor or representative's signature on each sheet. The counter signature of a Department of Correction Resident Engineer / representative will also be required. This shall be submitted with the appropriate requisition payment forms.

3.04 MEASUREMENT AND PAYMENT

A. The Department of Correction shall reimburse the Contractor's cost for Labor according to section 01010- 1.4.

B. The Contractor will be required to submit copies of his daily attendance sheets to the Department of Correction with the appropriate requisition for payment forms.

END OF SECTION

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SECTION 01330
SUBMITTALS

PART- 1 GENERAL

1.1. RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other requirements pertaining to submittals are included in the General Conditions and in various sections of the Specifications.

1.2. DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS

A. If, for any reason, the Contractor has cause to believe that work in addition to that specified in the work order is required to put any or all of the subject systems in satisfactorily operating condition, then the Contractor is to notify the Engineer/DOC Representative of the work entailed and the reason the Contractor believes such additional work is required. The Contractor is to proceed with the additional work only if written direction from the Department is provided. The written direction must be in the form of an approved change order.

The Contractor is to note that all work performed under this Contract, including additional change order work, is subject to audit by the City.

1.3. SUBSTITUTIONS

A. Whenever a product is specified by brand name, a substitute brand, equal to that named, may be submitted for approval. To substitute another material for one after it has been approved, a written request must be submitted to the Department's project manager or engineer along with descriptive literature for the parts or materials that the contractor wishes to substitute for those previously approved. Only upon receiving written approval of the latter submission from the Department may the Contractor proceed to install the substituted item.

1.4. SHOP DRAWINGS

A. Submit 6 copies of each shop drawing required by the Specifications. Show the information, dimensions, connections, and other details necessary to insure that the shop drawings accurately interpret the Contract Documents. Show adjoining construction in such detail as required indicating proper connections. Where adjoining connected construction requires shop drawings or product data, submit such information for approval at the same time so that connections can be accurately checked.

B. The shop drawings will be reviewed and 2 stamped copies returned. If returned copies are stamped "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly resubmit 6 copies of shop drawings meeting Contract requirements.

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1.5. PRODUCT DATA

A. Submit 6 copies of each item of product data required by the Specifications. Modify product data by deleting information that is not applicable to the project or by marking each copy to identify pertinent products. Supplement standard information, if necessary, to provide additional information applicable to the project.

B. The product data will be reviewed and 2 stamped copies returned. If returned copies are stamped "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly resubmit 6 copies of product data meeting Contract requirements.

1.6. PAYMENT SUBMITTAL

A. Prepare and submit an application for payment as directed by DOC-Construction Management Unit and as mentioned in section 01010-Specific Requirements.

1.7. SUBMITTAL REQUIREMENTS

A. Identify all submittals by project title and number. Include Contractor's name, date, and revision date. On shop drawings, product data, and samples, also include name of supplier and subcontractor (if any), and applicable specification section number. Stamp each submittal and initial or sign the stamp to certify review and approval of submittal.

B. If a submittal is based on, or the result of, a change order or field order to the Contract documents include copies of applicable change order or field order with the submittal.

C. Transmit each submittal to:

Mr. Andrew Bowie
NYC Department of Correction
NYCDOC Construction Mgt. Unit
Suite 160 650 Mandinici Rd, Rikers Island
East Elmhurst, NY 11370 East Elmhurst, NY 11370

Enclose an original and two copies of transmittal letter with each submittal.

D. Send one additional copy of each transmittal letter to NYCDOC'S Representative at the site.

END OF SECTION

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SECTION 02050 - DEMOLITION

PART 1 – GENERAL

1.01 SUMMARY

A. Work Included: Provide demolition and removal work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Demolition and removal of all or selected interior and exterior portions of a building or structure.
2. Patching and repairs.
3. Provision of Containers for removal of site debris, tenant debris and debris of other trades at various locations as directed.
4. Interior Scaffold.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Section 06100 - Rough Carpentry, for material and construction requirements for temporary enclosures.
2. Section 09250 - Gypsum Board Assemblies, for material and construction requirements for temporary enclosures.

C. The Contractor shall perform all demolition and removal work as directed by the Project Manager or Department of Correction representative and specified herein and do all demolition, removal, patching or repairing work not called for and not specifically mentioned herein but required and necessary to complete any and all alterations and renovations as directed.

1.02 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the City's property.

B. Remove and Salvage: Items indicated to be removed and salvaged remain the City's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Department of Correction's designated storage area.

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C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.

D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Resident Engineer, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.03 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the City's property, demolished materials shall become the Contractor's property and shall be removed from the site (as soon as possible or at the end of each work day) with further disposition at the Contractor's option.

1.04 SUBMITTALS

A. Proposed dust-control measures.

B. Proposed noise-control measures.

C. Schedule of selective demolition activities indicating the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity to ensure uninterrupted progress of City's on-site operations.

2. Interruption of utility services.

3. Coordination for shutoff, capping, and continuation of utility services.

4. Use of elevator and stairs.

5. Locations of temporary partitions and means of egress.

6. Coordination of City's continuing occupancy of portions of existing building and of City's partial occupancy of completed Work, phasing of the work.

7. Proposed use and type of scaffold (interior only). Should The Work of this contract require design of the scaffold by a Professional Engineer, the Contractor will engage an Engineer at no additional cost to the City of New York.

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- D. Inventory of items to be removed and salvaged.
- E. Inventory of items to be removed by City.
- F. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by selective demolition operations.
- G. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."
 - 1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.
- H. Landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- I. Detailed description of scaffold to be used to effect work at various locations.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing City, State and EPA regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Construction Kick-Off Meeting: Conduct meeting at Project site as per requirements of Division 1 Section "Project Meetings," wherein specific issues relevant to demolition are reviewed.

1.06 PROJECT CONDITIONS

- A. City will occupy portions of the building immediately adjacent to selective demolition area. Conduct selective demolition so that City's operations will not be disrupted. Provide not less than 72 hours' written notice to Department of Correction of activities that will affect City's operations.
- B. City assumes no responsibility for actual condition of buildings to be selectively demolished.
Conditions existing at time of inspection for bidding purpose will be maintained by the City as far as practicable.

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- C. Storage or sale of removed items or materials on-site will not be permitted.
- D. Conduct of demolition operations shall be in such a manner as to permit maintenance of full operation of all portions of the building not scheduled for construction activities. Areas disturbed by work hereunder shall be restored to original condition.
- E. The Contractor shall maintain unobstructed access to all public corridors, exit ways, stairwells and elevator lobbies on every floor. Interior scaffold may not obstruct access/egress in any way.
- F. The Contractor is hereby notified that the construction may be phased to allow a portion of the building staff to occupy a portion of the space during all phases of construction.

1.07 SCHEDULING

- A. Arrange selective demolition schedule so as not to interfere with the City's on-site operations. Coordinate with the Department of Correction and representatives of the affected offices/agencies.

1.08 WARRANTY

- A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.01 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.
 - 3. In each case, submit samples/specifications for approval by the Department of Correction prior to use.

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PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Resident Engineer.
- E. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition. This assessment may require the services of an engineer with the appropriate disciplinary background.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.02 UTILITY SERVICES

- A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Department of Correction and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Department of Correction and to governing authorities.
 - a. Provide not less than 72 hours' written notice to Department of Correction if shutdown of service is required during changeover.
- B. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services serving areas to be selectively demolished.
 - 1. Department of Correction will arrange to shut off indicated utilities when requested by Contractor.

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2. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.

3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit after bypassing.

C. Utility Requirements: Refer to Divisions 15, 16 and 17 Sections for shutting off, disconnecting, removing, and sealing or capping utility services. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.03 PREPARATION

A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Department of Correction and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

1. Erect temporary protection, such as, railings, canopies, and covered passageways, where required by authorities having jurisdiction.

2. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.

3. Cover and protect furniture, furnishings, and equipment that have not been removed.

D. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

1. Construct dustproof partitions of not less than nominal 4-inch (100-mm) studs, 5/8-inch (16-mm) gypsum wallboard with joints taped on occupied side, and 2-inch (13-mm) fire-retardant plywood on the demolition side. Construct partition to underside of

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structure above or to hung ceiling and to provide a sealed enclosure for the dustproof partition.

2. Insulate partition to provide noise protection to occupied areas.
3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
4. Protect air-handling equipment.
5. Weatherstrip openings.

E. Provide and maintain interior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of items and areas to be selectively demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

F. The Contractor shall protect and be responsible for the existing building, facilities, improvements and for all surfaces and materials that are retained within the area of his operations under this Contract.

G. The Contractor shall make such probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal. Give particular attention to bracing requirements so as to prevent any damage to existing conditions.

H. Provide, erect and maintain barriers, warning signs and other items as required for proper protection of workmen engaged in demolition operations and occupants of the building.

I. In areas where demolition work is to be performed or affected, the contractor shall cover the floor with building paper and protective planks, and keep it covered until the demolition work is completed.

3.04 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

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1. Remove debris from elevated portions of building by carts using routes approved by the Resident Engineer. Chutes and hoists are not permitted.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

D. Provide temporary protection for surfaces within areas of work. Cover floors and portions of walls subject to traffic or impact. Use proper floor and wall protection. Do not attach protection in a manner that will damage or deface surfaces. Be responsible for damage due to lack of protection.

3.05 SELECTIVE DEMOLITION AND EXECUTION

A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:

1. Demolition and removals shall be carried out in a workmanlike manner as shown, in an orderly and careful manner without unnecessary noise, dust, and other disturbances to the City's personnel, occupants of the existing building, neighbors, and public. All mechanical, electrical, and related equipment, and utilities, shall be completely removed within the Limits of Contract, unless otherwise shown or authorized to be left in place or abandoned. Demolish partitions and walls in small sections.

2. Demolition in occupied areas of the existing building shall be done in such manner as will not endanger persons, interfere with normal activities, or damage existing finishes scheduled to remain.

3. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain. Cutting beyond the required limits (over cutting) or careless removals shall be repaired and restored by this Contractor to the satisfaction of the Resident Engineer.

4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

5. Do not use cutting torches, cutting operations shall be executed with hand held grinding or sawing tools. Work area is to be cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting cutting operations.

6. Locate selective demolition equipment throughout the structure and remove

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debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

7. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.

8. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

B. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain, using power-driven masonry saw or hand tools; do not use power-driven impact tools.

C. Break up and remove concrete slabs on grade, unless otherwise shown to remain.

D. Remove non-asbestos resilient floor coverings and adhesive according to recommendations of the Resilient Floor Covering Institute's (RFCI) "Recommended Work Practices for the Removal of Resilient Floor Coverings" and Addendum.

E. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

F. Demolish and remove door frames by neatly cutting the opening plumb and square within 6 inches of the existing opening (unless noted otherwise).

G. The Contractor shall provide cut-out work in partitions, masonry walls, doors, ceilings and any other surfaces as called for on the plan or drawing provided during construction work and/or per instructions of electrical, mechanical installations and other utility services and such.

H. The Contractor shall provide interior scaffold as needed.

1. Scaffold will meet OSHA-approved safety standards for each type of scaffold.

2. Scaffolding in excess of 50 feet in height must be designed by a professional engineer, and erected, used and maintained in accordance with the engineered design.

3. Types of scaffold will include: Standard Metal Tubular Frame Scaffold ("Rolling Scaffold"), Walk-Through (Masonry) Frame Scaffold, Fold-Up Scaffolds.

4. Scaffold must be erected on surfaces which can adequately support all loads applied by the scaffold.

5. Base plates and screw jacks must be used on all non-mobile scaffolding of a size and capacity as specified by the manufacturer. Combination base plates with

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screwjacks must not be over-extended.

6. Plumbness: When first tier of scaffold is erected, check for plumbness and continue doing so as the scaffold is built to ensure maximum structural capability of the system.

7. Bracing: Braces can not be bent or damaged in any way and be secured at each end and self-locking devices should move freely and fall into space. Bracing in the vertical plane is required on both sides of every frame. Bracing in the horizontal plane should be provided at the joint of every third tier of frames. Horizontal bracing should coincide with the point at which scaffold is tied to the building or structure being worked on.

8. If wheels or castors are used, they must be securely attached to the scaffold and equipped with breaks. Ensure the ground is level and free of obstructions.

9. All parts and fittings must be in place and secure before platform components are placed on a scaffold tier. When proceeding with the next tier, workers should lift platform sections or planks from the previous tier leaving either one platform section or two planks.

10. Dismantling: Dismantling of a scaffold proceeds in reverse order to its erection. Each tier should be completely dismantled and the material lowered to the ground before dismantling of the next tier begins. If platform sections or planks have been left at each level during erection, it is recommended to however additional platform materials from above to the working deck being dismantled. Do not pull or tug on stuck components during dismantling. Workers should wear a safety harness and lanyard tied off to a secure anchor before attempting to loosen stuck or jammed parts. Do not hammer or pry apart the scaffold components. This may cause damage to the components and/or affect the structural integrity of the scaffold members.

11. Fall Protection: Provide lifeline secured to a suitable anchor on building and attaché a fall arrestor (rope grab) to a full body harness while erecting the scaffolding. Properly secure portable ladders, stand-off vertical ladders, scaffold stairway systems and climbing frames.

12. Ladder Rails: The ladder must be properly erected with rails projecting at least 3.3 feet (1 meter) above the platform level. Where scaffold frames are not equipped with ladder rungs, ladders must be installed as the erection of each tier proceeds. Rest stations should be decked in on scaffold towers at intervals no greater than every 16.5 feet (5 meters).

13. Typical Loads and Requirements: Do not overload scaffold platforms. Work platforms shall only be located on the top and bottom of end frames, not across intermediate braces. A standard minimum platform capacity is a uniformly distributed load of 50 lb/sq. ft. for typical construction work. For masonry construction where large pallets of concrete

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block, etc. to be carried, minimum capacity must be at least a uniformly distributed load of 150 lbs/sq. ft. Scaffolds with spans of 7 feet (2.1 meters) should be at least double-planked. Aluminum/plywood platforms should also have a layer of scaffold planks on top.

14. Looseness, Cracking and Distortion: Platform hooks and fastening hardware must be checked regularly for looseness, cracking and distortion.

15. Planking: Scaffold planks must be examined prior to use on a scaffold and at regular intervals to ensure that the planks remain in safe condition.

a. The wood plank must be No. 1 construction grade lumber (S-P-F) or better, nominal size 2" x 10" (50 mm x 250 mm). They must be properly seasoned and free from bow, crook, cup or twisted warp.

b. Splits: Planks with splits wider than 3/8" (10 mm) or lengthwise splits closer than 3" (75 mm) to the edge of the plank must be removed from service. When a lengthwise split in a plank exceeds 1/2 the length of the plank, then that plank should also be removed from service. Plywood cleats should not be used along the length of the plank to deep planks from splitting. Scaffold planks with cleats should be inspected immediately and removed from service if there is any indication of wood rot.

c. Woodgrain: The grain is not to exceed a slope of 1 in 12 along the length of the plank.

d. Knots: Knots must be sound, tight and spaced well apart. Maximum knot size for a 2" x 10" (50 mm x 250 mm) plank is 2" (50 mm). Knots on the edge of a plank must not be greater than 3/8" (10 mm) width, or spike across the entire width.

16. Guardrails: Guardrails must be constructed to resist a force of at least 200 lbs. (900 Newtons) applied anywhere on the guardrail. If guardrails are composed of sawn lumber, the vertical members, top rail and mid-rail are to be made of 2" x 4" (50 mm x 100 mm) lumber and the toe-board should be 1" x 6" (25 mm x 150 mm). The lumber used should be Number 1 construction grade SPF or better. The vertical wooden posts may be attached to the frame legs using U-clips or at least four "wraps" of No. 9 gauge wire with ends adequately twisted and secured. Vertical cross-bracing is not considered to be a guardrail and must not be used in such a manner. Tube-and-clamp guardrails may be constructed from standard aluminum scaffold tubing using parallel clamps to attach the vertical posts to each frame leg. Top rails and mid-rails should also be attached to the vertical posts.

17. Mid-rails and Toe-boards: A mid-rail should be provided where necessary, especially if workers are kneeling or bending over with frequency to do the work. The mid-rail should have the same design capacity as the top rail. Toe-boards should be provided where there is a possibility of materials falling from the working level to a site below. The toe-board must be a minimum 5" (125 mm) in height.

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18. Three-to-One Rule: the ratio of unsupported height to least lateral dimension on a scaffold should not exceed 3 to 1, unless the scaffold is:

- a. Tied-back to the structure at proper horizontal and vertical intervals.
- b. Equipped with outrigger stabilizers to maintain the ratio of 3 to 1.
- c. Equipped with a properly designed anchored guy wire system.
- d. The 3-to-1 rule applies only to the extent that outriggers are extended symmetrically about the scaffold tower.

19. Outrigger Stabilizers: Maintain the 3-to-1 ratio. Scaffolds may have outrigger stabilizers which may be attached to the scaffold base. With devices of this type, ensure that the outrigger is adjusted so that the foot will not be moved by vibration or dynamic loads on the platforms. Where stabilizers are used with castors, the castors must rest firmly on a solid surface with the stabilizer secure in the extended position before workers use the platform.

- a. Outriggers must be properly deployed and “snugged up” so that sufficient contact is made with the surface to prevent settlement or movement due to side thrusts.

20. Tie-Back Requirements: Scaffolds which exceed the 3-to-1 rule must be tied into the building or structure at intervals not exceeding 3 times the least lateral dimension of the scaffold. This usually means tie-ins are applied at every third frame vertically and every second frame horizontally for tubular frame scaffolds. Tie-ins for tube-and-clamp scaffolds should be applied at every second node vertically and every third standard horizontally. These tie-ins must be capable of sustaining lateral loads in both tension (pull) and compression (push).

- a. Anchor ties, reveal ties, box ties, through ties may be used. The system must be capable of supporting significant horizontal live and dead loads. Should open scaffold heights exceed 50 feet (15 meters) or hoarded scaffold exceed 25 feet (7.5 meters), the system must be designed by a Professional Engineer. Wire is not to be used in a tie-back system for securing scaffolding to a building or other structure, where the height of the scaffolding is greater than 50 feet (15 meters).

21. Rolling Scaffolds: Rolling scaffolds, other than those which are lifted off the ground on outriggers, must have brakes on all wheels. All brakes must be applied when the scaffold reaches the desired position. Rolling scaffolds must always be used on a surface which is smooth, free of depressions and reasonably level.

22. Castors: Castors must be positively secured to the frame and properly sized

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according to the manufacturer's specification. Castors or wheels should be suitable for the surface on which the scaffold is to be used.

23. Scaffold Safety:

- a. For rolling scaffolds over one frame in height must not be moved while a worker is on the platform. If for some reason workers must remain on the platform when the scaffold is being moved, they should be tied off to an independent structure with a fall arrest system.
- b. The floor area where the scaffold is to be moved should be free of bumps or depressions and cleared of all debris.
- c. Rolling scaffolds must be securely pinned together and should always be fitted with horizontal bracing as recommended by the manufacturer. Scaffold which are not securely pinned together can separate if they drop into a hole or depression or run into an obstacle at ground level. Horizontal bracing is necessary on a standard frame scaffold to keep it from folding up because the connections between frames braces are essentially pinned joints.
- d. Structural components that are bent, damaged or severely rusted should not be used.
- e. Platforms with damaged hooks should not be used.
- f. Planks showing damage should be discarded and removed from the site so that they cannot be used for platform material.
- g. Components in scaffold system must work harmoniously.
- h. Scaffolding that has been in place for long periods of time must be inspected and certified as sound by the Contractor's engineer.

3.06 PATCHING AND REPAIRS

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's printed

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recommendations.

C. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

D. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.

E. The Contractor shall promptly repair damage caused to adjacent surfaces by demolition operations, at no additional cost to the City.

F. When carpet has padding glued to the floor and/or underlayment as well, floor shall be cleared of material, scraped and sanded, flush patched smooth ready for installation of new floor finish.

G. Any disturbances or damage to the existing building and improvements, existing surfaces to be retained, or any impairment of facilities resulting directly or indirectly from the Contractor's operations, shall be promptly restored, repaired or replaced to the satisfaction Commissioner at no additional cost to the City.

H. Areas affected by demolition work such as walls, ceiling and/or floor, etc. shall be retained, patched and refinished to an excellent condition to match existing surfaces.

I. The Contractor will be responsible for all patching and repair work affected by the demolition to the satisfaction of the Department of Correction. All over-cutting and careless removals shall be remedied, repaired and restored to the satisfaction of the Department of Correction at the Contractor's expense and at no additional cost to the City.

3.07 DISPOSAL/REMOVAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site. Do not burn demolished materials. Transport demolished materials off City's property and legally dispose of them. Accumulation of old materials and/or debris will not be permitted. All old material shall be removed promptly. The premises and job site shall be left safe, neat and orderly without excess piles of debris or rubbish, at the end of each working day.

B. It shall be the Contractor's responsibility to provide dumpsters and/or containers of appropriate size for the amount of debris to be removed. The Contractor shall be responsible to obtain all applicable permits from agencies having jurisdiction and shall pay all related fees. The carting company will be responsible for all fines imposed directly or indirectly as associated with these containers. All related costs for the securing of containers, removal of debris from the job site, legally carting and/or hauling to disposal site and disposal shall be reimbursed as per the contract. The rental

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equipment and rental containers will be reimbursed per the bid sheet rental item % mark up factor.

3.08 REMOVALS & SALVAGE

A. Summary: It is the intent of removal & salvage that all work to be removed and stored will be reinstalled. The omission of specific mention of the reinstallation elsewhere in the drawings or specifications of any item listed in this Section to be removed and stored shall not relieve the Contractor from the responsibility of reinstalling the item. If not otherwise drawn or specified, the item shall be reinstalled to match its original condition in every aspect.

B. Salvage Materials: Removal & salvage shall also include all work to be clearly marked, record of origin, careful removal in a manner to permit reuse, storage and safeguard of all architectural elements and items designated to be reused.

C. Quality Assurance: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are familiar with: the specified requirements of this Section; restoration of historic buildings; protection of valuable objects; and the methods needed for proper performance of the work of this Section. In acceptance or rejection of work, no allowance will be made for lack of skill on part of workmen.

D. Documentation: Completely document existing conditions on drawings showing all items to be removed and stored for reinstallation. Label and number all items with water resistant materials in places that will not be visible in the finished work, and indicate numbers on drawings in a legible manner. The labels and numbers must remain legible for the duration of the Contract. Submit drawings to the Project manager for approval in accordance with the requirements of the General Conditions. No removal is to be started until the Project Manager has given written approval of the documentation.

1. Document the condition of all work to remain before proceeding with the work of this Section by submitting 8" x 10" photographs to the Project Manager. The Project Manager shall make the final determination of existing work to be documented. Removal work will not be permitted, nor will payment be made for it, until such photographs are submitted.

E. Description of Work: Submit a description of removal and storage operations to the Project Manager for approval prior to beginning work. Do not begin work until Project Manager has given written approval. Provide a detailed sequence of removal and storage work to ensure uninterrupted progress of the work.

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1. Description of work shall include details of methods, equipment, materials, temporary enclosure, storage locations, provisions for protection and security, and any other pertinent information about such operations as will enable the Project Manager to coordinate the designation in the field of elements to remain or to be removed and stored.

F. Job Conditions: Properly protect all material to remain before beginning and during progress of the work. Handle all removed material that is to be saved and reinstalled with great care.

Conduct removal and salvage operations and removal of debris to ensure minimal interference with the operation of and access to the building (and with roads, streets, walks and other adjacent occupied or used facilities). Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Ensure safe passage of persons around area of removal and storage work. Conduct operations to prevent injury to adjacent buildings, structures, other facilities and persons. Erect temporary covered passageways as required by the Project Manager.

1. Promptly repair any and all damage caused to adjacent materials or facilities by removal and storage operations to the complete satisfaction of the Project Manager at no cost to the City.

2. Maintain existing utilities, keep in service and protect against damage during work.

G. Protection: During the construction period, the Contractor shall provide adequate protection for existing work to remain. Perform all work including removal of debris in a careful manner so as not to damage any of the remaining building fabric. All existing work to remain shall be kept clean and undamaged.

1. All work shall comply with all safety requirements of the State and City of New York; Standard No. 241 Safeguarding Building Construction and Demolition Operations, latest edition, of the National Fire Protection Association; and OSHA regulations.

H. Sequence of Work: The Contractor shall be responsible for establishing the sequence of the work and assuring its prompt and faithful execution. Remove all labels (documentation) before reinstallation.

I. Completely repair, restore and/or replace in kind, to the complete satisfaction of the Department of Correction, any and all damage or harm caused by the work and/or operations of the Contractor of this Section, at no additional cost to the City. All such work shall be documented by written description accompanied by a sketch to be approved by the Department of Correction prior to the initiation of any work.

3.09 CLEANING

A. Sweep the building broom clean on completion of selective demolition operation.

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B. Change filters on air-handling equipment on completion of selective demolition operations.

END OF SECTION

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SECTION 02051 - DEMOLITION AND REMOVAL (ROOFING SYSTEM)

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The Work of this Section shall be in accordance with the Contract Documents. The Documents are as defined in the "Agreement." The "General Conditions Governing All Contracts" shall apply to all Work under the Contract. The Work of this Section as directed by work order letter shall include, but not be limited to, the following:

1. Demolition of complete roof system or systems, not including Asbestos Containing Roofing Material (ACRM).
2. Scrape and clean the fill or deck.
3. Ventilators, and duct work including removal and reinstallation.
4. Roof drains.
5. Cutting and reattachment of designated items.
6. Debris Removal.
7. Metal gravel stops and fascias.
8. Trimming and protecting plant material at or near roofing.

1.02 RELATED WORK

- A. Section 07525 – Preparation for Re-Roofing.
- B. Section 07545 – Thermoplastic Polyolefin (TPO) Single Ply Roofing
- C. Section 07620 – Sheet Metal Flashing and Trim.

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PART 2 - MATERIALS

NO TEXT

PART 3 - EXECUTION

3.01 DEMOLITION

A. Perform demolition work in phases coordinated with the Resident Engineer and the building operating staff in order to keep buildings water tight and habitable at all times. Roofing removal includes all slag, gravel, cap sheets, felts, flashing, pitch pockets, insulation and vapor barrier down to existing deck.

B. Demolition work shall be performed according to ANSI A10.69 "Demolition Work, Safety Requirements for" and Demolition Code of City of New York. Local authoritative regulations and ordinances applicable to demolition also shall apply.

C. Demolition work shall include work of all types of a demolition or removal nature which is necessary to perform new construction work, and conform to all requirements of the contract documents.

D. Demolish and remove work in a manner which allows for introduction of new adjacent work with a minimum damaged edge condition of the existing work.

E. Safety of persons, including building occupants, the public and workmen shall be the primary consideration. At various times, performing demolition work shall be subject to prior knowledge and consent of the Resident Engineer.

F. Provide dust-tight chutes and install them at inclines for effective but quietest possible transfer of debris off the building.

G. Damage or voids created by the removal work in the existing work which is to remain in place, shall be patched to match the existing adjoining surfaces with materials and workmanship as specified in the various sections of these specifications for similar new work or as directed by the "Commissioner".

H. Provide outriggers and catch platforms for major demolition work and at confined areas where danger of falling debris exists. Provide shoring, bracing, staging and other necessary equipment. Provide guard rails, flashing warning lights, barricades, hazard signs, keep out signs, and other precautionary items.

I. Maintain safe egress from the building at all times. Should phases of demolition

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work at times tend to cut off a required exit, provide covered and enclosed passageway to such exit. Keep required exits unencumbered at all times, and artificially lighted. All sidewalk protection, staging, debris chutes, safety lighting shall be in place prior to start of demolition and to the approval of the Commissioner.

J. Unnecessary hazards, such as exposed nails, sharp metal, splintered wood, broken glass, and similar conditions, shall not be left in hazardous state but immediately cleaned up at time they occur.

K. Do not load, or permit any part of the existing building to be loaded with any materials or equipment that may endanger its safety.

L. Haul all debris resulting from demolition work from the premises to be disposed of legally off-site.

M. Broom-clean areas where demolition work has occurred after debris has been removed and before new construction work begins.

N. Clean thoroughly and assure proper functioning of all roof drains and yard drains both new and existing. Use roto-rooter if necessary to dislodge debris wherever present. Maintain adequate protection of all drains during construction.

3.02 REMOVALS

A. Remove roofing, insulation, gravel, debris etc. to the level of the existing concrete fill or wood deck. Make repairs to existing fill with like materials where needed (See Sections 02050, 04200). Remove all debris from the site immediately with proper container.

B. All piping, HV and duct work units that have to be raised shall be checked by the Resident Engineer for working condition before the unit is removed. They shall be reinstalled to their original working condition and checked again by the Resident Engineer upon completion of roofing.

C. At the end of each work day, or in the event that work is stopped abruptly, temporary water cut-offs shall be installed at the edges of all drains and in the field of the roof.

3.04 TRIMMING AND PROTECTING PLANT MATERIAL AT OR NEAR ROOFING

A. Remove plant materials on or growing out of roofing surface as indicated. Use a

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herbicide if necessary approved by the "Commissioner." Removed plant materials to be disposed of properly under provisions of Section 02050.

B. Where overhanging plants interfere with roof replacement and related repair work tie back plants if possible to accomplish contract work. When required, trim back overhanging plants to minimum extent necessary to accomplish contract work taking appropriate care for the plant material.

END OF SECTION

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SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included: Provide earthwork in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:
1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns, and plantings.
 2. Drainage and moisture-control fill course for slabs-on-grade.
 3. Subbase course for concrete walks and pavements.
 4. Subsurface drainage backfill for walls and trenches.
 5. Excavating and backfilling trenches within building lines.
- B. Related Sections include the following:
1. Division 2 Section "Hot-Mix Asphalt Paving" for base requirements.
 2. Division 2 Section "Planting" for finish grading, including placing and preparing topsoil for lawns, plantings, trees, shrubs and seeding.
 3. Division 2 Section "Excavation Support and Protection" related to earthwork.
 4. Division 3 Section "Cast-in-Place Concrete" for ramps, walks and slabs.
 5. Division 4 Section "Stonework" for stone pavers.

1.03 Rock Measurement:

- A. Volume of rock actually removed shall be measured in original position, but will not exceed the following:

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1. 24 inches outside of concrete forms other than at footings.
2. 12 inches outside of concrete forms at footings.
3. 6 inches outside of minimum required dimensions of concrete cast against grade.
4. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments,
5. 6 inches beneath bottom of concrete slabs on grade.
6. 6 inches beneath pipe in wenchers, and the greater of 24 inches wider than pipe or 42 inches wide.

1.04 DEFINITIONS

A. Excavations consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.

B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.

D. Subbase Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.

E. Base Course: The layer placed between the subbase and surface pavement in a paving system.

F. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.

G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Resident Engineer. Unauthorized excavation, as well as remedial work in this regard as directed by the Resident Engineer, shall be at the Contractor's expense.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs,

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mechanical and electrical appurtenance; or other man-made stationary features constructed above or below the ground surface.

I. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.05 SUBMITTALS

A. General: Submit the following according to the Conditions of the Contract and Division I Specification Sections.

B. Product Data: For the following:

1. Each type of plastic warning tape.
2. Filter fabric.

C. Samples: For the following:

1. 20-lb samples, sealed in airtight containers, of each proposed fill and backfill soil material from on-site or borrow sources.
2. 12-by-12-inch sample of filter fabric.

D. Test Report: In addition to test reports required under field quality control, submit the following:

1. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources.
2. One optimum moisture-maximum density curve for each soil material.
3. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

E. Photographs of existing adjacent structures and site improvements

1.06 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.

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B. Testing and Inspection Service: A qualified independent geo-technical engineering testing agency shall be hired as instructed by DOC to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.

C. Site Meeting: Prior to commencing any work of this Section conduct meeting at project site to comply with requirements of Division I Section "Specific Requirements."

1. Before commencing earthwork, meet with representatives of the governing authorities, Resident Engineer, consultants, Geo-technical Engineer, independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants in writing at least 3 working days prior to convening conference. Contractor to record discussions and agreements and furnish a copy to each participant.

1.07 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by the Resident Engineer and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify the DOC not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without the DOC's written permission.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

A. General: Provide approved borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: ASTM D 2487 soil classification groups OW, GP, GM, SW, SP, and SM, or a combination of these group symbols; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, and other

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deleterious matter.

C. Unsatisfactory Soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols.

D. Backfill and Fill: Satisfactory soil materials.

E. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2- inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Base material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1- 1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

G. Engineered Fill: Subbase or base material.

H. Bedding: Subbase or base materials with 100 percent passing a 1 inch sieve and not more than 8 percent passing a No. 200 sieve.

I. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2 inch sieve and 0 to 5 percent passing a No. 50 sieve.

J. Filtering Material: Evenly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 50 sieve.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.02 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.

B. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches wide and 4 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

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1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications,
4. Blue: Water systems.
5. Green: Sewer systems.

C. Filter Fabric: Manufacturer's standard non-woven pervious geo-textile fabric of polypropylene, nylon or polyester fibers, or a combination. Provide filter fabrics that meet or exceed the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:

1. Grab Tensile Strength (ASTM D 4632): 100 lb.
2. Apparent Opening Size (ASTM D 4751): No. 100 U.S. Standard (150 micrometer) sieve.
3. Permeability (ASTM D 4491): 150 gallons per minute per sq. ft

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.02 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

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B. Protect subgrades and foundation soils from softening, undermining, washout, and damage by rain or water accumulation.

3.03 EXCAVATION

A. Unclassified Excavation: Excavation is unclassified and includes excavation to required sub-grade elevations regardless of the character of materials and obstructions encountered.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Classified Excavation: Excavation is classified and includes excavation to required subgrade elevations. Excavation will be classified as earth excavation or rock excavation as follows:

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

a. Intermittent drilling or ripping to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.

3.05 STABILITY OF EXCAVATIONS

A. Comply with local codes, ordinances and requirements of authorities having jurisdiction to maintain stable excavations.

3.06 EXCAVATION FOR WALKS AND PAVEMENT

A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

3.07 APPROVAL OF SUBGRADE

A. Notify Resident Engineer when excavations have reached required subgrade.

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B. When Resident Engineer determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities as directed by the DOC.

3.08 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to the Resident Engineer.

1. Fill unauthorized excavations under other construction as directed by the Resident Engineer.

B. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Resident Engineer.

3.09 STORAGE OF SOIL MATERIALS

A. Stockpile excavated materials acceptable for backfill and fill soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.10 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Acceptance of construction below finish grade including, where applicable, damp-proofing, waterproofing, and perimeter insulation.

2. Surveying locations of underground utilities for record documents.

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3. Testing, inspecting and approval of underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris from excavation.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
8. Draining and drying out excavation of any collected water,

3.11 SUBSURFACE DRAINAGE BACKFILL

- A. Subsurface Drain: Place a layer of filter fabric around perimeter of drainage wench or at footing as indicated. Place a 6 inch compacted course of filtering material on filter fabric to support drainage piping. After installing and testing, encase drainage pipe in a minimum of 6 inches of compacted filtering material and wrap in filter fabric, overlapping edges at least 6 inches.
- B. Drainage Backfill: Place and compact drainage backfill of filtering material over subsurface drain, in width indicated, to within 12 inches of final subgrade. Overlay drainage backfill with one layer of filter fabric, overlapping edges at least 6 inches.
- C. Impervious Fill: Place and compact impervious fill material over drainage backfill to final sub-grade.

3.12 FILL

- A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.
- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface or material,
- C. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and re-compact to required density.
- D. Place and compact fill material in layers to required elevations for each location

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as follows:

1. Under grass and planted areas, use satisfactory excavated or borrow soil material.
2. Under walks and pavements, use subbase or base material, or satisfactory excavated or borrow soil material.
3. Under steps and ramps, use subbase material,
4. Under building slabs, use drainage fill material.
5. Under footings and foundations, use engineered fill.

3.13 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight (or specified density). Stockpile or spread and dry removed wet satisfactory soil material.

3.14 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:

1. Under structures, building slabs, steps, and pavements, compact top 12 inches below sub-grade and each layer of backfill or fill material at 95 percent maximum

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dry density.

2. Under walkways, compact top 6 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.

3. Under lawn or unpaved areas, compact top 6 inches below subgrade and each layer of backfill or fill material at 90 percent maximum dry density.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades,

2. Cut out soft spots, fill low spots and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1.2 inches.

2. Walks: Plus or minus 1.2 inches.

3. Pavement: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.16 SUBBASE AND BASE COURSES

A. Under pavements and walks, place subbase course material on prepared subgrade. Place base course material over subbases to pavements.

1. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections and thickness to not less than 95 percent of ASTM D 4254 relative density.

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2. Shape subbase and base to required crown elevations and cross-slope grades.

3. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.

4. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

B. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of acceptable soil materials and compact simultaneously with each subbase and base layer.

3.17 DRAINAGE FILL

A. Under slabs-on-grade, place drainage fill course on prepared subgrade and as follows:

1. Compact drainage fill to required cross sections and thickness.

2. When compacted thickness of drainage fill is 6 inches or less, place materials in a single layer.

3. When compacted thickness of drainage course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

3.18 FIELD QUALITY CONTROL

A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

B. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable.

1. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked

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and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.

2. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Resident Engineer.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing sub-grades may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Resident Engineer.

D. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one field in-place density test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.

B. Foundation Wall Backfill: At each compacted backfill layer, at least one field in-place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.

F. Trench Backfill: At each compacted initial and final backfill layer, perform at least one field in-place test for each ISO feet or less of trench length, but no fewer than two tests.

G. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified (below specified density), scarify and moisten or aerate, or remove and replace soil to depth required; re-compact and retest until specified compaction (required density) is obtained.

H. All Field Quality Control measures related to the Work of this Section including but not limited to inspection, testing and reporting to the DOC shall be paid under time and material basis.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose

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compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Resident Engineer, reshape and re-compact at optimum moisture content to the required density.

C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Property of the City.

B. Disposal: Transport surplus satisfactory soil to designated storage areas on the Property of the City. Stockpile or spread soil as directed by the Resident Engineer.

1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

C. The removal, disposal and carting directly or indirectly related to all the Work of this Section shall be paid as per time & material basis.

END OF SECTION

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SECTION 02260 - EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide excavation support and protection work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Excavation support and protection systems.

B. Related Sections include the following:

1. Division 2 Section 02200 - Earthwork.

2. Division 6 Section 06100 - Rough Carpentry.

1.02 PERFORMANCE REQUIREMENTS

A. Design, provide, monitor, and maintain an anchored and braced excavation support and protection system capable of resisting soil and hydrostatic pressure and supporting sidewalls of excavations.

1. Install excavation support and protection systems without damaging existing buildings, pavements, and other improvements adjacent to excavation.

2. Prevent surface water from entering excavations by grading, dikes, or other means.

3. Water removal by pump or other mechanical method.

4. Work includes removing excavation support and protection systems when no longer needed.

1.03 SUBMITTALS

A. Shop Drawings: Prepared Shop Drawings signed and sealed by the qualified

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professional engineer for excavation support and protection systems. System design and calculations must be acceptable to authorities having jurisdiction.

B. Qualification Data: For firms and persons specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

C. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by excavation support and protection systems.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer to assume engineering responsibility and perform work of this Section who has specialized in installing excavation support and protection systems similar to those required for this Project and with a record of successful in-service performance.

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where the Project is located and who is experienced in providing engineering services for designing excavation support and protection systems that are similar to those indicated for this Project in material, design, and extent.

1. Engineering Responsibility: Engage a qualified professional engineer to prepare or supervise the preparation of data for the excavation support and protection system including drawings and comprehensive engineering analysis that shows the system’s compliance with specified requirements.

2. The cost of such engineering personnel shall be paid per the “Reimbursable” with prior DOC approval for the selection of such engineering personnel.

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1.05 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by the Owner or others unless permitted in writing by the RE and then only after arranging to provide temporary utility services according to requirements indicated.

B. Project Site Information: A geotechnical report, when required by DOC for each

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site shall be prepared by the Contractor.

1. Make test borings and conduct other exploratory operations as necessary.
2. Prepare a geotechnical report.

1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations, promptly notify RE if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials need not be new but must be in serviceable condition.
- B. Structural Steel: ASTM A 36.
- C. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of 3 inches.

PART 3 - EXECUTION

3.01 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.

1. Shore, support, and protect utilities encountered,

B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

C. Locate excavation support and protection systems clear of permanent construction and to permit forming and finishing of concrete surfaces.

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D. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure excavation support and protection systems remain stable.

E. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

3.02 SOLDIER BEAMS AND LAGGING

A. Install steel soldier piles before starting excavation. Space soldier piles at intervals indicated. Accurately align exposed faces of flanges to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

B. Install wood lagging within flanges of soldier piles as excavation proceeds. Trim excavation as required to install lagging. Fill voids behind lagging with soil, and compact.

C. Install wales horizontally at centers indicated and secure to soldier piles.

3.03 TIEBACKS

A. Tiebacks: Drill for, install, tension, and grout tiebacks into position. Test load-carrying capacity of each tieback and replace and retest deficient tiebacks.

3.04 BRACING

A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move a brace, install new bracing before removing original brace.

1. Do not place bracing where it will be cast into or included in permanent concrete work, unless otherwise approved by RE.

2. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

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3.05 REMOVAL AND REPAIRS

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils and damaging structures, pavements, facilities, and utilities.

1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlying construction and abandon remainder.

2. Repair or replace, as approved by RE, adjacent work damaged or displaced by removing excavation support and protection systems.

B. Leave excavation support and protection systems permanently in place.

END OF SECTION

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SECTION 02511 - HOT-MIX ASPHALT PAVING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide hot-mix asphalt paving in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Hot-mix asphalt paving.
2. Hot-mix asphalt patching.
3. Hot-mix asphalt overlays.

B. Related Work: Refer to other Sections for the following:

1. Division 2 Section 02200 - Earthwork for aggregate subbase and base courses and aggregate pavement shoulders.

1.02 SYSTEM DESCRIPTION

A. Provide hot-mix asphalt pavement according to the materials, workmanship and other applicable requirements of the New York City Department of Transportation, Bureau of Highway Operation "Standard Specifications" dated June 1986 plus latest addenda.

1. Standard specification: As indicated.
2. Measurement and pavement provisions and safety program submittals included in standard specifications do not apply to this Section and are superseded by those contained within this Contract and Section.

1.03 SUBMITTALS

A. Product Data: For each product specified, include technical data and tested physical and performance properties.

B. Job-Mix Design: Certification, by authorities having jurisdiction, of approval of

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each job mix proposed for the Work.

C. Shop Drawings: Indicate pavement markings, lane separations, and defined parking spaces. Indicate dedicated handicapped spaces with international graphic symbol.

D. Samples: 12 x 12 inches minimum, of paving fabric.

E. Material Test Report: Indicate and interpret test results for compliance of materials with requirements indicated.

F. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

1.04 QUALITY ASSURANCE

A. Warranty and Field quality Control: Contractor shall guarantee paving work for one year against becoming unserviceable or objectionable in a appearance as a result of being defective and/or nonconforming to the specifications or details.

B. Thickness: Asphaltic concrete paving will not be acceptable if exceeding following allowable variation from required compacted thickness.

1. Sub-base Paving Course: 1/4 in. or less.

2. Wearing Course: 1/8 in. or less.

C. Surface Smoothness: Wearing course surfaces will not be acceptable if exceeding 1/8 in. tolerance for smoothness where tested using 10 ft. straightedge applied parallel with and at right angle to centerline of paved area.

D. General: Provide in place testing of pavement courses for compliance with requirements for thickness, density, composition and surface smoothness. Repair or remove and replace unacceptable paving as directed by the Commissioner's representative All testing to be paid by the Contractor.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and direction for storage.

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B. Store pavement-marking materials in a clean, dry, protected location and within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.06 PROJCT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if substrate is wet or excessively damp or if the following conditions are not met:

1. Prime and Tack Coates: Minimum surface temperature of 60 deg F (15.5 deg C).

2. Asphalt Base Course: Minimum surface temperature of 40 deg F (4 deg C) and rising at time of placement.

3. Asphalt surface Course: Minimum surface temperature of 60 deg F (15.5 deg C) at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F (4 deg C) for oil-based materials, 50 deg F (10 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

PART 2 - PRODUCTS

2.01 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: Sound; angular crushed stone; crushed gravel; or properly cured, crushed blast-furnace slag; complying with ASTM D692.

C. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone; gravel, properly cured blast-furnace slag, or combination thereof; complying with ASTM D 1073.

1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

D. Mineral Filler: Rock or slag dust, hydraulic cement, or other inert material complying with ASTM D 242.

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2.02 ASPHALT MATERIALS

- A. Asphalt Cement: ASTM D 3381 for viscosity-graded material; ASTM D 946 for penetration-graded material.
- B. Undersealing Asphalt: ASTM D 3141, pumping consistency.
- C. Prime Coat: ASTM D 2027, medium-curing cutback asphalt; MC-30, MC-70, or MC-250.
- D. Prime Coat: Asphalt emulsion prime coating to NY state DOT requirements.
- E. Prime Coat: ASTM D 977, emulsified asphalt or ASTM D 2397, cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.
- F. Tack Coat: ASTM D 977, emulsified asphalt or ASTM D 2397, cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.
- G. Water: Potable.

2.03 AUXILIARY MATERIALS

- A. Herbicide: Commercial chemical for weed control, registered by Environmental Protection Agency (EPA). Provide granular, liquid or wettable powder form.
- B. Sand: ASTM D 1073, Grade Nos. 2 or 3.
- C. Paving Geotextile: Nonwoven polypropylene, specifically designed for paving applications, resistant to chemical attack, rot and mildew.
- D. Pavement-Marking Paint: Alkyd-resin type, ready-mixed, complying with FS TT-P-115, Type 1 or AASHTO M-248, Type N.
- E. Pavement-Marking Paint: Latex, water-base emulsion, ready-mixed, complying with FS TT-P-1952. Color: As indicated.

2.04 MIXES

- A. Hot-Mix Asphalt: Provide dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction; designed according to procedures in AI's "Mix Design Methods for Asphalt Concrete and Other Hot-Mix types"; and complying with the following requirements.

1. Provide mixes with a history of satisfactory performance in geographical area where project is located.

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2. Provide mixes complying with the composition, grading, and tolerance requirements of ASTM D 3515 for the following nominal, maximum aggregate sizes:

- a. Base Course: 1 inch.
- b. Surface Course: 1/2 inch.

B. Emulsified-Asphalt Slurry: ASTM D 3910, consisting of emulsified asphalt, fine aggregates, and mineral fillers and as follows:

- 1. Composition: Type 1.
- 2. Composition: Type 2.
- 3. Composition: Type 3.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.
- C. Notify RE in writing of any unsatisfactory conditions. Do not begin paving installation until these conditions have been satisfactorily corrected.

3.02 COLD MILLING

- A. Clean existing paving surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement, including hot-mix asphalt and, as necessary, unbound-aggregate base course, by cold milling to grades and cross sections indicated.
 - 1. Repair or replace curbs, manholes, and other construction damaged during cold milling.

3.03 PATCHING AND REPAIRS

- A. Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Re-compact new subgrade. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically.

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1. Tack coat faces of excavation and allow to cure before paving.
2. Fill excavation with dense-graded, hot-mix asphalt base mix and, while still hot, compact flush with adjacent surface.
3. Partially fill excavation with dense-graded, hot-mix asphalt base mix and compact while still hot. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseal concrete pieces firmly.

1. Pump hot undersealing asphalt under rocking slabs until slab is stabilized or, if necessary, crack slab into pieces and roll to reseal pieces firmly.
2. Remove disintegrated or badly broken pavement. Prepare and patch with hot-mix asphalt.

C. Leveling Course: Install and compact leveling course consisting of dense-graded, hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

D. Crack and Joint Filling: Remove existing filler material from cracks or joints to a depth of 1/4 inch. Refill with asphalt Joint-filling material to restore watertight condition. Remove excess filler that has accumulated near cracks or joints.

E. Tack Coat: Apply uniformly to existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new, hot-mix asphalt pave-merit. Apply at a uniform rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 lb./sq. m) of surface.

1. Allow tack coat to cure undisturbed before paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and Surroundings. Remove spillages and clean affected surfaces.

3.04 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

1. Sweep loose granular particles from surface of unbound aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.

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B. Herbicide Treatment Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted~ aggregate base before applying paving materials.

1. Mix herbicide with prime coat when formulated by manufacturer for that purpose.

C. Prime Coat: Apply uniformly over surface of compacted aggregate base at a rate of 0.15 to 0.50 gal./sq. yd. (0.7 to 2.3 lb./sq. m). Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure for 72 hours minimum.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use just enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.

2. Protect primed substrate from damage until ready to receive paving.

3.05 GEOTEXTILE INSTALLATION

A. Apply bond coat, consisting of asphalt cement, uniformly to existing surfaces at a rate of 0.20 to 0.30 gal./sq. yd. (0.8 to 1.2 lb./sq. m).

B. Place paving geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.

1. Protect paving geotextile from traffic and other damage and place overlay paving the same thy.

3.06 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt mix on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness, when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at minimum temperature of 250 deg F (121 deg C).
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes, unless otherwise indicated.

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5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide, except where infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous snips. Complete asphalt base course for a section before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.07 JOINTS

A. Construct Joints to ensure continuous bond between adjoining paving sections. Construct Joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat.

2. Offset longitudinal Joints in successive courses a minimum of 6 inches.

3. Offset transverse joints in successive courses a minimum of 24 inches.

4. Construct transverse joints by bulkhead method or sawed vertical face method as described in AI's "The Asphalt Handbook."

5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.

6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.08 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).

B. Breakdown Rolling: Accomplish breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated

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crown, grade, and smoothness. Repair surfaces by loosening displaced material, filling with hot-mix asphalt, and rerolling to required elevations.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling, while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density according to ASTM D 1559, but not less than 94 percent nor greater than 100 percent.

2. Average Density 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials. Remove paving course over area affected and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.09 INSTALLATION TOLERANCES

A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch.

2. Surface Course: Plus 1/4 inch, no minus.

B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.

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2. Surface Course: 1/8 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.10 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with RE.
- B. Allow paving to cure for 30 days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).

3.11 QUALITY CONTROL

- A. Testing Agency: Resident Engineer will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.
 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D 979.
 1. Reference laboratory density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 1559, and compacted according to job-mix specifications.
 2. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to

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ASTM D 2041, and compacted according to job-mix specifications.

3. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

a. One core sample will be taken for every 1000 sq. yd. (836 sq. m) or less of installed pavement, but in no case will fewer than 3 cores be taken.

4. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

END OF SECTION

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SECTION 02520 - CONCRETE PAVING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide concrete paving in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Portland cement concrete paving for sidewalks and ramps.

B. Related Sections:

1. Section 02200 - Earthwork.
2. Section 03300 - Cast-In-Place Concrete.
3. Section 07900 - Joint Sealers.

1.02 QUALITY ASSURANCE

A. Reference Standard: Comply with the requirements of the City of New York Department of Highways "Standard Specifications".

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data, test reports and written recommendations for products specified.

B. Certification: Provide written certification which ascertains that concrete design mix meets all requirements and local codes, for strength, density and hardness.

C. Shop Drawings: Provide shop drawings indicating steel reinforcing.

1.04 JOB CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

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PART 2 - PRODUCTS

2.01 MATERIALS

- A. Concrete: Provide Class B-32, Type IA air-entrained concrete with a minimum compressive strength of 4,000 psi at 28 days, in accordance with "Section 3.05 Concrete" of the reference standard.
- B. Base Course Aggregate: Comply with Section 4.13 of the reference standard.
- C. Concrete Materials: Comply with Section 4.13 of the reference standard. Include mineral pigments to produce required color.
- D. Steel Bar Reinforcement: Comply with Section 2.23 of the reference standard. Provide size and spacing of bars as shown.
- E. Welded Steel Wire Fabric: Comply with Section 2.25 of the reference standard.
- F. Curing Membrane: Type 1, Clear, in accordance with Section 2.14 of the reference standard.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Subgrade: Perform excavating, filling and compacting to provide a finished subgrade at the proper elevations Comply with Section 4.13 of the reference standard.

30.2 INSTALLATION

- A. Base Course: Provide a compacted base course in accordance with Section 4.13 of the reference standard, of compacted thickness as shown.
- B. Concrete Pavement: Form, place, finish and protect concrete in accordance with Section 4.13 of the reference standard,
 - 1. Reinforcement: Reinforce concrete paving in accordance with Section 4.14 of the reference standard, and as shown on drawings.
 - 2. Joints and Markers: Provide joints in pavement where shown. Saw cut

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lines where indicated.

3. Finish: After screeding concrete, provide a broomed finish on exposed surfaces to match approved sample.

4. Curing: Cure concrete in accordance with Section 4.10 of the reference standard.

3.03 PROTECTION

A. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. Maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

B. Sweep concrete pavement and wash free of stains, discolorations, dirt and other foreign material just prior to final inspection.

END OF SECTION

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SECTION 02620 - STORM DRAINAGE SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide storm drainage work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Provide manholes, catch basins, inlets, special catch basins, trench drains frame & grates, frame & covers with locking devices, etc. as directed.
2. Providing piping, as directed.
3. Provide connections to existing structures and adjust existing rim elevations, as directed.
4. Removing, demolishing, plugging and abandoning storm drainage system, as directed.

B. Related Work: Refer to other Sections for the following:

1. Excavation required for the work of this section including trenching, bedding, backfilling and compaction of backfill.
2. Removing all demolished material resulting from the work of this section.
3. Restoration of Pavement as required and/or shown on the drawings.

1.02 QUALITY ASSURANCE

A. Contractor shall submit for approval including but not limited to the following:

1. All pipes and fittings.
2. Manholes, trench drains and grates with locking devices, frames, etc.
3. Each type of cast iron frame, cover and grate.

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1.04 STANDARDS

A. Comply with applicable as well as specified requirements of the following:

1. All work under this section shall conform to the New York City Department of Environmental Protection (N.Y.C.D.E.P.J Sewer Design Standards, "Standard Details of Construction" and "Information for Bidders, Bid, Agreement, Bonds and Specifications", as modified by these specifications and as shown on the drawings.

2. All frames, grates and manhole covers shall conform to the New York City D.E.P. requirements. Grates and manhole covers shall have security locking devices.

PART 2 - PRODUCTS

2.0 MATERIALS

A. All storm drainage materials shall conform to the New York City Department of Environmental Protection "Sewer Design Standards" and "Information for Bidders, Bid, Agreement, Bonds & Specifications," or as shown on drawings.

1. All storm sewers shall be ductile iron and shall conform to 60-42-10 Grade and Class 56 in thickness.

2. Frames and grates for site-structures shall be as per N.Y.C.D.E.P. requirements or shown on the drawings.

3. All roadway frames and grates shall conform to the N.Y.C.D.E.P. requirements with security locking devices.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Shall conform to applicable provisions of the New York City Department of Environmental Protection, "Sewer Design Standards" and "Information for Bidders, Bid, Agreement, Bonds and Specifications" and as described in Division IV and V.

1. Do not place pipes until trench bottoms have been inspected and approved by the Resident Engineer nor until trenches are free from water.

2. All storm drainage pipes to be laid on concrete cradle.

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3. Lay all pipe true to line and grade as indicated on the Drawings and in manner to make all surfaces at the invert and throughout the full length of the pipe aligned and smooth. Install pipes with full and uniform support; eliminate irregularities in trench bottoms by placing suitable and approved materials.

3.02 DISCREPANCY

A. Contractor shall verify all existing invert elevations before commencement of work and shall notify the Resident Engineer prior to installation of storm drainage system of any discrepancy.

END OF SECTION

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SECTION 02900 - PLANTING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide planting work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Planting and maintenance of ground cover.
2. Lawn restoration.
3. Reseeding.

B. Related Sections:

1. Section 02200 - Earthwork.

1.02 ABBREVIATIONS

A. The following abbreviations are used in this Section regarding plant material:

1. CY: Cubic yard, not compacted.
2. ASA: American Society of Agronomy.
3. AAN: American Association of Nurserymen.

1.03 SUBMITTALS

A. Project Schedule: Submit two (2) copies of the following within ten (10) calendar days after the date specified for the commencement of work, submit a proposed time schedule indicating dates for commencement and completion of the following operations:

1. Tagging of plants in the nurseries.

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2. Delivery of topsoil and other materials.
3. Digging and preparation of plant beds.
4. Delivery of groundcover to the site.
5. Planting of groundcover.
6. Watering.
7. Completion of work for start of guarantee period.

B. Reports: The Contractor will provide mechanical and chemical analysis of topsoil used in preparation of soil mixtures.

1.04 HANDLING AND STORAGE

A. Products shall be delivered, stored and otherwise handled and protected in a manner to prevent damage.

B. Preparation and Storage of Materials:

1. Cover potted plants which cannot be planted immediately upon delivery with moist mulch to protect from drying. Water plants as often as necessary to prevent drying until planted.

2. After chemical and mechanical analysis and fertilizer recommendations report for topsoil and soil conditioners is received, prepare soil mixtures for planting area by thoroughly mixing approved topsoil with soil conditioner materials, fertilizer and lime. Thoroughly mix in the specified proportions prior to delivery of soil mixtures to site.

3. Planting soil shall have an acidity range between pH 6.5 and 7.5. Acidity range shall be raised by adding limestone and lowered by adding aluminum sulphate in quantities as required by analysis. Soluble salt content shall not exceed ECE of 2.0.

4. Store and protect soil mixture and other materials at designated area of the site. Protect topsoil mixture from excessive leaching by covering with tarpaulin.

5. Conduct planting operations under favorable weather conditions. Ground covers shall be planted in the spring only, between April 1st and June 1st.

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1.05 GUARANTEE

- A. The Contractor hereby guarantees that all work specified in this Section will be free from defects of materials and workmanship for a period of two (2) years.
- B. Furnish a guarantee in the form specified in Article on “Guarantees” of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006.
- C. The following types of failure will be adjudged as defective work:
 - 1. Remove unsatisfactory plants and replace with plants of the same kind, quality, and size as specified in the Schedule of Plant Materials.

PART 2 - PRODUCTS

2.01 SOIL MIXTURE

- A. Shrubs: Required Mixture - Parts by Volume

	Topsoil Classification <u>by Clay Content</u>	Top <u>Soil</u>	<u>Sand</u>	<u>Peat</u>	<u>Fertilizer</u>	<u>Lime</u>
-	Clay 5 – 10%	4	1	1	(1/2) Lb/Cy	(1) Lb/Cy
-	Clay 10 – 15%	2	2	1	(1/2) Lb/Cy	(1) Lb/Cy
-	Clay 15-25%	2	3	1 to 1-1/2	(1/2) Lb/Cy	(1) Lb/Cy

- B. Topsoil: Natural, fertile, friable soil, representative of local productive soil, and 90% free of clay lumps, subsoil or other foreign matter larger than one inch diameter, not frozen or muddy. Acidity range pH 6 to 7, not less than 3% organic matter as determined by loss on ignition of moisture free samples dried at 105 degrees Centigrade; not more than 60% by volume passing the No. 200 sieve.
- C. Sand: Clean, coarse, graded 1-2 mm, meeting the requirement of ASA for fine aggregate.
- D. Peat: A natural residue formed by decomposition of reeds, sedges or mosses from a fresh water site, free from lumps, roots and stones, absorbing at least 4 times its dry weight of water, organic matter not less than 90% on a *dry* weight basis. The maximum moisture content at the time of delivery shall be 6.5% by weight.

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E. Lime: Ground dolomitic limestone not less than 85% total carbonates and magnesium, ground so that 50% passes 100 mesh sieve and 90% 20 mesh sieve, Coarser material will be acceptable provided the specified rates of application are increased proportionately on the basis of quantities passing the 100 mesh sieve,

F. Fertilizer: A commercial fertilizer containing 5% nitrogen, 10% available phosphoric acid and 5% potash unless soil tests indicate need for different composition. Conform to applicable state fertilizer laws and standards of AOAC, uniform in composition, dry, free flowing and delivered in original, unopened containers bearing manufacturer's guaranteed analysis.

G. Root Enhancer: Root growth enhancer as manufactured by Roots, Inc., 25 Science Park, New Haven, CT 06511; Tel. (203) 786-5295; Fax (203) 786-5297; or approved equal.

H. Organic Mulch: Shredded Pine bark mulch as approved by the Resident Engineer.

2.03 CHEMICAL INHIBITORS

A. Anti-desiccant: Shall be an emulsion which will produce a protective film over plant surfaces; permeable enough to permit transpiration such as "Wilt-Pruf", manufactured by Nursery Products Specialties Co., Croton Falls, New York, or an approved equal. It shall be delivered in the containers of the manufactured and mixed on site.

B. Selective Herbicide: A municipality approved medium developed specifically to kill herbaceous weeds and seedlings. Herbicides shall be applied strictly in accordance with manufacturer's recommendations and application instructions.

C. Pre-emergent Herbicide: A municipality approved medium developed specifically for pre-emergent control of herbaceous weeds and seedlings. Herbicide shall be applied strictly in accordance with manufacturer's recommendations.

D. Fungicides: Municipality approved medium, specifically developed to combat the growth of fungi on plant materials and in planting soil media. Fungicide shall be applied strictly in accordance with manufacturer's recommendations and application rates.

2.04 PLANT MATERIALS

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A. Nomenclature: Names of plants required under this Contract conform to those given in Bonus Third 1976 or Hortus Second 1972, by L.H. Bailey. Names of varieties not included there conform with names generally accepted in the nursery trade.

B. Quality and Size: Nursery grown, habit of growth that is normal for the species, sound, healthy, vigorous and free from insects, diseases, and injuries. Equal to or exceeding measurements specified in plant list. Plants measured before pruning with branches in normal position; necessary pruning done at time of planting. Sizes and methods of handling according to the code of standards recommended by the AAN.

2.05 MINOR MATERIALS

A. Accessories or other materials not described, but required for completed work, shall conform to commonly accepted industry standards and shall be of types and sizes best suited for the intended purpose and related conditions.

2.06 GRASS SEED

A. All grass seed shall be fresh, recleaned grass seed of the latest crop mixed in the following proportions by weight and meeting the following standards of pure live seed (P.L.S.) content, purity and germination.

<u>Grass</u>	<u>P.L.S.</u>	<u>Max.</u> <u>Weed Seed</u>
- 40% Creeping Red Fescue (Illahee Strain)	90%	0.50%
- 30% Kentucky Bluegrass	80%	0.50%
- 10% Red Top (Fancy recleaned)	85%	1.00%
- 20% Blue Tag Perennial Rye	88%	0.50%

B. Samples of the seed taken from the stock proposed to be supplied may be subjected to tests for purity, viability and seed content and acceptance or rejection will be made on the basis of such tests.

C. Present a certificate of P.L.S. test of the grass seed intended for use, obtained from a well-recognized seed test laboratory that is not engaged in the business of selling seeds. This certificate shall state the true quality of the seeds which the Contractor proposes to furnish.

D. Grass seed shall meet the tolerance for germination and purity according to the standards tabulated on pages 22 and 23 of U.S. Department of Agriculture, Service and Regulatory Announcements No. 156. Deliver all grass seed in sealed bags of the vendor showing the weight, analysis and vendor's name.

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2.06 SOD

A. Cultivated, from a farm growing sod for commercial application; a mixture of Merion bluegrass and Fescue creeping grass, with at least 50% merion present, square cut for uniform laying, and 1 "minimum depth of soil around the roots. Sod that is dried out or overheated shall not be used.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

A. Do not construct when the subgrade is frozen or when it is soft or unstable. Do not construct during rainy or freezing weather or with frozen material.

B. Compact and grade subgrade to within + 1/2 inch of the sections and grades shown on the drawings.

C. Compact subgrade to not less than 95% of the maximum density as determined by the Modified Proctor Compaction Test, ASTM D 1557-70.

D. Should the subgrade material become contaminated or for any reason become unsuitable prior to placement of the pavement, correct or replace the subgrade material with satisfactory subgrade material at no additional expense.

3.02 GROUND COVER

A. Install mulch prior to planting.

B. Install groundcover and add water as necessary to allow settling of backfill mixture. If settling occurs add mixture to level to finish grade.

C. Dilute 50 parts to 1 part root enhancer in water and apply 6 oz. concentrate per 1,000 sq. ft. to soil surface before plant installations or foliar spray after plant installation.

3.03 SEEDING

A. After topsoil has been placed, rake all areas indicated on the Drawings or specified to be seeded to true lines, free from all unsightly variations, bumps, ridges and depressions. Remove all sticks, stones, roots, and other objectionable material which

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might interfere with the formation of a finely pulverized seed-bed from the soil.

B. Thoroughly roll the prepared lawn area with an approved lawn roller and level all low spots.

C. Apply ground limestone at the rate of 46 pound& per thousand square feet and evenly distribute and work lightly into the top of the soil to a depth of 3" either by hand or by machine at least 5 days before applying commercial fertilizer,

D. Apply acceptable Commercial Fertilizer at a rate of 25 pounds per thousand square feet and work lightly in to the top 3" of topsoil.

E. The rate of seeding shall be 5 pounds per thousand square feet. Sew the grass seed by approved machine in such a manner that a uniform stand shall result. After seeding, evenly rake the surface with a fine-toothed rake and roll with approved roller weighing at least 200 pounds.

F. Sew grass seed only in periods that will guaranty growth or at such other times as are approved by the RE. All seeding is to be done in dry or moderately dry soil and at times when the wind does not exceed a velocity of 5 miles per hour.

3.04 SODDING

A. Sod shall be laid only in periods that will guaranty growth, providing the ground is not frozen. No sod shall be laid without the approval of the RE.

B. Place topsoil to the required depth so that the sod may be laid to finished grade. Lay sod to provide close joints. Thoroughly tamp sod to a true even surface at the required finished grade. Water and mow and maintain sod in first class condition as hereinafter specified, until final payment. Remove any unsatisfactory sod and replace with acceptable material at the Contractor's expense.

3.05 MAINTENANCE

A. Begin maintenance immediately after each plant is installed and continue to maintain for one (1) year until the end of the guarantee period.

B. Perform the following operations: Watering as often as required to maintain capillary water within 2" of the soil suite around plants; weeding of planting beds by hand; reset plants to proper grades or upright position; add backfill mixture to level to finish grade; seasonal spraying to control fungus, disease or insect pests that may

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impair plants' vigor; replenish organic mulch; repair injuries to plants.

C. Replacement of plants required by the Plant Guarantee on a regular monthly basis except during the months of January, February, July and August.

D. Groundcover: Dilute 50 parts to 1 part root enhancer in water (2 oz./gal) and apply as a soil drench every 60 days.

3.06 INSPECTIONS FOR ACCEPTANCE OF WORK

A. Acceptance for Start of Maintenance: Within 15 days after completion of work an inspection for acceptance to start the maintenance period will be made. When the work is accepted, the maintenance period will begin and continue until final acceptance,

B. Final Acceptance: Before final acceptance, the terms of the Plant Guarantee must be met and the project site must be in the condition stipulated under Maintenance Operations.

END OF SECTION

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SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide cast-in-place concrete work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Foundations and footings.
2. Slabs-on-grade.
3. Foundation walls.
4. Equipment pads and bases.
5. Interior concrete slabs and deck/slabs,
6. Concrete curbs (steel facing included).

B. Related Sections include the following:

1. Division 2 Section "Earthwork" for drainage fill, moisture proofing and insulation under slabs-on-grade.
2. Division 2 Section "Concrete Pavement" for concrete pavement and walks.
3. Division 3 Section "Cementitious Toppings" for concrete floor toppings.
4. Division 5 Section "Steel Deck" for deck/slabs.
5. Division 5 Section "Metal Fabrications" for loose steel lintel and/or miscellaneous framing, supports, facing and rough hardware.

1.02 SUBMITTALS

A. General: Submit the following according to Conditions of the Contract and Division I Specification Sections.

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B. Product Data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others if requested by RE.

C. Samples of materials as requested by RE, including names, sources and descriptions as follows:

1. Color Finishes.
2. Normal weight aggregates.
3. Fiber reinforcement.

D. Laboratory test reports for concrete materials and mix design test.

E. Material certificates in lieu of material laboratory test reports when permitted by RE. Material certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with or exceeds specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.

F. Joint layout diagrams.

1.03 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified:

1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
2. ACI 318, "Building Code Requirements for Reinforced Concrete,"
3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

PART 2 - PRODUCTS

2.01 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panel~ that will provide continuous, flue, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

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1. Plywood, metal or other approved panel materials:
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS-1, and as follows:
 - a. Use overlaid plywood complying with U.S. Product standard PS-1 "A-C or B-B High Density Overlaid Concrete Form," Class I.
 - b. Use plywood complying with U.S. Product standard PS-1 "B-B (Concrete Form) Plywood," Class I, or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Forms for Smooth or Textured Finish Concrete: Units of face design, size, arrangement and configuration to match RE's control sample. Provide solid backing and form supports to ensure stability of textured form liners,
- D. Forms for Cylindrical Columns and Supports: Metal, glass-fiber-reinforced plastic, or paper or fiber tubes that will produce smooth surfaces without joint indications. Provide units with sufficient wall thickness to resist wet concrete loads without deformation.
- E. Form-Release Agent: Commercially formulated form-release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Farm Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 1. Furnish units that will leave no corrodible metal closer than 1-1/2 inches to the plane of the exposed concrete surface (only wire holes will be patched for Architectural exposed concrete).
 2. Furnish ties that, when removed, will leave holes not larger than 4 inches in diameter in concrete surface.

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3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.02 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615 Grade 60, deformed.
- B. Galvanized Reinforcing Bars: ASTM A 767, hot-dip galvanized after fabrication and bending, of reinforcement type and zinc coating as follows:
 - 1. Zinc Coating: Class II {2.0 oz. zinc psf (610 g/sq. m)}
- C. Epoxy-Coated Reinforcing Bars: ASTM A 775.
- D. Steel Wire: ASTM A 82, plain, cold-drawn steel.
- E. Welded Wire Fabric: ASTM A 185, welded steel wire fabric.
- F. Deformed-steel Welded Wire Fabric: ASTM A 497.
- G. Epoxy-Coated Welded Wire Fabric: ASTM A 884, Class A.
- H. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar-type supports complying with CRSI specifications.
 - 1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs:
 - 2. For exposed-to-view concrete surfaces where legs of supports are in contact with the forms, provide supports with legs that are protected by plastic (CR51, Class 1) or stainless steel (CR51, Class 2).

2.03 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I.
 - 1. Use one brand of cement throughout Project unless otherwise acceptable to resident Engineer.
- B. Fly Ash: ASTM C 618, Class F.

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C. Normal-Weight Aggregates: ASTM C 33 and as specified. Provide aggregates from a single source for exposed concrete.

1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.

2. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to the RE.

D. Lightweight Aggregates: ASTM C 330.

E. Water: Potable and complying with ASTM C 94

F. Fiber Reinforcement: Polypropylene fibers engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C 1116, Type III, not less than 3/4 inch long.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Gilco Fibers, Cormix Construction Chemicals
- b. Durafiber, Durafiber Corp.
- c. Fiberstrand 100, Euclid Chemical Co.
- d. Or an approved equal.

G. Admixtures, General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.

H. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Air-Tite, Cormix Construction Chemicals
- b. Air-Mix or Perma-Air, Euclid Chemical Co.
- c. Darex AEA or Daravair, W.R. Grace & Co.
- d. Or an approved equal.

I. Water-Reducing Admixture: ASTM C 494, Type A.

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1. Available Products: Subject to compliance with requirement, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Chemtard, Chem Masters Corp.
- b. PSI N, Cormix Construction Chemicals,
- c. Eucon WR-75, Euclid Chemical Co.
- d. Or an approved equal.

J. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Super P, Anti-Hydro Co., Inc.
- b. Cormix 200, Cormix Construction Chemicals.
- c. Eucon 37, Euclid Chemical Co.
- d. Or an approved equal.

K. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Q-Set, Conspec Marketing & Manufacturing Co.
- b. Lubricon NCA, Cormix Construction Chemicals.
- c. Accelguard 80, Euclid Chemical Co.
- d. Or an approved equal.

L. Water-Reducing and Retarding Admixture: ASTM C 494, Type 1).

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. PSI-R Plus, Cormix Construction Chemicals.
- b. Eucon Retarder 75, Euclid Chemical Co.
- c. Daratard-I7, W. R. Grace & Co.
- d. Or an approved equal.

2.04 RELATED MATERIALS

A. Reglets: Where sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 0.0217 inch (0.46 mm) thick galvanized sheet

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steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.

B. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

C. Waterstops: Provide flat, dumbbell-type or centerbulb-type waterstops at construction joints and other joints as indicated. Size to suit joints.

D. Rubber Waterstops: Corps of Engineers CRD-C 513.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. The Burke Co.
- b. Progress Unlimited.
- c. Williams Products, Inc.
- d. Or an approved equal.

E. Polyvinyl Chloride Waterstops: Corps of Engineers CRD.C 572.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. The Burke Co.
- b. Progress Unlimited.
- c. W. R. Meadows, Inc.
- d. Or an approved equal.

F. Sand Cushion: Clean, manufactured or natural sand.

G. Vapor Retarder: Provide vapor retarder that is resistant to deterioration when tested according to ASTM E 154, as follows:

1. Polyethylene sheet not less than 8 mils (0.2 mm) thick.
2. Water-resistant barrier consisting of heavy knit papers laminated together with glass-fiber reinforcement and overcoated with black polyethylene on each side.
3. Product: Subject to compliance with requirements, provide "Moistop" by Fortifiber Corporation, or an approved equal.

H. Non-slip Aggregate Finish: Provide factory-graded, packaged, rustproof,

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nonglazing abrasive aggregate of fused aluminum-oxide granules or crushed emery with emery aggregate containing not less than 50 percent aluminum oxide and not less than 25 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

I. Colored Wear-Resign Finish: Packaged dry combination of materials consisting of portland cement, graded quartz aggregate, coloring pigments, and plasticizing admixture. Use coloring pigments that are finely ground nonfading mineral oxides interground with cement Color as selected by RE from manufacturer's standards, unless otherwise indicated.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Conshake 600 Colortone, Conspec Marketing & Mfg. Co.
- b. Floorcron, Cormix Construction Chemicals.
- c. Quartz Tuff, Dayton-Superior.
- d. Or an approved equal.

J. Absorptive Cover: Burlap cloth made from jute or kenaf weighing approximately 9 oz/sq. yd., complying with AASHTO M 182, Class 2.

K. Moisture-Retaining Cover: Comply with ASTM C 171, one of the following:

1. Waterproof paper.
2. Polyethylene film.
3. Polyethylen-coated burlap.

L. Water-Based Acrylic Membrane Curing Compound: ASTM C 309, Type I, Class B.

1. Provide material that has a maximum volatile Organic compound (VOC) rating of 350g/L.

2. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Highseal, Conspec Marketing & Mfg. Co.
- b. Sealco-VOC, Cormix Construction Chemicals.
- c. Safe Cure and Seal, Dayton-Superior Corp.
- d. Or an approved equal.

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M. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Aquafilm, Conspec Marketing & Mfg. Co.
- b. Eucobar, Euclid Chemical Co.
- c. E-Con, L & M Construction Chemicals, Inc.
- d. Or an approved equal.

N. Joint Filler Elastomeric.

1. Metco Hi-Mod Epoxy, Metalcrete Industries.
2. Sikadur 32 Hi-Mod, Sika Corp.
3. Stonset LV5, Stonhard, Inc.
4. R-600 Series, Symons Corp.
5. Oran approved equal.

2.05 PROPORTIONING AND DESIGNING MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
2. For the trial batch method, use an independent testing agency acceptable to RE for preparing and reporting proposed mix designs.
3. Do not use the same testing agency for field quality control testing.
4. Limit use of fly ash to not exceed 25 percent of cement content by weight.

B. Submit written reports to RE of each proposed mix for each class of concrete at least 15 days prior to start of Work. Do not begin concrete production until proposed mix designs have been reviewed by the RE.

C. Design mixes to provide normal weight concrete with the following properties as

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indicated on drawings and schedules:

1. Compressive Strength (28 Days): 4000 psi (27.6 MPa); water-cement ratio, 0.44 maximum (non-air-entrained), 0.35 maximum (air-entrained).
2. Compressive Strength (28 Days): 3500 psi (24.1 MPa); water-cement ratio, 0.51 maximum (non-air-entrained), 0.40 maximum (air-entrained).
3. Compressive Strength (28 Days): 3000 psi (20.7 MPa); water-cement ratio, 0.58 maximum (non-air-entrained), 0.46 maximum (air-entrained).
4. Compressive Strength (28 Days): 2500 psi (17.2 MPa); water-cement ratio, 0.67 maximum (non-air-entrained), 0.54 maximum (air-entrained).

D. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:

1. Subjected to freezing and thawing: W/C 0.45,
2. Subjected to deicers/watertight: W/C 0.40.
3. Subjected to brackish water, salt spray or deicers: W/C 0.40.

E. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows

1. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
3. Concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8 inches after adding admixture to site - verified 2 - 3 inches slump concrete.
4. Other concrete: Not more than 4 inches.

F. Lightweight Structural Concrete: Lightweight aggregate and concrete shall conform to ASTM C 330. Proportion mix to produce concrete with a minimum compressive strength of 3000 psi (20.7) at 28 days and a calculated equilibrium unit weight of 110 pcf plus or minus 3 pcf as determined by ASTM C 567. Concrete slump at the point of placement shall be the minimum necessary for efficient mixing, placing and finishing. Maximum slump shall be 6 inches for pumped concrete and 5 inches

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elsewhere. Air entrain concrete exposed to weather according to ACI 301 requirements.

G. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by the RE. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the RE before using in Work.

H. Fiber Reinforcement: Add at manufacturer's recommended rate but not less than 1.5 lb./cu. yd.

I. Admixtures: Use admixtures according to manufacturer's written instructions.

1: Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

4. Use corrosion-inhibiting admixture in concrete mixes where indicated.

2.06 ADMIXTURES

A. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, or placement and workability.

B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50 deg F (10 deg C).

C. Use high-range water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs, Architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water-cement ratios below 0.50.

D. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits:

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1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure:
 - a. 4.5 percent (moderate exposure); 4.5 percent (severe exposure) for 1-1/2 inch maximum aggregate.
 - b. 4.5 percent (moderate exposure); 6.0 percent (severe exposure) for 1 inch maximum aggregate.
 - c. 5.0 percent (moderate exposure); 6.0 percent (severe exposure) for 3/4 inch maximum aggregate.
 - d. 5.5 percent (moderate exposure); 7.0 percent (severe exposure) for 1/2 inch maximum aggregate.
 2. Other concrete not exposed to freezing, thawing, or hydraulic pressure, or to receive a surface hardener 2 to 4 percent air.
- E. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

2.07 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and as specified, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94. Mix concrete materials in appropriate drum-type batch machine mixer.
1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least one and one-half minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
 2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
 3. Provide batch ticket for each batch discharged and used in the Work,

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indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.01 GENERAL

A. Coordinate the installation of job materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.

3.02 FORM WORK

A. General: Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch (3 mm) — tolerances for concrete surfaces exposed to view.

2. Class C, 1/2 inch (13 mm) — tolerances for other concrete surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

1. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Construct forms to sizes, shapes, lines and dimensions shown and to obtain

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alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the Work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent cement paste from leaking.

H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

I. Chamfer exterior corners and edges of permanently exposed concrete as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints, unless noted otherwise.

J. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work.

K. Provisions for other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine sizes and locations of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms. The Contractor is responsible for the coordination of this work and review of the drawings and specifications of other trades as related to the Work of this Section.

L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

N. Coat contact surfaces of forms with form-release agent, according to manufacturers written instructions, before placing reinforcement.

3.03 INSTALLING EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions finished with items to be embedded.

1. Install anchor bolts, accurately located, to elevations required.

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2. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3. Install dovetail anchor slots in concrete structures as indicated on drawings.

B. Forms for Slabs: Set edge forms, bulkheads and intermediate screed strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

3.04 PREPARING FORM SURFACES

A. General: Coat contact surfaces of forms with an approved, non-residual, low-VOC, form-coating compound before placing reinforcement.

B. Do not allow access form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply according to manufacturer's instructions.

1. Coat steel forms with a non-staining, rust-preventative material. Rust-stained steel formwork is not acceptable.

3.05 VAPOR RETARDERS

A. General: Place vapor retarder/barrier sheeting in position with longest dimension parallel with direction of pour.

B. Lap joints 6 inches and seal with manufacturer's recommended mastic or pressure-sensitive tape.

C. Cover vapor retarder/barrier with sand cushion and compact to depth indicated,

3.06 PLACING STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for methods of placing reinforcement and supports, details and as specified.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor

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retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as approved by RE.

D. Place reinforcement to maintain minimum coverages as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.07 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated, in accordance with approved joint layout shop drawings, or as approved by RE.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

2. Provide keyways at least 1-1/2 inches deep in construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.

3. Use a bonding agent at locations where fresh concrete is placed against hardened, partially hardened, or existing concrete surfaces.

C. Contraction (Control) Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:

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1. Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.

2. Sawn Joints: Form contraction joints (in unexposed floor slabs) with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks or as soon as possible after slab finishing as may be safely done without dislodging aggregate.

3. Joint pattern is not shown, provide joints not exceeding 15 ft. in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays).

4. Submit joint layout shop drawing for approval prior to proceeding with the work.

D. Isolation Joints in Slabs-on-Grade: Construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams and other locations, as indicated. Joint fillers and sealants are specified in Division 7 Section "Joint Sealers,"

E. Waterstops: Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint Support and protect exposed waterstops during progress of Work. Field-fabricate joints in waterstops according to manufacturer's printed instructions.

3.08 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed. Notify other trades to permit installation of their work.

B. General: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.

C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.

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D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidating concrete recommended by ACI 309R.

2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

E. Placing Concrete Slabs: Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations,

4. Slope surfaces uniformly to drains where required.

5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F

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(27 deg C) at point of placement.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement, Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent o. ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractors option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to RE.

3.09 FINISHING FORMED SURFACES

A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by form-facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding ½ inch in height rubbed down or chipped off.

B. Smooth-Formed Finish: Provide smooth-formed finish on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system. This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.

C. Smooth-Rubbed Finish: Provide smooth-rubbed finish on scheduled concrete

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surfaces that have received smooth-formed finish treatment not later than 1 day after form removal. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

D. Grout-Cleaned Finish: Provide grout-cleaned finish on scheduled concrete surfaces that have received smooth-formed finish treatment. Combine one part portland cement to one and one-half parts fine sand by volume, and a 50:50 mixture of acrylic or styrene butadiene-based bonding admixture and water to form the consistency of thick paint. Blend standard portland cement and white portland cement in amounts determined by trial patches so that final color of dry grout will match adjacent surfaces. Thoroughly wet concrete surfaces, apply grout to coat surfaces, and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

E. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.10 MONOLITHIC SLAB FINISHES

A. General: Comply with recommendations in ACI 302.1R for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: Apply scratch finish to monolithic slab surfaces to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and where indicated.

1. After placing slabs, finish surface to tolerances of F (F) 15 (floor flatness) and F (L) 13 (floor levelness) measured according to ASTM E 1155. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms or rakes.

C. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing membrane or elastic roofing, or sand-bed terrazzo; and where indicated.

1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven

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floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances of F (F) IS (floor flatness) and F (L) 15 (floor levelness) measured according to ASTM E 1155. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

D. Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint or another thin film-finish coating system.

1. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances of F (F) 20 (floor flatness) and F (L) 17 (floor levelness) measured according to ASTM E 1155. Grind smooth any surface defects that would telegraph through applied floor covering system.

E. Trowel and Fine-Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.

F. Non-Slip Broom Finish: Apply a non-slip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with RE before application.

G. Non-Slip Aggregate Finish: Apply non-slip aggregate finish to concrete stair treads, platforms, ramps and sloped walks, and where indicated.

1. After completing float finishing and before starting trowel finish, uniformly spread at a rate of 25 lb./100 sq. ft. of dampened non-slip aggregate over surface in one or two applications. Tamp aggregate flush with surface using steel trowel, but do not force below surface. After broadcasting and tamping, apply trowel finish as specified.

2. After curing, lightly work surface with steel wire brush or an abrasive stone, and water to expose non-slip aggregate.

H. Colored Wear-Resistant Finish: Apply a colored wear-resistant finish to monolithic slab surface indicated.

1. Uniformly apply dry-shake materials for the colored wear-resistant finish at

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a rate of 25 lb./100 sq. ft., unless greater amount is recommended by manufacturer. Cast a trial slab approximately 10 sq. ft. to determine actual application rate, color and finish, as acceptable to the RE.

2. Immediately following the first floating operation, uniformly distribute approximately two-thirds of dry-shake materials over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second dry-shake application, uniformly distributing remainder of material with overlapping applications to ensure uniform color, and embed by power floating.

3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake material manufacturer and apply immediately after final finishing.

3.11 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.12 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with AC! 306.1 for cold-weather protection and with recommendations in AC! 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's

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written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Unformed Surfaces: Begin curing immediately after placing and finishing concrete. Final cure concrete surfaces to receive finish flooring with a moisture retaining cover, unless otherwise directed. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

1. **Moisture Curing**: Keep surfaces continuously moist for not less than seven days with the following materials:

- a. Water.
- b. Continuous water-fog spray.
- c. Absorptive cover, water saturated, and kept continuously wet.

Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. **Moisture-Retaining Cover Curing**: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

a. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer recommends for use with floor coverings.

3. **Curing Compound**: On exposed interior slabs and on exterior slabs, walks, and curbs, apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

D. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods specified above, as applicable.

3.13 REMOVING FORMS

A. General: Formwork not supporting weight of concrete, such as sides of beams,

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walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.

B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.

C. Form-facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

3.14 REUSING FORMS

A. Clean and repair surfaces of forms to be reused in the work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to the RE.

3.15 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by the RE. Remove and replace concrete that cannot be repaired and patched to the RE's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.2-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of the RE. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and

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voids more than 1/4 inch in any dimension in solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by the RE. If defects cannot be repaired, remove and replace the concrete.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, pop-outs, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding,

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. Repair defective areas, except random cracks and single holes 1 inch or

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less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4 inch clearance all around:

Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar, Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to RE's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to RE's approval.

3.16 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94, shall be performed according to the following requirements:

1. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each days pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

2. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each days pour of each concrete mix.

3. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.

4. Compression Test Specimens: ASTM C 31; one set of four standard cylinder specimens for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test

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specimens are required.

5. Compressive-Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yd. plus additional sets for each 50 cu. yd. More than the first 25 cu. yd. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.

C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

D. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.

E. When a total quantity of a given class of concrete is less than 50 cu. yd., RE may waive strength testing if adequate evidence of satisfactory strength is provided.

F. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

G. Test results shall be reported in writing to RE, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.

H. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but will not be used as sole basis for approval or rejection of concrete.

1. Additional Tests: Testing and inspecting agency shall make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the RE. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed.

END OF SECTION

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SECTION 03400 - PRECAST CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide precast concrete in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Precast concrete structures.
2. Precast manholes.
3. Precast valve vaults.

1.02 REQUIREMENTS FOR MANUFACTURERS AND SUPPLIERS BEFORE DELIVERY

A. Testing and Inspection: Engineer may inspect and test all precast structures, fittings, lining and joint material after delivery to site or at factory.

1. Manufacturer or Supplier: Furnish materials for tests and labor to assist Engineer with tests.
2. Engineer may continually perform plant certification and process inspections.
3. Concrete design mix for precast manhole sections by manufacturer showing sieve analysis for aggregates, suppliers of materials, and thirty 28-day compressive strength test results performed within 1 year of submittal.

B. Factory or Site Inspected Material: See Section 01450.C. Storage and Handling.

1. Manufacturer or Supplier: Store reinforcing steel off ground in well-drained area to prevent deformation.
 - a. Aggregates and sand: Store on concrete slab and handle to maintain separation and to prevent infiltration of deleterious materials.

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b. Completed structures: Store off ground using wood blocks, pallets, or other appropriate means to give ample space between rows and individual pieces, and with enough clearance above and below to allow full view of walls and joint ends for inspection purposes.

c. Joint ends: Keep clean and off ground.

2. Manufacturer's Batching Plant, Casting Equipment, and Curing Facilities: Complete, operating properly, and of proper size and range.

3. Manufacturer's Records: Show evidence of continual maintenance and quality control over casting forms and joint forming rings.

C. Shipment Identification: Prior to inspection of precast structures for an order, manufacturer or supplier shall furnish to Engineer:

1. The Contract Number.

2. Contractor's name.

3. Section sizes.

4. Footage or number of pieces required to fill order.

5. Evidence that concrete has cured to minimum 80 percent of design strength.

D. Ship only the Commission approved precast concrete structures to Contract site.

E. Repairs: Follow manufacturer's procedures filed with Engineer.

F. Manufacturer or Supplier: Comply with standard cold weather concreting practices following ACI 306R "Cold Weather Concreting."

1. Engineer may make special requirements to ensure quality.

1.03 SUBMITTALS

A. Submit following Section 01330:

1. Shop Drawings: Show complete details, pertinent calculations, design loads, materials, strengths, sizes, and thicknesses, joint and connection design and

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details for precast structures.

- a. Reinforcing steel following ACI 315, including bar lists and bending diagrams, placement drawings, and special details.
- b. Location, types, and details of joints.
- c. Sequence of pours.
- d. Calculations showing concrete strength to be attained at proposed time of removal of formwork, false work, and centering.

2. Waivers: Shop drawing submittal waived when:

- a. Standard Details allow use of precast structures.
- b. Approved design drawings and calculations for precast structures are on file with Engineer.
- c. To obtain waiver submit letter citing:
 - i) The Contract Number.
 - ii) Precast structure manufacturer.
 - iii) Approved design drawing number.
- d. Installation Methods for Precast Sections when manufacturer's recommended methods are on file with Engineer.
- e. If Standard Details or specifications change, new submittals will be required.

3. Coating manufacturer's catalog data for lining interior surfaces of precast concrete manholes, including recommendations for surface preparation, application, curing, handling, and repair procedures for coated manhole sections.

B. Submit following Section 01450:

1. Certificate of Compliance:

- a. Precast Manhole Manufacturer or Supplier: Flexible connector assembly, including seals and metallic or non-metallic mechanical devices used therein.
- b. Manhole lining material meets the physical property requirements

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of the lining manufacturer and passes in-plant tests, as recommended by lining manufacturer.

c. Engineer may require manufacturer or supplier to furnish test results substantiating certificate of compliance, or in case of failure, may elect to witness testing to his or her satisfaction.

2. Certified Test Reports: Aggregates, cement, admixtures, and steel reinforcement used in production of vaults, manhole sections, and grade rings following ASTM.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Suitability of Precast Structures for Transport to Contract Site: When concrete has cured to minimum of 80 percent of design strength.

B. Storage:

1. Store off ground on wood blocks, pallets, or other appropriate means away from brush, and in area accessible for inspection.

2. Do not place excavated or other material over or against stored precast structures.

C. Handling of Precast Structures and Appurtenances: Unload and handle with crane, backhoe, or equipment of adequate capacity, equipped with appropriate slings and lifting devices to protect material from damage.

D. Repair or Replacement:

1. Repair damage or defects if Engineer deems repairable and at his direction.

2. Remove and replace at no cost to the Commission if Engineer deems damage or defects are not repairable by Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Reinforced Concrete Materials: See Section 03300, and modification herein,

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except that slump requirement shall not apply to manholes.

B. Precast Concrete Manholes: ASTM C478 except:

1. Compressive Design Strength of Concrete:
 - a. Minimum 5000 psi using Type II cement.
 - b. Minimum compression cylinder test of 4000 psi at time of shipment.
2. Configurations: Follow Drawings and Standard Details.
3. Joints: ASTM C443.
4. Sizes: Furnish in lengths of 1 foot minimum, except do not use more than one, 1-foot section in each manhole.
5. Appurtenances:
 - a. Steps: Manufactured and of style specified in Section 02530.
 - b. Bolt inserts: Embed a minimum of 3 inches, to accommodate 3/4-inch diameter bolts from one of the following; or approved equal.
 - i) Heckman Building Products Corporation, No. 444 Star Threaded Inserts.
 - ii) Pennsylvania Insert Corporation, the Liberator.
 - iii) Atlantic Concrete Products Co., Bolt Slot Insert System.
 - iv) Strut Service Company inserts.
 - v) Provide with plugs for transport to Contract site.
6. Flexible Gasket Connectors: ASTM C923.
 - a. Stainless steel, Type 304 may be used when not in contact with sewage or sewage gas.
 - b. Identification: Permanent markings of date and production runs.
 - c. Approved manufacturers for connectors connecting with diameter dimension of ductile iron pipes, polyvinyl chloride (PVC) ASTM D3034, and PVC ASTM F679 to sewer manholes; or approved equal:
 - i) A-LOK Products Inc., A-LOK or A-LOK X-CEL.

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- ii) Chardon Rubber Company, Lock Joint Flexible Manhole Sleeve.
- iii) Hail Mary Rubber Co., Star Seal.
- iv) Press Seal Gasket Corporation, Press Boot, PSX Series, Econoseal, or equal.
- v) NPC Incorporated, KOR-N-SEAL I Toggle Korband with Series 106 or 406 rubber boot.
- vi) International Precast Supply, Cobra Style, Toggle Style, and Adjustment Style.

d. Approved manufacturers for connectors for inserting pressure sewer piping through manhole walls; or approved equal:

- i) A-LOK Products, Inc., Z-LOK.
- ii) Press Seal Gasket Corporation, 8QRS-PSX Positive Seal System.

e. Approved manufacturers for connectors for closed profile PVC pipe for ASTM F1803 Pipe "Manhole Pipe"; or approved equal:

- i) Press Seal Gasket Corporation.
- ii) A-LOK X-CEL.

f. For connectors for profile PVC pipe for ASTM F794, use special adapter meeting profile dimensions approved by the pipe manufacturer.

g. Approved manufacturers for connectors for PVC pipe on slopes greater than 20 percent but no greater than 35 percent with AWWA C900/C905; or approved equal:

- i) Atlantic Concrete Products Z-LOK.

h. Approved manufacturers for connectors for PVC pipe on slopes greater than 10 percent but no greater than 20 percent with AWWA C900/C905; or approved equal:

- i) Atlantic Concrete Products Z-LOK.
- ii) Press-Seal Gasket Corporation.

<u>Pipe Size</u> <u>Diameter</u>	<u>Manufacturer's Gasket</u> <u>Designation</u>	<u>Manhole</u> <u>Opening</u>
4 inch	8QRS	8 inch
6 inch	12Y	12 inch

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8 inch	12M	12 inch
10 inch	16Y	16 inch
12 inch	16M	16 inch

i. Other pipe connectors: Recommended by pipe manufacturer and approved by Engineer.

7. Precast Channels/Benches:

a. Compressive design strength of concrete:

- i) Minimum 28 day compressive strength of 4000 psi using Type II cement.
- ii) Compressive strength of 3200 psi at time of shipment.

b. Construction and finish:

- i) Furnish access for jointing pipes to flexible manhole connectors.
- ii) Once channel/bench has been poured and initial concrete set has taken place, add no additional concrete to modify shape or repair defects.
- iii) Top surface of bench: Brush or light broom finish.
- iv) Channels: Troweled smooth surface.

c. Lining: Minimum following Standard Details.

d. Slopes:

- i) Bench: Slope toward channel with maximum 1 inch vertical drop for each foot horizontal.
- ii) Channels: Slope smoothly and uniformly from incoming pipes to outlet pipe.

e. Width and height:

- i) Match inside diameters of incoming and outgoing pipes and blend channel to smooth contour
- iii) Deviations to channel width above spring line of pipe and at flexible connectors will be permitted for this purpose with Engineer's approval.

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8. Manhole Identification: Clearly marked on inside near top where applicable.

- a. ASTM Specification designation.
- b. Manhole setting number (bases only) and WSSC Contract number.
- c. Date of manufacture.
- d. Production control number for tracking manufacture phases of item and name or trademark of manufacturer.
- e. Manhole sections with flexible connectors:
 - i) Marked above connector openings with type and size, and type of pipe for which connector is designed.
 - ii) Engraved or stenciled markings with waterproof paint or ink in minimum 1 inch high letters.
- f. Lined manholes: Stenciled with waterproof paint or ink markings as noted herein that cannot be easily removed from lining or epoxy coated surfaces.

9. Precast Manhole Sections:

- a. Approved Manufacturers; or approved equal:
 - i) Americast, Halltown, WV plant only.
 - ii) Atlantic Concrete Products Company, Cockeyville, MD plant only.
 - iii) Hanson Concrete Products, Jessup, MD plant only.
 - iv) Frederick Precast Concrete, Inc., for 48 inch through 72 inch manholes.

10. Lined Manholes: Concrete Protective Liner.

- a. Cover interior surfaces except at penetrations and channels.
- b. After installation, seal penetrations and other non-lined interior concrete surfaces following manufacturer's recommendation.
- c. Approved manufacturers; or approved equal:
 - i) Dura Plate 100 PVC liner, A-LOK Products, Incorporated,

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Tullytown, Pennsylvania.

- ii) T-Lok PVC liner, Ameron Protective Linings.
- iii) AGRU Sure-Grip HDPE liner, Americast AgruAmerica.

11. Lined Manholes: Epoxy Resin Mortar.

- a. Coat interior concrete surfaces, except channels, with .125 inch thick cementitious corrosion and abrasion resistant epoxy resin mortar.
- b. Approved supplier and product; or approved equal:
 - i) Nitomortar EL, FOSROC Incorporated.

12. Precast Concrete Grade Rings: ASTM C478, except:

- a. Compressive Design Strength of Concrete: Minimum 5000 psi using Type II cement.
- b. Configurations: Follow Standard Details.
- c. Rings: Drilled with holes 1-1/2 to 2-inch diameter to accommodate frame anchor bolts.
 - i) Grade rings with cracks or fractures passing through height of ring and any continuous crack extending for length of 3 inches or more will be rejected.
 - ii) Rings with damaged edges which will prevent making satisfactory joint will be rejected.
 - iii) Planes of ring surfaces: Within limits of plus or minus 1/4 inch of horizontal and vertical, except for sloped adjusting grade ring to be within 1/4 inch of Standard Detail.
 - iv) Protection: On lined manholes, follow manufacturer's recommendations.
- d. Approved manufacturers; or approved equal:
 - i) Atlantic Concrete Products Company.
 - ii) Americast.
 - iii) Contractors Precast Corporation.
 - iv) Hanson Concrete Products
 - v) Dal-Col Products, Inc.
 - vi) Prism Precast Products, Inc.
 - vii) Frederick Precast Concrete, Inc.

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- C. Precast Concrete Vaults: ASTM C858.
1. Configurations: Follow Drawings.
 2. Identification: Clearly mark inside of each precast concrete vault section.
 - a. ASTM Designation.
 - b. Vault size.
 - c. Date of manufacture.
 - d. Contract station location and WSSC Contract number.
 - e. Name or trademark of manufacturer.
 - f. Mark slabs on top and bottom surfaces.
 3. Design Mixes:
 - a. 5000 psi at 28 days using Type II cement.
 - b. Mix proportion: ACI 318.
 4. Approved Manufacturers; or approved equal:
 - a. A. C. Miller, Spring City, PA plant only.
 - b. Smith Midland Corp., Midland, VA plant only.
 - c. Rotondo Precast Products, Inc., Fredericksburg, VA plant only.
- D. Miscellaneous Materials:
1. Granular Bedding: ASTM C33 coarse aggregate size number 4.
 2. Weepholes: Service weight cast iron covered with non-erodible filter on earth side.

2.02 SOURCE QUALITY CONTROL

- A. Test Equipment: Instruments, gages, and other testing and measuring equipment

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of proper range, type, and accuracy to verify conformance with specification requirements.

1. Ensure equipment is calibrated and certified at annual intervals.
2. Calibrate against measurement standards with known relationship to existing national standards.
3. Calibrate and certify gages on equipment to which they belong, and keep them on equipment following certification.
4. Do not use instruments, gages, testing, and measuring equipment found to be out of calibration or adjustment until applicable requirements have been met.
5. Calibration by agency regularly engaged in this type of activity.

B. Precast Manhole Testing:

1. Joint and Barrel Testing: ASTM C443.
 - a. Plant vacuum testing: ASTM C1244.
2. Pipe to Manhole Connection Testing: Flexible gasket connectors following ASTM C923, except modified herein.
 - a. During every 90-day period, test at least 1 connector.
 - b. Perform hydrostatic testing of connectors following ASTM C923.
 - i) If manufacturer chooses to perform vacuum test following ASTM C1244, test connector with pipe in straight alignment, 7 degrees minimum axially deflected alignment, and loaded in shear following ASTM C923.
 - ii) Use test pipe of same size, class, design and type as pipe to be provided under Contract.
 - iii) Measure pressure at horizontal centerline of connector using calibrated pressure gage, minimum 4-1/2 inch diameter, calibrated from 0 to 30 psi with 1/2 pound subdivisions.
 - iv) Manufacturer may use standpipe calibrated in 1/2 foot increments with permanent markings instead of calibrated pressure gage.
 - v) Use standpipe high enough to develop specified water pressure and equipped with overflow line adjusted to height

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- for developing specified pressure.
- vi) Ensure that continuous stream of water flows from overflow line during test and is visible from test site.
- c. Hydrostatic test at or above 40 degrees F and in environment free from effects of wind, inclement weather, and conditions that would interfere with conducting tests and observing their results.
 - i) Adjust test medium and specimens to, and maintain at, 40 degrees F or above prior to commencing and for duration of test.
 - ii) Faulty performance or failure of test equipment during test phase will necessitate rerunning phase using properly performing test equipment.
- d. Retesting: If connector fails to meet requirements herein and in referenced ASTM document, Engineer will randomly select and test 2 additional connectors of same diameter and from bases originally manufactured on same day as failed connector.
 - i) If either of 2 additional connectors fails, Engineer will reject all bases manufactured that day with connectors of same size as those tested, as well as bases with other connector sizes mixed with original size tested.
 - ii) Perform retest of next day's production until compliance with requirements is proven.
- e. Repairs.
 - i) Failure of seal between connector and manhole wall due to occasional imperfections in manufacture or accidental injury during test may be repaired using methods recommended by manufacturer and on file with the Commission, and will be acceptable if Engineer finds repairs are sound, properly finished, and cured.
 - ii) Demonstrate to Engineer that repairs will result in seal conforming to requirements of this specification.
- f. Post test failures: If previously tested and complying connectors resubjected to prescribed hydrostatic or vacuum pressure during testing of other sizes fail, and/or seal between them and manhole wall fails water-tightness or vacuum-tightness requirements, Engineer will reject base.

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- i) Engineer will randomly select and test 2 additional bases fitted with same size connectors originally manufactured on same date as failed base.
- ii) If previously tested connector sizes fail retest, all bases with same size connectors manufactured on that date will be rejected.
- iii) Perform retest of next day's production until compliance with requirements is proven.
- iv) Perform retest of connectors that fail to meet requirements herein and in referenced ASTM document as specified in above.
- v) During retesting of flexible connectors on manhole parts or joints between manhole parts, leakage of water as described in this section in any area constitutes failure requiring retest.
- vi) Leakage consisting of a small run adjacent to lifting inserts on manhole sections shall not be cause for rejection.

C. Acceptance Procedure for Concrete Strength of Precast Manhole Sections:
Procedure applies to acceptance and approval of precast manhole bases, riser and cone sections, flattop slabs, and grade rings.

1. Concrete Design Mix Approval: Based on submittal specified above herein.

a. The Commission will issue approval for 3 years, provided design mix materials and sources are not changed and in-plant concrete testing of manhole sections continues to be accepted without rejection of more than 2 days' production in a row.

- i) Every 3 years thereafter, and under failure conditions stated above resubmit concrete design mix for approval.
- ii) Production from mixes other than those approved will be rejected.

b. Compressive strength test: ACI 301 and ACI 318.

D. Vaults and Other Precast Concrete Structures:

1. Determination of concrete compressive strength: From compressive tests made on concrete cylinders.

2. Unless otherwise specified, retain independent testing facility approved by

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Engineer for molding, capping, and testing concrete cylinders following appropriate ASTM requirements or, at Engineer's option, make cylinders and use own equipment to test.

- a. Furnish test results to Engineer.
 - b. Engineer may require core samples of finished products.
 - c. When requested by Engineer, furnish compressive test specimens for testing in addition to requirements above, and continue to monitor quality of concrete.
3. Notify Engineer at least 10 working days prior to pouring any structure.
 4. The Commission may perform random or full inspections of manufacture of boxes, vaults, and precast structures to inspect:
 - a. Steel placement and size.
 - b. Overall fabrication.
 - c. Workmanship.
 - c. Other general or specific aspects of production and specification compliance.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Execution: Follow Sections 03300, 02530, 02510, and supplemented herein.
 1. Provide granular bedding following Drawings.
 2. Provide weepholes on base of impervious material following Drawings.
 3. Provide bituminous membrane waterproofing following Drawings.

3.02 FIELD QUALITY ASSURANCE

- A. Perform field testing of precast concrete structures required under other sections of these specifications.

END OF SECTION

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SECTION 03500 - CEMENTITIOUS TOPPING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide cementitious floor topping in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Cementitious floor topping as self-leveling underlayment concrete.

B. Related Work Specified Elsewhere:

1. Division 3 Section "Cast-In-Place Concrete"

2. Division 9 Section "Tile"

1.02 QUALITY ASSURANCE

A. Comply with ACT 301 "Specifications for Structural Concrete for Buildings", unless otherwise specified.

B. Do not place cementitious topping until mix designs have been approved in writing by governmental agencies having jurisdiction.

C. Installer: Work must be performed by a firm having recent successful experience in comparable cementitious floor topping projects, with personnel skilled in this work.

1.03 SUBMITTALS

A. Submit cementitious mix designs from an independent testing laboratory to the Resident Engineer for review and approval.

B. Submit laboratory test reports and manufacturer's product data for proprietary materials.

C. Prepare a 60-100 sq. ft. test patch to verify proper bonding and strength of the material for the application indicated.

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1.04 GUARANTEE

A. In accordance with article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees that all work specified in this Section will be free from defects of materials and workmanship for a period of five (5) years.

B. Furnish a guarantee form specified in Article on "GUARANTEES" of the "General Conditions Governing All Contracts."

C. The following types of failure will be adjudged as defective work:

1. Cracking and delamination.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cementitious floor topping: "Ardex K-15" as manufactured by Ardex, Inc., or an approved equal, with a 3 day compressive strength of not less than 3000 psi, and with a 28 day compressive strength of not less than 4000 psi per ASTM C 109. Provide washed gravel aggregate (1/8" to 1/4" or larger) for use in installations over 1-1/2" thick.

B. Primer "Ardex P-51" as recommended by manufacturer of cementitious floor topping, or an approved equal.

C. Water: Clean, drinkable and free of deleterious matter.

2.02 MIXING

A. Provide batch type mechanical mixer with a suitable charging hopper, water tank, and a water-measuring device. Use mixers, which are capable of mixing materials into a uniform mix within specified time, and of discharging mix without segregation.

2.03 PRIMING

A. Apply "Ardex P-SI Primer" or approved equal, mixed with water. Ratio of mixture to be in accordance with absorption rate of the required substrate.

1. Apply primer according to manufacturer's suggested techniques, materials and process of application.

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PART 3 - EXECUTION

3.01 PREPARATION

- A. Remove dirt, loose material, oil, grease, paint or other contaminants, leaving a clean surface that complies with manufacturer's requirements.
- B. When base slab surface is acceptable for good bonding, roughen surface by chipping or scarifying before cleaning.

3.02 PLACING

- A. Apply cementitious floor topping to comply with the manufacturer's instructions, to a thickness as indicated on the Drawings, and to produce a surface that is smooth and level within ¼ inch in 10 feet without troweling. Feather surfaces to a smooth transition so that applied finishes do not telegraph edges or surface defects such as bumps, ridges or indentations.
- B. Where joints are required, construct to match and coincide with joints in base slab.

3.03 CURING

- A. Cure and protect cementitious topping applications as recommended by the manufacturer.

3.04 PERFORMANCE

- A. Failure of cementitious floor topping to bond to substrate or other failure of topping to perform as a floor finish, will be considered failure of materials and workmanship.
- B. Repair or replace defective toppings, as directed.

END OF SECTION

SECTION 04100 - RESTORATION MORTAR

PART 1- GENERAL

1.01 SUMMARY

A. Work Included: Provide restoration mortar in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Provide custom mortars *for* pointing existing exterior and interior brick and stone masonry.
2. Provide custom mortar for setting existing, new and salvaged exterior brick and stone masonry.

1.02 RELATED WORK

- A. Division 4 Section "Brick Masonry"
- B. Division 4 Section "Stonework"
- C. Division 4 Section "Exterior Stone Masonry Restoration"
- D. Division 4 Section "Masonry Pointing"
- E. Division 4 Section "Masonry Cleaning"

1.03 SUBMITTALS

- A. The Contractor shall submit three cured hand samples of each type of mortar set in V₂" by 6" plastic or aluminum channels for the Resident Engineer's approval. The Resident Engineer shall approve for color and texture. In general, the Contractor shall match existing mortar unless otherwise stated.
- B. The Contractor shall submit a 5-pound sample of each type of sand used.

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1.04 PRODUCT HANDLING

- A. Cement and lime materials, and aggregates shall be stored in such a manner as to prevent deterioration or intrusion of foreign material.
- B. Deliver materials in palletized containers, clearly labeled with manufacturer's name, address and product identification.
- C. Store materials in original containers, protected from direct ground contact and inclement weather.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Cold weather construction shall adhere to the following requirements for work, performed in ambient temperatures indicated, as well as all published guidelines in "Cold Weather Masonry Construction and Protection Requirements," Brick Institute of America, latest edition. If mortar is to be mixed at air temperatures below freezing, the following procedures shall be followed:

1. 40 deg F to 32 deg F: Heat mixing water or sand to produce mortar between 40 deg F and 120 deg F and maintain above 40 deg F until placed at that temperature,

2. 32 deg F to 20 deg F: Heat mixing water or sand to produce mortar between 40 deg F and 120 deg F. Heat grout materials so grout is maintained and placed at a temperature between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry.

3. 20 deg F and below: Heat mixing water or sand to produce mortar between 40 deg F and 120 deg F. Heat grout materials so grout is maintained and placed at a temperature between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. White Portland Cement: Type I, ASTM C 150.
- B. Portland Cement: Type 1, ASTM C 150, non-staining. Do not use masonry cement.

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C. Hydrated Lime: ASTM C 207, Type S.

D. Sand: Clean sharp sand free of loam, silt, soluble salts and organic matter, ASTM C 144. Aggregate/sand shall be selected to match original mortars, where applicable or as directed.

1. Sand for pointing mortars shall use aggregate graded with 100% passing the No. 16 sieve, as recommended for joints less than ¼ inches.

E. Water: Water shall be potable, from city mains clear and free of deleterious materials.

F. Oxide Pigments: Oxide pigments shall be stable, non-fading and alkali resistant.

G. Admixture for “thick set” and “thin set” mortars for setting stone dutchmen shall be Laticrete 3701 or 4237 Grout and Mortar Admixture as manufactured by Laticrete International Inc., or an approved equal, used in accordance with manufacturer’s written instructions.

H. Acrylic admixture for structural mortars and pouts shall be Acryl 60, as manufactured by Thom Systems Products, Inc., Miami, FL, or an approved equal.

I. No additives or admixtures, other than those specified (or approved as equal) shall be used. No chlorides, or aggressive corrosive chemicals shall be used.

2.02 MORTAR MIXES

A. The mortars specified herein after shall comply with ASTM C 270, “Standard Specification for Mortar for Unit Masonry.” Type “N” Mortar strength, in general, shall be consistent with a low standard deviation, and a 28 day cube compression strength of a minimum of 750 psi and a maximum of 1700 psi. Mortar mixes may change and require adjustment before and during construction in accordance with Pre-Construction Conformance Testing, Field Testing and evaluation thereof by the Resident Engineer.

1. Type “N” Mortar for pointing, rebuilding and patching finish brick masonry:

- 1 part by volume Portland cement (Type I)
- 1 part by volume hydrated lime (Type 5)
- 6 parts sand (selected to match sand in original mortar)
- Oxide pigments as needed to match original mortar color

2. Type “N” Mortar for pointing and rebuilding stone masonry:

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- 1 part by volume white Portland cement (Type I)
- 1 part by volume hydrated lime (Type 5)
- 6 parts "00" sand (selected to match sand in original mortar)
- Oxide pigments as needed to match original mortar color

3. Type "N" Mortar for grouting/anchoring masonry accessories, lintels, anchors, pins, frames in stone and brick masonry:

- 1 part by volume white Portland cement (Type I)
- 1 part by volume hydrated lime (Type 5)
- 6 parts "00" sand (selected to match sand in original mortar)
- Oxide pigments as needed to match original mortar color.

B. The mortars specified herein after shall comply with ASTM C 270, "Standard Specification for Mortar for Unit Masonry." Mortar mixes may change and may require adjustment before and during construction in accordance with Pre-Construction Conformance Testing, Field Testing and evaluation thereof by the Resident Engineer.

1. Mortar for slurry for pre-treating masonry to be repaired:

- 1 part by volume white Portland cement (Type I)
- 2 parts by volume hydrated lime (Type 5)
- 6 parts fine sand
- 1 part Acryl 60 to 5 parts water.

2. "Thin Set" Mortar for setting Stone Dutchmen: "Thick Set" mortars for special conditions when the mortar bed is greater than 3/8" thick shall employ Laticrete 3701.

- 1 part by volume white Portland cement (Type I)
- 3 parts fine "00" sand (selected to match color of existing clean stone)

Temper to a workable consistency with Laticrete 3701 polymer admixture mixed in accordance with manufacturer's recommendations for a high strength, "thick set" mortar.

3. "Thin Set" Mortar for Setting Stone Dutchmen: Use when the mortar bed is less than 3/8" thick to produce an initially tacky mortar exhibiting high strength properties when set.

- 1 part by volume white Portland cement (Type 1)
- 3 parts fine "00" sand (selected to match color of existing clean stone)

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Temper to a workable consistency with Laticrete polymer admixture mixed in accordance with manufacturer's recommendations for a high strength, "thin set" mortar.

C. Mortars for stone masonry patching including sandstone, brownstone, and brick, shall be custom-color matched patching materials specifically prepared by the manufacturer to match each cleaned existing stone, including color, texture and composition, and shall be "Jahn M70 Restoration Mortar" as manufactured by Cathedral Stone Company, or an approved equal.

2.03 MIXING OF MORTAR

A. Mortar ingredients shall be measured carefully so that proportions are controlled and maintained throughout all work periods.

B. Mortar shall be mixed in an approved type power operated batch mixer. Mixing time shall be such as to produce a homogeneous plastic mortar, but mixing shall not be less than five minutes, approximately two minutes of which shall be for mixing of dry materials and not less than three minutes for continuing the mixing after water has been added, A minimum amount of water shall be used to produce a workable consistency for the mortar's intended purpose,

C. Mortar for pointing shall be as dry a consistency as will produce a mortar sufficiently plastic to be worked into the joints.

D. Mortar for grouting shall be of a consistency as will readily be flowed in cracks and voids.

E. Mortar for slurry shall be of a consistency as will be brushable.

F. Where mortar or grout is required in small batches of less than a cubic yard and the Resident Engineer specifically approves in writing, mortar may be mixed by hand in clean wooden or metal boxes prepared for that purpose but not on slabs, sidewalks, etc., provided the methods of mixing and transferring the mortar are approved by the Resident Engineer.

G. After mixing, mortars for pointing or setting shall sit for 20 minutes prior to use to allow for initial shrinkage. Mortar shall be placed in final position within two hours of mixing. Re-tempering of partially hardened material is not permitted,

H. Mortar for grout shall be placed in final position within two hours of mixing. Re-tempering of partially hardened material is not permitted.

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I. Custom patching materials shall be stored and mixed in strict accordance with the manufacturer's written instructions

PART 3 - EXECUTION

3.01 INSTALLATION

A. To be performed as part of the work of the following sections:

1. Section 04500 "Exterior Stone Masonry Restoration"
2. Section 04515 "Masonry Pointing"

END OF SECTION

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SECTION 04200 - UNIT MASONRY

PART I - GENERAL

1.01 SUMMARY

A. Work Included: Provide unit masonry work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Concrete unit masonry.
2. Glazed concrete masonry unit
3. Reinforced unit masonry.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 7 Section "Joint Sealants" for sealing joint in mockup.

C. Products installed but not furnished under this Section include the following:

1. Division 5 Section "Metal Fabrications" for steel lintels in unit masonry.
2. Division 6 Section "Rough Carpentry" for wood nailers and blocking built into unit masonry.
3. Division 8 Section "Standard Steel Doors and Frames" for hollow steel frames in unit masonry openings.
4. Division 8 Section "Security Hollow Metal" for security hollow steel frames in unit masonry openings.

1.02 SUBMITTALS

A. Product data for each different masonry unit, accessory, and other manufactured product specified.

B. Shop drawings for reinforcing detailing fabrication, bending, and placement of

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unit masonry reinforcing bars. Comply with ACI 315 “Details and Detailing of Concrete Reinforcement” showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.

C. Material certificates for the following, signed by manufacturer and Contractor, certifying that each material complies with requirements.

1. Each different cement product required for mortar and grout, including name of manufacturer, brand, type, and weight slips at time of delivery.
2. Each material and grade indicated for reinforcing bars,
3. Each type and size of joint reinforcement
4. Each type and size of anchors, ties, and metal accessories,

1.03 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

B. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics from one source and by a single manufacturer for each different product required.

C. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not install until they are in an air-dried condition.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

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D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.05 PROJECT CONDITIONS

A. Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Joint Reinforcement, Ties, and Anchors:
 - a. Dur-O-Wal, Inc.
 - b. Masonry Reinforcing Corp. of America,
 - c. National Wire Products Industries.
 - d. Or an approved equal.

2. Glazed Concrete Masonry Units:
 - a. Burns & Russell Co. (The)
 - b. Trenwyth Industries, Inc.
 - c. Or an approved equal.

2.02 CONCRETE MASONRY UNITS

A. General: Provide shapes indicated and as follows for each form of concrete masonry unit as required.

1. Provide special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.

2. Provide square-edged units *for* outside corners, except where indicated as bullnose.

B. Concrete Masonry Units: ASTM C 90 and as follows:

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1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength indicated below:

- a. 1900 psi.
- b. Not less than the unit compressive strengths required to produce concrete unit masonry construction of compressive strength indicated.

2. Weight Classification: Normal weight unless lightweight units are required to match existing adjoining units.

3. Aggregates: Do not use aggregates made from pumice, scoria, or tuff.

4. Provide Type I, moisture-controlled units.

5. Size: Manufactured to the actual dimensions listed below (within tolerances specified in the applicable referenced ASTM specification) for the corresponding nominal sizes indicated on Drawings:

- a. 4 inch nominal: 3-5/8 inch actual.
- b. 6 inch nominal: 5-5/8 inch actual.
- c. 8 inch nominal: 7-5/8 inch actual.
- d. 10 inch nominal: 9-5/8 inch actual,
- e. 12 inch nominal: 11-5/8 inch actual,
- f. 16 inch nominal: 15-5/8 inch actual.

6. Exposed Faces: Manufacturer's standard color and texture, unless otherwise required. Where existing masonry work is patched, provide masonry unit with faces that match existing adjoining units. Included are glazed and ground faced units. Match shall be subject to the approval of the Resident Engineer.

C. Pre-faced Concrete Masonry Units: Lightweight or normal weight concrete units indicated below with manufacturer's standard smooth resinous tile facing, complying with ASTM C 744:

1. For concrete masonry units to which prefaced surfaces are applied, comply with the following:

a. Concrete Masonry Units: ASTM C 90, Type I, hollow and solid, moisture controlled units.

b. Unit Compressive Strength: Provide units with minimum average net-area compressive strength indicated below:

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- i) 1900 psi, unless otherwise indicated,
- 2. Size: Manufactured to dimensions matching the existing adjoining units,
- 3. Color and Pattern: Match existing adjoining units as approved by the Resident Engineer.
- 4. Provide finished exposed ends and other exposed faces with special shapes and curves where required to match existing units or new units.

2.03 MORTAR A GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Masonry Cement: ASTM C 91.
- C. Hydrated Lime: ASTM C 207, Type S.
- D. Portland Cement-Lime Mix: Packaged blend of Portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.
- E. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch, use aggregate graded with 100 percent passing the No. 16 sieve.
- F. Aggregate for Grout: ASTM C 404.
- G. Ready-Mixed Mortar: Cementitious materials, and aggregate complying with requirements specified in this Article; combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C 1142.
- H. Water: Potable.

2.04 REINFORCING STEEL

- A. Steel Reinforcing Bars: Material and grade as follows:
 - 1. Billet steel complying with ASTM A 615.
 - a. Grade 60.
- B. Welded-Wire Fabric: ASTM A 185,

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2.05 JOINT REINFORCEMENT

A. General: Provide joint reinforcement formed from the following:

1. Galvanized carbon-steel wire, coating class as follows:
 - a. ASTM A 641, Class 1, for interior walls.

B. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Wire Diameter for Side Rods: 0.1483 inch.
2. Wire Diameter for Cross Rods: 0.1483 inch.

C. For single-wythe masonry, provide type as follows with single pair of side rods:

1. Ladder design with perpendicular cross rods spaced not more than 16 inches o.c.

2.06 TIES AND ANCHORS, GENERAL

A. General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of this Article, unless otherwise indicated.

B. Wire: As follows:

1. Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class 8-2 coating.
2. Wire Diameter 0.1875 inch.

C. Steel Sheet: As follows:

1. Galvanized Steel Sheet: ASTM A 526, G 60 (commercial quality), steel sheet zinc coated by hot-dip process on continuous lines prior to fabrication, for sheet-metal ties and anchors in interior walls.

D. Steel Plates and Bars: ASTM A 36, shop painted with 2 coats of coal-tar epoxy-polyamide paint complying with SSPC-Paint 16 to comply with SSPC-PA I for painting and SSPC-SP 6 for surface preparation.

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2.07 ADJUSTABLE ANCHORS FOR CONNECTING TO STRUCTURAL FRAME

A. General: Provide 2-piece assemblies as described below, allowing vertical or horizontal differential movement between wall and frame parallel to plane of wall but resisting tension and compression forces perpendicular to it.

1. For anchorage to concrete, provide manufacturer's standard anchors with dovetail anchor section formed from sheet metal and triangular-shaped wire tie section sized to extend within 1 inch of masonry face and as follows:

a. Wire Diameter 0.1875 inch.

2. For anchorage to steel framing, provide manufacturers standard anchors with crimped 1/4-inch-diameter wire anchor section for welding to steel and triangular-shaped wire tie section sized to extend within 1 inch of masonry face and as follows:

a. Wire Diameter 0.1875 inch.

2.08 RIGID ANCHORS

A. General: Fabricate from steel bars as follows:

1. 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins.

2.09 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Type 2, Class A, Grade 1; compressible up to 35 percent; of width and thickness indicated; formulated from the following material:

1. Neoprene.
2. Urethane.
3. Polyvinyl chloride.

B. Preformed Control-Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

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C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification, for types of mortar indicated below:

1. Limit cementitious materials in mortar to Portland cement and lime.
2. For above-grade, load-bearing and nonload-bearing walls and parapet walls; for interior load-bearing walls; for interior nonload-bearing partitions, and for other applications where another type is not indicated, use type indicated below:

- a. Type: N.

C. Grout for Unit Masonry: Comply with ASTM C 476. Use grout of consistency indicated or, if not otherwise indicated, of consistency (fine or coarse) at time of placement that will completely fill spaces intended to receive grout.

1. Use fine grout in grout spaces less than 2 inches in horizontal dimension, unless otherwise indicated.
2. Use coarse grout in grout spaces 2 inches or more in least horizontal dimension, unless otherwise indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of unit masonry. Do not proceed with installation until unsatisfactory conditions have been corrected.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry.

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B. Examine existing glazed concrete masonry walls that require patching and/or tooting. Record any conditions that need correction prior to commencement of work.

3.02 INSTALLATION, GENERAL

A. Build chases and recesses to accommodate items specified in this and other Sections of the Specifications.

B. Leave openings for equipment to be installed before completion of masonry. After installing equipment, complete masonry to match construction immediately adjacent to the opening.

C. Cut masonry units with motor-driven saws to provide clean, sharp, un-chipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting, where possible. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

D. Mix units for exposed unit masonry from several pallets or cubes as they are placed to produce uniform blend of colors and textures.

E. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

3.03 CONSTRUCTION TOLERANCES

A. Variation front Plumb: For vertical lines and surfaces of columns, walls, and arrises, do not exceed 1/4 inch in 10 feet, nor 3/8 inch in 20 feet, nor 1/2 inch in 40 feet or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet, nor 1/2 inch in 40 feet or more. For vertical alignment of head joints do not exceed plus or minus 1/4 inch in 10 feet, nor 1/2 inch maximum.

B. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines, do not exceed 1/4 inch in 20 feet, nor 1/2 inch in 40 feet or more. For top surface of bearing walls, do not exceed 1/8 inch in 10 feet, nor 1/16 inch within width of a single unit.

C. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls, and partitions, do not exceed 1/2 inch in 20 feet, nor 3/4 inch in 40 feet or more.

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D. Variation in Mortar-Joint Thickness: Do not vary from bed-joint thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary bed-joint thickness from bed-joint thickness of adjacent course by more than 1/8 inch. Do not vary from head-joint thickness indicated by more than plus or minus 1/8 inch. Do not vary head-joint thickness from adjacent head-joint thickness by more than 1/8 inch. Do not vary from collar-joint thickness indicated by more than minus 1/4 inch or plus 3/8 inch.

3.04 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jam is, and where possible at other locations.

B. Lay walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

C. Lay masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: In each course, rack back 1/2-unit length for one-half running bond or 1 /3-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar prior to laying fresh masonry.

E. Built-in Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around bulk-in items.

F. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

G. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

H. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above and as follows:

1. Install compressible filler in joint between top of partition and underside of structure above.

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2. Wedge nonload-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.

3.05 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.
4. Maintain joint widths indicated, except for minor variations required to maintain bond alignment. If not indicated, lay walls with 3/8-inch joints.

B. Lay solid brick-size masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not furor bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumb-print hard, using a jointer larger than joint thickness, unless otherwise indicated,

D. Cut joints flush for masonry walls that are to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

3.06 HORIZONTAL JOINT REINFORCEMENT

A. General: Provide continuous horizontal-joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcing a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Provide reinforcement in mortar joint 1 block course above and below wall openings and extending 12 inches beyond opening.
 - a. Reinforcement above is in addition to continuous reinforcement

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B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by using prefabricated "U and "T" sections, Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.07 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.

2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.

3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.08 CONTROL JOINTS

A. General: Install control and expansion joints in unit masonry where indicated. Build-in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement

B. Form control joints in concrete masonry as follows:

1. Fit bond-breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces.

2. Install preformed control-joint gaskets designed to fit standard sash block.

3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake joint,

1. Install temporary foam plastic filler in head joints and remove when unit masonry is complete.

2.

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3.09 LINTELS

A. Install steel lintels where indicated.

B. Provide masonry lintels where required and where openings of more than 12 inches for brick size units and 24 inches for block size units are shown without structural steel or other supporting lintels,

1. Provide precast lintels made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcement bars indicated or required to support loads indicated. Cure precast lintels by same method as CMU.

2. Provide prefabricated or built-in-place masonry lintels. Use specially formed bond beam units with reinforcement bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

3. Provide either of above at Contractor's option or provide precast or formed-in-place concrete lintels complying with requirements of Division 3 Section "Cast-in-Place Concrete."

C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.10 INSTALLATION OF REINFORCED UNIT MASONRY

A. Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements during construction.

1 Construct formwork to conform to shape, line, and dimensions shown, Make sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.

2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.

1. Do not exceed the following pour heights for fine grout:

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- a. For minimum widths of grout spaces of 3/4 inch or for minimum grout space of hollow unit cells of 1-1/2 by 2 inches, pour height of 12 inches.
 - b. For minimum widths of grout spaces of 2 inches or for minimum grout space of hollow unit cells of 2 by 3 inches, pour height of 60 inches.
 - c. For minimum widths of grout spaces of 2-1/2 inches or for minimum grout space of hollow unit cells of 2-1/2 by 3 inches, pour height of 12 feet.
 - d. For minimum widths of grout spaces of 3 inches or for minimum grout space of hollow unit cells of 3 by 3 inches, pour height of 24 feet.
2. Do not exceed the following pour heights for coarse pour:
- a. For minimum widths of grout spaces of 1-1/2 inches or for minimum grout space of hollow unit cells of 1-1/2 by 3 inches, pour height of 12 inches.
 - b. For minimum widths of grout spaces of 2 inches or for minimum grout space of hollow unit cells of 2-1/2 by 3 inches, pour height of 60 inches.
 - c. For minimum widths of grout spaces of 2-1/2 inches or for minimum grout space of hollow unit cells of 3 by 3 inches, pour height of 12 feet.
 - d. For minimum widths of grout spaces of 3 inches or for minimum grout space of hollow unit cells of 3 by 4 inches, pour height of 24 feet.
3. Provide clean-out holes at least 3 inches in least dimension for pour pours over 60 inches in height.
- a. Provide clean-out holes at each vertical reinforcing bar.
 - b. At solid routed masonry, provide clean-out holes at not more than 32 inches o.c.

3.11 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units; install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep

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holes, and completely fill with mortar. Point-up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for application of sealants.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears prior to tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

3. Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.

4. Clean concrete masonry by cleaning method indicated in NCMA TEIC. 8-2 applicable to type of stain present on exposed surfaces.

E. Protection: Provide final protection and maintain conditions that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

3.12 MASONRY WASTE DISPOSAL

A. Undamaged, excess masonry materials are Contractor's property and shall be removed from the Project site for his use.

END OF SECTION

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SECTION 04210 - BRICK MASONRY

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide brick masonry work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Brick unit masonry.
2. Brick paving.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 4 Section "Unit Masonry" requirements shall be applicable to the Work of this Section.

1.02 PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following installed compressive strengths (fm) at 28 days.

1. For Brick Unit Masonry: As follows, based on gross area:
 - a. $f_m = 1500$ psi (103 MPa)

1.03 SUBMITTALS

A. Product data for each different masonry unit, accessory, and other manufactured product specified.

B. Samples for verification of the following:

1. Full-size units for each different exposed masonry unit required showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.

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a. Include size-variation data for brick, verifying that actual range of sizes for brick falls within ASTM C 216 dimension tolerances.

2. Accessories embedded in the masonry.

1.04 QUALITY ASSURANCE

A. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one source and by a single manufacturer for each different product required.

B. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

C. Mockup: Prior to installing unit masonry, construct 2 foot by 2 foot sample wall panels to verifying selections made under sample submittals and to demonstrate aesthetic effects of materials and execution, Build mockups to comply with the following requirements, using materials indicated for final unit of Work.

1. Notify Resident Engineer one week in advance of the dates and times when mockups will be constructed.

2. Protect accepted mockups from the elements with weather resistant membrane.

3. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

a. Acceptance of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Resident Engineer in writing.

b. Acceptance of mockups does not constitute approval of deviations from the Contract Documents contained in mockups, unless such deviations are specifically- approved by Resident Engineer in writing.

4. When directed, demolish and remove mockups from Project site.

1.05 DELIVERY, STORAGE, AND HANDLING

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- A. Store masonry units on elevated platforms, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not install until they are in an air-dried condition.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Platform materials shall not cause damage to brick masonry by absorbing moisture, dust or staining. Only undamaged and uncontaminated brick masonry units matching the Architect's sample and accepted by the Resident Engineer shall be installed in the Work.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.06 PROJECT CONDITIONS

- A. Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
1. Protect base of walls from rain-splashed mud and mortar splatter by coverings spread on ground and over wall surface.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost, Do not build on frozen subgrade or setting beds. Remove and replace unit masonry damaged by frost or freezing conditions. Comply with the following requirements.
1. Cold-Weather Construction: When the ambient temperature is within the limits indicated, use the following procedures.

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a. 40 to 32 deg F (4 to 0 deg C): Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C).

b. 32 to 25 deg F (0 to -4 deg C): Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry.

c. 25 to 20 deg F (-4 to -7 deg C): Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F (4 deg C) if grouting. Use heat on both sides of walls under construction.

d. 20 deg F (-7 deg C) and Below: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F (4 deg C). Provide enclosures and use heat on both sides of walls under construction to maintain temperatures above 32 deg F (0 deg C) within the enclosures.

2. Cold-Weather Protection: When the mean daily temperature is within the limits indicated, provide the following protection:

a. 40 to 25 deg F (4 to -4 deg C): Cover masonry with a weather-resistant membrane for 48 hours after construction.

b. 25 to 20 deg F (-4 to -7 deg C): Cover masonry with insulating blankets or provide enclosure and heat for 48 hours after construction to prevent freezing. Install wind breaks when wind velocity exceeds 15 mi/hr (25 km/hr).

c. 20 deg F (-7 deg C) and Below: Provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 48 hours after construction.

3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried out, but not less than 7 days after completion of cleaning.

D. Hot-Weather Requirements: Protect stonework when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F (38 deg C) and above.

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PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Brick:
 - a. Glen-Gery Corporation.
 - b. Boral Brick Company.
 - d. Or an approved equal.

2. Portland Cement, Mortar Cement:
 - a. Essroc Materials, Inc.
 - b. Glen-Gery Corporation.
 - c. Lehigh Portland Cement Co.
 - d. Riverton Corporation
 - e. Or an approved equal

3. Mortar Pigments:
 - a. Davis Colors.
 - b. Lafarge Corporation.
 - c. Solomon Grind-Chem Services, Inc.
 - d. Or an approved equal.

4. Joint Reinforcement, Ties, and Anchors:
 - a. Dur-O-Wal, Inc.
 - b. Masonry Reinforcing Corp. of America.
 - c. National Wire Products Industries,
 - d. Or an approved equal.

2.02 BRICK

A. General: Provide shapes indicated and as follows for each form of brick required.

1. Provide units without cores or frogs and with exposed surfaces finished for

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ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces,

B. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.

1. Provide Special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.

2. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

C. Face Brick: ASTM C 216 and as follows:

1. Grade and Unit Compressive Strength: Provide units with grade and minimum average net-area compressive strength indicated below:

a. Grade: SW.

b. Not less than the unit compressive strengths required to produce clay masonry construction of compressive strength indicated.

2. Initial Rate of Absorption: Between 5 and 20 g/30 sq. in. (g/194 sq. cm) per minute when tested per ASTM C 67.

3. Surface Coloring: Brick with surface coloring, other than flashed or sand-finished brick, shall withstand 50 cycles of freezing and thawing per ASTM C 67 with no observable difference in the applied finish when viewed from 10 feet (3 m).

4. Type: FBX.

5. Size: Bricks manufactured to the following actual dimensions within tolerances specified in ASTM C 216:

a. Standard: 3-1/2 to 3-S/S inches (89 to 92mm) thick by 2-1/4 inches (57mm) high by 8 inches (203 mm) long.

6. Application: Use where brick is exposed, unless otherwise indicated.

7. Color and Texture: Match Resident Engineer's samples.

8. Brick Payers: Equal to Belden Brick No. 133, Flashed Payers.

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2.03 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction Provide natural color or white cement as required to produce mortar color indicated,

B. Masonry Cement: ASTM C 91.

1. For pigmented mortars, use premixed, colored masonry cements of formulation required to produce color indicated, or if not indicated, as selected from manufacturer's standard formulations, Pigments shall not exceed 5 percent of masonry cement by weight for mineral oxides nor 1 percent for carbon black.

2. For colored-aggregate mortars, use masonry cement of natural color or white as required to produce mortar color indicated.

C. Hydrated Lime: ASTM C 207, Type S.

D. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type 1 or Type III, and hydrated lime complying with AS134 C 207.

1. For pigmented mortars, use colored portland cement-lime mix of formulation required to produce color indicated, or if not indicated, as selected from manufacturers standard formulations. Pigments shall not exceed 10 percent of portland cement by weight for mineral oxides nor 2 percent for carbon black.

E. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch (6.5 mm), use aggregate graded with 100 percent passing the No. 16 (1.18 mm) sieve.

1. White-Mortar Aggregates: Natural white sand or ground white stone.

2. Colored-Mortar Aggregates: Natural-colored sand or ground marble, granite, or other sound stone, as required to match Resident Engineers sample.

F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes, Use only pigments with a record of satisfactory performance in masonry mortars.

G. Cold-Weather Admixture: Non-chloride, non-corrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.

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H. Water: Potable.

I. Available Products: Subject to compliance with requirement, produce that may be incorporated in the Work include, but are not limited to, the following (approved equals will also be accepted):

1. Colored Masonry Cement:
 - a. Brixment-in-Color Essroc Materials, Inc.
 - b. Centurion Colorbond; Lafarge Corporation.
 - c. Lehigh Custom Color Masonry Cement; Lehigh Portland Cement Co.
 - d. Flamingo Color Masonry Cement; Riverton Corporation (The).
 2. Colored Portland Cement-Lime Mix:
 - a. Color Mortar Blend; Glen-Gery Corporation.
 - b. Centurion Colorbond PL; Lafarge Corporation.
 - c. Lehigh Custom Color Portland/Lime; Lehigh Portland Cement Co.
 - d. Riverton Portland Cement Lime Custom Color; Riverton Corporation (The).
 3. Mortar Pigments:
 - a. True Tone Mortar Colon; Davis Colors,
 - b. Centurion Pigments; Lafarge Corporation.
 - c. SGS Mortar Colors; Solomon Grind-Chem Services, Inc.
 4. Cold-Weather Admixture:
 - a. Accelguard 80; Euclid Chemical Co.
 - b. Monet; Grace: Wit, Grace & Co.
 5. Water-Repellent Admixture:
 - a. Dry-Block Mortar Admixture; Grace: W.R. Grace & Co.
- J. Latex additive (water emulsion) described below, serving as replacement for part or all of gaging water, of type specifically recommended by latex additive manufacturer for use with job-mixed portland cement and aggregate and not containing a retarder,
1. Latex Additive: Acrylic resin.

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2.04 TIES AND ANCHORS, GENERAL

A. General: Provide corrugated ties and anchors specified in subsequent articles that comply with requirements for metal and size of this Article, unless otherwise indicated.

1. Stainless-Steel Sheet: ASTM A 167, Type 304 or 316.
2. 0.0625 inch (1.6 mm) minimum thickness.

2.05 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Type 2, Class A, Grade 1; compressible up to 35 percent; of width and thickness as required; formulated from the following material:

1. Neoprene.
2. Urethane.
3. Polyvinyl chloride.

2.06 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of 1/2-cup (0.14.t) dry measure tetrasodium polyphosphate and 1/2-cup (0.14-L) dry measure laundry detergent dissolved in 1 gal. (4 L) of water.

B. Proprietary Acidic Cleaner Manufacturer's standard-strength, general-purpose cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry surfaces of type indicated below without discoloring or damaging masonry surfaces; expressly approved for intended use by manufacturer of masonry units being cleaned.

1. For masonry not subject to metallic oxidation stains, use formulation consisting of a concentrated blend of surface-acting acids, chelating, and wetting agents.
2. For dark-colored masonry not subject to metallic oxidation stains, use formulation consisting of a liquid blend of surface-acting acids and special inhibitors.

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3. For masonry subject to metallic oxidation stains, use formulation consisting of a liquid blend of organic and inorganic acids and special inhibitors.

4. Available Products: Subject to compliance with requirements, products that may be used to clean unit masonry surfaces include, but are not limited to, the following:

- a. 202 New Masonry Detergent; Diedrich Technologies, Inc.
- b. 200 Lime Solv; Diedrich Technologies, inc.
- c. 202V Vana-Stop; Diedrich Technologies, Inc.
- d. Sure Klean No. 600 Detergent; ProSoCo, Inc.
- e. Sure Klean No. 101 Lime Solvent ProSoCo., Inc.
- f. Sure Klean Vans Trol; ProSoCo, Inc.
- g. Or approved equal

2.07 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

2. Add cold-weather admixture (if used) at the same rate for all mortar, regardless of weather conditions, in order to ensure that mortar color is consistent

B. Mortar for Unit Masonry: Comply with ASIM C 270, Proportion Specification, for types of mortar indicated below:

1. Limit cementitious materials in mortar to portland cement and lime. Type: S.

C. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required.

1. Limit pigments to the following percentages of cement content by weight:

a. For mineral oxide pigments and portland cement-lime mortar, not more than 10 percent.

b. For carbon-black pigment and portland cement-lime mortar, not more than 2 percent.

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- c. For mineral oxide pigments and masonry cement mortar, not more than 5 percent.
- d. For carbon-black pigment and masonry cement mortar, not more than 1 percent.

D. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates combined with selected cementitious materials.

- 1. Mix to match existing adjoining mortar.

E. Latex-Modified Portland Cement Setting-Bed Mortar: Proportion and mix portland cement, aggregate, and latex additive for setting bed to comply with directions of latex additive manufacturer and as necessary to produce stiff mixture with a moist surface when bed is ready to receive payers.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of unit masonry. Do not proceed with installation until unsatisfactory conditions have been corrected.

- 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry.

B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.

3.02 INSTALLATION, GENERAL

A. Thickness: Build walls and other masonry construction to the full thickness shown.

B. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting, where possible. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

C. Mix units for exposed unit masonry from several pallets or cubes as they are placed to produce uniform blend of colors and textures.

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D. Wetting of Brick: Wet brick prior to laying if the initial rate of absorption exceeds 30 g/30 sq. in. (W194 sq. cm) per minute when tested per ASTM C 67. Allow units to absorb the water so they are damp but not wet at the time of laying.

3.03 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces of columns, walls, and arrises, do not exceed 1/4 inch in 10 feet (6mm in 3m), nor 3/8 inch in 20 feet (10mm in 6 m), nor 1/2 inch in 40 feet (12 mm in 12 m) or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch in 40 feet (12mm in 12 m) or more. For vertical alignment of head joints, do not exceed plus or minus 1/4 inch in 10 feet (6mm in 3 m), nor 1/2 inch (12 mm) maximum.

B. Variation from Level: For bed joints and lines of exposed horizontal grooves, and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6mm in 6 m), nor 1/2 inch in 40 feet (12mm in 12 m) or more. For top surface of bearing walls, do not exceed 1/8 inch (3 mm) in 10 feet (3m), nor 1/16 inch (1.5 mm) within width of a single unit.

C. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4 inch (6mm) nor plus 1/2 inch (12mm).

D. Variation in Mortar-Joint Thickness: Do not vary from bed-joint thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm). Do not vary bed-joint thickness from bed-joint thickness of adjacent course by more than 1/8 inch (3 mm). Do not vary from head-joint thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary head-joint thickness from adjacent head-joint thickness by more than 1/8 inch (3 mm). Do not vary from collar-joint thickness indicated by more than minus 1/4 inch (6 mm) or plus 3/8 inch (10mm).

3.04 LAYING MASONRY WALLS

A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.

B. Lay walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

C. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

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1. Flemish bond unless otherwise indicated.

D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2-inches (50-mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

E. Stopping and Resuming Work: In each course, rack back 1¹²-unit length for one-half running bond or 1/3-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry unite lightly if required, and remove loose masonry units and mortar prior to laying fresh masonry.

F. Built-in Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.

3.05 MORTAR BEDDING AND JOINTING

A. Lay solid brick-size masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not furrow bed joints or slush head joints.

B. Set stone units in full bed of mortar with vertical joints slashed full. Fill dowel, anchor, and similar holes solid. Wet stone-joint surface thoroughly before setting; for stone surfaces that are soiled, clean bedding and exposed surfaces with fiber brush and soap powder and rinse thoroughly with clear water.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

3.06 BRICK PAVER INSTALLATION

A. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.

B. Apply cement-paste slush coat over surface of concrete subbase about 15 minutes prior to placing setting bed. Limit area of slush coat to avoid its drying out prior to placing setting bed. Do not exceed 1/16-inch (1.6-mm) thickness for cement slush coat.

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C. Apply mortar setting bed over cement-paste slush coat immediately after latter has been applied. Spread and screed setting bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.

D. Mix and place only that amount of mortar setting bed that can be covered with pavers prior to initial set. Cut back, bevel edge, remove, and discard setting-bed material that has reached initial set prior to placing pavers.

1. Place reinforcing wire fabric over membrane protection course, lapped at joints by at least one full mesh and supported so that the mesh becomes embedded in the middle of setting bed. Do not butt edges against vertical surfaces.

E. Wet brick pavers prior to laying if the initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67. Allow units to absorb the water so that they are damp but not wet at the time of laying.

F. Place pavers before initial set of cement occurs. Immediately prior to placing pavers on green or wet setting bed, apply uniform 1/16-inch (1.5-mm) thick slurry bond coat to bed or to back of each paver with a flat trowel.

G. Tamp and beat pavers with a wooden block or rubber mallet to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each paver in a single operation prior to initial set of mortar; do not return to areas already set and disturb pavers for purposes of realigning finished surfaces or adjusting joints.

H. Spaced Joint Widths: Provide nominal joint width of 3/8 inch (10 mm) with variations not exceeding plus or minus 1/16 inch (13 mm).

I. Grout joints as soon as possible after initial set of setting bed. Force grout into joints, taking care not to smear grout on adjoining pavers and other surfaces. After initial set of grout, finish joints by tooling to produce a slightly concave polished joint, free from drying cracks.

J. Cure grout by maintaining in a damp condition for 7 days except as otherwise recommended by latex additive manufacturer.

3.07 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units; install in fresh mortar or grout, pointed to eliminate evidence of replacement.

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B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point-up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for application of sealants.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears prior to tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Resident Engineer's approval of sample cleaning before proceeding with cleaning of masonry.

3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

4. Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.

5. Clean brick by bucket and brush hand-cleaning method described in SM Technical Note No. 20 Revised, using the following masonry cleaner

- a. Job-mixed detergent solution.
- b. Proprietary acidic cleaner, applied in compliance with directions of acidic cleaner manufacturer.

6. Clean limestone units to comply with recommendations in the "Indiana Limestone Handbook" of the Indiana Limestone Institute of America.

E. Protection: Provide final protection and maintain conditions that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

END OF SECTION

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SECTION 04211- STONEWORK

PART 1- GENERAL

1.01 SUMMARY

A. Work Included: Provide stonework in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Stone panels, stone trim (such as decorative stone trim, cornice work, water table, base trim, etc.) and paving.

B. Related Sections include, but not limited to, the following:

1. Division 5 Section "Metal Fabrications"
2. Division S Section "Steel Doors and Frames"

1.02 SUBMITTALS

A. Product data for each different stone masonry unit, accessory, and other manufactured product specified.

B. Samples for verification of the following:

1. Full-size units for each different exposed stone masonry unit required showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.

2. Accessories embedded in the masonry.

3. Stone samples not less than 12 inches in length showing the full range of colors and textures expected in the finished construction.

C. Shop drawings for stone trim in the form of cutting and setting drawings showing sizes, profiles, and locations of each stone trim unit required.

D. Design stone anchors and anchoring systems according to ASTM C 1242 or New York City Building code whichever is more stringent.

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E. Calculations: Submit calculations for stone panel anchorage systems that are signed and sealed by a New York State licensed Professional Engineer and certified that anchorage system is in compliance with New York City Building Code.

1.03 QUALITY ASSURANCE

A. Single-Source Responsibility for Stone Units: Obtain exposed stone units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one source and by a single manufacturer for each different product required.

B. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

C. Mockup: Prior to installing stone, construct 2 foot by 2 foot sample wall panels to verify selections made under sample submittals and to demonstrate aesthetic effects of materials and execution. Build mockups to comply with the following requirements, using materials indicated for final unit of Work.

1. Notify Resident Engineer one week in advance of the dates and times when mockups will be constructed.

2. Protect accepted mockups from the elements with weather-resistant membrane.

3. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

a. Acceptance of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Resident Engineer in writing,

b. Acceptance of mockups does not constitute approval of deviations from the Contract Documents contained in mockups, unless such deviations are specifically approved by Resident Engineer in writing.

c. When directed, demolish and remove mockups from Project site.

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1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store stone and related materials on elevated platforms, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not install until they are in an air-dried condition.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.05 PROJECT CONDITIONS

- A. Protection: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of stonework to be left exposed. Immediately remove grout, mortar, and soil that come in contact with such stonework.
1. Protect base of walls from rain-splashed mud and mortar splatter by coverings spread on ground and over wall suffice.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit masonry damaged by frost or freezing conditions. Comply with the following requirements:
1. Cold-Weather Construction: When the ambient temperature is within the limits indicated, use the following procedures:
 - a. 40 to 32 deg F (4 to 0 deg C): Heat mixing water or sand to

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produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C).

b. 32 to 25 deg F (0 to -4 deg C): Heat mixing water or sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry.

c. 25 to 20 deg F (-4 to -7 deg C): Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F (4 deg C) if grouting. Use heat on both sides of walls under construction.

d. 20 deg F (-7 deg C) and Below: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F (4 deg C). Provide enclosures and use heat on both sides of walls under construction to maintain temperatures above 32 deg F (0 deg C) within the enclosures.

2. Cold-Weather Protection: When the mean daily temperature is within the limits indicated, provide the following protection:

a. 40 to 25 deg F (4 to -4 deg C): Cover masonry with a weather-resistant membrane for 48 hours after construction.

b. 25 to 20 deg F (-4 to -7 deg C): Cover masonry with insulating blankets or provide enclosure and heat for 48 hours after construction to prevent freezing. Install wind breaks when wind velocity exceeds 15 mi/hr (25 km/hr).

c. 20 deg F (-7 deg C) and Below: Provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 48 hours after construction.

3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried out, but not less than 7 days after completion of cleaning.

D. Hot-Weather Requirements: Protect stonework when temperature and humidity conditions produce excessive evaporation of water from mortar and grout.

1. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F (38 deg C) and above.

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PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

B. Portland Cement, Mortar Cement, Masonry Cement, and Lime:

1. Essroc Materials, Inc.
2. Glen-Gery Corporation.
3. Lafarge Corporation.
4. Lehigh Portland Cement Co.
5. Riverton Corporation (The).
6. Or an approved equal.

C. Mortar Pigments:

1. Davis Colors.
2. Lafarge Corporation.
3. Solomon Grind-Chem Services, Inc.
4. Or an approved equal.

D. Joint Reinforcement, Ties, and Anchors:

1. Dur-O-Wal, Inc.
2. Masonry Reinforcing Corp. of America.
3. National Wire Products Industries.

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4. Or an approved equal.

2.02 STONE

A. Limestone: Indiana oolitic limestone as quarried in Lawrence, Monroe, and Owen counties, Indiana; complying with ASTM C 568, Category H (medium density); and matching standards of the Indiana Limestone Institute of America (ILI) for the following:

1. Grade and Color: Select, buff and matching adjacent building.

2. Finish: Sawn.

B. Granite:

1. Granite Building Stone Standard: ASTM C 615.

2. Association Standard: "Specifications for Building Granite" of National Building Granite Quarries Association, Inc. (NBGQA).

3. Finish of Exterior Granite Veneer: Rubbed unless otherwise indicated.

4. Granite Color and Grain: Matching Deer Isle as manufactured by Fletcher Granite Company or New England Stone Industries, or approved equal.

C. Bluestone: ASTM C 616, and equal to North River Bluestone as manufactured by Heldaberg Bluestone and Marble or approved equal.

1. Finish: Natural cleft face with diamond rubbed finish unless otherwise indicated.

2. Color: Light grey-blue

D. Cut stone accurately to shape and dimensions indicated, with exposed faces dressed true, beds and joints at right angles to face; comply with ILI and NBGQA fabricating tolerances.

2.03 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C ISO, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Masonry Cement: ASTM C 91.

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1. For pigmented mortars, use premixed, colored masonry cements of formulation required to produce color indicated, or if not indicated, as selected from manufacturer's standard formulations. Pigments shall not exceed 5 percent of masonry cement by weight for mineral oxides nor 1 percent for carbon black.

2. For colored-aggregate mortars, use masonry cement of natural color or white as required to produce mortar color indicated.

C. Hydrated Lime: ASTM C 207, Type S.

D. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.

1. For pigmented mortars, use colored portland cement-lime mix of formulation required to produce color indicated, or if not indicated, as selected from manufacturer's standard formulations. Pigments shall not exceed 10 percent of portland cement by weight for mineral oxides nor 2 percent for carbon black.

E. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch (6.5 mm), use aggregate graded with 100 percent passing the No. 16 (1.18 mm) sieve.

1. White-Mortar Aggregates: Natural white sand or ground white stone.

2. Colored-Mortar Aggregates: Natural-colored sand or ground marble, granite, or other sound stone, as required to match Resident Engineer's sample.

F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes, Use only pigments with a record of satisfactory performance in masonry mortars.

G. Cold-Weather Admixture: Non-chloride, non-corrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.

H. Water: Potable.

I. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

1. Colored Masonry Cement:

a. Brixment-in-Color, Essroc Materials, Inc.

b. Centurion Colorbond; Lafarge Corporation.

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- Co.
- c. Lehigh Custom Color Masonry Cement; Lehigh Portland Cement
 - d. Flamingo Color Masonry Cement, Riverton Corporation (The).
 - e. Or an approved equal.

2. Colored Portland Cement-Lime Mix:

- a. Color Mortar Blend; Glen-Gery Corporation.
- b. Centurion Colorbond PL; Lafarge Corporation.
- c. Lehigh Custom Color Portland/Lime; Lehigh Portland Cement Co.
- d. Riverton Portland Cement Lime Custom Color; Riverton Corporation.
- e. Or an approved equal.

3. Mortar Pigments:

- a. True Tone Mortar Colors; Davis Colors.
- b. Centurion Pigments; Lafarge Corporation.
- c. SGS Mortar Colors; Solomon Grind-Chem Services, Inc.
- d. Or an approved equal.

4. Cold-Weather Admixture:

- a. Accelguard 80; Euclid Chemical Co.
- b. Monet, Grace: Wit. Grace & Co.
- c. Or an approved equal.

5. Water-Repellent Admixture:

- a. Dry-Block Mortar Admixture; Grace: W.R. Grace & Co.

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- b. Or an approved equal.

J. Latex additive (water emulsion) described below, serving as replacement for part or all of gaging water, of type specifically recommended by latex additive manufacturer for use with job-mixed portland cement and aggregate and not containing a retarder.

- 1. Latex Additive: Acrylic resin.

2.04 TIES AND ANCHORS, GENERAL

A. Fabricate anchors, including cramps, dowels, and shelf aniles, from stainless steel, ASTM A 666, Type 304, temper as required to support loads imposed without exceeding allowable design stresses.

- 1. Fasteners for Stainless-Steel Anchors: Annealed stainless-steel bolts, nuts, and washers; ASTM F 593 for bolts and ASTM F 594 for nuts, Alloy Group IAI.

2.05 MISCELLANEOUS ANCHORS

A. Dowels and Anchors: Provide dowels and attachments of type and size required to support stonework and fabricated from the following metals for conditions and anchors indicated below:

- 1. Stainless Steel, AISI Type 304, for anchors in direct contact with stone.

2.06 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Type 2, Class A, Grade I; compressible up to 35 percent, of width and thickness as required; formulated from the following material:

- 1. Neoprene.
- 2. Urethane.
- 3. Polyvinyl chloride.

2.07 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of 1/2-cup (0.14-L) dry measure tetrasodium polyphosphate and 1/2-cup (0. 14-L) dry measure laundry detergent

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dissolved in 1 gal. (4 L) of water.

B. Proprietary Acidic Cleaner: Manufacturer's standard-strength, general-purpose cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry surfaces of type indicated below without discoloring or damaging masonry surfaces; expressly approved for intended use by manufacturer of masonry units being cleaned.

1. For masonry not subject to metallic oxidation stains, use formulation consisting of a concentrated blend of surface-acting acids, chelating, and wetting agents.

2. For dark-colored masonry not subject to metallic oxidation stains, use formulation consisting of a liquid blend of surface-acting acids and special inhibitors.

3. For masonry subject to metallic oxidation stains, use formulation consisting of a liquid blend of organic and inorganic acids and special inhibitors.

4. Available Products: Subject to compliance with requirements, products that may be used to clean unit masonry surfaces include, but are not limited to, the following:

- a. 202 New Masonry Detergent Diedrich Technologies, Inc.
- b. 200 Lime Solv; Diedrich Technologies, Inc.
- c. 202V Vana-Stop; Diedrich Technologies, Inc. -
- d. Sure Klean No. 600 Detergent, ProSoCo, Inc.
- e. Sure Klean No. 101 Lime Solvent; ProSoCo., Inc.
- f. Sure Klean Vana Trol; ProSoCo, Inc.
- g. Or an approved equal.

2.08 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

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2. Add cold-weather admixture (if used) at the same rate for all mortar, regardless of weather conditions, in order to ensure that mortar color is consistent.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification, for types of mortar indicated below:

1. Limit cementitious materials in mortar to portland cement and lime. Type: S.

C. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required.

1. Limit pigments to the following percentages of cement content by weight:

a. For mineral oxide pigments and portland cement-lime mortar, not more than 10 percent.

b. For carbon-black pigment and portland cement-lime mortar, not more than 2 percent.

c. For mineral oxide pigments and masonry cement mortar, not more than 5 percent.

d. For carbon-black pigment and masonry cement mortar, not more than 1 percent.

D. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates combined with selected cementitious materials.

1. Mix to match existing adjoining mortar.

E. Latex-Modified Portland Cement Setting-Bed Mortar: Proportion and mix portland cement, aggregate, and latex additive for setting bed to comply with directions of latex additive manufacturer and as necessary to produce stiff mixture with a moist surface when bed is ready to receive payers.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of unit masonry. Do

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not proceed with installation until unsatisfactory conditions have been corrected.

B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.

3.02 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces of columns, walls, and arrises, do not exceed 1/4 inch in 10 feet (6mm in 3 m), nor 3/8 inch in 20 feet (10mm in 6 m), nor 1/2 inch in 40 feet (12 mm in 12 m) or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch in 40 feet (12 mm in 12 m) or more. For vertical alignment of head joints, do not exceed plus or minus 1/4 inch in 10 feet (6mm in 3 m), nor 1/2 inch (12 mm) maximum.

B. Variation from Level: For bed joints and lines of exposed horizontal grooves, and other conspicuous lines, do not exceed 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch in 40 feet (12mm in 12 m) or more. For top surface of bearing walls, do not exceed 1/8 inch (3mm) in 10 feet (3 m), nor 1/16 inch (1.5mm) within width of a single unit.

C. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4 inch (6 mm) nor plus 1/2 inch (12 mm).

D. Variation in Mortar-Joint Thickness: Do not vary from bed-joint thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm). Do not vary bed-joint thickness from bed-joint thickness of adjacent course by more than 1/8 inch (3 mm). Do not vary from head-joint thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary head-joint thickness from adjacent head-joint thickness by more than 1/8 inch (3 mm). Do not vary from collar-joint thickness indicated by more than minus 1/4 inch (6 mm) or plus 3/8 inch (10mm).

3.03 MORTAR BEDDING AND JOINTING

A. Set stone units in full bed of mortar with vertical joints slushed full. Fill dowel, anchor, and similar holes solid. Wet stone-joint surface thoroughly before setting; for stone surfaces that are soiled, clean bedding and exposed surfaces with fiber brush and soap powder and rinse thoroughly with clear water.

B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

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3.04 SETTING STONE

A. Execute stonework by skilled mechanics, and employ skilled stone fitters at the site to do necessary field cutting as stones are set.

1. Where field cutting is required use power saws to cut stones; for exposed edges, produce edges which are cut straight and true.

B. Contiguous Work: Provide chases, reveals, reglets, openings and other spaces as indicated for accommodating contiguous work. Close-up openings in stonework after other work is in place with stonework which matches that already set. Build in stainless steel flashing and weep holes.

C. Set stones to comply with requirements indicated on drawings and final shop drawings. Install anchors, supports, fasteners and other attachments indicated or necessary to secure stonework in place. Shim and adjust anchors, supports and accessories to set stones accurately in locations indicated with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances.

D. Construction Tolerances: Set stones to comply with the following tolerances:

1. Variation from Plumb: For lines and surfaces and arrises, do not exceed 1/4" in 10'.

2. Variation from Level: For grades indicated for horizontal grooves and other conspicuous lines, do not exceed 1/2" in any bay or 20' maximum, nor 3/4" in 40' or more.

3. Variation of Linear Building Line: For position shown in plan, do not exceed 1/2" in any bay or 20" maximum., nor 3/4" in 40' or more.

4. Variation in Cross-Sectional Dimensions: From dimensions indicated, do not exceed minus 1/4", nor plus 1/2".

E. Provide expansion joints, control joints and pressure relieving joints of widths and at locations indicated.

1. Sealing expansion and other joints is specified in Division-7 Section "Joint Sealers".

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2. Do not fill with mortar.
- F. Wet stones which are dry at time of setting by drenching or sponging them with water.
- G. Set stones in full bed of mortar with vertical joints slashed full, unless otherwise indicated.
1. Place setting buttons of adequate size, in sufficient quantity, and of same thickness as indicated joint width, to prevent mortar from squeezing out and to maintain uniform joint widths, Hold buttons at least one joint width back from face of stones.
 2. Do not set heavy stones or projecting courses until mortar in courses below has hardened sufficiently to resist being squeezed out of joint.
 3. Fill anchor holes with mortar.
- H. Rake out mortar from joints to depths equal to 2-1/2 times their widths but not less than 1/2" nor less than that required to expose' sound mortar for joints pointed with mortar, or to provide sufficient depth for sealant and sealant backing for joints pointed with sealants.
- I. Prepare stone joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply first layer of pointing mortar in layers not greater than 3/8" until a uniform depth is *formed*; compact each layer thoroughly and allow to become thumbprint hard before applying next layer.
- J. Point stone joints by placing pointing mortar in 3 layers with each of first and second layers filling approximately two-fifths of joint depth and third layer remaining one-fifth. Fully compact each layer and allow to become thumbprint hard before applying next layer.
- K. Tool joints with a round joiner having a diameter 1/8" larger than width of joint, when pointing mortar is thumbprint hard.

3.05 STONE PAVER INSTALLATION

- A. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.

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B. Apply cement-paste slush coat over surface of concrete subbase about 15 minutes prior to placing setting bed. Limit area of slush coat to avoid its drying out prior to placing setting bed. Do not exceed 1/16-inch (1.6-mm) thickness for cement slush coat.

C. Apply mortar setting bed over cement-paste slush coat immediately after latter has been applied. Spread and screed setting bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.

D. Mix and place only that amount of mortar setting bed that can be covered with pavers prior to initial set. Cut back, bevel edge, remove, and discard setting-bed material that has reached initial set prior to placing pavers.

E. Wet pavers prior to laying if the initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67. Allow units to absorb the water so that they are damp but not wet at the time of laying.

F. Place pavers before initial set of cement occurs. Immediately prior to placing pavers on green or wet setting bed, apply uniform 1/16-inch- (1 .5-mm-) thick slurry bond coat to bed or to back of each paver with a flat trowel.

G. Tamp and beat pavers with a wooden block or rubber mallet to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each paver in a single operation prior to initial set of mortar; do not return to areas already set and disturb pavers for purposes of realigning finished surfaces or adjusting joints.

H. Spaced Joint Widths: Provide nominal joint width of 3/8 inch (10 mm), unless otherwise indicated, with variations not exceeding plus or minus 1/16 inch (1.5 mm).

I. Grout joints as soon as possible after initial set of setting bed. Force grout into joints, taking care not to smear grout on adjoining pavers and other surfaces. After initial set of grout, finish joints by tooling to produce a slightly concave polished joint, free from drying cracks.

J. Cure grout by maintaining in a damp condition for 7 days except as otherwise recommended by latex additive manufacturer.

3.06 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units; install in fresh mortar or grout, pointed to eliminate evidence of replacement.

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B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point-up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for application of sealants.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears prior to tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Resident Engineer's approval of sample cleaning before proceeding with cleaning of masonry.

3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

4. Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.

5. Clean limestone units to comply with recommendations in the "Indiana Limestone Handbook" of the Indiana Limestone Institute of America.

E. Protection: Provide final protection and maintain conditions that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

END OF SECTION

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SECTION 04500 - EXTERIOR STONE MASONRY RESTORATION

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide exterior stone restoration work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Furnish and install new stone dutchmen (stone inserts) in broken or damaged stones where damage is larger than four square inches.
2. Grout and patch holes and losses in stone caused by removal of anchors and attachments.
3. Repair cracks and surface damage in marble with custom colored polyester patching compounds.
4. Reattach broken stone pieces by means of a "stone to stone repair".

B. Related Work Specified Elsewhere:

1. Restoration Mortar - Section 04100
2. Unit Masonry - Section 04200
3. Stonework – Section 04211
4. Masonry Cleaning - Section 04520
5. Joint Sealers - Section 07900

1.02 QUALITY ASSURANCE

A. Engage an experienced firm that has recently completed Exterior Stone Masonry Restoration projects similar in scope, cost, material, design, and extent to that indicated by this section (i.e. exterior work on buildings that are considered to be landmark, landmark quality or buildings of equivalent historical or architectural significance) and whose work has resulted in construction with a record of successful in-service

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performance.

B. Source of Materials: Obtain materials for masonry restoration from a single source for each type of material required to ensure a match in quality, color and texture,

C. Field Supervised Construction: Contractor shall notify Resident Engineer before beginning masonry restoration. Obtain the Resident Engineer's approval of the installation of restored masonry before proceeding with the remainder of the work.

D. The Contractor shall replace all broken, lost and damaged masonry resulting from repair, removal, transportation, cleaning or storing at no expense to the City

E. In acceptance or rejection of this work, no account shall be taken (nor excuses received) for incompetence or lack of skill on the pan of the workmen.

F. The Contractor shall maintain a steady work crew consisting of skilled craftsmen who are experienced with the materials and methods specified and familiar with the design requirements, and a full time foreman who speaks and reads the English language fluently. The Contractor shall confirm that all workmen under his direction fully understand the requirements of the job.

1. Stonework shall be executed by skilled mechanics, thoroughly trained and familiar with the methods required. Skilled stonefitters shall be employed at the site to do necessary' field cutting.

1.03 SUBMITTALS

A. Program of Work: Submit a written program for each restoration phase of this Contract., include protection of surrounding materials on the building and site, and adjoining properties, during operations.

1. Include detailed description of materials, methods, and equipment to be used for each phase of the work of the Contract

2. Include written descriptions, drawings, and diagrams, outlining proposed methods and procedures for protection of personnel, the public, and the existing construction during the Work of this Section.

3. If alternate methods and materials to those specified are proposed for any phase of the restoration work, provide written description. Provide evidence of successful use on comparable projects and demonstrate its effectiveness for use on this project.

B. Product Literatures: The Contractor shall submit three (3) copies of the

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manufacturer's technical data for each product including their recommendations for application and use. Include test reports and certificates that verify the product's compliance with the specification's requirement,

C. Shop Drawings:

1. Submit complete shop drawings of all cut stone work to the Resident Engineer for his approval. These drawings, when viewed together, shall show all details of bedding, bonding, jointing, anchoring and other essential aspects of the work, in addition, the finish, dimensions and setting number of each piece of stone shall be shown.

2. The Contractor shall be responsible for all field measurements and the preparation of setting drawings fully defining the conditions for the installation of all stone masonry and dutchman repairs. The Contractor shall review, approve and countersign the setting drawings prior to their submission to the Resident Engineer.

3. The cut stone fabricator shall prepare all shop drawings, fully defining the conditions for fabricating, finishing and fastening all cut stone and dutchmen.

D. Samples:

1. Submit sufficient sets of three (3) 12" x 12" samples of cut stone for Dutchmen to show the full range of color, texture, and finish proposed for the work. Upon approval by the Resident Engineer, one (1) full set shall be returned to the Contractor for his use as a reference standard during the conduct of the work. This set shall be kept on the job site for easy reference throughout the course of construction.

2. Submit samples of all attachments anchors, inserts, and fastening.

3. Submit copies of all manufacturers' printed materials and instructions, and material safety data sheets (MSDS)

1.04 MOCK-UPS

A. Mockup Panels:

1. Submit mockup panels for the Resident Engineer's approval. Resubmit panels until the Resident Engineer is fully satisfied, Mockup panels shall be prepared by the Contractor using the same workmen, methods and materials that will be employed for the remainder of the work. At the discretion of the Resident Engineer, mockups shall be prepared in the presence of the Resident Engineer.

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2. Prepare the following mockup panels, in locations selected by the Resident Engineer.

a. Dutchman stone repair. Panel shall be no less than 2 square feet, and shall, at the discretion of the Resident Engineer contain one or more dutchmen.

b. Stone patch using custom patching mortar, minimum twelve square inches,

3. Contractor shall protect approved mockup panels for the duration of the work. Approved mockups shall constitute a standard for approving subsequent work.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Work shall not be permitted in freezing weather, or when temperature of the air or wall is expected to freeze within 48 hours of work. The Contractor shall take all necessary precautions to protect the building and materials from freezing during treatment. No work shall begin when any part of the wall, or materials in use are frozen, or subject to freezing temperatures.

B. Protect completed masonry and adjacent masonry to be pointed in the following manner. Temperature ranges indicated apply to mean daily air temperatures except for grouted masonry. For routed masonry temperature ranges the following apply to anticipated minimum night temperatures.

1. 40° deg F to 32° deg F: Protect masonry from rain or snow for at least 24 hours by covering with weather-resistive membrane.

2. 32° deg F to 20° deg F: Completely cover masonry with weather-resistive insulating blankets or similar protection for at least 24 hours, 48 hours for grouted masonry.

3. 20° deg F and below: Except as otherwise indicated, maintain masonry temperature above 32° F for 24 hours using enclosures and supplementary heat, electric heating blankets, infrared lamps or other methods proven to be satisfactory. For grouted masonry maintain heated enclosure to 40° deg F for 48 hours.

C. Cold weather construction shall adhere to the published guidelines in "Cold Weather Masonry Construction and Protection Requirements," Brick institute of America, latest edition.

D. Materials shall be used only at the manufacturer's recommended temperature

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tolerances for masonry materials.

E. The work shall be protected during hot weather from premature or rapid curing by the use of dampened fabric coverings.

1.06 DEFINITIONS

A. As used here the term “Dutchman” refers to any new or salvaged stone fitted into the existing facade stone.

B. “Stone-to-Stone” repairs refer to conditions where the original stone piece still exists and can be pinned directly back into its original location or to its mated portion.

C. As used here “plug” refers to a circular dutchman drilled out of existing stone

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide new stone for dutchmen to match existing stone in color and tenure. All exposed surfaces shall have finish to match existing. Ends and planes shall be square, dressed uniformly, and free of projections, mars, chips or depressions.

1. Limestone shall be Indiana Limestone, Select Grade, ASTM C-568. Fabrication shall comply with recommendations of the Indiana Limestone Institute of America.

2. Marble shall comply with the requirements of ASTM C-503. Fabrication shall comply with recommendations of the Marble Institute of America, Inc. (MM) as published in “Dimension Stone Design Manual III.”

3. Granite shall comply with requirements of ASTM C 615, Architectural Grade, and National Building Granite Quarries Association, Inc., for color and finish qualities.

B. Anchors and Fastenings for Stone Masonry:

1. Anchors and fastenings shall be stainless steel Type 302 or 304.

2. Expansion bolts, cinch bolts and plugs shall not be acceptable.

C. Detergent: Non-ionic type, “KRC Ion 417,” manufactured by Chemique, Inc. Moorestown, NJ, 08057, or approved equal.

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D. Mortar:

1. Latex-modified mortar materials for “thin set” and “thick set” setting of stone dutchmen shall conform to the Materials and Mixtures specified in Section 04100~

E. Patching Material:

1. Mortar for patching limestone shall be custom-matched patching materials specifically prepared by the manufacturer to match the existing cleaned masonry color, texture and composition, and shall be “Jahn restoration mortar M70” as manufactured by Cathedral Stone, 2505 Reed Sweet, N.E., Washington, o.c. 20018, (202) 832-1135, or approved equal.

2. Patching material for Marble: 2-component Akemi Knife Grade Polyester adhesive, manufactured by Akemi Plastics, Inc., Eaton Rapids, ML, or approved equal,

F. Adhesive for attaching anchors: High modulus, high strength, moisture insensitive epoxy adhesive. Adhesive shall be two-component 100% solids, epoxy resin system with a viscosity similar to petroleum jelly, such as Sikadur Hi-Mod Gel, as manufactured by Sib Corporation, Lyndhurst, NJ, (201) 933-8800, or approved equal.

G. Adhesive for stone to stone repairs and crack injection: High modulus, high strength, moisture insensitive, low viscosity epoxy adhesive complying with ASTM C881-90, Types 1, II, III, IV, & V, Grade 1.

1. Provide Sikadur 35 Hi-Mod LV, as manufactured by Sika Corporation, Lyndhurst, NJ, (201) 933-8800, or approved equal.

K. Threaded rod for masonry patching: 3/8” minimum diameter threaded teflon rod.

L. Anchors for face pinning: Minimum 3/8” diameter threaded stainless steel adhesive anchors with screen tubes. Provide Hilti HIT HY150 anchors as manufactured by Hilti Corp, or approved equal.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall be fully responsible for the proper execution and performance of the work described herein, It shall be the Contractors responsibility to inspect all surface conditions and correct any conditions, which may affect his work adversely. Stonework shall be executed by skilled mechanics, thoroughly trained and

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familiar with the methods required. Skilled stonefitters shall be employed at the site to do necessary field cutting.

B. All treatments, including the installation of dutchman, new incisions into the stone, etc. shall have a minimum visual impact in the interest of preserving as much existing stone as possible.

C. As related to the work of this Contract, areas to be patched with natural stone dutchman include severely spalled locations, and stone that would visually detract or otherwise be unacceptable if left unrepaired.

3.02 SETTING STONE DUTCHMEN

A. Use Laticrete 3702 to produce high strength "thick set" mortar. Stone must be temporarily held in place with nylon wedges or other means until the mortar has sufficiently set

B. "Thin set" mortars for special conditions shall employ Laticrete 4237. Use "thin set" mortar when the mortar bed is less than 3/8" thick to produce an initially tacky mortar exhibiting high strength properties when set.

C. Provide a minimum of two (2) metal attachments for setting each stone Dutchman.

1. All wire, pins, anchors, and bars shall be stainless steel, Type 302 and 304.

a. 1/8" diameter round stock, stainless steel wire with turned up ends for small veneers.

b. 1/4" or 3/8" diameter round stock, stainless steel rod for direct pinning and drop dowels.

c. 1" wide, 1/8" thick, stainless steel, flat swap anchors for larger panels.

2. The quantity of individual attachments shall not be less than two attachments for each dutchmen, and one additional attachment for every two square feet.

3. All attachments shall be fastened by mechanical locking, in addition to appropriate adhesives and mortars.

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D. Adhesives for attaching anchors and for direct pinning:

1. Where permitted, anchors may be held in place with high modulus, high strength, moisture insensitive, epoxy adhesive, as specified.

E. General Method for Dutchman Repair of Stone:

1. All replacement stone for the restoration of all defects indicated on the contract drawings, shall be new stone. These repairs involving "new" material (referred to as "Dutchmen") shall vary in overall size, but shall not be less than 3" thick under any circumstance. New stone shall be carefully cut and selected to be sound and in good condition, free of defects, cracks, breaks, or other observable defects.

2. Dutchman shall be fastened with stainless steel wire, pins, and anchors, as necessary, designed to facilitate mechanical locking and to prevent possible slippage of the stone. The metal fasteners shall be positioned without weakening the stone in any way.

3. Cement mortar containing "Laticrete" latex emulsion additives shall be used for all setting purposes. All insertions shall be fully dressed on all sides, and carefully fitted to the patch opening, with an allowance of not more than 1/8" buttered joint between front edges. Undercutting shall not weaken the stone in any way. The joints between new and old work shall be finished to match the color and texture of the stone.

4. The surface of the new stone shall be dressed to resemble the appearance, tooling and texture of the-adjointing stone by an approved method. All surface dressing of new work shall be done before the stone is set.

5. Protect the adjacent materials during the process of stone restoration. Wipe and rinse any mortar accidentally splashed onto adjacent surfaces immediately. Clean uncured epoxy adhesive immediately with acetone.

a. Any damage to stone or materials to remain resulting from epoxy and mortar spills shall be restored to the full satisfaction of the Resident Engineer at no additional cost to the City.

6. The face of all new stone patches shall be cleaned following the completion of all setting work. Clean mortar splashes, smears, etc. with scrapers, or by vigorously brushing with stiff natural bristle brushes and potable water. If necessary, clean white sand may be added to the water. Cleaning shall start at the top of the structure and proceed downward.

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3.03 STONE-TO-STONE REPAIRS

- A. The re-attachment of broken or loose stone sections using a concealed repair is preferable to the fabrication of new stone pieces.
- B. To execute a concealed repair the following procedure shall be used. Holes shall be drilled into the fractured inner surface of each of the 2 pieces of stone to be reunited. The pieces shall be then fastened with stainless steel dowels embedded in epoxy adhesive, which shall be applied to both faces of the break. Only in situations involving the detachment of a very shallow fragment shall simple adhesive repair be acceptable.
- C. Particular care must be taken to ensure that all edges of the stone are perfectly aligned when marking out dowel holes.

3.04 STONE PATCHING

A. Removal of Material:

1. Examine limestone blocks for deteriorated areas. During this examination, consult the Resident Engineer whose opinion about removal of deteriorated stone will be final.
2. Remove deteriorated stone to the minimum depth necessary to reach sound material or substrate, or 1/2 inch, whichever is greater. Exercise care that sound masonry is not damaged or disturbed. Chipping of edges will not be permitted.
3. Cut edges of areas where stone has been removed straight and parallel or perpendicular to the joints in the facade.
4. Where the surface of the damaged stone is greater than 3/8" behind the plane of the adjacent block, slightly undercut the edges of the area to be patched to provide a slight dovetail. The rear surface of any flat area to be repaired shall be drilled with 1/2" diameter holes 1/2" deep spaced 2" to 3" apart in staggered rows to allow for mechanical bond of the patch. Vary the angles of these holes. Brush clean the areas to be patched.

B. Additional Mechanical Bond for Deep Patches:

1. If the surface of the sound stone is more than 2" below the plane of the facade drill additional holes 1" deep by 1/8" larger in diameter than the rods, 5" on center horizontally and vertically (one for every 25 square inches of surface to be patched).
2. Anchor threaded teflon rods in holes with epoxy gel. Rods should extend

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to a point 1" behind the surface of the finish patch.

C. Preparation:

1. Clean surfaces to be patched and filled so that they are free from all dust, dirt, oils, grease, and other substances or coatings that might in any way affect the adhesion of the filling and patching material.

2. Protect surrounding surfaces by all means necessary to keep them free from patching materials. Brush masonry to be patched with stiff natural bristle brushes and compressed air to make certain that all loose materials have been removed.

D. Application:

1. Preparation: Clean and prepare all areas to be patched as specified above.

2. Wetting: Wash surface of the prepared stone with clean, clear water and non-ferrous soft bristle brushes to remove all traces of oil, grease, scaling, dirt, dust, and friable material. The surface must be rewet prior the application of each coat.

3. Application of Patching Mortar: Repair involves a built-up system consisting of a thin slurry coat, several scratch coats (the number to be determined by the depth of the area to be patched), and a finish coat. Proceed as follows:

a. Apply thin Slurry Coat with a brush and rub vigorously into the surface.

b. Press first Scratch Coat into the slurry coat while the slurry coat is still moist. Score or punch this new surface before initial drying to provide a key for subsequent scratch coats or finish coat. No coat shall exceed 3/8" in thickness. Approximately two to four hours should be allowed for initial cure of scratch coat before the succeeding scratch or finish coat is applied.

c. The surface must be rewet prior to the application of each coat.

d. Apply the Finish Coat once the patch has received sufficient scratch coats to leave less than 3/8" to line of desired finish surface. Carefully match the original profile and texture.

e. Curing: During application of each coat, control premature drying and subsequent cracking by misting the application with water. Care shall be taken to keep the mist very gentle so that it does not wash any of the binder from the mixture.

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f. Patch Depth: The depth of the patch shall be a minimum of 3/8" at its thinnest point. No feather edges or skim coats of patching material shall be permitted. If any patch is determined to be less than 3/8", it shall be cut out, and a new patch applied in accordance with these specifications at no additional cost to the City.

4. Finishing: After the patch is partially cured to leather hardness, it may be dry troweled or damp sponged to give it a finish approximating as closely as possible that of the original stone. Alternately, after the patch is completely cured, it may be honed with dry *and* wet abrasive stones to achieve the desired finish. Samples of the different finishes shall be prepared for the Resident Engineer's approval before any patching is begun. The patching shall not begin until the Resident Engineer has given his written approval of the finishes and the methods used to achieve them.

5. Unacceptable Conditions: Separation at the edges of the patch and hairline cracking will not -be acceptable. Unacceptable patches will be removed and refilled as directed at the contractor's expense.

6. Remove any excess patching material or dirt from all masonry surfaces and leave all surfaces uniformly clean with no steaks or stains.

E. Corrective Measures:

1. Should any cracks occur on the surface of the patch, cut out the patch and reapply following the requirements of these specifications to the satisfaction of the Resident Engineer, at no extra cost to the City.

2. Should the Resident Engineer determine that any of the work does not equal or exceed the minimum standard established by the approved test area, the Contractor shall cut out the patch and reapply following the requirements of these specifications to the satisfaction of the Resident Engineer.

3.05 CLEANING

A. The face of all cut stonework shall be thoroughly cleaned after completion of the setting and other work liable to damage or soil the stone. The stonework shall be gone over and any mortar splashes, or smears, and any other encrusted matter carefully removed from the surface by scrapers or carborundum bricks and any indurated discoloration from soot or other causes where such soiling occurs shall be removed, leaving the stone in condition for a thorough cleaning.

B. The cleaning shall be done with non-ionic detergent and clean water applied vigorously with fiber brushes. After cleaning, the stone shall be drenched with clear

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water.

C. The cleaning operation shall start at the top of the structure and proceed downward.

D. This cleaning shall be in addition to the Masonry Cleaning specified in Section 04520.

END OF SECTION

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SECTION 04515 - MASONRY POINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide masonry pointing work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Where indicated, removal of existing mortar, preparation of the surfaces, installation of new mortar, tooling of the joints, and cleaning of any excess mortar from the joints or surfaces of the masonry.

B. Related work specified elsewhere:

1. Restoration Mortar is specified in Section 04100.
2. Exterior Stone Masonry Restoration is specified in Section 04500.
3. Masonry Cleaning is specified in Section 04520.

1.02 QUALITY ASSURANCE

A. Engage an experienced firm that has recently completed Masonry Pointing projects similar in scope, cost, material, design, and extent to that indicated by this section (i.e. masonry pointing on buildings that are considered to be landmark, landmark quality or buildings of equivalent historical or architectural significance) and whose work has resulted in construction with a record of successful in-service performance.

B. Qualification of Personnel: Use adequate number of skilled and competent workmen who are thoroughly trained and experienced in the necessary crafts and men who are familiar with the specified requirements of restoration of historic buildings and the methods needed for proper performance of the work of this Section - the equivalent to a "master mason".

1. A foreman who speaks and reads the English language fluently shall be on the job site at all times work is being performed. The Contractor shall confirm that all

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workmen under his direction fully understand the requirements of the job.

C. Testing of Workers: All technicians planned for use on the job will be required to successfully complete five linear feet of cutting and raking of mortar joints in the presence of the Resident Engineer prior to working on the job. One-quarter inch chip of masonry per linear yard will be the standard of acceptable skill. Unsuccessful performance in this test area will be grounds for rejection of this technician for this job.

D. In acceptance or rejection of work no allowance will be made for lack of skill or competence on part of workers.

1.03 SUBMITTALS

A. Mortars: Submit, for approval by the Resident Engineer, samples of all mortars required for the work of this Section.

B. Test Panels:

1. After Resident Engineer's preliminary approval of mortar composition, Contractor shall point 4' x 4' test panels, including at least 8 linear feet of joint, following the requirements of this specification for each different kind or type of material to be pointed or of pointing mortar to be used. Allow mortar to dry so that its final color can be determined. Notify Resident Engineer when test area is ready for approval. No further pointing work shall be done until the Resident Engineer has approved the test area.

2. The Contractor shall resubmit panels until the Resident Engineer is fully satisfied. No work shall proceed until approval of the mockups. Approved mockups may be incorporated into the work. All samples shall be in locations acceptable to the Resident Engineer and accessible for review by the Owner, Resident Engineer, and their designees. The Resident Engineer will monitor all work. Provide scaffolds and ladders as required for review of panels.

3. The approved test panels will be covered for the remainder of the work and will represent the minimum acceptable standard for the pointing work for that particular combination of masonry and mortar.

1.04 JOB CONDITIONS

A. Perform all work of this Section following all applicable Federal, State, and Local health, safety, and environmental requirements.

B. Take all necessary precautions to protect workers, residents, public, and neighbors from the work of this Section.

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C. Minimize dispersing of dust to the greatest extent possible.

1. This contractor shall hold City and its Consultants harmless from all claims relating to dust resulting from the work of this Section.

D. All necessary care shall be used to protect existing stone and other masonry from damage during the work of this Section. Special care shall be taken in removing existing mortar to insure that no arises are damaged, chipped, or broken. Any stone damaged in any manner whatsoever shall be repaired or replaced by the Contractor as directed by the Resident Engineer and to his complete satisfaction at no cost to the City,

E. Staining: Prevent grout or mortar from staining the face of masonry to be left exposed. Protect sills, ledges, and projections from droppings of mortar. Immediately remove grout or mortar in touch with such masonry. Protect base of walls from rain splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

F. Cold Weather Protection: Do not point when air or masonry temperature is below 40 deg F (15.5 deg C) or when it is expected to drop below 40 degrees Fahrenheit within 48 hours of the application of the mortar.

1. Remove all pointing determined by the Resident Engineer to be damaged by freezing conditions and repoint following these specifications to the satisfaction of the Resident Engineer.

G. Protection from Rain: Protect all pointed joints with heavy waterproof sheeting from *any* direct attack by rain or other precipitation for at least 24 hours after mortar has been applied.

H. Protect all joints shown to be caulked or sealed from mortar and from any other substances that might adversely affect the adhesion of the sealant.

PART 2 - PRODUCTS

2.01 TOOLS

A. Hand tools only shall be used for removal of mortar from vertical brick joints. Power tools shall not be used to rind out those joints. Hand held electric grinders with 4 1/2" diameter, 1/8" thick diamond blades may be used to remove mortar from horizontal joints only with the approval of the Resident Engineer.

B. Chisels shall be narrower than the joints in which they are used.

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- C. Brushes shall be stiff, natural bristle brushes.
- D. Trowels used for pointing shall be long, thin pointing trowels that are narrower than the joints being pointed. It may be necessary to custom fabricate such tools

2.02 MORTAR: See Section 04100.

2.03 CLEANER

A. Chemical cleaner formulated specifically to remove mortar smears from masonry. Provide Vanatrol, or Lime Solvent, manufactured by Prosoco, Inc., Kansas City, Kansas, or approved equal.

PART 3 - EXECUTION

3.01 PREPARATION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work, such as metal fasteners, wires and cables, loose masonry, etc. Do not proceed until unsatisfactory conditions are corrected.

B. Before using power grinders, erect dust impervious barriers to prevent the escape of grinding dust. Take all other necessary measures to prevent grinding dust from traveling beyond the work platform.

C. Remove mortar from all joints containing mortar to a depth of at least 3/4" or to sound mortar, whichever is greater, but in all cases all weathered and loose material shall be removed..

1. Use hand tools on vertical joints, brick arches, brick reveals, and mortar joints less than 6" long.

a. For narrow joints 1/8" or less, mortar shall be raked out manually with a sharp knife blade or cutter made for this purpose. The cutter may be used with or without the aid of a hammer.

b. Sharpen chisels hourly to minimize chipping.

2. Power grinders shall not be used to remove mortar from joints less than

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3/16" wide or for the raking out of vertical (head) mortar joints.

D. Special precautions shall be taken to ensure that masonry faces and arises are not damaged during the process of joint cutting or repointing.

E. All joint cutting shall cease if, in the judgment of the Resident Engineer, the methods employed by the Contractor are causing damage to the brick. No work shall commence until tools, workmen, and methodology are corrected to meet the quality standard of the test panel.

F. Remove all mortar from the surface of the brick within the joint so that new mortar bonds directly to the masonry, and bottom of the joint is uniform and roughly perpendicular.

G. Remove all mortar and foreign material from raked joints; clean joint edges; use fine stiff natural bristle brush or compressed air to remove granular particles and dust.

H. The Contractor shall replace all brick damaged during the raking process at no cost to Owner.

3.02 POWER TOOL MORTAR REMOVAL

A. Contractor shall demonstrate that all workmen repointing using power tools are proficient in the use of power tools for preparing joints for repointing prior to commencing with the work. Failure to demonstrate to the Resident Engineer's satisfaction that each worker is proficient, and that power tool joint preparation does not result in damage to the masonry to remain shall result in the prohibition of the use of power tools for preparing joints. If proficiency is not demonstrated, or if work in progress results in damage to masonry to remain, all power tool preparation shall cease, and joints shall be prepared using hand tools.

B. Do not use blades thicker than 3/32" for scoring joints.

C. Power tools shall be used to remove mortar from joints only as allowed by Article 3.01 above.

1. In addition, power tools shall not be used to remove mortar from vertical joints less than 1-1/8 times the diameter of the blade.

D. The power tool cut shall made be in the center of the joint. Only one kerf cut shall be made in each joint. Remove the remaining mortar using hand tools. The contractor shall set the depth of the blade so that the resulting kerf does not exceed the minimum

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depth:

E. Stop the kerf a minimum 3/4 times the blade diameter from inside comets and projecting elements. Remove the remaining mortar using hand tools.

F. The Contractor may construct jigs to guide the power tools and to prevent damage to adjacent masonry.

3.03 APPLICATION

A. Wet brick 24 hours prior to pointing and again immediately before. The surfaces should not rapidly absorb moisture, but they should have no standing water and should not be wet at time of mortar application.

B. Apply pointing mortar tightly in layers of 1/4" to fill joint to match original sound joints with a long thin pointing trowel having a blade that is narrower than the width of the joints. Firmly iron each layer to compact mortar to ensure a fill bond between mortar and masonry and to form a firm, solid joint." After one layer of mortar has set, apply another layer as necessary to completely fill the joint. Do not let the previous layer dry out before applying succeeding layer. Construct uniform joints.

1. It may be necessary to custom fabricate pointing trowels that are thinner than the joints.

C. Tool joints after final layer is "leather hard" with a flat rule jointer, or as directed by the Resident Engineer.

D. Keep joints damp for at least 48 hours, or until surface is cured.

E. Maintain temperature as required until joint is cured.

F. When stopping work, at the end of each day or for other reasons, stagger the layers of mortar so that there will be no through joints in the pointing. Stagger the joints in the layers so that they are at least three inches (3") from each other.

G. Where one day's work joins that of the previous day, dampen the previous work so that a good bond will be formed.

3.04 JOINT TOOLING

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A. Tool the joints as shown on the drawings or to match original as directed by the Resident Engineer. Take care to compress the mortar so that it adheres well to the masonry on both sides and forms a dense surface. Premature or late tooling will result in unacceptable finishes that will be rejected.

B. Duplicate existing finish on adjacent historic joints by brushing the newly pointed joints with a nonmetallic bristle brush to produce a slight tenure.

3.05 CURING

A. Keep newly pointed joints damp for at least 48 hours after the mortar has been inserted. Do not apply a direct stream of water to the joints for at least 24 hours after the mortar has been placed.

3.06 CLEANING OF MORTAR JOINTS

A. All repointed mortar joints shall be washed with plain clean water to remove mortar debris from masonry surfaces. Washing shall be done within 48 hours following completion of repointing. Chemical cleaning shall be used where mortar stains are persistent. Conduct chemical cleaning only with prior approval of the Resident Engineer. The following procedure shall be employed for chemical cleaning:

1. Pre-wet wall with water.
2. Brush or spray specified cleaner evenly until both the brick and mortar joints obtain a uniform effect. Do not use wire brushes for cleaning.
3. Rinse wall with water pumped at 300 psi or less to remove all traces of chemical, and without damaging mortar or brick.
4. Follow manufacturer's directions for proper dilution, application, and protection for the use of this product.
5. Water shall be filtered through size 20-micron particulate cartridge filters to remove particulate matter from the water supply. Water shall be taken from the building water supply.
6. Water run-off shall be collected in a manner approved by the Resident Engineer at the base of each wall and troughed to a drain or sewer. Water shall not be permitted to collect or pond on the roof.

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- B. As the cleaning progresses, examine all joints in the work to locate cracks, holes and other defects in same and carefully point up and fill with mortar such defects. Where necessary, in the opinion of the Resident Engineer, cut out joints and reset with pointing mortar exercising extreme care to insure the same color with that of the original work.
- C. All exposed surfaces shall be free from protruding mortar, holes in joints and similar defects.

3.07 CORRECTIVE MEASURES

- A. Should any cracks occur in the surface of the joint, cut out the mortar and repoint following the requirements of these specifications to the satisfaction of the Resident Engineer.
- B. Should the Resident Engineer determine that any of the work does not equal or exceed the minimum standard established by the approved test area, the Contractor shall cut out the mortar and repoint following the requirements of these specifications to the satisfaction of the Resident Engineer.

END OF SECTION

SECTION 04520 - MASONRY CLEANING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide all labor and materials for interior and exterior masonry cleaning work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. General cleaning of brick masonry using chemical cleaners and pressurized water rinse.
2. General cleaning of interior stone masonry using chemical cleaners and pressured-water rinse.
3. General cleaning of granite or sandstone masonry using chemical cleaners and pressurized water rinse
4. Clean biological growth from exterior masonry using chemical cleaners, biocides, and low pressure water rinses.
5. Remove efflorescences and gypsum crusts from masonry using poultices and water misting.
6. Protect pedestrian and vehicular traffic, adjacent materials and buildings, and building occupants and contents during cleaning.
7. Collect and properly dispose of all solid and liquid wastes in accordance with current governmental regulations.
8. Comply with OSHA, EPA and NYC DEP regulations.
9. Clean all masonry and stone surfaces as directed by the Project Manager or the Department of Correction representative. Surfaces shall include but not limited to walls, floors, ceilings, trim, baseboards, etc.

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1.02 QUALITY ASSURANCE

A. The Contractor shall engage an experienced firm that has recently completed Masonry Cleaning projects similar in scope, cost, material, design, and extent to that indicated by this section (i.e. masonry cleaning on buildings that are considered to be landmark, landmark quality or buildings of equivalent historical or architectural significance) and whose work has resulted in construction with a record of successful in-service performance.

B. The Contractor shall maintain a steady work crew made up of qualified workers and a MI time foreman who speaks and reads fluent English. The Contractor shall confirm that all workers understand the job's requirements.

C. Cleaning Standard: The Contractor shall prepare sample panels for approval by the Resident Engineer which shall form a standard for general masonry restoration and cleaning.

1. No test panels shall be made until the methods and locations are approved by the Resident Engineer.

1.03 TESTING AND MOCK-UPS

A. Test Panels: Test panels for each cleaner, procedure and substrate specified herein will be prepared on wall surfaces ranging from one (1) square foot to twenty-five (25) square feet in area, at locations to be selected by the Resident Engineer.

1. Resident Engineer will be present during the creation of all test panels. Do not proceed with the work unless the Resident Engineer is present. Notify the Resident Engineer not less than forty-eight (48) hours in advance. Provide scaffolding as necessary for Resident Engineer's close-up inspection of the test panels.

2. Provide protection during the testing phase.

3. All procedures, dwell times, concentrations, dilutions, and materials are subject to modification by the Resident Engineer during the testing process. The Resident Engineer will choose products to be used for cleaning the entire building based on the results of the test panels. Modifications of sequence, chemical dilution, substitute reagents, and equivalent procedures shall be executed at no additional cost to the City.

4. After the test panels are complete, wait seven (7) or more calendar days

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to allow for thorough drying prior to final evaluation.

5. Repeat demonstration and testing procedures until the Resident Engineer's requirements are satisfied.

B. No test panels shall be made until the methods and locations are approved by the Resident Engineer.

C Field-Construction Mock-Ups: After the completion of the testing phase, and before general masonry cleaning begins, prepare mock-up panels on the building, as indicated, where directed by the Resident Engineer. Obtain the Resident Engineer's written acceptance of visual qualities before proceeding with the work. Retain the approved panels, undisturbed and suitably marked, throughout construction, as a standard for judging completed work.

1. Mock-ups must be approved before the general work begins. The Contractor shall repeat samples until approved by the Resident Engineer. Upon approval, the test panels will remain the standard throughout the job and shall remain intact at the job site as a point of reference until the work of this section has been approved and accepted.

2. Provide protection during the mock-up phase.

3. All mock-ups will be a minimum of 5'-0" x 5'-0" except where specifically approved by the Resident Engineer.

4. Mock-ups shall be performed by the same foreman and workmen completing the general work.

5. All procedures dwell times, concentrations dilutions, and materials are subject to modification during the mock-up process. The Resident Engineer will modify the procedures as required for subsequent work. Modifications of sequence, chemical dilution, substitutes reagents, and equivalent procedures shall be executed at no additional cost to the City.

1.04 SUBMITTALS

A. Qualification Data: Submit qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Bidders shall visit the site and make themselves familiar with job conditions.

B. Product Literature: The Contractor shall submit copies of the manufacturer's

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technical data for each product including their recommendations for application and use. Include test reports and certificates that verify the product's compliance with the specification's requirements.

1. On Site Copy of Product Literature: one complete set of product literature shall be placed in a 3-ring, loose-leaf binder and shall be present on the job site at all times for the reference of the Resident Engineer.

C. Test Panels: Test panels for each cleaner, procedure and substrate specified herein will be done on wall surfaces ranging from one (1) square foot up to and including areas of twenty-five (25) square feet, at the discretion of the Resident Engineer and at locations to be selected by said Resident Engineer.

1. Resident Engineer will be present during the creation of all test panels. Do not proceed with the work unless the Resident Engineer is present Notify the Resident Engineer not less than forty-eight (48) hours in advance. Provide scaffolding as necessary for Resident Engineer's close-up inspection of the test panels.

2. Provide protection during the testing phase.

3. All procedures, dwell times, concentrations, dilutions, and materials are subject to modification by the Resident Engineer during the testing process. The Resident Engineer will choose products to be used for cleaning the entire building based on the results of the test panels. Modifications of sequence, chemical dilution, substitute reagents, and equivalent procedures shall be executed at no additional cost to the City.

4. After the test panels are complete, wait seven (7) or more calendar days to allow for thorough drying prior to final evaluation.

5. Repeat demonstrations and testing procedures until the Resident Engineer's requirements are satisfied.

D. Methods of Protection: Before cleaning operations begin, the Contractor shall submit to the Resident Engineer a written description of the proposed materials and methods of protection. Protection is required for, but not limited to, the following: All metal, painted surfaces, wood, window glass, awnings and canopies, building occupants, pedestrian and vehicular traffic, plants and lawns, and nearby property and materials.

E. Waste Disposal Program: Before cleaning operations begin, the Contractor shall submit a written description of the proposed collection and disposal methods for each

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type of solid and liquid by-product generated during masonry cleaning.

F. Field-Construction Mock-Ups: When directed by the Architect or the Department of Correction, after the completion of the testing phase, and before general masonry cleaning begins, prepare mock-up panels on the building, as indicated, where directed by the Resident Engineer. Obtain the Resident Engineer's written acceptance of visual qualities before proceeding with the work. Retain the approved panels, undisturbed and suitably marked, throughout construction, as a standard for judging completed work.

1. Mock-ups must be approved before the general work begins. The Contractor shall repeat samples until approved by the Resident Engineer. Upon approval, the test panels will remain the standard throughout the job.

2. Provide protection during the mock-up phase.

3. All mock-ups will be a minimum of 5'-0" x 5'-0" except where specifically approved by the Resident Engineer.

4. Mock-ups shall be performed by the same foreman and workmen completing the general work.

5. All procedures, dwell times, concentrations, dilutions, and materials are subject to modification during the mock-up process. The Resident Engineer will modify the procedures as required for subsequent work. Modifications of sequence, chemical dilution, substitute reagents, and equivalent procedures shall be executed at no additional cost to the City.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site in the manufacturer's original, unopened containers and packaging, bearing product labels as to type, name, and manufacturer.

1.06 PROJECT CONDITIONS

A. Visitors to, and users of, the building, general pedestrian traffic and vehicular traffic shall be protected from all cleaning materials and their by-products, including liquids, solids, rinse water, overspray, and wind-carried spray. Cleaning materials may be harmful to people, materials; and animals.

B. Protection of Materials:

1. Protect, using extreme care, surrounding materials, buildings, plants,

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lawns, and landscape materials. Products used for cleaning stone may be harmful to metal, glass, and plants. Any damage to materials caused by the cleaning process is unacceptable and shall be repaired to the satisfaction of the Resident Engineer at no cost to the City.

2. Provide protection from water damage to the building, its structure, and its contents.

C. Windows: The Contractor shall completely protect windows to remain, including sealant beads between frame and masonry opening and metal grilles, for the duration of the work. Any damage to windows shall be repaired by the Contractor to the complete satisfaction of the Resident Engineer at no additional cost to the City.

1.07 ENVIRONMENTAL CONDITIONS

A. Clean masonry surfaces only when the air temperatures are forecast to remain above 40 deg F (4 deg C) for seven (7) or more days.

B. No work shall begin when any part of the wall or materials are frozen or subject to freezing.

1.08 COLLECTION AND DISPOSAL OF WASTE PRODUCTS

A. General: Collect, test, and dispose of solid and liquid wastes in accordance with all applicable local, state, and federal regulations. Observe "Rules and Regulations Relating to the Use of the Public Sewers, Including Sewer Surcharge?" as published by the New York City Department of Environmental Protection, Industrial Waste Control Section.

1. Protection and waste collection systems shall be in place before general cleaning begins.

2. Test all drains and other water removal systems to assure that drains and systems are functioning properly before cleaning operations begin. Notify the Resident Engineer immediately if any drains or systems are stopped or blocked. The Contractor shall repair drains if so directed by the Resident Engineer. Do not begin the work of this Section until the drains are in good working order.

3. Provide a method to prevent solids such as masonry residue from entering the drains and drain lines. The Contractor shall be responsible for cleaning out any drain or drain line that becomes blocked or filled with sand or other solids because of

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work performed under this Contract

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS

A. General: Chemical materials shall be safe for use and not in violation of City, State, or Federal regulations.

B. Water for Cleaning: Clean, potable, free of oils, acids, alkalis, salts, organic matter, and other materials detrimental to cleaning surfaces; it must be non-staining. Obtain water sources before installing equipment and provide water at no additional cost to the City. Filter all water through a 5 micron particulate filter placed in line with the water supply. Pump water to locations where the work of this Section is being performed.

C. Cleaner for interior marble shall be "Liquid Marble Cleaner," manufactured by ProSoCo, Inc., Kansas City, KS, or an approved equal.

D. Products for brick, granite, and sandstone masonry cleaning are as the following (or an approved equal):

1. "HydroClean HT-626 Brick, Granite, Sandstone and Terra Cotta Cleaner" manufactured by Hydrochemical Techniques, Inc., Hartford, CT (203) 527-6350.

2. "Sure Clean Restoration Cleaner" manufactured by ProSoCo, Inc., Kansas City, KS.

3. "Heavy Duty Restoration Cleaner" manufactured by ProSoCo, Inc., Kansas City, KS.

4. "Bac 2 Nu" manufactured by Chemique, Inc., Moorestown, NJ (800) 225-4161.

E. Detergent cleaner shall be KRC Ion 417, available from Chemique, Inc. Moorestown, NJ, or approved equal

F. Poultice shall be "Marble Poultice," Marble Poultice Additive," and "TI 087 Special Poultice Additive," manufactured by ProSoCo, Inc., Kansas City, KS, or an approved equal.

G. Biological Growth Remover: "Biological Stain Remover", by ProSoCo, Inc., or an

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approved equal.

H. Biocide: Concentrated solution of Hydrogen Peroxide in water.

2.02 CLEANING EQUIPMENT

A. Pressure pumps: All pumps shall be equipped with working pressure gauges. Any pump found to be without working pressure gauges shall be removed from the site and work will cease until pump has been replaced with pump having working pressure gauge.

B. Brushes: Fiber bristle only.

2.03 MIXING CHEMICAL CLEANING SOLUTIONS

A. General: Chemical cleaning materials are to be diluted according to the results obtained through the test mock-ups. The manufacturer's recommended dilutions may be modified to reflect the results of field mock-ups.

B. Testing panels shall be created using a minimum of two (2) dilutions for each product where dilution is recommended by the manufacturer or requested by the Resident Engineer.

PART 3 - EXECUTION

3.01 PREPARATION

A. General: Comply with chemical manufacturer's recommendations for protecting building surfaces against damage from exposure to their products.

B. Protect pedestrians, motor vehicles, surrounding surfaces of buildings whose masonry surfaces are being cleaned, building site, and surrounding buildings from injury resulting from masonry cleaning work.

1. Prevent chemical cleaning solutions from contacting pedestrians, motor vehicles, landscaping, buildings and other surfaces.

2. Do not clean masonry when winds are of sufficient force to spread cleaning solutions to unprotected surfaces.

3. Erect temporary protection over pedestrian walkways and over areas

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where people and vehicles enter and exit the building.

C. Protect glass, unpainted metals, and polished stone from acidic chemical cleaners by covering them with strippable masking or polyethylene film and waterproof masking tape. Apply masking agent according to the manufacturer's recommendations. Do not apply liquid masking agent to painted or porous surfaces.

D. Protect unpainted metal from alkali cleaners by covering them with polyethylene film and waterproof masking tape.

E. Dispose of cleaning run-off by legal means which prevent: erosion, undermining, damage to plant material, and water penetration into the building. Dispose of toxic and hazardous wastes as specified in Part I of this Section, in accordance with current governmental regulations (OSHA, EPA and NYC DEP).

F. All joints and cracks in masonry must be watertight before starting any work with water. Provide temporary seal for all joints and cracks to prevent water infiltration as directed by the Resident Engineer. All caulking and sealing required shall be completed before this cleaning operation begins. Grout and repair masonry or stone where needed and/or as directed.

G. Carefully remove and safely store all surface mounted furnishings and signs as directed by Department of Correction. Cleaning shall be done behind all surface mounted items as directed. Upon completion of cleaning, re-secure, re-install and/or replace all items in their original location and position.

H. Provide all labor and materials for scaffolding, ladders or other equipment necessary to perform the cleaning work and be responsible for the securing safety and sufficiency thereof.

I. The Contractor shall take all necessary precautions to protect all the adjoining surfaces, and will be held responsible for any such damage and repair at his own expense.

3.02 CLEANING MASONRY, GENERAL

A. Do not begin cleaning until the Resident Engineer approves the cleaning technique.

B. Clean in an orderly manner

C. Do not allow products to dry out on masonry surfaces,

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- D. Protect surfaces located below from acidic cleaners and related rinse waters,
- E. Use only those cleaning methods approved by the Resident Engineer. The use of wire brushes or steel wool will not be permitted anywhere on the building.
- F. Cleaning of masonry other than limestone will generally be accomplished with One-Part chemical cleaners. Extremely heavily soiled masonry may require Two-Part chemical cleaning Systems.
- G. Cleaning of sandstone may require Two-Part chemical cleaners consisting of a prewash/ afterwash system. Heavily soiled limestone may require more aggressive components.
- H. Apply each cleaner uniformly to all surfaces, including corners, moldings, interstices. Produce an overall even effect without streaking or damaging the masonry surfaces,
- I. Rinse chemical residue and soil by working upwards from the bottom to the top of each treated area. Test rinsed surfaces with litmus papers to ensure that all chemicals have been removed from the surface of the masonry.

3.03 WATER APPLICATION METHODS

- A. Rinsing: Spray water on masonry surfaces as indicated for location, purpose, water temperature, pressure, volume, and equipment Unless otherwise indicated, hold spray nozzle not less than 12” from the masonry surface and spray from side to side in overlapping bands to produce uniform coverage and an even effect.
 - 1. Low Pressure Spray: Not more than 300 psi; 3 to 6 gallons per minute, with a 15-20 degree fan tip.
- B. Filter all water for rinsing through a 5-micron particulate filter placed in line of water. Replace filter daily or as required, whichever is more frequent

3.04 CHEMICAL CLEANING

- A. General: Apply chemical cleaners to masonry surface according to the manufacturer’s recommendations using brush or spray application methods, at the Contractor’s option, unless otherwise indicated. Do not allow the chemicals to remain on the surfaces for periods longer than determined by the field mock-ups or recommended by the manufacturer. Only the chemical cleaners approved for use at the conclusion of the mock-up phase shall be used for general cleaning.

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B. Spray Application: Apply chemicals at pressures not exceeding so psi, unless recommended by the manufacturer.

C. One-part Chemical Cleaning of Masonry: Clean masonry surfaces with one-past systems using chemical cleaners of dilution indicated, and applied as follows:

1. Prewar masonry surface using a low pressure cold water spray.
2. Apply cleaner to masonry with a brush or roller. Let the cleaner remain on the surface for period recommended by cleaner manufacturer or as determined by the field testing.
3. Pressure rinse masonry with cold water spray to remove chemicals and soil.
4. Repeat the cleaning process until the area meets the standards set by approved mock-up panel. Do not apply more than twice or as determined by the approved field mock-up panel.
5. Scrub heavily stained areas with a natural fiber brush and specified cleaner diluted as determined by the Resident Engineer.
6. Test rinsed surfaces with litmus papers to ensure that all chemicals have been removed from the surface.

D. Two-part Chemical Cleaning of Masonry: Clean masonry surfaces with two-part systems using chemical cleaners of dilution indicated, and applied as follows:

1. Prewet masonry surface using a low pressure cold water spray.
2. Apply alkaline cleaner or prewash to masonry with a brush or roller. Let the cleaner remain on the surface for period recommended by cleaner manufacturer or as determined by the Resident Engineer.
3. Pressure rinse masonry with cold water spray to remove chemicals and soil.
4. Apply acidic cleaner as afterwash to damp, masonry using low pressure spray, deep nap roller, or soft fiber brush. Let cleaner remain on the surface for a period recommended by the cleaner manufacturer or as determined by testing.
5. Pressure rinse masonry with cold water spray to remove chemicals and soil.

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6. Repeat the cleaning process until the area meets the standards set by approved mock-up panel. Do not apply more than twice or as determined by the Resident Engineer.

7. Scrub heavily stained areas with a natural fiber brush and specified cleaner in a dilution of one part water to one part chemical cleaner concentrate or as determined by the Resident Engineer.

8. Test rinsed surfaces with litmus papers to ensure that all chemicals have been removed from the surface.

E. The Contractor shall repeat the chemical cleaning process in heavily soiled locations.

3.05 BIOLOGICAL GROWTH REMOVAL

A. General: Perform biological growth removal immediately following final rinsing of masonry surfaces.

B. Remove all plant, fungus, algae, and lichen growth by brushing with dry natural bristle brushes and scraping with plastic or wooden implements. Do not use metal tools in this process.

C. Apply biological growth remover diluted to manufacturer's printed instructions, applied as follows:

1. Brush or low pressure spray apply. Coordinate application so that sodium hypochlorite is applied when surface is still wet from final rinsing for general cleaning of masonry surfaces.

2. Allow to remain on the surface for five (5) minutes.

3. Rinse surface thoroughly.

D. Apply the biocide, Allow to dwell for one hour. Repeat the application.

1. Thoroughly rinse the masonry surfaces where the biocide has been applied with medium pressure water (400 psi) for a minimum of five minutes.

3.06 EFFLORESCENCE REMOVAL METHOD

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- A. Remove efflorescence from masonry by brushing with dry, soft, natural bristle brushes. Do not wet wall before brushing.
- B. Remove remainder of efflorescence by poultice cleaning.

3.07 POULTICE CLEANING

- A. General: Perform poulticing in areas determined by the Resident Engineer in conjunction with the cleaning contractor. The intention is to remove efflorescence from masonry surfaces.
- B. Cleaning with poultice:
 - 1. Remove surface efflorescence using a dry natural fiber bristled brush.
 - 2. Slowly mix clay with water to form a paste or cream.
 - 3. Apply by airless spray or stainless steel, wood or plastic trowel to form a 1/4" thick coating.
 - 4. Cover with lightweight polyethylene film. Press film into poultice and tape edges.
 - 5. Let stand for 12-24 hours or time determined by the Resident Engineer.
 - 6. Remove film and poultice. Rinse with low pressure water.
 - 7. Repeat process as determined by the Resident Engineer.

3.08 INTERIOR MASONRY CLEANING METHODS

- A. General Protection Methods:
 - 1. Provide gutters and troughs to intercept and redirect water at walls if deemed necessary by the Resident Engineer.
 - 2. Provide protection to adjacent finishes and materials, building occupants and contents as required.
 - 3. The Contractor shall be responsible for the installation, removal and disposition of all necessary masking, temporary caulking, gutters, troughs, containers,

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etc., for completion of the cleaning operation.

4. All necessary measures shall be taken to protect all parts of the building not being cleaned (e.g. window frames, metal grilles, paint and plaster finishes, etc.) from the cleaning process.

B. General Cleaning Method:

1. Cleaning shall include the removal of surface dirt, stains and discolorations of every intensity and nature encountered.

2. Dilute cleaning products with water as recommended by testing and in accordance with the manufacturer's printed instructions.

3. Water used for cleaning shall be clean, potable and free of soluble and insoluble iron.

4. The use of wire brushes or steel wool will not be permitted,

5. Inspection of the building shall be carried on hill time during cleaning operations.

6. Scrubbing methods will be employed, using natural fiber bristle brushes, for cleaning deeply embedded dirt from areas which prove hard to clean by other means.

7. Should the contractor wish to modify any cleaning method specified, he shall submit his proposal in writing for consideration and review. The Resident Engineer will have the right to ask for test samples before final approval.

8. Finished work shall show no signs of stains, scratches, streaks or runs of discoloration from use of cleaners. Leave all exposed surfaces neat and clean. The appearance of the stone after cleaning and after adequate drying time shall be uniformly clean.

9. In locations where stubborn stains and soil deposits exist, re-application of cleaners will be required until stone color is uniform.

10. Selective stain removal may be necessary in some locations following cleaning. This shall be done with approved chemical cleaner or poultice with the approval of the Resident Engineer.

11. Work shall not be considered complete until the Resident Engineer has so

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notified the Contractor in writing.

C. General Rinsing Methods:

1. Sources of water shall be obtained prior to installation of any equipment. The water shall be filtered with a 5 micron particulate filter placed in line with the water supply.

2. Rinsing shall be performed with sponges. Light water misting may be employed if water collection methods are in place and have been previously approved by the Resident Engineer.

3. Water used for cleaning shall be filtered through a five (5) micron particulate filter placed in line with the water supply. The filter shall be replaced as needed during the work.

4. Temporary water supply systems erected for the purpose of delivering water during the cleaning process shall be constructed of polyvinylchloride (PVC) tubing. All hoses, fittings, pumps and other equipment shall be made with non-ferrous alloy parts.

D. Execution: Cleaning polished marble:

1. Soil shall be removed from marble in the following manner
 - a. Apply detergent solution in water to marble. Dwell time shall be in accordance with approved test procedures and manufacturer's written instructions.
 - b. Scrub surface using soft bristle, natural fiber brushes during dwell time. Pay particular attention to crevices in carved and decorated surfaces.
 - c. Rinse all traces of chemical and residue with water. Repeat procedure if necessary.
 - d. Rinse waste water shall not be allowed to remain on floor or adjacent surfaces and shall be removed by means of approved vacuum system to prevent ponding or accumulation of rinse waste water.

3.09 CLEAN UP

A. Properly remove any and all debris (resulting from the work) from the building and leave the premises broomed and mopped clean at the end of each work shift.

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B. Clean all glass surfaces soiled as a result of the work.

3.10 MARBLE POLISHING

A. Upon the completion of cleaning marble surfaces, per the direction of the Project Manager or the Department of Correction representative, slowly polish the marble to a high sheen with power machine equipment.

B. Per manufacturer's direction, use "Stone Glo" with # 800 line screen or an approved equal.

END OF SECTION

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SECTION 05120 - STRUCTURAL STEEL

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide structural steel in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Division 5 Section "Steel Deck" for field installation of shear connectors.
2. Division 5 Section "Metal fabrications" for loose steel bearing plates and miscellaneous framing.
3. Division 7 Section "Fireproofing"
4. Division 9 Section "Painting" for surface preparation and priming requirements.

1.02 PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer structural steel connections (review per NYS Code) required by the Contract documents to be selected or completed by the fabricator to withstand design loadings indicated.

B. Engineering Responsibility: Engage a fabricator who utilizes a qualified professional engineer to prepare calculations, shop drawings and other structural data for structural steel connections.

1.03 SUBMITTALS

- A. Product Data for each type of product specified.
- B. Shop Drawings detailing fabrication of structural steel components.
 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

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2. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.

3. Indicate type, size and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct tension, or tensioned shear/bearing connections.

4. Include shop drawings signed and sealed by a qualified professional engineer responsible for their preparation.

C. Mill test reports signed by manufacturers certifying that their products, including the following, comply with the requirements.

1. Structural steel, including chemical and physical properties.
2. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
3. Direct-tension indicators.
4. Shear stud connectors.
5. Shop primers.
6. Non-shrink grout.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Fabricator Qualifications: Engage in a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.

1. Fabricator must participate in the AISC Quality Certification Program and be designated an AISC-Certified Plant as follows:

- a. Category: Category I, conventional steel structures.

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b. Category: Category II, complex steel building structures.

c. Fabricator shall be registered with and approved by authorities having jurisdiction.

C. Comply with applicable provisions of the following specifications and documents:

1. AISC's "Specification for Structural Steel Buildings-Allowable Stress Design and Plastic Design".

2. AISC's "Load and Resistance Factor Design (LFRD) Specification for Structural Steel Buildings".

3. AISC's "Specification for Allowable Stress Design of Single-Angle Members".

4. AISC's "Specification for Load and Resistance Factor Design of Single-Angle Members".

5. AISC's "Seismic Provisions for Structural Steel Buildings".

6. ASTM A 6 (ASTM A 6M) "Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use".

7. Research Council on Structural Connections' (RCSC) "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

8. Research Council on Structural Connections' (RCSC) "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

D. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those services performed for projects with structural steel framing that are similar to that indicated for this Project in material, design, and extent.

E. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code - Steel".

1. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re-certification.

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F. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings".

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver structural steel to Project site in such quantities and at such times to ensure continuity of installation.

B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.

1. Store fasteners in a protected place. Clean and re-lubricate bolts and nuts that become dry or rusty before use.

2. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.06 SEQUENCING

A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Structural Steel Shapes, Plates, and Bars as follows:

1. Carbon Steel: ASTM A 36 (ASTM A 36M).

2. High-Strength, Low-Alloy Columbium-Vanadium Steel: ASTM A 572 (ASTM A 572M), Grade 50.

3. High-Strength, Low-Alloy Structural Steel: ASTM A 588 (ASTM A 588M), Grade 50, corrosion resistant.

B. Cold-Formed Structural Steel Tubing: ASTM A 500, Grade B.

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- C. Hot-Formed Structural Steel Tubing: ASTM A 501.
- D. Steel Pipe: ASTM A 53, Type E or S, Grade B.
1. Weight Class: Standard.
 2. Weight Class: Extra strong.
 3. Weight Class: Double-extra strong.
 4. Finish: Black.
 5. Finish: Galvanized.
 6. Finish: Black, except where indicated to be galvanized.
- E. Carbon-Steel Castings: ASTM A 27, Grade 65-35 (ASTM A 27M, Grade 450-240), medium-strength carbon steel.
- F. High-Strength Steel Castings: ASTM A 148, grade 80-50 (ASTM A 148M, Grade 550-345).
- G. Shear Connectors: ASTM A 108, Grade 1015 through 1020, headed-stud type, cold-finished carbon steel, AES D1.1, Type B.
- H. Anchor Rods, Bolts, Nuts, and Washers as follows:
1. Unheaded Rods: ASTM A 36 (ASTM A 36M).
 2. Unheaded Rods: ASTM A 572, Grade 50 (ASTM A 572M, Grade 345).
 3. Unheaded Rods: ASTM A 687, high strength.
 4. Headed Bolts: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); carbon-steel, hex-head bolts; and carbon-steel nuts.
 5. Headed Bolts: ASTM A 325 (ASTM A 325M), Type 1, heavy hex steel structural bolts and heavy hex carbon-steel nuts.
 6. Headed Bolts: ASTM A 490 (ASTM A 490M), Type 1, heavy hex steel structural bolts and heavy hex carbon-steel nuts.

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7. Washers: ASTM A 36 (ASTM A 36M).

- I. Non-High-Strength Bolts, Nuts and Washers: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); carbon-steel, hex-head bolts; carbon-steel nuts; and flat, unhardened steel washers.
 1. Finish: Plain, uncoated.
 2. Finish: Hot-dip zinc-coating, ASTM A 153, Class C.
 3. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50.

- J. High-Strength Bolts, Nuts and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts and hardened carbon-steel washers.
 1. Finish: Hot-dip zinc-coating, ASTM A 153, Class C.
 2. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50.
 3. Direct-Tension Indicators: ASTM F 959, Type 325.
 - a. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50, epoxy coated.

- K. High-Strength Bolts, Nuts and Washers: ASTM A 490 (ASTM A 490M), Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts and hardened carbon-steel washers, uncoated.
 1. Finish: Hot-dip zinc-coating, ASTM A 153, Class C.
 2. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50.
 3. Direct-Tension Indicators: ASTM F 959, Type 490.
 - a. Finish: Mechanically deposited zinc-coating, ASTM B 695, Class 50, epoxy coated.

- L. Welding Electrodes: Comply with AWS requirements.

- M. Machinery Mount Neoprene Elastomer Pads:

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1. Resilient element and material to be commercial neoprene for vibration isolation and abatement of acoustic noise.
2. Must be resistant to oils and most solvents.
3. Operating temperature range of -20 degrees F to +190 degrees F (-29 degrees C to +88 degrees C).
4. Elastomer to be blended CR/NBR/SBR with durometer of 75-85.
5. Typical tensile psi (bar) minimum to be not less than 1,400 (1,000).
6. Finish to be smooth with size no less than 4" x 4" square.
7. Ultimate elongation percentage minimum to be not less than 200.
8. Standard gauge in inches not less than 1".
9. Manufacturers:
 - a. Extreme Soundproofing.
 - b. Masco Electronics.
 - c. Barry Controls.
 - d. Garlock Rubber Technologies
 - e. Or approved equal.

2.02 PRIMER

- A. Primer: Fast-curing, lead and chromate-free, universal modified-alkyd primer with good resistance to normal atmospheric corrosion, complying with performance requirements of FS TT-P-664.
- B. Primer: SSPC-Paint 25; red iron oxide, zinc oxide, raw linseed oil and alkyd primer.
- C. Primer: SSPC-Paint 23, latex primer.
- D. Primer: SSPC-Paint 15, Type I, red oxide.
- E. Primer: Fabricator's standard lead and chromate-free, non-asphaltic, rust-inhibiting primer.

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F. Primer: Non-asphaltic primer complying with SSPC's "Painting System Guide No. 7.00".

G. Galvanizing Repair Paint: High zinc dust content paint for re-galvanizing welds and repair painting galvanized steel, with dry film containing not less than 93 percent zinc dust by weight, and complying with DOD-P-21035A or SSPC-Paint 20.

2.03 GROUT

A. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404, Size No. 2. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

B. Metallic, Shrinkage-Resistant Grout: Pre-mixed, factory-packaged, ferrous aggregate grout, complying with ASTM C 1107, of consistency suitable for application, and a 30-minute working time.

C. Non-Metallic, Shrinkage-Resistant Grout: Pre-mixed, non-metallic, non-corrosive, non-staining grout containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, of consistency suitable for application, and a 30-minute working time.

2.04 FABRICATION

A. Fabricate and assemble structural steel in shop to greatest extent possible. Fabricate structural steel according to AISC specifications referenced in this Section and in shop drawings.

1. Camber structural steel members where indicated.
2. Identify high-strength structural steel according to ASTM A 6 (ASTM A 6M) and maintain markings until steel has been erected.
3. Mark and match-mark materials for field assembly.
4. Fabricate for delivery a sequence that will expedite erection and minimize field handling of the structural steel.
5. Complete structural steel assemblies, including welding of units, before starting shop-priming operations.

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6. Comply with fabrication tolerance limits of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel.

B. Fabricate architecturally exposed structural steel with exposed surfaces smooth, square, and free of surface blemishes, including pitting, rust and scale seam marks, roller marks, rolled trade names, and roughness.

1. Remove blemishes by filling, grinding, or by welding and grinding, prior to cleaning, treating, and shop priming.

2. Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for architecturally exposed structural steel.

C. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded.

D. Finishing: Accurately mill ends of columns and other members transmitting loads in bearing.

E. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's printed instructions.

F. Steel Wall Framing: Select true and straight members for fabricating steel wall framing to be attached to structural steel framing. Straighten as required to provide uniform, square, and true members in completed wall framing.

G. Welded Door Frames: Build up welded door frames attached to structural steel framing. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk, cross-recessed head machine screws, uniformly spaced not more than 10 inches (250 mm) o.c., unless otherwise indicated.

H. Holes: Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members, as shown on shop drawings.

1. Cut drill, or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning. Drill holes in bearing plates.

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2. Weld threaded nuts to framing and other specialty items as indicated to receive other work.

2.05 SHOP CONNECTIONS

A. Shop install and tighten non-high-strength bolts, except where high-strength bolts are indicated.

B. Shop install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

C. Shop install and tighten high-strength bolts according to RCSC's "Load and resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

1. Bolts: ASTM A 325 (ASTM A 325M) high-strength bolts, unless otherwise indicated.

2. Bolts: ASTM A 490 (ASTM A 490M) high-strength bolts, unless otherwise indicated.

3. Connection Type: Snug tightened, unless indicated as slip-critical, direct tension, or tensioned shear/bearing connections.

4. Connection Type: Slip-critical, direct-tension, or tensioned shear/bearing connections as indicated.

D. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.

2. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds ½ inch (13-mm) and larger. Grind flush butt welds. Dress exposed welds.

2.06 SHOP PRIMING

A. Shop prime steel surfaces, except the following:

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1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50-mm).

2. Surfaces to be field welded.

3. Surfaces to be high-strength bolted with slip-critical connections.

4. Surfaces to receive sprayed-on fireproofing.

5. Galvanized surfaces.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and splatter, slag, or flux deposits. Prepare surfaces according to SSPC specifications as follows:

1. SSPC-SP 2 "Hand Tool Cleaning".

2. SSPC-SP 3 "Power Tool Cleaning".

3. SSPC-SP 5 "White Metal Blast Cleaning".

4. SSPC-SP 6 "Commercial Blast Cleaning".

5. SSPC-SP 7 "Brush-Off Blast Cleaning".

6. SSPC-SP 8 "Pickling".

7. SSPC-SP 10 "Near-White Blast Cleaning".

8. SSPC-SP 11 "Power Tool Cleaning to Bare Metal".

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's instructions and at a rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils (0.038-mm). Use priming methods that result in full coverage of joints, corners, edges and exposed surfaces.

C. Painting: Apply a 1-coat, non-asphaltic primer complying with SSPC's "Painting System Guide No. 7.00" to provide a dry film thickness of not less than 1.5 mils (0.038-mm).

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2.07 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel indicated for galvanizing according to ASTM A 123.
- B. Field Applied Galvanizing: Apply zinc-rich paint to surfaces where original zinc coating has been damaged or removed.

2.08 SOURCE QUALITY CONTROL

- A. The DOC will engage an independent testing and inspecting agency to perform shop inspections and tests and to prepare test reports.
1. Testing agency will conduct and interpret tests and state in each report whether test specimens comply with or deviate from requirements.
 2. Provide testing agency with access to places where structural steel Work is being fabricated or produced so required inspection and testing can be accomplished.
- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- D. Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".
- E. Shop-bolted connections will be tested and inspected according to RCSC's "Load and Resistance Factor Design for Structural Joints Using ASTM A 325 or A 490 Bolts".
1. Direct-tension indicator gaps will be verified to comply with ASTM F 959, Table 2.
- F. In addition to visual inspection, shop-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
1. Liquid Penetrant Inspection: ASTM E 165.

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2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.

3. Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level "2-2T".

4. Ultrasonic Inspection: ASTM E 164.

G. In addition to visual inspection, shop-welded shear connectors will be inspected and tested according to requirements of AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connectors.

2. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Before erection proceeds, and with the steel erector present, verify elevations of concrete and masonry bearing surfaces and locations of anchorages and bearing pads for compliance with requirements.

B. Do not proceed with erection until unsatisfactory conditions have been corrected.

3.02 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC specifications referenced in this Section.

B. Base and Bearing Plates and Pads: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen surfaces prior to setting base and bearing plates and pads. Clean bottom surface of base and bearing plate.

1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.

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2. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

3. Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.

a. Comply with manufacturer's instructions for proprietary grout materials.

C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Building and Bridges".

1. Maintain erection tolerances of architecturally exposed structural steel within AISC's "Code of Standard Practice for Steel Building and Bridges".

D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.

2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.

E. Splice members only where indicated.

F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.

G. Do not use thermal cutting during erection.

H. Finish sections thermally cut during erection equal to a sheared appearance.

I. Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts.

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3.04 FIELD CONNECTIONS

A. Install and tighten non-high-strength bolts, except where high-strength bolts are indicated.

B. Install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

C. Install and tighten high-strength bolts according to RCSC's "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

1. Bolts: ASTM A 325 (ASTM A 325M) high-strength bolts, unless otherwise indicated.

2. Bolts: ASTM A 490 (ASTM A 490M) high-strength bolts, unless otherwise indicated.

3. Connection Type: Snug tightened, unless indicated as slip-critical, direct tension, or tensioned shear/bearing connections.

4. Connection Type: Slip-critical, direct-tension, or tensioned shear/bearing connections as indicated.

D. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.

2. Comply with AISC specifications referenced in this Section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds ½ inch (13-mm) and larger. Grind flush butt welds. Dress exposed welds.

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3.05 FIELD QUALITY CONTROL

A. The DOC will engage an independent testing and inspecting agency to perform shop inspections and tests and to prepare test reports.

1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviate from requirements.

B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.

C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

D. Field-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

E. Field-bolted connections will be tested and inspected according to RCSC's "Load and Resistance Factor Design for Structural Joints Using ASTM A 325 or A 490 Bolts".

1. Direct-tension indicator gaps will be verified to comply with ASTM F 959, Table 2.

F. In addition to visual inspection, field-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.

1. Liquid Penetrant Inspection: ASTM E 165.

2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.

3. Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level "2-2T".

4. Ultrasonic Inspection: ASTM E 164.

G. In addition to visual inspection, field-welded shear connectors will be inspected and tested according to requirements of AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connectors.

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2. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.

3.06 CLEANING

A. Touch-up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.

1. Apply by brush or spray to provide a minimum dry film thickness of 1.5 mils (0.038-mm).

B. Touch-up Painting: Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of shop paint on structural steel are included in Division 9 Section "Painting".

C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint according to ASTM A 780.

END OF SECTION

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SECTION 05170 - SECONDARY SUPPORT GRID SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide secondary support grid system for suspended ceilings and equipment in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. This support for ceiling suspension systems shall include the attachment to overhead slab (terra cotta arch system or other structural system that is insufficient to support the suspended ceiling and suspended piping and equipment for AVAC, plumbing and electrical work), steel angle, plate hanger, and running channels and all additional hardware required to provide the secondary support system for attachment of suspension systems.

2. Suspension system, furring members and other attachments for the various ceiling materials and systems shall be as specified in the respective Section.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Section 07250 - Fireproofing
2. Section 09200 - Lath and Plaster
3. Section 09215 - Veneer Plaster
4. Section 09250 - Gypsum Board Assemblies.
5. Section 09510 - Acoustic Panel Ceilings

1.02 SUBMITTALS

A. Submit Shop Drawings showing suspension assembly, indicating all components, connections and anchorages, and grid layout.

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B. Submit laboratory report certifying pullout and shear capabilities for the anchor embedded in the materials to be used in this Project.

C. Submit test results of field pullout tests performed by a certified New York City testing laboratory paid for by the Contractor.

1.03 REFERENCE STANDARDS

A. Comply with the requirements of the applicable section of the New York City Building Code.

1.04 SYSTEM DESCRIPTION

A. The work of this section requires the Contractor to design and engineer a secondary steel support system for attachment of hung ceiling suspensions systems, suspended piping and equipment for HVAC, plumbing and electrical work where existing terra cotta arch construction exists.

1. System shall consist of a steel grid of the sizes and dimension required to support the required loads and shall be suspended from the existing tile arch if adequate to support the loads or attached to existing steel framing system.

1.05 PROJECT CONDITIONS

A. Field Measurements: Check actual locations of walls, structural members and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Overhead Floor Structure: Examine the existing structure to determine if load capacity is adequate to support loads that will be imposed as a result of the Work of this Contract and related HVAC, Plumbing and Electrical Contracts.

1. The Contractor's testing agency shall perform pullout tests to determine the maximum anchorage loads.

a. Test shall consist of a minimum of 12 anchors of each type that are tensioned tested to failure.

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b. The resulting lower values will be accepted as double the allowable load for the Site.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Steel Angle and Plate:

1. ASTM A-36 and sized in accordance with performance requirements for imposed loading. Provide shop coat of asphaltum paint.

B. Bolts: ASTM A307, 3/en diameter minimum, with lock washers and nuts. Provide shop coat of asphaltum paint.

C. Running Channels: Steel channels or other structural shapes as required to meet performance requirement and the requirements of the New York City building Code. Provide shop coat of asphaltum paint for paint channels. Use painted channels unless indicated otherwise.

1. ASTM A568 for painted channels.

D. For Terra Cotta Arch System: Use expansion bolts that comply with NYC Building Code Reference Standard *RS-5-16* and performance test requirements.

2.02 PAINTING

A. All steel members and accessories of the support system unless galvanized or of stainless steel, shall be dipped or painted with one coat approved asphaltum paint.

PART 3 - EXECUTION

3.01 COORDINATION WITH OTHER TRADES

A. Coordinate this Work with the various trades who may have ducts, pipes, conduits, or other Work in the spaces above the suspended ceilings, in order that anchors, hangers and running channels may be properly placed to avoid such ducts, pipes, conduits, and other obstructions. Any changes required to be made in the locations of anchors, hangers, and running channels by reason of the Contractor's failure to observe this requirement shall be made by the Contractor without additional cost to the City.

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B. Coordinate Work with ceiling systems work and the work of HVAC, plumbing and electrical contracts.

3.02 SUPPORT SYSTEM LOCATIONS

A. Provide support system for all suspended ceiling systems as indicated on the Drawings; for duct enclosures; piping and equipment for HVAC, plumbing and electrical for other enclosures or furring systems indicated on the Drawings and specified herein.

B. When attachment is made to terracotta arch construction, care shall be exercised so that no damage is made to terracotta. Use approved methods and repair any damage to tile arch to the satisfaction of the Resident Engineer. Use drilling or other methods approved by the Resident Engineer.

3.03 INSTALLATION

A. Attach support system to floor arch where the floor arch is of adequate strength to support imposed loads. Use anchors as approved by testing methods. Where floor structure is not adequate to support the grid structure and its imposed loads attach the grid framing members directly to the nearest steel floor member.

B. Where portions of the existing fire protective covering is removed as a result of the attachment operations, patch the assembly with fireproofing in accordance with requirements of Section 07250 and as required to meet required fire resistance ratings.

END OF SECTION

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SECTION 05310 – ROOF DECK

PART 1 - GENERAL

1.01 SCOPE

- A. This section shall include all materials, equipment and labor for installation of steel roof deck and roof deck accessories.
- B. Requirements for such items as deck supports, field painting, flashing, insulation, poured saddles, gutters or other such miscellaneous items specified elsewhere.

1.02 REFERENCE STANDARDS

- A. AISI, American Iron and Steel Institute - Cold Formed Steel Design Manual, 2001 and the 2004 supplement edition.
- B. SDI, Steel Deck Institute.
 - 1. Design Manual for Composite Decks, Form Decks, Roof Decks and Cellular Metal Floor Decks with Electrical Distribution, latest edition.
 - 2. SDI Manual of Construction with Steel Deck.
- C. AWS, American Welding Society, Structural Welding Code - Sheet Steel, D1.3.
- D. AWS, American Welding Society, Structural Welding Code - Steel, D1.1.
- E. ASTM, American Society for Testing and Materials.
 - 1. A653/A653M, Standard Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. A1008, Standard Specification for Sheet Steel, Carbon, Cold-Rolled, Structural Quality (Painted).
 - 3. A924/A924M Standard Specification for General Requirements for Sheet Steel, Metallic-Coated by the Hot-Dip Process.

1.03 SUBMITTALS

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- A. Product data for each type of steel roof deck specified including profiles, finishes and load tables.
- B. Shop drawings showing roof deck layout, method of attachment and attachment pattern.
- C. Mechanical fastener data evidencing compliance of mechanical fasteners with project requirements.

1.04 QUALITY ASSURANCE

- A. Welding Requirements: Comply with applicable provisions of the AISI and AWS specifications.
- B. Certify that each welder has satisfactorily passed AWS qualification test for the welding process of sheet steel attachment and, if applicable, has undergone re-certification.

1.05 SITE STORAGE

- A. Deck not promptly erected shall be stored off the ground with one end elevated to provide drainage. Bundles shall be stacked in such a manner to prevent tipping, sliding, rolling, shifting or material damage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Steel roof deck shall be 1-1/2" Wide Rib Roof Deck, Type BW36, 16 Gage, as manufactured by Wheeling Corrugating Company from steel conforming to ASTM A653 for galvanized deck or ASTM A1008 for prime painted steel. Minimum yield steel strength shall be 33 ksi.
- B. Composite deck finish shall be coated to conform to ASTM A924/924M, G-90 or to Federal Specification QQ-S-775.
- C. Accessories shall be supplied as required on contract drawings.

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PART 3 - EXECUTION

3.01 SITE EXAMINATION

A. Prior to installing the steel roof deck, inspect support framing system and work site area conditions to ensure correctness for proper installation of deck system. Do not proceed with deck installation until unsatisfactory conditions have been corrected.

3.02 HANDLING

A. Place deck bundles on the building frame over or near a main supporting beam near a column or wall. In no case should the deck bundles be placed on unbolted frames or unattached and/or unbridged joists.

3.03 INSTALLATION

A. Steel roof deck shall be placed in accordance with approved erection drawings.

B. Cutting of openings through the deck less than 25 sq. ft. in area and all skew cutting shall be performed in the field.

C. Deck units shall be placed on supporting framing and adjusted to final positions before permanently fastened.

D. Ends of deck units shall be lapped approximately 2 inches over supports.

E. Attachment to supports shall be 5/8 inch diameter puddle welds spaced as indicated on erection drawings.

F. When spans exceed 5'-0", side laps shall be fastened together at a maximum spacing of 36 inches on center. Side lap fasteners shall be welded for nested side laps.

END OF SECTION

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SECTION 05330 – FLOOR DECK

PART 1 - GENERAL

1.01 SCOPE

A. This section of the specification shall include all materials, equipment and labor for installation of composite floor deck and accessories for the placement of structural concrete.

B. Requirements for such items as deck supports, concrete placement, field painting, spray fireproofing or other such miscellaneous items are specified elsewhere.

1.02 REFERENCE STANDARDS

A. AISI, American Iron and Steel Institute - Cold Formed Steel Design Manual, 2001 edition and 2004 supplement.

B. SDI, Steel Deck Institute.

1. Design Manual for Composite Decks, Form Decks, Roof Decks and Cellular Metal Floor Decks with Electrical Distribution, latest edition.

2. SDI Manual of Construction with Steel Deck.

C. AWS, American Welding Society, Structural Welding Code - Sheet Steel, D1.3.

D. AWS, American Welding Society, Structural Welding Code - Steel, D1.1.

E. ASTM, American Society for Testing and Materials.

1. A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip process.

2. A1008, Standard Specification for Steel Sheet, Carbon, Cold-Rolled, Structural Quality (Painted).

3. A924/A924M Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

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1.03 SUBMITTALS

- A. Product data for each type of steel composite floor deck specified including profiles, finishes, load tables and span data.
- B. Shop drawings showing composite deck panel layout, closure accessory placement, method of attachment and attachment pattern.
- C. Mechanical fastener data evidencing compliance of mechanical fasteners with project requirements.

1.04 QUALITY ASSURANCE

- A. Welding requirements - Comply with applicable provisions of the AISI and AWS specifications.
- B. Certify that each welder has satisfactorily passed AWS qualification test for the welding process of sheet steel attachment and, if applicable, has undergone re-certification.

1.05 SITE STORAGE

- A. Deck not promptly erected shall be stored off the ground with one end elevated to provide drainage. Bundles shall be stacked in such a manner to prevent tipping, sliding, rolling, shifting or material damage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Composite steel floor deck shall be Wheeling Super-Bond type 3.0SB, 16 Gage, as manufactured by Wheeling Corrugating Company from steel conforming to ASTM A653/653M for galvanized deck or ASTM A1008 for phosphatized/ painted deck.
- B. Composite deck finish shall be coated to conform to ASTM A924/924M, G-90 or to Federal Specification QQ-S-775.
- C. Accessories such as closures, pour stops and girder filler plates shall be as shown on design drawings to furnish a complete job.
 - 1. Accessories shall be manufactured from Galvanized steel with a G-90 coating weight and conforming to ASTM A924/924M.

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2.02 FABRICATION

A. Fabricate metal deck units in lengths to span three or more supports unless framing dictates otherwise. Side laps are to be male/female interlocking for button punching attachment or overlapping for screw attachment. Metal deck units shall have web embossments designed to mechanically lock the deck and concrete to achieve composite action.

B. Fabricate metal deck accessories as specified on contract documents.

PART 3 - EXECUTION

3.01 SITE EXAMINATION

A. Prior to installation of composite steel floor deck, inspect support framing system and work site area conditions to ensure correctness for proper installation of deck system. Do not proceed with deck installation until unsatisfactory conditions have been corrected.

3.02 HANDLING

A. Place deck bundles on the building frame over or near a main supporting beam near a column or wall. In no case should deck bundles be placed on unbolted frames or unattached and/or unbridged joist.

3.03 INSTALLATION

A. Composite floor panels and accessories shall be placed in accordance with approved shop drawings, manufacturers' recommendations and SDI reference documents.

B. Place deck panels on supporting framing and adjust to final position with ends accurately aligned and bearing on supporting members. After alignment attach immediately to supporting framework in order to form a safe working platform.

C. Cut and neatly fit deck panels and accessories around openings and perimeter edges.

D. Deck shall be welded to the steel supports with a 3/4" diameter puddle weld at each support so that the average weld spacing does not exceed 12 inch centers.

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Accessories shall be welded to structural steel members and screw attached to sheet steel members with minimum #10 screws.

- E. Side lap attachment shall not exceed 36 inch centers with the following method:
 - 1. Overlapping side lap configuration, #10 self-drilling screws.

3.04 CONCRETE PLACEMENT

A. All composite deck sheets shall have adequate bearing and fastening to all supports so as not to lose support during construction. Deck areas subject to heavy or repeated traffic, concentrated loads, impact loads, wheel loads, etc. shall be adequately protected by planking or other approved means to avoid overloading and/or damage. Damaged decks (sheets containing distortions or deformations caused by construction practices) shall be repaired, replaced or shored to the satisfaction of the architect before placing concrete. The cost of repairing, replacing or shoring of damaged units shall be the liability of the trade contractor responsible for the damage.

B. Prior to concrete placement, the steel deck shall be free of soil, debris, standing water and all other foreign matter.

END OF SECTION

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SECTION 05400 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to the work specified in this section.

1.02 DESCRIPTION OF WORK

A. The extent of light gage framing shown on the drawings.

B. The types of light gage metal framing units for the project include the following:

1. "C" shaped load bearing steel studs
2. "C" shaped steel joists

C. Related work specified elsewhere:

1. Structural Steel, Metal Decking, Metal Fabrications are specified elsewhere in Division 5.
2. Non load bearing metal studs are specified in Division 9.

1.03 QUALITY ASSURANCE

A. Component Design: Compute structural properties of studs and joists in accordance with American Iron and Steel Institute (AISI) "Specification for the Design of Cold-Formed Steel Structural Members," Latest Edition.

B. Fire-Rated Assemblies: Where framing units are components of assemblies indicated for a fire-resistant rating, including those required for compliance with governing authorities having jurisdiction.

1.04 SUBMITTALS

A. Product Data: Submit copies of manufacturer's product information and installation instructions for each item of light gage framing and accessories. Distribute one additional copy of installation instructions to the installer.

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B. Shop Drawings: Submit shop drawings for special components and installations not fully dimensioned or detailed in manufacturer's product data.

1. Include placing drawings for framing members and all prefabricated components showing size and gage designations, number, type, location and spacing. Indicate supplemental strapping, bracing, splices, bridging, accessories, connections, and details required for proper installation.

1.05 DELIVERY AND STORAGE

A. Protect metal framing units from rusting and damage. Deliver to the project site in manufacturer's unopened containers or bundles fully identified with name, brand, type and grade. Store off the ground in a dry ventilated space or protect with suitable waterproof coverings.

PART 2 - PRODUCTS

2.01 METAL FRAMING

A. System Components: With each type of metal framing required provide manufacturer's standard steel runners (tracks), blocking, bridging, lintels, clip angles, shoes, reinforcements, fasteners, and accessories as recommended by manufacturer for the applications indicated, as needed to provide a complete metal framing system.

B. Materials and Finishes: For 16 gage and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield point of 50,000 psi: ASTM A 446, A 570, or A 611.

C. Provide galvanized finish to metal framing where indicated with ASTM A 525 for minimum G 60 coating.

D. For 18 gage and lighter units, fabricate metal framing components of commercial quality steel sheet with a minimum yield point of 33,000 psi, ASTM A 446, A 570, or A 611.

E. Provide prime coated finish with one coat of shop-applied red-oxide, zinc-chromate, or other similar rust-inhibitive primer for all other metal framing components not galvanized.

F. "C" - Shaped Studs: Manufacturer's standard load-bearing steel studs of size, shape, gage and properties indicated with 1.625" minimum flange and flange return lip.

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G. “C” Shaped Joists: Manufacturer’s standard C-shape sections of size, shape, gage and properties indicated.

2.02 FABRICATION

A. General: Framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels in a manner to prevent damage or distortion in any members in the assembly.

B. Fastenings: Attach similar components by welding. Attach dissimilar components by welding, bolting, or screw fasteners, as standard with the manufacturers.

1. Wire tying of framing components is not permitted.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Pre-Installation Conference: Prior to the start of installation of metal framing systems, meet at the project site with the installers of other work including door and window frames and mechanical and electrical work. Review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.

3.02 INSTALLATION

A. Manufacturer’s Instructions: Install metal framing systems in accordance with manufacturer’s printed or written instructions and recommendations, unless otherwise indicated.

B. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.

C. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners to supporting structure.

D. Install supplementary framing, blocking and bracing in the metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishing, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with the stud manufacturer’s recommendations and industry standards in each case, considering the weight or loading resulting from the item supported.

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E. Installation of Wall Stud System:

1. Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.
2. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are either shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with stud shoes or by welding, and space jack studs same as full-height studs of the wall. Secure stud system all around to wall opening frame in the manner indicated.
3. Frame both sides of expansion and control joints, as shown for the wall system, with a separate stud and do not bridge the joint with components of the stud system.
4. All walls to have horizontal stiffeners and bridging. It shall be installed and properly attached by welding or screwing at each intersection before any studs are loaded.
5. Install horizontal stiffeners in stud system, wall bridging for walls up to 10'-0" height, two rows spaced equally. For walls over 10'-0" height, bridging shall be spaced (vertical distance) at 3'-4" o.c. maximum. Weld at each intersection.

F. Installation of Joists: Install level and plumb, complete with bracing and reinforcing as indicated on drawings. Provide not less than 1-1/2" end bearing.

1. Reinforce ends with end clips, steel hangers, steel angle clips, steel stud section, or as otherwise recommended by joist manufacturer.
2. Where required, reinforce joists at interior supports with single short length of joist section located directly over interior support, snap-on shoe, 30% side-piece lapped reinforcement, or other method recommended by joist manufacturer.
3. Secure joists to interior support systems to prevent lateral movement of bottom flange.

G. Field Painting: Touch-up shop-applied protective coatings damaged during handling and installation. Use compatible primer for prime coated surface; use galvanizing repair paint for galvanized surfaces.

END OF SECTION

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SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide metal fabrications in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Rough hardware.
2. Loose steel lintels.
3. Miscellaneous framing and supports for the following:
 - a. Suspended toilet partitions.
 - b. Applications where framing and supports are not specified in other sections.
4. Steel stair nosings.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 4 Section "Unit Masonry" for steel lintels within masonry walls.
2. Division 10 Section "Toilet Partitions" for structural support system for ceiling hung compartments.

1.02 SUBMITTALS

A. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections,

B. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the "Quality Assurance" Article.

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C. Submit calculations of all metal fabrication items engineered by the Contractor. Calculations shall be signed and sealed by a New York State licensed professional engineer or architect.

1.03 QUALITY ASSURANCE

A. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code - Steel," AWS D1.2 "Structural Welding Code - Aluminum," and AWS D1.3 "Structural Welding Code - Sheet Steel."

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re-certification.

B. Contractor shall engineer all required ladders and supports to comply with requirements of New York City Building Code.

1.04 PROJECT CONDITIONS

A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication, Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

PART 2 - PRODUCTS

2.01 FERROUS METALS

A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pining, seam marks, roller marks, rolled trade names, or roughness.

B. Steel Plates, Angles, Shapes, and Bars: ASTM A 36.

C. Steel Tubing: Product type (manufacturing method) and as follows:

1. Cold-Formed Steel Tubing: ASTM A 500.

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2. Hot-Formed Steel Tubing: ASTM A 501.
- D. Steel Pipe: ASTM A 53, standard weight (schedule 40), unless otherwise indicated, or another weight required by structural loads.
 1. Black finish, unless otherwise indicated.
- E. Gray-Iron Castings: ASTM A 48. Class 30.
- F. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47 malleable iron or ASTM A 27 cast steel. Provide bolts; washers, and shims as required, hot-dip galvanized per ASTM A 153.
- G. Welding Rods and Rare Electrodes: Select according to AWS specifications for the metal alloy to be welded.

2.02 PAINT

- A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free universal modified-alkyd primer complying with performance requirements of FS TT-P-664, selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.
- B. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12, except containing no asbestos fibers.

2.03 FASTENERS

- A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating, where built into exterior walls. Select fasteners for the type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A, with hex nuts, ASTM A 563. And where indicated, flat washers.
- C. Machine Screws: ANSI B18.63.

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- D. Lag Bolts: ANSI B18.2.1.
- E. Wood Screws: Flat head, carbon steel, ANSI B18.6.1.
- F. Plain Washers: Round, carbon steel, ANSI B18.22.1.
- G. Lock Washers: Helical, spring type, carbon steel, ANSI B18.21.1.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
 - 1. Material: Carbon steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Group I alloy 304 or 316 stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594.
- I. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as required.

2.04 GROUT

- A. Non-shrink, Nonmetallic Grout: Factory-packaged, non-staining, non-corrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Non-shrink, Nonmetallic Grouts:
 - a. Euco - S Grout; Euclid Chemical Co.
 - b. Five Star Grout; Five Star Products.
 - c. Crystex; L & M Construction Chemicals, Inc.
 - d. Masterflow 928 and 713; Master Builders Technologies, Inc.
 - e. Sealtight 588 Grout; W. R. Meadows, Inc.

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- f. SonogROUT 14; Sonneborn Building Products – ChemRex, Inc.
- g. Or approved equals

2.05 FABRICATION GENERAL

A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

C. Shear and punch metals cleanly and accurately. Remove burrs.

D. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Remove sharp or rough areas on exposed traffic surfaces.

F. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

G. Form exposed connections with hairline joints; flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

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H. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation,

J. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

2.06 ROUGH HARDWARE

A. Furnish bent, or otherwise custom-fabricated, bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures, Straight bolts and other stock rough hardware items are specified in Division 6 Sections.

B. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable iron washers for heads and nuts that bear on wood structural connections, and furnish steel washers elsewhere.

2.07 LOOSE STEEL LINTELS

A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.

B. Weld adjoining members together to form a single unit where indicated.

C. Size loose lintels for equal bearing of 1 inch per foot of clear span but not less than 8 inches bearing at each side of openings, unless otherwise indicated.

D. Loose Lintel Schedule (angle sizes, inches)

Opening Width (Max.)	<u>4 inch Wall</u>	<u>6 inch Wall</u>	<u>8 inch Wall</u> *
2 ft.	3-1/2 x 3-1/2 x 1/4	5 x 5 x 5/16	3-1/2 x 3-1/2 x 1/4
4 ft.	3-1/2 x 3-1/2 x 1/4	5 x 5 x 5/16	3-1/2 x 3-1/2 x 1/4
5 ft	3-1/2 x 3-1/2 x 1/4	5 x 5 x 5/16	3-1/2 x 3-1/2 x 1/4

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6 ft.	3-1/2 x 3-1/2 x 1/4	5 x 5 x 5/16	3-1/2 x 3-1/2 x 1/4
7 ft.	3-1/2 x 3-1/2 x 1/4	5 x 5 x 5/16	3-1/2 x 3-1/2 x 1/4
8 ft.	4 x 3-1/2 x 1/4	5 x 5 x 5/16	4 x 3-1/2 x 1/4

* Furnish two angles at all openings in 8 inch walls. Furnish a lintel angle for each masonry wythe.

2.08 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports for applications indicated that are not a part of structural steel framework as required to complete the Work.

B. Fabricate units to sizes, shapes, and profiles indicated and required to receive other adjacent construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.

1. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.

a. Except as otherwise indicated, space anchors 24 inches o.c. and provide minimum anchor units in the form of steel straps 1-1/4 inches wide by 1/4 inch thick by 8 inches long.

C. Fabricate support for suspended toilet partitions as follows:

1. Beams: Continuous steel shapes of size required to limit deflection to L/360 between hangers, but use not less than CS by 11.5 channels or another shape with equivalent structural properties.

2. Hangers: Steel rods, 3/8-inch minimum diameter, spaced not more than 36 inches o.c. Thread rods to receive anchor and stop nuts. Fit hangers with wedge-shaped washers for full bearing on sloping flanges of support beam.

3. Braces and Angles: Steel angles of size required for rigid support of beam and for secure anchorage.

2.09 FINISHES, GENERAL

A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designing finishes.

B. Finish metal fabrications after assembly.

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2.10 STEEL AND IRON FINISHES

A. Galvanizing: For those items required to be galvanized, apply zinc coating by the hot-dip process complying with the following requirements with a minimum 060 coating:

1. ASTM A 153 for galvanizing iron and steel hardware.
2. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick or thicker.

B. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:

1. Interiors (SSPC Zone IA): SSPC-SP 3 "Power Tool Cleaning".

C. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 1" for shop painting.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2.11 STEEL STAIR NOSINGS

A. Fabricate units of materials, sizes and configurations indicated. If not indicated, provide cast-iron units with an integral abrasive finish. Furnish in lengths as required to accurately fit each opening or conditions.

1. Cast units with an integral abrasive grit consisting of aluminum oxide, silicon carbide, or a combination of both.

B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include the following (approved equals will also be accepted):

1. American Safety Tread Co., Inc.
2. Amstep Products.

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3. Armstrong Products, Inc.
 4. Balco/Metalines, Inc.
 5. Safe-T-Metal, Inc.
 6. Wooster Products Inc.
- C. Provide anchors for embedding units in concrete, either integral or applied to units, as standard with the manufacturer,
- D. Apply black asphaltic coating to concealed bottoms, sides and edges of cast-iron units set into concrete.
- E. Provide cross-hatched surfaces unless otherwise indicated.
- F. Installation, General: Center nosings on tread widths with noses flush with riser faces and tread surfaces. Install with anchorage system indicated to comply with manufacturer's recommendations

2.12 TELEVISION BRACKETS

- A. Provide ceiling mounted television bracket, equal to Jumbo JMC 650D as manufactured by Peerless Industries, or approved equal. Verify television sizes in field, and provide appropriate size per manufacturer's recommendations.
- B. Unit shall be complete with accessories, hangers and hardware. Provide additional framing as required to attach television bracket to suspended framing above hung ceiling. Provide additional cold rolled steel concealed framing as required to support I 50# loading and comply with the NYC Building Code.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.02 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction.

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Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fining required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction,

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations.

E. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals,

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately,

4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

3.03 SETTING LOOSE PLATES

A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.

B. Set loose leveling and bearing plates on wedges or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.

1. Use non-shrink, grout unless otherwise indicated.

2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

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3.04 INSTALLING SUPPORTS FOR TOILET PARTITIONS

A. Anchor supports securely to and rigidly brace from overhead building structure.

3.05 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 requirements for touching up shop-painted surfaces.

1. Apply by brush or spray to provide a 2.0-mil minimum dry film thickness.

B. For galvanized surfaces, clean welds, bolted connections, and abraded areas, and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION

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SECTION 05520 - HANDRAILS AND RAILINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide handrails and railings in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Steel pipe tube.
2. Handrails.
3. Parapet railings.
4. Balusters.
5. Fittings

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Section 05500 - Metal Fabrications: Attachment plates and angles for metal stairs, including anchorage.
2. Section 09900 - Painting: Paint finish.

1.02 REFERENCES

- A. ASTM A53 - Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
- B. ASTM A386 - Zinc-Coating (Hot-Dip) on Assembled Steel Products.
- C. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
- D. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- E. ASTM B211 - Aluminum-Alloy Bars, Rods, and Wire.

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- F. ASTM B221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
- G. ASTM B241 - Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.
- H. ASTM B483 - Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications.
- I. SSPC - Steel Structures Painting Council.

1.03 DESIGN REQUIREMENTS

- A. Railing assembly, wall rails, and attachments to resist lateral force of 75 lbs (333 N) any point without damage or permanent set.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- B. Samples: Submit two 6-inch (2.4mm) long samples of handrail. Submit two samples of elbow, Tee, wall bracket escutcheon and end stop.

1.06 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings

PART 2 - PRODUCTS

2.01 STEEL RAILING SYSTEM

- A. Steel Tubing: ASTM A500, Grade B. ASTM A501.
- B. Pipe: ASTM A53, Grade B Schedule 40.
- C. Galvanizing: 1.25 oz/sq. ft. (380 g/sq. m.) zinc coating in accordance with ASTM A386.

2.02 FABRICATION

- A. Fit and shop assemble components in largest practical sizes, for delivery to

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site.

- B. Fabricate components with joints tightly fitted and secured.
- C. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- E. Continuously seal joined pieces by continuous welds.
- F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- G. Accurately form components to suit stairs and landings to each other and to building structure.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Beginning of installation means erector accepts existing conditions

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be embedded in masonry with setting templates to appropriate Sections.

3.03 INSTALLATION

- A. Install components plumb and level, accurately fitted, free from distortion or defects.
- B. Provide anchors, plates, angles required for connecting railings to structure. Anchor railing to structure.

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C. Field weld anchors as indicated on shop drawings. Touch-up welds with primer. Grind welds smooth.

D. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.04 ERECTION TOLERANCES

A. Maximum Variation from Plumb: 1/4 inch (6 mm) per story, non-cumulative.

B. Maximum Offset from True Alignment: 1/4 inch (6 mm).

END OF SECTION

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SECTION 05600 - SECURITY GATES AND GRILLES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide security gates and grilles in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Security bar stock grilles and manually operated swinging gates.
2. Prime painting of security grilles and gates.
3. All grille trim, locking pilasters, receiving columns, anchors and similar items required to fit new door into existing bar stock grilles.
4. All miscellaneous masonry work required to accommodate grille work into existing infrastructure.

B. Related Work: Refer to other Sections for the following:

1. Section 05120 - Structural Steel
2. Section 09900 - Painting; for finish painting,

1.02 QUALITY ASSURANCE

A. References: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

B. Manufacturer Qualifications: Provide security gates and grilles manufactured by a firm specializing in this work for at least three (3) years.

C. Qualify welding processes and welding operators in accordance with AWS D1.1 "Structural Welding Code - Steel", D1.3 "Structural Welding Code - Sheet Steel".

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

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D. Shop Assembly: Preassemble items in shop to minimize field assembly. Disassemble units only as necessary for shipping and handling.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for security grilles and gates, including data on electrical controls and paint products.

B. Shop Drawings: Submit shop drawings for fabrication and erection of security grilles and gates. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others where cast or built into the work of other contracts,

C. Samples: Submit 3 sets of representative samples of materials and finished products as may be requested,

D. Certification: Submit welder certificates signed by Contractor certifying that welders comply with requirements specified under "Quality Assurance" article.

1.04 PROJECT CONDITIONS

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Allow for fitting where field measurements before fabrication might delay work.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle security gates and grilles in accordance with the manufacturers recommendations to prevent damage, deterioration or soiling of the grilles.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Acceptable Manufacturers: Subject to compliance with requirements, provide products from one of the following:

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1. Southern Steel Company, San Antonio, TX
2. Stewart Decatur, Covington, KY
3. Willo Products, Alabama
4. Universal Steel Products, Hayward, CA
5. Roanoke Iron & Bridge, VA
6. Or an approved equal.

2.02 METALS

A. Metal Surfaces, General: Use only materials which are new, smooth and free of any flaws or surface blemishes.

B. Steel Plates, Shapes and Bars: ASTM A29, produced by the open hearth or electric process, of grade and chemical composition within the limits adopted by the American Steel Manufacturers Association. Steel produced by the Bessemer process will not be acceptable unless the phosphorus and sulphur contents are certified to be within the allowable maximums prescribed for open hearth steel in the A.S.M.A. specifications.

1. Steel bars shall be 1 inch diameter tungsten carbide, tool resistant steel.

C. Concrete Inserts: Threaded or wedge type; galvanized castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims, hot-dip galvanized, ASTM A153.

2.03 FASTENERS

A. General: Select fasteners for the type, grade and class required.

B. Bolts and Nuts: ASTM. A307, Grade A; flat, countersunk bolt heads where exposed, of torque twist-off head type or "torx" type.

C. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.

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2.04 PAINT

- A. Metal Primer Paint: Red lead iron oxide, raw linseed oil, alkyd paint, Steel Structures Painting Council (SSPC) Paint 2-64.
- B. Compatibility: Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Division 9, Sections 09900 and 09920.

2.05 FABRICATION, GENERAL

- A. Use materials of size and thickness required to produce strength and durability for use intended. Work to dimensions shown on shop drawings, using proven details of fabrication and support.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32". Form bent-metal corners to smallest radius possible without causing grain separation or other defect.
- C. Weld seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use torque twist-off fasteners where exposed in inmate areas.
- E. Provide anchorage coordinated with support. Fabricate and space anchoring devices to provide adequate support for intended use.
- F. Cut, reinforce, drill and tap work to receive hardware.
- G. Locks: Provide for locks and dead bolts on swinging Security Bar Grilles,

2.06 SHOP PAINTING

- A. Shop Painting: Shop paint metal work, except portions of members to be embedded in concrete, surfaces and edges to be field 'welded.
1. Remove scale, rust and other deleterious material before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP-2

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“Hand Tool Cleaning”, SSPC SP-3 “Power Tool Cleaning”, or SSPC SP-7 “Brush-Off Blast Cleaning”.

2. Remove oil, grease and similar contaminants in accordance with SSPC SP- I “Solvent Cleaning”.

3. Immediately after surface preparation, apply primer in accordance with manufacturer’s instructions, to provide a uniform dry film thickness of 2.0 mils for each coat.

4. Apply one shop coat to fabricated metal items, except apply 2 coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat from the first coat.

PART 3 - EXECUTION

3.01 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, templates, and instructions for installation of anchorages which are to be embedded in concrete or masonry construction.

3.02 INSTALLATION

A. Fastening to Construction: Provide anchorage devices and fasteners for securing the work; including, threaded fasteners for inserts, through-bolts, and other required connectors.

B. Cutting, Fining, and Placement Perform cutting, drilling and fitting required for installation of security gates. Set work accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels. Provide temporary bracing as necessary. Make adjustments to existing bar stock assemblies designated to remain. Trim off openings with construction to match existing and in a manner equal to existing construction. Make provisions for new swing gate and hardware.

C. Connections: Fit exposed connections accurately to form tight hairline joints, Weld all connections. There shall be no exposed joints or seams in any inmate use areas. Grind exposed field welds and joints smooth and touch-up shop paint coat.

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D. Field Welding: Comply with AWS Code for procedures of welding, appearance and quality of welds made, and methods used in correcting welding work, and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

3.03 ADJUSTING AND CLEANING

A. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of the shop paint on miscellaneous metal is specified in Division 9 Section "Painting" of these specifications.

END OF SECTION

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SECTION 05710 - FERROUS METAL RESTORATION

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide ferrous metal restoration work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Repair/replace pivot pins on iron gates. Repair gates and operating hardware on gates and return to working order.
2. Repair broken cast iron gate frames.
3. Remove all paint and corrosion from iron gates, frames and grilles, prime and re-paint
4. Furnish and install, new ironwork gate, frame, grilles, hardware and paint finish, complete.
5. Remove and re-set anchors or gate supports.

B. Related Work: The following related work is to be performed by other trades under the designated sections:

1. Stonework - Section 04211
2. Exterior Stone Masonry Restoration - Section 04500
3. Painting - Section 09900
4. Paint Removal - Section 09910

1.02 QUALITY ASSURANCE

A. Engage an experienced firm that has recently completed Ferrous Metal Restoration projects similar in scope, cost, material, design, and extent to that indicated by this section (i.e. ferrous metal restoration work on buildings that are considered to be landmark, landmark quality or buildings of equivalent historical or

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architectural significance) and whose work has resulted in construction with a record of successful in-service performance.

B. The Contractor shall maintain a steady work crew consisting of qualified craftsmen who are experienced with the materials and methods specified and familiar with the design requirements.

C. Trade Supervision: The Contractor shall confirm that all workmen under his direction fully understand the requirements of the job. All mechanics shall be directly supervised by a foreman, or other designated person, with the same or more experience set forth in 1.02A for Restoration Specialist. The foreman shall be present at the job site daily for the duration of the Work of this Section. The same foreman for each trade shall remain on the job, unless performance is deemed unacceptable. At least one person who is able to communicate in English shall be on site at all times.

D. Field Supervised Construction: Contractor shall notify Resident Engineer before beginning metal restoration. Obtain the Resident Engineer's approval for the installation of restored metal, before proceeding with the work.

E. The Contractor shall replace all broken, lost and damaged metalwork resulting from repair, removal, transportation cleaning or storing at no expense to the Owner.

F. In acceptance or rejection of this work, no account shall be taken for incompetence or lack of skill on the part of the workmen.

G. Materials and work shall conform to the latest edition of reference specifications listed below, specified herein and to all applicable code and requirements of local authorities having jurisdiction, whichever is more stringent.

1. American Welding Society Code, AWS DI- I "Structural Welding" (latest edition).

2. "Manual of Steel Construction," American Institute of Steel Construction (AJCS).

3. SSPC SP-6, "Surface Preparation Specification No. 6. Commercial Blast Cleaning," or SSPC SP-1 1 "Surface Preparation Specification No. 11, Power Tool Cleaning to Bare Metal"

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4. SSPC PA-1, "Painting Application Specification," Steel Structures Painting Council -"Shop, Field and Maintenance Painting, "Steel Structure Painting Manual", vol2.

5. "Handbook on Bolt, Nut and Rivet Standards," Industrial Fasteners Institute (IFI).

6. Relevant ASTM Standards for all materials.

H. Source of Materials: Obtain materials for metal restoration from a single source for each type of material required to ensure a match in quality, color, texture, and pattern.

I. Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for adjustments and fitting where taking of field measurements before fabrication might delay the work.

J. Erect work square, plumb, straight, and true. Fit work accurately and anchor securely in place. All flat metal surfaces shall be installed perfectly level or pitched as specified in one plane.

K. Confirm specified dry mil thickness of applied primer with standard equipment recognized by the industry for determining the thickness of paint coatings.

1.03 SUBMITTALS

A. Qualification Data: Submit qualification data for firms and people specified in "Quality Assurance" Article that demonstrate their capabilities and experience as required in that article. List project names, addresses, names and telephone numbers of Architect and Owner, plus other specified information.

B. Documentation: Submit documentation as described in "Documentation" article, below. Number tags shall be noted on plan drawings. Ironwork may not be removed until approval of the documentation.

C. Program of Work: Submit a written program for each restoration phase of this Contract, include protection of surrounding materials on the building and site, and adjoining properties, during operations.

1. Include detailed description of materials, methods, and equipment to be used for each phase of the restoration work of the Contract.

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2. Include written descriptions, drawings, and diagrams, outlining proposed methods and procedures for protection of personnel, the public, and the existing construction during the Work of this Section.

3. If alternate methods and materials to those specified are proposed for any phase of the iron restoration work, provide written description. Provide evidence of successful use on comparable projects and demonstrate its effectiveness for use on this project.

D. Product Data and Literature: Submit manufacturers, fabricator's and finisher's technical data for each product, specifications, installation instructions for products used in metalwork, include recommendations for application and use of all finishing materials and methods. Include test reports and certificates substantiating the products compliance with the specified requirements.

E. Samples: Submit, for verification purposes, prior to mock-up erection, samples of the following:

1. Samples of all attachments, anchors, inserts, fastenings, adhesives, preparations and products included in this section.

2. Paint Samples: Primer, intermediate primer, and finish coat applied to iron samples measuring 4" x 4".

3. Submit (2) sets of representative samples, 6" or longer, of each metal and finish required. Prepare samples of metal of same alloy and thickness to be used for the work. Where normal color and texture variations are to be expected, include (2) or more sets of each sample showing the limits of such variations.

F. Shop Drawings:

1. Submit for fabrications and installation of all types of ornamental metalwork, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing and all other details to fully illustrate the work of this Section. Provide setting diagrams and templates for anchorages, sleeves and bolts installed by others.

2. Submit large scale drawings showing new anchorage system for gate.

G. Field Constructed Mockups: Before beginning iron restoration, prepare the following samples, obtain the Resident Engineers acceptance of visual qualities

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before proceeding with the work. Mockups shall remain as a record at the site until the Work is completed and approved by the Resident Engineer.

1. Execute complete sequence of restoration of one gate leaf; selected by Resident Engineer; include paint removal, repainting, and new anchors,

H. Samples submitted which are approved by the Resident Engineer shall remain as a record at the site until the work is completed and approved by the Resident Engineer.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General: Deliver, store, handle, and protect all materials from damage, moisture, dirt, and introduction of foreign matter. Store all iron materials on raised platforms and under ventilated, waterproof cover. Store packaged materials in manufacturer's unopened containers, marked with manufacturer's name and product brand name. Immediately reseal containers after partial use. Remove and replace damaged materials.

1.05 PROTECTION

A. Take all necessary precautions to protect all persons, property and materials (whether subject to the work of this Section or not) from any harm or damage associated with the work of this Section.

B. Take all necessary precautions to prevent fire and spread of fire.

C. Take all necessary precautions to protect workers and the public from any hazards involved in the work of this Section.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Provide materials which have been selected for their surface flatness, smoothness and freedom from surface blemishes where exposed to view in the finished unit. Exposed to view surfaces which exhibit pitting, seam marks, roller marks, stains, discolorations or other imperfections on the finished units will not be acceptable.

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B. Wrought Iron: Metal used in replacing wrought iron shall be steel complying with ASTM A-36, latest edition,

C. Casting: All cast grilles or other new castings shall be cast malleable iron conforming to ASTM A 47 Oracle 32510.

D. Patching Material: Crack filler and patching material shall be Belzona "Supermetal" from Belzona Molecular, Inc., 100 Charles Lindbergh Blvd., Uniondale, NY 11553, or approved equal.

E. Welding Electrodes and Filler Metal: Type and alloy of filler metal and electrodes as recommended by producer of the metal to be welded, and as required for color match, strength and compatibility in the fabricated items. For welding existing cast iron, use Nickel 99 electrodes and rod.

F. Anchors for Ironwork onto masonry: Adhesive anchors consisting of stainless steel threaded rods set in moisture insensitive modified epoxy adhesive. Provide Hilti HIT HY-150 anchors manufactured by the Hilti Corp, or approved equal.

G. Fasteners and Anchoring Devices:

1. Fasteners: Bolts, nuts, washers, screws, rivets and other connection devices to be stainless steel according to ASTM F 593. For components of mating fasteners (bolts, nuts and washers) use stainless steel according to ASTM F 594.

2. Masonry Anchorage Devices: Expansion shields shall conform to Federal Specification FFS-325.

H. Primer for Blast Cleaned Iron and Steel: "Series 66, Hi-Build Epoxoline", manufactured by Tnemec Company, Inc., Woburn, MA, or approved equal. Apply (2) coats. Provide minimum 5 mil dry film thickness.

I. Primer for Hand Tool Cleaned Iron and Steel: "Series 135, Chem Build", manufactured by Tnemec Company, Inc., Woburn, MA, or approved equal. Apply (2) coats. Provide minimum 5 mil dry film thickness.

J. Second and Finish Coats: "Series 73 Endura-Shield III, Hi-Build Acrylic Polyurethane Enamel", manufactured by Tnemec Company, Inc., Woburn, MA, or approved equal. Provide one intermediate coat and two finish coats, 4 - 9 mil dry film thickness.

K. Colors: Paint colors shall be selected by the Resident Engineer. Prime coats and undercoats shall each have a slight variation in color to distinguish them from the preceding coat. All finish paints shall be "ready-mixed" matching the approved

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color displays. Colors shall be pure, non-fading pigments, mildew-proof, sun-proof, finely ground in approved medium.

2.02 ACCEPTABLE MANUFACTURERS

A. Subject to the requirements of this section, provide products of one of the following manufacturers (approved equals will also be accepted):

1. Architectural Iron Company, 104 Ironwood Rd., Milford, PA 18337,
2. Historical Arts and Castings, Inc., 5580 W. Bagley Rd., West Jordan, Utah 84088,
3. Robinson Iron Corp., Robinson Rd., Alexander City, Alabama 35011,

2.03 FABRICATION

A. Take field measurements prior to preparation of shop drawings and fabrication. Do not delay job progress; allow for trimming and fining wherever taking field measurements before fabrication might delay work.

1. Provide for additional nil extensions and adjust lengths to accommodate new designs.
2. Additions and subtractions from the width (horizontal) of existing panels shall be made symmetrically to both ends of the panel. For new work, deviations from the width of the panels shall be spaced symmetrically.

B. Components shall be designed and fabricated to allow for expansion and contraction for a minimum ambient temperature range of 120° F., without causing buckling, excessive opening of joints or overstressing of welds and fasteners or anchors.

C. All removable members shall be carefully machined and fitted and shall be secured by screws or bolts of proper size and approved spacing.

D. Drill or cleanly punch holes; do not bum.

2.04 CASTINGS

A. Where possible, use original castings. If not possible, adhere to the outline, as noted.

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B. Molds shall be made from the approved models, complete with core boxes, loose pieces, and all required operation equipment. The cores shall be carefully set and secured, so that cross-sections of all parts shall be of uniform thickness.

C. Castings shall be made in properly vented molds faced with the best, finest grained material to give optimum smoothness to the cast surface, and shall be thoroughly cleaned before painting.

D. Castings: Provide castings to match existing original elements in material, dimension, configuration, and profile. Provide castings that are sound and free of warp, cracks, blow holes, or other defects that impair strength or appearance. Grind, wire brush, sandblast, and buff castings to remove seams, gatemarks, casting flash, and other casting marks. Machine with holes *for* fasteners and other elements to match existing units. Finish castings to match finish of existing elements.

E. Properly finish such portions of all castings necessary to assure that such shall fit in a neat and satisfactory manner.

F. Clean all castings prior to painting in accordance *with* the requirements of the Steel Structures Painting Council (SSPC) SP-6, Commercial Blast Cleaning,

2.05 SHOP FINISHING

A. Shop coat all ferrous metal surfaces using specified primer paint and two coats of the specified paint according to the Steel Structures Painting Manual Vol. 2, SSPC PA-I, "Paint Application Specification No. 1, Shop, Field and Maintenance Painting."

1. Protect all copper alloy ornaments in place on railings during restoration of railings.

B. Paint shall be delivered in the original containers of the approved manufacturer.

C. Painting shall be done in dry weather or under cover, and steel or iron surfaces shall be free from moisture or frost. No materials shall be delivered until the shop coat has dried.

D. Remove loose rust, mill scale and existing paint by air abrasive cleaning as specified in Steel Structures Painting Manual Vol. 2, SSPC SP-6, "Commercial Blast Cleaning.

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E Each primer coat applied shall produce a dry film thickness of 2.0 to 2.5 mils. Finish coats shall produce a minimum dry film thickness of 2.0 to 3.5 mils.

F Surfaces concealed from view in the finished construction work and which will not be accessible shall receive an additional shop coat of paint. Touch-up marred and abraded surfaces with the specified paint after erection in the field.

G Repaint areas of shop coat damaged during handling or installation with paint similar to that applied in the shop.

H Corrosion Protection: Coat concealed surfaces which will be in contact with concrete, masonry, or dissimilar metals and in exterior work with a heavy coat of bituminous paint. Do not extend coating onto exposed surfaces. Do not coat anchors set in lead.

2.06 SEQUENCING AND SCHEDULING

A Removal of existing iron fabrications shall proceed before the beginning of masonry restoration and cleaning and dismantling.

PART 3 - EXECUTION

3.01 COORDINATION

A The Contractor shall provide a schedule for the removals, storage, reinstallation and methods of protection prior to beginning any work.

B Coordinate removal and reinstallation of iron gates with new wood doors and stone restoration.

C Coordinate repair and painting of ferrous metal grilles and gates with masonry and railing work at entrance.

3.02 DOCUMENTATION

A Remove the iron items to be restored. Identify each piece before removal with a metal tag identifying exact location. Numbers shall be keyed to drawings.

B Before beginning the work of this Section, photographically document conditions of all materials to be removed and salvaged. Prints shall be minimum 5" x

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7", labeled, and keyed to drawings showing the locations of the items. Prints shall be placed in clear sleeves and kept in a carefully labeled binder. Binder shall be accessible at all times.

3.03 PROCEDURES: IRON GATES - Shop Restoration

- A. Remove gates to a shop for restoration, where possible. Identify each gate leaf with a metal tag prior to removal from the building.
- B. Remove all paint and corrosion from the ironwork by abrasive blast methods. All work to be performed in accordance with the requirements of Section 09910. All exposed surfaces of iron to be cleaned to SSPC SP-6.
- C. Weld all opened joints
- D. Fill all holes in gates with specified patching compound.
- E. Fabricate and attach new hardware for mounting the gates to masonry, where necessary. Attach by welding. Repair and/or replace all hardware to return gates to full operability.
- F. Remove all dust, millscale, and additional corrosion and rinse completed unit with a suitable solvent to remove all dirt and oils.
- G. Prime paint with specified primer. Paint with finish paint. All work shall be performed in accordance with the requirements of Section 09900.

3.04 PROCEDURES: WELDING

- A. Comply with AWS Code for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of the exposed side. Clean exposed welded joints of all welding flux, and dress on all exposed and contact surfaces.

3.05 PROCEDURES: IRONWORK NOT TO BE REMOVED FROM SITE

- A. Remove all paint from ironwork in accordance with the procedures of Section 09910.
- B. Remove all soil, and corrosion products using hand tools and hand-held power tools to bright metal (SSPC-SP 11).

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1. Thoroughly protect adjacent masonry.
- C. Weld all opened joints Weld cracked pieces of cast iron. Grind welds smooth.
- D. Fill all holes in gates with specified patching compound.
- E. Repair and/or replace all hardware to return gates to full operability.
- F. Remove all dust, millscale, and additional corrosion and rinse completed unit with a suitable solvent to remove all dirt and oils.
- F. Prime paint with specified primer. Paint with finish paint. All work shall be performed in accordance with the requirements of Section 09900.

3.06 PROCEDURES: PANTING

- A. Refer to Section 09900.
- B. All removed items shall be reinstalled as soon as possible after final paint application. Paint must be dry before reinstallation. Touch up surfaces after installation as required.
- C. Protect all surfaces and materials not to be painted. Any paint on such surfaces or materials shall be removed to the complete satisfaction of the Architect, at no additional cost to the Owner.

3.07 INSTALLATION OF GATES

- A. Provide anchorage devices and fasteners for securing gates to masonry.
- B. Perform all cutting and drilling of masonry required for the installation of the gates. Set the work accurately in location, alignment and elevation, plumb. Level and true, measured from established lines and levels.
- C. Do not alter gates except for installation of new anchoring devices and hardware.
- D. Restore protective coverings which have been damaged during shipment or installation of the work. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at the same location.

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3.08 MOLDMAKING PROCEDURE

- A. Attach embossed numbered tag to each element to be reproduced and cross-reference its location on documentation drawings.
- B. Allow Resident Engineer to inspect and document the condition of the element
- C. Prepare element for transfer to shop for restoration work.
- D. Remove element to shop for restoration work.
- E. Remove all paint from element.
- F. Make mold from cleaned element.

3.09 NEW CASTINGS

A. Preparation:

1. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fining of work. Do not delay job progress; allow for adjustments and fitting where taking field measurements before fabrication might delay work.

2. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of items having integral anchors which are to be embedded in masonry construction. Coordinate delivery of such items to the project site.

3.10 INSTALLATION OF NEW IRONWORK FABRICATIONS

- A. All ironwork shall be installed in strict accordance with plans and specifications in a Workmanlike manner.
- B. Install iron fabrications plumb, level and secure.
- C. Install iron fabrications after the completion of masonry cleaning and restoration.

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D. Do not cut or abrade finishes which cannot be completely restored in the field. Return items with such finishes to the shop for required alteration, followed by complete refinishing, or provide new units at Contractor's option.

E. Restore protective coverings which have been damaged during shipment or installation of the work. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at the same location.

H. Field Welding:

1. Comply with AWS Code for the procedures of manual shielded metal-arc welding, the appearance and quality of welds made, and the methods used in correcting welding work.

2. Any field welding required shall be concealed and not visible in the finished work.

END OF SECTION

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SECTION 05805 – EXPANSION JOINT ASSEMBLIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Expansion joint assemblies for roof surfaces.

1.02 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Custom fabricated steel expansion and control joint devices.
- B. Section 07620 - Sheet Metal Flashing and Trim: Roof control joints.
- C. Section 07900 - Joint Sealers: Expansion and control joint finishing utilizing a sealant and bond breaker.

1.03 REFERENCES

- A. ASTM B 221: Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, Tubes.
- B. ASTM B 308: Aluminum-Alloy, 6061-T6 Standard Structural Shapes, Rolled or Extruded.
- C. ASTM B 455: Copper-Zinc Lead Alloy (Leaded Brass) Extruded Shapes.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01000.
- B. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction, and anchorage locations.
- C. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices, available colors and finish.
- D. Samples: Submit two samples 6 inch (152.4mm) long, illustrating profile, dimension, color and finish selected.

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E. Manufacturer's Installation Instructions: Indicate rough-in sizes; provide templates for cast-in or placed frames or anchors; required tolerances for item placement.

1.05 FIELD MEASUREMENTS

A. Verify that field measurements are as instructed by the manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements manufacturer's offering products which may be incorporated in the work include but are not limited to the following:

1. Watson Bowman Acme.
2. Pawling Corp.
3. MM Systems Corp.

2.02 MATERIALS

- A. Extruded Aluminum: ASTM B221, 6061 or 6063 alloy, T6 or T5 temper B308.
- B. Extruded Bronze: ASTM B455, 385 alloy.
- C. Resilient Filler: Neoprene exhibiting Shore A Hardness of 40 - 50 Durometer.
- D. Threaded Fasteners: Stainless steel.
- E. Backing Paint: Asphaltic type.

2.03 FABRICATION

- A. Joint Covers: Aluminum or Bronze cover plate, aluminum frame construction, retainers with resilient neoprene filler strip designed to permit plus or minus 50 percent joint movement with full recovery, flush and recess mounted.
- B. Back paint components in contact with cementitious materials.

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- C. Galvanize embedded ferrous metal anchors and fastening devices.
- D. Shop assemble components and package with anchors and fittings.
- E. Provide joint components in single length wherever practical. Minimize site splicing.

2.04 FINISHES

- A. Resilient Filler Exposed to View: Color as selected by the "Commissioner."

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions under provisions of Section 01000.
- B. Verify that joint preparation and affected dimensions are acceptable.

3.02 PREPARATION

- A. Provide anchoring devices for installation and embedding.
- B. Provide templates and rough-in measurements.

3.03 INSTALLATION

- A. Install components and accessories in accordance with manufacturer's instructions.
- B. Align work plumb and level, flush with adjacent surfaces.
- C. Rigidly anchor to substrate to prevent misalignment.

3.04 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01000.

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- B. Do not permit traffic over unprotected floor joint surfaces.
- C. Provide removable strippable coating reinforced cloth tape to protect finish surface.

END OF SECTION

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SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide rough carpentry work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Wood grounds, nailers, blocking and furring and other miscellaneous carpentry work which is generally not exposed.
2. Plywood backing panels for equipment.
3. Plywood subflooring/underlayment.
4. Wood framing and sleepers.
5. Temporary exterior handicap ramp.

B. Related Sections:

1. Section 02260 – Excavation, Support and Protection.
2. Section 06200 – Millwork.
3. Section 09250 – Gypsum Drywall.
4. Section 09900 – Painting.

1.02 SUBMITTALS

A. Material Certificates: Submit listing of species and grade selected for framing lumber, and a signed copy of grading rules showing design values for selected lumber. Design values shall comply with specified requirements and American Lumber Standards Committee.

B. Product Data: Submit manufacturer's specifications and installation instructions

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for manufactured materials, including construction panels.

C. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, and using treated material.

1. Submit certification by treating plant stating type of treatment, preservative retained and conformance with applicable standards.

2. Submit a statement that moisture content of treated materials complied with levels indicated before delivery.

3. Submit certification by treating plant that fire-retardant treated wood products comply with specified standards and other requirements.

1.03 PRODUCT HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Stack wood to provide air circulation within and around stacks.

1.04 PROJECT CONDITIONS

A. Coordination: Fit carpentry work to other work accurately. Correlate location of supports for attachment of other work.

PART 2 - PRODUCTS

2.01 LUMBER, GENERAL

A. Lumber Standards: Comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee.

B. Grade Stamps: Furnish lumber with grade stamp of inspection agency to show compliance with grading rules, and identifying grading agency, grade, species, moisture content and mill.

C. Provide lumber sizes as required by PS 20, unless otherwise shown.

1. Provide dressed lumber, S4S.

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2. Provide seasoned lumber with 15% maximum moisture content.

2.02 DIMENSION LUMBER

A. Structural Framing (2" to 4" thick, 2" to 5" and wider): Provide any species and grade under W'WPA or WCLIB rules which meets the following values:

1. Fb (minimum extreme fiber stress in bending); 1,400 psi.
2. Fv (minimum horizontal shear force); 90 psi.
3. E (minimum modulus of elasticity); 1,400,000.

2.03 MISCELLANEOUS LUMBER

A. General: Provide wood cants, nailers, blocking, furring, grounds and similar members, of sizes and shapes shown

B. Grade: Standard Grade light framing lumber of western or southern species, and Standard Grade boards per WCLIB or WWPA rules.

2.04 CONSTRUCTION PANELS

A. Construction Panel Standards: Comply with American Plywood Association (APA) "Performance Standard and Policies for Structural-Use Panels", Form No. E445.

B. Trademark: Factory-mark each construction panel with APA trademark to show compliance with grade requirements,

C. APA Performance-Rated Panels: Provide APA Performance-Rated Panels of thickness shown and as follows:

1. Plywood Backing Panels: For backing panels where shown, provide fire-retardant treated plywood, APA C-D PLUGGED NT with exterior glue, not less than 1/2" thick.
2. Plywood Subflooring/Underlayment Panels: For subflooring/underlayment panels where shown, provide fire-retardant treated plywood, APA RATED STURD-I-

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FLOOR, span rated panels, EXPOSURE I, 1/2" thick, unless otherwise indicated.

2.05 MISCELLANEOUS MATERIALS

A. Fasteners and Anchorages: Provide size, type, material and finish complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers, anchors and connectors of the size and type recommended by the manufacturer for each use indicated including recommended nails.

1. Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

2. Provide galvanized steel connectors, minimum 16-gauge, of type and size as recommended by manufacturer for uses indicated.

B. Building Paper: ASTM D 226, Type I; asphalt saturated felt, non-perforated, 15-lb. type.

2.06 WOOD TREATMENT BY PRESSURE PROCESS

A. Preservative Treatment: Comply with applicable requirements of AWPA Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark.

1. Pressure-treat above-ground items with water-borne preservatives to comply with AWPB LB-2. After treatment, kiln-dry lumber and plywood to 15% maximum moisture content. Treat the following:

a. Wood cams, nailers, curbs, blocking, stripping and sleepers in connection with roofing, flashing and waterproofing.

b. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.

2. Complete fabrication of treated items prior to treatment, where possible, Coat field cut surfaces with heavy brush coat of same chemical used for treatment and to comply with AWPA M4.

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B. Fire-Retardant Treatment: Comply with City of New York Code, Pressure impregnate interior lumber and plywood with fire-retardant chemicals to comply with AWPA C20 and C27, respectively Identify treated lumber with marking of Underwriters Laboratories, Inc., U.S. Testing, or other approved testing and inspecting agency.

1. Current Evaluation/Research Reports: Provide fire-retardant treated wood for which a current model code evaluation/research report exists that is acceptable to authorities having jurisdiction and that evidences compliance of fire-retardant treated wood for application indicated.

2. Interior Type A: For interior locations use fire-retardant chemical formulation that produces treated lumber and plywood with the following properties under conditions present after installation:

a. No reduction takes place in bending strength, stiffness, and fastener holding capacities below values published by manufacturer of chemical formulation that are based on tests by a qualified independent testing laboratory of treated wood products identical to those indicated for this Project under elevated temperature and humidity conditions simulating installed conditions.

b. No other form of degradation occurs due to acid hydrolysis or other causes related to manufacture and treatment.

c. No corrosion of metal fasteners results from their contact with treated wood.

3. Products: Subject to compliance with requirements, provide one of the following:

a. "Dricon," Hickson Corporation

b. "Pyro-Guard," Hoover Treated Wood Products.

c. "Flameproof LHC-HTT" Osmose Wood Preserving Co, Inc.

d. Or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

A. Discard defective materials. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

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B. Securely attach carpentry work as required by specified standards, Countersink nail heads on exposed carpentry work and fill holes.

C. Use fasteners of size to not penetrate members to exposed side or into finish materials. Make tight connections; install fasteners without splitting of wood; predrill as required.

3.02 WOOD GROUNDS, NAILERS, BLOCKING AND SLEEPERS

A. Provide where shown for screeding or attachment of other work. Shim as shown and locate for true line and level of work to be attached.

B. Attach to support applied loading. Countersink exposed bolts and nuts flush with surfaces. Where possible, anchor to concrete and masonry during their installation.

C. Provide permanent grounds of dressed, preservative treated, key-bevelled lumber not less than 1-1/2" wide and of thickness to match finish material. Remove temporary grounds when no longer required.

3.03 WOOD FURRING

A. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finished work.

3.04 INSTALLATION OF CONSTRUCTION PANELS

A. General: Comply with applicable recommendations contained in Form No. E 3 OF, "APA Design/Construction Guide - Residential & Commercial".

B. Fastening Methods: Fasten panels as indicated below:

1. Plywood Backing Panels: Nail or screw to supports.

2. Subflooring/Underlayment Panels: Glue-nail to framing. Continually glue and nail, 6" o.c. on panel edges and 8" o.c. over intermediate framing.

3.05 TEMPORARAY EXTERIOR HANDICAP RAMP

A. Ramp: Temporary exterior handicap ramp shall be constructed with pressure

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treated (PT) structural wood members, 3/4" thick exterior grade plywood and all necessary hardware, anchors and/or fasteners, finishes and accessories for a complete installation, Ramp shall include all framing, railings, landings and curbs.

B. Regulatory: Ramp shall comply with Building Code and ADA guidelines.

C. Submittals: Provide shop drawings for ramp (anchoring, framing and railing, elevations and slopes, etc) and signage, prior approval required by Architect or the Project Manager before construction is to begin.

E. Demolition: The Contractor is also responsible for the removal and clean up of any temporary ramp installed during the project.

END OF SECTION

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SECTION 06200 - MILL WORK

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide mill work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Casework, cabinets, countertops and shelving.
2. Miscellaneous trim and basework.
3. Cabinet hardware and adjustable shelf hardware.
4. All other items of finish carpentry work as required or as directed by the Architect or Project Manager.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 6 Section "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view.
2. Division 9 Section "Painting" for priming and back priming of finish carpentry.
3. Division 9 Section "Resilient Tile" for courtroom (judge's bench, witness stand, stenographer station and jury box) flooring.

1.02 SUBMITTALS

A. Product Data for each type of factory-fabricated product and process specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.

B. Wood treatment data as follows, including chemical treatment manufacturer's

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instructions for handling, storing, installing, and finishing treated material:

1. For fire-retardant-treated wood products include certification by treating plant that treated materials comply with specified standard and other requirements.

C. Shop drawings showing location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcing specified in other Sections.

2. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, and other items installed in architectural woodwork.

3. Show veneer leaves with dimensions, grain direction, exposed face, and an identification number indicated for each leaf.

D. Samples for initial selection of the following in the form of manufacturer's color charts consisting of actual units or sections of units showing the full range of colors, textures, and patterns available for each type of material indicated.

1. Each type of trim specified, 12" long samples.

2. Plastic laminate, 3 samples, 12" square, for each type, color and surface finish.

3. Exposed hardware, one unit of each type and finish.

4. Cabinet door and hardware before construction.

5. Granite, finish polished, minimum sample size 4" x 4" x 3/8" thick.

E. Material test reports from a qualified independent testing agency indicating and interpreting test results relative to compliance of fire-retardant-treated wood products with requirements indicated.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed finish carpentry similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

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1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Do not deliver interior finish carpentry until environmental conditions meet requirements specified for installation areas. If finish carpentry must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.05 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry until building is enclosed and weatherproof, wet-work in space is completed and nominally dry, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels through the remainder of construction period.

B. Maintain temperature and humidity in installation area as required to maintain moisture content of installed woodwork within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. Require Woodwork Manufacturer to establish optimum moisture content and required temperature and humidity conditions

1.06 RELATED DOCUMENTS

A. Drawings, details and/or plans by the Design Consultant or the DOC of the various courtroom locations will be supplied by the Project Manager as they become available.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering high pressure decorative laminates or granite which may be incorporated in the work include; but are not limited to, the following:

1. Formica Corp.
2. Nevamar Corp.

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3. Ralph Wilson Plastics Co.
4. Chemcore Industries Inc.
5. Or an approved equal.

2.02 MATERIALS, GENERAL

A. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," for lumber and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:

1. NELMA - Northeastern Lumber Manufacturers Association.
2. NHLA - National Hardwood Lumber Association.
3. NLGA - National Lumber Grades Authority.
4. SCMA - Southern Cypress Manufacturers Association.
5. SPIB - Southern Pine Inspection Bureau.
6. WCLIB - West Coast Lumber Inspection Bureau.
7. WWTPA - Western Wood Products Association.

C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps entirely and provide certificates of grade compliance issued by inspection agency.

D. Softwood Plywood: Comply with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood."

E. Hardwood Plywood: Comply with HPVA HP-1, "Interim Voluntary Standard for

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Hardwood and Decorative Plywood.”

F. Hardboard: ANSI/AHA A135.4

G. Medium-Density Fiberboard: Product made without formaldehyde and complying with ANSI A208.2, Product Class MD.

1. Product: Subject to compliance with requirements, provide “Medite II” by Medite Corp.

H. Particleboard: ANSI A208.1, GradeM-2.

I. High Pressure Laminate: NEMA LD 3.

J. Granite: Comply with ASTM C97, C99, C170, C241, C880.

2.03 FIRE-RETARDANT-TREATED MATERIALS

A. General: Use materials impregnated with fire-retardant chemical formulations indicated by a pressure process or other means acceptable to authorities having jurisdiction to produce products with fire-test-response characteristics specified. Comply with New York City Building Code requirements.

B. Fire-Retardant Chemicals: Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated material from untreated material.

C. Fire-Retardant-Treated Lumber: Comply with the following:

1. Low-Hygroscopic Formulation: Interior Type A per AWPA C20.

2. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.

3. Discard treated material that does not comply with requirements of referenced standards. Do not use twisted, warped, bowed, discolored, or otherwise damaged or defective material.

4. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

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- a. D-Blaze; Baxter: J. H. Baxter Co.
- b. D-Blaze; Chemical Specialties, Inc.

- c. Pyro-guard; Continental Wood Preservers, Inc.

- d. Dricon; Hickson Corp.

- e. Pyro-guard; Hoover Treated Wood Products, Inc.

- f. Or an approved equal.

2.04 BASIC MATERIALS AND FABRICATION METHODS

A. General: Except as otherwise indicated, comply with following requirements for Premium Grade as defined by AWI for millwork items specified.

B. Wood Moisture Content: Provide kiln-dried (KD) lumber with an average moisture content range of 6% to 11% for interior work. Maintain temperature and relative humidity during fabrication, storage and finishing operations so that moisture content values for woodwork at time of installation does not exceed 5% to 10%.

C. Fabricate woodwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items of work.

1. Ease edges to a 1/16" radius, for edges of solid wood (lumber) members less than 1" in nominal thickness, 1/8" radius for edges of rails and similar members over 1" in nominal thickness.

D. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary, provide ample allowance for scribing, trimming, and fitting.

E. Pre-Cut Openings: Provide woodwork with pre-cut openings, where possible, for hardware, appliances, plumbing fixtures, electrical work, telephone cut-outs and similar items. Locate openings accurately and provide proper size and shape. Smooth edges of cutouts and, where located in countertops, seal edges of cutouts with a water-resistant coating.

F. Measurements: Before fabrication of woodwork to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required

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for accurate fit.

1. Where field measurements before fabrication would delay the project, fabricate without field measurements and provide ample borders and edges to allow scribing and trimming of woodwork.

G. Solid Wood: AWI Section 100, Grade 1, and as follows:

1. Opaque Finish: Premium quality medium density fiberboard.
2. Transparent Finish: Premium quality AWI TR-2.
3. Concealed: Any hardwood specie, Grade III per AWI Section 100.

H. Plywood: Veneer core, minimum 3/4" thick unless otherwise noted, interior grade using exterior type waterproof glue.

1. Provide "A" face plies of 1/26" plain sliced, clear, paint grade for exposed and semi-exposed surfaces to receive "painted" finish.

2. Provide plywood for "painted" finish with "V" type hardwood edge banding on exposed edges and on all edges of adjustable shelves. Edge band shall be tongued and pressure glued core with mitered corners.

I. Panel Products: AWI Section 200, particleboard core plywood, with face veneers matched as indicated.

1. Opaque Finish: Premium grade medium density fiberboard which will not show any defects when finished with specified opaque finish.

2. Transparent Finish: Premium quality AWI TR-2.

3. Plastic Laminate: Comply with NEMA LD-3 for Grade GP-50; 0.050" thickness, of color, pattern and finish. Refer to schedule at end of Section.

J. Lumber: AWI Section 100 with the following requirements:

1. Hardwood for Concealed Blocking and Framing: Economy grade, any species which when painted, will not show any defects.

K. Particleboard: AWI Section 200, particleboard core unless otherwise indicated, with the following requirements:

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1. Use particle cores of "Duraflake FR", as manufactured by Willamette, Inc., or approved equal.
2. Provide facings and edgings as indicated.

2.05 INTERIOR STANDING AND RUNNING TRIM

A. Hardwood Trim: Provide finished hardwood lumber and moldings complying with the following requirements:

1. Species: Clear, kiln-dried white hardwoods.
2. Texture: Surfaced (smooth).
3. Lumber for Transparent Finish (Stained or Clear): Solid lumber stock.

2.06 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

1. Where finish carpentry materials are exposed in areas of high humidity, provide fasteners and anchorages with hot-dip galvanized coating complying with ASTM A153.

B. Fasteners:

1. Wood Screws: FS FF-S-1 11, type, size, material and finish as required for the condition of use.
2. Nails: FS FF-N-I05, type, size, material and finish as required for the condition of use.
3. Anchors: Type, size, material and finish as required for the condition of use.
4. Staples: Type, size, to provide sufficient strength to hold upholstered fabric taut and in place without sagging.
5. Panel Supports: Provide wood veneer panel supports where indicated.

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C. Adhesives:

1. For Laminating Plastic Laminate Surfaces: Melamine, phenol-resin, or resorcinol-resin complying with FS MMM-A- 181; type, grade and class best suited for the purpose.

2. For All Other Uses: Moisture resistant complying with FS MMM-A-125, Type II, or MMM-A-188, Type 1,11 or III; type best suited for the purpose.

3. All adhesives shall meet (MSDS) Material Safety Data Sheet Standards.

D. Grommets: Provide diameters shown; satin finished chrome grommet sleeves sizes as indicated on drawings.

E. Glue: Aliphatic- or phenolic-resin wood glue recommended by manufacturer for general carpentry use.

2.07 FABRICATION - GENERAL

A. General: Provide architectural woodwork visible from any one space or room fabricated from a single flitch obtained from the same tree, and shall match in cut grain, color, finish, and other aesthetic effects.

1. All woodwork for a given floor to be selected from the same flitch obtained from a single tree.

B. Provide steel framing and lumber framing for architectural woodwork, complete with all bracing and fastening devices as required for a rigid installation, and as required to sustain the imposed loads.

C. Do all fabrication from field measurement with provision for scribing as required to meet built-in conditions.

D. Coordinate the work of this Section with the work of other trades.

E. Fabricate units in largest practicable sections. Trial fit in the shop, disassemble for shipment and reassemble with concealed fasteners.

F. Fabricate architectural woodwork from specified veneers, all sapwood and other imperfections shall be clipped out. Each elevation of specified woodwork shall be of a single flitch. Each item of woodwork for this project shall be fabricated of veneers from a single tree.

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G. Maintain relative humidity and temperature during fabrication, storage and finishing operations matching that of the areas of installation.

H. Details indicate the required type of construction, Modifications to conform to manufacturer's standards will be considered providing they comply with the Contract Documents, maintain the profiles shown and subject to acceptance by the Resident Engineer.

I. Reinforcing shown is minimum. Provide additional reinforcing as required to ensure a rigid assembly. Exposed surfaces shall be free from dents, tool marks, warpage, buckle, glue and open joints, or other defects. Accurately fit all joints, corners and miters.

J. Provide openings for hardware, appliances, plumbing fixtures and electrical work. Locate openings accurately and use templates or diagrams for proper size and shape. Smooth edges of cutoffs and seal edges of cutouts in countertops with a water-resistant coating.

K. Provide balancing sheets as required, and specified, complying with referenced AWI standards.

2.08 CABINET HARDWARE

A. Schedule of acceptable cabinet hardware, or approved equal:

1. Drawer glides: "Grant"; Model #328 (up to 50 lbs.); #329 (over 50 lbs.).
2. Back-mounted hinges: "Stanley"; Series #1560, size to suit.
3. Shelf supports: "Grass" of America.
4. Magnetic catches: "Ives"; Series #323/per leaf.
5. Shelf pins and ferrules: "Grass"; stainless steel.

B. Provide model, size as required for the proper installation.

2.09 FACTORY FINISHING OF INTERIOR ARCHITECTURAL WOODWORK

A. Quality Standard: Comply with AWI Section 1500 unless otherwise indicated.

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B. General: The entire finish of interior architectural woodwork is specified in this section, regardless of whether factory applied or field applied touch-up after installation.

C. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces and similar preparations for finishing of architectural woodwork, as applicable to each unit of work.

D. Transparent Finish: Comply with requirements indicated below for grade, finish system, color, effect, and sheen:

1. Grade: Premium.
2. AWI Finish System: TR- 2 - Catalyzed Lacquer.
3. Stain and Effect: Natural satin luster appearance.
4. Sheen: Semi-gloss.

E. Opaque Finish: Comply with requirements indicated below for grade, finish system, color, effect, and sheen:

1. Grade: Premium.
2. AWI Finish System: OP-2 - Catalyzed Lacquer.
3. Color and Effect: As selected by Architect.
4. Sheen: Natural satin luster appearance.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting installation and performance of finish carpentry. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 SCHEDULING

A. The Contractor shall begin diligently to fabricate all the above millwork and as each of the various courtroom spaces become available, The Contractor shall be notified to begin installation of his work at such premises.

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B. The Contractor shall complete all of his fabrication and installation without the various premises interfering with the courtroom activity.

C. Electrical work will be done by others, but the Contractor shall cooperate with such parties so that the work can be completed within the allowed contract time.

3.03 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Condition finish carpentry to average prevailing humidity conditions in installation areas before installation, for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

C. Prime and backprime lumber for painted finish exposed on the exterior. Comply with requirements for surface preparation and application in Division 9 Section "Painting."

3.04 INSTALLATION, GENERAL

A. Do not use finish carpentry materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install finish carpentry plumb, level, true, and aligned with adjacent materials. Use concealed shims where required for alignment.

1. Scribe and cut finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

2. Countersink nails, fill surface flush, and sand where face nailing is unavoidable.

3. Install to tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm) for plumb and level. Install adjoining finish carpentry with 1/32-inch (0.8-mm) maximum offset for flush installation and 1/16-inch (1.5-mm) maximum offset for reveal installation.

4. Coordinate finish carpentry with materials and systems in or adjacent to standing and running trim and rails. Provide cutouts for mechanical and electrical items

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that penetrate exposed surfaces of trim and rails.

- C. Finish according to specified requirements.
- D. Refer to Division 9 Sections for final finishing of finish carpentry.

3.05 STANDING AND RUNNING TRIM INSTALLATION

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches (610 mm) long, except where necessary. Stagger joints in adjacent and related standing and running trim. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane backs of casings to provide uniform thickness across joints, if required.

- 1. Match color and grain pattern across joints.
- 2. Install trim after gypsum board joint finishing operations are completed.
- 3. Drill pilot holes in hardwood before fastening to prevent splitting. Fasten to prevent movement or warping. Countersink fastener heads on exposed carpentry work and fill holes.

3.06 SHELVING

A. Shelves shall be constructed of 3/4" thick oak veneered plywood, unless otherwise specified. Plywood shall be free from knots, cracks, blemishes, etc. and sanded smooth.

B. Wood finish shall be one (1) coat of stain and two (2) coats of polyurethane. Color of stain shall be selected by Architect. Approval of stain or equal will be required before application.

C. All cut edges are to be finished with iron-on woodgrain tape to match wood veneer or with 1/4" thick solid K.D. strip on all edges.

3.07 COUNTERS AND COUNTERTOPS

A. All woodwork shall be carefully cut and constructed throughout to conform with finished dimensions as shown in drawings to be provided keeping with the best practice

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of the trade. Work shall be pre-assembled as far as practical. No work shall be installed until surface is cleaned, leveled and fully prepared.

B. Lumber and plywood used for construction shall be fire retardant treated. Affidavits attesting to this shall be submitted for each type.

C. All woodwork corner joints shall be blind mitered, dovetail connected. Nailing and gluing shall be neat, sufficient and invisible wherever possible and shall result in a rigid and squeak-free construction. All cut edges are to be finished with iron-on woodgrain tape to match wood veneer.

D. All lumber and plywood shall be straight, true and level, free of warpage, splitting, serious cracking, knots and other defects affecting the strength and appearance. Lumber shall be construction grade 1 (1400 lbs. Fiber stress to be grade and trade marked). All exposed lumber and plywood shall be oak wood and shall be kiln dried. Counters shall be constructed of 3/4" architectural grade plywood. Drawers shall be constructed from 1/2" oak veneer plywood, provided with drawer slide hardware for easy pulling and return, and any and all hardware and fastenings as required and necessary.

E. Counter shall be provided with drawer units and shelves as shown on the drawings and specified herein. Drawers and shelves shall be square and true, sanded and prepared ready for varnish.

F. Countertop should be prepared to receive 1" granite as indicated following manufacturer's recommendations.

G. Granite countertop will be vanity mounted or wall hung on full perimeter steel support angles and will include all cutouts required. For every 30" of width, contractor shall provide a minimum of one (1) sink cutout to accept all related faucets and accessories.

3.08 CABINETS

A. Cabinets shall be installed in locations shown on the plan and required to fit flush with line of window wall cabinetry. Cabinets shall be pairs of double door cabinets, of approximate finish dimensions 24" deep exterior and a height of 30" or up to the height of the finished window sill.

B. Cabinets shall sit on a board of continuous 2" X 4" lumber, forming a 4" high toe space covered in vinyl base moulding and topped with oak trim.

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C. Cabinets shall have a top counter of oak veneer plywood finish as selected and vertical surfaces shall be covered in hardwood veneer paneling as described in the drawing. All cabinets shall be edged in oak trim as described.

D. Doors shall be of oak plywood with solid edge throughout. Doors shall be hung on one pair of fully concealed self closing cabinet door hinges, so that doors fully overlap frames and no interior color or edge is visible when closed. Doors when open shall hold back against cabinets without damaging any woodwork or hardware.

E. Cabinets shall contain one 5/8" thick shelf covered on all sides with the same interior color of birch plywood. Shelf shall be easily adjustable on metal clips fitting into pre-coated slotted standards painted to match interior finish, or approved fastening.

F. Doors shall be fitted with built-in handgrab, allowing an open area for grabbing of at least 1" deep and 3-1/2" long. Doors shall be fitted with interval positive fastening devices top and bottom and an approved pin tumbler cylinder lock, with bolt throw sufficient for easy and secure locking of each pair of doors. The Contractor shall supply four keys for each pair of cabinets (4 doors) to be keyed alike. The Contractor shall submit one complete door with hardware for approval before proceeding with construction.

3.09 ALL PURPOSE ACCESS PANEL

A. The Contractor shall furnish and install an all purpose access panel minimum size approximately 24" X 30" for use in plastered, masonry, drywall and certain ceiling surfaces. Exact dimension shall be in accordance with the site condition and as provided by the Architect.

B. The all purpose access panel shall provide convenient access for inspection or services to vital components or utility services. Panel material shall be as directed by the Architect and in accordance with specifications.

3.10 METAL ACCESS PANEL

A. Metal access panel shall have frame of 060-6063 T6 extruded aluminum and panel corner of 0.060 aluminum as manufactured by "CESCO Products" or approved equal. Hinge shall be concealed continuous stainless steel. Latch shall be flush mounted key lock or tamper resistant latch. Finish shall be galvanized steel/mill.

3.11 ADJUSTING

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A. Repair damaged or defective finish carpentry where possible to eliminate functional or visual defects. Where not possible to repair, replace finish carpentry. Adjust joinery for uniform appearance.

3.12 PROTECTION

A. Provide final protection and maintain conditions that ensure finish carpentry is without damage or deterioration at the time of Substantial Completion.

END OF SECTION

SECTION 07200 - BUILDING INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide building insulation in accordance with the Contract Documents. The Contract Documents are as defined in the "Agreement". The "General Conditions Governing All Contracts" shall apply to all work under the Contract. The Work of this Section shall include but not be limited to the following:

1. Building insulation of the types indicated.

B. Related Work: Refer to other Sections for the following:

1. Division 16 - Mechanical; for insulation for mechanical systems.

1.02 QUALITY ASSURANCE

A. References: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

B. Thermal Conductivity: Thicknesses indicated are for thermal conductivity (k-value at 75 deg. F) specified for each material. Provide adjusted thicknesses for equivalent material having a different thermal conductivity. Where insulation is identified by "R" value, provide thickness required to achieve indicated value.

C. Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, by UL or other testing and inspection agency acceptable to authorities having jurisdiction.

1. Surface Burning Characteristics: ASTM E 84.
2. Fire Resistance Ratings: ASTM E 119.
3. Combustion Characteristics: ASTM E 136.

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1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product specifications and installation instructions for each required type of insulation.
- B. Certified Tests: With product data, submit certified test report showing compliance with specified performance values, including k-values (aged values for plastic insulations) , densities, compression strengths, burning characteristics, perm ratings and water absorption ratings and similar properties.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. General Protection: Protect insulations from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendation for handling, storage and protection during installation.

PART 2 - PRODUCTS

2.01 INSULATING MATERIALS

- A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics. Provide insulation of standard thickness shown.

1. Preformed Units: Sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths and lengths.

- B. Rigid Glass Fiber Board Insulation: Glass fibers and water-resistant binders formed into rigid or semi-rigid boards; ASTM C 612: k-value of 0.26; manufacturer's standard length and widths.

1. FSK Faced Board: Provide manufacturer's standard foil-skrim-kraft faced (one side) vapor-barrier board of not less than 5.0 lb. per cu. ft. density; vapor transmission of 0.02 perms.

- C. Glass Fiber Blanket/Batt Insulation: Resilient flexible blankets or semi-rigid batts; ASTM C 665, Type as indicated, densities of not less than 0.5 lb. per cu. ft., k-value of 0.27; manufacturer's standard length and widths as required to coordinate with spaces to be insulated; types as follows:

1. Provide Type III reflective vapor barrier faced units unless otherwise shown, with integral flanges; barrier rating of 0.5 perms.

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2. Flame-Spread Rating: Provide units with rating of 25, ASTM E 84.

D. Manufacturer: Subject to compliance with requirements, provide products of one of the following or approved equal:

1. Certain-Teed Products Corp.
2. Manville Bldg. Materials Corp.
3. Owens-Corning Fiberglas Corp.

2.02 AUXILIARY INSULATING MATERIALS

A. Adhesive for Bonding Insulation: Type recommended by insulation manufacturer, and complying with fire-resistance requirements.

B. Mechanical Anchors: Type and size as recommended by insulation manufacturer for type of application and condition of substrate.

C. Mastic Sealer: Type recommended by insulation manufacturer for bonding edge joints between units and filling voids in work.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Examine substrates and conditions under which insulation work is to be performed. Submit a report listing conditions detrimental to performance of work in this section. Proceed with work after unsatisfactory conditions have been corrected.

B. Clean substrate of substances harmful to insulations, including removal of projections which might puncture vapor barriers.

3.02 INSTALLATION, GENERAL

A. Comply with manufacturer's instructions for particular conditions of installation. If printed instructions are not available or do not apply, consult manufacturer's technical representative for specific recommendations before proceeding with work.

B. Extend insulation full thickness over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.

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C. Apply a single layer of insulation of required thickness, unless otherwise required to make up total thickness.

3.03 GENERAL BUILDING INSULATION

A. Apply insulation units to substrate by method complying with manufacturer's recommendations. Bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed-cell (non-breathing) insulation units by applying mastic or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with mastic or sealant.

C. Set vapor barrier faced units with vapor barrier to warm side of construction. Do not obstruct ventilation spaces, except for firestopping.

1. Tape joints and ruptures in vapor barrier, and seal each continuous area of insulation to surrounding construction to ensure vapor-tight installation.

3.04 PROTECTION

A. Protect installed insulation from harmful weather and from physical abuses, by non-delayed installation of concealing work or, by temporary covering or enclosure. Protect against exposure hazards, including possible sources of deterioration and fire.

END OF SECTION

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SECTION 07250 - FIREPROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide fireproof patching work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. New fireproofing and patching of existing structural members.

1.02 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain fireproofing materials from a single manufacturer for each different product.

B. Fire Performance Characteristics: Provide materials and construction which are identical to those tested for the following fire performance characteristics, according to test method indicated, by DL or other testing and inspecting agency acceptable to authorities having jurisdiction. The Contractor shall be responsible for Fire Performance Testing.

1. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for fire-rated assemblies in which fireproofing serves as direct-applied protection, tested per ASTM E 119.

2. Surface Burning Characteristics: As indicated for each fireproofing product required, tested per ASTM E 84 and listed in DL "Building Materials Directory"

C. Installation:

1. Fireproofing shall be installed in strict accordance with manufacturer's latest written instructions. Discrepancies between these instructions and this specification, drawings or site conditions are to be resolved by the Architect in writing.

2. Fireproofing shall be applied by a Contractor approved by the fireproofing manufacturer, and having the proper equipment, in accordance with manufacturer's recommendations.

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3. Before proceeding with the work, the Contractor shall apply fireproofing in accordance with the fire ratings to a representative surface area of approximately 50 square feet. Finish texture shall be inspected by Resident Engineer before proceeding.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data for fireproofing product indicated.

B. Test Reports:

1. Submit certified test results from an independent testing laboratory indicating compliance of fireproofing products with performance requirements indicated.

2. Submit test results of in-place performance as required under Part 3 of this section for field quality control.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to project site in original, unopened packages. Include labels with names of products and manufacturers, date of manufacture, shelf life, and UL labels for fire-resistance ratings.

1. Do not use materials whose shelf life has expired.

B. Store materials inside, under cover, and in a manner to keep them dry until ready to use. Remove from project site and discard any materials that have been exposed to moisture or have otherwise deteriorated.

PART 2 - PRODUCTS

2.01 FIREPROOF PATCHING MATERIALS

A. General: For concealed applications of fireproofing provide manufacturer's standard products complying with requirements indicated below for material composition and physical properties representative of installed products.

B. Cementitious Fireproofing: Factory-mixed dry formulation of inorganic binders and lightweight mineral aggregates mixed with water at project site to form a slurry for troweled-on application,

C. Physical Properties: Minimum values, unless otherwise indicated, measured per

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standard test
methods referenced with each property, as follows:

1. Bond Strength: 80 lb. per sq. ft. per ASTM E 736.
2. Compressive Strength: 3.47 lb. per sq. inch per ASTM E 76].
3. Corrosion Resistance: No evidence of corrosion per ASTM E 937.
4. Deflection: No cracking, spalling, delamination or the like per ASTM E 759.
5. Effect of Impact on Bonding: No cracking, spalling, delamination or the like per ASTM E 760.
6. Air Erosion: Maximum weight loss of 0.025 grams per sq. ft. per ASTM E 859.
7. D Density: Values for average and individual densities as required for fire-resistance rating indicated, per ASTM E 605, but not less than 14 lb. per cu. ft.
8. Hardness: 0.50 inch maximum penetration per ASTM C 569.
9. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 10 and 0, respectively.

D. Products: Subject to compliance with requirements, provide Cementitious Fireproofing as follows; "Monokote"; Grace Construction Products Div., W.R. Grace & Co., or an approved equal.

2.02 AUXILIARY FIREPROOFING MATERIALS

A. General: Provide auxiliary fireproofing materials which are compatible with fireproofing products and substrates, approved for use indicated by manufacturer of fireproofing, and which have been approved by UL or other acceptable testing and inspecting agency for use in fire-resistance rated designs indicated.

B. Substrate Primers: Type approved by manufacturer of fireproofing for substrate and for conditions of exposure indicated.

PART 3 - EXECUTION

3.01 INSPECTION

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A. Require Installer to examine substrates to determine if they are in satisfactory condition to receive fireproofing.

3.02 PREPARATION

A. Provide ventilation in areas to receive fire resistive coating.

B. Clean substrates of oil, grease, rolling compounds, incompatible primers, and loose mill scale which could impair bond of fireproofing.

C. Prime substrates where recommended by fireproofing manufacturer.

D. Cover other work and existing improvements which might be damaged by fall-out or spatter of fireproofing materials during application. Provide temporary enclosure as required to confine fireproofing operations, protect the environment, and to ensure adequate ambient conditions for temperature and ventilation.

3.03 INSTALLATION

A. General: Comply with fireproofing manufacturer's instructions for mixing materials, application procedures and equipment used to convey and troweled fireproofing material:

B. Extend fireproofing full thickness over entire area of each substrate to be protected. Unless otherwise recommended by fireproofing manufacturer, install fireproof patching materials in a single course.

C. Apply fireproofing in thicknesses and densities indicated but not less than that required to achieve fire resistance ratings specified.

D. Apply fireproofing materials by troweled-on method to maximum extent possible.

3.04 FIELD QUALITY CONTROL

A. Testing Laboratory: Contractor shall employ and pay an independent testing laboratory to perform tests required for local authority approval.

B. Repair or replace fireproofing within areas where test results indicate fireproofing does not comply with code or performance requirements.

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3.05 CLEANING, REPAIR AND PROTECTION

A. Immediately upon completion of troweled-on operations in each containable area of project, remove spatter and fall-out of materials from surfaces of other work and clean exposed surfaces to remove evidence of soiling.

B. The cleaning, repair and protection of the areas affected by the Work of this Section shall be the responsibility of the Contractor to the sole satisfaction of the DOC, at no additional cost to the City.

C. Cure exposed fireproofing materials in compliance with fireproofing manufacturers recommendations.

END OF SECTION

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SECTION 07270 - FIRESTOPPING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide firestopping work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Firestopping at openings in floors and fire rated walls and partitions to prevent the passage of fire, smoke or toxic gases.

B. Related Work: Refer to other Sections for the following:

1. Section 04200 - Unit Masonry.

1.02 QUALITY ASSURANCE

A. Qualifications: The Installer shall be an established firm that has been trained by the Manufacturer in the proper installation of firestopping materials and which is regularly engaged in this work.

1. Submit verification of experience upon request.

B. Contractor shall be responsible for securing controlled inspection approval for installations.

1.03 REFERENCES

A. Codes and Regulations: Comply with applicable regulations of the New York City Building Code.

1.04 SUBMITTALS

A. Shop Drawings: Submit shop drawings to show installation conditions that are not included in the product data.

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- B. Product Data: Submit manufacturers technical and installation instructions.
- C. Test Reports: Submit copies of test reports, by an independent testing laboratory, indicating that the firestopping materials comply with the specified requirements,
- D. Certificates: Submit certificates from manufacturers that their products comply with specifications and are suitable for the use indicated.
1. Submit New York City MEA and BS & A numbers for firestopping product required.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original sealed containers or unopened packages, with legible mixing and application instructions.
- B. Store materials out of weather in original containers as recommended by manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Fire Resistant Silicone Foam: Foam sealant shall conform to a two hour fire rating in accordance with the requirements of ASTM E 119, with a Flame Spread rating of 15 in accordance with ASTM E 84. Foam sealant shall also conform to UL Standard 1479 "Standards for Fire Tests of Through Penetration Fire Stops".
1. The foam sealant shall provide a fire resistance equal to the construction into which it is installed; in accordance with "Through Penetration Firestop Systems (XHEZ) in the Underwriters Laboratories "Building Materials Directory",
- B. Dams: Provide as recommended by the silicone foam manufacturer, as required for proper installation and for required fire rating.
- C. Mineral Fiber "Fire-Safing Insulation": Provide "Thermafiber" by U.S. Gypsum Co. or approved equal, 4 lbs. per cubic foot, of thickness to suit condition.
1. Provide 20 gauge minimum metal plate where required for firesafing support to comply with fire ratings and as required to meet UL assembly requirements.
- D. One-Part Fire-Stopping Sealant: One part elastomeric sealant formulated for use

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in a through-penetration fire-stop system for sealing openings around cables, conduit, pipes and similar penetrations through walls and floors.

1. Product 3M Fire Bather Caulk CP-25 as manufactured by the 3M Co., or an approved equal.
2. Provide assembly as required to meet UL assembly requirements.

PART 3 - EXECUTION

3.01 PREPARATION

A. Preparation of Surfaces: Surfaces to receive firestopping shall be firm, smooth, fully cured, clean and dry, free from defects.

3.02 INSTALLATION

A. General: Install firestopping materials to comply with the manufacturers instructions. Coordinate with plumbing, mechanical, electrical and other work to ensure that all pipe, conduit, ducts and other penetrations have been installed.

B. Dams: Install dams to properly contain firestopping materials, without affecting the appearance of adjacent construction,

C. Mineral Fiber Insulation: Unless otherwise indicated, pack and seal openings in fire-rated construction with mineral insulation: with allowance for fire resistance foam sealant where indicated.

D. Foam Installation: Install foam per manufacturer's instructions and so that it is totally contained within the thickness of the floor, wall or partition construction.

1. After installation, the silicone foam shall remain soft and pliable to allow for the removal or addition of pipe or conduit without the necessity of drilling holes. It shall properly adhere to itself to allow repairs to be made with the same materials.

2. Inspect silicone foam after 24 hour cure and install additional materials, as required. After at least 24 hour curing of silicone foam, remove non-fire-resistant damming materials.

E. Installation of Fire-Stopping Sealant: Install sealant, including forming, packing, and other accessory materials to fill openings around mechanical and electrical services penetrating floors and walls to provide fire-stops with fire resistance ratings indicated for

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floor or wall assembly in which penetration occurs. Comply with installation requirements established by testing and inspecting agency.

3.03 CLEANING AND PROTECTION

A. Upon completion of the work, remove all unused materials from the site. Clean floors, walls and other adjacent surfaces that are stained, marred or otherwise damaged by this work. Leave all work and the adjacent areas in a clean condition.

B. Protect all completed work from damage, by methods recommended by the manufacturer of installed materials.

END OF SECTION

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SECTION 07510 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Removal or partial removal of existing roofing system in preparation for a new roof membrane system.

1.02 RELATED SECTIONS

- A. Section 02050 – Demolition and Removal.
- B. Section 06125 – Wood Decking
- C. Section 07514 – Built-Up Asphalt Bituminous Roofing.
- D. Section 07545 – TPO Single Ply Membrane Roofing.
- E. Section 07600 – Flashing and Sheet Metal.

1.03 SYSTEM DESCRIPTION

- A. All Roof Areas as Indicated: Remove existing roofing gravel, perimeter flashings, base flashings, counter flashings, vent stack flashings, roofing membrane, insulation, vapor retarder, or underlayment with sheet metal roofing.
- B. Remove roof mounted mechanical equipment and electrical equipment.

1.04 QUALIFICATIONS

A. Materials Removal: Shall be performed by a qualified firm using experienced workmen. The Contractor shall demonstrate to the Commissioner's satisfaction that the firm maintains an organization with the necessary technical knowledge, experience and facilities to perform the required work properly and within the required time.

1.05 PRE-INSTALLATION CONFERENCE

A. Attend meetings as required by "the Commissioner".

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1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous temporary protection prior to and during installation of new roofing system.

1.07 COORDINATION

- A. Coordinate work under provisions of Section 01000.
- B. Coordinate the work with other affected mechanical and electrical work associated with roof penetrations.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Temporary Protection: Sheet polyethylene; provide weights to retain sheeting in position.
- B. Protection Board: ASTM C208, Roof Insulating Board type, cellulose fiber board, with the following characteristics:
 - 1. Board Size: 48x96inch (1219.2x2438.4 mm).
 - 2. Board Thickness: ½ inch (12.7mm).
 - 3. Board Edges: Square

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing site conditions under provisions of Section 01000.
- B. Verify that existing roof surface is clear and ready for work of this section.

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3.02 PREPARATION

A. Sweep roof surface clean of loose matter. Remove loose refuse and dispose off site.

3.03 MATERIALS REMOVAL

A. Remove metal counter flashings. Fold up metal counter flashings to permit access to top edge of base flashings.

B. Scrape roofing gravel from membrane surface without causing serious damage to membrane felts.

C. Remove damaged portions of roofing membrane, perimeter base flashings, flashings around roof protrusions, pitch pans and pockets and insulation vents.

D. Cut and lay flat any membrane blisters.

E. Remove damaged insulation and fasteners, cant strips and blocking.

F. Remove vapor retarder, sheathing paper, underlayments.

G. Repair existing wood, steel, or concrete deck surface to provide smooth working surface for new roof system.

3.04 TEMPORARY PROTECTION

A. Protect finished Work under provisions of Section 01010.

B. Provide temporary protective sheeting over uncovered deck surfaces.

C. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights.

D. Provide for surface drainage from sheeting to existing drainage facilities.

E. Do not permit traffic over unprotected or repaired deck surface.

3.05 FIELD QUALITY CONTROL

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- A. Field inspection and testing will be performed under provisions of Section 01000.
- B. Inspection will identify the exact limits to material removal.
- C. Testing will identify the exact condition of existing materials and their reuse, repair or removal.
- D. Test Reports: Indicate existing insulation moisture content and existing bitumen quality.

END OF SECTION

SECTION 07515 - BUILT-UP ASPHALT BITUMINOUS ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Vapor retarder placed over structural deck surface, insulation, membrane roofing, gravel, cap sheet, base flashings, roofing membrane, expansion joints and cant strips.

1.02 RELATED SECTIONS

A. Section 02050 - Demolition and Removal: Roof deck surface.

B. Section 06114 - Wood Blocking and Curbing: Wood nailers, cant strips, and prefabricated curbing for mechanical equipment.

C. Section 07565 - Preparation for Re-Roofing.

D. Section 07620 - Sheet Metal Flashing and Trim: Counter flashing and reglets.

E. Section 07631 - Gutters, downspouts, roof drains, and leader line piping.

F. Section 07710 -Manufactured Roof Specialties: Counter flashings and flashing collars.

G. Section 07724 - Roof Hatches: Counter flashings.

H. Section 07810 -Unit Skylights: Skylight frame, integral curb and counter flashing.

1.03 REFERENCES

A. ASTM C79 - Test Method for Gypsum Sheathing Board.

B. ASTM C177 - Test Method for Steady-State Thermal Transmission Properties by Means of the Guarded Hot Plate.

C. ASTM C208 - Insulating Board (Cellulosic Fiber), Structural and Decorative.

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- D. ASTM C552 - Cellular Glass Block and Pipe Thermal Insulation.
- E. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.
- F. ASTM C612 - Mineral Fiber Block and Board Thermal Insulation.
- G. ASTM C726 - Mineral Fiber and Mineral Fiber, Rigid Cellular Polyurethane Composite Roof Insulation Board.
- H. ASTM C728 - Perlite Thermal Insulation Board.
- I. ASTM C984 - Perlite Board, Rigid Cellular Polyurethane Composite Roof Insulation.
- J. ASTM C1013 - Membrane Faced Rigid Cellular Polyurethane Roof Insulation.
- K. ASTM C1050 - Rigid Cellular Polystyrene Cellulosic Fiber Composite Roof Insulation.
- L. ASTM D41 - Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- M. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- N. ASTM D249 - Asphalt Roll Roofing (Organic Felt) Surfaced with Mineral Granules.
- O. ASTM D312 - Asphalt Used in Roofing.
- P. ASTM D549 - Test Methods for Rosin in Paper and Paperboard.
- Q. ASTM D1227 - Emulsified Asphalt Used as a Protective Coating for Roofing.
- R. ASTM D1863 - Mineral Aggregate for Use on Built-Up Roofs.
- S. ASTM D2178 - Asphalt Glass Felt Used in Roofing and Waterproofing.
- T. ASTM D2626 - Asphalt-Saturated and Coated Organic Felt Base Sheet Used in Roofing.
- U. ASTM D2822 - Asphalt Roof Cement.

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- V. ASTM E96 - Water Vapor Transmission of Materials.
- W. ASTM D3672 - Venting Asphalt-Saturated and Coated Inorganic Felt Base Sheet used in Roofing.
- X. ASTM D3909 - Asphalt Roll Roofing (Glass Felt) Surfaced with Mineral Granules.
- Y. FM (Factory Mutual) - Roof Assembly Classifications.
- Z. NRCA (National Roofing Contractors Association) - Roofing and Waterproofing Manual.
- AA. UL (Underwriters Laboratories, Inc.) - Fire Hazard Classifications.

1.04 SYSTEM DESCRIPTION

- A. Built-up Roofing System: Four-ply asphalt membrane system with vapor retarder, insulation, and aggregate surfacing finish.
- B. NRCA Specification Plate: 42-IAGA; Diagram B, Alternate Procedure.

1.05 SUBMITTALS

- A. Submit under provisions of Section 01000.
- B. Shop Drawings:
 - 1. Layout furnished by fabricator of Tapered Insulation.
 - 2. The layout shall indicate the extent, profiles, high and low points for the tapered insulation. The Contractor shall survey and probe the roof prior to submitting tapered insulation shop drawings, which shall contain details and dimensions of critical areas in relationship to cap flashing and gravel stops.
 - 3. The contractor shall be responsible to maintain a uniform high point at gravel stop. The Contractor shall also be responsible for the actual heights of the roofing where it intersects vertical surfaces.
 - 4. Drawing(s) showing details at parapets, drains, bulkheads, vents, hatches and other roof penetrations.

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- C. Product Data: Provide data indicating membrane and bitumen materials, base flashing materials, insulation, vapor retarder and protective covering.
- D. Submit two samples 6x6 inches (152.4 x152.4 mm) in size illustrating insulation.
- E. Submit two samples 1 lb (0.5) kg containers of roofing aggregate.
- F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- G. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- H. Manufacturer's Field Reports: Indicate procedures followed; ambient temperatures, humidity, wind velocity during application and supplementary instructions given.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.
- B. Maintain one copy of each document on site.

1.07 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Applicator: Roofing work shall be performed by a qualified firm using experienced workmen. The Contractor shall demonstrate to the Commissioner's satisfaction that the firm maintains an organization with the necessary technical knowledge, experience and facilities to perform the required work properly and within the required time.

1.08 REGULATORY REQUIREMENTS

- A. Conform to applicable New York City Building code for roof assembly fire hazard requirements.

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- B. UL: Class A Fire Hazard Classification based on job conditions.
- C. FM: Roof Assembly Classification, wind uplift requirement of I60, in accordance with FM Construction Bulletin 1-28.

1.09 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this section.
- B. Review preparation and installation procedures, coordination and scheduling of required work of this section and related work.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- B. Store products in weather- protected environment, clear of ground and moisture.
- C. Protect foam insulation from direct exposure to sunlight.
- D. There shall be no stockpiling of materials allowed on the roof.
- E. Materials improperly stored or which become wet or damaged shall be identified, conspicuously marked as rejected and removed from the job site.
- F. Store roll goods on end. Avoid damage or embedment of foreign material in ends. Store materials containing solvents in dry, cool, well ventilated spaces with proper fire and safety precautions. Keep lid on tight.

1.11 PROTECTION

- A. Care, Custody and Control:
 - 1. From the date that work commences until completion and acceptance of work, the Contractor shall assume full responsibility for maintaining roofs watertight. This includes both new and existing roofs within contract limit lines.
 - 2. No roofing work shall be performed during rainy weather nor on damp

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surfaces. All necessary precautions must be taken during inclement weather to prevent deck surface and materials from becoming damp or wet. The Contractor shall provide waterproof protective covering when required to protect portions of roof decks during intervals between work periods.

3. The Contractor shall not remove or damage more roofing, in any one day, than can be temporarily reroofed or covered with the completed membrane, graveled-in, and made watertight that same day.

B. Drains and Lines:

1. Rod out and clean all leaders.
2. Take precautions to prevent drains from clogging during execution of this Contract. Remove debris at completion of each day's work. Clean drains.
3. Plug drains during application. Remove plugs each night.

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4. At completion, test drains to ensure that drainage system is clean and free running and that drains are watertight.
- C. Protect areas from damage and bitumen staining. Provide plywood and a two (2) inch layer of sand under stored bitumen and kettles.
- D. Protect building elements from damage and staining. Provide canvas, boards or sheet materials, properly secured. Promptly remove stains, splatters, etc., from building surfaces. Restore damaged areas to their original conditions.
- E. Take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. Give ample notice to the Resident Engineer, so that building contents can be protected.
- F. Do not overload any portion of the building either by use of or placement of equipment, storage of debris or storage of materials
- G. Protect against fire and fire spread. Maintain proper and adequate fire extinguishers near kettles and where open flames are used.
- H. Protect ventilators, stacks and flashing to be retained or reused.
- I. Upon completion, remove protective coverings, repair damaged items and restore, stained or damaged building elements to their original condition.

1.12 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply roofing membrane during unsuitable weather when ambient temperature is below 40 degrees F (5 degrees C).
- B. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is occurring.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.13 COORDINATION

- A. Coordinate work under provisions of Section 01000.
- B. Coordinate the work with installation of associated counter flashings installed by other Sections as the work of this Section proceeds.

1.14 GUARANTEE / WARRANTY

- A. In accordance with the Article on "GUARANTEES" in the "General Conditions",

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the Contractor hereby guarantees all workmanship and materials described in this Section for a period of ten (10) years.

B. The contractor shall furnish security for the faithful performance of the above guarantee in the form of a surety bond executed by duly authorized surety company in the penal amount of twenty-five (25) percent of the cost of the work of this Section for each work location. The bond shall be in the form satisfactory to the "Commissioner" and the Comptroller of the City of New York. The required surety bond shall be effective for a Two (2) year period.

C. The Contractor performing the work of this Section shall furnish proof of his ability to obtain the type of bond described above, before the work is started.

D. Defective Work: The following types of failure which will be judged as defective work include but shall not be limited to:

1. All Work -- Leaking, failure to stay in place, ponding.
2. Built-Up Roofs -- Splitting, pulling loose from substrate,
3. Wearing Surfaces -- Splitting, pulling loose from substrate, buckling, blistering, fishmouthing and opening up of joints under expansion and contraction.

E. The Contractor shall make permanent corrective repairs, as recommended by the Manufacturer and as approved by the "Commissioner," within forty-eight (48) hours of notification. If inclement weather does not permit permanent corrective repairs, the Contractor shall make temporary repairs, as approved, within the aforementioned time frame.

F. Complete roof installation, methods and materials used, shall comply with all requirements for the roofing manufacturer's warranty. Manufacturer's Representative shall make required inspections and certify approval of all work.

G. Roofing Contractor must be a qualified and authorized installer for the roofing system used and approved on this project.

H. Manufacturer's Documentation:

1. Contractor shall furnish the Ten (10) year Guarantee/Warranty in The standard form of the manufacturer, as approved by DGS. Information on the form shall include but not be limited to:

- a. Building Name, Address, and Owner.
- b. Contractor's Name and Address.
- c. Deck Type.

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- d. Insulation Type and Fastening.
- e. Manufacturer's Roofing Specification Number.
- f. Flashing Specification
- g. Type of Surfacing
- h. Total Payable Sum shall be NO DOLLAR LIMIT.

2. The Contractor must obtain written approval from the Roofing Manufacturer before commencing work. Before the Contractor begins work, the Manufacturer must make a field inspection of the roofs. The Contractor shall submit a copy of the Manufacturer's approval to the "Commissioner". The contractor must modify any detail and meet any condition required by the Manufacturer at no cost to the City.

I. Guarantee Label:

1. Manufacturer shall furnish a guarantee label to be mounted by the contractor at a prominent location as directed by the "Commissioner".

2. This label shall be sized to contain the necessary information and shall be laminated in a transparent closure for permanent protection, framed in aluminum with a clear acrylic front; and secured where directed.

3. Label shall contain the following:

- a. Type of system.
- b. Name and address of manufacturer.
- c. Name, address, and phone number of contractor.
- d. Statement of warranty and its' effective date.
- e. Cautions and warnings against specific actions or types of misuse which will effect guarantee.

PART 2 - PRODUCTS

2.01 MANUFACTURERS - SHEET AND BITUMEN MATERIALS

- A. Manville-Schuller Systems Division.
- B. Other acceptable manufacturers offering equivalent products:

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1. The Celotex Corporation
 2. GAF Building Materials Corporation.
 3. Tamko Roofing Products.
- C. Selected Product: Specification 4GIG by Manville.
- D. Substitutions: Under provisions of Section 01000.

2.02 SHEET MATERIALS

- A. Glass Fiber Felts: ASTM D2178, Type IV. (Glasply).
- B. Base Sheet: ASTM D2626, No. 43 plain asphalt saturated and coated inorganic base sheet (Glasply Premier).
- C. Mineral Surfaced Felts: ASTM D249 No. 90 colored mineral granules. Color as selected by the "Commissioner" (GlasBase).
- D. Base Flashing Felt: Reinforced roof flashing felt formed by a lamination of two (2) flexible polyester mats and a fiberglass core and an elastomeric base material consisting of SBS rubber and a high quality asphalt (Dynaflex).
- E. Dry Sheathing Paper: Clean, white cellulose. ASTM D549 red rosin paper, unsaturated.

2.03 BITUMINOUS MATERIALS

- A. Asphalt Bitumen: ASTM D312, Type IV.
- B. Asphalt Primer: ASTM D41.
- C. Plastic Cement: ASTM D2822 Type II, cutback asphalt type.
- D. Asphalt Emulsion: ASTM D1227, Type I.

2.04 DECK COVERING MATERIALS

- A. Gypsum Sheathing: ASTM C79, Fire rated type, paper face, 5/8 inch (16 mm) thick.

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B. Fire Resistant Sheet Vapor Retarder: UL requirements; reinforced asphalt/kraft paper laminate, non-bituminous foil and fibrous mesh type.

2.05 MANUFACTURERS-RIGID AND TAPERED INSULATION

A. Manufacturers:

1. Manville-Schuller Roofing Systems Division.
2. The Celotex Corporation
3. GAF Building Materials Corporation.

B. Substitutions: Under provisions of Section 01000.

2.06 RIGID INSULATION

A. Insulation: ASTM C1013, polyisocyanurate rigid board, both faces finished with glass fiber treated kraft paper, with the following characteristics:

1. Board Density -- 2 lb/cu ft (52.2 kg/cu m)
2. Board Size -- 48x48 inch (1219x1219 mm) and 48x96 inch (1219x2438mm)
3. Board Thickness (over metal deck) -- 1.5 inch (38mm); (over nailable and non-nailable deck): 1.8 inch (45mm).
4. Thermal Conductivity (over metal deck -- C value=.10, R value=10; (over nailable and non-nailable deck): C value=.08, R value=12.5.
5. Board Edges -- Square

B. Insulation (Used as Overlayment): ASTM C728, Expanded perlite aggregate board made with cellulose fibers, binders and waterproofing agent with the following characteristics:

1. Board Density -- 6.7 lb/cu ft (128kg/cu m)
2. Board Size -- 24x48 inch (610x1220mm)
3. Board Thickness -- 1/2 inch (12.8mm)
4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10.0; (over nailable and non-nailable deck): C value=.08, R value=12.5.

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5. Board Edges -- Square

C. Insulation: ASTM C552, Cellular glass board; with the following characteristics:

1. Board Density -- 8 lb/cu ft (128 kg/cu m)

2. Board Size -- 24x48 inch (610x1220mm)

3. Board Thickness (over metal deck) -- 3 1/2 inch (89mm); (over nailable and non-nailable deck): 4 inch (101mm).

4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10.0; (over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square

D. Insulation: ASTM C578 Type VI, Extruded expanded polystyrene board with natural skin surfaces (must be used with 1/2" thick layer of cellulose fiberboard placed over insulation before hot bitumen is applied) with the following characteristics:

1. Board Density -- 1.9 lb/cu ft (30 kg/cu m)

2. Board Size -- 48x48 inch (1220x1220mm); 48x96 inch (1220x2440mm)

3. Board Thickness (over metal deck) -- 2 inches (51mm); (over nailable and non-nailable deck): 3 inch (76mm).

4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10; (over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square.

E. Insulation: ASTM C726, ASTM C984, ASTM C1050, Composite fabrication of two material lamination of top layer of perlite and bottom layer of polyisocyanurate or polystyrene factory bonded; with the following characteristics:

1. Board Density -- 1.7 lb/cu ft (27.3 kg/cu m)

2. Board Size -- 48x48 inch (1219x1219 mm)

3. Board Thicknesses -- polyisocyanurate: 2-2.5 inches (50.8-63.5 mm); for different R values) polystyrene: 2-4 inches (50.8-101.6mm)

4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10; (over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square

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2.07 TAPERED INSULATION

A. Insulation:

1. Tapered polyisocyanurate.
2. Tapered cellular glass.
3. Composite insulation with top layer of perlite and tapered bottom layer of polyisocyanurate or polystyrene.

B. Slopes:

1. One-half (1/2) inch per foot, in areas around drains.
2. One-quarter (1/4) inch per foot, in areas where diversion of water migration is required.
3. One-eighth (1/8) inch per foot, in areas where roof deck is flat or level.

C. Board Size: 24x48 inch (609.6x1219.3mm)

D. Thermal Conductivity: The average thickness between minimum and maximum slope thicknesses must equal the following values:

1. At installations over metal decks -- C value=.10, R value=10.
2. At installations over nailable and non-nailable decks -- C value of .08, R value=12.5.

2.08 FLASHINGS

A. Manufactured Roof Specialties: As specified in Section 07710.

B. Control or Expansion Joint Flashing: Sheet neoprene, metal counter flashings and wood materials in accordance with NRCA Construction Details

2.09 ROOF SURFACING

A. Aggregate: ASTM D1863; sound, hard washed river gravel stone; graded at no more than five (5) per cent retained on three quarter (3/4) inch sieve nor more that five (5) per cent passing eight (#8) sieve.

B. The use of transparent stone, translucent stone, limestone, dolomite, or crushed masonry is not acceptable.

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2.10 WALKWAY PADS

A. Walkway Pads: Asphalt impregnated mineral boards with granular surfaces 24x24 inch (609.6x609.6 mm) x ½ inch thick (12.7mm) to be compatible with specified roofing system.

2.11 CANTS

A. Fiber Cant and Tapered Edge Strips: Asphalt impregnated wood fiberboard, preformed to 45-degree angle.

2.12 ACCESSORIES

A. Sheathing Adhesive: Non-combustible type, for adhering gypsum sheathing to metal deck.

B. Sheathing Joint Tape: Paper type. Width as recommended by manufacturer for specified application.

C. Insulation Joint Tape: Asphalt treated glass fiber reinforced; 6 inches (150 mm) wide; self-adhering.

D. Insulation Fasteners: Appropriate for purpose intended and approved by and system manufacturer; length required for thickness of insulation material and penetration of deck substrate, with metal washers.

E. Roofing Nails: Galvanized, hot dipped non-ferrous type, size and configuration as required to suit application.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves or projections, properly sloped to drains, valleys or eaves, and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Confirm dry deck by moisture meter with 12 percent moisture maximum.

F. Verify adjacent precast concrete roof members do not vary more than 1/4 inch (6

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mm) in height. Verify grout keys are filled flush.

G. Verify adjacent plywood sheets do not vary more than 1/4 inch (6 mm) in height.

H. Verify roof openings, curbs and penetrations through roof are solidly set, and wood cant strips, wood nailing strips and reglets are in place.

3.02 PREPARATION AND VAPOR RETARDER APPLICATION - WOOD DECK

A. Verify flatness and tight joints of wood decking. Seal joints of plywood with tape if a hot bitumen application is to follow. Fill knot holes with latex filler.

B. Lay one ply of dry sheathing paper; lap edges 2 inches (50mm).

C. Lay asphalt coated base sheet; lap edges 4 inches (100 mm). Nail laps 6 inches (150 mm) o.c. Nail the field area at 12 inches (300 mm) o.c. staggered.

D. Extend vapor retardant under cant strips and blocking.

E. Install flexible flashings from vapor retardant to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.

F. Glaze top surface of the vapor retarder if insulation is not placed immediately.

3.03 PREPARATION AND VAPOR RETARDER APPLICATION - CONCRETE DECK

A. Fill surface honeycomb and variations with latex filler.

B. Apply primer at a rate of 1 gal/square (4.5L/10 sq. m) and allow to dry.

C. Mop surface with hot bitumen and embed two plies of roof felt, full mop each ply; lap plies 19 inches (480 mm); apply bitumen at a rate of 20 lb/square (98kg/100 sq. m).

D. Lap flexible flashings over air seal material of wall construction to provide continuity of the air barrier plane.

E. Glaze top surface of the vapor retarder if insulation is not placed immediately.

3.04 PREPARATION AND VAPOR RETARDER APPLICATION - METAL DECK WITH GYPSUM SHEATHING

A. Install gypsum sheathing on metal deck.

B. Lay with long side at right angle to flutes; stagger end joints; provide support at

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ends.

- C. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface. Tape joints.
- D. Mechanically fasten sheathing to roof deck, in accordance with manufacturer's instructions.
- E. Fasten sheathing to roof deck with continuous mopping of adhesive on each flute.
- F. Apply roller coat of primer to top of sheathing surfaces. Allow to dry.
- G. Mop surface with hot bitumen and embed two plies of roof felt; lap plies 19 inches (480 mm); full mop each ply. Apply bitumen at the rate of 20 lb/square (98 kg/100 sq. m).
- H. Lap flexible flashings over air seal material of wall construction to provide continuity of the air barrier plane.
- I. Glaze top surface of the vapor retarder if insulation is not placed immediately.

3.05 INSULATION APPLICATION-ONE OR TWO LAYERS, FLAT OR TAPERED

- A. Ensure vapor retardant is clean and dry, continuous, and ready for application of roofing system.
- B. Mechanically fasten first layer of insulation to deck. Embed a second layer of insulation into flood coat mopping of hot bitumen in accordance with insulation manufacturer's instructions. Lay second layer of insulation with joints staggered from first layer.
- C. Place the constant thickness first layer and the tapered thickness insulation second layer to the required slope pattern in accordance with manufacturer's instructions.
- D. Tape joints of insulation in accordance with insulation manufacturer's instructions.
- E. Do not apply more insulation than can be covered with membrane in same day.
- F. New Roof Drains (and other flanged items): The rigid insulation around the roof drain shall be shaped and tapered toward the drain body to facilitate water flowing into the drain. The sheet lead flange supplied with the drain shall be cemented to the surface of the felt with flashing cement. Over the surface of the flange apply, with

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alternate moppings, two (2) plies of stripping so that the first extends not less than three (3) inches beyond the outer edge of the flange, and the second not less than six (6) inches. Special care must be taken to prevent the migration of asphalt into drain openings.

3.06 MEMBRANE APPLICATION

A. Lay one ply coated base sheet, coated side down mopped with 20 lbs./square (100 square feet) of bitumen. Lap sides 2 inches (50 mm); lap ends 6 inches (150 mm).

B. Equiviscous Temperature (EVT) at Point of Application: In accordance with NRCA and manufacturer's requirements.

C. Apply 4 plies of roof felt over coated base ply, weather lap edges and ends, mopped with 20 lb/square (98kg/100 sq. m) of bitumen per ply. Apply felt 2 on 2 in opposite direction.

D. Install two ply membrane and bitumen glaze coat for cut-off at end of day's operation. Glaze felts exposed at end of working day. Remove cut-off before resuming roofing.

E. Apply felts smooth, free from air pockets, wrinkles, fishmouths, or tears.

F. Extend base ply and membrane felts up 4 inches above top of cant strips and minimum of 8 inches (200mm) onto vertical surfaces and under gravel stops. Mop on two additional plies of felt and one ply of granular surfaced felt as base flashings over roofing membrane plies. Secure to nailing strips at 4 inches (100 mm) o.c. and reglets.

G. Mop and seal two additional plies of felt around roof penetrations.

H. Install traffic pads by setting in hot asphalt at 2 gallons/square foot. Set joints 6 inches (150 mm) apart.

I. Installation of cap sheet:

1. Cap sheet shall not be applied when the ambient temperature is less than fifty (50) degrees Fahrenheit.

2. Asphalt backmopping of cap sheet shall be applied when the ambient temperature is between fifty (50) degrees and seventy (70) degrees Fahrenheit.

3. At temperatures above (70) degrees Fahrenheit, roll and cut the cap sheet to a maneuverable length, usually twelve (12) to eighteen (18) feet, and allow to relax and flatten prior to application.

4. The cap sheet shall be firmly and completely set into hot asphalt with all edges well seated.

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5. The temperature of the asphalt when applied shall be such that, when the Cap sheet is set into it, its temperature is approximately twenty (20) degrees Fahrenheit above the equiviseous temperature (EVT) to assure proper fluxing of the cap sheet coating and result in maximum bonding.

6. Starting just below the point where the base flashing will terminate, mop the curb with hot asphalt and press the backer felt into place, lapping the vertical joints three (3) inches. Mop the back surface of the base flashing and the exposed face of the just applied backer felt and press the base flashing into place, with three (3) inch end laps offset from those of the backer felt. Mechanically fasten the base flashing on four (4) inch centers along the top edge and at the laps. Fasteners shall have an integral flat cap no less than one (1) inch across.

7. Cover the vertical laps with a four (4) inch wide strip of finishing felt embedded in, and troweled over with a one-eighth (1/8) inch thick layer of Flashing cement.

8. Metal Counterflashing, where used, should overlap the base flashing by at least four (4) inches.

3.07 FLASHINGS AND ACCESSORIES

A. Apply granular surfaced felt flexible base flashings to seal membrane to vertical elements.

B. Install prefabricated roofing control and expansion joints to isolate roof into areas as indicated in accordance with manufacturer's instructions.

C. Fabricate roofing control and expansion joints to isolate roof into areas as indicated.

D. Coordinate installation of roof drains, sumps and related flashings.

E. Mop in and seal flashings and flanges of items penetrating membrane with two plies of felt.

3.08 AGGREGATE SURFACING

A. Apply uniform flood coat of bitumen at rate of 60 lb/square (293 kg/100 sq. m) and while hot, embed a single application of roofing aggregate at rate of 400lb/square (1 957 kg/100 sq. m).

B. Evenly distribute aggregate and ensure bond with flood coat. Extend aggregate to bottom edge of cant strips.

C. Butt aggregate to edge of traffic pads.

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3.09 CLEANING

- A. Remove bituminous markings from finished surfaces.
- B. In areas where finished surfaces are soiled by bitumen or any other source of soiling caused by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or disfigured finishes caused by work of this section.

3.10 PROTECTION OF FINISHED WORK

- A. Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION

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SECTION 07535 - MODIFIED BITUMEN ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Modified bitumen membrane roofing with cap sheet, insulation, base flashings, roofing membrane expansion joints, cant strips, and counter flashings.

1.02 RELATED SECTIONS

A. Section 02050 - Demolition and Removal: Roof deck substrate.

B. Section 06114 - Wood Blocking and Curbing: Wood nailers, cant strips and prefabricated curb for mechanical equipment.

C. Section 07565 - Preparation for Re-Roofing.

D. Section 07620 - Sheet Metal Flashing and Trim: Counter flashing and reglets.

E. Section 07710 - Prefabricated Roof Specialties: Counter flashing and flashing collars.

F. Section 07724 - Roof Hatches: Frame and integral curb and counter flashing.

G. Section 07810 - Unit Skylights: Skylight frame, integral curb and counter flashing.

1.03 REFERENCES

A. ASTM C177 - Test Method for Steady-State Thermal Transmission Properties by Means of the Guarded Hot Plate.

B. ASTM C208 - Insulating Board (Cellulosic Fiber), Structural and Decorative.

C. ASTM C552 - Cellular Glass Block and Pipe Thermal Insulation.

D. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.

E. ASTM C612 - Mineral Fiber Block and Board Thermal Insulation Board.

F. ASTM C630 - Water-Resistant Gypsum Backing Board.

G. ASTM C728 - Perlite Thermal Insulation Board.

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- H. ASTM C1002 - Steel Drill Screws for the Application of Gypsum Board.
- I. ASTM C1013 - Membrane Faced Rigid Cellular Polyurethane Roof Insulation.
- J. ASTM D41 - Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- K. ASTM D312 - Asphalt Used in Roofing.
- L. ASTM D2178 - Asphalt Impregnated Glass (Felt) Mat Used in Roofing and Waterproofing.
- M. FM - Roof Assembly Classifications.
- N. NRCA (National Roofing Contractors Association) - Roofing and Waterproofing Manual.
- O. ULI - Fire Hazard Classifications.

1.04 SYSTEM DESCRIPTION

- A. Modified Bitumen Conventional Roofing System: Two ply membrane system with vapor retarder, insulation, and aggregate surface finish.

1.05 SUBMITTALS

- A. Submit under provisions of Section 01000.
- B. Shop Drawings:
 - 1. The layout shall indicate the extent, profiles, high and low points for the tapered insulation. The Contractor shall survey and probe the roof prior to submitting tapered insulation shop drawings, which shall contain details and dimensions of critical areas in relationship to cap flashing and gravel stops.
 - 2. The Contractor shall be responsible to maintain a uniform high point at gravel stop. The Contractor shall also be responsible for the actual heights of the roofing where it intersects vertical surfaces.
 - 3. Drawing(s) showing details at parapets, drains, bulkheads, vents, hatches and other roof penetrations.
- C. Product Data: Provide membrane materials, base flashing materials, insulation, vapor retarders and protective coating.

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- D. Samples: Submit two samples 1 lb (0.5 Kg) containers of roofing aggregate.
- E. Manufacturer's Installation Instructions: Indicate special precautions required for seaming the membrane.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- G. Manufacturer's Field Reports: Submit under provisions of Section 01000.
- H. Reports: Indicate procedures followed, ambient temperatures and wind velocity during application.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable code for roof assembly fire hazard requirements.
- B. UL: Class A Fire Hazard Classification.
- C. FM: Roof Assembly Classification, Class 1 Construction, wind uplift requirement of I60, in accordance with FM Construction Bulletin 1-28.

1.07 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.
- B. Maintain one copy of each document on site.

1.08 QUALIFICATIONS

- A. Work shall be performed by a qualified firm using experienced workmen. The Contractor shall demonstrate to the Commissioner's satisfaction that the firm maintains an organization with the necessary technical knowledge, experience and facilities to perform the required work properly and within the required time.

1.09 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this Section, under provisions of Section 01000.

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B. Review installation procedures and coordination required with related Work.

1.10 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect, and handle products to site under provisions of Section 01000.

B. Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.

C. Store products in weather protected environment, clear of ground and moisture.

D. Stand roll materials on end.

E. There shall be no stockpiling of materials allowed on the roof.

F. Materials improperly stored or which become wet or damaged shall be identified, conspicuously marked or rejected and removed from the job site.

G. Store roll goods on end. Avoid damage or embedment of foreign material in ends. Store materials containing solvents in dry, cool, well ventilated spaces with proper fire and safety precautions. Keep lids on tight.

1.11 PROTECTION

A. Care, Custody and Control:

1. From the date that work commences until completion and acceptance of work, the Contractor shall assume full responsibility for maintaining roofs watertight. This includes both new and existing roofs within contract limit lines.

2. The Contractor shall not remove or damage more roofing, in any one day, than can be temporarily reroofed or covered with the completed membrane, graveled-in, and made watertight that same day.

3. No roofing work shall be performed during rainy weather nor on damp surfaces. All necessary precautions must be taken during inclement weather to prevent deck surface and materials from becoming damp or wet. The Contractor shall provide waterproof protective covering when required to protect portions of roof decks during intervals between work periods.

B. Drains and Lines:

1. Rod out and clean all leaders.

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2. Take precautions to prevent drains from clogging during execution of this Contract. Remove debris at completion of each day's work. Clean drains.
 3. Plug drains during application. Remove plugs each night.
 4. At completion, test drains to ensure that drainage system is clean and free running and that drains are watertight.
- C. Protect areas from damage and bitumen staining. Provide plywood and a two (2) inch layer of sand under stored bitumen and kettles.
- D. Protect building elements from damage and staining. Provide canvas, boards or sheet materials, properly secured. Promptly remove stains, splatters, etc., from building surfaces. Restore damaged areas to their original conditions.
- E. Take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. Give ample notice to the Resident Engineer, so that building contents can be protected.
- F. Do not overload any portion of the building either by use of or placement of equipment, storage of debris or storage of materials
- G. Protect against fire and fire spread. Maintain proper and adequate fire extinguishers near kettles and where open flames are used.
- H. Protect ventilators, stacks and flashing to be retained or reused.
- I. Upon completion, remove protective coverings, repair damaged items and restore, stained or damaged building elements to their original condition.

1.12 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply roofing membrane during inclement weather ambient temperatures below 45 degrees F (6 degrees C).
- B. Do not apply roofing membrane to damp or frozen deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.13 COORDINATION

- A. Coordinate work under provisions of Section 01000.

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B. Coordinate the work with installing associated metal flashings as the work of this section proceeds.

1.14 GUARANTEE / WARRANTY

A. In accordance with the Article on "GUARANTEES" in the "General Conditions", the Contractor hereby guarantees all workmanship and materials described in this Section for a period of ten (10) years.

B. The Contractor shall furnish security for the faithful performance of the above guarantee in the form of a surety bond executed by duly authorized surety company in the penal amount of twenty-five (25) percent of the cost of the work of the Section for each work location. The bond shall be in the form satisfactory to the "Commissioner" and the Comptroller of the City of New York. The required surety bond shall be effective for a two (2) year period.

C. The Contractor performing the work of this Section shall furnish proof of this ability to obtain the type of bond described above, before the work is started.

D. Defective Work:

1. The following types of failure which will be judged as defective work include, but shall not be limited to:

a. All Work -- Leaking, failure to stay in place, ponding.

b. Built-Up Roofs -- Splitting, pulling loose from substrate, alligating, buckling, tearing and blistering.

c. Wearing Surfaces -- Splitting, pulling loose from substrate, buckling, blistering, fishmouthing and opening up of joints under expansion and contraction.

2. The Contractor shall make permanent corrective repairs, as recommended by the Manufacturer and as approved by the "Commissioner", within forty-eight (48) hours of notification. If inclement weather does not permit permanent corrective repairs, the Contractor shall make temporary repairs, as approved, within the aforementioned time frame.

E. Complete roof installation, methods and materials used, shall comply with all requirements for the roofing manufacturer's warranty. Manufacturer's Representative shall make required inspections and certify approval of all work.

F. Roofing contractor must be a qualified and authorized installer for the roofing system used and approved on this project.

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G. Manufacturer's Documentation:

1. Contractor shall furnish the Ten (10) year Guarantee/Warranty in the standard form of the manufacturer, as approved by DGS. Information on the form shall include but not be limited to:

- a. Building Name, Address and Owner.
- b. Contractor's Name and Address.
- c. Deck Type.
- d. Insulation Type & Fastening.
- e. Manufacturer's Roofing Specification Number.
- f. Flashing Specification.
- g. Type of Surfacing.
- h. Total Payable Sum shall be NO DOLLAR LIMIT.

2. The Contractor must obtain written approval from the Roofing Manufacturer before commencing work. Before the Contractor begins work, the manufacturer must make a field inspection of the roofs. The Contractor shall submit a copy of the Manufacturer's approval to the "Commissioner." The Contractor must modify any detail and meet any condition required by the Manufacturer at no cost to the City.

H. Guarantee Label:

1. Manufacturer shall furnish a guarantee label to be mounted by the contractor at a prominent location as directed by the "Commissioner."

2. This label shall be sized to contain the necessary information and shall be laminated in a transparent closure for permanent protection, framed in aluminum with a clear acrylic fronts; and secured where directed.

3. Label shall contain the following:

- a. Type of system.
- b. Name and address of manufacturer.
- c. Name, address, and phone number of contractor.

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- d. Statement of warranty and its' effective date.
- e. Cautions and warnings against specific actions or types of misuse which will effect the guarantee.

PART 2 - PRODUCTS

2.01 MANUFACTURERS - MEMBRANE MATERIALS

- A. GAF Building Materials Corp.
- B. Other acceptable manufacturers offering equivalent products.
 - 1. The Celotex Corporation.
 - 2. Tamko Roofing Products, Inc.
 - 3. Nord Bitumin, USA, Inc.
- C. Substitutions: Under provisions of Section 01000.

2.02 MEMBRANE MATERIAL

- A. Membrane: Asphalt and polymer modifiers of atactic polypropylene (APP) type, reinforced with non-woven polyester granule surfaced; with the following characteristics:
 - 1. Thickness: 160 mils
 - 2. Average Weight: 1.02 lb/sq ft
 - 3. Sheet Width: 36 inch
 - 4. Tensile Strength: 100 psi when tested at 73 F
 - 5. Elasticity: 50 percent with full recovery without set when tested at 73 F.

2.03 SHEET MATERIALS

- A. Glass Fiber Felts: ASTM D2178, Type IV.

2.04 BITUMINOUS MATERIALS

- A. Asphalt Bitumen: ASTM D312, Type III.

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- B. Asphalt Primer: ASTM D41.
- C. Plastic Cement: ASTM D2822 Type II, cutback asphalt type.

2.05 MANUFACTURERS - INSULATION

- A. Manville-Schuller Roofing Systems Division.
- B. The Celotex Corporation.
- C. GAF Building Materials Corporation.
- D. Substitutions: Under provisions of Section 01000.

2.06 RIGID INSULATION

- A. Insulation: ASTM C1013, polyisocyanurate rigid board, both faces finished with glass fiber treated kraft paper, with the following characteristics:
 - 1. Board Density -- 2 lb/cu ft (52.2 kg/cu m)
 - 2. Board Size -- 48x48 inch (1219x1219 mm) and 48x96 inch (1219x2438mm)
 - 3. Board Thickness (over metal deck) -- 1.5 inch (38mm); (over nailable and non-nailable deck): 1.8 inch (45mm).
 - 4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10; (over nailable and non-nailable deck): C value=.08, R value=12.5.
 - 5. Board Edges -- Square
- B. Insulation (Used as Overlayment): ASTM C728, Expanded perlite aggregate board made with cellulose fibers, binders and waterproofing agent with the following characteristics:
 - 1. Board Density -- 6.7 lb/cu ft (128kg/cu m)
 - 2. Board Size -- 24x48 inch (610x1220mm)
 - 3. Board Thickness -- 1/2 inch (12.8mm)
 - 4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10.0;

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(Over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square

C. Insulation: ASTM C552, Cellular glass board; with the following characteristics:

1. Board Density -- 8 lb/cu ft (128 kg/cu m)
2. Board Size -- 24x48 inch (610x1220mm)
3. Board Thickness (over metal deck) -- 3 1/2 inch (89mm); (over nailable and non-nailable deck): 4 inch (101mm)

4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10.0; (over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square

D. Insulation: ASTM C578 Type VI, Extruded expanded polystyrene board with natural skin surfaces (must be used with 1/2" thick layer of cellulose fiberboard placed over insulation before hot bitumen is applied) with the following characteristics:

1. Board Density -- 1.9 lb/cu ft (30 kg/cu m)
2. Board Size -- 48x48 inch (1220x1220mm); 48x96 inch (1220x2440mm)
3. Board Thickness (over metal deck) -- 2 inches (51mm); (over nailable and non-nailable deck): 3 inch (76mm)

4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10; (over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square.

B. Insulation: ASTM C726, ASTM C984, ASTM C1050, Composite fabrication of two material lamination of top layer of perlite and bottom layer of polyisocyanurate or polystyrene factory bonded; with the following characteristics:

1. Board Density -- 1.7 lb/cu ft (27.3 kg/cu m)
2. Board Size -- 48x48 inch (1219x1219 mm)
3. Board Thicknesses (polyisocyanurate) -- 2-2.5 inches (50.8-63.5 mm); (for different R values) polystyrene: 2-4 inches (50.8-101.6mm).

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4. Thermal Conductivity (over metal deck) -- C value=.10, R value=10; (over nailable and non-nailable deck): C value=.08, R value=12.5.

5. Board Edges -- Square

2.07 TAPERED INSULATION

A. Insulation:

1. Tapered polyisocyanurate.

2. Tapered cellular glass.

3. Composite insulation with top layer of perlite and tapered bottom layer of polyisocyanurate or polystyrene.

B. Slopes:

1. One-half (1/2) inch per foot, in areas around drains.

2. One-quarter (1/4) inch per foot, in areas where diversion of water migration is required.

3. One-eighth (1/8) inch per foot, in areas where roof deck is flat or level.

C. Board Size: 24x48 inch (609.6x1219.3mm)

D. Thermal Conductivity: The average thickness between minimum and maximum slope thicknesses must equal the following values:

1. At installations over metal decks -- C value=.10, R value=10

2. At installations over nailable and non-nailable decks -- C value of .08, R value=12.

2.08 FLASHINGS

A. Flexible Flashings: Same material as membrane.

B. Control or Expansion Joint Flashing: Sheet butyl, metal counter flashings and wood materials, in accordance with NRCA Construction Details and items specified in Section 05805.

2.09 ACCESSORIES

A. Fiber Cant and Tapered Edge Strips: Asphalt impregnated wood fiberboard,

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performed to 45 degree angle tapered edge strip.

- B. Sheathing Fasteners: ASTM C1002, steel drill type, for mechanical attachment of gypsum sheathing to metal deck.
- C. Sheathing Joint Tape: Paper Heat type.
- D. Insulation Joint Tape: Asphalt treated glass fiber reinforced; 6 inches (150 mm) wide; self adhering.
- E. Roofing Nails: Galvanized hot dipped type, size as required to suit application.
- F. Insulation Fasteners: Appropriate for purpose intended and approved by Factory Mutual and system manufacturer; length required for thickness of material with metal washers.
- G. Sealants: As recommended by membrane manufacturer.
- H. Strip Reglet Devices: Galvanized steel; surface or recess mounted, binder bars, maximum possible length per location, with attachment flanges.
- I. Traffic Pads: Bituminous composition type, 6 x 6 inch (156.4 mm) size, granular surface finish 156.4 x 1/2 inch thick (12.7 mm).

2.10 SURFACING

- A. Aggregate: Washed, smooth gravel, 3/8-inch (9 mm) nominal size. Fines, dirt, or organic material are not acceptable.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secured.
- C. Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains valleys, or eaves.
- D. Verify adjacent precast concrete roof members do not vary more than 1/4 inch (6 mm) in height. Verify grout keys are filled flush.
- E. Verify deck surfaces are dry and free of snow or ice. Verify flutes of metal deck are clean and dry.
- F. Confirm dry deck by moisture meter with 12 percent moisture maximum.

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G. Verify roof openings, curbs, pipes, conduit, sleeves, ducts, and vents through roof are solidly set, and wood cant strips wood nailing strips and reglets are in place.

3.02 PREPARATION - WOOD DECK

- A. Verify flatness and tight joints of wood decking.
- B. Seal joints of plywood with tape.
- C. Fill knot holes with latex filler.

3.03 PREPARATION - CONCRETE DECK

- A. Fill surface honeycomb and variations with latex filler.

3.04 VAPOR RETARDER APPLICATION - WOOD DECK

- A. Lay one ply of dry sheathing paper; lap edges 2 inches (50 mm).
- B. Lay base sheet; lap edges 4 inches (100 mm). Nail laps 6 inches (150 mm) o.c. Nail the field area at 12 inches (300 mm) o.c staggered.
- C. Extend vapor retarder under cant strips and blocking. Lap flexible flashings over vapor and air barrier of wall construction to provide continuity of vapor and air barrier envelope.
- D. Glaze top surface of vapor retarder if insulation is not placed same day.

3.05 VAPOR RETARDER APPLICATION - CONCRETE DECK

- A. Apply primer at 1 gal/square (48 L/100 sq m) and allow to dry.
- B. Lay a two ply strip of dry applied felt 18 inches (450 mm) wide over precast concrete deck joints.
- C. Mop surface with hot bitumen and embed two plies of roof felt; full mop each ply; lap plies 19 inches (480 mm); apply bitumen at 20 lb/square (98 kg/100 sq m).
- D. Extend vapor retarder under cant strips and blocking. Lap flexible flashings over vapor and air barrier of wall construction to provide continuity of vapor and air barrier envelope.

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- E. Glaze top surface of vapor retarder if insulation is not placed same day.

3.06 VAPOR RETARDER APPLICATION - METAL DECK WITH SHEATHING

- A. Lay with long side at right angle to flutes; stagger end joints; provide support at ends.
- B. Mechanically fasten sheathing at full roof area of roof deck, to a distance of 4 ft (1.5 m) in from edges] using 6 fasteners with washers per board.
- C. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface. Tape joints.
- D. Apply coat of primer by roller. Allow to dry.
- E. Apply mop coating of bitumen; embed one ply of factory coated base sheet; lap plies 4 inches (100 mm); seal joints with bitumen.
- F. Mop glaze coat over coated base sheet at 10 lb/square (0.5 kg/sq m) and embed one ply of roof felt; lap edges 4 inches (100 mm); seal joints with bitumen.
- G. Apply bitumen to 20 lb/square (98 kg/100 sq m).
- H. Extend vapor retarder under cant strips and blocking. Lap flexible flashings over vapor and air barrier of wall construction to provide continuity of vapor and air barrier envelope.
- I. Glaze top surface of vapor barrier if insulation is not placed same day.

3.07 INSULATION APPLICATION

- A. Ensure vapor retarder is clean and dry.
- B. Place the constant thickness first layer and the tapered thickness insulation second layer to the required slope pattern in accordance with manufacturer's instructions.
- C. Mechanically fasten insulation to deck at full roof area in accordance with insulation manufacturer's instructions.
- D. Mechanically fasten boards over roof surface.
- E. Minimum Total Insulation Thickness: As required to achieve an insulation R value

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of 10 to an average R value of 10 for tapered insulation.

- F. Place boards parallel to deck flutes with edges over flute surface for bearing support.
- G. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- H. Lay tapered boards or Cut boards to slope for a distance of 18 inches (450 mm) back from roof drains for positive drainage.
- I. Apply no more insulation than can be covered with membrane in same day.
- J. Tape joints of insulation in accordance with insulation manufacturer's instructions.

3.08 MEMBRANE APPLICATION

- A. Apply membrane and primer in accordance with manufacturer's instructions.
- B. Apply membrane; lap and seal edges and ends permanently waterproof.
- C. Apply membrane smooth, free from air pockets, wrinkles, or tears. Ensure full bond of membrane to substrate.
- D. Extend membrane up cant strips and minimum of 2 inches (50 mm) onto vertical surfaces.
- E. Extend membrane over vapor and air barrier of wall construction and seal.
- F. Mop and seal membrane around roof protrusions and penetrations.
- G. Provide waterproof cut-off to membrane at end of day's operation. Remove cut-off before resuming roofing.

3.09 FLASHINGS AND ACCESSORIES

- A. Apply flexible sheet base flashings to seal membrane to vertical elements.
- B. Secure to nailing strips at 4 inches (100 mm) o.c. and reglets.
- C. Install prefabricated roofing control and expansion joints to isolate roof into areas as indicated in accordance with manufacturer's instruction.
- D. Fabricate roofing control and expansion joints to isolate roof into areas as indicated.

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- E. Coordinate installation of roof drains, sumps, curbs, and related flashings.
- F. Seal flashings and flanges of items penetrating or protruding through the membrane.

3.10 SURFACING

- A. Apply coating to top surface at the rate recommended by membrane manufacturer.
- B. Apply hot bitumen to membrane in quantity sufficient to bond aggregate. Evenly distribute aggregate over membrane at a rate of 400 lb/100 sq ft (182 Kg /10 sq m) to achieve full coverage of membrane.
- C. Install traffic pads by setting in hot bitumen. Set joints 6 inches (150 mm) apart.

3.11 TESTS

A. The tests listed below shall be performed at the discretion of the "Commissioner", and paid for by the Contractor if there is any reason to believe that the contractor has not installed the roofing system according to these specifications.

1. Drain Test:

a. The Contractor shall verify the slope of all roof decks or fill by whatever means to the satisfaction of the "Commissioner" prior to the installation of any new work.

b. The Contractor shall be responsible for providing a positive pitch to drain. Where water ponding on roof exists, or is suspected, the Contractor shall correct condition by providing where necessary, tapered roof insulation, extra felts, gravel and/or asphalt. To check for ponding, the resident engineer can request that the contractor hose down the entire roof surface after the 2-ply vapor retarder has been fully installed.

2. Cut Test:

a. At the discretion of the Commissioner, roofs may be cut and samples taken to determine the quality of work. The contractor will be responsible for replacing the roofing material in all areas where cut tests are taken.

3. Flood Test:

a. Roofs may be flooded with standing water for a period of twenty-four (24) hours, to demonstrate that the roof surfaces are entirely watertight.

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- B. Correct identified defects or irregularities.
- C. Require site attendance of roofing and insulation materials manufacturers during installation of the Work.

3.13 CLEANING

- A. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- B. Repair or replace defaced or disfigured finishes caused by work of this section.

3.14 PROTECTION

- A. Protect building surfaces against damage from roofing work.
- B. Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION

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SECTION 07545 - THERMOPLASTIC POLYOLEFIN (TPO) SINGLE PLY ROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide thermoplastic polyolefin (TPO) single-ply roofing work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Thermoplastic Single-Ply Roofing
2. Insulation

B. Related Sections:

1. Section 02050 – Demolition and Removal: Roof deck substrate.
2. Section 06114 – Wood Blocking and Curbing.
3. Section 07565 – Preparation for Re-Roofing.
4. Section 07620 – Sheet Metal Flashing and Trim.

1.02 REFERENCES

- A. Factory Mutual (FM Global) - *Approval Guide*
- B. Underwriters Laboratories (UL) - *Roofing Systems and Materials Guide* (TGFU R1306)
- C. American Society for Testing and Materials (ASTM) - *Annual Book of ASTM Standards*
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - *Architectural Sheet Metal Manual*
- E. National Roofing Contractors Association (NRCA)
- F. American Society of Civil Engineers (ASCE)

1.03 DEFINITIONS

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A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) *Roofing and Waterproofing Manual* for definitions of roofing terms related to this section.

1.04 PERFORMANCE REQUIREMENTS

A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.

B. Provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.05 SUBMITTALS

A. Product Data: Provide product data sheets for each type of product indicated in this section.

B. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.

C. Samples: Provide samples of insulations, fasteners, membrane materials and accessories for verification of quality.

D. Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

1.06 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Provide a roofing system that meets or exceeds all criteria listed in this section.

B. Installer's Qualifications:

1. Installer shall be classified as an **Authorized** contractor as defined and certified by the proposed roofing manufacturer.

C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.

D. Final Inspection:

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1. Manufacturers representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.

1.07 PRE-INSTALLATION CONFERENCE

A. Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, manufacturer's representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.08 REGULATORY REQUIREMENTS

A. All work shall be performed in a safe, professional manner, conforming to all federal, state and local codes.

B. Exterior Fire Test Exposure: Provide a roofing system that will achieve an **Underwriters Laboratories** rating for roof slopes indicated.

1. UL Class A
2. Roof Slope: Minimum 1 in 12

C. Windstorm Classification: Provide a roofing system which will achieve a **Factory Mutual** wind uplift rating, as listed in the current FM Approval Guide.

1. FM 1-90

1.09 DELIVERY, STORAGE AND HANDLING

A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a manufacturer's or BMCA® label.

B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.

C. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.

D. Remove manufacturer supplied plastic covers from materials provided with such.

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Use “breathable” type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed.

E. Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.

1.10 PROTECTION

A. Care, Custody and Control:

1. From the date that work commences until completion and acceptance of work, the Contractor shall assume full responsibility for maintaining roofs watertight. This includes both new and existing roofs within contract limit lines.

2. The Contractor shall not remove or damage more roofing, in any one day, than can be temporarily re-roofed or covered with the completed membrane, graveled-in, and made watertight that same day.

3. No roofing work shall be performed during rainy weather nor on damp surfaces. All necessary precautions must be taken during inclement weather to prevent deck surface and materials from becoming damp or wet. The Contractor shall provide waterproof protective covering when required to protect portions of roof decks during intervals between work periods.

B. Roof Drains, Gutters and Leaders:

1. Before the new roofing work commences, the Contractor shall inspect all roof drains, gutters and leaders and rod out and clean as necessary to ensure that the new roof being installed shall meet manufacturer’s requirements for the issuance of the required twenty (20) year warranty.

a. Before the new roofing work commences, the Contractor and CMU Project Manager shall survey the roof and agree on the quantity of the number of roof drains, gutters and leaders that need to be cleaned.

b. The Contractor shall price into his/her bid that thirty (30) percent of the existing roof drains, gutters and leaders need to be rod out and cleaned. Anything more than thirty (30) percent will be constituted as an additional work.

2. Take precautions to prevent drains from clogging during execution of this Contract. Remove debris at completion of each day's work. Clean drains.

3. Plug drains during application. Remove plugs each night.

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4. At completion, test drains to ensure that drainage system is clean and free running and that drains are watertight.

C. Protect building elements from damage and staining. Provide canvas, boards or sheet materials, properly secured. Promptly remove stains, splatters, etc., from building surfaces. Restore damaged areas to their original conditions.

D. Take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. Give ample notice to the Resident Engineer, so that building contents can be protected.

E. Do not overload any portion of the building either by use of or placement of equipment, storage of debris or storage of materials

F. Protect against fire and fire spread. Maintain proper and adequate fire extinguishers near kettles and where open flames are used.

G. Protect ventilators, stacks and flashing to be retained or reused.

H. Upon completion, remove protective coverings, repair damaged items and restore, stained or damaged building elements to their original condition.

1.11 ENVIRONMENTAL REQUIREMENTS

A. Do not apply roofing membrane during inclement weather ambient temperatures below 45 degrees F (6 degrees C).

B. Do not apply roofing membrane to damp or frozen deck surface.

C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.12 GUARANTEE/WARRANTY

A. In accordance with the Article on "GUARANTEES" in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees all workmanship and materials described in this Section for a period of two (2) years. In addition, the Contractor shall furnish the TWENTY (20) year Guarantee/Warranty in the standard Guarantee/Warranty form of the manufacturer.

B. Defective Work: The following types of failure which will be judged as defective work include, but shall not be limited to:

1. ALL WORK - Leaking, failure to stay in place, ponding.

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2. WEARING SURFACES - Splitting, pulling loose from substrate, buckling, blistering, fishmouthing and opening up of joints under expansion and contraction.

C. The Contractor shall make permanent corrective repairs, as recommended by the Manufacturer and as approved by the "Commissioner" or his representative, within forty-eight (48) hours of notification. If inclement weather does not permit permanent corrective repairs, the Contractor shall make temporary repairs, as approved, within the aforementioned time frame.

D. Manufacturer's Documentation: Contractor shall furnish the TWENTY (20) year Guarantee/ Warranty in the standard Guarantee/Warranty form of the manufacturer. Information on the form shall include but not be limited to:

1. Building Name, Address and Owner.
2. Contractor's Name and Address.
3. Insulation Type & Fastening.
4. Manufacturer's Roofing Specification Number.
5. Flashing Specification.
6. Type of Surfacing.
7. Total Payable Sum shall be NO DOLLAR LIMIT.

E. Guarantee Label:

1. Manufacturer shall furnish a guarantee label to be mounted by the contractor at a prominent location as directed by the "Commissioner" or his representative.

2. This label shall be sized to contain the necessary information and shall be laminated in a transparent closure for permanent protection, framed in aluminum with a clear acrylic fronts; and secured where directed.

3. Label shall contain the following:

- a. Type of system.
- b. Name and address of manufacturer.
- c. Name, address, and phone number of contractor.
- d. Statement of warranty and its' effective date.
- e. Cautions and warnings against specific actions or types of misuse

which will effect the guarantee.

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PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. EverGuard® TPO, GAF Materials Corporation - 1361 Alps Road, Wayne, NJ 07470
- B. JM TPO-60, Johns Manville - P. O. Box 5108, Denver, CO 80217-5108
- C. Sure-Weld TPO, Carlisle SynTec Incorporated, P.O. Box 7000, Carlisle, PA 17013
- D. UltrPly™ TPO, Firestone Building Products, 310 E. 96th St., Indianapolis, IN 46240
- E. TPA FB-60, Tremco Incorporated - 3735 Green Road, Beachwood, OH 44122
- F. Or an approved equal.

2.02 MEMBRANE MATERIALS

- A. A smooth type, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. Color: White

2.03 INSULATION

- A. Insulation: Rigid insulation board made of glass-fiber mat facer laminated to a closed-cell polyisocyanurate foam core; with the following characteristics:
 - 1. Board Density: 8 lb/cu ft (128 kg/cu m)
 - 2. Board Size: 48x48 inch (1220x1220mm) & 48x96 inch (1220x2440mm)
 - 3. Board Thickness: 3 1/2 inch (89mm)
 - 4. Thermal Conductivity (over metal deck): C value=.10, R value=10.0; (over nailable and non-nailable deck): C value=.08, R value=12.5.
 - 5. Board Edges: Square

2.04 ROOF BOARD

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A. Underlayment or overlayment board with a water-resistant and silicone treated gypsum core with glass fiber facers embedded on both sides, and pre-primed on one side. **GP Dens-Deck® Prime Roof Board**, distributed by BMCA®; or approved equal.

1. Board Thickness: 5/8 inch (16mm)
2. Thermal Resistance (R value) of: 1.5

2.05 INSULATION ACCESSORIES

A. Tapered Edge Strip: Factory fabricated rigid perlite strip cut at angles to provide a smooth transition between differences in elevation.

2.06 FLASHING MATERIALS

A. Flexible Flashings: Same material as membrane.

B. Control or Expansion Joint Flashing: Sheet butyl, metal counter flashings and wood materials, in accordance with NRCA Construction Details.

C. 25 gauge steel with 0.020" thick TPO based film. Factory supplied in sheets and required for fabrication into metal gravel stop and drip edge profiles, metal base and curb flashings, sealant pans, and scupper sleeves.

2.07 ADHESIVES, SEALANTS and PRIMERS

A. Solvent-based Bonding Adhesive: Solvent based rubberized adhesive for use with TPO membranes.

B. Solvent based liquid, required to protect field cut edges of TPO membranes. Applied directly from a squeeze bottle.

C. Solvent based primer for preparing surfaces to receive butyl based adhesive tapes.

D. One part polyurethane sealant suitable for sealing the upper lip of exposed termination bars and penetrations, and around clamping rings. Meets or exceeds ASTM C-920-87, Type S, Grade NS, Class 25.

E. One part butyl based high viscosity sealant suitable for sealing between flashing membrane and substrate surface behind exposed termination bars and for sealing between roofing membrane and drain flange.

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F. 100% solids epoxy based two-part sealant suitable for filling sealant pans at irregularly-shaped penetrations. Epoxy is part A. Polyamide is part B.

G. Asphalt primer: ASTM D 41

H. Insulation Adhesive: Oly-Bond 500 distributed by BMCA®; or approved equal.

2.08 ACCESSORIES

A. Mechanical fasteners for securing of insulation, roofing and flashing materials as required. Required fastener type determined by type of substrate and requisite attachment. **Drill•Tec™** fasteners, by BMCA; or approved equal.

B. Extruded aluminum termination bar with angled lip caulk receiver and lower leg bulb stiffener. Pre-punched slotted holes at 6" on center or 8" on center. ¾" x 10' with 0.090" cross section.

C. 0.075" thick molded TPO membrane sized to accommodate most common pipe and conduits, (1" to 6" diameter pipes), including square tube. Hot-air welded directly to TPO membrane, supplied with stainless steel clamping rings.

D. 0.075" thick molded TPO membrane with butyl adhesive on the mating surface. Sized to accommodate most common pipe and conduits, (1" to 6" outside diameter pipes), including square tube. Self adheres directly to TPO membrane, supplied with stainless steel clamping rings.

E. 0.065" thick molded TPO membrane designed to accommodate both inside and outside corners of base and curb flashing. Hot-air welds directly to TPO membrane. Size 4" x 4" with 4" flange.

F. 0.065" thick molded TPO membrane with butyl adhesive on the mating surfaces. Designed to accommodate both inside and outside corners of base and curb flashing. Adheres directly to TPO membrane. Size 4" x 4" with 4" flange.

G. A 4 inch (10.1 cm) diameter, smooth type, polyester scrim reinforced thermoplastic polyolefin membrane with a factory laminated butyl underside. Designed for use as a cover patch where two seams meet.

H. Factory fabricated assemblies used to accommodate three-dimensional joints in a roof structure. Two standard sizes to accommodate most common joint widths. Standard 50 foot continuous length minimizes joints, universal style suitable for both field and wall expansion joint in both flat-mounted and curb-mounted styles. Made of 0.045" thick reinforced membrane with foam supported bellows. Equipped with metal nailing flanges.

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- I. Walkway Pads - 1/8" thick extruded and embossed TPO pads 30" x 36", heat welds directly to roofing membrane. Unique herringbone traction surface, safety yellow or gray in color.
- J. Walkway Rolls - 1/8" thick extruded and embossed TPO roll 30" x 50', heat welds directly to roofing membrane. Unique herringbone traction surface, safety yellow or gray in color.
- K. Liquid, temporary fire retardant treatment that is pre-mixed and comes ready to be brushed, rolled or sprayed on various roofing components prior to the application of the base sheet or the roofing membrane. Upon application in sufficient quantities to completely saturate wood surfaces, insulation, cant areas and other roofing components, including areas of penetration, the fire danger associated with the use of flame torches in the application of base sheets and/or modified bitumen membrane will be temporarily reduced.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.
- C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are dry and free of ice or snow.
- E. Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.

3.02 SUBSTRATE PREPARATION

A. Recover:

1. Suitable roofs for recover shall be free of dust, dirt, debris, and any contaminants that may adversely affect the performance of the new roof. Areas of substantial deck deflection or membrane imperfections shall be corrected prior to installing any new roofing.

2. Taking test cuts to verify the existing roof construction and condition. Three test cuts should be made for roofs under 100 squares and one test cut per 100

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squares above the minimum amount. It is highly recommended and in certain circumstances, required, that a moisture survey be made to determine the extent of wet insulation and moisture entrapment.

3. Existing substrates and insulation (if applicable) must be dry over the majority of the roof area. Wet or deteriorated areas of insulation and substrate must be removed and replaced with new materials. When adhering insulation or new roofing directly to the existing roof surface, the existing roof system components must be well attached to each other and their substrate.

4. All applicable code requirements must be met for recover over an existing roofing system.

3.03 BITUMEN HANDLING

A. Do not mix different types of asphalt.

B. Use only ASTM D 312, Type IV Steep Asphalt.

C. Application with hot asphalt requires continuous, uniform interply mopping rates of 25 lbs. +/- 20% per 100 square feet of roof area (1.2 kg/m²).

D. Application temperature of the asphalt must be at the Equiviscous Temperature (EVT) with a tolerance of +/- 25°F (13.9°C), at which a viscosity of 125 centipoise is attained. When using mechanical asphalt applicators, the target viscosity should be 75 centipoise.

E. For all SBS modified asphalt flashings; the minimum application temperature of the asphalt must be at the EVT or 425°F (218°C), whichever is greater, with a rolling bank (puddle) of mopping asphalt across the full width of the roll.

F. Do not heat the asphalt to or above its flash point or hold the asphalt at temperatures above the finished blowing temperature for more than 4 hours.

G. Do not keep heated tankers above 325°F (163°C) overnight.

3.04 INSULATION - GENERAL

A. Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt may be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.

B. Do not install wet, damaged or warped insulation boards.

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- C. Install insulation boards with staggered board joints in one direction (unless taping joint).
- D. Install insulation boards snug. Gaps between board joints must not exceed ¼" (6 mm). All gaps in excess of ¼" (6 mm) must be filled with like insulation material.
- E. Wood nailers must be 3-1/2" (8.9 cm) minimum width or 1" (25 mm) wider than metal flange. They shall be of equal thickness as the insulation, and be treated for rot resistance. All nailers must be securely fastened to the deck.
- F. Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
- G. Roof tape, if required over insulation joints, must be laid evenly, smoothly and embedded in a uniform coating of hot steep asphalt with 4" (10.2 cm) end laps. Care must be taken to assure smooth application of tape, and full embedment of the tape in the asphalt.
- H. Do not install any more insulation than will be completely waterproofed each day.

3.05 INSULATION

- A. The insulation must be securely attached to the roof deck. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM fastening patterns. Factory Mutual requires fastener density increased in corner areas for FM 1-60 as well as perimeter and corner area fastener density increases for FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, and 1-49.
- B. Use only fasteners with a minimum 3 inch (7.6 cm) stress plate when mechanically attaching insulation. Do not attach insulation with nails.
- C. Metal Retrofit – Flute Fill
 - 1. Fill all flutes with a base layer of insulation. Insulation must be of equal height as metal ribs, seams or flutes to allow for subsequent layers to be applied without interference.

3.06 MEMBRANE APPLICATION

- A. Fully Adhered:
 - 1. Place membrane so that wrinkles and buckles are not formed. Any

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wrinkles or buckles must be removed from the sheet prior to permanent attachment. Roof membrane shall be fully adhered immediately after it is rolled out, followed by welding to adjacent sheets.

2. Overlap roof membrane a minimum of 3" (15 cm) for side laps and 3" (15 cm) for end laps.

3. Install membrane so that the side laps run across the roof slope lapped towards drainage points.

4. All exposed sheet corners shall be rounded a minimum of 1".

5. Use full width rolls in the field and perimeter region of roof.

6. Use appropriate bonding adhesive for substrate surface, applied with a solvent-resistant roller, brush or squeegee.

7. Fully adhere membrane sheets with bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive.

8. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition.

9. Prevent seam contamination by keeping the adhesive application a few inches back from the seam area.

10. Adhere approximately one half of the membrane sheet at a time. One half of the sheet's length shall be folded back in turn to allow for adhesive application. Lay membrane into adhesive once the bonding adhesive is tacky to the touch.

11. Roll membrane with a weighted roller to ensure complete bonding between adhesive and membrane.

12. Membrane laps shall be heat-welded together. All welds shall be continuous, without voids or partial welds. Welds shall be free of burns and scorch marks.

13. Weld shall be a minimum of 1-1/2" in width for automatic machine welding and a minimum 2" in width for hand welding.

14. All cut edges of reinforced membrane must be sealed with TPO Cut Edge Sealant.

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15. Supplemental membrane attachment is required at the base of all walls and curbs, and where the angle of the substrate changes by more than five (5) degrees (1" in 12"). Roofing membrane shall be secured to the structural deck with appropriate Drill-Tec™ screws and plates spaced every 12" o.c. The screws and plates must be installed no less than ½" from the membrane edge. Alternatively, the roofing membrane may be turned up the vertical plane a minimum of 3" and secured with screws and termination bar Fastener spacing is the same as is used for in-lap attachment. The termination bar must be installed within 1-1/2" to 2" of the plane of the roof membrane, with a minimum of 1" of membrane extending above the termination bar.

16. Supplemental membrane attachment to the structural deck is required at all penetrations unless the insulation substrate is fully adhered to the deck. Roofing membrane shall be secured to the deck with appropriate Drill-Tec™ screws and plates.

17. Fasteners must be installed to achieve the proper embedment depth. Install fasteners without lean or tilt.

18. Install fasteners so that the plate or termination bar is drawn down tightly to the membrane surface. Properly installed fasteners will not allow the plate or termination bar to move (underdriving), but will not cause wrinkling of the membrane (overdriving).

3.07 FLASHINGS

A. General:

1. All penetrations must be at least 24" (61 cm) from curbs, walls, and edges to provide adequate space for proper flashing.

2. Flash all perimeter, curb, and penetration conditions with coated metal, membrane flashing, and flashing accessories as appropriate to the site condition.

3. All coated metal and membrane flashing corners shall be reinforced with preformed corners or non-reinforced membrane.

4. Hot-air weld all flashing membranes, accessories, and coated metal. A minimum 2" wide (hand welder) weld is required.

5. All cut edges of reinforced membrane must be sealed with TPO Cut Edge Sealant.

B. Coated Metal Flashings:

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1. Coated metal flashings shall be formed in accordance with SMACNA guidelines.
2. Coated metal sections used for roof edging, base flashing and coping shall be butted together with a ¼" gap to allow for expansion and contraction. Hot-air weld a 6" wide reinforced membrane flashing strip to both sides of the joint, with approximately 1" on either side of the joint left un-welded to allow for expansion and contraction. 2" wide aluminum tape can be installed over the joint as a bond-breaker, to prevent welding in this area.
3. Coated metal used for sealant pans, scupper inserts, corners of roof edging, base flashing and coping shall be overlapped or provided with separate metal pieces to create a continuous flange condition, and pop-riveted securely. Hot-air weld a 6" wide reinforced membrane flashing strip over all seams that will not be sealed during subsequent flashing installation.
4. Coated metal flashings shall be nailed to treated wood nailers or otherwise mechanically attached to the roof deck, wall or curb substrates, in accordance with construction detail requirements.
5. Provide a ½" hem for all exposed metal edges to provide corrosion protection and edge reinforcement for improved durability.
6. Provide a ½" hem for all metal flange edges whenever possible to prevent wearing of the roofing and flashing membranes at the flange edge.

C. Reinforced Membrane Flashings:

1. The thickness of the flashing membrane shall be the same as the thickness of the roofing membrane.
2. Membrane flashing shall be fully adhered to the substrate surface in accordance with "Construction Detail Requirements".
3. Where flashings are to be fully adhered, apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.
4. Apply the adhesive only when outside temperature is above 40°F. Recommended minimum application temperature is 50°F to allow for easier adhesive application.

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5. The membrane flashing shall be carefully positioned prior to application to avoid wrinkles and buckles.

D. Self-Adhered Membrane Flashings:

1. Install self-adhering membrane flashings according to all applicable manufacturer's construction details. Broom or roll all walls. All seams shall be rolled-in with a silicone roller.

2. Apply flashing membrane only when outside temperature is above 50°F to allow for improved adhesive performance.

3. The membrane flashing shall be carefully positioned prior to removal of release film to avoid wrinkles and buckles.

E. Un-reinforced Membrane Flashings:

1. Un-reinforced membrane is used to field-fabricate penetration or reinforcement flashings in locations where preformed corners and pipe boots cannot be properly installed.

2. Penetration flashings constructed of un-reinforced membrane are typically installed in two sections, a horizontal piece that extends onto the roofing membrane and a vertical piece that extends up the penetration. The two pieces are overlapped and hot-air welded together.

3. The un-reinforced membrane flashing shall be adhered to the penetration surface. Apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.

F. Roof Edges:

1. Roof edge flashings are applicable for gravel stop and drip edge conditions as well as for exterior edges of parapet walls.

2. Flash roof edges with metal flanges nailed 4" O.C. to pressure-treated wood nailers. Where required, hot-air weld roof membrane to coated metal flanges.

3. When the fascia width exceeds 4", coated metal roof edging must be

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attached with a continuous cleat to secure the lower fascia edge. The cleat must be secured to the building no less than 12" O.C.

4. Alternatively, roof edges may be flashed with a 2-piece snap on fascia system, adhering the roof membrane to a metal cant and face nailing the membrane 8" on center prior to installing a snap-on fascia.

5. Flash roof edge scuppers with a coated metal insert that is mechanically attached to the roof edge and integrated as a part of the metal edging.

G. Parapet and Building Walls:

1. Flash walls with TPO membrane adhered to the substrate with bonding adhesive, loose applied (Less than 18" in height) or with coated metal flashing nailed 4" on center to pressure-treated wood nailers.

2. Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the wall surface and membrane flashing underneath all exposed termination bars. Exposed termination bars shall be mechanically fastened 8" on center; termination bars that are counter flashed shall be fastened 12" on center.

3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:

a. Mechanically Attached Systems – Per in-lap on center spacing, with a 12" maximum.

b. Fully / Self Adhered Systems – 12" on center

4. All coated metal wall flashings and loose applied membrane flashings must be provided with separate metal counterflashings, or metal copings.

5. Metal counterflashings may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with approved caulking.

6. Flash wall scuppers with a coated metal insert that is mechanically attached to the wall and integrated as part of the wall flashing.

H. Curbs and Ducts:

1. Flash curbs and ducts with TPO membrane adhered to the curb substrate with bonding adhesive, loose applied (Less than 18" in height) or with coated metal flashing nailed 4" on center to pressure-treated wood nailers.

2. Secure membrane flashing at the top edge with a termination bar. Water

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Block shall be applied between the curb/duct surface and membrane flashing underneath all termination bars. Exposed termination bars shall be mechanically fastened every 8"o.c.; termination bars that are counter flashed shall be fastened 12" on center.

3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:

a. Mechanically Attached Systems – Per in-lap on center spacing, with a 12" maximum.

b. Fully / Self Adhered Systems – 12" on center

4. All coated metal curb flashings and loose applied membrane flashings must be provided with separate metal counterflashings, or metal copings.

5. Metal counterflashings may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with approved caulking.

I. Roof Drains:

1. Roof drains must be fitted with compression type clamping rings and strainer baskets. Original-type cast iron and aluminum drains, as well as retrofit-type cast iron, aluminum or molded plastic drains are acceptable.

2. Roof drains must be provided with a minimum 36" x 36" sump. Slope of tapered insulation within the sump shall not exceed 4" in 12".

3. Extend the roofing membrane over the drain opening. Locate the drain and cut a hole in the roofing membrane directly over the drain opening. Provide a ½" of membrane flap extending past the drain flange into the drain opening. Punch holes through the roofing membrane at drain bolt locations.

4. For cast iron and aluminum drains, the roofing membrane must be set in a full bed of water block on the drain flange prior to securement with the compression clamping ring. Typical water block application is one 10.5 ounce cartridge per drain.

5. Lap seams shall not be located within the sump area. Where lap seams will be located within the sump area, a separate roof membrane drain flashing a minimum of 12" larger than the sump area must be installed. The roof membrane shall be mechanically attached 12" on center around the drain with screws and plates. The separate roof drain flashing shall be heat welded to the roof membrane beyond the screws and plates, extended over the drain flange, and secured as above.

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6. Tighten the drain compression ring in place.

3.08 TRAFFIC PROTECTION

- A. Install walkway pads/rolls at all roof access locations and other designated locations including roof-mounted equipment work locations and areas of repeated rooftop traffic.
- B. Walkway pads must be spaced 2" apart to allow for drainage between the pads.
- C. Fully adhere walkway pads/rolls to the roof membrane with solvent-based bonding adhesive, applied at the rate of 1 gal. per 100 sq. ft. to both the walkway and roof membrane surfaces. Press walkway in position once adhesive is tacky to the touch.
- D. Alternatively, walkway pads/rolls may be hot-air-welded to the roof membrane surface continuously around the perimeter of the pad/roll.

3.09 ROOF PROTECTION

- A. Protect all partially and fully completed roofing work from other trades until completion.
- B. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.
- C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.
- D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

3.10 CLEAN-UP

- A. All work areas are to be kept clean, clear and free of debris at all times.
- B. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.
- C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.

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- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition.

END OF SECTION

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SECTION 075600
FLUID APPLIED ROOFING

PART 1 - GENERAL

1.01. Summary

- A. This Section includes fluid applied membrane roofing systems, and related substrate restoration, primers, reinforcing mats, flashing, surfacing aggregates, and accessories.
- B. Related Sections:
 - 1. 014000 (Quality Requirements).
 - 2. 014339 (Mockups, and Physical Quality Assurance Aids).
 - 3. 016000 (Product Requirements).
 - 4. 017300 (Execution).

1.02. Submittals

- A. Product Data: For each product specified in Part 2 - Products.
- B. Samples:
 - 1. Membrane: Sample shall be 12" square, and representative of color, texture, thickness, and surfacing of membrane to be incorporated in the Work.
 - 2. Special Surfacing: Sample shall be 3 lbs. of surfacing material to be incorporated in the Work.
- C. Shop Drawings:
 - 1. Deck Survey: For those areas of full edge-to-edge roof replacement, after removal of overlaying components as indicated in the contract documents, provide deck elevation drawings completed by New York State Licensed Surveyor, signed and sealed.
 - 2. Shop drawings to indicate:
 - a. Dimensions, thickness and arrangement of insulation panels.
 - b. Roofing details for all roofing terminations and penetrations as required for warranted roofing system, where not otherwise indicated; include dimensions of each product specified, method of installation to the substrate, underlayment, and termination.
 - 3. Maintain R-Value of existing roof assembly.
- D. Manufacturer Approved Installer Credentials: Prior to pre-installation conference,

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submit installer credentials issued by manufacturer of roofing products.

E. Pre-construction Test Reports:

1. Membrane Bond Strength Test Reports
2. Deck Dryness Test Reports

F. Warranty Prerequisites:

1. Sample Warranty: Prior to pre-installation conference, submit sample warranty and warranted application procedures from manufacturer.
2. Manufacturer Inspection Reports/Certifications (On-demand).

1.03. Performance Requirements

- A. Wind Uplift Pressure Resistance: Roofing system shall resist wind uplift pressures at corners, perimeter, and field-of-roof in accordance with ASCE 7 and applicable building codes.
- B. Cool Roof Energy Performance: Roofing systems shall conform to the following standards: Initial solar reflectance of not less than 0.70, per ASTM C1549. Thermal emittance of not less than 0.75, per ASTM C1371. Solar Reflective Index (SRI) of not less than 78, per ASTM E1980.
- C. Fire Rating: Fluid applied membrane shall achieve Class A fire rating.

1.04. Quality Assurance

- A. Pre-installation Conference: Prior to starting roofing Work, conduct an on-site conference to review the detailed requirements of the Work.
1. Attendees shall include Contractor's Project manager and superintendent, Architect's Project representative, Owner's Project representative, manufacturer's authorized representative, manufacturer approved installer. Provide seven (7) business days advance notice to attendees.
 2. Agenda shall include:
 - a. Manufacturer approved installer credentials.
 - b. Sample warranties and warranted application procedures.
 - c. Project construction schedule.
 - d. Weather conditions.
 - e. Condition of substrate and preparation.
 - f. Preparation Work performed by other trades.
 - g. Proposed equipment.
 - h. Mixing procedures.

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- i. Installation sequence.
- j. Odor control procedures.
- k. Penetrations.
- l. Mockups.
- m. Tests and inspections.

1.05. Tests and Inspections

A. Pre-construction Testing:

1. Membrane Bond Strength Testing:

- a. Testing: Perform random tensile bond strength of membrane to substrate tests according to manufacturer's requirements.
- b. Test Reports: Reports shall include date of test, locations, test method, and test results, whether the results comply, or do not comply with performance requirements.
- c. Acceptance: Obtain Architect's written acceptance of test results before proceeding with the Work.
- d. Re-testing: If necessary, after additional preparation per manufacturer's recommendations, repeat testing to verify suitability of substrate preparation.

2. Deck Dryness Test:

- a. Testing: Determine substrate moisture content, throughout Work, at location of application according to manufacturer's requirements.
- b. Test Reports: Reports shall include date of test, locations, test method, and test results.

B. Additional Tests: Perform Additional Tests as recommended by manufacturer.

1.06. Project Conditions

A. Weather Conditions: Proceed with roofing Work only when existing and predicted weather conditions will permit Work to be performed in accordance with manufacturer's recommendations and warranty requirements.

B. Substrate Conditions: Do not install roofing on wet or moist substrates.

1.07. Warranty

A. Roofing System Manufacturer's Warranty: Written form in which manufacturer agrees to furnish products and labor to repair or replace those areas of roofing system that do not comply with performance and other requirements specified in the Contract Documents during the warranty period. Manufacturer shall warranty

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the complete roofing system including, but not limited to membranes, flashing, insulation, fasteners, and embedded edge metal.

1. Warranty Period: Twenty (20) Years, No Dollar Limit (NDL) Total System Warranty.
2. Wind Rider for full term of Warranty Period and for wind speeds of 110 MPH.

B. Manufacturer's Inspection and Certification:

1. Coordinate inspections required by manufacturer. Provide three (3) business days' notice to manufacturer's authorized representative to inspect Work at the required milestones or intervals. No Work is to proceed until after each inspection is completed with written acceptance by manufacturer.
2. Upon acceptance of completed Work by manufacturer, obtain manufacturer's certification stating that the Work complies with the requirements for Warranty.
3. Manufacturer's certification to verify that systems comply with cool roof reflectivity, fire rating and wind uplift resistance requirements, including for wind speeds of 110 MPH.

C. Contractor's Warranty: In addition to the provisions of the manufacturer's warranty, the following items shall be covered under the Contractor's warranty:

1. Wind blow-off of roofing or associated Work will be considered a failure of materials and workmanship.
2. Ponding of water on any roof surface for longer than 24 hours after rain will be considered a failure of materials and workmanship.

PART 2 - PRODUCTS

2.01. General

A. All products in this Section must be acceptable to the manufacturer of the overall roofing system, and used in accordance with manufacturer's recommendations.

B. Fluid Applied Products, by Category:

1. Membranes:

- a. Kemper System: 2K-PUR Resin (2-component).
UV-stable, solvent-free polyurethane.
Membrane thickness: 70 mils (w/ 165 fleece).
Minimum application air and surface temperature is 41° F.
- b. Siplast System: Parapro S System (2-component).
MMA acrylic.
Membrane thickness: 90 mils.
Minimum application air and surface temperature is 23° F.

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- c. Soprema System: Alsan RS260 LO Field (2-component).
PMMA acrylic.
Membrane thickness: 105 mils.
Minimum application air and surface temperature is 32° F.
- C. Resin Additives: Comply with manufacturer's recommendations for use of resin additives (e.g. cold weather additive, warm weather additive) under specific project conditions.

2.02. Fluid Applied Membrane

A. Fluid Applied Membrane

1. Kemper System:

Resin (2-Component):	Kemperol 2K-PUR	Kemper
Fleece:	Kemperol Fleece 165	Kemper
Coating:	Kemperdur BSF-R Coating (White Color)	Kemper

Note: Kemperol 2K-PUR System requires Kemperdur BSF-R Coating to achieve Cool Roof Reflectivity and Class A Fire Rating.

2. Siplast System:

Resins (2-Component):	Parapro S (White Color)	Siplast
Fleece:	Pro Fleece	Siplast

3. Soprema System:

Resin (2-Component):	Alsan RS 260 LO Field (White Color)	Soprema
Fleece:	Alsan RS Fleece	Soprema

2.03. Surface Primer

A. Primer

1. Kemper Primers:

- a. For Metal, Wood, and Bituminous Substrate:
Kempertec AC Primer Kemper
- b. For Cementitious, and Masonry Substrate:
Kempertec EP Primer Kemper

2. Siplast Primers:

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- a. For Metal, Wood, and Bituminous Substrate:
Pro Primer W Resin Siplast
- b. For Cementitious, and Masonry Substrate:
Pro Primer T Resin Siplast
- 3. Soprema Primers:
 - a. For Metal, Wood, and Bituminous Substrate:
Alsan RS 276 Primer Soprema
 - b. For Cementitious, and Masonry Substrate:
Alsan RS 222 Primer Soprema

2.04. Patching/Leveling Compounds (for Concrete Substrate)

A. Resin Patching/Leveling Compound

- 1. Kemper System:

Resin:	Kemperol BR	Kemper
Aggregate:	Washed, dust free, kiln dried silica sand (size as recommended by Manufacturer)	
Mix:	1:2 resin to aggregate ratio by volume	
- 2. Siplast System:

Resin:	Pro Paste Resin	Siplast
Aggregate:	N/A	
Mix:	N/A	
- 3. Soprema System:

Resin:	Alsan RS Repair Mortar Resin	Soprema
Aggregate:	Alsan RS Repair Mortar Powder	Soprema
Mix:	1:9 resin to aggregate ratio by weight	

2.05. Modified Repair Mortar & Grout (for Concrete Substrate)

A. Modified Repair Mortar

- 1. BASF System:

Repair Mortar:	MasterEmaco T1060 [T1061]	BASF
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- | | | |
|----------------|------------------|------|
| Bonding Agent: | MasterEmaco P124 | BASF |
|----------------|------------------|------|
2. Sika System:

Repair Mortar:	SikaQuick 1000	Sika
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 3. Approved Equal

Note: Prime concrete with scrub coat, per Manufacturer's Recommendations.

B. Cementitious Grout (Non-Shrink)

1. MasterFlow 928 BASF
2. SikaQuick 1000 Sika
3. Approved Equal

2.06. Special Surfacing

A. Skid-Resistant Surfacing

1. Kemper System:

Resin:	Kemperdur BSF-R Finish	Kemper
Aggregate:	Washed, dust free, kiln dried silica sand or ceramic-coated aggregate (size as recommended by manufacturer)	
Sealer:	Kemperdur BSF-R Finish	Kemper
2. Siplast System:

Resin:	Parapro S	Siplast
Aggregate:	Pro Natural Quartz	Siplast
Sealer:	Pro Color Finish	Siplast
3. Soprema System:

Resin:	Alsan RS 289 Textured Finish	Soprema
Aggregate	(Aggregate pre-mixed into Resin)	
Sealer:	N/A	

2.07. Accessories

A. Extruded Polystyrene Insulation

1. Styrofoam Plazamate Dow
2. Insulfoam Expanded Boards Carlisle
3. ProPink Rigid Extruded (XPS) Owens Corning

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PART 3 - EXECUTION

3.01. General:

- A. Coordinate the installation so that each completed area is made watertight at the end of each day.

3.02. Odor Control Measures

- A. Implement odor control and elimination measures prior to and during the application of the roofing materials in accordance with manufacturer's recommendations and regulatory authorities.

3.03. Preparation of Substrate

- A. Substrate conditions are to be evaluated by Contractor, Architect, and roofing manufacturer to determine the extent of repair and leveling required.
- B. Unacceptable substrates, per manufacturer's warranty requirements, shall be brought to the Architect's attention in writing immediately upon discovery.
- C. Existing concrete substrate should be prepared per manufacturer's recommendations and in accordance with ASTM D4259. Concrete should be abraded to comply with ICRI CSP 2-4.
- D. Clean, level, and repair substrate in manner recommended by roofing manufacturer. Allow time for curing of repair mortars and patching/leveling compounds, prior to application of membrane system.
- E. Additional substrate preparation is required in the event pre-construction tests do not meet manufacturer's recommendations.
- F. Inspection of Prepared Substrate: Provide two (2) business days written notice to Architect and roofing manufacturer to inspect fully prepared substrate. Implement additional preparation specified in writing by Architect or manufacturer. Obtain manufacturer's written acceptance prior to proceeding with Work.

3.04. Installation of Roofing System

- A. Install roofing system in accordance with manufacturer's written instructions and recommendations.

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SECTION 07565 – STANDING SEAM METAL ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Pre-coated, Galvanized steel, Terne-coated stainless steel, Stainless steel roofing, associated integral flashings, and underlayment.
- B. Integral fascias.

1.02 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 07620 - Sheet Metal Flashing and Trim: counterflashings, reglets, and accessories.

1.03 RELATED SECTIONS

- A. Section 06112 - Framing and Sheathing: Plywood Roof deck substrate.
- B. Section 06114 - Wood Blocking and Curbing: Wood blocking and battens for metal roofing substrate profiles, roof curbs for mechanical equipment.
- C. Section 07514 - Built-Up Asphalt Bituminous Roofing: Membrane roofing substrate.
- D. Section 07620 - Sheet Metal Flashing and Trim.
- E. Section 07631 - Gutter and Downspouts.
- F. Section 07710 - Manufactured Roof Specialties: Precast concrete splash pads at downspout outlets.
- G. Section 07724 - Roof Hatches.
- H. Section 07810 - Unit Skylights.
- I. Section 07820 - Metal Framed Skylights.

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- J. Section 07900 - Joint Sealers.
- K. Section 09900 - Painting: Prime and finish painting

1.04 REFERENCES

- A. AISI (American Iron and Steel Institute) - Stainless Steel - Uses in Architecture.
- B. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- C. ASTM A361 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.
- D. ASTM A446 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- E. ASTM B32 - Solder Metal.
- F. ASTM B486 - Paste Solder.
- G. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- H. ASTM D2178 - Asphalt Impregnated Glass Mat for Roofing and Waterproofing
- I. ASTM D4586 - Asphalt Roof Cement, Asbestos-Free.
- J. FS L-P-512 - Polyethylene Underlayment.
- K. FS O-F-506 - Flux, Soldering, Paste and Liquid.
- L. NRCA (National Roofing Contractors Association) - Roofing Manual.
- M. SMACNA - Architectural Sheet Metal Manual - Fourth Edition.

1.05 SUBMITTALS

- A. Submit under provisions of Section 01000.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Provide data on metal types, finishes, and characteristics.

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- D. Submit specified trade association installation instructions.
- E. Submit three samples 12x12 inch (304.8x304.8 mm) in size illustrating metal roofing mounted on plywood backing illustrating typical seam to match existing condition material, and finish.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA and NRCA standard details and requirements.
- B. Maintain one copy of each document on site.

1.07 QUALIFICATIONS

- A. Fabricator and Installer: shall be a qualified firm using experienced workmen. The Contractor shall demonstrate to the Commissioner's satisfaction that the firm maintains an organization with the necessary technical knowledge, experience and facilities to perform the required work properly and within the required time.

1.08 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this section, under provisions of Section 01000.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01000.
- B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials which may cause discoloration or staining.

1.10 COORDINATION

- A. Coordinate work under provisions of Section 01000.
- B. Coordinate with the work of Section 07620 for installing flashing reglets.

1.11 GUARANTEE / WARRANTY

- A. Provide two (2)-year warranty under provisions of Section 01000.
- B. Warranty: Include coverage for degradation of metal finish, water tightness, and integrity of seals.

1.12 PROTECTION

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A. Care, Custody and Control:

1. From the date that work commences until completion and acceptance of work, the Contractor shall assume full responsibility for maintaining roofs watertight. This includes both new and existing roofs within contract limit lines.

2. The Contractor shall not remove or damage more roofing, in any one day, than can be temporarily reroofed or covered with the completed sheet metal roof and made watertight that same day.

3. No roofing work shall be performed during rainy weather nor on damp surfaces. All necessary precautions must be taken during inclement weather to prevent deck surface and materials from becoming damp or wet. The Contractor shall provide waterproof protective covering when required to protect portions of roof decks during intervals between work periods.

B. Drains and Lines:

1. Rod out and clean all leaders.

2. Take precautions to prevent drains from clogging during execution of this Contract. Remove debris at completion of each day's work. Clean drains.

3. At completion, test drains to ensure that drainage system is clean and free running and that drains are watertight.

C. Protect areas from damage.

D. Protect building elements from damage. Provide canvas, boards or sheet materials, properly secured. Restore damaged areas to their original conditions.

E. Take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. Give ample notice to the Resident Engineer, so that building contents can be protected.

F. Do not overload any portion of the building either by use of or placement of equipment, storage of debris or storage of materials

G. Protect ventilators, stacks and flashing to be retained or reused.

I. Upon completion, remove protective coverings, repair damaged items and restore damaged building elements to their original condition.

PART 2 - PRODUCTS

2.01 FABRICATORS

A. Butler Roofing Systems.

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- B. Follansbee Steel
- C. Steelox Roofing Systems
- D. Or Approved Equal.

2.02 SHEET MATERIALS

- A. Pre-Coated Galvanized Steel: ASTM A446, Grade A, G90 zinc coating; 24gage (0.6mm) core steel, shop pre-coated with fluoropolymer coating of color as selected by the "Commissioner".
- B. Galvanized Steel: ASTM A361, G90 zinc coating; 24 gage (0.6 mm) core steel.
- C. Terne-Coated Steel: 0.015 inch (.38 mm) stainless steel conforming to ASTM A167, Type 304; core material with 0.015 inch (0.4 mm) terne alloy coating on both sides of core metal.
- D. Stainless Steel: ASTM A167, Type 304, soft temper, inch (mm) thick; smooth patterned 4D finish.

2.03 ACCESSORIES

- A. Fasteners: Stainless steel with soft neoprene washers.
- B. Underlayment: ASTM D2178, No. 15 asphalt saturated roofing felt.
- C. Slip Sheet: Rosin sized building paper.
- D. Primer: Zinc chromate for stainless steel or galvanized steel.
- E. Protective Backing Paint: Zinc chromate alkyd.
- F. Sealant: Polyurethane type, specified in Section 07900.
- G. Bedding Compound: Rubber-asphalt type.
- H. Plastic Cement: ASTM D4586, Type I.

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- I. Eave (Ice Dam) Protection: ASTM D2178, Type IV, glass fiber felts.
- J. Reglets: Surface mounted or Recessed type, galvanized steel.
- K. Solder: ASTM B32; 50/50 type.
- L. Flux: FS O-F-506.

2.04 SHOP FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet, interlockable with sheet.
- C. Fabricate starter strips of same material as sheet, continuous, interlockable with sheet.
- D. Form pieces in longest practical lengths.
- E. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.
- F. Form material with seams to match existing conditions.
- G. Pre-tin edges of steel sheet. Solder shop formed metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Weather seal joints.
- H. Fabricate corners from one piece with minimum 18 inch (450 mm) long legs; seam solder for rigidity, seal with sealant.

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- I. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
- J. Fabricate flashings to allow toe to extend 2 inches (50 mm) over roofing gravel. Return and brake edges.
- K. Form sheet metal pans (pitch pockets) 6 inch (150 mm) nominal size, with 3 inch (75mm) upstand, and 4 inch (100 mm) flanges.
- L. Fabricate snow guards in accordance with SMACNA plate 159.

2.05 FINISH

- A. Prepare steel surfaces in accordance with Section 09900.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil (0.4 mm).

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains, valley or eaves.
- B. Verify deck is dry and free of snow or ice. Verify joints in wood deck are solidly supported and fastened.
- C. Verify correct placement of wood nailers and insulation positioning between nailers.
- D. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.

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- E. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

3.03 INSTALLATION - EAVE (ICE DAM) PROTECTION

- A. Place eave edge and gable edge metal flashings tight with fascia boards. Weather lap joints 2 inches (50 mm) and seal with plastic cement. Secure flange with nails spaced 12 inches (304.8mm) o.c.
- B. Apply 4 inch (100 mm) wide band of plastic cement over deck flange of eave edge flashings, and embed an 18 inch (450 mm) wide strip of underlayment. Place underlayment starter strip with eave edge flush with face of flashings. Secure in place. Lap ends minimum 6 inches (150 mm).
- C. Apply lap cement at rate of approximately 1-1/4 gal/100 sq. ft. (0.5 L/sq. m.) over underlayment starter strip.
- D. Starting from lower edge of starter strip, lay additional 36 inch (900 mm) wide strips of underlayment in lap cement, to produce a two ply membrane. Weather lap plies minimum 19 inches (475 mm) and nail in place. Lap ends minimum 6 inches (150 mm). Stagger end joints of each consecutive ply.
- E. Extend eave protection membrane minimum 4 feet (1 200 mm) upslope beyond interior face of exterior wall.

3.04 INSTALLATION

- A. Apply underlayment [in single layer laid perpendicular to slope; weather lap edges 2 inches (50 mm) and nail in place. Minimize nail quantity.

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- B. Apply slip sheet in one layer, laid loose.
- C. Cleat and seam all joints.
- D. Use bedding compound for joints between metal and bitumen or metal and felts.
- E. Align transverse joints of roofing sheets.
- G. Provide formed metal pans for protrusions through roof. Fill pans watertight with plastic cement.
- H. Back paint surfaces in contact with dissimilar materials.
- J. Solder lap joints. After soldering, wash metal clean with neutralizing solution, rinse with water.

3.05 FLAT SEAM ROOFING

- A. Space seams to match existing conditions.
- B. Notch corners and turn up pre-tinned edges 3/4inch (19 mm).
- C. Lay sheets with long dimension parallel to eaves. Apply pans beginning at eaves.
- D. Lock cleats into seams and flatten in direction of drainage.
- E. At eaves and gable ends, terminate roofing by hooking over edge strip.
- F. Fold lower ends of seams at eaves over at 45-degree angle.

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- G. Form valleys of sheets not exceeding 10 feet (3 m) in length. Lap joints 6 inches (150 mm) in direction of drainage.
- H. Extend valley sheet minimum 6 inches (150 mm) under roofing sheets.
- I. At valley, fold valley and roofing sheets and secure with cleats spaced 18 inches (400 mm) o.c.

3.06 STANDING SEAM ROOFING

- A. Space standing seams to match existing conditions.
- B. Lay sheets with long dimension perpendicular to eaves. Apply pans beginning at eaves.
- C. Lock cleats into seams and flatten.
- D. At eaves and gable ends, terminate roofing by hooking over edge strip.
- E. Finish standing seams 1 inch (25 mm) high on flat surfaces and 1/2 inch (13 mm) high on curved surfaces.
- F. Bend up one side edge 1-1/2 inches (38 mm) and other edge 1-3/4 inches (44 mm).
- G. Make first fold 1/4 inch (6 mm) wide single fold and second fold 1/2 inch (13 mm) wide, providing locked portion of standing seam, 5 plies in thickness.
- H. Fold lower ends of seams at eaves over at 45-degree angle.

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- I. Terminate standing seams at ridge and hips by turning down with tapered fold.
- J. Form valleys of sheets not exceeding 10 feet (3 m) in length. Lap joints 6 inches (150 mm) in direction of drainage.
- K. Extend valley sheet minimum 6 inches (150 mm) under roofing sheets.
- L. At valley, double fold valley and roofing sheets and secure with cleats spaced 18 inches (400 mm) o.c.

3.07 BATTEN SEAM ROOFING

- A. Space battens to match existing conditions.
- B. Turn up sides of sheets and extend 1/2 inch (13 mm) above top of battens.
- C. Form cross seams with 3/4 inch (19 mm) fold under on lower end and 2 inches (50mm) fold on upper end. Slit folds in cross seams at each corner, 1 inch (25 mm) in from batten to form tab. Hook fold on lower end of pan into fold on upper end of underlaying pan.
- D. Apply pans beginning at eaves.
- E. Place cover strips over battens, locking edges with flanges of pan malletted down against sides of battens. Cover batten ends with cap folded and locked into extensions of batten covers and vertical legs of pans.
- F. At intersection of roof slope with ridge and hip battens, turn up edges of roof pans against battens and terminate in 1/2 inch (13 mm) flange at top of battens. Install cover strips.
- G. Form valleys of sheets not exceeding 10 feet (3 m) in length. Lap joints 6 inches (150 mm) in direction of drainage.

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- H. Extend valley sheet minimum 6 inches (150 mm) under roofing sheets.

- I. At valley, double fold valley and roofing sheets and secure with cleats spaced 18 inches (400 mm) o.c.

- J. At eaves without gutters, hook pan over edge strip. Extend edge strip up under metal roofing 4 inches (100 mm) and secure with nails at 4 inches (100 mm) o.c, at 1 inch (25 mm) from upper end

- K. At eaves with gutters, loose lock end of roofing pans into gutters.

- L. Install batten flush with gable. Extend batten cover down exterior face and lock into edge strip.

3.08 FLASHINGS

- A. Secure flashings in place using concealed fasteners.

- B. Insert flashings into reglets to form tight fit. Secure in place with lead wedges at maximum 12 inches (304.8mm) on center. Pack remaining spaces with lead wool. Seal flashings into reglets with sealant.

- C. Cleat and seam all joints.

- D. Apply plastic cement compound between metal flashings and felt flashings.

- E. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

- F. Install snow guards 18 inch (457.3mm) up slope from eaves and valleys.

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G. Seal metal joints watertight.

H. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

3.09 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of Section 01000.

3.10 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01000.

B. Do not permit traffic over unprotected roof surface. No unnecessary walking over the roof shall be permitted.

C. Roofers shall wear rubber-soled shoes.

D. Protective gloves shall be worn by those handling Terne in order to limit surface handling marks and avoid injury.

E. Do not use roof as storage area for other materials

END OF SECTION

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SECTION 07600 - FLASHING AND SHEET METAL TRIM

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Coping, parapet, cap, sill, and lintel flashings.
- B. Fascias, scuppers, pitch pockets, and snow guards.
- C. Counterflashings over bituminous, base flashings.
- D. Counterflashings for roof hatches and skylights.
- E. Counterflashings at roof mounted equipment and vent stacks.
- F. Drain flashing.

1.02 RELATED SECTIONS

- A. Section 02050 – Demolition.
- B. Section 02080 – Incidental Asbestos Abatement.
- C. Section 06114 – Wood Blocking.
- D. Section 07545 – TPO Roofing.

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1.03 REFERENCES

- A. AISI (American Iron and Steel Institute) - Stainless Steel - Uses in Architecture.
- B. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- C. ASTM A525 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.
- D. ASTM B32 - Solder Metal.
- E. ASTM B209 - Aluminum and Alloy Sheet and Plate.
- F. ASTM B486 - Paste Solder.
- G. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- J. NRCA (National Roofing Contractors Association) Roofing Manual.
- K. SMACNA - Architectural Sheet Metal Manual.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01000.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

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C. Samples: Submit two samples, 6x6 inch (152.4x152.4 mm) in size illustrating typical standing seam, or seams.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA and NRCA standard details and requirements.

B. Maintain one copy of each document on site.

1.06 QUALIFICATIONS

A. Fabricator and Installer: Flashing and Sheet Metal Trim to be done by a qualified firm using experienced workmen. The Contractor shall demonstrate to the Commissioner's satisfaction that the firm maintains an organization with the necessary technical knowledge, experience and facilities to perform the required work properly and within the required time.

1.07 PRE-INSTALLATION CONFERENCE

A. Convene one week prior to commencing work of this section, under provisions of Section 01000.

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01000.

B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials which may cause discoloration or staining.

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1.09 COORDINATION

A. Coordinate work under provisions of Section 01000.

PART 2 - PRODUCTS

2.01 SHEET MATERIALS

A. Aluminum Sheet: ASTM B209, 3003-O alloy, .025 inch (.635mm) thick; mill finish, shop pre-coated with epoxy coating of color as selected by the "Commissioner".

B. Stainless Steel: ASTM A167, Type 304 soft temper, .020 inch (.508mm) thick; smooth 4D finish.

C. Flexible Sheet Membrane Flashing: Non-reinforced flexible, black elastic sheet flashing of 50 to 65 mils' thickness and complying with the following:

1. Shore A Hardness (ASTM D 2240): 50-70
2. Tensile Strength (ASTM D 412): 1200 psi
3. Tear Resistance (ASTM D 624, Die C): 20 labs. per linear.
4. Ultimate elongation (ASTM D 412): 250 per cent.
5. Low temperature brittleness (ASTM C 746): -30 degrees F. (-35 degrees C).
6. Resistance to ozone aging (ASTM D 1149): No cracks for 10 per cent elongated sample for 100 hours in 50 ppm (50.5 mpa) ozone at 104 degrees F (70 degrees C).

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7. Resistance to Heat Aging (ASTM D 573): Maximum hardness increase of 15 points, elongation reduction of 40 per cent, and tensile strength reduction of 30 per cent, for 70 hours at 212 degrees F (100 degrees C).

8. Acceptable Products:
- a. Neoprene synthetic rubber sheet.
 - b. Butyl synthetic rubber sheet.
 - c. EFDM synthetic rubber sheet.

D. Lead Sheet (for Drain Flashing): Provide four (4) pound lead sheet (12) inches wider than drain diameter to fit under clamping ring and turned down one (1) inch into the drain sump.

2.02 ACCESSORIES

- A. Fasteners: Stainless steel with soft neoprene washers.
- B. Underlayment: ASTM D2178, No. 15 asphalt saturated roofing felt.
- C. Slip Sheet: Rosin sized building paper.
- D. Protective Backing Paint: Zinc chromate alkyd.
- E. Sealant: Polyurethane type, specified in Section 07900.
- F. Bedding Compound: Rubber-asphalt type.
- G. Plastic Cement: ASTM D4586, Type I.

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H. Reglets: Surface mounted and/or Recessed type, stainless steel manufactured by Fry Reglet Corporation or approved equal.

I. Cap Flashing: Cap flashing of twenty-four (24) gauge stainless steel, (width as required for existing conditions).

J. Vent Stack Flashing: Twenty four (24) gauge stainless steel vent sleeves with stainless steel flashing collar welded to vent pipe.

K. Sealant Pockets: Formed of twenty-four (24) Gauge Stainless Steel.

L. Gravel Stops and Fascias: When aluminum is called for it shall be Aluminum 3003 alloy complying with Federal Specifications QQ-A349C and unless otherwise specified shall have a minimum thickness of 0.050 inch with mill finish.

M. Nails and Fasteners: Shall be of aluminum, stainless steel, or white bronze. Where exposed fasteners cannot be avoided they shall have finished heads.

N. Solder: ASTM B32; 50/50 type.

O. Flux: FS O-F-506.

2.03 COMPONENTS

A. Gutters: To match existing profile.

B. Downspouts: To match existing profile.

C. Accessories: Profiled to suit gutters and downspouts.

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2.04 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet interlockable with sheet.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.
- E. Form material with standing, batten, or flat lock seams.
- F. Pre-tin edges of stainless steel or aluminum sheet. Solder shop formed metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Weather seal joints.
- G. Fabricate corners from one piece with minimum 18-inch (450-mm) long legs; solder for rigidity, seal with sealant.
- H. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
- I. Fabricate flashings to allow toe to extend 2 inches (50 mm) over roofing gravel. Return and brake edges.
- J. Form sheet metal pans (pitch pockets): Shall be six (6) inches high from top of gravel surface with locked and folded seams. Bottom of pan fabricated with four (4) inch flanges which shall be nailed to wood nailers fastened to roof deck and covered with roofing felts and elastomeric sealant. Hem top flanges one-half (1/2) inch on itself. Fill pocket with polyurethane sealant, pitch and slope top surface to drain freely. Solder all slits where new or existing sealant

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pockets must be slit to fit over existing roof-mounted items cannot be temporarily raised and later refastened.

K. Cap Flashing: Overlap all base flashing not less than four (4) inches. Cap Flashing shall be lapped a minimum of six (6) inches.

L. Vent Stack Flashing: Set flange of sleeves in asphaltic or plastic cement on first layer of roofing and at all corners and in between. Seal off edge of flange with six (6) inch strip of glass fabric set in asphaltic cement. Seal around base of stacks with plastic cement.

M. Gravel Stops and Fascias:

1. Form gravel stops to configuration to match existing with roof deck flange punched with three-eighths (3/8) inch by one-eighth (1/8) inch holes four (4) inches on center. Finish and color to be selected by the "Commissioner".

2. Set gravel stop on roofing base sheet in mopping of asphalt so as to engage the drip edge over a previously placed continuous cleat. Both cleat and roof flange of gravel stop shall be nailed twelve (12) inches on center. No nailing shall be visible in the finish work.

3. Lap ends four (4) inches, with layer of asphaltic or plastic cement between end laps. Seal off roof deck flange with four (4) inches strip of glass fabric set in asphalt, and continue with balance of roofing.

N. Drain Flashing: Any repair work involving pipes shall involve a minimal amount of disruption on the part of the contractor to the existing facilities and operation of the building.

O. Fabricate snow guards to match or be compatible with existing conditions.

2.05 FINISH

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A. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15mi (0.4 mm).

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

3.03 INSTALLATION

A. Conform to drawing details included in the SMACNA and NRCA manual.

B. Insert flashings into reglets to form tight fit. Secure in place with lead wedges. Pack remaining spaces with lead wool.

C. Apply plastic cement compound between metal flashings and felt flashings.

D. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

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- E. Seal metal joints watertight.

- F. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

- G. Install snow guards 18 inch (mm) up slope from eaves and valleys.

- H. Set splash pads under downspouts. Set in place with hot mop application compatible with roof surface.

- I. Seal metal joints watertight.

3.04 FIELD QUALITY CONTROL

- A. Field inspection will be performed under provisions of Section 01000.

- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

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SECTION 07620 - FLASHING (SHEET METAL AND FLEXIBLE)

PART 1 – GENERAL

1.1. Summary

- A. This Section includes in-wall and counter flashing, and related accessories.
- B. Excludes roof flashing and accessories, which are integrally installed with roofing membrane systems. Roof flashing is specified in the roofing Sections.

1.2. Submittals

- A. Product Data: For each product specified in Part 2 - Products.
- B. Samples:
 - 1. Sheet Metal: For each type to be incorporated in the Work. Samples shall be 12" square.
 - 2. Pre-formed Sheet Metal Flashing: For each type to be incorporated in the Work. Samples shall be 12" long.
 - 3. Sheet Metal Counterflashing: For each type to be incorporated in the Work. Samples shall be 12" long.
 - 4. Accessories: For each type of termination bar, metal clip, strap, anchor, masonry nails (w/ washer), and fastener to be incorporated in the Work.
- C. Fabricator Qualifications: For sheet metal fabrications. Obtain written acceptance from Architect, prior to commencement with fabrication Work.

PART 2 - PRODUCTS

2.1. Sheet Metal

- A. Stainless Steel
 - 1. Comply with AISI Type 302/304. ASTM A 167 2D annealed finish, soft, except where harder temper is required for forming or performance.

2.2. Pre-Formed Sheet Metal Flashing

- A. Pre-Formed Sheet Metal Flashing (Stainless Steel)
 - 1. Break formed stainless steel, 24 gauge unless otherwise indicated.

2.3. Sheet Metal Counterflashing

- A. Counterflashing (at Cavity Wall / 2 Piece)

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1. XT-1WA-16 ExTech

2.4. Fabric Flashing

A. Copper Composite Fabric Flashing

1. Multi-Flash 500 Series York
 Copper Fabric Laminate (5 oz.)

B. Modified Bitumen Fabric Flashing

1. Bituthene 4000 W.R. Grace & Co.

2.5. Flashing Cement/ Utility Mastic

A. Utility Mastic

1. Cop-R-Tite York

B. Flashing Cement

1. MBR Flashing Cement (2 part) Johns Manville

2.06 Flashing Lap Tape

A. Flashing Lap Tape

1. Sure-Lap Seam Tape Karnak

2.07 Accessories

1. Solder (for copper)

1. 50 - 50 tin / lead solder (ASTM B 32), with rosin flux.

2. Masonry Nails

1. 1" long non-corrosive metal, with 1" diameter neoprene washers.

3. Pressure Treated Wood Blocking

1. Exterior Grade Alkaline Copper Quat (ACQ-B) pressure treated Douglas fir.
 - a. Use either G185 (min.) zinc coated hot-dipped galvanized steel, type 304/316 stainless steel, or copper for fasteners/metal flashing in contact with ACQ treated wood. Do not combine stainless & galvanized steel.

4. Fasteners (Sheet Metal)

1. Same metal as flashing/ sheet metal or other non-corrosive metal. For manufactured products, use fasteners recommended by manufacturer.

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5. Epoxy Seam Sealer

1. 2-part non corrosive metal seam cementing compound, recommended by metal manufacturer for exterior / interior non moving joints.

6. Bituminous Coating

1. FS TT C 494 or SSPC paint 12, solvent type bituminous mastic, normally free of sulfur, compounded for 15 mil dry film thickness per coat.

7. Mastic Sealant

1. Polyisobutylene; non hardening, non skinning, nondrying, non migrating sealant.

8. Adhesives

1. Type recommended by flashing sheet manufacturer for waterproof / weather resistant seaming and adhesive application of flashing sheet.

9. Metal Accessories

1. Sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of Work, matching or compatible with material being installed, non corrosive, size and gage required for performance.

10. Clamp Assembly

1. Sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of Work, matching or compatible with material being installed, non corrosive, size and gage required for performance.

11. Termination Bar

1. Sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of Work, matching or compatible with material being installed, non corrosive, size and gage required for performance.

2.8. Fabricated Units

- A. General Metal Fabrication: Shop fabricate sheet metal units to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather resistant performance; with expansion provisions for running, sufficient to permanently prevent leakage, damage or deterioration of the Work. Form units to fit substrates. Form exposed sheet metal Work without excessive oil canning, buckling and tool marks, true at line and levels indicated, with exposed edges folded back to form hems.
- B. Seams: Fabricate nonmoving seams in sheet metal with flat lock seams. For metal, tin edges to be seamed, form seams, and solder.

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- C. Expansion Provisions: Where lapped or bayonet type expansion provisions in Work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).
- D. Sealant Joints: Where movable, non expansion type joints are indicated or required for proper performance of Work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

PART 3 - EXECUTION

3.01 Installation Requirements

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual".
- B. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units. Conceal fasteners where possible.
- C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- D. Install membrane flashing in accordance with manufacturer's recommendations. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with manufacturer's recommendations.
- E. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6". Fabricate seams at joints between units with minimum 3" overlap, to form a continuous waterproof system.

3.02 Blocking Installation

- A. Install where indicated and where required for attaching other Work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other Work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Where wood-preserved-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- D. Fasten wood blocking to preceding layers of wood blocking in such a manner that the nails penetrate a minimum of 1-1/4 inches.
 - 1. Fasten with two rows so that spacing in any one row should not exceed 24 inches.

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2. Spacing shall not exceed 12 inches, 8 feet each way from outside corner.
3. Withdrawal resistance should be 100 lb per nail minimum.
- E. Fasten wood blocking to concrete block walls with minimum 3/8" diameter stainless steel anchors. Fasten at 2-1/2 feet apart staggered if nailer is wider than 6 inches.

3.03 Cleanup and Protection

- A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finish.
- B. Ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION

SECTION 07710 - COPINGS

PART 1 - GENERAL

1.01 Summary

- A. This Section includes manufactured sheet metal copings, fascias, roof edge, gravel stops, and related accessories, collectively referred to as coping and fascia systems.

1.02 Submittals

- A. Product Data: For each product specified in Part 2 - Products.
- B. Samples:
 - 1. Manufactured Coping and Fascia Systems: For each complete assembly type and color to be incorporated in the Work including fasteners as provided by manufacturer. Samples shall be 12" long.
- C. Shop Drawings: Showing coping and fascia systems including layout, cleats, springs, splice plates; fastener type, size, spacing; and related accessories.
- D. Manufacturer Certification / System Letter: Prepared and signed by coping and fascia system manufacturer, listing all components of each type of assembly. The manufacturer must certify that each system complies with wind pressure resistance as specified in the "Performance Requirements" article in this Section, and will achieve the specified warranty for each application.

1.03 Performance Requirements

- A. Wind Pressure Resistance: Coping and fascia systems including blocking shall resist wind pressures in accordance with ANSI/SPRI ES-1 and applicable building codes.

1.04 Warranty

- A. Coping and Fascia System Manufacturer's Warranty: Written form in which manufacturer agrees to furnish products and labor to repair or replace those portions of each system that do not comply with performance and other requirements specified in the Contract Documents during the warranty period.
 - 1. Warranty Period: Twenty (20) Years, No Dollar Limit (NDL), Total System Warranty
- B. Manufacturer's Inspection and Certification:
 - 1. Coordinate inspections required by manufacturer. Provide three (3) business days' notice to manufacturer's authorized representative to inspect Work at the required milestones or intervals. No Work is to proceed until after each inspection is completed with written acceptance by manufacturer's authorized

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representative.

2. Upon acceptance of completed Work by manufacturer, obtain manufacturer's certification stating that the Work complies with the requirements for Warranty.

PART 2 - PRODUCTS

2.01 General

- A. Components of coping and fascia system shall be aluminum. Comply with the following:
 1. Extrusions: Strength and durability properties specified in ASTM B 221 for 6063 T5; 0.50" thick.
 2. Sheet: Strength and durability of 5005 H15, ASTM B 209; 0.50" thick.
 3. Aluminum Finishes:
 - a. Comply with NAAMM "Metal Finishes Manual" to produce uniformly finished products. For colored finishes, if any, provide colors or color matches indicated below. If not indicated, as selected by Architect through the submittal process.
 - b. Finish: High Performance Coating
 - c. Standard: AA C12C42R1x (cleaned with inhibited chemicals, conversion coated and painted with specified organic coating). Apply fluorocarbon coating system consisting of thermo cured primer, 0.2 mil min. dry film thickness, and thermo cured fluorocarbon coating containing "Kynar 500" resin, 1.0 mil min. dry film thickness.
- B. Fabrication: Fabricate fascias and coping covers in sizes and profiles required to fit applications indicated and to remain watertight. Include provisions for controlled expansion of fascia and coping components relative to themselves and to adjoining dissimilar materials.
- C. Color: Color of fascias and coping covers shall be as shown on Drawings or as selected in writing by Architect from fabricator's standard colors.
- D. Miscellaneous Materials: Include exposed and concealed fasteners, continuous cleats and splice plates; flashing materials, seals, sealants, and adhesive; and other accessories as required for complete assembly of systems indicated.
- E. Where products in this Section are to be used in conjunction with a warranted roofing system, the products must be acceptable to the manufacturer of the roofing system.
- F. In some cases, a listed product has a companion product (i.e. a product which is a slightly modified version of a listed product) associated with it, designated by enclosing brackets ("[]"). Where applicable, companion products are recommended by the manufacturer for better adapting to certain conditions (e.g. greater wind uplift resistance, etc.)

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2.02 Fascia Systems

A. Multi Part Fascia System: (Coping)

1. Presto-Lock System by Johns Manville
2. Paraguard Coping System by Siplast
3. SopraCap by Soprema

B. Multi Part Fascia System: (Fascia)

1. Presto-Tite Fascia System [Presto-Tite Edge One Fascia System] by Johns Manville
2. Paraguard Raised Edge by Siplast
3. SopraEdge Fascia by Soprema

C. Multi Part Fascia System: (Gravel Stop)

1. JM Gravel Stop by Johns Manville
2. Proform Gravel Stop by Siplast
3. SopraGuard Gravel Stop by Soprema

2.03 Blocking & Fasteners

A. Pressure Treated Wood Blocking

1. Exterior grade Alkaline Copper Quat (ACQ-B) pressure treated Douglas-fir
 - a. Use either G185 (min.) zinc coated hot-dipped galvanized steel, type 304/316 stainless steel, or copper for fasteners/metal flashing in contact with ACQ wood. Do not combine stainless & galvanized steel.

B. Masonry Nails

1. 1" long non-corrosive with 1" diameter neoprene washers

PART 3 - EXECUTION

3.01 Installation

- A. Coordinate installation with roofing systems, and other construction and substrates to produce a watertight assembly capable of withstanding inward and outward loading pressures, and thermal and lateral loads.
- B. Completely isolate metals from dissimilar metals or corrosive substrates using bituminous coatings or other means of permanent separation to prevent electrolytic corrosion.

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3.02 Preparation of Substrate for Blocking

- A. Remove all existing overlay material, roof membrane, and accessories (nails, etc.) to expose substrate. Do not damage substrate during removal.

3.03 Blocking Installation

- A. Install where indicated and where required for attaching other Work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other Work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Where wood-preserved-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- D. Fasten wood blocking to preceding layers of wood blocking in such a manner that the nails penetrate a minimum of 1-1/4 inches.
 - 1. Fasten with two rows so that spacing in any one row should not exceed 24 inches.
 - 2. Spacing shall not exceed 12 inches, 8 feet each way from outside corner.
 - 3. Withdrawal resistance should be 100 lb per nail minimum.
- E. Fasten wood blocking to concrete block walls with minimum 3/8" diameter stainless steel anchors. Fasten at 2-1/2 feet apart staggered if nailer is wider than 6 inches.

END OF SECTION

SECTION 07710 – GUTTERS & DOWNSPOUTS

PART 1 - GENERAL

1.01 Summary

- A. This Section includes manufactured sheet metal gutters, downspouts (leaders), conductor heads, scuppers, and related accessories, collectively referred to as gutter and downspout systems.

1.02 Submittals

- A. Product Data: For each product specified in Part 2 - Products.
- B. Samples:
 - 1. Gutter: For each type to be incorporated in the Work, including miscellaneous accessories and fasteners. Sample shall be 12" long.
 - 2. Downspouts: For each type to be incorporated in the Work, including miscellaneous accessories and fasteners. Sample shall be 12" long.
 - 3. Color Samples: Manufacturer's standard colors for gutter and downspout systems.
- C. Manufacturer Certification / System Letter: Prepared and signed by gutter and downspout system manufacturer, listing all components of each type of assembly. The manufacturer must certify that each system complies with wind pressure resistance as specified in the "Performance Requirements" article in this Section, and will achieve the specified warranty for each application.

1.03 Performance Requirements

- A. Wind Design Considerations: Gutter and downspout systems shall comply with wind design standards specified in ANSI/SPRI GD-1 and applicable building codes.

Project Conditions

- A. Do not proceed with installation of sealants under the following conditions:
 - 1. When conditions are outside the limitations permitted by the product manufacturer.
 - 2. When ambient and substrate temperature is below 40° F.
 - 3. When substrates are damp or wet. Comply with ASTM C 1193 Paragraph 5.8.3 (Moisture) and Paragraph 16.2 (Environmental Conditions).

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PART 2 - PRODUCTS

2.01 General

- A. Components of gutter and downspout systems shall be aluminum. Comply with the following:
1. Extrusions: Strength and durability properties specified in ASTM B 221 for 6063 T5.
 2. Sheet: Strength and durability of 5005 H15, ASTM B 209. Downspouts shall be minimum 0.050" thick, unless otherwise indicated on Drawings. Gutters, scuppers and conductor heads shall be minimum 0.060" thick, unless otherwise indicated on Drawings.
 3. Aluminum Finishes:
 - a. Comply with NAAMM "Metal Finishes Manual" to produce uniformly finished products. For colored finishes, if any, provide colors or color matches indicated below. If not indicated, as selected by Architect through the submittal process.
 - b. Coating: High Performance Coating
 - c. Cleaning Standard: AA C12C42R1x (cleaned with inhibited chemicals, conversion coated and painted with specified organic coating). Apply fluorocarbon coating system consisting of thermo cured primer, 0.2 mil min. dry film thickness, and thermo cured fluorocarbon coating containing "Kynar 500" resin, 1.0 mil min. dry film thickness.
- B. Fabrication: Fabricate gutter and downspout systems in sizes and profiles to fit application as indicated on drawings and to remain water tight, durable and uniform in appearance.
- C. Color: Color of gutter and downspout systems shall be as shown on Drawings or as selected in writing by Architect from manufacturer's standard colors.
- D. Miscellaneous Accessories: Include exposed and concealed fasteners, straps, hangers, and continuous clips; seals, and sealants; and other accessories; as recommended by manufacturer and required for complete assembly of systems indicated.

2.02 Gutters, Downspouts and Scuppers

A. Gutter

1. Wind-Resistant Gutter W.P. Hickman Co.
2. Seal-Tite Industrial Gutter Metal-Era
3. OR Approved Equal

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B. Downspout

- | | |
|-----------------------------------|------------------|
| 1. Downspout | W.P. Hickman Co. |
| 2. Seal-Tite Industrial Downspout | Metal-Era |
| 3. OR Approved Equal | |

C. Conductor Head

- | | |
|----------------------|------------------|
| 1. Conductor Head | W.P. Hickman Co. |
| 2. Collector Box | Metal-Era |
| 3. OR Approved Equal | |

D. Scupper

- | | |
|-------------------------|------------------|
| 1. Through-Wall Scupper | W.P. Hickman Co. |
| 2. Thru-Wall Scupper | Metal-Era |
| 3. OR Approved Equal | |

2.03 Accessories

A. Gutter Hangers

1. As recommended by manufacturer.

B. Downspout Straps

1. As recommended by manufacturer.

C. Fasteners

1. As recommended by manufacturer.

D. Strainer

1. Stainless steel: Use non-magnetic stainless steel of types and sizes standard with manufacture of products indicated to be used with aluminum materials.

E. Splash Block

- | | |
|--------------------------|---------------------|
| 1. SplashGuard SG24/SB24 | Suncast Corporation |
|--------------------------|---------------------|

F. Sealant

- | | |
|-----------------------------|---------------------------------|
| 1. 756 SMS Building Sealant | Dow Corning Corporation |
| 2. SilPruf NB SCS9000 | Momentive Performance Materials |

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3. OR Approved Equal

PART 3 - PART 3 - EXECUTION

3.01 General

- A. Coordinate installation with roofing, flashing, masonry and substrate Work to ensure that each element of this Work performs properly and that combined elements are sound, waterproofed and properly secured. Anchor and secure to substrate to withstand lateral and thermal stresses.
- B. Completely isolate dissimilar metals or corrosive substrates to achieve permanent separation top prevent electrolytic corrosion.

3.02 Cleaning

- A. Clean exposed metal surfaces in accordance with manufacturer's instruction.

3.03 Touch-up

- A. Touch-up damaged metal coatings.

END OF SECTION

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SECTION 07750 - GUTTERS, DOWNSPOUTS, ROOF DRAINS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Stainless steel gutters and downspouts, downspouts, scuppers, roof drains, leader line piping, testing, cutting and patching.

1.02 RELATED SECTIONS

A. Section - 07620 Flashing and Sheet Metal Trim: Precast concrete splash pads at downspout outlets.

B. Section 07710 - Manufactured Roof Specialties.

C. Section 07611 - Custom Sheet Metal Roofing.

D. Section 09900 - Painting: Field painting of metal surfaces.

1.03 REFERENCES

A. ASTM A167 - Stainless and Heat-Resisting, Chromium-Nickel Steel Plate

B. ASTM A446 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.

C. ASTM B32 - Solder Metal.

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- D. ASTM B486 - Paste Solder.
- E. FS O-F-506 - Flux, Soldering, Paste and Liquid
- F. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- G. SMACNA - Architectural Sheet Metal Manual.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01000.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.
- C. Product Data: Provide data on prefabricated components.
- D. Samples: Submit two samples, 6 inch (152.4mm) long illustrating component design, finish, color, and configuration.

1.05 QUALITY ASSURANCE

- A. Conform to SMACNA Manual for sizing components for rainfall intensity determined by a storm occurrence of 1 in 10 years.
- B. Maintain one copy of each document on site.

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1.06 REGULATORY REQUIREMENTS

A. Conform to applicable code for size and method of rain water discharge.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01000.

B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.

C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

1.08 COORDINATION

A. Coordinate the work with downspout discharge pipe inlet.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Zurn Industries

B. Jones Spec.

C. Josam Manufacturing Co.

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D. Or Approved Equal.

2.02 MATERIALS

A. Stainless Steel: ASTM A167, Type 304, soft temper, as required for forming and performance.4D finish.

2.03 COMPONENTS

A. Gutters: SMACNA Rectangular or Square style profile, size to match existing.

B. Downspouts: SMACNA Rectangular or Square profile, size to match existing.

C. Scuppers: Size and profile to match existing.

D. Accessories: Profiled to suit gutters and downspouts.

E. Roof Drains: Drains shall have galvanized cast iron domes and bodies except promenade deck drains shall have nickel bronze grate. Drains shall be vandal proof construction and shall be installed with 6# lead flashing extending not less than 12" beyond the outer edge of the drain bodies where feasible. Drains, except gutter drains, shall be provided with an underdeck clamp and sump receiver. Jay R. Smith Mfg. Co. Part numbers are specified herein to indicate the type of drains required as following:

1. Type "A" (General Use) 16" Dia. - Low Profile Dome.
2. Type "B" (90 degree General Use) 16" Dia. - Low Profile Dome.
3. Type "C" (Adjustable Extension; 1-1/4 – 2-1/2") 15-1/4" Dia. - Low Profile Dome.

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4. Type "D" (General Use) 12" Dia. - Low Profile Dome.
5. Type "E" (90 degree General Use) 12" Dia. - Low Profile Dome.
6. Type "F" (General Use) 8 1/2" Dia. - Low Profile Dome.
7. Type "G" (Promenade Deck) 14" Square.
8. Type "H" (Promenade Deck) 11" Square.
9. Type "I" (Promenade Deck) 8" Square.
10. Type "J" (Gutter Drain) 6" Dia.

F. Piping: Piping to be replaced under this contract shall be that from the drain and horizontal section below the roof. Size shall be as existing. Acceptable material:

1. No-Hub Cast Iron.
2. Std. Wt. Cast Iron- Bell & Spigot.
3. Sched. 40 Galvanized Steel.

G. Piping installed under this contract shall be insulated with 1/2" thick fiberglass with All Service Jacket (ASJ). Provide all labor and material necessary to perform tests required by code. Repair or replace any failed sections and repeat test until acceptable.

H. Splash Pads or Blocks: Precast concrete type, of 18 inch by 30 inch by 3 inches thick, minimum 3000 psi (21 mpa) at 28 days, with minimum 5 percent air entrainment.

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2.04 ACCESSORIES

- A. Anchorage Devices: Type recommended by fabricator.
- B. Gutter Supports: Brackets. Straps. Spikes and ferrules.
- C. Downspout Supports: Brackets and Straps as required.
- D. Fasteners: Stainless steel with soft neoprene washers. Finish exposed fasteners same as flashing metal.
- E. Primer: Zinc chromate type.
- F. Protective Backing Paint: Zinc chromate alkyd
- G. Solder: ASTM B32; 50/50 type.
- H. Flux: FS O-F-506.

2.05 FABRICATION

- A. Form gutters, downspouts, and scuppers of profiles and sizes to match existing.
- B. Fabricate with required connection pieces.
- C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.

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- D. Hem exposed edges of metal.
- E. Pre-tin edges of stainless steel sheet. Solder shop formed metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Weather seal joints.
- F. Fabricate gutter and downspout accessories; seal watertight.

2.06 CUTTING AND PATCHING

- A. Provide all labor and material for repair of any areas disturbed due to work of this contract and provide a finish which matches the adjoining surfaces.

2.07 FINISHES

- A. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil (0.4 mm).
- B. Apply bituminous protective backing on surfaces in contact with dissimilar materials.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work.

3.02 INSTALLATION

- A. Install gutters, downspouts, scuppers and accessories in accordance with manufacturer's instructions.

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- B. Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.
- C. Slope gutters 1/4 inch per foot (6.3 mm/m) minimum.
- D. Seal metal joints watertight.
- E. Set splash blocks under downspouts. Secure in place with method compatible with substrate.

END OF SECTION

SECTION 07820 - MANUFACTURED ROOF SPECIALTIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Copings Fascias Gravel stops Vents.
- B. Roof control expansion joint covers.
- C. Roof membrane vents.
- D. Pre-fabricated curbs for mechanical equipment supports.

1.02 RELATED SECTIONS

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- A. Section 06114 - Wood Blocking and Curbing.
- B. Section 06125 - Wood Decking.
- C. Section 07512 - Built-Up Coal Tar Bituminous Roofing.
- D. Section 07514 - Built-Up Asphalt Roofing.
- E. Section 07536 - Modified Bitumen Roofing.
- F. Section 07620 - Flashing and Sheet Metal Trim
- G. Section 07631 - Gutters and Downspouts.

1.03 REFERENCES

- A. ASTM D2822 - Asphalt Roof Cement.
- B. NRCA (National Roofing Contractors Association) - Roofing and Waterproofing Manual.
- C. SMACNA - Architectural Sheet Metal Manual.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.
- B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

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- C. Samples: Submit two samples, illustrating component shape, finish, and color.

- D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with SMACNA and NRCA details.

- B. Maintain one copy of each document on site.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Cheney Flashing Company.

- B. W.P. Hickman Company.

- C. MM Systems Corporation.

- D. Or Approved Equal.

2.02 COMPONENTS

- A. Copings and Gravel Stops: Formed aluminum, 063 inch (1.6 mm) thick, shaped as indicated, including special supports spaced at 5 feet (1524 mm) o.c. Include cover plates to conceal and weather seal joints and attachment flanges.

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B. Control and Expansion Joint Covers: Composite construction of flexible butyl vinyl strip flashing each edge seamed to aluminum sheet metal flanges, designed for nominal joint width as required by existing conditions. Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.

C. Roof Vents: Formed aluminum sheet metal, .090 inch (2.2 mm) thick, of watertight construction to permit construction below roof membrane to breathe; with attachment flanges as required by existing conditions.

D. Attic Vents: Type of aluminum, sheet metal, .090 inch (2.2 mm) thick, formed to permit installation with roofing and shed water. Fabricate with minimum free area of ventilation required by applicable code.

E. Roof and Equipment Support Curbs: Galvanized sheet steel heavy gauge thickness determined by existing loading conditions assembly to be fully welded and mitered corner seams, internal reinforcing on sides 36" and greater (12" o.c. at equipment curbs) integral base, plate pressure treated wood nailers and 1-1/2" thick, fiberglass insulation manufacturer: Custom Curb Co., Inc. or approved equal.

2.03 ACCESSORIES

A. Sealant: Same as specified in Section 07900.

B. Roofing Cement: Same as specified in Sections 07512, 07514 and 07536.

2.04 FINISHES

A. Aluminum: Mill finish as selected.

PART 3 - EXECUTION

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3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions.

B. Conform to SMACNA - Architectural Sheet Metal Manual NRCA - Waterproofing Manual drawing details.

C. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

D. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

E. Coordinate installation of flashing flanges into reglets.

END OF SECTION

SECTION 07850 - ROOF HATCHES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide prefabricated roof hatches, with integral support curbs, operable hardware, and counterflashings in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Roof hatches.
2. Fire and Smoke rated vents, with release mechanism.

1.02 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry.
- B. Section 07507 - Built-Up Roofing Repair.
- C. Section 07536 - Modified Bitumen Roofing.
- D. Section 07545 - TPO Single Ply Roofing.
- E. Section 07600 - Flashing and Sheet Metal.

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F. Section 09900 - Painting: Field painting.

1.03 REFERENCES

A. FM - Roof Assembly Classifications.

B. UL - Fire Hazard Classifications.

1.04 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.

B. Product Data: Provide data on unit construction, sizes, configuration, jointing methods and locations when applicable, and attachment method.

1.05 SUBMITTALS FOR INFORMATION

A. Section 01300 - Submittals: Procedures for submittals.

B. Manufacturer's Installation Instructions: Indicate special installation criteria, interface with adjacent components.

1.06 REGULATORY REQUIREMENTS

A. Conform to applicable N.Y.C. Building code for UL and FM requirements as applicable to fire rated roof hatches, heat or smoke vents.

B. Provide certificate of compliance from authority having jurisdiction indicating approval of fire or smoke rated units.

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PART 2 - PRODUCTS

2.01 ROOF HATCH AND VENT

A. Manufacturers: One of the following manufacturers or approved equal.

1. Bilco Co.
2. Babcock - Davis Inc.
3. Dur-Red Products.
4. Section 01000 - Materials and Equipment: Product options and substitutions.

B. Unit: As required by existing conditions.

C. Integral Steel Curb: 14 gage (2 mm) galvanized prime painted steel with 1inch (25.4 mm) rigid glass fiber insulation; integral cap flashing to receive roof flashing; extended flange for mounting.

D. Flush Steel Cover: 14 gage (2 m) galvanized prime painted steel; 1 inch (25 mm) glass fiber foam insulation; 22 gage (0.8 mm) steel interior liner; continuous neoprene gasket to provide weatherproof seal.

E. Hardware: Cadmium plated finish:

1. Compression spring operator and shock absorbers;
2. Steel manual pull handle ring for interior and exterior operation;
3. Steel hold open arm with grip handle for easy release;

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4. Automatic opening upon break of 160 degree F (71 degree C) fusible link
Automatic opening upon activation of fire alarm system.
5. Padlock hasp.
6. Hinges: Manufacturer's recommended type.

2.02 FABRICATION

- A. Fabricate components free of visual distortion or defects. Weld corners and joints.
- B. Provide for removal of condensation occurring within components or assembly.
- C. Fit components for weather tight assembly.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Coordinate with installation of roofing system and related flashings for weather tight installation.
- C. Apply bituminous paint on surfaces of units in contact with cementitious materials or dissimilar metals.
- D. Adjust hinges for smooth operation.

END OF SECTION

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SECTION 07880 - PLASTIC UNIT SKYLIGHTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Plastic skylight and frame.
- B. Integral insulated curb.
- C. Ceiling dome.
- D. Counterflashings.

1.02 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Fabricated steel framed opening.
- B. Section 06114 - Wood Blocking and Curbing: Wood support curbs.
- C. Section 07512 - Built-Up Coal Tar Bituminous Roofing: Roofing system and base flashing at skylight curb.
- D. Section 07514 - Built-Up Asphalt Roofing:
- E. Section 07536 - Modified Bitumen Roofing:

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F. Section 07620 - Sheet Metal Flashing and Trim: Skylight counterflashing.

G. Section 09900 - Painting: Field painting of flashings.

1.03 REFERENCES

A. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

1.04 PERFORMANCE REQUIREMENTS

A. Allow for expansion and contraction within system components caused by a cycling surface temperature range of 170 F degrees (95 C degrees) without causing detrimental effects to system or components.

B. Withstand dead loads and live loads and pressure and suction of wind acting vertically as calculated in accordance with N.Y.C. Building code.

C. Route condensation to interior.

1.05 SUBMITTALS

A. Submit under provisions of Section 01000.

B. Shop Drawings: Indicate configurations, dimensions, locations, fastening methods, and installation details.

C. Product Data: Provide characteristics of light admitted and transparency.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.06 QUALIFICATIONS

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A. Skylight Work shall be performed by a qualified firm using experienced workmen. The Contractor shall demonstrate to the Commissioner's satisfaction that the firm maintains an organization with the necessary technical knowledge, experience and facilities to perform the required work properly and within the required time.

1.07 COORDINATION

A. Coordinate work under provisions of Section 01000.

B. Coordinate the work with the installation of wood curbs and roofing system.

C. Coordinate this section with dimensions, tolerances, and method of attachment with other adjacent work.

1.08 GUARANTEE / WARRANTY

A. Provide two (2)-year warranty under provisions of Section 01000.

B. Warranty: Include coverage for weather and water tightness of skylight assembly and seal with roofing system.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Naturalite/EPI Skylight Systems.

B. Bristolite Skylights.

C. Dur-Red Products.

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D. Or Approved Equal.

2.02 MATERIALS

A. Single Dome: Polycarbonate plastic, manufacturer's standard thickness; clear white translucent.

B. Shape: To match existing condition.

C. Configuration: Single or Multiple units to match existing condition.

D. Nominal Size: To match existing condition.

E. Unit Frame: Extruded aluminum thermally broken, reinforced and welded corner joints, integral curb frame mounting flange and counterflashing to receive roofing flashing system, with integral condensation collection drainage gutter, dome retainer.

F. Support Curb: Sheet aluminum, sandwich construction; .062 inch minimum height 8" above roof to match existing conditions; glass fiber insulation; with integral flange for anchorage to roof deck.

2.03 ACCESSORIES

A. Anchorage Devices: Type recommended by manufacturer.

B. Counterflashings: Same metal type and finish as roof flashing metal.

C. Protective Back Coating: FS TT-C-494, bituminous.

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D. Sealant: Specified in Section 07900.

2.04 FABRICATION

A. Fabricate free of visual distortion and defects.

B. Fabricate for a weather tight assembly.

C. Apply bituminous paint on aluminum surfaces of units in contact with cementitious materials or dissimilar metals.

D. Aluminum: Mill finish.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that openings [and adjoining air and vapor seal materials are ready to receive work of this Section.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install aluminum curb frame.

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- C. Place unit and secure to curb frame. Counterflash into roof system.
- D. Apply sealant, seal water tight.
- E. Provide weather tight installation.

3.03 CLEANING

- A. Remove protective material from prefinished aluminum surfaces.
- B. Wash down exposed surfaces; wipe surfaces clean.
- C. Remove excess sealant.

END OF SECTION

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SECTION 07885 - REFURBISHED SKYLIGHTS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide refurbished skylights in accordance with the Contract Documents. The Contract Documents are as defined in the "Agreement". The "General Conditions Governing All Contracts" shall apply to all work under the Contract. The Work of this section shall include but not be limited to the following:

1. Cleaning, refinishing repairs, and painting as required to indicated existing metal framed skylights.

B. Related Work:

1. Section 05500 - Metal Fabrications.

2. Section 07600 - Flashing and Sheet Metal.

3. Section 08800 - Glazing.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)

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- B. National Association of Architectural Metal Manufacturers (NAAMM)
- C. International Conference of Building Officials D. American Welding Society (AWS)

1.03 SUBMITTALS

- A. Manufacturer's Data: Indicate properties and characteristics of all components.
- B. Samples: Two samples each of all miscellaneous products (e.g., battens, sealing, tape, gaskets, etc) to be included in the Work.

1.04 QUALITY ASSURANCE

A. Refurbisher: The skylight refurbisher/repairer shall have not less than three (3) years experience in the repair of metal-framed skylights similar in size, materials and scope of repair work to skylight indicated to be refurbished in Project. Where existing skylight manufacturer's Warranties are still active, refurbisher shall be certified or otherwise approved in writing by existing skylight manufacturer for indicated repair work.

B. Performance Requirements: The refurbished skylight shall be free of all leaks and defects and be in compliance with the New York City Building Code and all governing officials related to this project.

C. Pre-Installation Conference: Before refurbishing existing skylight, conduct a pre-installation conference at the project with the refurbisher and other interested parties to review procedures, schedules, and coordinate installation with other elements of the Work.

- 1. Comply with requirements of Division 1 section "Project Coordination".

D. Regulatory Agencies:

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1. New York City Building Code
2. New York City Materials and Equipment Acceptance (MEA).

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials with suitable protective covering, and handle and store with care to prevent damage, staining, soiling and corrosion.
- B. Remove damaged, defective or non-conforming materials and replace with acceptable new materials.

1.06 GUARANTEE / WARRANTY

- A. In accordance with Article on "GUARANTEES" of the "General Conditions Governing All Contracts", the Contractor hereby guarantees that all work specified in this section will be free from defects of materials and workmanship for a period of five (5) years.
- B. Furnish a guarantee form specified in Article on "GUARANTEES" of the "GENERAL CONDITIONS GOVERNING ALL CONTRACTS".
- C. Failures shall include (but not be limited to) the following:
 1. Structural failures including, but not limited to, excessive deflection.
 2. Noise or vibration caused by thermal movements.

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3. Failure of system to meet specified performance requirements.
4. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
5. Water leakage.
6. Glazing breakage.

PART 2 - PRODUCTS

2.01 GENERAL

A. Existing Skylight Refurbishment: Prior to any work to existing skylights, refurbisher/repairer shall coordinate with Resident Engineer as to inspect all existing skylights to be refurbished. Skylight refurbisher/ repairer shall replace and repair all damaged portions that may exist and may be required to comply with Part-1 of this section prior to any form of priming and re-paintings.

2.02 MATERIALS

A. Existing Skylight Refurbishment Materials: Provide appropriate material that may be required for replacing or repairing existing skylight.

B. Metal Framing: Match existing framing materials and profiles.

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C. Fasteners: Provide standard fasteners of type and metal to match existing, as structurally required for skylight design and performance requirements specified.

1. Selected type shall not cause electrolytic action or corrosion.

D. Anchors, Supports and Accessories: Provide anchors, supports and accessories of type and metal as structurally required for repair, performance requirements specified and as recommended by manufacturer.

E. Sealant: If required, provide sealant type as recommended by original skylight manufacturer, to remain permanently elastic, non-shrinking and non-migrating. Comply with section 07900 for installation of sealant. -

F. Fabrication and Accessories: Provide fabrication and accessories to match existing skylight. Include complete system for assembly of components and anchorage of units.

2.02 FABRICATION AND ACCESSORIES

A. If required, fabricate repairs and refurbished members and assemblies to existing designs, sizes and thicknesses and to comply with specified performance criteria.

B. Maintain accurate relation of planes and angles with hairline fit of contacting members.

C. Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of metal work to prevent damage to exposed finish surfaces except where refinishing is to be applied. Complete these operations prior to application of finishes.

D. Repair and replace operable parts and materials to match existing with tolerances to match original design, repaired existing skylights shall be fully functional with all required accessories and supports to operate as originally intended.

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2.03 ALUMINUM FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

C. High Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Fluoropolymer Two-Coat System -- Manufacturer's standard two-coat, thermo-cured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.

2. Color and Gloss -- As selected by Resident Engineer from manufacturer's full range.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Installer: Examine openings, measurements, supporting structure and all other conditions at skylight locations. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.02 INSTALLATION

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- A. Comply with refurbish1 J Manufacturer's shop drawings and recommendations for repair of skylight and components.

- B. Set skylights plumb, level, and true to line, without warp or rack of frames or panels and anchor securely in place in accordance with approved shop drawings.

- C. Remove excess sealants, dirt and other soiling substances.

- D. Upon completion, carefully inspect the Work and make all necessary adjustment to ensure proper installation and weather-tight conditions.

3.03 CLEANING

A. Upon Completion:

- 1. Clean all exposed metal component surfaces as recommended by the refurbishing Manufacturer.

- 2. Clean all sandwich panel surfaces in manner recommended by the refurbishing Manufacturer.

- 3. Clean all debris from the Work area.

END OF SECTION

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SECTION 07900 - JOINT SEALERS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide joint sealers in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Joint sealers as indicated and security sealant.

B. Related Work: Refer to other Sections for the following:

1. Section 03300 – Concrete.
2. Section 08110 – Hollow Metal Doors and Frames.
3. Section 08800 – Glass and Glazing.

C. General Performance: Joint sealers are required to establish and maintain airtight and waterproof continuous seals.

1.02 QUALITY ASSURANCE

A. References: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

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- B. Installer Qualifications: One who has successfully completed similar joint sealer applications.
- C. Single Source for Materials: Obtain joint sealer materials from a single manufacturer for each different product.
- D. Preconstruction Field Tests: Prior to installation of joint sealants, field-test adhesion to joint substrates as recommended in ASTM C 962.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data and installation instructions for each joint sealer product required.
- B. Samples: Submit manufacturer's standard bead samples consisting of strips of actual products showing full range of standard colors available.
- C. Certified Tests: Submit certified test reports for elastomeric sealants on aged performances, including hardness, stain resistance, adhesion, cohesion, low-temperature flexibility, modulus of elasticity, and resistance to heat and weathering.
- D. Certificates: Submit certificates from manufacturers that their products comply with specifications and are suitable for the use indicated.

1.04 JOB CONDITIONS

- A. Weather Conditions: Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

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1.05 DELIVERY. STORAGE. AND HANDLING

A. Deliver materials in original unopened containers with labels indicating manufacturer, expiration date, and other pertinent data.

B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.06 GUARANTEE

A. In accordance with the Article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees that all work specified in this Section will be free from defects of materials and workmanship for a period of 5 years.

1. Furnish a guarantee in the form specified in Article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006.

B. The following types of failure will be adjudged as defective work:

1. Abnormal deterioration, aging or weathering.

2. Failure in adhesion or cohesion or to remain watertight.

PART 2 - PRODUCTS

2.01 MANUFACTURERS (approved equals will also be accepted):

A. Manufacturers of Polyurethane Sealants:

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1. "Chem-Calk 950"; Bostik Construction Products Div.
2. "Vulkem 45"; Mameco International, Inc.
3. "NR-20I Urexpan"; Pecora Corp.
4. "Sonolastic SL-I "; Sonneborn Building Products Div., Rexnord Chemical Products Inc.

B. Manufacturers of Nonacid Silicone Sealants:

1. "Chem-Calk N-Cure 2000"; Bostik Construction Products Div.
2. "Dow Corning 790"; Dow Corning Corp.
3. "Silglaze N SCS 2501"; General Electric Co.
4. "Silpruf SCS 2000"; General Electric Co.

C. Manufacturers of Acid-Curing Silicone Sealants:

1. "Chem-Calk 1200"; Bostik Construction Products Div.
2. "Dow Corning 999A"; Dow Corning Corp.
3. "SCS 1000"; General Electric Co.
4. "Construction 1200"; General Electric Co.

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D. Manufacturers of Sanitary Sealant:

1. "Dow Corning 786"; Dow Corning Corp.
2. "SCS 1702 Sanitary"; General Electric Co.
3. "863 #345 White"; Pecora Corp.

E. Manufacturers of Acrylic Sealants:

1. "60+Unicrylic"; Pecora Corp.
2. "PTI 738"; Protective Treatments Inc.
3. "PTI 767"; Protective Treatments Inc.
4. "Mono"; Tremco Inc.

F. Manufacturers of Butyl-Polyisobutylene Sealant:

1. "PTI 404"; Protective Treatments, Inc.
2. "Extru-Seal Tape"; Pecora Corp.
3. "Shim-Seal Tape"; Pecora Corp.

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4. "PTI 606 or 303 or 626"; Protective Treatments, Inc.

5. "Tremco 440 Tape"; Tremco Inc.

G. Manufacturers of Security Sealants:

1. "Lo-Mod Gel," Sika Corp.

2. Or an approved equal.

2.02 SEALANT MATERIALS

A. General Requirements: Provide colors as selected. Select materials for compatibility with joint surfaces and other indicated exposure, and select modulus of elasticity and hardness or grade recommended by manufacturer for each application required.

B. Polyurethane Sealant: (For joints in floors and pavements) One-part, polyurethane-based sealant; complying with ASTM C920 Type S Class 25, self-leveling type.

C. Silicone Rubber Sealant: One-past silicone-rubber-based non-sag sealant; complying with ASIM C920 Type S Class 25 Grade NS.

1. Non-Acid Type (For exterior Joints): Provide non-acid, "low-modulus" type; with tensile strength minimum 245 psi at 100% elongation per ASTM D4 12.

2. Sanitary Interior Type: Where used in high-humidity or wet service, provide manufacturer's mold/mildew-resistant acid type sealant for application to nonporous sealant bond surfaces.

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D. Acrylic Sealant: (For interior non-moving joints) Acrylic terpolymer, solvent-based, one-part, thermo-plastic sealant compound; solid not less than 95% acrylic; recommended by manufacturer for general use as an exposed building construction sealant.

E. Polyisobutylene Sealant: (For concealed joints subject to shear movement but not subject to normal joint movement) Provide either liquid or preformed ribbon (coiled with release paper) of Polyisobutylene-based mastic; as recommended by manufacturer.

F. Security Sealant (Sealant within inmate areas): Two component, solvent free, epoxy resin formulated for non-sag, gap-filling material used as a small joint filler.

2.03 JOINT FILLERS AND SEALANT BACKERS

A. Sponge Rubber: (For joints in floors and pavements) Provide resilient, non-extruding, open-cell type pre-molded rubber, gray to match concrete, complying with ASTM D 1752 Type I.

B. Closed-Cell Synthetic Rubber: (For exterior joints requiring maximum durability) Provide expanded synthetic rubber complying with ASTM D1752 or ASTM D 1056, Class SC-E (oil-resistant and medium swell), of density as recommended by the manufacturer,

C. Expanded Polyethylene: (For typical joints, except concrete joints) Provide flexible, compressible, non-gassing closed-cell polyethylene, subject to approval of the sealant manufacturer.

D. Open-Cell Polyurethane: (For joints of low percentage movement) Provide flexible, compressible, open-cell polyurethane foam subject to approval of the sealant manufacturer.

2.04 MISCELLANEOUS MATERIALS

A. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.

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B. Cleaners: Provide non-staining cleaner of type acceptable to manufacturer of sealant and sealant backing materials.

C. Bond Breaker Tape: Provide polyethylene tape or other plastic tape as recommended by sealant manufacturer, to prevent bond between sealant and material at back of joint. Provide self-adhesive tape where applicable.

D. Sealant Backer Rod: Provide compressible rod stock of polyethylene foam, polyurethane foam, neoprene foam or other flexible, permanent, durable non-absorptive material recommended by sealant manufacturer for back-up of arid compatibility with sealant.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine joint surfaces and conditions that may affect joint sealer work. Proceed with work after unsatisfactory conditions have been corrected.

3.02 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of sealants to comply with recommendations of joint sealer manufacturers and the following requirements:

1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including water.

2. Clean porous joint substrate surfaces to produce a clean, sound substrate, Remove loose particles remaining from cleaning.

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3. Remove laitance and form release agents from concrete.
 4. Clean non-porous surfaces with cleaners which are not harmful to substrates or leave residues that may affect joint sealers.
- B. Prime or seal joint surfaces where recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond only.

3.03 INSTALLATION

- A. Comply with ASTM C962 and manufacturer's printed instructions except where more stringent requirements are specified.
- B. Set joint filler units at depth to coordinate with other work, including installation of bond breakers, backer rod and sealants, Do not leave gaps between ends of joint fillers.
- C. Install sealant backer rod for liquid-applied sealants, except where recommended to be omitted by sealant manufacturer.
- D. Install bond breaker tape where required by manufacturer to ensure that liquid-applied sealants will perform as intended.
- E. Use proven techniques to ensure that sealants are uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces. Form sealant to a slightly concave surface.
- F. Install elastomeric sealants to depths as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of beads:

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1. For joints subject to traffic, abrasion and indentation, fill joints to a depth equal to 75% of joint width, but neither more than 5/8" deep nor less than 3/8" deep.

2. For normal moving joints not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.

3. For joints sealed with non-elastomeric sealants fill joints to a depth in range of 75% to 125% of joint width.

G. Do not allow sealants onto adjoining work. Clean adjoining surfaces to eliminate evidence of sealants.

H. Recess exposed edges of exposed joint fillers slightly behind adjoining surfaces, so that compressed units will not protrude.

I. Install security sealant in open joints between all building components attached to walls and floors in inmate areas.

3.04 CLEANING

A. Clean off excess sealants or sealant smears as work progresses by methods and materials approved by manufacturers of joint sealers.

3.05 CURE AND PROTECTION

A. Cure sealants in compliance with manufacturer's instructions and recommendations so that they will be without deterioration or damage at time of substantial completion.

B. Replace or restore joint sealers which are damaged or deteriorated during construction period.

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END OF SECTION

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SECTION 08110 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide steel doors and frames in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. The furnishing of all labor, materials and equipment necessary for the complete and proper installation of interior steel (includes galvanized, stainless, Dutch) doors and frames including the installation of all door hardware as specified.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 4 Section "Unit Masonry" for building anchors into and grouting frames in masonry construction.

2. Division 8 Section "Door Hardware" for door hardware and weatherstripping.

3. Division 8 Section "Glazing" for glass in steel doors and sidelights.

4. Division 9 Section "Gypsum Board Assemblies" for spot grouting frames in gypsum board partitions.

5. Division 9 Section "Painting" for field painting primed doors and frames.

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1.02 SUBMITTALS

A. Product Data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.

B. Shop Drawings showing fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

1. Submit a detailed glazing schedule coordinated with door elevations and identified with door locations.

C. Door Schedule: Submit schedule of doors and frames using same reference numbers for details and openings as those on Contract Drawings.

1. Indicate coordination of glazing frames and stops with glass and glazing requirements.

D. Oversize Construction Certification; For door assemblies required to be fire rated and exceeding limitations of labeled assemblies, submit certification of a testing agency acceptable to authorities having jurisdiction that each door and frame assembly has been constructed to conform to design, materials, and construction equivalent to requirements for labeled construction.

1.03 QUALITY ASSURANCE

A. Provide doors and frames complying with ANSI/SDI 100 "Recommended Specifications for Standard Steel Doors and Frames" and as specified.

B. Fire-Rated Door Assemblies: Units that comply with NFPA 80, are identical to door and frame assemblies tested for fire-test-response characteristics per ASTM E 152, and are labeled

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and listed by UL, Factory Mutual Research Corporation, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction. Unless otherwise specified or directed by the Architect, the Contractor shall provide 2-hour fire rated labeled doors.

1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a testing agency acceptable to authorities having jurisdiction that doors conform to all standard construction requirements of tested and labeled fire-rated door assemblies except for size.

2. Temperature-Rise Rating: Where indicated, provide doors that have a temperature-rise rating of 450 deg F (250 deg C) maximum in 30 minutes of fire exposure.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.

B. Inspect doors and frames on delivery for damage. Minor damages may be repaired provided refinished items match new work and are acceptable to Project Manager; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4-inch high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If cardboard wrappers on doors become wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

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A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Kewanee Corp.
2. Republic Builders Products.
3. Steelcraft.
4. Pioneer Industries.
5. Ceco Corp.
6. Or an approved equal.

2.02 MATERIALS

A. Hot-Rolled Steel Sheets and Strip: Commercial-quality carbon steel, pickled and oiled, complying with ASTM A 569 (ASTM A 569M).

B. Cold-Rolled Steel Sheets: Carbon steel complying with ASTM A 366 (ASTM A 366M), commercial quality, or ASTM A 620 (ASTM A 620M), drawing quality, special killed.

C. Galvanized Steel Sheets: Zinc-coated carbon steel complying with ASTM A 526 (ASTM A 526M), commercial quality, or ASTM A 642 (ASTM A 642M), drawing quality, hot-dip galvanized according to ASTM A 525, with A 60 or G 60 (ASTM A 525M, with Z 180 or ZF ISO) coating designation, mill phosphatized.

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D. Stainless-Steel Sheets: Commercial-quality stainless steel, Type 302 or 304, complying with ASTM A 167.

E. Supports and Anchors: Fabricated from not less than 0.0478-inch (1.2-mm) thick steel sheet; 0.0516-inch (1.3-mm) thick galvanized steel where used with galvanized steel frames.

F. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize complying with ASTM A 153, Class C or D as applicable.

2.03 DOORS

A. Steel Doors: Provide 1-3/4-inch thick flush doors of minimum 16-gauge, prime quality cold rolled stretcher level sheet (free of scale, pitting or other surface defects) conforming to ASTM A 366-68, or as indicated on Drawings and/or schedules:

1. Top and Bottom Channels: 16-gauge
2. Stiffener: Stiffener section shall not be less than 16-gauge
3. Wings and Closer Reinforcement: 7-gauge
4. Strike Reinforcement: 10-gauge
5. Reinforcing Plates: Comply with the following:
 - a. Wings: 3/16" thick steel plate x 1-1/3" wide x 6" longer than hinge, secured with minimum (2) spot welds.
 - b. Hinge Pivot Reinforcements: 7-gauge steel sheet

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c. Mortise Locksets and Deadbolts: 14-gauge steel sheet, secured with minimum (2) spot welds.

d. Cylinder Locks: 12-gauge steel sheet, secured with minimum (2) spot welds.

e. Surface Applied Closers: 12-gauge steel sheet, secured with minimum (6) spot welds.

f. Flush Bolts: 12-gauge sheet steel, secured with minimum (2) spot welds.

B. Stainless-Steel Doors: Fabricate stainless-steel doors of 2 outer stainless-steel sheets not less than OMSOO inch (13 mm) thick, permanently and continuously bonded or welded to rigid internal steel core. Construct doors with smooth, flush surfaces without visible joints or seams on exposed faces or stile edges, except around glazed or louvered panel inserts. Provide No. 4 finish on exposed surfaces with vertical grain direction, unless otherwise shown.

1. Provide internal core constructed of stretcher-leveled steel sheets not less than 0.0478-inch (1.2-mm) thick, vertically reinforced with steel sheet sections not less than 0.0478-inch (1.2-mm) thick, spaced 6 inches (150 mm) o.c., extended full door height, and spot welded to both face sheets at not more than 5 inches (127 mm) o.c.

a. Continuous truss-form reinforcement of 0.0149-inch (0.4-mm) thick steel sheet may be provided in lieu of spaced steel sections. Spot weld truss-form reinforcement 3 inches (75 mm) o.c. vertically and horizontally over entire surface on both sides.

2. Reinforce tops and bottoms of doors with 0.0478-inch (1.2-mm) thick horizontal steel channels, spot welded maximum 6 inches (150 mm) o.c. to core faces. For exterior doors, close bottom edge with galvanized steel sheet 0.516-inch (13-mm) thick closing channel and top edge with same thickness galvanized steel filler channel so webs of channels are flush with bottom and top edges. Seal joints in top edges of doors against water penetration.

2.04 FRAMES

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A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, according to ANSI/SDI 100, and of types and styles as shown on Drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of 14-gauge thick cold-rolled stretcher level steel sheet conforming to ASTM designation A 366-68.

1. Fabricate frames with mitered or coped and continuously welded corners.

2. Fabricate frames with mitered or coped corners knocked down, for field assembly.

3. For stainless-steel doors, form frames from stainless-steel sheets with No. 4 finish, 0.0625 inch (1.6 mm) thick.

B. Rubber Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of single-door frames and 2 silencers on heads of double-door frames, install plugs to keep holes clear during construction.

C. Plaster Guards: Provide minimum 0.01 79-inch (0.45-rnm) thick factory installed steel plaster guards or mortar boxes for hinge and lock reinforcements, at back of hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

D. Grout: When required in masonry construction, as specified in Division 4 Section "Unit Masonry."

2.05 FABRICATION

A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from defects, warp, or buckle, Construction shall be seamless with no visible seams or joints on their faces or vertical edges. Where practical, fit and assemble units in manufacturers plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site. Comply with ANSI/SDI 100 requirements.

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1. Clearances: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between non-fire-rated pairs of doors. Not more than 3/4 inch at bottom.
 - a. Fire Doors: Provide clearances according to NFPA 80.
- B. Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, from only cold-rolled steel sheet. Face panels shall be projection-welded to all perimeter channels on 5" centers. Face sheets shall be stiffened and reinforced by continuous channel stiffeners and clop reinforcements. Top and bottom edges of all doors shall be closed with continuous recessed steel channel, extending the full width of the door spot welded to both faces.
- C. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold or hot-rolled steel sheet. Stiffeners shall not be spaced more than 6" apart and shall be securely attached by spot weld to cove sheets not more than 4" on center. Stiffener sections shall extend vertically through the height of the door and shall span the full thickness of the interior spaces between door faces.
- E. Galvanized Steel Doors, Panels, and Frames: For the following locations, fabricate doors, panels, and frames from galvanized steel sheet according to SDI 112. Close top and bottom edges of doors flush as an integral part of door construction or by addition of minimum 0.0635-inch (1.6-mm) thick galvanized steel channels, with channel webs placed even with top and bottom edges. Seal joints in top edges of doors against water penetration.
 1. At "Wet Area" locations,
 2. Where indicated.
- F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

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G. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for door and frame preparation for hardware.

1. For concealed overhead (or in-floor mounted) door closers, provide space, cutouts, reinforcing, and provisions for fastening in top nil of doors or head of frames, as applicable.

2. Steel plaster guards shall be factory installed for all hinge and lock reinforcements.

3. Provide cover boxes in back for all hardware outlets.

H. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

I. Locate hardware as indicated on Shop Drawings or, if not indicated, according to the Door and Hardware institute's (DHI) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames,"

J. Glazing Stops: Minimum 0.0359-inch thick steel or 0.040-inch thick aluminum.

1. Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.

2. Provide screw-applied, removable, glazing beads on inside of glass, louvers, and other panels in doors.

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K. Insulation: Door shall be insulated with a 6-lb. density inorganic non-combustible batt type material, solidly packed full door height, to fill spaces between stiffeners and other inner core reinforcing members.

2.06 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

B. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for steel sheet finishes.

C. All steel doors and frames shall be factory primed, unless noted otherwise,

D. Provide compatible air-drying primers (per manufacturer's recommendation) for prime coat touch-up and field finishing as directed.

E. Hollow metal frames shall be bonderized and given a baked coat of an approved rust inhibitive paint.

2.07 GALVANIZED STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces with non-petroleum solvent so that surfaces are free of oil or other contaminants, After cleaning, apply a conversion coating of the type suited to the organic coating applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.

1. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035 or SSPC-Paint 20.

B. Factory Priming for Field-Painted Finish: Where field painting after installation is indicated, apply air-dried primer specified below immediately after cleaning and pretreatment.

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1. Shop Primer: Zinc-dust, zinc-oxide primer paint complying with performance requirements of FS TT-P-641, Type II.

2.08 STEEL SHEET FINISHES

A. Surface Preparation: Solvent-clean surfaces to comply with SSPC-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel to comply with SSPC-SP 5 (White Metal Blast Cleaning) or SSPC-SP 8 (Pickling)

B. Pretreatment: Immediately after surface preparation, apply a conversion coating of type suited to organic coating applied over it.

C. Factory Priming for Field-Painted Finish: Apply shop primer that complies with ANSI A224.1 acceptance criteria, is compatible with finish paint systems indicated, and has capability to provide a sound foundation for field-applied topcoats. Apply primer immediately after surface preparation and pretreatment.

D. Stainless-Steel Doors and Frames: Grind and polish surfaces to produce uniform, directional, textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

1. Bright, Directional Polish: No. 4 finish.

2. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.01 INSTALLATION

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A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

B. Placing Frames: Comply with provisions of SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. Except for frames located in existing concrete, masonry, or gypsum board assembly construction, place frames before constructing enclosing walls and ceilings.

2. In masonry construction, install at least 3 wall anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.

3. At existing concrete or masonry construction, install at least 3 completed opening anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set frames and secure to adjacent construction with bolts and masonry anchorage devices.

4. In metal-stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In steel-stud partitions, attach wall anchors to studs with screws.

5. In in-place gypsum board partitions, install knock-down, slip-on, drywall frames.

6. Install fire-rated frames according to NFPA 80.

C. Door Installation: Fit hollow-metal doors accurately in frames, within clearances specified in ANSI/SDI 100.

1. Fire-Rated Doors: Install with clearances specified in NFPA 80.

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3.02 SOUND PROOFING HOLLOW METAL DOOR

A. The Contractor shall furnish and install sound proofing materials to new and/or existing hollow metal doors as directed by the Architect.

1. Hollow metal door shall be provided with a special sound attenuating core with STC 51 rating.

2. Door shall be provided with an automatic door bottom that eliminates the need for a raised gill seal. Provide lift hinges in stainless steel and neoprene compression door seal as manufactured by "Kreeger Steel Products, Co." or an approved equal.

3.03 ADJUSTING AND CLEANING

A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION

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SECTION 08150 - SECURITY HOLLOW METAL

PART 1 - GENERAL

1.01 SUMMARY

A. WORK INCLUDED: Provide security hollow metal work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Security hollow metal doors and frames.
2. Prime painting of security hollow metal.
3. Galvanized rigid steel conduit, 3/4" diameter, and junction boxes built into door frames as indicated.

B. RELATED WORK:

1. Section 08100 - Metal Doors and Frames
2. Section 05600 - Security Grilles and Gates
3. Section 08710 - Finish Hardware
4. Section 08711 - Security Screws
5. Section 08800 - Glass and Glazing

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6. Section 09900 - Painting

7. Division 17 - Electrical

1.02 QUALITY ASSURANCE

A. Provide doors including frames complying with NAANM "Guide Specifications for Detention Security Hollow Metal Doors and Frames" and as herein specified.

B. QUALIFICATIONS: Provide security hollow metal work manufactured by a firm specializing in this work for at least three (3) years.

C. FIRE-RATED ASSEMBLIES: Comply with the label requirements of the Board of Standards & Appeals (BS&A) of the City of New York. Fabricate units in accordance with requirements of BS&A for the class of door opening corresponding to the hourly rating shown.

1. Provide required labels permanently fastened on each door and frame assembly which is within the size limitations established by the labeling authority having jurisdiction.

2. Provide anchors for labeled frames as required by authority having jurisdiction.

D. STANDARDS: Comply with applicable provisions and recommendations of:

1. AWS D1.1 "Structural Welding Code".

2. NAA14M Standard HMDF-1-85 "Guide Specifications for Detention Security Hollow Metal Doors and Frames".

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1.03 SUBMITTALS

A. PRODUCT DATA: Submit manufacturer's technical product data to show that products comply with specified requirements.

B. SHOP DRAWINGS: Submit shop drawings showing details of each frame type, partitions, elevations of door design types, conditions at openings, details, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

1. Provide a schedule of doors, and frames using same reference numbers for details and openings of those on the contract drawings.

C. SAMPLES:

1. Frames: Corner sample of each type, 21" x 2'-0", showing mortises and reinforcements, shop primed.

2. Doors: Corner sample 21" x 21", for each type, showing construction mortises and reinforcements, shop primed.

3. Partition: Corner sample 2'-0" x 2'-0" showing mortises and reinforcements, shop primed.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver security hollow metal work cartoned or crated to provide protection during transit and storage.

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B. Inspect security hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal to new work and acceptable to Resident Engineer; otherwise, remove and replace damaged items.

C. Store security hollow metal work to protect them from dirt, damage and moisture. Remove wet cartons immediately. Provide 1/4" spaces between stacked doors for air circulation.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. GENERAL: Subject to compliance with requirements, provide specified security- hollow metal as manufactured by Fries Correctional Equipment, Inc., or an approved equal of one of the following:

1. American Steel Products Corp.
2. Trussbuilt.
3. Or approved equal.

2.02 MATERIALS

A. HOLLOW METAL FRAMES: Combination buck, jambs and trim, with all miters clean cut, reinforced, fully seam welded and cleaned flush. Minimum 12-gauge, open hearth, pickled, cold rolled and annealed sheet steel. Frame type: as shown on drawings to profiles detailed.

B. HOLLOW METAL DOORS: Flush type reinforced inside with stiffeners and constructed of the best quality, minimum 14-gauge, open hearth, full cold rolled, full pickled, patent leveled, annealed sheet steel, free from visible waves or other surface defects.

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2.03 TESTING

A. The test described shall be performed by an approved independent testing laboratory retained by the Contractor and subject to the approval of Resident Engineer. Provide data attesting the construction.

B. TEST A - STATIC LOAD TEST: Under a centrally applied load of 14,000 lbs. at quarter points the maximum permitted mid-span deflection shall be 0.580 and shall rebound to a permanent deflection of 0.015 maximum.

C. TEST B - RACKLOAD TEST: Door shall have one unsupported corner loaded with not less than 7,500 lbs. with results as follows: deflection of not more than 2.4 and a rebound not to exceed 0.15 deformation with no visual signs of weld failure.

D. TEST C - IMPACT LOAD TEST: A 3'-0" x 7'-0" door frame with hardware assembly shall be constructed and rigidly mounted such that the door and locking hardware are operable. The door shall swing on 1-1/2 pairs of full mortised hinges, and shall be locked using a Folger Adam #60, 70, and 80 Series lock with bolt size not to exceed 2" high x 3/4" wide with 3/4" throw.

1. A ram pendulum system capable of delivering consistent impacts of 200 foot pounds shall be constructed such that impact may be delivered to any area of the assembly. The pendulum system shall be positioned opposite the door side such that the door swings away from the frame. The striking force of the striking nose shall not exceed 4.0 square inches. With the door closed and locked and the above testing arrangements secured, the following series of impacts shall be performed on the assembly:

<u>Position and order of impact</u>	<u># of Impacts</u>	<u>Impact Energy</u>
On the door within 6" of the bolt	400	200 ft. lbs.
On the door within 6" of middle hinge	50	200 ft. lbs.

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2. The door shall remain closed and locked throughout the test and the assembly shall not be damaged such that forcible egress can be obtained.

3. After testing is completed, the door shall be capable of being unlocked and operated such that normal egress can be obtained.

2.04 FABRICATION

A. Fabricate security hollow metal units to be rigid, neat in appearance and free from defects, warp or buckle. Accurately form metal to required sizes and profiles. Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at the project site. Weld exposed joints, dress, and make smooth, flush and invisible.

B. EXPOSED FASTENERS: Provide countersunk flat torque heads for exposed screws and bolts. Unless otherwise indicated, locate fasteners 2" from each end of members and not more than 12" apart. Refer to Section 08711 - Security Screws.

C. HARDWARE PREPARATION:

1. Prepare security hollow metal to receive mortised and concealed finish and security hardware, including cutouts, reinforcing, drilling and tapping in accordance with final Hardware Schedule and templates provided by hardware supplier.

2. Reinforce security hollow metal to receive surface-applied hardware. Drilling and tapping for this hardware may be done at the project site.

3. Weld 14-gauge steel tongues, 1-1/2" high, inside lock mortise to keep lock body centered in door.

4. Reinforce all doors for surface door closer application, and for frames for closer arm application, whether or not closers are specified.

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D. SHOP PAINTING:

1. Chemically wash, rinse and dry exposed and concealed surfaces of fabricated units.
2. Apply 2 shop coats of prime paint promptly after pretreatment. Apply smooth coats of even consistency to provide a total uniform dry film thickness of not less than 4.0 mils.
3. Units shall be capable of passing the following tests:
 - a. Salt Spray Test complying with ASTM D117 for 120 cont. hours.
 - b. Water Test complying with ASTM D1735 for 250 cont. hours.

2.05 DOORS

A. GENERAL: Provide flush security doors, minimum 2" thick unless otherwise specified, seamless hollow construction.

1. Door Edges: Lock stile edge of single acting hinged doors shall be beveled, 1/8" in 2". Meeting stiles of pairs of single acting doors shall be "V" bevel or rounded as detailed on the drawings or required.

2. Astragals: Provide, for pairs of doors, on non-inmate side of inactive leaf, steel astragals, attached with machine screws unless noted otherwise.

3. Core Filler: Provide 6 lb. mineral wool solidly packed full door height to fill voids between inner core reinforcing members.

B. DOOR CONSTRUCTION: Fabricate security doors of stretcher-leveled steel face sheets of gauges shown but not less than 14-gauge. Construct doors with smooth, flush surfaces and

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edges, without visible joints or seams on exposed faces or stile edges. Construct doors with 1/8" edge clearance on all sides, except where undercut is required.

1. Reinforce inside of doors with min. 18-gauge vertical sheet steel sections spaced not more than 4" o.c. and full door height. Spot-weld at not more than 3" o.c. to both face sheets.

2. Reinforce edges, tops and bottoms of doors with min. 16-gauge steel channels welded continuously to outer sheets. Reinforce door edges with to gage reinforcement welded to top and bottom door channels.

3. Use galvanized metal for exterior doors and doors in wet areas.

C. HARDWARE REINFORCEMENT:

1. For each surface hinge, provide a 12-gauge steel channel, with additional 3/8" steel plate backup at hinge screws.

2. For each mortise butt, provide a 7-gauge plate with additional channel stiffener, welded to plate and both door face sheets.

3. Surface pull reinforcement; 12-gauge.

4. Surface door closer reinforcement; one piece channel, 12-gauge.

5. Provide an integral pocket in doors for locks. Finish detention side of door flush, with 1/8" backup plate to protect lock. At door edge, provide 1/8" channel welded to door face sheet, 3" o.c. Cut this channel only for passage of lock bolt.

6. Where electrical devices are used, provide boxes and conduit in doors to receive electrical wiring. Provide conduit access from floor and ceiling as shown.

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D. HARDWARE INSTALLATION: Factory install the following hardware on sliding security hollow metal: Locks and deadbolts.

E. ACCESSORIES: Where required, furnish accessory items for security hollow metal as follows:

1. Glass Mouldings and Stops:

a. Where shown, doors and partitions shall be provided with steel mouldings to secure glazing in accordance with glass sizes and thickness shown on the Drawings.

b. Fixed glass moulding shall be no less than 12-gauge, and shall be spot welded to both face sheets 5" o.c. maximum.

c. Removable glass stops shall be pressed steel channel not less than 14-gauge with tight fitting butt or mitered corner joints, and secured with #8-32 countersink, tamperproof machine screws located 9" o.c. maximum. Refer to section 08711 Security Screws for exposed type fasteners.

d. Where glass thickness dictates, 12-gauge, offset surface mounted glass stop shall be used. The corners shall be tight fitting and mitered, and the glass stop shall be secured to the face of the door using #8-32 countersink, tamperproof machine screws spaced 9" o.c. maximum. Refer to Section 08711 - Security Screws for exposed type fasteners.

e. Where shown on the Drawings, pressed steel angle glazing stops, no less than 10-gauge, shall be provided. Angle stops shall be mitered and tight fitting at the corner joints, and secured in place using machine screws.

2. Louver in Doors: Louvers shall be of the welded inverted vee type construction providing free air delivery as shown. A rectangular louver shall not exceed 18" in width without being reinforced at its midpoint by a vertical rectangular steel bar at least 1/4" x 1-5/8". The inverted vee type vanes shall be not less than 10-gauge and shall be spaced so that no rigid flat instrument can be passed through them.

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3. Louver in Walls: Louvers shall be of the welded inverted truncated vee type construction providing free air delivery. Louver shall not exceed 18" in width without being reinforced at it's midpoint by a vertical rectangular steel bar at least 1/4" x 1-5/8". The inverted truncated vee type vanes shall not be less than 12-gauge and be spaced that no rigid flat instrument can be passed through them.

4. Galvanize accessories for exterior doors and doors in wet areas.

2.06 FRAMES

A. GENERAL: Provide security hollow metal frames of 12-gage minimum for doors, transoms, sidelights, borrowed lights and other openings, of size and profile as indicated.

1. Fabricate frames of full-welded unit construction, with corners mitered, reinforced, continuously welded full depth and width of frame, unless otherwise indicated. Knock-down type frames not acceptable.

B. SHEET STEEL: Form frames of galvanized steel sheets for exterior doors and doors in wet areas and of hot-rolled steel sheets for other areas, of not less than gage shown.

C. HARDWARE REINFORCEMENT:

1. For each surface hinge, provide a 3/2" x 1-1/2" x 9" reinforcement welded to frame. Drill and tap frames for surface hinges after door is fitted into frame.

2. For each mortise butt, provide a 3/16" x 1-1/2" x 9" reinforcement, factory drilled and tapped. Protect all mortises with steel cover boxes.

3. Provide electro-mechanical lock housing with factory drilled and tapped 3/16" plate backup; and 1/8" flat head screws. Coordinate with position indicators where required, with indicator mounting holes factory drilled and tapped.

4. Provide electrical conduit and jamb box as required.

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- D. JAMB ANCHORS: Furnish door frames with jamb anchors of not less than 12-gauge steel. Provide at least 3 anchors per jamb up to 7'-6" height; 4 anchors up to 8'-0" jamb height; one additional anchor for each 24" or fraction thereof over 8'-0" height.
- E. FLOOR ANCHORS: Provide floor anchors for each door jamb, formed of not less than 12-gauge steel sheet.
- F. STRUCTURAL REINFORCING MEMBERS: Wherever door openings are greater than 3'-4", provide min. 12-gauge channel reinforcing members, welded to head of frame assembly,
- G. SPREAD BARS: Provide 2 removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- H. PARTITION ANCHORS: Provide security partition frames with not less than 12-gauge steel anchors spaced not more than 2'-0" on centers, of type and size to suit adjacent construction.
- I. GLAZING BEADS: Provide glazing beads as shown, with fasteners evenly spaced, not more than 12" o.c.
- J. Galvanize all frame components for exterior frames and frames in wet areas.

2.07 METAL AND GLASS PARTITIONS

- A. PARTITION FRAMES: Flush type reinforced inside with stiffeners and constructed of the best quality, open hearth, full cold rolled, full pickled, patent leveled, annealed sheet metal, minimum 12-gauge, free from visible waves or other surface defects.
1. Fabricate frames of full-welded unit construction, with corners mitered, reinforced, continuously welded full depth and width of frame.

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B. Glass panels shall have steel channel reinforcing around perimeter of partition opening, spot welded at 3" intervals. Channels shall be same gauge as frames.

PART 3 - EXECUTION

3.01 INSTALLATION

A. GENERAL: Install security hollow metal and accessories in accordance with the final shop drawings, manufacturer's data, and as herein specified.

B. PLACING FRAMES: Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

C. DOOR INSTALLATION: Fit doors accurately in their respective frames, within the following clearances:

1. Jambs and Head: 3/32" to 1/8", maximum.
2. Meeting Edges, Pairs and Doors: 1/8" to 3/16" maximum.
3. Bottom: 3/8", where no threshold.
4. Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

D. PLACING PARTITIONS: Set partitions accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. Remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. At in-place concrete or masonry construction, set partitions and secure in place with machine screws, machine bolts, and masonry anchorage devices.

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3.02 ADJUST AND CLEAN

A. FINAL ADJUSTMENTS: Check and readjust operating finish hardware items just prior to final inspection. Leave work in complete and proper operating condition, Remove and replace defective work, including doors or frames which are warped, bowed or otherwise damaged.

B. PRIME COAT TOUCH-UP: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air drying primer.

END OF SECTION

SECTION 08301 - CRAWL SPACE ACCESS DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. The work to be performed under this item of the specifications consists of furnishing all labor, materials, appliances and equipment in performing all operations in connection with this Section as shown on the Drawings, as specified herein, and/or as required by job conditions.

B. The Work of this Section shall include but not be limited to the following:

1. Crawl Space Access Doors and Frames.
2. Provide factory primed doors and frames to be field painted.

C. Painting primed doors and frames are specified in Section 09900 "Painting" in this Contract.

D. Door hardware is specified in Section 08710 "Door Hardware" in this Contract.

1.02 SUBMITTALS

A. Manufacturer's standard details, specifications and installation instructions.

1.03 DELIVERY, STORAGE, AND HANDLING

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A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory finished doors and frames.

B. Inspect doors and frames upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to the City; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4-inch high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4 inch spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering standard steel doors and frames which may be incorporated in the Work include, but not limited to the following:

1. Bar-Co., Inc.
2. Cesco Products
3. J.L. Industries
4. Milcor, Inc.
5. Nystrom, Inc.

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6. Or approved equal.

2.02 DOORS AND FRAMES

- A. Vertical Metal Siding (Exterior): 30" x 30", 14 Gauge Steel Flush Panel Doors with manufacturer's standard hinges, factory primed; set in 16 Gauge Steel Frame with nominal one inch wide exposed flanges, factory primed.

2.03 LOCKING DEVICES

- A. Provide one mortise lock per access door, with 2 keys per lock; all access doors shall be keyed alike; as manufactured by Medeco or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Coordinate installation with work of other trades and locate accurately. Comply with manufacturer's instructions for secure attachment, proper relation to adjacent finished surfaces and proper operation.

3.02 ADJUSTING AND CLEANING

- A. Prime Coat Touch-Up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

END OF SECTION

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SECTION 08305 - ACCESS DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide access doors in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Access doors as indicated.

B. Related Work:

1. Section 04200 - Unit Masonry
2. Section 08710 - Finish Hardware
3. Section 09540 - Security Ceilings

1.02 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Wherever a fire-resistance classification is required, provide access door assembly from manufacturer listed in Underwriters Laboratories, Inc.; "Classified Building Materials Index" for rating required. Provide UL Label on fire-rated doors.

B. Size Variations: Obtain acceptance of manufacturer's standard size units which may vary slightly from sizes required.

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C. Coordination: Furnish inserts and anchoring devices which must be built into other work for installation of access doors. Coordinate delivery with other work to avoid delay.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions, including setting drawings and templates for anchorage devices.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide access doors as manufactured by one of the following:

1. Base: J.L. Industries
2. Milcor Inc.
3. Karp Associates Inc.
4. Or approved equal.

2.02 MATERIALS AND FABRICATION

A. General: Furnish each access door assembly manufactured as an integral unit, complete and ready for installation.

B. Sizes: Minimum 12" x 12" in security ceiling panels, 18" x 18" and 24" x 24" at walls and in areas where access doors cannot be provided, Folger Adam 416 access panels (larger than

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24" x 24" in either direction), as indicated or required to allow inspection of items requiring service, maintenance, or repair.

C. Steel Access Doors and Frames: Fabricate units of continuous welded steel construction. Grind welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels properly.

D. Frames: Fabricate from 14 gauge sheet steel, with exposed flange approximately 1" wide around perimeter of frame for units installed in the following construction:

1. Exposed masonry.
2. Inmate Toilet/Shower Partitions (Chase Walls).
3. Security ceilings.

E. Flush Panel Doors: Fabricate from not less than 16 gauge sheet steel, with concealed spring hinges or concealed continuous piano hinge set to open 175 degrees. Prime with manufacturer's factory-applied baked enamel prime paint. Finish painting refer to Section 09900. Reinforce doors as required to prevent buckling.

1. Fire Rated Doors: Provide manufacturer's standard insulated flush panel doors, automatic closer with positive latching, interior release device, with continuous piano hinge.

2. Recessed Doors: Fabricate with face of panel recessed, where required to receive applied finish.

3. Locking Devices: Furnish flush locks to hold door in flush, smooth plane when closed. Provide security locking with flush cylinder lock per access door. Furnish 2 keys per lock and key all locks keyed alike to the building system.

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4. In areas where access doors cannot be provided, Folger Adam 416 access panels shall be provided with Folger Adam No. 12 dead lock.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's instructions for installation of access doors. Coordinate installation with work of other trades.

B. Set frames accurately in position and securely attach to supports with face panels plumb or level with adjacent finish surfaces.

3.02 ADJUST AND CLEAN

A. Adjust hardware and panels after installation for proper operation.

B. Remove and replace units which are warped, bowed or damaged.

END OF SECTION

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SECTION 08330 - ROLLING DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide rolling doors in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

B. Related Sections: Other specification sections which directly relate to the work of this Section include, but are not limited to, the following:

1. Section 08710 - Finish Hardware; key cylinders for locks.
2. Section 16100 - Electrical; wiring.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each type of rolling door. Include both published data and any specific data prepared for this project.

B. Shop Drawings: Submit shop drawings for approval prior to fabrication. Include detailed plans, elevations, details of framing members, required clearances, anchors, and accessories. Include relationship with adjacent materials.

1.03 QUALITY ASSURANCE

A. Manufacturer: Rolling doors shall be manufactured by a firm with a minimum of five years experience in the fabrication and installation of rolling doors. Manufacturers

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proposed for use, which are not named in these specifications, shall submit evidence of ability to meet performance and fabrication requirements specified, and include a list of five projects of similar design and complexity completed within the past five years.

B. Installer: Installation of rolling doors shall be performed by an authorized representative of the manufacturer.

C. Single-Source Responsibility: Provide doors, guides, motors, and related primary components from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

D. Pre-Installation Conference: Schedule and convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials and products in labeled protective packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage from weather, excessive temperatures and construction operations.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Provide rolling doors by Overhead Door Corporation, Pennsylvania Division; Telephone 800-929-2553 or 717-248-0131; Fax 800-929-1274, or approved equal.

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2.02 ROLLING DOORS

A. Rolling Doors: 610 Series Service Doors by Overhead Door Corporation.

1. Curved profile type C-187 for doors up to 15'- 4" wide: Fabricated of 20-gauge stainless steel.

2. Curved profile type C-275 for doors up between 15'- 4" and 18'- 4" wide: Fabricated of 22-gauge stainless steel.

3. Curved profile type C-275 for doors between 18'- 4" and 25'- 4" wide: Fabricated of 16-gauge stainless steel.

4. Flat profile type F-265 for doors up to 18'4" wide: Fabricated of 22-gauge stainless steel.

5. Flat profile type F-265 for doors between 18'- 4" and 25'- 4" wide: Fabricated of 20-gauge stainless steel.

6. Fenestrated service doors: Provide slats with 3" x 5/8" uniformly spaced openings.

7. Ventilated service doors: Provide slats with 1/16" diameter perforations
3/32" on center staggered rows.

B. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.

C. Finish:

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1. Stainless Steel: Slats and hood shall be stainless steel with (2B mill finish or No. 4 satin finish as selected by Architect.

2. Color: Gray polyester top coat, color as selected by Architect from manufacturer's standard colors.

D. Windload Design: 30 PSF.

E. Weatherseals: Vinyl bottom seal & Guide weatherseal.

F. Bottom Bar: Extruded aluminum up to 15'4" wide. Two steel angles over 15'4" wide. (Two galvanized steel angles.)

G. Guides: Roll-formed steel shapes attached to continuous steel wall angle is standard for doors up to 15'4" wide. Three structural steel angles with minimum thickness of 3/16" for doors over 15'4" wide.

H. Brackets: Hot rolled steel (Galvanized steel) to support counterbalance, curtain and hood.

I. Counterbalance: Helical torsion spring type designed for standard 20,000 cycle life design. Counterbalance shall be housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03" per foot of span. Counterbalance shall be adjustable by means of an adjusting tension wheel.

J. Hood: Stainless steel, 24-gauge hood with intermediate supports as required.

K. Secondary Manual Operation: Manual push up (chain hoist) for doors up to 96 sq.ft. Chain hoist (Crank operation) for doors over 96 sq.ft.

L. Primary Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.

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- M. Sensing Edge Protection: Electric sensing edge.
- N. Operator Controls: Push-button and key operated control stations with open, close, and stop buttons for surface mounting, for both interior and exterior location.
- O. Locking: Interior bottom bar slide bolt. Chain keeper locks for chain hoist operation. Cylinder lock for electric operation with interlock switch.
- P. Wall Mounting Condition: Face-of-wall mounting.
- Q. Vision Lites: (3" x 5/8") uniformly spaced opening, open or with Plexiglas® covers.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Strictly comply with manufacturer's installation instructions and recommendations. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
- B. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

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3.03 ADJUSTING AND CLEANING

A. Test rolling doors for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Touch-up damaged coatings and finishes and repair minor damage. Clean exposed surfaces using non-abrasive materials and methods recommended by manufacturer of material or product being cleaned.

END OF SECTION

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SECTION 08610 - STEEL WINDOWS AND SCREENS

PART 1 - GENERAL

1.01 DESCRIPTION

A. WORK INCLUDED: Furnish all labor and materials to complete the fabrication of the windows as shown on drawings and as specified herein. All material covered by this specification shall be fabricated by Hope's Windows, Inc., Jamestown, New York, whose name and products are used to establish the standard of workmanship and quality construction required for this project. Other manufacturers must be approved by DOC at least ten days prior to the bid date, through submission of samples and evidence showing that the bidder has been fabricating clearstory window products of this type and quality for at least three (3) years. All work shall include, but not be limited to, the following:

1. Jamestown 175™ series steel double weather-stripped single hung windows.
2. All window anchors, mullions, covers and trim.
3. Stainless steel insect screens for all operating ventilators.
4. Factory applied finish.

B. RELATED WORK SPECIFIED ELSEWHERE:

1. Structural Steel - Section 05120.
2. Joint Sealers - Section 07900.
3. Glass and glazing - Section 08800.

1.02 QUALITY ASSURANCE

A. Manufacturer shall have not less than three (3) years experience in the fabrication of heavy custom steel windows and be a member of The Steel Window Institute (SWI).

B. Installation of clearstory window systems shall be done by experienced window installers.

C. ALLOWABLE TOLERANCES: Size dimensions +/- 1/16 inch.

D. SOURCE QUALITY CONTROL:

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1. Air infiltration test:
 - a. Tested in accordance with ASTM E283
 - b. Maximum air infiltration 0.50 CFM/Ft. of crack length with differential pressure across window unit of 1.57 PSF (50 m.p.h.).

2. Water penetration test:
 - a. Tested in accordance with ASTM E331
 - b. No water penetration for 15 minutes when window is subjected to a rate of flow of 5 gal./hr./sq. ft. with differential pressure across window unit of 2.86 PSF (50 m.p.h.).

3. Structural test:
 - a. Tested in accordance with ASTM E330.
 - b. No damage at 60 psf design pressure.

4. Quality of e-coat/ top-coat combination shall meet or exceed the following ASTM designations:
 - a. ASTM D714 - Paint Blistering Test;
 - b. ASTM D4585 - Humidity Test;
 - c. ASTM B117 - Salt Spray (Fog) Test;
 - d. ASTM D1654 - Painted Products in Corrosive Environments;
 - e. ASTM G85 - Cyclic Fog/Dry Test (Prohesion);
 - f. ASTM D5894 - Salt Fog/UV Painted Metal;
 - g. ASTM D4541 - Pull Off Strength of Coating Test.

5. Upon request, the window manufacturer shall provide a test report from a qualified independent U.S. testing laboratory regularly engaged in testing windows to verify that his products conform to these test requirements.

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1.03 SUBMITTALS

A. **SAMPLES:**

1. Typical window corner with glazing beads.
2. Sample of specified muntin, showing welded intersections and glazing beads.
3. Sample of stainless steel screen corner.
4. Color sample of finish.
5. Hardware.

B. **SHOP DRAWINGS AND MANUFACTURER'S LITERATURE:**

1. Submit for approval shop drawings showing window and installation details, including anchorage, fastening and recommended sealing methods.
2. Dimensioned elevations showing window opening and window sizes.
3. The manufacturer shall not commence any work until shop drawings have been approved.
4. Color charts for finishes.

1.04 PRODUCT, STORAGE AND HANDLING

A. The General Contractor shall be responsible for the protection and storage of the window components after delivery to the site.

B. Store in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

1.05 WARRANTY

A. In accordance with the Article on "GUARANTEES" in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees all workmanship and materials described in this Section for a period of two (2) years. In addition, the Contractor shall furnish the Ten (10) year Guarantee/Warranty in the

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standard Guarantee/Warranty form from the manufacturer.

PART 2 - PRODUCT AND FABRICATION

2.01 MATERIALS

A. Frames formed from 12 gauge galvanized sheet steel.

B. Heavy custom double weather-stripped windows shall be manufactured from solid hot rolled steel shapes.

1. Sections made from new billet steel with flanges rolled integrally at the mill.

2. Sections shall have glazing rebates providing an unobstructed glazing surface of at least 3/4".

3. Glazing rebate surfaces must be perpendicular to the web or stem of the section. Applied glazing rebate extensions and rebate surfaces that are tapered will not be acceptable.

4. Ventilator sections shall be a minimum of 1.80 pounds per lineal foot.

C. MUNTINS:

1. Muntins shall be solid hot rolled from new billet steel with flanges rolled integral at the mill.

2. Glazing rebate surfaces must be perpendicular to the stem of this section. Rebate surfaces that are tapered will not be acceptable.

3. 1-3/4" tee shall weigh 1.62 pounds per lineal foot, the 1-3/8" tee shall weigh 1.44 pounds per lineal foot and the 7/8" tee shall weigh 1.19 pounds per lineal foot (specify).

D. Glazing beads shall be extruded aluminum Alloy 6063-T5 with a minimum thickness of .062 inches.

E. Weather-stripping shall be Fin-seal® or Q-Ion® contained in an extruded aluminum adaptor.

F. OPERABLE HARDWARE:

1. Fastener: Bronze sweep lock.

2. Pulls: Bronze lift handle.

3. Balance Arm: Spiral and extension spring sash balance.

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G. All screws that are furnished by Hope's®, for hardware, trim, covers, anchoring, weatherbars, water dams, screens, etc. shall be non-ferrous brass or stainless steel. Glazing bead retainer screws are plated steel.

H. PAINT:

1. Pre-treatment.
2. Primer: E-Coat (Electrodeposited epoxy primer).
3. Finish Coat: Factory applied polyurethane.

2.02 FABRICATION

A. Prior to fabrication, all hot rolled steel sections shall be cleaned by shot blasting.

B. Corners of frame and ventilator shall be mitered or coped then solidly welded. Exposed and contact surfaces shall be finished smooth flush with the adjacent surfaces. All interior and exterior rail bar and muntin joints shall be face welded and ground smooth.

C. MUNTINS:

1. True Divided Lite muntins shall be tenoned and welded to the perimeter frame. Muntin intersections shall be slotted, cross notched and welded. All interior and exterior muntin joints shall be face welded and ground smooth.

D. GLAZING:

1. All windows shall be designed for inside or outside glazing.
2. Provide replaceable continuous snap-in glazing beads to suit the glass as specified.
3. Glazing beads shall be cut and shop fitted to each glass lite prior to shipment.

F. WEATHERSTRIP:

1. Continuous Fin-seal® or Q-lon® weatherstripping shall be applied to the interior and exterior grooves of an aluminum adapter. The adapter is then screw applied around the perimeter of the ventilator.

G. OPERABLE HARDWARE:

1. Ventilators shall be hung on a set of 80 pound spiral balances at the jambs. Use a double set of balances for 80-160 pound ventilators.

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2. Provide two sweep locks per ventilator where widths exceed 48".
3. Two sash lifts per ventilator.

H. FACTORY FINISHING:

1. Shot Blasting: Before any machining or welding is performed, all hot-rolled steel sections shall be cleaned by shot blasting to remove any loose scale.
2. Bonderizing: After fabrication, windows, mullions, covers, and trim shall be subjected to a 10 stage bonderizing pre-treatment process that produces a non-metallic phosphate coating on the surface of the steel in preparation for e-coat priming system.
3. E-Coat Prime Painting:
 - a. Following the pretreatment, windows and accessories are e-coated with a cathodic epoxy primer of PPG Powercron® 8000 or equivalent to insure all surfaces are evenly covered. Spray or dip primers shall not be acceptable.
 - b. Immersed in a rinse of ultra-filtered RO water for 3 minutes to remove all the excess paint and removing any runs.
 - c. A spray of ultra-filtered RO water repeats the above process to further improve surface conditions.
 - d. The primer is oven baked to 335 degrees F for 15 minutes to a dry film thickness of 0.7 - 1.0 mil.
 - e. The material is then cooled in preparation for the finish coat.
4. Ultrathane Finish Painting:
 - a. Following the prime coat, all windows and accessories are given a spray coat of acrylic polyurethane and oven baked at 225 degrees F for 15 minutes to dry film thickness of 1.5 to 2.0 mils.
 - b. The combined overall dry film thickness of the prime coat and finish coat shall be 2.2 - 3.0 mils.
 - c. The architect shall choose from an unlimited color selection. Color matching is available upon request, along with clear coats. Some colors may require clear coats for added protection. Consult your Hope's® Representative for selection assistance.

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5. E-Coat/top coat combination shall provide full documented compliance with all ASTM designations as outlined in Quality Assurance portion of the specifications.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Window openings shall conform with details, dimensions and tolerances shown on the window manufacturer's approved shop drawings.
- B. Conditions which may adversely affect the window installation must be corrected before installation commences.
- C. The wash down of the adjacent masonry must be completed before erection commences to prevent damage to the finish by the cleaning materials.

3.02 INSTALLATION

- A. Install windows in openings in strict accordance with approved shop drawings.
1. Set units plumb, level and true to line, without warp or rack of frames.
 2. Anchor units securely to surrounding construction with approved fasteners.
 3. The exterior joints between the windows, trim and mullions shall be properly sealed watertight with an approved sealant and neatly pointed.
- B. Attach ventilator hardware, as required, and adjust ventilators to operate smoothly free from twist and to be weathertight when closed.
- C. Attach loose muntin grids per approved shop drawings, if applicable.
- D. Repair any abraded areas of the factory finish.

3.03 CLEANING

- A. Window installer shall leave window surfaces clean after installation and ready to receive glass and glazing. The window installer will not be responsible for final cleaning.

END OF SECTION

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SECTION 08650 – SECURITY WINDOWS AND SCREENS

PART 1 - GENERAL

1.01 DESCRIPTION

A. WORK INCLUDED: Furnish all labor and materials to complete the fabrication and installation of detention windows as shown on the drawings and as specified herein. The work of this Section shall include but not limited to the following:

1. Formed stainless steel medium detention fixed windows having horizontal steel detention bars spaced 6" on center concealed within the rails. The round detention bars shall penetrate the flat detention bars concealed in the frame to form an integral detention grid.

2. All detention window anchors, mullions, covers and trim.

B. RELATED WORK SPECIFIED ELSEWHERE:

1. Section 07900 – Joint Sealers, Security Caulking

2. Section 08800 – Glass, glazing and glazing materials

1.02 QUALITY ASSURANCE

A. Manufacturer shall have not less than three (3) years documented experience in the fabrication of stainless steel detention windows.

B. ALLOWABLE TOLERANCES: Size dimensions +/- 1/16 inch.

C. PERFORMANCE REQUIREMENTS:

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1. Air infiltration test, meets or exceeds ASTM E283, maximum air infiltration .06 CFM/ Ft. of crack length with pressure differential across the window unit of 1.57 PSF.
2. Water penetration test, meets or exceeds ASTM E331, no water penetration for 15 minutes when the window is subjected to a rate of flow of 5 gal. /hr./sq. ft. with differential pressure across the window unit of 2.86 PSF.
3. Tool-resisting steel, meets or exceeds ASTM A627-03 Grade 4, submit test reports from a qualified independent testing laboratory verifying that the window manufacturer's tool-resisting steel is in conformance with ASTM A627-03.
4. Impact Test, meets or exceeds ASTM F1592-01 "Standard Test Methods for Detention Hollow Metal Vision Systems".
 - a. Impact Blows: Must withstand a minimum of 600 blows of 200 Ft-Lbf impact energy at each impact location (1200 total blows per frame without rail bar, 1800 total blows per frame with rail bar).
 - b. Glazing Test: The glazing and panels shall remain in place. No damage to the extent that forcible entry can be achieved.
 - c. Frame Test: No welded joints or the entire frame joint shall completely separate.
 - d. The wall anchoring shall retain the frame in place throughout the test procedure to the extent that forcible entry cannot be achieved.
5. Along with submittals, the window manufacturer shall provide the applicable test report from a qualified independent testing laboratory regularly engaged in testing windows to verify that his products conform to these test requirements. All testing must be current and meet minimum requirements in conformance with specifications.

1.03 SUBMITTALS

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A. SAMPLES: Submit samples of Stainless steel #2B finish, on 24" length of window members. Submit, as required, additional samples, which will show fabrication techniques and workmanship, and design of accessories.

B. SHOP DRAWINGS AND MANUFACTURER'S LITERATURE:

1. Submit for approval shop drawings showing full size window and installation details including anchorage, fastening and recommended sealing methods.

2. Dimensioned elevations showing window opening and window sizes.

3. The manufacturer shall not commence any work until shop drawings have been approved.

1.04 PRODUCTS, STORAGE AND HANDLING

A. Deliver security windows cartoned or crated to provide protection during transit and job storage.

B. Inspect security windows upon delivery for damage. Minor damages may be repaired provided finish is equal in all respects to new work as judged by the Commissioner, otherwise remove and replace damaged items with new items.

C. Store security windows under cover off ground in vertical position with spacers to allow air circulation. Protect from damage. Remove wet cartons immediately.

1.05 GUARANTEE

A. In accordance with the Article on "GUARANTEES" in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees all workmanship and materials described in this Section for a period of two (2)

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years. In addition, the Contractor shall furnish the Ten (10) year Guarantee/Warranty in the standard Guarantee/Warranty form from the manufacturer.

B. Furnish a guarantee in the form specified in article on "GUARANTEES" of the "GENERAL CONDITIONS GOVERNING ALL CONTRACTS".

C. The following types of failure shall be adjudged as defective work:

1. Structural failures, including excessive deflections.
2. Excessive water leakage or air infiltration, and condensation.
3. Deterioration of metals and finishes beyond normal weathering.

PART 2 - PRODUCT

2.01 MATERIALS

A. WINDOW SERIES/TYPES: Provide CMSG Series 2000, 14-gauge stainless steel, Fixed Windows as manufactured by CM Security Group Inc., Montreal, Quebec, Canada, H9X 3P1 or Series SS30, 14-gauge stainless steel, Fixed Windows as manufactured by Hope's Windows Inc., Jamestown, New York or Approved Equal.

B. Vertical imposts (Muntins) to divide the glazing area and to receive and conceal steel detention bars shall not be spaced more than 6" o.c. and shall be formed from 14-gauge stainless steel.

C. Glazing rebate shall provide unobstructed glazing surface at least 3/4" in height.

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- D. Medium security detention windows shall have detention bars of 7/8" round and 1/4" x 2 1/2" flat mild steel.
- E. Glazing beads shall be formed from 14-gauge stainless steel.
- F. Anchors shall be fabricated from steel angles with a minimum leg thickness of 3/16".
- G. **FASTENERS:** Non-magnetic stainless steel, torx tamper resistant 1/4"-20 screws spaced at 6" o.c.
- H. **SEALANT:** Provide type recommended by window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Comply with Section 07900 for installation of sealant.
- I. **POLYCARBONATE:** The specially designed muntin gap filler shall be extruded in U.V. resistant colored polycarbonate.

2.02 FABRICATION

- A. Fabricate windows in accordance with approved shop drawings.
- B. Frame members shall be coped and welded at corners the full depth of the frame for maximum strength and weather tightness, with all exposed welds dressed smooth.
- C. Horizontal imposts or rail bars shall be securely welded to the frame for maximum strength and weather tightness, with all welds dressed smooth or concealed.
- D. Anchors shall be located a maximum of 18" on center and shall be a minimum of 2" long.

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E. All removable covers or trim, either exterior or interior, shall be attached with tamper-resistant screws spaced not more than 9" on center at the interior and spaced not more than 12" on center at the exterior.

F. Horizontal 7/8" round steel detention bars shall penetrate and be securely welded to the concealed 1/4" x 2 1/2" flat detention bars to form an integral detention grid. The 7/8" round detention bars shall be equipped with a feature that allows the rod to rotate freely and discourages a device from cutting into the bar.

G. Where the height or width of a window requires, intermediate detention bars may be added that would allow the horizontal 7/8" round steel detention bars to penetrate and run continuously. This intermediate bar would prevent any deflection or spreading of the horizontal detention bars. For medium detention, this intermediate bar shall be 1/4" x 2 1/2" flat mild steel bar concealed in a 14-gauge stainless steel formed impost. The recommended width or height without an intermediate bar should not exceed 36".

H. GLAZING:

1. All frames shall be designed for outside glazing.
 2. Provide continuous glazing beads to suit glass as specified.
 3. Glazing beads shall be cut and shop fitted to each glass lite prior to shipment.
 4. Glazing beads shall be attached with tamper-resistant screws spaced a maximum of 9" on center.
- I. Windows shall have #2B stainless steel finish.

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PART 3 - EXECUTION

3.01 INSPECTION

A. Window openings shall conform to details, dimensions and tolerances shown on the window manufacturer's approved shop drawings.

B. The general contractor must correct conditions, which may adversely affect the window installation, before installation commences.

3.02 INSTALLATION

A. Experienced personnel shall install Windows specified under this section.

B. Install windows in openings in strict accordance with approved shop drawings.

1. Set windows plumb, level and true to line without warp or rack of frames.

2. Anchor windows securely to surrounding construction with a minimum 1" long weld at anchor points. Maximum distance between weld points will be 18".

3. The exterior joints between the windows, trim and mullions shall be properly sealed weather tight with an approved sealant and neatly pointed.

C. Repair any abraded areas of the factory finish.

3.03 CLEANING

A. Window installer shall leave the window surfaces clean after installation and ready to receive glass and glazing. The window installer shall not be responsible for final cleaning.

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B. Any protection necessary due to cleaning adjacent materials shall be the responsibility of the general contractor.

END OF SECTION

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SECTION 08651 - REINSTALLATION OF SECURITY WINDOWS AND SCREENS

PART 1 - GENERAL

1.01 SUMMARY

A. WORK INCLUDED: Provide reinstallation of security windows and screens in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Reinstallation of existing security windows and screens as indicated on drawings.

B. RELATED WORK:

1. Section 04200 - Unit Masonry.
2. Section 07900 - Joint Sealers.
3. Section 08711 - Security Screws.
4. Section 09900 - Painting.

1.02 QUALITY ASSURANCE

A. REFERENCES: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

B. QUALIFIED INSTALLER: The installer shall have not less than three (3) years experience in the installation of security windows and screens similar in size, materials and

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scope of work required for installation of windows and screens indicated to be installed in Project. Where existing security windows and screens manufacturer's Warranties are still active, installer shall be certified or otherwise approved in writing by existing security windows and screens manufacturer for indicated installation work,

C, WATER RESISTANCE: Test each type and size of required window unit for water penetration in accordance with ASTM E 331, There shall be no water penetration for 15 minutes when window is subjected to a rate of flow of 5 gal./hr./sq. ft. with differential pressure across the window unit of 2.86 psf.

1.03 SUBMITTALS

A. SHOP DRAWINGS: Submit drawings including window elevations and full size details of every typical member and accessories required.

1.04 GUARANTEE

A. In accordance with Article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees that all work specified in this Section will be free from defects of materials and workmanship for a period of two (2) years.

B. Furnish a guarantee form specified in Article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006.

C. The following types of failure will be adjudged as defective work:

1. Excessive leakage or air infiltration.

1.05 STORAGE, AND HANDLING

A. Remove, handle and store existing security windows and screens with care to prevent damage, staining, soiling and corrosion.

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PART 2 - PRODUCTS

2.01 GENERAL

A. SECURITY WINDOWS AND SCREENS: Prior to any reinstallation of existing security windows and screens, Resident Engineer shall coordinate with all trades related with wall assembly. Installer shall replace and repair all damaged anchorage and fasteners that may exist and may be required to comply with Part-i of this section prior to any installation of security windows and screens.

2.01 WINDOW MATERIALS

A. FASTNERS: Aluminum or non-magnetic stainless steel, warranted by manufacturer to be security type, vandal resistant, non-corrosive and compatible with window members, trim, hardware and anchors.

1. Do not use exposed fasteners except where unavoidable, use "pop" rivets for exposed fasteners for application of hardware. Match finish of adjoining metal.

B. ANCHORS, CLIPS AND WINDOW ACCESSORIES: Depending on strength and corrosion-inhibiting requirements, fabricate units of aluminum, non-magnetic stainless steel, or hot dip zinc coated steel complying with ASTM A 386.

C. SEALANT: Provide type recommended by window manufacturers for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Comply with Section 07900 for installation of sealant.

D. UNIT MASONRY: Refer to Division 4, Section 04200 - Unit Masonry.

PART 3 - EXECUTION

3.01 INSTALLATION

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- A. Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators, screens and other components of the work.
- B. Set units plumb, level and true to line, without warp or rack of frames or sash. Anchor securely in place. Separate zinc coated steel and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials, by inserting bituminous coating or plastic sheet materials.
- C. Set sill members and other members with joint fillers or gaskets, to provide weathertight construction. Refer to "Joint Sealer" section of Division 7 for sealants, fillers, and gaskets to be installed concurrently with window units. Coordinate installation with wall flashings and other components of the work. Pack insulation in all voids at jamb, head and sill.
- D. Adjust operating sash and hardware to provide a tight fit at contact points and at weatherstripping, for smooth operation and weathertight closure.
- E. Clean surfaces promptly after installation of windows and screens, exercising care to avoid finish damage. Remove excess sealant, dirt and other substances. Lubricate hardware and other moving parts.
- F. After erection of the windows and screens, clean and touch up any abraded surface, as approved by the window manufacturer, to match factory applied finish.
- G. Determine protocols and other precautions required through remainder of construction period, and ensure that window units and screens will be without damage or deterioration (other than normal weathering) at time of substantial completion.

END OF SECTION

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SECTION 08710 - FINISH AND SECURITY HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. WORK INCLUDED: Provide finish and security hardware in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Furnishing and installation of non-security finish hardware.
2. Furnishing and installation of security hardware.

B. RELATED WORK:

1. Electrical and operational requirements - Division 17,

1.02 QUALITY ASSURANCE

A. Hardware where required shall conform to the applicable requirements of the American Insurance Association, Underwriter's Laboratories, Inc., local codes and all other regulations and agencies having jurisdiction. Such items of hardware shall bear a label or mark indicating its conformance to the above requirements.

B. MANUFACTURER: A hardware manufacturer who has been successfully manufacturing products of the type specified for not less than three (3) years. Each type of finish hardware or accessory shall be obtained from only one (1) manufacturer.

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C. SUPPLIER: Finish hardware and detention equipment supplier who have been furnishing finish and security hardware and detention equipment, respectively, for a period of not less than two (2) years. The finish hardware supplier shall be or have in employment an Architectural Hardware Consultant (AHC) in good standing as certified by the Society of Architectural Hardware Consultants Council. Each supplier shall be available as required during the course of the work for project hardware consultation. Upon completion of the work each supplier shall inspect their installations with manufacturer's representatives and submit a letter to Resident Engineer advising that all items required have been installed and are operating properly.\

1.03 REFERENCES

A. Comply with applicable provisions of the following reference standards except as otherwise shown or specified.

1. Building Hardware Manufacturer's Association (BHM.A).
2. Underwriter's Laboratories (UL).
3. Hollow Metal Manufacturer's Association, Division of the National Association of Architectural Metal Manufacturers.
4. American National Standards Institute (ANSI).
5. Door and Hardware Institute (DHI).
6. New York City Board of Standards and Appeals (BS&A).

1.04 SUBMITTALS

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- A. Hardware supplier shall prepare and submit for approval 9 copies of the complete detailed hardware schedule. This shall be done within fifteen (15) working days after receipt of award of contract.
- B. Hardware supplier shall schedule and detail each floor separately. On doors of different sizes or where hardware changes, a separate heading shall be used.
- C. The supplier of hardware shall be solely responsible for any errors or omissions of the schedules, and all security hardware equal in kind and quality to that herein specified or required shall be supplied.
- D. Identify hardware items unsuitable for use as scheduled.
- E. If requested by Resident Engineer, a sample of each hardware item will be supplied as required for comparison with hardware as furnished. Any deviation from hardware schedule shall be replaced with the proper hardware at hardware supplier's expense.
- F. Templates and/or shop drawing information shall be sent to each manufacturer who requires such information, Approved hardware schedule shall be sent to each manufacturer who requires template information.

1.05 PRODUCT HANDLING

- A. As hardware is received, sort and repackage in containers marked with the hardware set number.
- B. Upon delivery to jobsite, the Contractor's shall inventory the delivered hardware with a representative of the hardware supplier. Both Contractor and supplier shall be satisfied that the count is correct before delivery is accepted.
- C. Provide secure lock-up for hardware that is not installed. Control the handling and installation of hardware items which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation.

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1.06 JOB CONDITIONS

A. **COORDINATION**: Coordinate hardware with other work. Tag each item or package separately, with identification related to the hardware schedule, and include basic installation instructions in the package. Provide hardware items of proper design for door thickness, profile, swing, security and similar requirements, for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper locations for installation.

B. **PRODUCT INFORMATION**: Furnish hardware templates installation instructions and wiring diagrams as required to each fabricator of doors and frames to be factory—prepared for the installation of hardware. Upon request, check the shop drawings of such other work, to confirm that adequate provisions are made for the proper installation of hardware.

1.07 GUARANTEE

A. In accordance with Article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017, the Contractor hereby guarantees that all work specified in this Section will be free from defects of materials and workmanship for a period of two (2) year.

1. Furnish a guarantee form specified in Article on "GUARANTEES" of the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT.

B. The following types of failure will be adjudged as defective work:

1. Product failure.
2. Deterioration of finishes.

PART 2 - PRODUCTS

2.01 SCHEDULED HARDWARE

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A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of builders hardware are indicated. Products are identified by using appropriate hardware designation numbers,

B. One or more manufacturers are listed for each hardware type required. Provide either the product designated, or the equivalent product of one of the other listed manufacturers. Provide products of a single manufacturer for each product type,

2.02 MATERIALS AND FABRICATION, GENERAL

A. The drawings show the direction of movement of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.

B. Do not use manufacturer's products which have manufacturer's name or trade name in a visible location, except in conjunction with required UL labels.

C. Provide hardware units of no lesser quality than specified. Do not furnish "optional" materials or forming methods for those indicated.

D. FASTNERS: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not furnish hardware which has been prepared for self-tapping sheet metal screws, except as specifically, indicated.

1. Provide Torx-head security screws, or approved equal, in all areas where security hardware sets are provided.

2. Provide concealed fasteners for hardware units which are exposed when the door is closed, except to the extent no standard units are available with concealed fasteners. Standard exposed fasteners shall be modified to render the installations vandal resistant, but readily serviceable for maintenance. Welded covers will not be acceptable.

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3. Finish exposed screws to match the hardware finish.

E. TOOLS FOR MAINTENANCE: Furnish six (6) complete sets of specialized tools as needed for the installation and maintenance of hardware.

F. Should any hardware, even though required by the Contract Drawings or Specifications, fail to meet the intended requirements or require modification to suit or fit the designated location, such correction and modification shall be made as necessary and in ample time to void delay in the manufacture and delivery of the hardware. Changes and modifications shall not be made without prior notification, and approval, by Resident Engineer. The Contractor shall take such corrections and modifications as directed and approved without extra cost.

2.03 HINGES

A. MANUFACTURER: Subject to compliance with the requirements, provide hinges by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. Non-security: Stanley CB199, 4½" x 4½", Stainless steel, satin finish (32D), ANSI A5111.

2. Security: Southern Folger FA 4-1/2" FM-ICS. investment-cast stainless steel w/ 15/32" diameter, 1/2" long studs on each leaf. Studs anchor the hinge to door and frame, and provide support even if screws are sheared. Non-removable fully concealed pins, Tamper-resistant mounting screws - eight (8) 1/4-20 x 1/2" flat head stainless steel screws are provided in US32D, Hospital tips, Permanent lubrication, Reversible. Screw hole locations conform to industry standards (ANSI A156.7). Heavy door capacity - three hinges support a 300 lb. door.

B. Minimum (3) three hinges per door leaf up to 7'-6" high. Provide one (1) additional hinge per 2'-6" or fraction thereof.

C. Hinge sizes shall be detailed so that the least amount of projection shall be visible from the frame.

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D. Provide heavy weight hinges with hospital type non-rising loose pins. Use non-ferrous non-removable hinges and pins for interior and exterior doors.

E. FINISHES:

1. Interior: USP.

2. Exterior: US32D.

2.04 CONTINUOUS HINGES

A. MANUFACTURER: Subject to compliance with the requirements, provide hinges by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. Non-security: Northeast Hinge Distributers Inc, Stock No. C077040050, .075" thick, 14 Gauge, 4" Open Width, ¼" Pin Diameter, 1" Knuckle Length, 2-B Mill Finish, Type 304 Stainless steel pins, Equal leaves.

2. Security: Northeast Hinge Distributers Inc, Stock No. C128050060, .120" thick, 11 Gauge, 5" Open Width, 3/8" Pin Diameter, 2" Knuckle Length, 2-B Mill Finish, Type 304 Stainless steel pins, Equal leaves.

2.05 ELECTRIC HINGES

A. MANUFACTURER: Subject to compliance with the requirements, provide hinges by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

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1. Non-security: Northeast Hinge Distributers Inc, Stock No. C077040050, .075" thick, 14 Gauge, 4" Open Width, ¼" Pin Diameter, 1" Knuckle Length, 2-B Mill Finish, Type 304 Stainless steel pins, Equal leaves,

2. Security: Southern Folger FA 4-1/2EH. Investment-cast hinge leaves – 0.188" thick, investment-cast stainless steel. Supplied with eight (8) 1/4-20 x 1/2" flat head tamper-resistant mounting screws. Stainless steel screws are provided for US32D finish. Stainless steel 9/16" diameter tubular pin – tubular pin allows wiring to pass from jamb to door. Reversible – Non-handed. Screw hole locations conform to industry standards.

2.06 LOCKS (NON-SECURITY)

A. OFFICE/PRIVACY FUNCTION: Latchbolt operated by lever either side except when outside lever is made inoperative by a stop or other mechanical means other than key. When outside lever is locked, latchbolt is retracted by key from outside or by operating inside lever. Auxiliary deadlatch.

1. MANUFACTURER: Subject to compliance with the requirements, provide locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

a. Schlage LV9050-06BL (ANSI F04), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

b. Yale SL8807FL (ANSI F04), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

B. PASSAGE FUNCTION: Latchbolt operated by lever from either side at all times.

1. MANUFACTURER: Subject to compliance with the requirements, provide locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

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a. Schlage LV9010-06BL (ANSI F01), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

b. Yale SL8801FL (ANSI F01), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

C. CLASSROOM FUNCTION: Latchbolt operated by lever either side except when outside lever is locked from outside by key or push button mechanism. When outside is locked latchbolt is retracted by key or by operating key or push button, and outside lever from outside or by operating inside lever. Auxiliary deadlatch.

1. MANUFACTURER: Subject to compliance with the requirements, provide locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

a. Schlage LV9070-06BL (ANSI F05), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

b. Yale SL8808FL (ANSI F05), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

D. STOREROOM FUNCTION: Latchbolt operated by key outside or by operating inside lever. Outside lever always inoperative. Auxiliary deadlatch.

1. MANUFACTURER: Subject to compliance with the requirements, provide locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

a. Schlage LV9080-06BL (ANSI F07), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

b. Yale SL8805FL (ANSI F07), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

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E. APARTMENT/ ENTRANCE FUNCTION: Latchbolt operated by lever either side, except when made inoperative by key from inside. When outside is locked latchbolt is retracted by key from outside or by operating inside lever. Auxiliary deadlatch.

1. MANUFACTURER: Subject to compliance with the requirements, provide locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

a. Schlage LV9060-06BL (ANSI F09), L Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

b. Yale SL8817-2FL (ANSI F09), Escutcheon, Stainless steel, satin finish (32D), Lever Handle.

2.07 LOCKS (SECURITY)

A. SECURITY DOORS: Deadlocks are designed for use on high security **Cell Doors, Corridor Doors, Dormitory Doors and Dayrooms**. Keyed both sides.

1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 86, Deadlock, Six tumbler model keyed both sides, with 80-4BL Mortise keeper with switch and mounting screws.

b. R.R. Brink Locking Systems, Inc., Model 7086, Six tumbler keyed both sides, with 7080KS Mortise keeper with switch and mounting screws.

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B. SECURITY DOORS: Deadlocks are designed for use on **Holding Room Doors**. Keyed cover side only.

1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 82, Deadlock, Six tumbler model keyed cover side only, with 80-4BL Mortise keeper with switch and mounting screws,

b. R.R. Brink Locking Systems, Inc., Model 7082, Six tumbler model keyed cover side only, with 7080KS Mortise keeper with switch and mounting screws,

C. SECURITY DOORS: Deadlocks are designed for **Administrative or Infirmary Areas** where staff personnel require the convenience of knob operation combined with slam-locking and the security of a deadlock.

1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 66K, Deadlock, Knob model keyed both sides, with 60-4BL Mortise keeper with switch and mounting screws,

b. R.R. Brink Locking Systems, Inc., Model 1066-FKC, FKC - Factory supplied high commercial security key cylinder with collar - two change keys/cylinder. Deadlock, Knob model keyed cover side only.

D. SECURITY DOORS: Deadlocks are designed for **Visit Rooms or Inmate Toilet Doors** where staff personnel require the convenience of knob operation combined with slam-locking and the security of a deadlock.

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1. **MANUFACTURER:** Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 62K, Deadlock, Knob model keyed cover side only, with 60-4BL Mortise keeper with switch and mounting screws.

b. R.R. Brink Locking Systems, Inc., Model 1062-FKC, FKC - Factory supplied high commercial security key cylinder with collar – two change keys/cylinder. Deadlock, Knob model keyed cover side only.

E. **SECURITY DOORS:** Deadlocks are designed for ***Control Room and Stairway Doors*** consisting of Electromechanical Automatic Deadlocking Latch - 1” Throw High Security/Impact Resistant 120 VAC solenoid actuated and manual key unlocking via standard or Mogul key cylinder - jamb mounted, designed for heavily used Cell, Corridor or Entrance Doors. Slam-locking with remote, electrical unlocking. When connected to a momentary-contact switch, the latchbolt retracts when the solenoid is energized. Once retracted, the latchbolt is held mechanically retracted until the door is opened. The latchbolt extends when the door is open. Mechanical unlocking by key (For use during power failure, or any time the lock unlocks by use of prison paracentric key). Latchbolt remains retracted until relocked by key.

1. **MANUFACTURER:** Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 56ELNN, Solenoid voltage - 120VAC, keyed both sides. No-notch feature - The holdback lever has no notch to hold the latchbolt mechanically retracted. The latchbolt extends in the locked position regardless of the position of the door.

b. R.R. Brink Locking Systems, Inc., Model 5026S-FKC, FKC - Factory supplied high commercial security key cylinder with collar – two change keys/cylinder. Solenoid voltage - 120VAC, keyed both sides.

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F. SECURITY DOORS: Deadlocks are designed for use on small swinging doors such as Access Panels, Plumbing Chases, Electric Panels or Hatches which are infrequently used.

1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 12, Five tumbler model keyed cover side only, and mounting screws.

b. R.R. Brink Locking Systems, Inc., Model 9025-1, Deadlock, Knob model keyed cover side only, and mounting screws.

G. SECURITY DOORS: Door operators are designed for use in Sallyports, Vestibules, Corridors, or Entrances requiring both remote and local control. Door Operators shall be high security, motorized locking and operating mechanisms for individual sliding doors not exceeding 450 pounds.

1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam D5B, with manual paracentric key lock release in front door receiver pilaster – keyed both side, and switch and mounting screws.

b. R.R. Brink Locking Systems, Inc., Model 57700ECP x K2S, with manual paracentric key lock release in front door receiver pilaster – keyed both sides, and switch and mounting screws.

H. SECURITY DOORS: Door operators are designed for use in any Multiple Cell or Inmate Room Doors. Door Operators shall be high security, motorized locking and operating mechanisms for sliding Cell Doors not exceeding 300 pounds.

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1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 2B.3, with manual paracentric key lock release in front door receiver pilaster – keyed one side, and switch and mounting screws.

b. R.R. Brink Locking Systems, Inc., Model 57300ECP x K1S, with manual paracentric key lock release in front door receiver pilaster – keyed one side, and switch and mounting screws.

I. SECURE STORAGE DOORS: Cremone Bolt Sets are lever tumbler, mechanical deadlocks for single or paired swinging doors. Cremone bolts provide three-point locking for the active or single door, and five point locking for paired doors.

1. MANUFACTURER: Subject to compliance with the requirements, provide security locks by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following.

a. Folger Adam 3862HM Double doors keyed both sides with 80-4BL Mortise keeper with switch and mounting screws, and 3S-4BL Mortise head bolt keeper with switch and mounting screws for single or double doors.

b. R.R. Brink Locking Systems, Inc., Model 70106HM/EL, Head and Foot Bolt, Paracentric keyed both sides, with No. 7080 lever tumbler, Extended length 1” diameter stainless steel bolt and cover plate facilitates locking and unlocking of high, hollow metal doors (plate with paint primer), with No. 70105FR Floor bolt receptacle suitable for casting into concrete, and No. 70105HBK/S Head Bolt Keeper with Indication Switch.

2.08 EXIT DEVICES (NON-SECURITY)

A. MANUFACTURER: Subject to compliance with the requirements, provide Exit Devices by the manufacturer specified herein or approved equal:

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1. Non-security: **Von Duprin XP98-F** Fire Exit Rim Devices for all types of 4' x 10' (1219mm x 2438mm) single doors or 8' x 10' (2438mm x 2438mm) double doors with 9954 mullion, UL listed A, B, C, D, or E fire labeled installations.

2. Security: Stanley Security Solutions, Inc, Precision Hardware Apex 2000 Series Delayed Egress, with following fire features:

a. Alarm Contacts – Fire Alarm input at any time will cut power to the delayed egress function and provide immediate egress.

b. Armed-Momentary Egress – Turning the key clockwise allows authorized personnel to exit without alarming. At the end of the field selectable time period (10, 20 or 30 seconds), the device will relock and rearm.

c. De-Device Networking Feature – This feature allows a Delayed Egress device to arm, alarm, reset and disarm all devices on the same circuit. Each device will continue to operate independently for Momentary Egress.

d. Nuisance Delay Time – A Nuisance Delay Time helps avoid inadvertent activation. The alarm will sound when the touchbar is pressed, but the alarm sequence will not start unless the touch bar is held in for more than the Nuisance Delay Time. Delay Time is field selectable for 0, 1, 2 or 3 seconds.

e. Integral Key Switch:

i) Arm – The Key switch provides the means to locally arm the (DE) device.

ii) Momentary Egress – The Key switch will provide temporary disarming to allow for momentary egress (10, 20 or 30 seconds) when the device is in the armed state. The Key switch will Disarm the device and it will function as a standard exit device.

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iii) Reset – During alarm sequence the device can be rearmed by the Key Switch.

f. 1-1/4 mortise cylinder.

2.09 OVERHEAD CLOSERS

A. **MANUFACTURER:** Subject to compliance with the requirements, provide hinges by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. **Non-security:** Yale 4420T Full Cover Heavy Duty Holder Stop Thumbturn, LCN 4041XP-EDA-H, or Norton UNI8301H x 689 Unitrol Arm Hold Open, Aluminum finish.

2. **Security:** LCN 5014 for Interior doors, LCN 5015 for Exterior doors up to 42", Aluminum finish, Delayed Action for Exterior doors, H180 Hold-Open for Interior doors, TORX Machine Screw (TORX), or Norton 7904 for interior doors and 7905 for Exterior doors, H (Hold-Open) for Interior doors and DA (Delayed Action) for Exterior doors.

B. Closers for Exterior and Interior doors shall be full rack-and-pinion type with cast aluminum alloy shell. Closers shall be concealed in a 4" (102 mm) high frame header. The slide track shall be concealed in the top rail of the door. Closer, arm and slide track shall be completely concealed when the door is closed. Hydraulic fluid shall be non-gumming and non-freezing. Closer shall have four (4) for Interior and five (5) for Exterior noncritical valves, hex-key-operated, to independently regulate sweep speed, latch speed and delayed action closing for Exterior doors. Slide track shall have built-in cushioning shock-absorber mechanism.

1. Where doors are indicated to be fire-rated, closers shall be provided with a fire-blocking door liner to permit installation in 20 minute fire door assemblies, when required.

2. Where closers are indicated for doors required to be accessible to the physically handicapped, closer shall be adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.

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3. Closer shall have power adjustment to permit a 50% increase in power over the minimum closing force for any size. Degree of stop is adjustable in field by slider.

4. Hold-Open mechanism shall be capable of disengagement when holding function is not required. Hold-Open mechanism shall be fully adjustable by slide mechanism.

C. Closers shall have secure arms and covers, without indentations or other design features.

D. Closers shall be sized in accordance with the accepted manufacturer's standards to suit height, width, weight of door and draft conditions.

2.10 FLOOR CLOSERS

A. MANUFACTURER: Subject to compliance with the requirements, provide extra heavy-duty floor closers for doors weighing up to 1,400 lbs., by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. Rixon Model L27 Series.
2. Dorma Products Model BTS-80-L Floor Closer Package.

B. Provide asylum type top pivot and intermediate with each security type floor closer. Provide extended spindles where required. Provide floor closers with sealed cases. Provide floor closer covers with a 1/4 inch minimum thickness.

2.11 ESCUTCHEON AND CYLINDER SHIELD

A. MANUFACTURER: Subject to compliance with the requirements, provide Escutcheon to prevent wear at the cylinder edge, and Cylinder Shield - a swinging, protective cover for a lever

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tumbler lock cylinder. Escutcheons are provided either single wing (key removable in one position) or double wing (key removable in two positions) as required by the lock functions.

1. Escutcheon: Folger Adam No. 1, Stainless steel finish (US32D), with two 1/4"-20 x 5/16" Torx tamper resistant screws.

2. Cylinder Shield - Folger Adam No. 2CS, Stainless steel finish (US32D), with two 1/4"-20 x 5/16" Torx tamper resistant screws.

2.12 WALL/FLOOR DOOR STOPS

A. MANUFACTURER: Subject to compliance with the requirements, provide wall and floor stops by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. Ives FS1154 Premium Plunger Door Stop.
2. Trimco 1258M Heavy Duty Floor Stop, Spring loaded.

B. Provide a Heavy-duty plunger door stop with 1-1/4" throw, 5-1/2" high, 2" wide, ANSI/BHMA 156.16, L11401.

C. FINISHES: US32D.

2.13 PROTECTION PLATES / ARMOR PLATES

A. MANUFACTURER: Subject to compliance with the requirements, provide protection plates by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. Ives.

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2. Trimco / BBW (Formerly Builders Brass Works, Inc.).
 3. Metal Sales, Inc.
- B. Provide kick plates and armor plates with 3 beveled edges.
- C. Kick plates shall be 2" less than the width of each door leaf by 10" in height. Satin Stainless steel (US32D), Magnetic mount.
- D. Armor Plates shall be 5083 H131 Armor Plate per Specification: Mil-DTL-46207K42" x 2"LDW x .050 x 3BE by Metal Sales, Inc.

2.14 DOOR POSITION SWITCHES

- A. MANUFACTURER: Subject to compliance with the requirements, provide door position switch by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:
1. Magnetic Door Position Switches: Southern Steel, Model 200MRS, Magnetic Switch, tamper-proof unit mortised into the door frame. An actuating magnet is recessed into the door edge. Provided with security fasteners, or Securitron Magnalock Corp., Model MSS-1, High Security Balanced Magnetic Switch Series.
 2. Concealed Door Position Switches: Southern Steel, Model 240CPS, Indicator switch is mechanically activated when the door is moved from the closed position. A switch adjustment is provided to allow for varying field conditions. Provided with security fasteners.
- B. Provide one door position switch per leaf where scheduled.

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C. Where keeper switches are scheduled for pairs of doors with flush bolts, modify the keeper switches as required to monitor both the active and inactive leaves.

2.15 DOOR PULLS

A. **MANUFACTURER:** Subject to compliance with the requirements, provide surface mounted door pulls by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. **Handle-type Raised Pull:** Folger Adam No. 2, stainless steel (US32D, ANSI 630) w/ tamper-resistant screws, or R.R. Brink Locking Systems, Inc., Model 300021, Cast stainless steel grip pull in satin finish (US32D, ANSI 630) w/ tamper-resistant screws.

2. **Flush-mounted Pull:** Folger Adam No. 4-1D, w/ bi-directional finger grips, stainless steel (US32D, ANSI 630) w/ tamper-resistant screws, or R.R. Brink Locking Systems, Inc., Model 300011-C (Inmate side only) and 300011-B (Back-to-back mounting for two side flush cup pull applications), satin chrome (US26D, ANSI 626) w/ tamper-resistant screws.

2.16 DOOR SILENCERS

A. **MANUFACTURER:** Subject to compliance with the requirements, provide door position switch by the manufacturer listed in the Hardware Sets specified herein or approved equal by one of the following:

1. Ives SR66GRY, Gray Self Adhesive Door Silencer 1/2" Diameter, 1/8" thick.

B. Provide silencers for all non-gasketed frames, Provide three (3) for each single swing door and two (2) sets of three (3) silencers for each pair of doors.

2.17 CYLINDERS AND KEYING

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A. Where heavy duty locksets and heavy duty electric locks are scheduled, provide mogul type cylinders and keys or approved equal. Where extra heavy duty locksets and extra heavy duty electric locks are scheduled, provide paracentric type cylinders and keys or approved equal. Where standard builders hardware mortise locksets are scheduled provide locks with high security 6-pin cylinders which comply with performance requirements for Grade 1 cylinders as listed in ANSI A156.5 and which have been tested for pick and drill resistance requirements of UL 437 and are UL listed.

B. Supplier shall provide for a masterkeyed system and will meet with Resident Engineer to determine additional keying requirements. The Contractor shall obtain final instructions in writing. The keying schedule will be forwarded to the Contractor upon approval of the shop drawings and hardware schedule.

2.18 KEY CONTROL SYSTEM

A. MANUFACTURER: One of the following manufacturers or approved equal.

1. Key Cabinet for Builders Hardware Type Keys: Chancellor (Telkee), Aristocrat Wall Key Cabinet Panels, PP/10 Prison Panel, Model WC-450.

2. Key Cabinet for Mogul Type and Paracentric Type Keys: Chancellor (Telkee), FA #505E.

3. Lund, Prison Key Cabinet.

B. Set up a key control system for all levels of keying and provide instruction to the facility's personnel regarding the operation of the system.

2.19 DOOR ACCESSORIES

A. GENERAL: Provide type indicated of sizes, shapes and mounting system recommended by manufacturer for application indicated.

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B. WEATHERSTRIPPING AT HEAD AND JAMBS: Provide weatherstripping units where seal strip is easily replaceable and readily available from stocks maintained by manufacturer. At exterior doors, provide bumper-type resilient insert and metal retainer strips, surfaced-applied unless shown as mortised or semi-mortised, of following metal, finish and resilient bumper material:

1. Housing: Extruded aluminum with color anodized finish as selected by Architect; 0.062" minimum thickness of walls.

2. Seal: Flexible, hollow polyurethane bulb or loop insert.

C. SEALS ON DOOR BOTTOMS: At exterior doors provide threshold-contact type resilient insert and metal housing of the following metal, finish and resilient seal strip.

1. Housing: Extruded aluminum with color anodized finish as selected by Architect; 0.062" minimum thickness of walls.

2. Seal: Solid polyurethane wiper or sweep seal strip.

D. MEETING SEALS AT PAIRS OF EXTERIOR DOORS: Unless otherwise shown, provide metal strips to retain flexible plastic seals as follows:

1. Seal: Heavy polyurethane sheet, black, complying with MS R-6855, Class II, Grade 40. Provide seal strips on both door leaves.

2. Housing: Extruded aluminum, 0.062" thick, color anodized finish.

E. THRESHOLDS: At exterior doors, and at interior doors where shown, provide thresholds with integral anchors, as follows:

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1. Metal: Abrasive cast aluminum, with cast finish consisting of aluminum oxide or silicon carbide integrally cast into wearing surface of threshold.
2. Surface Pattern: Grooved tread, manufacturer's standard.
3. Width: As shown or specified.
4. Minimum Thickness: Provide fast units with 1/2" minimum tread thickness, exclusive of surface pattern grooves.
5. Profile: For exterior doors, provide profile designed to and type of hardware form a weather seal, of appropriate type for swing of door.

PART 3 - EXECUTION

3.01 GENERAL

A. A representative of the segment manufacturer shall be present at the beginning of the installation. The representative shall be fully conversant in all respects with the correct installation method. The representative shall be responsible to advise the Contractor, that the proper installation is being followed, and the Contractor shall provide certification that such work is being carried out under the supervision of a competent manufacturer's representative. Approval by the manufacturer's representative does not absolve the Contractor of the responsibility of having a wholly complete and acceptable installation at the time of final inspection and acceptance of the Contract.

B. The segment manufacturers make periodic checks during construction in order to ascertain that the finish hardware furnished is installed correctly. After completion of all construction work, adjust finish hardware to work properly; test all keys and adjust as required for smooth, free operation.

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C. Furnish suitable templates, together with the reviewed finish hardware schedule, to the respective trades as required, to insure the accurate setting and fitting of finish hardware.

3.02 HARDWARE SCHEDULE

A. GENERAL: Following list of hardware sets are typical of what are normally installed in Correctional facilities. Any combination of items or parts can be used to make up a lockset.

B. NON-SECURITY (BUILDER'S HARDWARE):

1. HW SET 1 (Each Door to Have):

3 Ea.	Hinges
1 Ea.	Classroom Function Lockset
1 Ea.	Door Closers
1 Ea.	Kick Plates
1 Ea.	Wall Stops
3 Ea.	Silencers

2. HW SET 2 (Each Door to Have):

3 Ea.	Hinges
1 Ea. Exit Devices	
1 Ea. Cylinders	
1 Ea.	Door Closers
1 Ea.	Kick Plates
3 Ea.	Silencers

3. HW SET 3 (Each Door to Have):

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- 3 Ea. Hinges
- 1 Ea. Privacy Function Lockset
- 1 Ea. Door Closers
- 1 Ea. Kick Plates
- 1 Ea. Wall Stops
- 3 Ea. Silencers

- 4. HW SET 4 (Each Door to Have):
 - 3 Ea. Hinges
 - 1 Ea. Storeroom Function Lockset
 - 1 Ea. Door Closers
 - 1 Ea. Kick Plates
 - 3 Ea. Silencers

- 5. HW SET 5 (Each Door to Have):
 - 3 Ea. Hinges
 - 1 Ea. Privacy Function Lockset
 - 1 Ea. Kick Plates
 - 1 Ea. Overhead Door Stops
 - 3 Ea. Silencers

- 6. HW SET 6 (Each Door to Have):
 - 1 Ea. Continuous Hinges
 - 1 Ea. Edge Guards
 - 1 Ea. Storeroom Function Lockset
 - 1 Ea. Flush Bolts
 - 1 Ea. Dust Proof Strikes
 - 1 Ea. Door Closers

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- 1 Ea. Armor Plates
- 1 Ea. Wall Stops
- 3 Ea. Silencers

7. HW SET 7 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Privacy Function Lockset
- 1 Ea. Kick Plates
- 1 Ea. Mop Plates
- 1 Ea. Wall Stops
- 3 Ea. Silencers

8. HW SET 8 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Storeroom Function Lockset
- 1 Ea. Door Closers
- 1 Ea. Kick Plates
- 1 Ea. Floor Stops
- 1 Ea. Silencers

9. HW SET 9 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Classroom Function Lockset
- 1 Ea. Door Closers
- 1 Ea. Wall Stops
- 3 Ea. Silencers

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10. HW SET 10 (Each Door to Have):
- 3 Ea. Hinges
 - 1 Ea. Classroom Function Lockset
 - 1 Ea. Kick Plates
 - 1 Ea. Overhead Door Stops
 - 3 Ea. Silencers
11. HW SET 11 (Each Door to Have):
- 3 Ea. Hinges
 - 1 Ea. Classroom Function Lockset
 - 1 Ea. Door Closers
 - 1 Ea. Kick Plates
 - 1 Ea. Wall Stops
 - 3 Ea. Silencers
12. HW SET 12 (Each Door to Have):
- 3 Ea. Hinges
 - 1 Ea. Push/Pull Lockset
 - 1 Ea. Deadlocks
 - 1 Ea. Door Closers
 - 1 Ea. Kick Plates
 - 1 Ea. Wall Stops
 - 3 Ea. Silencers
13. HW SET 13 (Each Door to Have):
- 3 Ea. Hinges

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- 1 Ea. Passenger Function Lockset
- 1 Ea. Overhead Door Stops
- 3 Ea. Silencers

14. HW SET 14 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Storeroom Function Lockset
- 1 Ea. Kick Plates
- 1 Ea. Wall Stops
- 3 Ea. Silencers

15. HW SET 15 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Classroom Function Lockset
- 1 Ea. Door Closers
- 1 Ea. Kick Plates
- 3 Ea. Silencers

16. HW SET 16 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Privacy Function Lockset
- 1 Ea. Door Closers
- 1 Ea. Kick Plates
- 3 Ea. Silencers

17. HW SET 17 (Each Door to Have):

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- 3 Ea. Hinges
- 1 Ea. Storeroom Function Lockset
- 1 Ea. Flush Bolts
- 1 Ea. Dust Proof Strikes
- 1 Ea. Door Closers
- 1 Ea. Kick Plates
- 1 Ea. Wall Stops
- 1 Set Sound Seals
- 1 Ea. Door Sweeps
- 1 Set Meeting Stile Astragals
- 1 Ea. Thresholds

18. HW SET 18 (Each Door to Have):

- 4 Ea. Pocket Pivots
- 1 Ea. Exit Devices
- 1 Ea. Floor Closers
- 1 Ea. Electro-magnetic Holders*
- 1 Ea. Protector Bars
- 1 Ea. Kick Plates
- 1 Set Smoke Seals
- * Connect to Fire/Smoke Alarm System.

19. HW SET 19 (Each Door to Have):

- 4 Ea. Pocket Pivots
- 1 Ea. Exit Devices
- 1 Ea. Door Closers

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- 1 Ea. Electro-magnetic Holders*
- 1 Ea. Protector Bars
- 1 Ea. Kick Plates
- 1 Set Smoke Seals
- * Connect to Fire/Smoke Alarm System.

20. HW SET 20 (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Exit Devices
- 1 Ea. Door Closers
- 1 Ea. Electro-magnetic Holders*
- 1 Ea. Protector Bars
- 1 Ea. Kick Plates
- 1 Set Smoke Seals
- * Connect to Fire/Smoke Alarm System.

C. SECURITY HARDWARE:

21. HW SET SH-1 – Exterior Security Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Electric Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Ea. Cylinder Shields
- 1 Set Head and Foot Bolts
- 1 Ea. Door Position Switches
- 1 Set Pulls

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- 1 Ea. Overhead Door Stops
- 1 Set Weatherstripping
- 1 Ea. Astragals
- 1 Ea. Thresholds

22. HW SET SH-2 – Exterior Security Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Ea. Cylinder Shields
- 1 Ea. Door Position Switches
- 1 Set Flush Pulls
- 1 Ea. Door Closers
- 1 Ea. Overhead Door Stops
- 1 Ea. Weatherstripping
- 1 Ea. Thresholds

23. HW SET SH-3 – Exterior/Loading Doors (Each Door to Have):

- 1 Ea. Continuous Hinges
- 1 Set Cremone Bolts
- 1 Ea. Lock Mounts
- 1 Ea. Cylinder Shields
- 1 Ea. Door Position Switches
- 1 Set Pulls
- 1 Ea. Door Closers

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- 1 Ea. Door Edges
- 1 Ea. Armor Plates
- 1 Ea. Weatherstripping
- 1 Ea. Thresholds
- * Modify Door Edges and Armor Plate for Cremeone Bolts, as required.

24. HW SET SH-4 – Exterior Stair/Sallyport Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Electric Lock
- 1 Ea. Door Position Switches
- 1 Set Pulls
- 1 Ea. Push Plates
- 1 Ea. Door Closers
- 1 Ea. Overhead Door Stops
- 1 Ea. Wall or Floor Door Stops
- 1 Ea. Weatherstripping
- 1 Ea. Thresholds
- * Provide Overhead Door Stop where door does not open flush to wall.

25. HW SET SH-5 – Kitchen Secure Doors (Each Door to Have):

- 1 Ea. Continuous Hinges
- 1 Set Cremeone Bolts
- 1 Ea. Door Closers
- 1 Ea. Overhead Door Stops
- 1 Ea. Door Edges
- 1 Ea. Armor Plates
- 1 Ea. Protector Bars
- * Modify Door Edges and Armor Plate for Cremeone Bolts, as required.

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- 1 Ea. Door Closers
- 1 Ea. Overhead Door Stops
- 1 Ea. Wall or Floor Door Stops
- * Provide Overhead Door Stop where door does not open flush to wall.

29. HW SET SH-9 – Interior Security Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Electric Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Ea. Escutcheon
- 1 Ea. Door Position Switches
- 1 Ea. Door Closers
- 1 Set Automatic Flush Bolts
- 1 Set Pulls
- 1 Ea. Coordinator
- 1 Ea. Wall or Floor Stops

30. HW SET SH-10 – Sliding Corridor/Sallyport Doors (Each Door to Have):

- 1 Ea. Door Operator

31. HW SET SH-11 – Sliding Cell Doors (Each Door to Have):

- 1 Ea. Door Operater

32. HW SET SH-12 – Corridor Grille Doors (Each Door to Have):

- 3 Ea. Hinges

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- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Set Head and Foot Bolts
- 1 Ea. Door Position Switches
- 1 Ea. Door Closers
- 1 Set Pulls

33. HW SET SH-13 – Holding Room Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Set Pulls

34. HW SET SH-14 – Pipe Chase Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Set Flush Pulls

35. HW SET SH-15 – Visiting Room Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Set Pulls

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36. HW SET SH-16 – Exterior Recreation Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Ea. Door Position Switches
- 1 Set Pulls
- 1 Ea. Overhead Door Stops
- 1 Ea. Weatherstripping
- 1 Ea. Thresholds

37. HW SET SH-17 – Inmate Toilet Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Ea. Door Position Switches
- 1 Ea. Door Closers
- 1 Ea. Overhead Door Stops

38. HW SET SH-18 – Staff Toilet Doors (Each Door to Have):

- 3 Ea. Hinges
- 1 Ea. Heavy Duty Deadlock
- 1 Ea. Lock Mounts
- 1 Ea. Escutcheon

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- 1 Ea. Privacy Indicator
- 1 Ea. Door Closers

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SECTION 08800 - GLASS AND GLAZING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide glass and glazing in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Vision lites in doors and frames.
2. Information window with speaker holes.
3. Bullet resistant glass.

B. Related Sections:

1. Section 08110: Steel Doors and Frames.
2. Section 08651: Reinstalling Security Windows and Screens.

1.02 DEFINITIONS

A. Manufacturer is used in this Section to refer to a firm that produces primary glass or fabricated glass as defined in the referenced glazing standard.

B. Deterioration of Laminated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to glass breakage and practices for maintaining and

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cleaning laminated glass contrary to manufacturer's directions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated glass standard.

1.03 SYSTEM PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems that are produced, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading (where applicable), without failure including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight deterioration of glazing materials; and other defects in construction.

B. Glass Design: Glass thicknesses indicated on Drawings are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide vision lites for the various size openings in the thicknesses and strengths (annealed or tempered) to meet or exceed the following criteria:

1. Minimum glass thickness, nominally, in exterior work is 1/4 inch.
2. Minimum glass thicknesses, whether composed of annealed or tempered glass, are selected so the worst-case probability of failure does not exceed the following:
 - a. 8 lites per 1000, for lites set vertically or not over 15 degrees off vertical and under wind action. Determine minimum thickness of monolithic annealed glass according to ASTM E 1300. For other than monolithic annealed glass, determine thickness per glass manufacturer's standard method of analysis including applying adjustment factors to ASTM E 1300 based on type of glass.
3. Provide tempered safety glass where required by Code and for all doors and sidelights.

1.04 SUBMITTALS

A. Product data for each glass product and glazing material indicated.

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B. Samples for verification purposes of 12-inch square samples of each type of glass indicated except for clear monolithic glass products, and 12-inch long samples of each color required (except black) for each type of sealant or gasket exposed to view. Instill sealant or gasket sample between two strips of material representative in color of the adjoining framing system.

C. Product certificates signed by glazing material manufacturers certifying that their products comply with specified requirements.

1. Separate certifications are not required for glazing materials bearing manufacturer's permanent labels designating type and thickness of glass, provided labels represent a quality control program of a recognized certification agency or independent testing agency acceptable to authorities having jurisdiction.

2. Submit certification of compliance with safety glazing standards.

D. Compatibility test report from manufacturer of insulating glass edge sealant indicating that glass edge sealants were tested for compatibility with other glazing materials including sealants, glazing tape, gaskets, setting blocks, and edge blocks.

1.05 QUALITY ASSURANCE

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. FGMA Publications: "FGMA Glazing Manual."

2. AAMA Publications: AAMA TIR-A7 "Sloped Glazing Guidelines" and "Glass Design for Sloped Glazing."

3. LSGA Publications: "LSGA Design Guide."

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4. SIGMA Publications: TM-3000 "Vertical Glazing Guidelines" and TB-3001 "Sloped Glazing Guidelines."

B. Safety Glass: Products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.

1. Subject to compliance with requirements, provide safety glass permanently marked with certification label of Safety Glazing Certification Council (SGCC) or other certification agency acceptable to authorities having jurisdiction.

C. Glazier Qualifications: Engage an experienced glazier who has completed glazing similar in material, design, and extent to that indicated for Project with a record of successful in-service performance.

D. Single-Source Responsibility for Glass: Obtain glass from one source for each product indicated below:

1. Primary glass of each (ASTM C 1036) type and class indicated.
2. Heat-treated glass of each (ASIM C 1048) fully tempered condition.
3. Laminated glass of each (ASTM C I 172) kind indicated.
4. Insulating glass of each construction indicated.

E. Single-Source Responsibility for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

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1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials to comply with manufacturer's directions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1. Where insulating glass units will be exposed to substantial altitude changes, comply with insulating glass fabricators recommendations for venting and sealing to avoid hermetic seal ruptures.

1.07 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing materials manufacturer or when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Install liquid sealants at ambient and substrate temperatures above 40 deg F (4 deg C).

2.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the products specified throughout this Section.

2.02 PRIMARY FLOAT GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Class as indicated below, and Quality q3 (glazing select).

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1. Class I (clear) unless otherwise indicated.

- B. Refer to Primary Clear Float Glass Product Data Sheet for Class I uncoated tinted glass for monolithic glazing.

- C. Refer to requirements for sealed insulating glass units for performance characteristics of assembled units composed of tinted glass, coated or uncoated, relative to visible light transmittance, U-values, shading coefficient, and visible reflectance.

2.03 HEAT-TREATED (FULLY TEMPERED) FLOAT GLASS PRODUCTS, GENERAL

- A. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.

2.04 HEAT-TREATED (FULLY TEMPERED) FLOAT GLASS

- A. Uncoated, Clear, Heat-Treated Float Glass: ASTM C 1048, Condition A (uncoated surfaces), Type I (transparent glass, flat), Class I (clear), Quality q3 (glazing select), kind as indicated below,

1. Kind FT (fully tempered) where indicated.

- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering heat-treated glass products that may be incorporated in the Work include, but are not limited to, the following companies.

1. AFG Industries, Inc.

2. Cardinal 1G.

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3. Saint-Gobain.
4. Falconer Glass Industries.
5. Glasstemp, Inc.
6. Guardian Industries Corp.
7. Tempglass.
8. Viracon, Inc.
9. Or an approved equal.

2.05 WIRED GLASS

A. Wired Glass: ASTM C 1036, Type II (patterned and wired glass, flat), Class I (clear), Quality q8 (glazing); 1/4 inch thick; of form and mesh pattern indicated below:

1. Polished Wired Glass: Form I (wired, polished both sides), and as follows:
 - a. Mesh m2 (square).

B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering wired glass products that may be incorporated in the Work include, but are not limited to, the following companies.

1. Asahi Glass Co.
2. Central Glass Co., Ltd.

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3. Nippon Sheet Glass Ltd.
4. Pilkington Sales (North America) Ltd.
5. Or an approved equal.

2.06 LAMINATED GLASS PRODUCTS

A. Laminated Glass Products: Comply with ASTM C 1172 for kinds of laminated glass indicated and other requirements specified, including those in Laminated Glass Product Data Sheet at the end of this Section. Refer to primary and heat-treated glass requirements relating to properties of glass products comprising laminated glass products.

B. Interlayer: Interlayer material as indicated below, in clear or colors, and 0.060 inch thick with a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after laminating glass lites and installation,

1. Interlayer Material: Polyvinyl butyral sheets.
2. Available Products: Subject to compliance with requirements, the plastic interlayer products that may be incorporated in the Work include, but are not limited to, the following:
 - a. Saflex, Monsanto Co.
 - b. Butacite, E. I. du Pont de Nemours & Co., Inc.
 - c. Or an approved equal.

C. Laminating Process: Fabricate laminated glass to produce glass free of foreign substances and air or glass pockets as follows:

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1. Laminate lites with polyvinyl butyral interlayer in autoclave with heat plus pressure.

2.07 INSULATING GLASS PRODUCTS

A. Sealed Insulating Glass Units: Preassembled units consisting of organically sealed lites of glass separated by dehydrated air spaces complying with ASTM E 774 and with other requirements indicated, including those in Insulating Glass Product Data Sheet at the end of this Section.

1. For properties of individual glass lites making up units, refer to requirements specified elsewhere in this Section applicable to types, classes, kinds, and conditions of glass products comprising lites of insulating glass units.

2. U-values are expressed as Btu/hr x sq. ft. x deg F (W/sq. m x K).

2.08 ELASTOMERIC GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:

1. Compatibility: Select glazing sealants and tapes of proven compatibility with other materials they will contact, including glass products, seals of insulating glass units, and glazing channel substrates, under conditions of installation and service, as demonstrated by testing and field experience.

2. Suitability: Comply with sealant and glass manufacturer's recommendations for selecting glazing sealants and tapes that are suitable for applications indicated and conditions existing at time of installation.

3. Colors: Provide color of exposed joint sealants to comply with the following:

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a. Provide selections made by Resident Engineer from manufacturers full range of standard colors for products of type indicated.

B. Elastomeric Glazing Sealant Standard: Provide manufacturers standard chemically curing, elastomeric sealants of base polymer indicated that comply with ASTM C 920 requirements indicated on each Elastomeric Glazing Sealant Product Data Sheet at the end of this Section, including those referencing ASTM classifications for Type, Grade, Class and Uses.

1. Additional Movement Capability: Where additional movement capability is specified in Elastomeric Glazing Sealant Product Data Sheet, provide products, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, with the capability to withstand the specified percentage change in the joint width existing at time of installation and remain in compliance with other requirements of ASTM C 920 for uses indicated.

2.09 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100 percent, non-staining and non-migrating in contact with nonporous surfaces, with or without spacer rod as recommended by tape and glass manufacturers for application indicated, packaged on rolls with a release paper backing, and complying with AAMA 800 for products indicated below:

1. AAMA 804.1.
2. AAMA 806.1.
3. AAMA 807.1

B. Expanded Cellular Gluing Tape: Closed-cell polyvinyl chloride foam tape, factory coated with adhesive on both surfaces, packaged on rolls with release liner protecting adhesive, and complying with AA.MA 800 for product 810.5.

C. Available Products: Subject to compliance with requirements, glazing tape that may be incorporated in the Work includes, but is not limited to, the following (approved equals will also be accepted):

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1. Back-Bedding Mastic Glazing Tape Without Spacer Rod:
 - a. PTI 303 Glazing Tape (shimless), Protective Treatments, Inc.
 - b. S-M 5700 Poly-Glaze Tape Sealant, Schnee-Morehead Inc.
 - c. Tremco 440 Tape, Tremco Inc.
 - d. Extru-Seal, Pecora Corp.
 - e. PTI 606 Architectural Sealant Tape, Protective Treatments, Inc.
 - f. Dyna-Seal, Pecora Corp.
 - g. PTI 626 Architectural Sealant Tape, Protective Treatments, Inc.
 - h. S-M 5710 H.P Poly-Glaze Tape Sealant, Schnee-Morehead, Inc.
 - i. SST-800 Tape, Tremco, Inc.

2. Back-Bedding Mastic Glazing Tape With Spacer Rod:
 - a. PTI 303 Glazing Tape (with shim), Protective Treatments, Inc.
 - b. Pre-shimmed Tremco 440 tape, Tremco, Inc.

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- c. PTI 606 Architectural Sealant Tape, Protective Treatments, Inc.

- 3. Expanded Cellular Glazing Tape:
 - a. Norseal V-980 Closed-Cell Glazing Tape, Norton Company.

2.10 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:

- 1. Neoprene, ASTM C 864.

- 2. EPDM, ASTM C 864.

- 3. Silicone, ASTM C 1115.

- 4. Thermoplastic polyolefin rubber, ASTM C 1115.

- 5. Any material indicated above.

B. Soft Compression Gaskets: Extruded or molded closed-cell, integral-skinned gaskets of material indicated below, complying with ASTM C 509, Type II, black, and of profile and hardness required to maintain watertight seal:

- 1. Neoprene.

- 2. EPDM.

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3. Silicone.
4. Thermoplastic polyolefin rubber.
5. Any material indicated above.

C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following companies.

1. Advanced Elastomer Systems, L.P.
2. Schnee-Morehead, Inc.
3. Tremco. Inc.
4. Or an approved equal.

2.11 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials involved for glazing application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85 plus or minus 5.

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- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (sidewalking).
- F. Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-staining, non-extruding, non-outgassing, strips of closed-cell plastic foam of density, size, and shape to control sealant depth and otherwise contribute to produce optimum sealant performance,
- G. Perimeter insulation for Fire-Resistive Glazing: Identical to product used in test assembly to obtain fire-resistive rating.
- H. Information Window: Provide laminated glass assembly of the sizes shown on the drawings, with stainless steel fasteners to form the speaker window requirement.
- I. Speaker Holes: Provide clear anodized aluminum speak holes, circular anodized aluminum, of diameter shown on the drawings, as manufactured by Nissen & Company, or approved equal.
- J. Security Glazing (S): Provide laminated security glass consisting of sheets of clear glass and plastic complying with ASTM C 1036, Type I, Class I, quality g3; permanently laminated together with a clear plastic polyvinyl butyral interlayer. Laminated glass assemblies shall have edges factory-sealed prior to proprietary chemical tempering.
1. Thickness: 11/16 inches, unless otherwise indicated.
 2. Selected Product: Provide "Secur-Tem + Poly 2116" as manufactured by Globe Amarada Glass Co., or approved equal acceptable to DOC.
 3. Security Requirements: HP White I. Level A ballistic II forced entry.

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2.12 FABRICATION OF GLASS AND CLEAR GLAZING PRODUCTS

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.
- B. Clean cut or flat grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with indoor and outdoor faces.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine glass flanging, with glazier present, for compliance with the following:
1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
 2. Presence and functioning of weep system.
 3. Minimum required face or edge clearances.
 4. Effective sealing between joints of glass-framing members.
- B. Do not proceed with glazing until unsatisfactory conditions have been corrected.

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3.02 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

3.03 GLAZING, GENERAL

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, except where more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass from edge damage during handling and installation as follows:

1. Use a rolling block in rotating glass units to prevent damage to glass corners. Do not impact glass with metal framing. Use suction cups to shift glass units within openings; do not raise or drift glass with a pry bar. Rotate glass lites with flares or bevels on bottom horizontal edges so edges are located at top of opening, unless otherwise indicated by manufacturer's label.

2. Remove damaged glass from Project site and legally dispose of off site. Damaged glass is glass with edge damage or other imperfections that, when installed, weaken glass and impair performance and appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

D. Install elastomeric setting blocks in sill rabbets, sized and located to comply with referenced glazing standard, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

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F. Provide spacers for glass sizes larger than 50 unites inches (1250 mm) (length plus height) as follows:

1. Locate spacers inside, outside, and directly opposite each other. Install correct size and spacing to preserve required face clearances, except where gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and comply with system performance requirements.

2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

G. Provide edge blocking to comply with requirements of referenced glazing publications, unless otherwise required by glass manufacturer.

H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

I. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

J. Square cut wedge-shaped gaskets at corners and install gaskets in manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.04 TAPE GLAZING

A. Position tapes on fixed stops so that when compressed by glass their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously but not in one continuous length. Do not stretch tapes to make them fit opening.

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- C. Where framing joints are vertical, cover these joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover these joints by applying tapes to jambs and then to heads and sills.
- D Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until just before each lite is installed.
- F. Apply heel bead of elastomeric sealant.
- G Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.05 GASKET GLAZING (DRY)

- A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.
- B. Secure compression gaskets in place with joints located at corners to compress gaskets producing a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- C. Install gaskets so they protrude past face of glazing stops.

3.06 SEALANT GLAZING (WET)

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- A. Install continuous spacers between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel weep systems until sealants cure. Secure spacers in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass. Install pressurized gaskets to protrude slightly out of channel to eliminate dirt and moisture pockets.

END OF SECTION

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SECTION 09200 - LATH AND PLASTER

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide lath and plaster work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Metal furring and lathing.
2. Suspension system for metal lath for plaster.
3. Gypsum plastering with modified gypsum plaster finish coat.
4. Portland cement plaster for security ceilings.
4. Inspection and repair of existing furred and suspended metal lath.
5. Cutting, patching and blending existing plaster.
7. Patching of perlite plaster fireproofing.

B. Related Sections:

1. Section 02050 - Demolition.
2. Section 07250 - Fireproofing.
2. Section 07900 - Joint Sealants.
4. Section 09220 - Ornamental Plaster Restoration.
5. Section 09250 - Gypsum Board Assemblies.
6. Section 09900 - Painting.
7. Section 09910 - Paint Removal.

1.02 DEFINITIONS - DEFECTIVE

A. Plaster is considered defective if it is cracked, crumbling, crystallized or chalking, rust

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stained or if any layer is separated from its substrate.

- B. Metal lath is considered defective if rust is exposed through plaster or if spacing of metal supports exceeds the performance criteria for that type of lath.
- C. Furring and runners are considered defective if rust or damage has visibly reduced section of metal or if spacing of metal supports exceeds the performance criteria for suspended or furred ceiling or if furring and runners have been cut or damaged by attachment of ductwork or piping.
- D. Wire ties are considered defective if rusted or damaged.
- E. Hangers are considered defective if rust and damage have visibly reduced section. Hangers are considered defective if concrete slab exhibits cracking, spalling or efflorescence in the immediate area of hanger attachment to concrete slab.

1.03 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an Installer who has recent successful experience in lath and plaster projects similar to the work described in this Section.
- B. Coordination of Work: Coordinate layout and installation of suspension system for suspended ceilings and soffits with other work supported by, or penetrating through, ceilings and soffits prior to installation.
 - 1. Proceed with re-supporting of primary and secondary furring, runners and hangers only after mechanical, plumbing, fire protection and electrical coordination is completed and approved.
 - 2. Coordinate with removal trades and masonry trades to maintain masonry supports of furring channels.
 - 3. Coordinate with fireproofing trades to assist in the location and sequence of repair to fireproofing of new and existing structure prior to the installation of plaster work.
- C. Metal Lath and Framing Standards: Comply with the applicable requirements of the following standards:
 - 1. "Specifications for Metal Lath and Furring" by the Metal Lath/Steel Framing Association.
 - 2. "Specification for Metal Lath and Furring" by the NAAMM.

1.04 MOCK-UPS AND TESTING

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A. Field Mock-Ups: Prior to plastering, provide 4' x 4' mock-ups panels for each type of finish and application required, where directed. Show the proposed range of color, texture and workmanship to be expected in completed work. Obtain Resident Engineer's acceptance of panels visual quality before start of work.

B. Provide field mock-ups as follows:

1. Suspended plaster blended to existing plaster.
2. Plaster on furred metal lath wall blended to existing plaster.
3. Plaster on concrete masonry unit blended to existing plaster.

1.05 SUBMITTALS

A. Product Data: Submit manufacturer's product data for plaster materials, additives, admixtures, lath, metal supports and accessories.

B. Material Certificates: Submit producer's certificate for each kind of plaster aggregate to show that materials comply with requirements.

C. Field verify the location of main runners and indicate them on coordination drawings.

D. Fireproofing Data: Submit UL Design Number(s) for proposed assemblies along with UL description of assemblies and approvals as required by New York City Building Code.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original containers with identification of product and manufacturer.

B. Store materials inside, under cover and keep them dry, protected from weather, contamination, aging, corrosion, and damage. Protect metal corner beads and trim from being bent or damaged.

1.07 PROJECT CONDITIONS

A. Environmental Requirements, General: Comply with requirements of plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after application of plaster.

B. Maintain a uniform temperature of not less than 55 deg. F, nor more than 80 deg. F, for not less than 1 week before plaster application, during application, and until

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plaster is dry but for not less than one week after application.

- C. Ventilation: Ventilate building spaces to remove excess moisture, immediately after plaster is applied and until it sets. Maintain adequate ventilation to control humidity (between 40 and 75% relative humidity) for one week prior, during and at least one week after plaster application.
- D. Protect contiguous work from soiling, splattering and other harmful effects which might result from plastering.
- E. Do not apply over saturated masonry surfaces including furred systems. Notify Owner's Representative immediately if conditions are encountered.
- F. Dust: Schedule installation and protect masonry, gypsum lath, intermediate plaster coats and finish coat from dust and debris which may affect bonding.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. General: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
- B. Manufacturers of Metal Lath and Accessories; or approved equal.
1. Gold Bond Building Products Div., National Gypsum Co.
 2. Milcor Division; Inryco, Inc.
 3. United States Gypsum Co.
- C. Manufacturers of Gypsum Plaster, Base Coat and Finish Coat Lime; or approved equal:
1. Gold Bond Building Products Div., National Gypsum Co.
 2. United States Gypsum Co.
- D. Manufacturers for Portland Cement; or approved equal:
1. Lone Star Cement
 2. Lehigh Portland Cement Company
- E. Manufacturers of Bonding Agents; or approved equal:

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1. Larsen Products Corporation
2. Thoro Bond

F. Reinforcing Fibers; or approved equal:

1. Sisal hemp fibers: Plastic Tooling Co., Extron, PA.
2. Polypropylene Fibers: Fibermesh Co., Oakdale, NY.

2.02 METAL SUPPORTS FOR CEILINGS AND SOFFITS

A. General: Size metal ceiling supports to comply with the following, unless otherwise indicated or required by New York City Building Code.

1. Interior Lathing and Furring: ASTM C 841.
2. Lathing and Furring for Portland Cement Plaster: ASTM C 1063.

B. Wire for Ties: ASTM A 641, 18 gauge minimum, Class 1 zinc coating, soft temper.

C. Rod or Flat Hangers: Mild steel, zinc or cadmium coated, 1/4" rods unless otherwise shown or required to meet code requirements. Flat hangers: min. 3/16" x 1" mild steel, galvanized per ASTM A 123.

D. Channels For Indirect Ceiling Systems: Cold-rolled steel, 0.0598" minimum thickness of base metal, allowable bending stress of 18,000 psi, with rust inhibitive paint or galvanizing complying with ASTM A 525 for G60 coating designation, and as follows:

1. Carrying Channels: 1-1/2" deep x 7/16" wide flanges, 475 lbs. per 1000' painted, 508 lbs. per 1000' galvanized.

2. Furring Channels: 3/4" deep x 7/16" wide flanges, 300 lbs per 1000' painted, 316 lbs per 1000' galvanized.

3. Steel Studs for Furring Channels: ASTM C 645, minimum 0.0179 inch thickness of base metal. Provide standard depth as shown.

4. Steel Rigid Furring Channels: ASTM C 645, hat-shaped, depth of 7/8 inch, and minimum of 0.0179 inch thickness of base metal.

5. Attachment of Furring to Suspended Members: Minimum 130 degree bend at rods and 3/8 inch round head stove bolts at flat hangers.

E. Support Systems: Support System components to meet requirements of New York

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City Building Code.

F. Hanger Anchorage Devices: Provide devices appropriate for anchorage to the structure whose suitability has been proven through certified test data, and as follows:

1. General: Size devices to develop full strength of hanger but not less than 3 times calculated hanger loading, except size direct pull-out concrete inserts for 5 times the calculated hanger loading. All hanger anchorage shall support a minimum of 200 pounds deadload.

2. Concrete Slabs - 4" Minimum: Provide drilled expansion type anchors of size to suit the load.

3. Provide appropriate code approved hangers where other support conditions exist.

2.03 LATH

A. Expanded Metal Lath: Provide lath complying with ASTM C 847 for type, configuration and other characteristics indicated below, painted after fabrication.

1. Diamond Mesh Lath: Comply with the following requirements:

- a. Configuration: Flat or self-furring as applicable to substrate.
- b. Weight: 3.4 lbs. per sq. yd.

B. Lath Attachment Devices: Devices as required by referenced standards and recommended by lath manufacturer for secure attachment of lath.

2.04 PLASTER ACCESSORIES

A. General: Comply with ASTM C 1063; coordinate depth of accessories with thicknesses of plaster.

B. Metal Corner Reinforcement: Expanded large-mesh diamond mesh lath fabricated from zinc-alloy or welded wire mesh fabricated from 0.0475-inch-diameter zinc-coated (galvanized) wire and specially formed to reinforce external corners of Portland cement plaster on exterior exposures while allowing full plaster encasement.

C. Metal Corner Beads: Small nose corner beads fabricated from zinc alloy, with expanded flanges of large-mesh diamond lath to allow full encasement by plaster.

D. Strip Reinforcement: Smooth edge strips of expanded metal lath fabricated from

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painted or zinc-coated (galvanized) steel sheet.

E. Casing Beads: Square-edged style, with 7/8" expanded metal flanges to suit plaster bases indicated; of zinc-coated (galvanized) steel.

F. Control Joint: Galvanized steel "M" and "W" type. Taped joints at flat or re-entrant corners - 7/8" expanded metal ground.

2.05 LIME PORTLAND CEMENT PLASTER MATERIALS

A. Base Coat Cement: ASTM C 150, Type I or II, Portland cement and autoclaved lime complying with ASTM C 270.

B. Finish Coat: The finish coat shall consist of lime (ASTM C 206, Type S) and gypsum gauging plaster (ASTM C 28) for smooth trowel finish.

C. Aggregate for Base Coats: ASTM C 897.

D. Aggregate for Finish Coat: ASTM C 897, manufactured from white sand.

E. Fibers for Base Coat: Sisal hemp fibers or alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in Portland cement plaster.

2.06 PORTLAND CEMENT PLASTER MIXES AND COMPOSITIONS

A. General: Comply with ASTM C 926 for Portland cement plaster base and finish coat mixes as applicable to plaster bases, materials, and other requirements indicated.

B. Portland Cement Plaster Base Coat Mixes and Compositions: Proportion materials for respective base coats in parts by volume for cementitious materials and in parts by volume per sum of cementitious materials for aggregates to comply with the following requirements for each method of application and plaster base indicated. Adjust mix proportions below within limits specified to attain workability.

1. Fiber Content: Add fiber to following mixes after ingredients have mixed at least 2 minutes. Comply with fiber manufacturer's directions but do not exceed 2 lbs. per cu. ft. of cementitious materials. Reduce aggregate quantities accordingly to maintain workability.

C. Three-Coat work Over Metal Lath: Base coats as indicated below:

1. Scratch Coat: 15 percent Portland cement to 85 percent lime, 2-1/2 to 3 parts sand.

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2. Brown Coat: 15 percent Portland cement to 85 percent lime, 3 parts sand.

D. Job-Mixed Plaster Finish Coat:

1. For Gypsum Gauging Plaster: 1 part gypsum gauging plaster and 2 parts lime. Comply with ASTM C 842.

E. Crack Patching in Plaster Base Coat:

1. Brown Coat: 15 percent Portland cement to 85 percent lime, and fine (100% passing through 30 mesh screen) silica sand aggregate and 2 to 1 ratio of water to polymer admixture.

F. Crack Patching in Gypsum Finish Coat:

1. Finish Coat: 1 part gauging plaster and 2 parts lime putty and 2 to 1 ratio of water to polymer admixture.

2.07 MISCELLANEOUS MATERIALS

A. Water for Plaster: Drinkable, free of substances capable of affecting plaster or of damaging lath or accessories.

B. Bonding Agent for Portland Cement Plaster: ASTM C 631, equal to "Plaster Weld" by Larsen Products Corp.

C. Acid Etch Solution: Muriatic acid, mixed one part acid to 6 to 10 parts water.

2.8 MIXING

A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

2.09 GYPSUM PLASTER MATERIALS, USED AS FIREPROOFING

A. Base Coat Plaster: ASTM C 28, gypsum ready-mixed plaster with perlite aggregate.

B. Finish Coat Plaster: High-strength gypsum gauging plaster, ASTM C 28, with a minimum average dry compressive strength of 5,000 psi per ASTM C 472 for a neat mix.

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- C. Finishing Hydrated Lime: ASTM C 206, Type N, normal hydrated lime for finishing purposes.
- D. Aggregates for Base Coat Plaster: ASTM C 35; graded per ASTM C 842, perlite aggregate.
- E. Manufacturers of Perlite Plaster; or approved equal:
1. Pennsylvania Perlite Corp. of York.
 2. Redco, Inc.
 3. Supreme Perlite Co.
 4. Zonolite Construction Products, Division of W.R. Grace & Co.

2.10 GYPSUM PLASTER MIX AND COMPOSITION USED AS FIREPROOFING

- A. Plaster Base Coat Composition: Comply with ASTM C 842 and manufacturer's directions for gypsum plaster base coat proportions that correspond to application method and plaster bases indicated below. Comply with UL Design and New York City Building Code requirements regarding mix design.
1. Three-Coat Work Over Metal Lath: Base coats, as indicated below:
 - a. Scratch Coat: High-strength gypsum plaster with perlite aggregate.
 - b. Brown Coat: High-strength gypsum plaster with perlite aggregate.
- B. Finish Coat: Proportion materials in parts by dry weight for finish coat to comply with the following requirements.
1. Troweled Finishes: Finish coat as indicated below:
 - a. High-Strength Gypsum Gauging Plaster: 1 part plaster and 1 part lime.

PART 3 - EXECUTION

3.01 INSTALLATION OF LATHING AND FURRING, GENERAL

- A. Interior Lathing and Furring Installation Standard: Install lathing and furring materials for Portland cement plaster to comply with ASTM C 1063 and the Standards stated hereinbefore.

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B. Supplementary Framing: Install supplementary framing, at terminations in the work and for support of fixtures, toilet accessories, and similar work to comply with recommendations of gypsum plaster manufacturer, or "Gypsum Construction Handbook" published by United States Gypsum Co.

C. Isolation: Isolate lathing and metal support system to prevent transfer of structural loading into the work. Install slip or cushion type joints to absorb deflections but maintain lateral support.

D. Frame both sides of control and expansion joints independently, and do not bridge joints with furring and lathing.

3.02 INSTALLATION OF CEILING AND SOFFIT SUSPENSION SYSTEMS

A. Preparation and Coordination: Coordinate installation of suspension systems with overhead structural systems to ensure that anchorage provisions will receive ceiling hangers in a manner that will develop their full strength and at required spacings.

B. Hanger Installation: Attach hangers to structure above ceiling to comply with ML/SFA "Specifications for Metal Lathing and Furring" and with referenced standards. Do not use metal deck tabs. Where structure above is not adequate to support suspension system attach suspension system to supplemental support system specified in Division 5.

C. Reuse of Existing Hangers: Replace defective hanger with materials to meet the performance criteria herein.

D. Reuse of Existing Furring and Suspension Systems: Replace existing defective metal lath suspension systems with materials to meet the performance criteria.

E. Partial Reuse of Existing Furred or Suspended Ceilings: Cut back all runners and re-support with new hangers to meet performance criteria. Provide runner parallel along entire perimeter of cut back area within 8" of cut edges if none exist to remain. Repair existing cut carrying angles with splices to develop full strength or replace carrying angle. Reattach loose hanger supports.

F. Install suspension system components of sizes and spacings required by referenced lathing and furring installation standards. The following sizes are minimum. Increase sizes to accommodate loading as required by New York City Building Code.

1. Hangers: Space hangers not over 4'-0" o.c. parallel with, and not over 3'-0" perpendicular to, direction of carrying and angles channels, unless otherwise indicated, and within 6" of carrying channel ends. Do not increase existing spacing at hangers at existing angles and channels.

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2. Carrying Channels: Space carrying channels not over 3'-0" o.c. with 4'-0" o.c. hanger spacing.

3. Furring Channels to Receive Metal Lath: Space furring channels not over 16" o.c. for 3.4 lb. diamond mesh lath.

3.03 EXISTING CEILING SUSPENSION SYSTEMS LEFT IN PLACE

A. General: Inspect areas requiring patching. Examine existing suspension system. Where suspension system support members are damaged, the covering plaster and lath or other finish, must be removed to the extent necessary to permit the repairs to be made. Damaged elements that shall be removed include, but are not limited to, furring members that are defective or otherwise unsuitable for reuse; and hangers and hanger attachments that are unsuitable for reuse. Unsuitable for reuse means that the hanger cannot support the imposed loads.

B. Existing hangers and hanger attachments that have been left in place where suspended ceiling furring has been removed shall be examined to verify their suitability to support the new furring. Those found to be unsuitable shall be removed by cutting close to slab. Existing hangers that are sound, adequate, and suitable for reuse may be left in place, or removed, cleaned and reused.

C. For patching existing ceilings, use approved hangers and hanger attachments. Provide new hangers and attachments where existing have been removed or improperly placed or otherwise unsuitable, and where there are no existing hangers.

D. Splice new furring members to existing members using procedures recommended by furring manufacturer for splice joint.

E. Prime all exposed metal with the exception of zinc coated or stainless steel members with a zinc rich primer.

F. Schedule work to eliminate other trades from loading suspension systems after repairs and new work is installed.

3.04 METAL LATHING

A. Install expanded metal lath for the following applications, to comply with referenced lathing installation standards.

1. Ceilings, Soffits and Walls: Diamond mesh lath, 3.4 lbs. per sq. yd.

B. Existing metal lath that is defective or otherwise unsuitable shall be removed. 4" minimum at sound lath shall be left exposed to tie to the new lath.

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1. Provide new metal lath where existing has been removed. Metal lath shall be lapped over and tied to existing lath following procedures recommended by lath manufacturer for joining sections of lath, and referenced lathing installation standards.
2. Cracks shall be widened to about 6". The plaster shall be removed down to the lath or solid substrate. Strip lath shall be placed over substrate, centered at the location of the crack and securely fastened in place before the plaster is repaired.
3. Install metal lath to comply with referenced standards unless indicated otherwise. Lath for patching and extending existing work shall match existing installation, but never should be of less quality or of different design from those currently recognized as proper for that installation.
4. Any trace of paint, dirt, oil, grease and/or other foreign matter shall be removed from surfaces to receive new lath or plaster.

3.05 INSTALLATION OF PLASTERING ACCESSORIES

A. General: Comply with referenced lathing and furring installation standards for installation of plaster accessories. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases.

B. Accessories: Provide the following:

1. Corner Reinforcement: Install at external corners.
2. Corner Beads: Install at external corners.
3. Casing Beads: Install at all terminations of plaster work, at all mechanical, electrical, communications and other miscellaneous openings in the plaster work, except where plaster passes behind and is concealed by other work.
4. Control Joints: Install control joints at locations indicated or, if not indicated, at locations complying with the following criteria and approved by Resident Engineer.
 - a. Where plaster panel sizes or dimensions change, extend joints full width or height of plaster membrane.
 - b. For Lime Portland Cement Plaster: Where distances between and areas within control joints exceed, respectively, the following measurements: 30 feet in either direction.

C. Existing Plaster Accessories: Remove where damaged and where necessary to carry out the work.

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1. Install new plaster accessories where existing accessories have been removed. Anchor securely to substrates. Match lines of existing accessories where the total plaster thickness increases because new plaster is placed over existing plaster, it will be necessary to remove the existing accessories and provide new accessories properly sized for the new conditions.

3.06 PLASTER APPLICATION, GENERAL

A. Prepare monolithic surfaces for bonded base coats and use bonding compound or agent to comply with requirements of referenced plaster application standards for conditioning of monolithic surfaces.

B. Tolerances: Do not deviate more than 1/8" in 10'-0" from a true plane in finished plaster surfaces, as measured by a 10'-0" straightedge placed at any location on surface.

C. Grout hollow metal frames, with base coat plaster and prior to lathing where necessary. Except where full grouting is required for fire-resistance rating, grout 6" lengths at each anchorage.

D. Sequence plaster application with the installation and protection of other work, so that neither will be damaged by the other.

E. Plaster flush with metal frames and other built-in metal items, unless otherwise indicated. Where plaster is not terminated at metal by casing beads, cut base coat free from metal before plaster sets and groove finish coat at the junctures with metal.

F. Apply thicknesses and number of coats of plaster as indicated; or as required by referenced standards. Minimum thickness is 3/4" and as required to match existing adjoining work.

G. Concealed Plaster: Where plaster will be permanently concealed, finish-coat may be omitted; where concealed behind cabinets, furnishings and equipment, apply finish-coat; where used as a base for adhered finishes, omit finish-coat and coordinate thickness with dimension as shown, and comply with tolerances specified.

3.07 LIME PORTLAND CEMENT PLASTER APPLICATION

A. Plaster Application Standard: Apply Portland cement plaster materials, compositions, and mixes to comply with ASTM C 926. Minimum thickness for plaster work is 3/4 inch and as required to match existing adjoining work.

B. Number of Coats: Apply plaster as three-coat work, of composition indicated.

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1. Finish Coat: Trowel finish unless otherwise indicated; match Resident Engineer's sample for texture and color.

C. Time between coats shall allow for adequate plaster and bonding agent curing and drying.

3.08 CUTTING, PATCHING AND RESTORATION OF PLASTER

A. General: Cut, patch, point-up, repair and/or restore new and existing plaster as necessary to accommodate other work and to repair defects, and where bond to the substrate has failed. Use initial patches as mock-ups, when approved, for subsequent repairs.

B. Defective Plaster: Carefully remove soft, deteriorated, weak, unbounded, cracked, effloresced, broken, loose, re-crystallized, and otherwise damaged existing plaster back to masonry or lath and to solid adjacent plaster. The edges shall be rectilinear, clean, sharp, and beveled inward to permit keying repairs into existing materials.

1. Remove plaster by layers until a sound, well-adhered layer is encountered. Unsound or poorly adhered base coats shall be removed in step fashion so that each new coat in the path will lap over the underlying existing plaster coat.

2. Cracks: Enlarge cracks that are 1/16" wide or wider. Cut back to solid substrate using carborundum-tipped saw blade. Cut perpendicular to surface and straight. Do not further enlarge cracks except to remove soft, broken, or loose materials or to repair backup materials. Where approved, widen cracks and install strip lath over substrate centered at location of cracking before making plaster repairs.

3. Do not attempt to repair cracks until the underlying cause of the cracks has been identified and eliminated.

4. Do not attempt to repair more cracks than can be finished before the patching plaster has had a chance to set up.

C. Patching: Clean, prepare surface and moisten existing plaster to be patched, apply bonding agent and plaster to comply with referenced standards and manufacturer's recommendations. Finish coat patching over stable base coats will be acceptable. Where existing substrate is wire lath apply plaster following recommendation for new work on wire lath.

1. Direct Plastering: Except where metal lath is indicated, etch concrete and masonry surfaces for direct plastering. Wet surface, scrub with acid etch solution and rinse thoroughly; repeat if necessary for adequate plaster bond. Protect all adjacent materials from acid contact.

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2. Bonding Agents: Apply to every surface that will receive plaster. Apply complete bond coat over existing and new lime Portland cement plaster base coat prior to application of finish coat. Surfaces to which bonding agent is to be applied shall be clean and free from substances that will affect bond. Follow bonding agent manufacturer's recommendations in every instance. Permit bonding agent to dry properly before applying plaster. Do not exceed manufacturer's recommendations for application of plaster to bonding agent. Do not apply plaster to bonding agents contaminated with dust. Coordinate drying and curing time of plaster with application of bonding agents to prevent excessive drying of bonding agent.

3. Cleaning and Dampening Substrates: Sweep masonry and lath clean immediately before plaster is applied, and a bonding agent is applied. Dampen surfaces of existing plaster, unless the bonding agent manufacturer recommends otherwise.

4. Thickness and Number of Coats: At patches and extensions in existing work, match thickness of existing plaster, and make finish of patch or extension flush with existing plaster. New plaster patches or extensions, including all coats shall match adjacent, existing plaster thickness.

5. Each coat shall be allowed to cure and dry thoroughly before the succeeding coat is applied. Full-thickness patches shall be built-up in layers, the same as new work. Extensions and full-thickness patches shall be made using three-coat plaster applications. Two-coat plaster applications will be limited to those recommended by the plaster manufacturer and permitted by applicable ASTM standards and governing regulations.

6. Apply final coat of plaster to match and blend with existing plaster, where applicable.

7. After finishing plaster patches, remove plaster residue and lime from the plaster surface using clear water. When the water has dried, wipe the area with clean dry rags to remove plaster dust completely.

D. Finish: Sand smooth-troweled finishes lightly to remove trowel marks and arises. Repairs and extensions shall match existing finishes and be blended so that patches and extensions are indiscernible.

E. Replace plaster materials that are tested by other to contain excessive alkalis.

F. All surfaces are to be inspected by the painting contractor with the plaster contractor. Perform all required remedial work, to provide acceptable surfaces, ready for painting.

3.09 GYPSUM PLASTER APPLICATION USED AS FIREPROOFING

A. Interior Gypsum Plaster Application Standard: Apply gypsum plaster materials, composition, mixes, and finishes indicated to comply with ASTM C 842 and the UL Fire

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Resistance Directory and the requirements of the New York City Building Code.

B. Number of Coats: Apply gypsum plaster, of composition indicated, to comply with the following requirements.

1. Use three-coat work over metal lath or as required to achieve the fire resistance rating of the structural member that is patched.

C. Finish Coat: Apply finish coat to comply with the following requirements:

1. Troweled finish for gypsum finish coat plaster.

3.10 CLEANING AND PROTECTION

A. Remove temporary protection and enclosure of other work. Promptly remove plaster from surfaces which are not to be plastered. Repair floors, walls and other surfaces which have been stained, or damaged by plastering work. When plastering work is completed, remove unused materials, containers and equipment and clean floors of plaster debris.

B. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures plaster work being without damage or deterioration at time of Final Acceptance.

C. Protect furniture, equipment, carpet, light fixtures, fan coil enclosures, etc., at no additional cost to the Owner, including time required if the Contractor is required to return to correct plaster or painting deficiencies due to failure in workmanship or materials or an inability to meet the schedule.

END OF SECTION

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SECTION 09250 - GYPSUM DRYWALL

PART 1 - GENERAL

1.01 SUMMARY

A. WORK INCLUDED: Provide gypsum drywall work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Steel framing members to receive gypsum board.
2. Gypsum board screw - attached to steel framing and furring members.
3. Glass mesh mortar units.
4. Drywall finishing with joint tape-and-compound.
5. Security mesh (expanded metal) for application within drywall system.

B. RELATED WORK:

1. Section 05120 - Structural Steel.
2. Section 06100 - Rough Carpentry
3. Section 09900 - Painting
5. Section 09990 - Impact-Resistant Wall Covering

1.02 DEFINITIONS

A. GYPSUM BOARD CONSTRUCTION TERMINOLOGY: Refer to ASTM C-11 and GA-505 for definitions of terms for gypsum board construction not otherwise defined in this Section or other referenced standards.

1.03 SUBMITTALS

A. Submit manufacturer's technical product data for each type of product specified.

1.04 QUALITY ASSURANCE

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A. FIRE-RESISTANT RATINGS: Where indicated, provide materials and construction which are identical to those of assemblies whose fire-resistance rating has been determined in accordance with ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.

1. Provide fire-resistance rated assemblies, identical to those indicated by reference to GA File Nos. in GA-600 "Fire Resistance Design Manual" or to design designations in U.L. "Fire Resistance Directory" or in listing of other testing organizations acceptable to authorities having jurisdiction.

1.05 DELIVERY, STORAGE. AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

C. Handle gypsum boards to prevent damage to edges, ends and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1 .06 PROJECT CONDITIONS

A. ENVIRONMENTAL CONDITIONS, GENERAL: Establish and maintain environmental conditions for application and finishing gypsum boards to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.

B. MINIMUM ROOM TEMPERATURE: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing gypsum board, maintain not less than 50 deg F (10 deg C) for 48 hours prior to application and continuously thereafter until drying is complete.

C. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. ACCEPTABLE MANUFACTURERS: Subject to compliance with requirements, manufacturers offering standard steel doors and frames which may be incorporated in the

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Work include, but not limited to the following or Approved Equal:

1. Steel Framing and Furring:
 - a. Bostwick Steel Framing Co.
 - b. Dale Industries, Inc.
 - c. Gold Bond Building Products, Division of National Gypsum Co.
 - d. United States Gypsum Co.
 - e. Marino Industries Corp.
 - f. Incor, Inc.

2. Gypsum Boards and Related Products:
 - a. Centex American Gypsum Co.
 - b. Georgia-Pacific Corp.
 - c. Gold Bond Building Products, Division of National Gypsum Co.
 - d. United States Gypsum Co (USGC).

2.02 STEEL FRAMING COMPONENTS FOR SUSPENDED CEILINGS

- A. COLD-ROLED STEEL CHANELS: ASTM C 635; 16 gauge galvalume steel, 7/16 inch wide and 2 inches deep flanges.
- B. WIRE FOR HANGERS AND TIES: ASTM A 641; 9 gauge galvalume steel hanger wire, Class I, zinc coatings.
- C. STEEL RIGID FURRING CHANELS: ASTM C 645; 20 gauge galvalume steel, hat-shaped, depth of 7/8 inch.

2.03 STEEL FRAMING FOR WALLS AND PARTITIONS

- A. STEEL STUDS AND RUNNERS: ASTM C 645; 18 gauge galvalume steel, 3-5/8" deep.
- B. STEEL RIGID FURRING CHANELS: ASTM C 645; 20 gauge galvalume steel, hat-shaped, depth of 7/8 inch.

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C. Z-FURRING MEMBERS: ASTM A 525, C 60; 18 gauge galvalume steel, Z-shaped for mechanical attachment of insulation, to masonry/concrete walls.

2.04 GYP SUM DRYWALL

A. GENERAL: Provide Gypsum Board products which comply with ASTM C-36, with square or tapered edges and of types indicated, in maximum lengths available, 5/8" thickness unless otherwise indicated.

1. Fire-Resistance Rated: Type "X" for fire-resistance rated assemblies in all interior partitions, except in Toilet/Shower areas and in Janitor's Closets.

2. Water-Resistant/Fire-Resistance Rated: Water-Resistant, Type "X" for fire-resistance rated assemblies in Toilet/Shower areas and in Janitor's Closets; and in all exterior partitions.

3. Impact-Resistant/Abuse-Resistant Rated: Impact or Abuse Resistant, Type "X" for fire-resistance rated assemblies in all interior partitions, except specifically called out for Inmate Areas, which shall receive additional layer of "Impact Resistant Wall Covering" in Section 09990 - Impact-Resistant Wall Covering.

B. PRODUCTS: subject to compliance with requirements, provide one of the following products or Approved Equal:

1. Fire-Resistance Rated:

a. Sheetrock brand Firecode "Type X" Gypsum Board, by USGC.

b. ToughRock Fireguard "Type X" Gypsum Board, by Georgia-Pacific Gypsum Co.

c. Fire-Shield C "Type X" Wallboard, by Gold Bond Building Products, Div., National Gypsum Co.

2. Water-Resistant/Fire-Resistance Rated:

a. Sheetrock brand W/R (Water Resistant) Firecode "Type X" Gypsum Board, by USGC.

b. DensArmor Plus® High-Performance Interior Panel, by Georgia-Pacific Gypsum Co.

c. Fire-shield "Type X" MR (Moisture Resistant) Board, by Cold Bond Building Products, Div., National Gypsum Co.

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3. Impact-Resistant/Abuse-Resistance Rated:

a. Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC.

b. **DensArmor Plus® Impact-Resistant Interior Panels**, by Georgia-Pacific Gypsum Co.

c. Hi-Impact® XP® Gypsum Board with Sporgard, by Cold Bond Building Products, Div., National Gypsum Co.

2.05 CEMENTITIOUS BACKER UNITS

A. GENERAL: Provide cementitious backer units complying with ANSI A118.9, of thickness and width indicated below, and in maximum length available to minimize end-to-end butt joints.

1. Thickness: 5/8", unless otherwise indicated.

2. Width: Manufacturer's standard width but not less than 32 inches.

B. PRODUCTS: Subject to compliance with requirements, provide one of the following products or Approved equal:

1. DUROCK Interior Cement Board, by USGC.

2. DensShield Tile Backer Board, by Georgia-Pacific Gypsum Co.

3. Util-A-Crete Concrete Backer Board, by FinPan, Inc.

4. Glas-Crete Cementitious Backer Board, by Glascrete, Inc.

2.06 SECURITY MATERIALS

A. GENERAL: Provide security materials for gypsum drywall work of the type and grade as required for the partition assemblies in all inmate occupied areas.

B. SECURITY MESH: Provide security mesh sheets of expanded metal panels, minimum 9-gauge, galvanized steel with a G-90 coating weight.

1. Subject to compliance with requirements, provide security mesh "Amico", #ASM 1 .5 - 9F, as manufactured by Alabama Metal Industries Corp.

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C. Fasteners: Provide welds, mechanical fasteners and other means of attachment as recommended by the security mesh manufacturer.

2.07 IMPACT-RESISTANT WALL COVERINGS

A. SEMI-RIGID SHEET WALL COVERING: Provide manufacturer's standard textured, semirigid, fiberglass reinforced polyester (FRP) sheets. Material shall be chemical and stain resistant, abrasion resistant. Fiberglass Reinforced Polyester sheets shall comply with impact resistance and fire performance characteristics specified.

1. Sheet size: 4 by 8 feet or 4 by 10 feet.
2. Sheet Thickness: 0.090 inch thick.

B. PRODUCTS: Subject to compliance with requirements, provide products by one of the following:

1. Fiber-X Glasboard with "Surfaseal" panels, Kemlite Co.
2. PYRO PANL, Sequentia, Inc.
3. Kal-Lite LF & S, Kalwall Corp.
4. LascoBoard FireFlex 25/125, Philips Industries.

2.08 PARTITION TYPES

A. GENERAL: Provide following partition assemblies as required.

1. All partition assemblies are full height of minimum 8'-0" clear height, unless specifically noted otherwise, In case other sizes are required, the department shall make a note of the sizes as necessary.

B. PARTITION ASSEMBLIES:

1. Partition Type 1:

a. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal on one side only.

b. 2-1/2" deep, 18-gauge galvanized steel studs @ 16" o.c.

2. Partition Type 2:

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a. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

b. 2-1/2" deep, 18-gauge galvanized steel studs @ 16" o.c.

c. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

3. Partition Type 3:

a. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

b. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c. with R-19 Batt insulation.

c. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).

4. Partition Type 4:

a. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

b. 5-1/2" deep, 18-gauge galvanized steel studs @ 16" o.c. with R-19 Batt insulation.

c. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

5. Partition Type 5:

a. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

b. 5/8" Sheetrock brand Firecode "Type X" Gypsum Board, by USGC, or approved equal.

c. 5-1/2" deep, 18-gauge galvanized steel studs @ 16" o.c. with R-19 Batt insulation.

d. 5/8" Sheetrock brand Firecode "Type X" Gypsum Board, by USGC, or approved equal.

e. 5/8" thick Sheetrock brand FIBEROCK® VHI (Very High Impact) Abuse-Resistant Panels, by USGC, or approved equal.

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6. Partition Type 6:

- a. 1/2" thick Plywood Backing Panel, fire-retardant treated plywood, APA C-D PLUGGED NT with exterior glue.
- b. 1/2" thick Plywood Backing Panel, fire-retardant treated plywood, APA C-D PLUGGED NT with exterior glue.
- c. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c. with R-19 Batt insulation.
- d. 9-gauge expanded metal security mesh, galvanized steel w/ G-90 (on the inmate side), fastened to steel studs @ 16" x 16" o.c.
- e. 1/2" thick Plywood Backing Panel, fire-retardant treated plywood, APA C-D PLUGGED NT with exterior glue.
- f. 1/2" thick Plywood Backing Panel, fire-retardant treated plywood, APA C-D PLUGGED NT with exterior glue.

7. Partition Type 7:

- a. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.
- b. 5/8" thick sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal.
- c. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c. with R-19 Batt insulation.
- d. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal.
- e. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.

8. Partition Type 8:

- a. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.
- b. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).

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c. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).

d. 9-gauge expanded metal security mesh, galvanized steel w/ G-90 (on the inmate side), fastened to steel studs @ 16" x 16" o.c.

e. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c. w/ R-19 Batt insulation.

f. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).

g. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).

h. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.

9. Partition Type 9 (2-Hour Rated Interior Partition in Non-Security Areas):

a. 0.090" thick, Fiber-X Clasboard with "Surfaseal" panels by Kemlite Co. or approved equal.

b. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal.

c. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal.

d. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c. w/ R-19 Batt insulation.

e. 5/8" thick sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal.

f. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal.

g. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.

10. Partition Type 10 (2-Hour Rated Interior Partition in Security Areas):

a. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.

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- b. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).
- c. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).
- d. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).
- e. 9-gauge expanded metal security mesh, galvanized steel w/ G-90 (on the inmate side), fastened to steel studs @ 16" x 16" o.c.
- f. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c. w/ R-19 Batt insulation.
- g. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).
- h. 5/8" thick Sheetrock brand Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).
- i. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).
- j. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.

11. Partition Type 11 (Exterior Partition in All Areas):

- a. 0.090" thick, Fiber-X Glasboard with "Surfaseal" panels by Kemlite Co. or approved equal.
- b. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).
- c. 5/8" thick Sheetrock brand W/R (Water Resistant) Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).
- d. 5/8" thick Sheetrock brand W/R (Water Resistant) Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).
- e. 9-gauge expanded metal security mesh, galvanized steel (on the inmate side).
- f. 3-5/8" deep, 18-gauge galvanized steel studs @ 16" o.c., R-19 Batt

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insulation.

g. 5/8" thick Sheetrock brand W/R (Water Resistant) Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).

h. 5/8" thick Sheetrock brand W/R (Water Resistant) Firecode "Type X" Gypsum Board, by USGC or approved equal (Base Layer).

i. 5/8" thick DUROCK Interior Cement Board, by USGC or approved equal (Face Layer).

j. 7/8" deep, hat-shaped, Steel Rigid Furring Channels, 20-gauge.

k. 20-gauge vertical, corrugated, galvanized steel siding, factory finished enamel finish.

2.09 GYPSUM BOARD JOINT TREATMENT MATERIALS

A. Joint Tape: Paper reinforcing tape, unless otherwise indicated.

1. Use open-weave glass fiber tape where recommended by gypsum board manufacturer with use of setting-type joint compound.

B. Drying-Type Joint Compounds: Factory-prepackaged. vinyl-based products complying with the following requirements:

1. Ready-Mix Formulation: Factory-premixed.

2. All-purpose compound formulated for use as both taping and topping compound.

2.10 TRIM ACCESSORIES

A. General: ASTM C 1047; manufacturer's standard trim accessories of the types required for drywall work, formed of galvanized steel and beaded for concealment of flanges in joint compound. Provide corner-beads, L-type edge trim-beads, U-type edge trim-beads, and one-piece control joint beads.

B. Aluminum Edge Trim: Where indicated, provide manufacturer's standard extruded aluminum edge trim of profile shown or referenced by manufacturer's standard product designation, fabricated from aluminum alloy 6063 T5 complying with ASTM B 221, factory primed for field painting, unless otherwise indicated.

1. Products: Subject to compliance with requirements, provide extruded

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aluminum trim "Softforms" as manufactured by Pittcon Industries Inc., or approved equal.

- a. Double Corner Step: #SCS-2X (050-050); 1/2" x 1/2".
- b. Trim Reveal: #STR-050-050; 1/2"
- c. Wall Reveal Channel: #SWR-050-050; 1/2".
- d. "v" wall Reveal Channel: #SWR-V; 1/2".

2.11 MISCELLANEOUS MATERIALS

- A. Laminating Adhesives: Produce recommended by gypsum board manufacturers.
- B. Gypsum Board Screws: ASTM C 1002.
- C. Gypsum Board Nails: ASTM C 514.
- D. Concealed Acoustical Sealant: Comply with requirements specified in Section 07901 "Joint Sealants".
- E. Sound Attenuation Blankets: ASTM C 665, Type I, unfaced mineral fiber blanket insulation.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Ceiling Anchorages: Coordinate work to ensure that inserts and other anchorage provisions have been installed for ceiling hangers.

3.02 INSTALLATION OF FRAMING, GENERAL

- A. Installation Standard: Comply with ASTM C 754 and ASTM C 840. Provide support for all edges of gypsum board. Use screw fasteners only.
- B. Install supplementary framing, runners, furring, blocking and bracing at openings and terminations in gypsum drywall and where required for support of other work which cannot be adequately supported on gypsum board alone.

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1. Where handrails are attached to drywall, provide a 16 gauge 8" x 26" wide galvanized steel strip behind gypsum board.
- C. Do not bridge building expansion joints with support systems, frame both sides of joint with furring and other supports as indicated.
- D. Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to inserts, clips and other anchorage devices or fasteners as indicated.
- E. Install steel studs with bottom and top runner tracks anchored to substrates. Isolate system from building structure to prevent transfer of structural loading and deflections, at locations indicated below.
 1. Where edges of suspended ceilings abut building structure.
 2. Where partition and wall framing abuts overhead structure.
- F. Frame door and other openings with studs and runners of gauge, number and arrangement to comply with manufacturer's recommendations for size of opening, weight of doors and height and size of studs, unless otherwise indicated.
- G. Erect thermal insulation and Z-furring members to comply with manufacturer's directions.
- H. Framing location tolerance shall not exceed 1/2".

3.03 WALL AND PARTITION FRAMING

- A. Install runner tracks at floors, ceilings and structural walls and columns where gypsum drywall stud system abuts other work. At exterior walls, install asphalt felt strips between wall and framing.
- B. Extend partition stud system through ceiling to the structural support above the ceiling, unless otherwise indicated.
- C. Space studs 16" o.c., unless otherwise indicated.
- D. Frame door openings to comply with recommendations of gypsum board manufacturer, or with "Gypsum Construction Handbook" by United States Gypsum Co. Screw studs to jambs of door frames; install runner track at head of frame and secure to jamb studs.
 1. Extend vertical jamb studs through suspended ceilings and attach to underside of structure above. Brace studs where required.

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- E. Frame openings, other than door openings, in same manner as required for door openings; and install framing below sills of openings to match framing above door heads.
- F. Space wall furring members 16" o.c., unless otherwise indicated.
- G. Install insulation between framing or furring members where indicated. Until gypsum board is installed, hold insulation with wire staples.

3.04 CEILING SUPPORT SYSTEMS

- A. Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to inserts, clips and other anchorage devices or fasteners. Hangers are subject to random pullout tests to be performed by testing agency approved by FBOP. If hangers fail testing, the cost of replacement and subsequent testing shall be paid for by the Contractor.
- B. Space main runners 4'-0" o.c. and space hangers 4'-0" o.c. at runners.
- C. Level main runners to a tolerance of 1/8" in 12'-0", measured both lengthwise on each runner and transversely between parallel runners.
- D. Wire-tie or clip furring members to supports.
- E. Space ceiling furring members 16" o.c.

3.05 GYPSON BOARD APPLICATION AND FINISHING, GENERAL

- A. Installation Standard: Comply with ASTM C 840.
- B. Install acoustical insulation prior to gypsum board unless readily installed after board has been installed.
- C. Locate exposed end-butt joints away from center of walls and ceilings, and stagger not less than 1'- 0" in alternate courses. Install boards to form smooth curved surfaces where shown.
- D. Install ceiling boards to minimize the number of end-butt joints, and to avoid end joints in the ceiling. Stagger end joints at least 24".
- E. Install wall and partition boards vertically to avoid end-butt joints wherever possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs.

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- F. Install gypsum board with face side out. Do not install defective or damp boards. Butt boards lightly together with not more than 1/16" space between boards. Do not force into place.
- G. Locate edges and ends over supports or other solid backing. Position boards so that like edges abut, tapered edges against tapered edges and cut ends against cut ends. Stagger joints over different studs on opposite sides of partitions.
- H. Cover both faces of partition framing with gypsum board in concealed spaces, except in chase walls which are braced internally.
1. Fit gypsum board around ducts, pipes, and conduit.
 2. Except for sound or fire rated applications, scraps of not less than 8 sq.ft. area may be used where concealed.
- I. Form control joints and expansion joints to receive trim accessories. Locate these joints to comply with manufacturer's instructions.
- J. Isolate perimeter of non-load-bearing partitions from the structure. Provide 1/4" to 1/2" space and trim edge with J-type edge trim. Seal joints with acoustical sealant.
- K. Seal sound-rated drywall work to comply with ASTM C 919.
- L. Space screw fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations.
- M. Grout hollow metal frames. Except where full grouting is required for fire-resistance rating, grout 6" lengths at each anchorage.

3.06 DOUBLE AND TRIPLE LAYER APPLICATION

- A. General: Two layers of Fire-Shield "Type X" MR (Moisture Resistant) Board and one layer of DUROCK Cement Board screw attached with 2-1/2" screws on both sides. Base layers vertical, face layer horizontal. All vertical joints staggered.
1. On partitions and walls apply gypsum board vertically and provide sheet lengths which will minimize end joints.
 2. On z-furring members apply gypsum board vertically (parallel) with no end joints. Locate edge joints over furring members.
 3. Where indicated install glass mesh mortar units and treat joints to comply with manufacturer's recommendations for type of application indicated.

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3.07 INSTALLATION OF DRYWALL TRIM

- A. General: where feasible, use the same fasteners to anchor trim as required to fasten gypsum board. Fasten flanges of trim in accordance with manufacturer's instructions. Closely fit and align ends of trim.
- B. Install metal corner beads at external corners of drywall work.
- C. Install edge trim of exposed or semi-exposed edges of drywall. Install L-type trim where work abuts other work, and install kerf-type where other work is kerfed to receive trim. Install U-type trim where edge is exposed, revealed, gasket, or sealant filled.
- D. Install metal control joints (beaded-type) where indicated, above each jamb and at 30'-0" o.c. where not shown.

3.08 FINISHING OF DRYWALL

- A. General: Treat gypsum board joints, trim accessories, penetrations, fastener heads, surface defects and elsewhere as required for applied finishes. Prefill open joints using proper compound.
 - 1. Apply joint tape between gypsum boards, except at trim.
 - 2. Apply joint compound in three (3) coats, not including prefill in joints, and sand between last two coats and after last coat.
- B. Partial Finishing: Omit third coat and sanding on concealed drywall work which requires finishing to achieve fire-resistance rating, sound rating, or to act as an air or smoke barrier.

3.09 FACING PANEL APPLICATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
- B. Do not begin installation until backup surfaces are put into satisfactory condition.
- C. Do all cutting with carbide tipped saw blades or drill bits, or cut with snips.
- D. Install panels with manufacturer's recommended gap for panel field and corner joints.

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- E. Fasteners holes in the panels must be predrilled 1/8" oversize.
- F. Using a 1/4" notched trowel, apply manufacturer's recommended adhesive to panel back for 100 percent coverage.
- G. Using products acceptable to manufacturer, install the "Fiberglass Reinforced Panel" system in accordance with manufacturer's printed instructions.
- H. Remove any adhesive or excessive sealant from face using solvent or cleaner recommended by panel manufacturer.

3.10 PROTECTION OF WORK

- A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall work being without damage or deterioration at time of substantial completion.

END OF SECTION

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SECTION 09510 - ACOUSTICAL PANEL CEILINGS

4.

5.

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide acoustical panel ceilings and walls in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Ceilings composed of acoustical panels, perimeter molding and exposed suspension systems.
2. Acoustical ceiling tile cemented directly to ceiling.
3. Drywall soffit on suspension system.
4. Framing and support for light fixtures, air diffusers, registers, etc.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 9, Gypsum Board Assemblies

1.02 SUBMITTALS

A. Product data for each type of product specified.

B. Coordination drawings for reflected ceiling plans drawn accurately to scale and coordinating penetrations and ceiling-mounted items. Show the following:

1. Ceiling suspension system members.
2. Method of attaching suspension system hangers to building structure.
3. Ceiling-mounted items including light fixtures; air outlets and inlets; speakers; sprinklers; and special moldings at walls, column penetrations, and other junctures of acoustical ceilings with adjoining construction.
4. Minimum Drawing Scale: 1/4 inch = 1 foot.
5. All accessories necessary to install wall or ceiling system.

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C. Samples for initial selection in the form of manufacturer's color charts consisting of actual acoustical panels or sections of panels and sections of suspension system members showing the full range of colors, textures, and patterns available for each ceiling assembly indicated.

D. Samples for verification of each type of exposed finish required, prepared on samples of size indicated below. Where finishes involve normal color and texture variations, include sample sets showing the MI range of variations expected.

1. 6-inch- (150-mm-) square samples of each acoustical panel type, pattern, and color.

2. Full-size samples of each acoustical panel type, pattern, and color.

3. Set of 12-inch- (300-mm-) long samples of exposed suspension system members, including perimeter and ceiling moldings, for each color and system type required.

E. Product test reports from a qualified independent testing agency that are based on its testing of current products for compliance of acoustical panel ceilings and components with requirements.

F. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction that show compliance of acoustical panel ceilings and components with the building code in effect for the Project.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed acoustical panel ceilings similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Fire-Test-Response Characteristics: Where required to maintain fire resistance rating, provide acoustical panel ceilings that comply with the following requirements:

1. Fire-response tests are performed by a qualified testing and inspecting agency. Qualified testing and inspecting agencies include Underwriters Laboratories (UL), Warnock Hersey, or another agency that is acceptable to authorities having jurisdiction and that performs testing and follow-up services.

2. Surface-burning characteristics of acoustical panels comply with ASTM E 1264 for Class A materials as determined by testing identical products per ASTM E 84.

3. Acoustical panel ceilings indicated are identical in materials and construction to those tested for fire resistance per ASTM E 119.

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4. Fire-resistance-rated, acoustical panel ceilings are indicated by design designations listed in the UL "Fire Resistance Directory," in the Warnock Hersey "Certification Listings," or in the listing of another qualified testing and inspecting agency and as approved for use in New York City.

5. Products are identified with appropriate markings of applicable testing and inspecting agency.

C. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling panel from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.

D. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.

1. Obtain both acoustical panels and suspension system from the same manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels and suspension system components to Project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.05 PROJECT CONDITIONS

A. Space Enclosure and Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet-work in spaces is completed and dry, work above ceilings is complete, and ambient temperature and humidity conditions are being maintained at the levels indicated for Project when occupied for its intended use.

1.06 COORDINATION

A. Coordinate layout and installation of acoustical panels and suspension system components with other construction that penetrates ceilings or is supported by them,

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including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition assemblies (if any).

1.07 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.

1. Furnish quantity of full-size units equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, acoustical panels that may be incorporated in the Work include, but are not limited to, the following:

1. Non-Fire-Resistance-Rated, Water-Felted, Mineral-Base Panels:
 - a. Minaboard Cortega; Armstrong World Industries, Inc.
 - b. Hytone Fine Fissured; The Celotex Corporation.
 - c. Acoustone Fissured; USG Interiors, Inc.
 - d. Or approved equal

2.02 ACOUSTICAL PANELS, GENERAL

A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.

1. Mounting Method for Measuring Noise Reduction Coefficient (NRC): Type E-400 [plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from the test surface] per ASTM F 795.

2. Test Method for Ceiling Attenuation Class (CAC): Where acoustical panel ceilings are specified to have a CAC, provide units identical to those tested per ASTM E 1414 by a qualified testing agency.

B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.

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1. Where appearance characteristics of acoustical panels are indicated by reference to ASTM E 1264 pattern designations and not to manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range of products that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

C. Panel Characteristics: Comply with requirements indicated on each Acoustical Panel Ceiling Product Data Sheet at the end of this Section, including those referencing ASTM E 1264 classifications.

2.03 ACOUSTICAL CEILING PANELS (FIRE - RETARDANT)

A. Install suspension system according to ASTM C-636-76, Recommended Practice For Installation of Metal Ceiling Suspension System For Acoustical Tile and Lay-In panels”.

B. Panel Characteristics: Fire-retardant fiberboard by “USO Acoustone” or approved equal.

1. Color: White, unless otherwise indicated.
2. Light Reflectance Coefficient: LR- 1 (75% or over)
3. Noise Reduction Coefficient: NRC Range (0.50 - 0.60)
4. Ceiling Sound Transmission Class Range: CSTC 35-39 (Cont. Ceiling 5/8”)
5. Edge Detail: Square or beveled edge, unless otherwise indicated.
6. Flame Spread: 0-25 ASTM E84, Class A Fed Spec SS-S1188, 25 or under (UL Label)
7. Insulation Value: Average C Factor, (At 75 deg F is 64), R Factor is 1.56
8. Thickness: 5/8 inch, unless otherwise indicated.
9. Size: 24 by 24 inches, unless otherwise indicated.

2.04 METAL SUSPENSION SYSTEMS, GENERAL

A. Metal Suspension System Standard: Provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635, “Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings” requirements.

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1. Suspension system shall be wide flange type, hung directly from structure above or by means of carrying channels.

2. Suspension system shall be hung by means of 1-1/2" cold rolled 16 gauge steel # 1.475 carrying channels accurately leveled and placed not over 4'-0" o.c., with first channel not over 10" from wall.

3. The (exposed) "1" grid shall be "snap action" type of 24 gauge (0.025 inch) 1-1/2" high electro-galvanized steel finish, off-white enameled on exposed 15/16" surfaces. Main slots to form grid for 24" x 24" tiles and lights, unless otherwise indicated. Form grid as shown on drawing (reflected ceiling plan) and constructed so the cross tee may be snapped in place.

4. All metal work used shall be galvanized and/or fully primed and coated to form corrosion resistance. Metal work shall be relocated and/or protected from contact with condensation.

5. Attachment Devices: Suspension system shall be hung by anchor straps of 1" x 1/8" galvanized steel straps or 12 gauge galvanized wire hangers to 1/4" diameter steel hook-end rods running in GAT clips such as #481 -5L clamped to channels, not more than 4'-0" o.c., or as approved.

6. Maximum allowable deflection in the ceiling suspension is 1/360 of the span. The manufacturer must furnish and certify deflection data on his suspension system.

7 Ceiling height from finished floor elevation will be established by Architect, or as directed by the Project Manager, and shall be leveled to within one-eighth of an inch in twelve feet (1/8" in 12'-0").

B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated. Provide similar material to frame around perimeter walls, light fixtures, air diffusers, registers, etc.

C. Hanger Rods: Mild steel, zinc coated, or protected with rust-inhibitive paint, size and type complying with the New York City Building Code.

D. Flat Hangers: Mild steel, zinc coated, or protected with rust-inhibitive paint, size and type complying with the New York City Building Code.

F. Sheet-Metal Edge Moldings and Trim: Type and profile indicated, or if not indicated, manufacturer's standard moldings for edges and penetrations that fit acoustical panel edge details and suspension systems indicated; formed from sheet metal of same material and finish as that used for exposed flanges of suspension system runners.

1. For lay-in panels with reveal edge details, provide stepped-edge molding that

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forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.

2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

3. For narrow-face suspension systems, provide suspension system and manufacturer's standard edge moldings that match width and configuration of exposed runners.

F. Miscellaneous Accessories: All miscellaneous accessories including tempered spring steel spacers, stabilizer bars, clips, clamps, fastenings and similar items shall be furnished and installed under this contract as required to insure the proper installation of all work and to provide a safe rigid and level ceiling with a continuous rid and fully framed around all edges, post columns, etc.

1. All alterations necessary shall be performed to ceiling channels, grid, lights, etc. to keep the ceiling as close as possible to the existing ducts, obstructions. etc. as required, directed or as approved.

2. Wall mouldings shall be installed at intersection of suspended ceiling and vertical surfaces.

3. All perimeter and column edges shall be provided with steel angle or channel trim of similar material and appearance.

4. Provide all necessary alterations and modifications so that the "T" grid system shall frame around the existing ducts, edges, columns, etc. and allow for installation of new diffusers, lights, etc.

5. Splines shall be used as recommended by the tile manufacturer.

6. Tiles shall be laid out symmetrically, Butt all existing raceway, conduit, partition, pipes, canopies, etc., neatly and tightly to suit all conditions.

2.05 SOFFITS (STEEL FRAMED)

A. 'Where windows, radiators and/or ducts require alteration to ceiling edges, and ceiling height is indicated on drawings, suspended ceiling shall stop with framed soffit edges constructed with visible edges faced in 5/8" Fire Code 60 gypsum board over 2-1/2" (25 gauge) galvanized steel framing 12" o.c. with entire window/ceiling recess and areas of the wall, radiators and/or ducts, if directed, painted to match the ceiling tile color.

B. The Contractor shall carefully "box in" all ducts and protrusions that come below ceiling height with acoustical tiles applied to lower framed duct surfaces, as directed and

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approved.

C. Framing for gypsum board shall connect with or allow for suspension ceiling system and shall be fully independent of duct hangers, conduits, etc., and shall be hung off black iron channel or as approved. The Contractor shall insure these areas are safe, rigid, and consistent with the finest construction practice and reinforced as needed or directed.

2.06 ACOUSTICAL TILE (GLUED)

A. Acoustical tile shall be 12" x 12" units, 3/4" thick, fissured mineral fiber tile having a noise reduction co-efficient of 0.65 - 0.75, manufactured by "Armstrong", or approved equal.

B. The tile shall be on incombustible material and have a flame material spread rating of 0-25.

C. The units shall be securely spot cemented in place in the standard approved best practice with an adhesive cement such as "Hertzels Acoustiglue", or approved equal, that has a strength of not less than 1/2 lb. per sq. inch when first applied and a strength not less than 1-1/2 lbs. per sq. inch 24 hours after application.

D. Such adhesive shall be waterproof and resistant to alkaline solutions and of such nature that they remain plastic during and after application.

2.07 GYPSON BOARD CEILING ON SUSPENDED CEILING

A. As required by the Architect, or as directed by the Project Manager, a suspended gypsum board ceiling shall be installed either in lieu of an acoustical tile ceiling or as a ceiling design accent. The ceiling shall be installed in accordance with all applicable building and fire codes and taped and finished as described in the "Gypsum Board Assemblies" Section of the Specifications.

B. The Contractor shall furnish and install ceiling fascia as shown on the drawing.

C. The Contractor shall secure 25 gauge channel runners to the underside of slab above and to the wall above the windows. Channel runners shall be 3-5/8" steel manufactured by "Gold Bond", or approved equal.

D. Steel studs shall be 3-5.8", 25 gauge, spaced at 16" o.c.

E. Gypsum wall board shall be one layer, 5/8" thick, "Fire Code 60", secured to steel studs with steel screws with rust inhibiting coating.

F. Fascia corner moulding shall be extruded alloy 6063T5 with clear anodized finish. # FCM-75 manufactured by "Fry Reglet", or approved equal. Fascia and/or soffits shall have

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one layer of gypsum board, unless otherwise indicated.

1. All joints shall be neatly fitted, taped with perforated tape, an approved type joint compound shall be applied and tape centered over joints and seated into compound.

2. Sufficient compound must remain under tape to provide an even and proper bond. Immediately after a skim coat shall follow. After skim coat is thoroughly dry, a fill coat shall be applied, covering tape and feathering out 4 inches on each side of tape.

3. All fastening and depressions shall be properly taped and topped with compound as required. All screw heads shall be depressed,

G. Finish details and practices shall comply with all applicable provisions of Paragraph 2.4 "Metal Suspension Systems, General" and 2.5 "Soffit (Steel Framed)" of this Section and related Sections, in regards to, but not limited to, miscellaneous accessories, grids, soffits, fascia painting, "box-in", ceiling heights, leveling, etc.

2.08 ACOUSTICAL SEALANT

A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard non-sag, paintable, non-staining latex sealant complying with ASTM C 834 and the following requirements:

1. Product is effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies per ASTM E 90.

2. Product has flame-spread and smoke-developed ratings of less than 25 per ASTM E 84.

B. Acoustical Sealant for Concealed Joints: Manufacturer's standard non-drying, non-hardening, non-skinning, non-staining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound.

C. Available Products: Subject to compliance with requirements, acoustical sealants that may be incorporated in the Work include, but are not limited to, the following:

1. Acoustical Sealant for Exposed and Concealed Joints:
 - a. AC-20 FTR Acoustical and Insulation Sealant; Pecora Corp.
 - b. SHEETROCK Acoustical Sealant; United States Gypsum Company.
 - c. Or approved equal

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PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.

1. Furnish cast-in-place anchors and similar devices to other trades for installation well in advance of time needed for coordinating other work,

B. Measure each ceiling area and establish the layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and conform to the layout shown on reflected ceiling plans.

3.03 INSTALLATION

A. General: Install acoustical panel ceilings to comply with publications referenced below per manufacturers instructions and CISCA "Ceiling Systems Handbook".

1. Standard for Ceiling Suspension System Installations: Comply with ASTM C 636.

2. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.

3. CISCA Recommendations for Acoustical Ceilings: Comply with CISCA "Recommendations for Direct-Hung Acoustical Tile and Lay-In Panel Ceilings."

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of the supporting structure or of the ceiling suspension system.

2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter-splaying, or other equally effective means.

3. Where width of ducts and other construction within ceiling plenum produces

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hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

4. Secure hangers to ceiling suspension members and to supports above with a minimum of 3 tight turns. Connect hangers either directly to structures or to inserts, eye screws, or other devices that are secure, that are appropriate for substrate, and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.

5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.

6. Secure bracing wires to ceiling suspension members and to supports with a minimum of 4 tight turns. Fasten bracing wires to concrete with cast-in-place or post-installed anchors.

7. Do not support ceilings directly from permanent metal forms. Fasten hangers to cast-in-place hanger inserts, powder-actuated fasteners, or drilled-in anchors that extend through forms into concrete.

8. Do not attach hangers to steel deck tabs or to steel roof deck. Attach hangers to structural members only.

9. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise shown; and provide hangers not more than 8 inches (200 mm) from ends of each member.

C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

2. Screw attach moldings to substrate at intervals not over 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.18mm in 3.66 m). Miter corners accurately and connect securely.

3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

D. Install suspension system runners so they are square and securely interlocked with

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one another. Remove and replace dented, bent, or kinked members.

E. Install acoustical panels with undamaged edges into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide neat, precise fit.

1. Install panels with pattern running in one direction parallel to axis of space.
2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
3. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. For reveal-edged panels on suspension system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension system surfaces and panel faces flush with bottom face of runners.
5. Paint the cut panel edges remaining exposed after installation; match color of exposed panel surfaces using coating recommended for this purpose by acoustical panel manufacturer.
6. Install hold-down clips in areas indicated and in areas required by governing regulations, or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.
7. For ceiling that are patched, use tile size, pattern, color and edge that matches existing adjoining tiles remaining, Run pattern is same direction as existing ceiling.

3.04 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 09525 - SECURITY CEILINGS

PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Work Included: Provide security ceilings in accordance with the Contract Documents. The Work of this Section shall include but not be limited to the following:

1. Metal panel ceilings, factory finished
2. Installation of access doors in security ceilings
3. Coordination with work of other trades and contracts

B. Related Work: Refer to other Sections for the following:

1. Section 08305 - Access Doors
2. Division 09250 - Gypsum Drywall
3. Section 09511 - Acoustical Panel Ceilings
4. Section 09900 - Painting
5. Divisions 16 and 17 - Mechanical and Electrical Work.

1.03 QUALITY ASSURANCE

A. References: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

B. Coordination of Work: Coordinate layout and installation of security ceiling units and suspension systems with other work supported by or penetrating security ceilings.

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C. Manufacturers Qualifications: A firm with at least three (3) years experience in manufacturing products similar to type specified.

D. Installers Qualifications: A firm acceptable to the ceiling manufacturer and experienced in installing comparable ceilings.

E. Mock-Up: Install mock-up ceilings of each type material or assembly in areas selected for Commissioners review. Mock-up shall be used as a standard for subsequent ceiling construction.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, standard details and installation instructions for security ceilings. Submit other data required to show compliance with these specifications.

1. Certification: Submit certification that the installed ceiling grid assembly complies with the code seismic zone 2 requirements.

B. Shop Drawings: Submit reflected ceiling plans of security ceilings before proceeding with Work. Include details of joints, edges, trim, suspension system and other pertinent data. Show adjacent construction. Show locations of items of work which are to be coordinated with the security ceilings, including

1. Mechanical Devices: Registers, grilles, sprinkler heads
2. Electrical Devices: Light fixtures, speakers
3. Electronic Security Devices: Cameras
4. Access panels

C. Samples: Submit a set of 12" square samples of finished ceiling panels. Submit 12" long samples of related items upon request.

D. Test Data: Submit test data from a qualified testing agency to show compliance with specified performance criteria.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver ceiling units in original, unopened packages and store them in a fully enclosed space where they will be protected against damage, staining and

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deterioration.

B. Handle ceiling units carefully to avoid damaging units.

1.06 PROJECT CONDITIONS

A. Comply with the manufacturers instructions with regard to building enclosure, heat and ventilation.

B. Do not install security ceilings until work above ceilings is complete. Make allowance for required inspections.

1.07 EXTRA STOCK

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.

1. Furnish quantity of full-size units equal to two percent (2%) of amount installed.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide security ceilings manufactured by one of the following:

1. Environmental Interiors, Inc.: 13 River Road, Hudson, NH 03051.
2. Steel Ceilings, Inc.: E. Coshocton Street, Johnstown, Ohio 43031.
3. Industrial Acoustics Company Inc.: Commerce Ave., Bronx, NY 10462.
4. Epic Metals Corp.: 11 Talbot Ave., Rankin, PA 15104.
5. Wilsecure by Wildeck Inc.: P0 Box 89, Waukesha, WI 53187.
6. DOC approved equal.

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2.02 SECURITY CEILING ASSEMBLIES

A. Security Ceiling Panels: Provide acoustical metal panels to be formed 18" wide with a 2-1/2" high interlocking rib at each edge providing a flush bottom surface with open non-concealable joints with plastic encased fiberglass fill. Butted side joints are not acceptable. Face panels are perforated with 3/32" holes staggered approximately 3/16" o.c.

1. Steel Sheets: Provide A minimum 16-gauge steel sheets conforming to ASTM A-446 Grade A, having a minimum yield strength of 33,000 psi. Before forming, the steel sheets shall have received a hot dipped protective coating of zinc conforming to ASTM A-525, Class G60, with face flatness within IJ360. Provide internal reinforcing for face panels, as required for live load and for flatness.

2. Finish: Provide a premium baked on white powder coated epoxy finish.

3. Acoustical Fill: Provide sound absorption pads placed between the ribs of each panel to achieve the required NRC Rating. Sound absorption pads shall be completely enclosed in polyethylene, heat-sealed bags. Polyethylene heat sealed bags shall have a flame spread index of not more than 15 and smoke developed value of not more than 5 and shall be tested by a recognized independent testing laboratory per ASTM E-84.

4. Backer Plate: A minimum 22-gauge galvanized steel backer plate shall be shop attached near the top of the sound absorption pads completely encasing the ceiling panel for sound transmission enhancement. For sound absorption fiberglass insulation.

5. Moisture Conditions: In areas of high humidity (Pantry, Toilet/Shower), and areas indicated, all panels and channel supports shall be non-perforated commercial quality, AISC Type 304, 18-gauge stainless steel.

B. Suspension System: Provide a security ceiling support system capable of withstanding their own dead weight plus a live load of 40 psf upward or downward with a deflection limit of 1/360. Maximum stress is limited to .6 Fy with a concentrated load of 200 lbs. at the mid-span of the panel system.

1. Support System: Support shall be steel or heavy-duty aluminum angles or tees and shall provide a means to attach ceiling panels to the angles and tees. Rod and wire are not permitted.

2. Hangers/Supports: ASTM A-36; 2" x 2" x 1/4" steel angles painted to

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match the ceiling panels or stainless steel where stainless steel panels are installed.

3. Fasteners: Tamper proof type as approved by DOC of galvanized steel per ASTM A-153 or stainless steel for stainless steel ceiling panels.

C. Finish: Components of the panel and suspension system visible from the floor side shall be painted both sides and to match with power epoxy white or stainless steel for stainless steel ceiling panels. Finish shall have a flame spread index of not more than 5 and smoke developed, index of not more than 25 as tested on the panel as per ASTM EM. Finish shall have passed a salt spray test of 1,000 hours per ASTM B1 17 and humidity test of 1,000 hours per ASTM D2247.

D. Sound Absorption Criteria: Provide acoustical blanket in security ceilings that meet the following minimum criteria:

1. NRC Range: .60 - .70, in accordance with ASTM C-423 when tested to comply with ASTM E-795, Type E-400 Mounting.

2. STC Range: 40 - 44, in accordance with AIMA I-II "Ceiling Sound Transmission Test by Two-Room Method."

3. Panel Penetrations: Except for the penetrations for lighting, HVAC, sprinkler piping, communication systems and access doors as shown and dimensioned on the approved shop drawings, all openings or notches required in the ceiling panels shall be properly field cut and touched up by the trades requiring the opening. If penetration must span panel joint, a molding shall be installed to deal the panel at the joints. Fasteners shall be tamper proof as approved by DOC.

D. Access: Individual panel shall be removable from the bottom using special tools or any other methods approved by DOC. Panel shall be removable without damage to the support molding or panel.

1. Access Doors shall be provided for immediate emergency access to above ceiling valves, controls, etc. Doors shall be heavy duty, key locked and provided with a framing system equal to the security level of the ceiling system. Access doors shall not penetrate the joint of two panels. Provide access doors to be located in the field, as required.

2. Provide Folger Adams, 17-M latch with 17-4 keeper, keyed to building lock system. Use galvanized finish in stainless steel panel.

E. End Closures: Individual panel shall have a flush fitting end closure

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installed where the open joints rest on the support angles. These end closures must be attached to the support angles by tamper proof fasteners or other means approved by DOC and be removable.

2.03 ASSEMBLY

- A. Fabricate panels accurately to size, with encased fiberglass fill. Assemble perforated face panels and unperforated back panels with continuous mechanically interlocked edges.
- B. Auxiliary Frame: Install auxiliary frames and framing as required for support of ceiling, light fixtures and other work supported at ceiling.
- C. Penetrations: Penetrations for 1' x 4' light fixtures in security ceiling panels shall be cut for each individual fixture, leaving a 12" wide panel section between tandem 1' x 4' light fixtures. The drawings showing tandem 1' x 4' light fixtures without solid panel sections between fixtures are diagrammatic only, and this specification shall govern.
- D. Existing Utilities: Where existing pipes, conduits, boxes or other existing elements protrude below the line of the new security ceiling panels, the Contractor shall cut new security ceiling panels around such obstructions. Ceiling panels shall be neatly trimmed to follow the line and shape of such obstructions. All joints between new ceiling and obstructions shall be completely sealed using coped closure plates and security caulking.
- E. Temperature/Moisture: Installation of security ceiling panels shall not begin until residual moisture is dissipated. The building shall be fully enclosed and permanent heating and cooling equipment shall be in operation.
- F. Cut-outs: Neatly cut and reinforce all openings in ceiling panels to allow for field conditions. All cuts to be reinforced to protect insulation and insure structural, security and acoustical integrity of panels.
- G. Edge Fastening: Install wall angles accurately to required levels and securely bolt to wall construction. Provide expansion joints not more than 30 feet on center.
- H. Access Doors: Install ceiling access doors where shown or required. Comply with recommendations of the access door manufacturer.

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PART 3 - EXECUTION

3.01 PREPARATION

- A. Inspection: Examine adjacent construction and conditions that may affect this work. Proceed with the work after unsatisfactory conditions have been corrected.
- B. Coordination: Furnish layouts for inserts, clips, or other supports to be installed by other trades for support of security ceilings. Coordinate installation with other adjacent work.
- C. Field Measurements: Measure each ceiling area and establish layout of units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders.

3.02 INSTALLATION, GENERAL

- A. Install ceiling materials in accordance with manufacturers printed instructions, and to comply with governing regulations and the following:
1. Centering of Pattern: Center pattern in both directions in major space or rooms or as shown on drawings; and where possible, adjust pattern so that edge pieces will be not less than 1/2 unit in width.
 2. Install metal ceiling panels, complete with acoustical pads or thermal insulation, in coordination with suspension system and exposed runner moldings. Scribe and cut units for accurate fit at borders and at penetrations. Stiffen edges of cut units as required to eliminate evidence of oil-canning or buckling.
- B. Acoustical Requirements: Installed ceiling and wall assemblies shall maintain a minimum of:
1. 45 STC between indicated rooms.
- C. Seismic Restraint: for use at rooms over 400 sq. ft. enclosed by four walls as per ASTM E-580.
1. Wall angles or channels shall be considered as aesthetic closures and shall have no special structural value assessed to themselves or their method of attachment to the walls.

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2. Main runners and cross runners shall be attached to the perimeter members on two adjacent walls. A clearance of 1/4" shall be maintained between the main runners and cross runners and the perimeter members on the two remaining walls. Avoid splices within 6" of walls.

3. Stabilizer Strut: Direct concealed suspended ceiling systems shall have positively attached stabilizer struts or mechanically connected cross runners at a maximum spacing of 60 in. perpendicular to the main runners. Supplemental stabilizer bars shall occur within 24 in. of each end wall.

4. Suspension Application: Suspension shall be spaced along each main runner in accordance with the load carry capacity of the system.

a. Each vertical support shall be attached to the ceiling suspension member to the structure above with a connection capable of carrying not less than 100-lb. more than the allowable load. The points of hanger supports shall not permit disengagement through vertical lifting.

b. Suspension shall not hang more than one in six out of plumb unless countersloping supports are provided. Supports shall not attach to, or bend around interfering material, such as studs. A trapeze or equivalent device shall be used where obstructions preclude direct suspension.

c. At locations, where the terminal ends of each cross runner or main runner are supported independently, a maximum of 18 in. from each wall.

5. Seismic Installation: Horizontal restraint shall be effected by four No. 12-gauge wires secured parallel to the main runner within 2 in. (51 mm) of the cross runner intersection and splayed 90 deg from each other, at an angle not exceeding 45 deg from the plane of the ceiling. These horizontal restraint points shall be placed 12 ft. on center in both directions, with the first point within 4 ft. from each wall. Attachment of the restraint wires to the structure above shall be adequate for the load imposed. Bracing wires to be taut and tied both ends with a minimum of three turns. (OSHA requires 3 turns in 1 1/2" of run on schools and hospitals.) This horizontal restraint is not required for room sizes less than 400 SF where surrounding walls connect directly to the structure above. The walls will provide the required restraint for room sizes less than 400 SF. Alternative methods for providing horizontal restraint will be considered acceptable so long as their performance is proven to be equal to or better than the prescribed method.

6. Light Fixture Application: Recessed lighting fixtures shall be firmly fixed to the suspended ceiling system unless independently supported. The attachment device, a minimum of two per fixture, shall have a capacity of 100% of the lighting

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fixture weight acting in any direction.

a. Surface mounted lighting fixtures shall be attached to the ceiling system with positive clamping devices that completely surround the supporting members. Safety wires shall be attached between the clamping device and the adjacent ceiling hanger or to the structure above. In no case shall the applied fixture load exceed the design carrying capacity of the supporting members.

7. Services within the Ceiling: A suspended ceiling shall not be used to support ductwork, plumbing, etc. They should be attached to the structure above except when such units were specially designed for this application, as in the case of integrated ceiling systems.

a. Ceiling mounted air terminals, or services weighing less than 20 lb. shall be positively attached to the ceiling suspension system unless deflection minimums specified in accordance with Specification C-635 are exceeded.

8. Partition Application to Suspended Ceilings: Where nonbearing partitions are attached to ceiling suspension systems, the lateral force reaction transmitted must fall within the design limitation of the suspension system or supplementary bracing must be provided.

a. Ring nails shall be installed at all component intersections with the horizontal strut at unattached watts. The horizontal strut shall run continuously at perimeters and not be pop riveted to the watt angle.

3.03 CLEAN UP

A. Clean exposed surfaces of security ceilings, including watt angles. Touch up of minor finish damage.

B. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

C. Remove all debris resulting from this work.

END OF SECTION

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SECTION 09600 - TILES

PART 1- GENERAL

1.01 SUMMARY

A. Work Included: Provide tile work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Unglazed ceramic mosaic tile.
2. Glazed ceramic mosaic tile.
3. Unglazed quarry tile.
4. Glazed wall tile.
5. Stone thresholds.
6. Bevel existing stone threshold for ADA compliance.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 2 Section "Demolition" for removal of existing tile.
2. Division 3 Section "Cast-In-Place Concrete" for monolithic slab finishes specified for tile substrates.
3. Division 7 Section "Joint Sealers" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
4. Division 9 Section "Lath and Plaster" for portland cement scratch coat over metal lath on wall surfaces.
5. Division 9 Section "Gypsum Board Assemblies" for cementitious backer units installed as part of gypsum wallboard systems.

1.02 SUBMITTALS

A. Product data for each type of product specified.

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- B. Shop drawings indicating tile patterns and locations and widths of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for initial selection purposes in form of manufacturer's color charts consisting of actual tiles or sections of tile showing full range of colors, textures, and patterns available for each type and composition of tile indicated. Include samples of grout and accessories involving color selection.
- D. Samples for verification purposes of each item listed below, prepared on samples of size and construction indicated, products involve color and texture variations, in sets showing full range of variations expected.
1. Each type and composition of tile and for each color and texture required, at least 12 inches square, mounted on plywood or hardboard backing and grouted.
 2. Full-size units of each type of trim and accessory for each color required.
 3. Stone thresholds in 6-inch lengths.
- E. Material test reports from qualified independent testing laboratory indicating and interpreting test results relative to compliance of tile and tile setting and grouting products with requirements indicated.
- F. Color and pattern will be selected by DOC.

1.03 QUALITY ASSURANCE

- A. Single-Source Responsibility for Tile: Obtain each color, grade, finish, type, composition, and variety of tile from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- B. Single-Source Responsibility for Setting and Grouting Materials: Obtain ingredients of a uniform quality from one manufacturer for each cementitious and admixture component and from one source or producer for each aggregate.
- C. Installer Qualifications: Engage an experienced Installer who has successfully completed tile installations similar in material, design, and extent to that indicated for Project. Use only thoroughly trained and experienced tile setters who are completely familiar with the requirements of this work, and the recommendations contained in the referenced standards.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and

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labels intact until time of use. Comply with requirement of ANSI A137. 1 for labeling sealed tile packages.

B. Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

1.05 PROJECT CONDITIONS

A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.

B. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide buildup.

C. Maintain temperatures at 50 deg F (10 deg C) or more in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standard or manufacturer's instructions.

1.06 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials that match products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

B. Un glazed and/or Glazed Ceramic Mosaic Tile:

1. American Olean Tile Co., Inc.
2. Dal-Tile Corp.
3. United States Ceramic Tile Co.

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4. Villeroy & Boch (U.S.A.) Inc.
 5. Or an approved equal.
- C. Unglazed Quarry Tile:
1. American Olean Tile Co., Inc.

 2. Dal-Tile Corp.
 3. Summitville Tiles, Inc.
 4. Or an approved equal.
- D. Unglazed and/or Glazed Wall Tile:
1. American Olean Tile Co., Inc.

 2. Dal-Tile Corp.
 3. United States Ceramic Tile Co.
 4. Villeroy & Boch (U.S.A.) Inc.
 5. Or an approved equal.
- E. Dry-Set Mortars and Grouts:
1. American Olean Tile Co., Inc.

 2. DAP Inc. Div.; USG Corp.
 3. Laticrete International Inc.
 4. Summitville Tiles, Inc.
 5. Or an approved equal.
- F. Latex-Emulsion-Based Latex-Portland Cement Mortars:
1. American Olean Tile Co., Inc.

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2. DAP Inc. Div.; USG Corp.
 3. Laticrete International Inc.
 4. Summitville Tiles, Inc.
 5. Or an approved equal.
- G. Water-Cleanable Tile Setting Epoxy Adhesives:
1. American Olean Tile Co., Inc.
 2. Atlas Minerals & Chemicals, Inc.
 3. Summitville Tiles, Inc.
 4. Or an approved equal.
- H. Organic Adhesives, Type I:
1. American Olean Tile Co., Inc.
 2. DAP Inc. Div.; USG Corp.
 3. Laticrete International Inc.
 4. Or an approved equal.
- I. Commercial Portland Cement Grouts:
1. American Olean Tile Co., Inc.
 2. Bostik Construction Products Div.
 3. Custom Building Products
 4. Or an approved equal.
- J. Acrylic Emulsions for Latex-Portland Cement Grouts:
1. American Olean Tile Co., Inc.

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2. Bostik Construction Products Div.
3. Custom Building Products
4. DAP Inc. Div.; USG Corp.
5. Laticrete International Inc.
6. Or an approved equal.

2.02 PRODUCTS, GENERAL

A. ANSI Standard for Ceramic Tile: Comply with ANSI A137.1 “American National Standard Specifications for Ceramic Tile” for types, compositions, and grades of tile indicated. Furnish tile complying with “Standard Grade” requirements unless otherwise indicated.

B. ANSI Standard for Tile Installation Materials: Comply with ANSI standard referenced with products and materials indicated for setting and grouting.

C. Colors, Textures, and Patterns: Where manufacturer’s standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:

1. Provide selections made by Architect from manufacturers full range of standard colors, textures, and patterns for products of type indicated.

2. Provide tile trim and accessories that match color and finish of adjoining flat tile. Provide ceramic trimmers, bullnose and shapes to match wall and/or floor as required for complete installation.

D. Factory Blending: For tile exhibiting color variations within the ranges selected during sample submittals, blend tile in factory and package accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples.

E. Mounting: Where factory-mounted tile is required, provide back- or edge-mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.

2.03 TILE PRODUCTS

A. Unglazed Ceramic Mosaic Tile: Provide factory-mounted flat tile complying with the following requirements:

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1. Composition: Porcelain,
2. Composition: - Porcelain with abrasive admixture.
3. Nominal Facial Dimensions: 1 inch x 1 inch +/- 1/2 inch
2 inch x 2 inch +/- 1/2 inch
4 inch x 4 inch +/- 1/2 inch
6 inch x 6 inch +/- 1/2 inch
4. Nominal Thickness: 1/4 inch.
5. Face: Plain with cushion edges.

B. Glazed Ceramic Mosaic Tile: Provide factory-mounted fiat tile complying with the following requirements:

1. Composition: Porcelain.
2. Nominal Facial Dimensions: 1 inch x 1 inch +/- 1/4 inch
2 inch x 2 inch +/- 1/2 inch
4 inch x 4 inch +/- 1/2 inch
6 inch x 6 inch +/- 1/2 inch
3. Nominal Thickness: 1/4 inch.
4. Face: Plain with cushion edges.

C. Unglazed Quarry Tile: Provide square-edged flat tile complying with the following requirements:

1. Wearing Surface: Abrasive aggregate embedded in surface where indicated; nonabrasive elsewhere.
2. Nominal Facial Dimensions: 6 inches by 6 inches.
3. Nominal Thickness: 3/8 inch.
4. Face: Plain.

D. Glazed Wall Tile: Provide flat tile complying with the following requirements:

1. Nominal Facial Dimensions: 4-1/4 inches by 4-1/4 inches (or 2 inches by 2 inches).
2. Nominal Thickness: 5/16 inch.

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3. Face: Plain with modified square edge or cushion edge.

4. Mounting: Factory back-mounted,

E. Unglazed Wall Tile: Provide flat tile complying with the following requirements:

1. Nominal Facial Dimensions: 4-1/4 inches by 4-1/4 inches (or 2 inches by 2 inches).

2. Nominal Thickness: 5/16 inch.

3. Face: Plain with modified square edge or cushion edge.

4. Mounting: Factory back-mounted.

F. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile and to comply with following requirements:

1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.

2. Shapes: As follows, selected from manufacturer's standard shapes:

a. Base for Portland Cement Mortar Installations: Coved.

b. Base for Thinset Mortar Installations: Straight.

c. Wainscot Cap for Portland Cement Mortar Installations: Bullnose cap.

d. Wainscot Cap for Thinset Mortar Installations: Surface bullnose.

e. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above.

f. External Corners for Portland Cement Mortar Installations: Bullnose shape with a radius of at least 3/4 inch unless otherwise indicated.

g. External Corners for Thinset Installations: Surface bullnose,

h. Internal Corners: Field-buttet square corners, except use coved base and cap angle pieces designed to member with stretcher shapes.

G. Water Absorption: Tile installed on floors shall be slip resistant and have water absorption not to exceed 0.5%.

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2.04 STONE THRESHOLDS

A. General: Provide stone that is uniform in color and finish, fabricated to sizes and profiles indicated or required to provide transition between tile surfaces and adjoining finished floor surfaces.

B. Marble Thresholds: Provide marble thresholds complying with ASTM C 503 requirements for exterior use and for abrasion resistance where exposed to foot traffic, a minimum hardness of 10 per ASTM C 241.

1. Provide White, Pink Tennessee, or any other color and shade to match existing (or replace in kind), honed marble complying with MIA Group "A" requirements for soundness.

C. Stone Thresholds: Provide stone threshold as specified by the Architect or as directed by Project Manager.

2.05 WATERPROOFING FOR THINSET TILE INSTALLATIONS

A. Latex Rubber Waterproofing: Manufacturer's standard factory prepackaged, job-mixed, proprietary two-pan formulation consisting of liquid latex rubber and powder for trowel application and glass fiber fabric reinforcing.

B. Available Products: Subject to compliance with requirements, products which may be incorporated in the Work include, but are not limited to, the following:

1. Latex Rubber Waterproofing:

a. "Laticrete 301/335 Waterproof Membrane"; Laticrete International Inc.

b. Or an approved equal.

2.06 SETTING MATERIALS

A. Portland Cement Mortar Installation Materials: Provide materials complying with ANSI A 108.1 and as specified below.

1. Cleavage Membrane: Asphalt felt, ASTM D 226, Type I (No. 15), or polyethylene sheeting ASTM D 4397, 4.0 mils thick.

2. Reinforcing Wire Fabric: Galvanized welded wire fabric, 2 inches by 2 inches - WO.3 by WO.3 (16 ASW gage or 0.0625 inch diameter); comply with ASTM A 185 and ASTM A 82 except for minimum wire size.

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3. Expanded Metal Lath: Provide diamond mesh lath complying with ASTM C 847 for requirements indicated below:

a. Base Metal and Finish for Interior Applications: Fabricate lath from uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.

b. Configuration Over Studs and Furring: Flat.

c. Configuration Over Solid Surfaces: Self-furring.

d. Weight: 3.4psf.

4. Latex additive (water emulsion) described below, serving as replacement for part or all of gauging water, of type specifically recommended by latex additive manufacturer for use with job-mixed portland cement and aggregate mortar bed.

a. Latex Additive: Acrylic resin.

B. Dry-Set Portland Cement Mortar: ANSI AI 18.1.

C. Latex-Portland Cement Mortar: ANSI AI 18.4, composition as follows:

1. Prepackaged dry mortar mix composed of portland cement, graded aggregate, and the following dry polymer additive in the form of a re-emulsifiable powder to which only water is added at job site.

a. Dry Polymer Additive: Polyvinyl acetate or ethylene vinyl acetate.

2. Latex additive (water emulsion) of type described below, serving as replacement for part or all of gauging water, combined at job site with prepackaged dry mortar mix supplied or specified by latex additive manufacturer.

a. Latex Type: Acrylic resin.

D. Organic Adhesive: ANSI AI 36.1, Type I for installation of ceramic tile on drywall. Shear strength shall be 50 psi minimum. Adhesive primer as recommended by adhesive manufacturer. Manufacturer shall certify, in writing, that adhesive and primer used are proper types for the intended tile types and application.

E. Water: Clean, fresh and suitable for drinking.

2.07 GROUTING MATERIALS

A. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and

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white or colored aggregate as required to produce colors selected by the Resident Engineer.

B. Commercial Portland Cement Grout: ANSI AI 18.6, color as selected by the Resident Engineer.

C. Dry-Set Grout: ANSI AI 18.6, color as indicated.

D. Latex-Portland Cement Grout: ANSI AI 18.6, color as indicated, composition as follows:

1. Latex additive (water emulsion) serving as replacement for part or all of gauging water, added at job site with dry grout mixture, with type of latex and dry grout mix as follows:

a. Latex Type: Acrylic resin.

b. Dry Grout Mixture: Dry-set grout specified or supplied by latex additive manufacturer. Use latex additive without retarder with dry-set grout.

i) Application: Use dry-set grout combined with latex additive for grouting joints in glazed wall tile.

c. Dry Grout Mixture: Commercial portland cement specified or supplied by latex additive manufacturer.

i) Application: Use commercial portland cement grout combined with latex additive for grouting joints in floor tile unless otherwise indicated.

E. Water: Clean, fresh and suitable for drinking.

2.08 ELASTOMERIC SEALANTS

A. General: Provide sealants as specified herein and that comply with requirements of Division 7 Section "Joint Sealers," including ASTM C 920 as referenced by Type, Grade, Class, and Uses.

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.

C. One-Part Mildew-Resistant Silicone Sealant: Type 5; Grade NS; Class 25; Uses NT, G, A, and as applicable to nonporous joint substrates indicated, 0; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and temperature extremes.

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D. Available Products: Subject to compliance with requirements, products which may be incorporated in the Work include, but are not limited to, the following:

1. "Dow Coming 786"; Dow Coming Corp.
2. "SCS 1702"; General Electric Co.
3. "863 #345 White"; Pecora Corp.
4. "Rhodorsil 6B White"; Rhone-Poulenc Inc.
5. "Proglaze White"; Tremco Corp.
6. Or an approved equal.

2.09 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with requirements of referenced standards and manufacturers including those for accurate proportioning of materials, water, or additive content; type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortars and grouts of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and areas where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm, dry, clean, and free from oil or waxy films and curing compounds.

2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Blending: For tile exhibiting color variations within the ranges selected during sample

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submittals, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

B. Condition of Surfaces: Allowable variations in substrate levels - Flooded: +/- 1/8" in 10'- 0" distance and 1/4" total maximum variation from levels shown. Grind or fill concrete and masonry substrates as required to comply with allowable variations.

C. Preparation: Etch concrete substrate with 10% solution of muriatic acid as may be required to remove substance that would interfere with proper bond of setting bed. Rinse with water to remove all traces of acid.

3.03 INSTALLATION, GENERAL

A. ANSI Tile Installation Standard: Comply with parts of ANSI 108 series of tile installation standards included under "American National Standard Specifications for the Installation of Ceramic Tile" that apply to type of setting and grouting materials and methods indicated.

B. TCA Installation Guidelines: TCA "Handbook for Ceramic Tile Installation"; comply with TCA installation methods indicated.

C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions except as otherwise shown. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

D. Accurately and neatly form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, drains and other penetrations so that plates, collars, or covers overlap tile. Perform all necessary cutting and fitting of the tile work wherever required in connection with the work as may be necessary to overcome inaccuracies, and to make the materials properly fit and conform to the conditions encountered.

E. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths unless otherwise shown.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so that extent of each sheet is not apparent in finished work, Joints: Not more than 1/16" wide, maintain the standard mounting width of joints between all tile of each sheet and between adjacent sheets of tile.

F. Lay out tile wainscots to next full tile beyond dimensions indicated.

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G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw cut joints after installation of tiles.

1. Locate joints in tile surfaces directly above joints in concrete substrates.
2. Prepare joints and apply sealants to comply with requirements of Division 7 Section "Joint Sealers."

H. Grout tile to comply with the requirements of the following installation standards:

1. For ceramic tile grouts (sand-portland cement, dry-set, commercial portland cement, and latex-portland cement grouts), comply with ANSI A108.IO.
2. All tile shall be grouted in approved manner and to the best practice of the trade. Provide manufacturer's recommended sealer after grouting.

I. Mortar: Do not use mortar that has reached its initial set. Do not retemper mortar.

J. Adhesives: Install wall tile adhesives using matched trowel to a thickness of not less than 3/16".

3.04 WATERPROOFING FOR THINSET TILE INSTALLATIONS

A. Install waterproofing in compliance with waterproofing manufacturer's instructions to produce a waterproof membrane of uniform thickness bonded securely to substrate.

B. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.05 FLOOR INSTALLATION METHODS (Ceramic Mosaic Tile): Install tile to comply with requirements indicated below for setting bed methods, TCA installation methods related to types of subfloor construction, and grout types.

A. Portland Cement Mortar: ANSI AIOS.1

1. Bond Coat: Portland cement paste or dust coat on plastic bed.
2. Bond Coat: Latex-portland cement mortar on cured bed, ANSI A 108.5.
3. Bond Coat: Dry-set portland cement mortar on cured bed, ANSI A 108.5.
4. Bond Coat: Portland cement paste or dust coat on plastic bed or the following thin-set mortar on cured bed, ANSI AIOS.5, at Contractor's option:
 - a. Latex-portland cement mortar.

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5. Concrete Subfloors, Interior: TCA Fill (cleavage membrane).
 6. Concrete Subfloors, Interior: TCA FI 12 (bonded).
 7. Concrete Subfloors, Interior, Waterproofing Membrane: TCA F121.
 8. Wood Subfloors, Interior: TCA FI4I.
 9. Grout: Latex-portland cement.
- B. Organic Adhesive: ANSI A108.4:
1. Concrete Subfloors, Interior: TCA FI 16.
 2. Wood Subfloors, Interior: TCA F 142.
 3. Grout: Latex-portland cement.
- C. Latex-Portland Cement Mortar: ANSI A108.5.
- D. Dry-Set Portland Cement Mortar: ANSI A108.S.
1. Concrete Subfloors, Interior: TCA FI 13.
 2. Cementitious Backer Unit Underlayment, Interior: TCA F 144.
 3. Grout: Latex-portland cement.
- 3.06 FLOOR INSTALLATION METHODS (Quarry Tile):** Install tile to comply with requirements indicated below for setting bed methods, TCA installation methods related to types of subfloor construction, and grout types.
- A. Portland Cement Mortar: ANSI A108.I:
1. Bond Coat: Portland cement paste or dust coat on plastic bed.
 2. Bond Coat: Latex-portland cement mortar on cured bed, ANSI A 108.5.
 3. Concrete Subfloor, Interior: TCA Fill (cleavage membrane).
 4. Concrete Subfloor, Interior: TCA FI 12 (bonded).

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5. Concrete Subfloor, Interior: TCA FI 14 (with chemical- resistant resin grout).
 6. Grout: Latex-portland cement.
- B. Latex-Portland Cement Mortar: ANSI A 108.5.
1. Concrete Subfloor, Interior: TCA F 113.
 2. Concrete Subfloor, Interior: TCA FI 15 (with chemical-resistant resin grout).
 3. Grout: Latex-portland cement.

3.07 FLOOR INSTALLATION METHODS (Stone Thresholds): Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile unless otherwise indicated.

- A. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent non-tile floor finish.
- B. Comply with TCA TR6I 1, unless otherwise indicated.
- C. Bevel stone thresholds to comply with ADA requirements.
 1. Bevel by grinding and polish stone threshold - approval of method by Architect.
 2. Provide dust and noise control.

3.08 WALL TILE INSTALLATION METHODS: Install types of tile designated for wall application to comply with requirements indicated below for setting-bed methods, TCA installation methods related to subsurface wall conditions, and grout types:

- A. Portland Cement Mortar: ANSI A 108.1:
 1. Masonry or Concrete, Interior: TCA W2I I (bonded).
 2. Solid Backing, Interior: TCA W22 1 (membrane, lath, and scratch coat).
 3. Solid Backing, Interior: TCA W222 (one-coat method).
 4. Metal Studs, Interior: TCA W241.
 5. Grout: Sand-portland cement.

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6. Grout: Latex-portland cement.
- B. Organic Adhesive: ANSI A108.4. (for gypsum drywall backing only)
1. Solid Backing, Interior: TCA W223.
 2. Gypsum Board, Interior: TCA W242.
 3. Grout: Latex-portland cement.
- C. Latex-Portland Cement Mortar: ANSI A108.5.
1. Masonry, Interior: TCA W202.
 2. Cementitious Backer Units, Interior: TCA W244.
 3. Grout: Latex-portland cement.
- D. Tile Over Existing Tile Installations: ANSI A 136.1.
1. Masonry, Interior: TCA TR7 13 with epoxy mortar.
 2. Grout: Latex-portland cement.

3.09 CLEANING AND PROTECTION

- A. Cleaning: Upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
1. Remove latex-portland cement grout residue from tile as soon as possible.
 2. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's printed instructions, but no sooner than 14 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.
- B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, an-bonded, and otherwise defective tile work.
- C. Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensures that tile is without damage or deterioration at time of Substantial Completion.
1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft

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paper or other heavy covering during construction period to prevent staining, damage, and wear.

2. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION

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SECTION 09620 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide resilient floor tiles in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Resilient floor tile, base and accessories.
2. Sheet linoleum flooring, base and accessories.
3. Resilient flexible marble terrazzo floor tile.

1.02 QUALITY ASSURANCE

A. References: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

B. Manufacturer: Where possible, provide resilient flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds.

C. Fire Test Performance: Unless otherwise indicated, provide resilient flooring having the following classifications or properties when tested in accordance with the standard fire tests referenced below:

1. Critical Radiant Flux (CRF): Not less than 0.45 watts per sq. cm. per ASTM EMS.
2. Flame Spread: Not more than 75 as per ASTM E 84.
3. Smoke Developed: Not more than 450 as per ASTM E 84.
4. Smoke Density: Not more than 450 as per ASTM E 662.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for each type of resilient flooring and accessory.

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- B. Samples: Submit samples of each color and pattern of resilient flooring indicating full range of color and pattern. Provide full-size tile units and 12" long sections of flooring accessories for approval by Architect.
- C. Certification for Fire Test Performance: Submit manufacturer's certification that resilient flooring complies with required fire test performance and has been tested and meets indicated requirements.
- D. Maintenance Instructions: Submit manufacturer's recommended maintenance practices for resilient flooring.
- E. Replacement Material: After completion of work, deliver to project site replacement materials from same manufactured lot as materials installed, not less than one box for each 50 boxes or fraction thereof, for each color installed.

1.04 JOB CONDITIONS

- A. Maintain temperature above 65 deg F in spaces to receive resilient flooring for at least 48 hours before, after and during installation. In the case of flexible terrazzo marble flooring, spaces must be acclimated to a minimum of 70 deg. F prior to installing. Store materials in spaces where they will be installed for at least 48 hours before beginning installation; for flexible terrazzo marble flooring it is recommended that prior to the installation the tiles be delivered and removed from the cartons and squarely stacked upside down for a minimum of 24 hours or until they are 70 deg. F and flat. Subsequently, maintain temperature above 55 deg. F in areas where work is completed.
- B. Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Colors and Patterns: As selected by Architect from manufacturer's standards.
- B. Vinyl Composition Floor Tile: FS SS-T-312B, type IV; 12" x 12" unless otherwise indicated; Composition 1 - asbestos-free, gage: 1/8".
1. Selected Product: Equal to Armstrong Stonetex Excelon, as manufactured by Armstrong World Industries, or other approved equal.

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2. The tiles shall be free from defects affecting its serviceability or appearance and the surface shall have a smooth calendared finish free from sand, grid or lumps. All tile shall be given a wax finish at the factory.

3. The tiles shall have straight edges and square corners.

4. All materials shall be delivered in the manufacturer's sealed package with the labels intact and the seal unbroken.

5. The tile installed shall match in every aspect the approved samples.

C. Linoleum Sheet Flooring and Base: FS LLL-F-1238A; homogeneous floor covering composed of linseed oil, cork, wood floor, resin binders, dry pigments containing NO asbestos, mixed and calendered onto jute backing; 79" wide sheet, 3.2mm thick, with bonded jute backing.

1. Selected Product Equal to Forbo Industries, Marmolium Dual, Thickness: 3.2 mm thick, or other approved equal.

D. Resilient flexible terrazzo marble flooring: characterized by polished natural stone set in binder resin, unpolished backing, dry pigments containing NO asbestos, 11.92 inches square, 1/8" and or 3/16" depending on tile line.

1. Selected product: Equal to Fritztile, CL200 Series or CTN500 Series, as manufactured by Fritz Industries, 500 Sam Houston Road, Mesquite, Texas 75149 or other approved equal.

2. The tiles shall have straight edges and square corners and be free from defects affecting the serviceability.

3. All the materials shall be delivered in the manufacturer's sealed package with the labels intact and the seal unbroken -with manufacturer's instructions for application.

4. The tile installed shall match in every aspect the approved samples.

E. Wall Base: Provide standard top-set cove base complying with FS SS-W-40; Type II, with matching end stops and preformed or molded corner units, and as follows:

1. Height: 4" or 6"

2. Thickness: 1/8".

F. Resilient Edge Strips: 1/8" thick, homogeneous vinyl or rubber composition, tapered edge, color as selected from standard colors available; not less than 1" wide.

G. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring

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manufacturer to suit material and substrate conditions.

- H. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
- I. Leveling Compound: Latex type as recommended by flooring manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Broom clean or vacuum surfaces to be covered, and inspect subfloor. Start of flooring installation indicates acceptance of subfloor conditions and full responsibility for completed work.
- B. Use leveling compound as recommended by flooring manufacturer for filling small cracks and depressions in subfloors.
- C. Perform bond and moisture tests on concrete slabs to determine that concrete surface are sufficiently cured, dried and ready to receive flooring.
- D. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions. Inspect substrate and make other required corrections prior to starting installation.

3.02 INSTALLATION, GENERAL

- A. Where movable partitions are shown, install resilient flooring before partitions are erected.
- B. Install flooring in strict compliance with manufacturer's recommendations. Extend flooring into toe spaces, door reveals and into closets and similar openings.
- C. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.
- D. Install flooring on recessed covers within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on these items. Tightly cement edges to perimeter of floor around such items.
 - 1. Unless otherwise directed lay out files in basket weave pattern with grain direction alternating between reversed and adjacent files.
- E. Tightly cement flooring to subbase without open cracks or other surface

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imperfections. Hand roll flooring at perimeter of each covered area to assure adhesion.

F. Prior to installation, review patterns, direction, starting points, borders and other layout conditions with Resident Engineer.

3.03 FLOORS

A. Unless otherwise directed, lay tile from center marks so that tile at opposite edges of room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis.

B. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable. Lay tile with grain in one direction or as directed by the Resident Engineer.

C. Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

3.04 ACCESSORIES

A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with molded corners. Tightly bond base to substrate at horizontal and vertical surfaces.

B. On masonry surfaces, or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.

C. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

D. Provide metal or vinyl edge moulding as binder bar, stair nosing, reducer strips, etc. as directed. Approval by the Architect for the edge moulding is required before installation.

3.05 CLEANING AND PROTECTION

A. Remove any excess adhesive or other surface blemishes, using neutral type cleaners as recommended by flooring manufacturer. Protect installed flooring with heavy Kraft paper or other covering.

B. After completion of project and just prior to final inspection of work, thoroughly clean floors and accessories.

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C. Apply polish and buff, with type of polish, number of coats, and buffing procedures in compliance with flooring manufacturer's instructions.

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SECTION 09660 - RUBBER TILE FLOORING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Rubber Recreational and Athletic Flooring.

1.02 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 06100 - Rough Carpentry.

1.03 REFERENCES

- A. ASTM D 412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers--Tension.
- B. ASTM D 624: Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- C. ASTM D 746: Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
- D. ASTM D 2047: Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
- E. ASTM D 2240: Standard Test Method for Rubber Property--Durometer Hardness.
- F. ASTM E 648: Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- G. MIL-M-15562: Dielectric Strength.
- H. NFPA 253: Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.04 SUBMITTALS

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- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Maintenance Recommendations.
- C. Shop Drawings: Dimensioned plans, to scale, indicating layout of flooring tiles in areas to receive them.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum three (3) years documented experience producing flooring similar to those specified in this section.
- B. Installer Qualifications: Minimum three (3) years documented experience installing flooring similar to those specified in this section
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.

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3. Refinish mock-up area as required to produce acceptable work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- C. Store materials indoors in a dry, warm, ventilated weathertight location.
- D. Do not store unprotected flooring tile under fluorescent lighting for period longer than 30 calendar days; cover flooring tile with dark color polyethylene sheeting, or other light-protective covering.

1.07 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 COORDINATION

- A. Coordinate Work with other operations and installation of adjacent floor finish materials to avoid damage.

1.09 EXTRA MATERIALS

- A. Supply extra floor tiles, in quantities to equal 5 percent of installed tile for each type tile specified, for Owner's maintenance stock.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Pawling Corp., Architectural Products Div., Or Approved Equal.

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B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.02 RUBBER RECREATIONAL AND ATHLETIC FLOORING

A. Rubber Material: Virgin SBR rubber; compositions using reclaimed or reprocessed rubber not permitted; with the following characteristics:

1. Flammability, when tested in accordance with NFPA 253 and ASTM E 648: Critical Radiant Flux 0.62 watts/cm², Class I.

2. Specific gravity: 1.47 plus or minus 0.03.

3. Tensile strength, when tested in accordance with ASTM D 412: 650 pounds per square inch (4.48 Mpa).

4. Hardness, when tested in accordance with ASTM D 2240: Durometer Shore A 55 plus or minus 5.

6. Elongation, when tested in accordance with ASTM D 412: 550 percent.

7. Tear resistance, when tested in accordance with ASTM D 624: 75 pounds per square inch (0.51 Mpa).

8. Temperature stability range, when tested in accordance with ASTM D 746: minus 30 degrees F (minus 34.4 degrees C) to 120 degrees F (48.8 degrees C).

8. Shrinkage, after 7 days at 212 degrees F (100 degrees C): 2 percent.

9. Dielectric strength, in accordance with MIL-M-15562: 37,000 volts.

10. Conductivity: Non-conductive.

B. Flooring: Pro-Tek Hid-N-Lok II, Style HL-150; made of rubber with the characteristics specified.

1. Size: 24 inches (609.6 mm) square.

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2. Thickness: 3/8 inches (9.5 mm).
3. Weight: 12 pounds (5.4 kg), each tile.
4. Static coefficient of friction, when tested in accordance with ASTM D 2047: Dry 0.84; Wet 0.90.
5. Tile-to-tile interlock: Hidden interlock feature, which hides interlocks beneath tile surface; five interlocks per side.
6. Surface: Polished top surface; four 12-inch (304.8 mm) squares per tile.
7. Color: Custom color matching Architect's sample; solid color throughout full tile thickness.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that sub-floors to receive flooring are level to within flooring manufacturer's requirements, and without large cracks, depressions, or indentations.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove dust, debris, moisture, and powder accumulations from surfaces to receive flooring.

3.03 INSTALLATION

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- A. Install in accordance with manufacturer's instructions.
- B. Do not install tiles over carpet.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Repair minor damage to finishes in accordance with manufacturer's recommendations.
- D. Replace products having damage to function, and products having damage to finishes which cannot be repaired to Architect's acceptance.

END OF SECTION

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SECTION 09680 - CARPET

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide carpet in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Carpet, carpet cushion and carpet moulding.
2. Carpet tile and carpet moulding.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 2 Sections for removing existing flooring.
2. Division 3 Sections for curing compounds and other concrete treatments compatibility with carpet and carpet cushion adhesives.
3. Division 9 Section "Resilient Tile Flooring" for materials and installation.

1.02 SUBMITTALS

A. Product Data for each type of carpet material, carpet cushion, and installation accessory specified. Submit manufacturer's printed data on physical characteristics, durability, fade resistance, and fire-test-response characteristics. Submit methods of installation for each type of substrate.

B. Shop Drawings showing columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet. Indicate the following:

1. Carpet type, color, and dye lot.
2. Locations where dye lot changes occur.
3. Seam locations, types, and methods.
4. Type of subfloor.
5. Type of installation.

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6. Pattern type, repeat size, location, direction, and starting point.
7. Pile direction.
8. Type, color, and location of insets and borders.
9. Type of cushion
10. Type, color, and location of edge, transition, and other accessory strips.
11. Transition details to other flooring materials.

C Samples for initial selection in the form of manufacturer's color charts or Samples of materials showing the full range of colors, textures, and patterns available for each type of carpet indicated.

D. Samples for verification of the following products, in manufacturer's standard sizes, showing the full range of color, texture, and pattern variations expected. Prepare Samples from the same material to be used for the Work, Label each sample with manufacturer's name, material type, color, pattern, and designation indicated on Drawings and carpet schedule, Submit the following:

1. 12-inch- (300-mm-) square Samples of each type of carpet material required.
2. 12-inch (300-mm-) Samples of each type of exposed edge stripping and accessory item.
3. 6-inch (150-mm-) Samples of each type of carpet cushion.

E. Schedule of carpet using same room designations indicated on Drawings.

F. Maintenance data for carpet and cushion. Include the following:

1. Methods for maintaining carpet and carpet cushion, including manufacturer's recommended frequency for maintaining carpet.
2. Precautions for cleaning materials and methods that could be detrimental to finishes and performance. Include cleaning and stain-removal products and procedures.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who is certified by the Floor Covering Installation Board (FCIB) or who can demonstrate compliance with FCIB certification program requirements.

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B. Single-Source Responsibility: Obtain each type of carpet from one source and by a single manufacturer: Each roll of carpet and/or box of carpet tile shall be from the same dye lot.

C. Carpet Fire-Test-Response Characteristics: Provide carpet with the following fire-test-response characteristics as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify carpet with appropriate markings of applicable testing and inspecting agency.

1. Surface Flammability: Passes CPSC 16 CFR, Part 1630.
2. Flame Spread: Class 1, 25 or less per ASTM E 84.
3. Smoke Developed: 450 or less per ASTM E 84.

D. Carpet shall be soil resistant, dense and durable to give optimum performance in highly trafficked areas. Carpet shall be static resistant and shall comprise materials for superior stability.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General: Comply with the Carpet and Rug Institute's CR1 104, Section 5: "Storage and Handling".

B. Deliver materials to Project site in original factory wrappings and containers, labeled with identification of manufacturer brand name, and lot number.

C. Store materials on-site in original undamaged packages, inside well-ventilated area protected from weather, moisture, soilage, extreme temperatures, and humidity. Lay flat, with continuous blocking off ground.

1.05 PROJECT CONDITIONS

A. General: Comply with CR1 104, Section 6: "Site Conditions."

B. Space Enclosure and Environmental Limitations: Do not install carpet until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient temperature and humidity conditions are and will be continuously maintained at values near those indicated for final occupancy.

C. Subfloor Moisture Conditions: Moisture emission rate of not more than 3 lb/1000 sq. ft./24 hours (14.6 kg/WOO sq. m/24 hours) when tested by calcium chloride moisture test in compliance with CR1 104, 6.2.1, with subfloor temperatures not less than 55 deg F (12.7

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deg C).

D. Subfloor Alkalinity Conditions: A pH range of 5 to 9 when subfloor is wetted with potable water and pHydriion paper is applied.

1.06 WARRANTY

A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have wider other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Carpet Warranty: Submit a written warranty executed by carpet manufacturer and Installer agreeing to repair or replace carpet that does not meet requirements or that fails in materials or workmanship within the specified warranty period. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination.

C. Warranty Period: 5 years from date of Substantial Completion.

D. Special Carpet Cushion Warranty: Submit a written warranty executed by carpet cushion manufacturer and Installer agreeing to repair or replace carpet cushion that does not meet requirements or that fails in materials or workmanship within the specified warranty period. Failures include, but are not limited to, permanent indentation or compression.

E. Warranty Period: 5 years from date of Substantial Completion.

F. The contractor shall guarantee in writing to relay or restretch any carpet that does not provide an attractive, wrinkle-free appearance and to correct any condition due to faulty installation which may appear within one year of acceptance of the completed installation including loss of adhesive to the subfloor, frayed open or raveled seams.

1.07 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.

1. Carpet: Before installation begins, furnish quantity of full-width units equal to 5 percent of amount installed.

2. Carpet Tile: Before installation begins, furnish quantity of full-size units equal to 5 percent of the amount installed.

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B. All carpet remnants 1 square yard or larger should be left at the job site or packaged in appropriate wrapping, labeled and delivered to the building custodian.

PART 2 - PRODUCTS

2.01 CARPET

A.	Type Face yarn	100% "Commercial on"
	Soil-hiding Nylon "3700"	
	Yarn Size	3.55/2 Heat-Set
	Ply Twist	6.0 TPI as tested under ASTM D 1222-82
	Construction	Dense Cut Pile
	Special Treatments	"Scotch Guard"
	Pile Height	0.375 Inch
	Stitches Per Inch	12
	Tufts Per Sq. In.	120
	Tufts Per Sq. Yd.	155,520
	Gauge	1/10(270 Pitch)
	Static Resistance	Below 3.5 Kilovolts as tested under SSTCC- 134
	Density Factor	4,800
	Weight Density Factor	240,000
	Pile Weight	40 oz./Sq. Yd. (1695 Grams/Sq. M.)
	Width	12' (3.66 M)
	Primary Backing	Polypropylene
	Secondary backing	Jute or Synthetic (Mill Option Only)
	Total Weight (Jute)	93.3 oz/Sq. Yd. (3,164 Grams/Sq. M.)
	Total Weight (Synthetic)	91.0 oz/Sq. Yd. (3,086 Grams/Sq. M.)
	Pattern	As directed by RE
	Color	As directed by RE

B. Carpet shall be factory treated with a product such as "Scotch Guard" as manufactured by 3M Company or approved equal and shall be so stated on the Manufacturer's warranty card.

2.02 CARPET CUSHION

A. Available Products; 40 oz. padding as selected by the Resident Engineer.

2.03 CARPET TILE

A. Manufacturing Specifications - Interface Flooring Systems, Inc. or approved equal.

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2.04 INSTALLATION ACCESSORIES

A. Concrete-Slab Primer Nonstaining, VOC compliant type as recommended by the following:

1. Carpet manufacturer.
2. Carpet cushion manufacturer.
3. "Floorstone" or approved equal.

B. Trowelable Underlayments and Patching Compounds; voc compliant as recommended by the following:

1. Carpet manufacturer.
2. Carpet cushion manufacturer.

C. Adhesives: Water-resistant, mildew-resistant, VOC compliant, nonstaining type to suit products and subfloor conditions indicated and to comply with flammability requirements for installed carpet as recommended by the following;

1. Carpet manufacturer.
2. Carpet cushion manufacturer.

D. Tackless Carpet Stripping: Water-resistant plywood in strips as required to match cushion thickness and in compliance with CR1 104, 113.

E. Seaming Cement: Hot-melt adhesive tape or similar product recommended by carpet manufacturer for taping seams and butting cut edges at backing to form secure seams and to prevent pile loss at seams.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine subfloors and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting performance of carpet. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Verify that subfloors and conditions are satisfactory for carpet installation and comply with requirements specified in this Section.

C. The Contractor shall notify the Project Manager in writing of any conditions which will

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prevent him from producing satisfactory finish work.

3.02 PREPARATION

A. General: Comply with carpet manufacturer's installation recommendations to prepare substrates indicated to receive carpet installation.

B. Level subfloor within 1/4 inch in 10 feet (6mm in 3m), noncumulative, in all directions. Sand or grind protrusions, bumps, and ridges. Patch and repair cracks and rough areas. Fill depressions.

1. Use leveling and patching compounds to fill cracks, holes, and depressions in subfloor as required.

C. Remove subfloor coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone.

D. Broom or vacuum clean subfloors to be covered with carpet. Following cleaning, examine subfloors for moisture, alkaline salts, carbonation, or dust.

E. Concrete-Subfloor Preparation: Apply concrete-slab primer, according to manufacturer's directions.

F. Wood-Subfloor Preparation: Apply wood-floor sealer, according to manufacturer's directions.

G. Resilient-Flooring Substrate Preparation: Replace missing pieces of existing resilient flooring or patch to level. Cut out peaked seams and fill with latex underlayment as recommended by manufacturer. Repair depressions with filler material.

H. The Contractor shall remove all furniture, equipment and moveable obstructions to allow installation of wall to wall carpeting and place back in original location and position upon completion of work.

3.03 INSTALLATION

A. Direct Glue-Down Installation: Comply with CR1 104, Section 8: "Direct Glue-Down."

B. Carpet with Attached-Cushion Installation: Comply with CR1 104, Section 10: "Attached Cushion."

C. Stretch-in Installation: Comply with CR1 104, Section II: "Stretch-in Utilizing Tackless Strip."

D. Stair Installation: Comply with CR1 104, Section 12: "Carpet on Stairs."

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- E. Comply with carpet manufacturer's recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under door in closed position. Do not bridge building expansion joints with continuous carpet.
- F. Where demountable partitions or other items are indicated for installation on top of finished carpet floor, install carpet before installation of these items.
- G. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer. Coordinate installation with installation of wall base to establish sequences and details of overlapping work.
- H. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions removable flanges, alcoves, and similar openings.
- I. Unless otherwise directed, install pattern parallel to walls and borders.
- J. Install carpet cushion seams at 90-degree angle with carpet seams.
- K. The carpet shall be installed by direct glue down, carpet tiles installed on vinylloc as specified or as directed by the Architect based upon the condition of the existing floor.
- L. Carpet mouldings or metal binder bars shall be installed at all areas where floor covering material changes or a carpet edge does not abut a vertical surface. Open doorways to be finished with anodized tap down metal.
- M. Carpets shall be installed wall to wall using continuous lengths and as broad widths as possible. Cut edges shall be true and appropriately treated to form nonraveling joints where exposed. Carpet shall be installed in accordance with Carpet Manufacturer's recommendations for seaming techniques and seaming cement where required.
- N. Seams, if absolutely necessary, shall be as few as possible and as nearly invisible as possible. Seaming diagram showing location of all seams shall be submitted for approval before installation is started.
- O. Doors must be undercut where required to prevent abrasion of newly installed carpet.
- P. The Contractor shall neatly cut new wall to wall carpeting for any electrical and/or telephone floor system.
- Q. Installed carpeting shall be properly stretched and upon completion shall show no signs of bilges, spots, dirt, soiling, tears, frays or pulls.
- R. All expansion joints, cracks, gaps and indents shall be filled with a quality floor patching compound on latex base filler All high spots or ridges shall be leveled by sanding.

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All low or shallow places shall be filled or built up with latex base underlayment.

S. All edges cut for seaming must be treated with a seam sealer. Any excess sealer getting to the face of the pile should be removed with the solvent recommended for that purpose.

T. All carpet adhered to the floor with adhesive should have 100% contact with the adhesive.

3.04 CARPET MOULDING INSTALLATION

A. The edges of carpet ending at doorways or connecting with resilient or hard surface flooring should be anchored with metal binders ("Z" bars).

B. Provide metal or vinyl edge moulding as binder bar, stair nosing, reducer strips, etc. as needed with the Architect's approval,

3.05 CLEANING: Perform the following operations immediately after completing installation.

A. Remove visible adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer

B. Remove protruding yarns from carpet surface.

C. Vacuum carpet using commercial machine with face-beater element.

D. After completion of the installation, all dirt, carpet scraps, packaging and rubbish shall be removed.

E. Soiled spots will be removed with Manufacturer's recommended spot remover.

F. Excessive adhesive on carpet may be removed with sharp scissors.

G. Any damaged carpet caused during clean up will be replaced by the Contractor at no additional cost.

3.07 PROTECTION

A. General: Comply with CR1 104, Section 15: "Protection of Indoor Installation".

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure carpet is without damage or deterioration at the time

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of Substantial Completion.

END OF SECTION

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SECTION 09700 - SEAMLESS RESINOUS FLOORING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide seamless resinous flooring in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Shower/Toilet Room area floors.
2. Inmate Bathrooms and staff Bathrooms
3. Janitor Closets

B. Related Sections:

1. Section 03320 - Concrete Floor Topping.
2. Section 04200 - Unit Masonry.
3. Section 07100 - Sheet Membrane Waterproofing.
4. Section 07900 - Joint Sealers.
5. Section 09250 - Gypsum Drywall

C. Definitions:

1. Resinous flooring includes a penetrating two-component urethane primer, quartz silica aggregate, a three component urethane undercoat, brightly colored vinyl flake broadcast, and a two component, high performance, clear urethane sealer.

1.02 SUBMITTALS

A. Samples: Submit 6" square samples of special flooring required. For initial selection of colors and finishes, submit manufacturer's color charts showing full range of colors and finishes available.

B. Product Data: Submit manufacturer's technical information and installation instructions and general recommendations for each type of special flooring and accessory required. Include certification indicating compliance of materials and requirements.

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C. Maintenance Instructions: Submit 2 copies of written instructions for recommended periodic maintenance of special flooring.

1.03 QUALITY ASSURANCE

A. Manufacturer's Instructions: In addition to specified requirements, comply with resin manufacturer's instructions and recommendations for substrate preparation, materials storage, mixing and application, finishing, and curing.

B. Installer: A firm which has specialized in installing the specified flooring for not less than three years and which is acceptable to manufacturer of primary materials.

1.04 JOB CONDITIONS

A. Ventilation: Provide adequate ventilation during application of solvent-based products in enclosed spaces. Maintain ventilation until coatings have cured.

B. Environmental Conditions: Comply with flooring manufacturer's directions in regard to temperature, humidity and ventilation.

C. Installation shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture from plaster, concrete or terrazzo work has dissipated.

D. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation adhesive manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Material shall be stored in a dry, enclosed area protected from exposure to moisture. Temperature of storage shall be maintained between 60 and 85 F and 30 C.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Approved Manufacturers: Subject to compliance with requirements, a manufacturer offering products which may be incorporated in the work include but is not limited to the following:

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1. Stontec UTF, as manufactured by Stonhard, Inc., One Park Avenue, Maple Shade, NJ 08052; Phone: (800) 257-7953; (856) 779-7500; FAX: (856) 321-7525
2. Polycrete MDB, as manufactured by DUR-A-FLEX, Inc., 95 Goodwin Street, East Hartford, CT 06108; Phone: (860) 528-9838; Fax: (860) 528-2802
3. Hubbellite 300, as manufactured by **Hubbellite America, P.O. Box 18047 Pittsburgh, PA 15236; Phone: (412) 885-4950; Fax: (412) 885-5052**
4. Covercrete S.L. and Covercrete V (Cove Base) System, as manufactured by Covercrete Flooring Products, Ontario, Canada (1 -800-267-4425 / 905-420-0425).
5. FasTop™, as manufactured by General Polymers, Division of Sherwin-Williams Industrial and Marine Coatings Group, 101 Prospect Ave. NW, Cleveland, Ohio 44115, Phone: (216) 566-2000.
6. Or an approved equal.

2.02 SHOWER ROOM AREA FLOORING SYSTEM

A. Seamless resinous flooring shall consist of a system comprised of a penetrating two-component urethane primer, quartz silica aggregate, a three component urethane undercoat, brightly colored vinyl flake broadcast, and a two component, high performance, clear urethane sealer. Resinous flooring shall meet the following minimum standards:

	Characteristics	Performance	Test
1.	Compression	>7,000 psi	ASTM C-579
2.	Surface Hardness	90 Shore D	ASTM D-2240
3.	Indentation	No indentation	MIL-D-3134F
4.	Adhesion	>400 psi	MIL-D-3134, Para. 4.7.14
5.	Tensile Strength	>1,200 psi	ASTM D-638
6.	Flexural Strength	2,800 psi	ASTM C-580
7.	Bond Strength	>400 psi	ASTM D-4541
8.	Modulus of Elasticity	1.2 x 10 ⁶ psi	ASTM C-580

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|-----|---------------------|------------------|-----------------------|
| 9. | Water Absorption | <0.1% | ASTM C-413 |
| 10. | Heat Resistance | 140 deg. F | (continuous exposure) |
| 11. | Abrasion Resistance | 0.06 gm max loss | ASTM D-4060 |

B. Subject to compliance with the requirements, provide Stonetec UTF by Stonehard or equal by listed manufacturer's as acceptable to the Commissioner:

C. Accessories: Provide manufacturer's recommended waterproofing membrane under flooring applications.

D. Colors: Provide seamless flooring in manufacturer's color's Slate, unless otherwise indicated.

2.03 FLOORING ACCESSORIES

A. Accessory Joints, Strips and Lath: Furnish and install required accessory items as recommended by manufacturer.

B. Waterproof Membrane: Waterproof Coating: Trowel applied latex composition waterproofing. Provide embedded "Glass mat" fiberglass fabric reinforcing where required.

1. Breakload, Wet (ASTM D 1117): 67 lbs./inch
2. Breakload, Dry (ASTM D 1117): 79 lbs./inch.
3. Elongation, Wet (ASTM D 1117): 31%.
4. Elongation, Dry (ASTM D 1117): 29%.
5. Adhesion: 19.2 lbs/linear inch.
6. Waterproofness:
 - a. Method: 18 inch diameter sample subjected to 50 lbs. per inch water pressure for 60 minutes. Test for amount of water forced through in grams.
 - b. Result: No measurable water penetration.
 - c. Product: Type as recommended by manufacturer for system type

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installed.

PART 3 - EXECUTION

3.01 PREPARATION

- A. **General**: Perform preparation and cleaning procedures in compliance with flooring manufacturer's instructions.
- B. **Concrete Surfaces**: Comply with ASTM C 811 unless otherwise required by manufacturer's instructions.
- C. **Materials**: Carefully mix and prepare materials used in flooring system in compliance with manufacturer's instructions.
- D. Prime or etch slabs as required and as recommended by the manufacturer, Remove any surface material that will interfere with the bond of the resin matrix base. All depressions and cracks in substrates shall be filled as recommended by the flooring manufacturer. Drains and other slab fixtures shall have been properly secured in position before flooring operations begin. Maintain areas to receive flooring at temperatures recommended by the materials manufacturer.

3.02 APPLICATION OF SHOWER ROOM AREAS

- A. **General**: Apply each component of flooring system in compliance with manufacturer's directions to produce a uniform monolithic floor.
1. Provide integral bases unless otherwise indicated.
- B. **Prime Coat**: When recommended by manufacturer, apply primer over properly prepared substrate at spreading rate and timing of application to ensure optimum adhesion between flooring and substrate.
- C. **Broadcast**: Immediately broadcast quartz silica aggregate into the primer using the manufacturer's specially designed sprycaster.
- D. **Topping Mixes**: Trowel apply topping mixes in number of coats and at spreading rates required to produce required thicknesses.
- E. **Finish Coats**: Apply grout coats, dressing coats and finish as recommended by the manufacturer. The finished floor shall be smooth, uniform in color and free from trowel marks.

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3.03 CURING, CLEANING AND PROTECTION

A. Cure special flooring in compliance with manufacturer's directions, taking care to prevent their contamination during application and prior to completion of curing, Close area for a minimum of 12 hours.

B. Protect special flooring from damage and wear during construction operation. Comply with manufacturer's recommendations for protective covering. Remove temporary covering just prior to cleaning for final inspection.

C. Clean special flooring just prior to final inspections. Use materials and procedures recommended by flooring manufacturer.

END OF SECTION

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SECTION 09770 - SANITARY WALL AND CEILING FINISH

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide sanitary wall and ceiling finishes in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1.02 SUBMITTALS

- A. Product data from manufacturers for each type of product specified.
1. Two samples of each type of panel each type of trim and fastener.
 2. Shop Drawings: Indicate the location and dimension of joints and fastener attachment.

1.03 QUALITY ASSURANCE

A. Provide panels and molding only from the manufacturer specified to ensure warranty and color harmonization of accessories.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Delivery of Materials: Package sheets on skids or pallets for shipment to project site.
- B. Storage of Materials: Store panels indoors in a dry place at the project site.
- C. Handling: Remove foreign matter from face of panel by use of a soft bristle brush, avoiding abrasive action.

1.05 PROJECT CONDITIONS

- A. Installation shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture from plaster, concrete or terrazzo work has dissipated.
- B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and

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recommendation adhesive manufacturer.

C. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Crane Kemlite Company, Joliet, Illinois, USA Phone: 1-800-435-0080 or 1-815-467-8600,
Fax: 1-815-467-8666.

B. Other acceptable manufacturers offering equivalent products.

1. Glasteel, Division of Stabilit America, Inc.
2. Marlite, 202 Harger Street, Dover, OH 44622 Phone: 1-330-343-6621
3. Or an approved equal.

2.02 SANITARY WALL / CEILING PANELS

A. Sanitary Wall / Ceiling Panels: Class I (A) Interior Finish. Wall and/or ceiling panels shall be fiberglass reinforced plastic panels, KEMLITE® Fire-X Glasbord with Surfaseal, as manufactured by Crane Kemlite Company, with the following characteristics.

1. Underwriter's Laboratories (UL.) Classified.
2. Class A Flame Spread of less than 25, Smoke Developed less than 450 per ASTM-E84 latest version.
3. Barcol Hardness (scratch resistance) of 55 as per ASTM D-2583.
4. Panels with exhibit no more than a 0.038% weight loss after a 25-cycle Taber Abrasion Test using CS-17 abrasive wheels with 1000 g. wt.
5. Gardner Impact Strength of 22 in. - lbs. (25.6 cm - kg) showing no visible damage on front side per ASTM D-3029.
6. FMRC (Factory Mutual Research Center) approved. Subject to the conditions of approval as described in FMRC Report J.I. IV549.AM.
7. Meets USDA / FSIS Requirements.

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8. ICBO Report Number 4583.
- B. Moldings: Harmonizing PVC (polyvinyl chloride) moldings shall be 85 white
- C. Rivets: Rivets shall be installed only in areas where there are large changes in temperature and/or humidity, where the substrate is unusually uneven, and in all low temperature or cold storage applications. Refer to Installation Guide #6211 for rivet pattern and installation instructions. Color to match wall / ceiling panels.

2.03 FACTORY LAMINATED SANITARY WALL BOARD

- A. Wall and / or ceiling boards shall be KEMLITE Kemply with Surfaseal fiberglass reinforced plastic panels as manufactured by Crane Kemlite Company, with the following characteristics.
 1. Substrates
 - a. 5/8" Firecode-X Gypsum Board.
 - b. 1/2" BCX Fir Plywood.
 2. Kemply polypropylene panels for wall panels shall be laminated on one side with 0.09" embossed Fire-X Glasbord skin. Lay-in ceiling panels should be laminated on both sides with 0.09" embossed Fire-X Glasbord skin for all installations.
 3. All panels meet USDA / FSIS Requirements.
- B. Division Bars, Corner Trim: Panel manufacturer's standard length extruded vinyl pieces; longest length possible - to eliminate end joints (Insert from Item 1, 2, 3, or 4 Part B)
- C. Fasteners: Non-corrosive drive rivets. (Insert from Item 1, 2, or 3 Part C.)

PART 3 - EXECUTION

3.01 PREPARATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
- B. Do not begin installation until backup surfaces are put into satisfactory condition.

3.02 APPLICATION

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- A. Do all cutting and drilling with carbide tipped saw blades or drill bits, or cut with snips. Install panels with manufacturer's recommended gap for panel field and corner joints. Fastener holes in the panels must be predrilled 1/8" (3.2 mm) oversize.
- B. For trowel type and application of adhesive, follow adhesive manufacturers recommendation.
- C. Using products acceptable to manufacturer, install the frp panel system in accordance with panel manufacturer's printed instructions, Installation Guide #6211.

3.03 CLEANING

- A. Remove any adhesive or excessive sealant from panel face using solvent or cleaner recommended by panel manufacturer.

END OF SECTION

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SECTION 09800 - SEAMLESS EPOXY SHOWER AND WALL COATING SYSTEM
(SPECIAL COATING)

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide labor, equipment and materials to complete and finish interior walls, interior floor and base coatings as indicated and as specified herein. Walls & flooring shall be a seamless system

1.02 RELATED SECTIONS

A. Specified elsewhere:

1. Section 03300 – Cast-In-Place Concrete
2. Section 03500 – Cementitious Topping

1.03 QUALITY ASSURANCE

- A. References: Cited Standards are incorporated herein by reference and govern the work:
1. Pamphlet No. 03732, International Concrete Repair Institute (Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings and Polymer Overlays.
- B. Single Source Responsibility: Obtain primary resinous wall and ceiling materials including hardening agents, finish or sealing coats from a single manufacturer with not less than three (3) years of successful experience in manufacturing and installing the principal materials described in this section. Provide secondary materials only of type and from a source recommended by the manufacturer of the primary material.
- C. Contractor Experience: Furnish list of projects using materials specified for this project that applicator has furnished during the past three (3) years, including the following:
1. Letter of training certification from the manufacturer/distributor stating that contractor is an approved installer of the products specified in this Section.

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2. Submit written description of the contractors experience with the specified material over the last three (3) years.

3. Submit a list of five (5) projects of similar complexity and size as this project including Owner's names with phone numbers. References must be submitted 10 days prior to bid date for approval by architect. Include with references the product data sheets of manufacturer's material meeting the specified product requirements per section 09805, Paragraph 2.01 D "Product Description".

4. Submit resume of the key person(s) who will be performing the actual work and list a minimum of five (5) projects with different Owners giving contact names and phone numbers as references.

D. Sampling of Material: When directed by Architect/Engineer, obtain test samples from material stored at the project site or source of supply.

1. Select samples at random from sealed containers.

E. Manufacturer Supervision: A representative of the materials manufacturer must be present on site for the duration of the preparation and for all phases of the installation of the specified coating materials.

1.04 SUBMITTALS

A. Submit three (3) copies of manufacturer's product literature indicating technical data. If different than the product basis of design, product data sheets must be submitted 10 days prior to bid date for architect's approval subject to performance criteria in section 09800 paragraph 2.01 D "Product Characteristics".

B. Submit three (3) copies of manufacturer's Installation and Application Guide.

C. Submit three (3) samples of finished product on substrate to be applied:

1. Prepare samples on each type of material to be covered.

2. Make samples not less than four (4) inches square.

3. Submit samples in accordance with Section 01340.

D. Submit three (3) copies of manufacturer's Material Safety Data Sheets.

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E. Submit a list of ten (10) projects of similar complexity and size as this project including Owner's names with phone numbers. References must be submitted 10 days prior to bid date for approval by architect.

Note: All submittals must be received for review 10 days prior to bid date and must be included in contractor's bid proposal. Failure to do so will result in disqualification to perform the work in this section.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery of Materials: Deliver materials to project site with labels legible and intact.

B. Storage of Materials:

1. Store only acceptable project materials on project site.
2. Store in a suitable location, convenient to progress of work.
3. Restrict storage to paint and coating materials and related equipment
4. Comply with health and fire regulations.
5. Storage temperature shall be between 65°F and 90°F or such other ambient temperature conditions as may be specifically recommended by product manufacturer.

1.06 JOB CONDITIONS

A. Environmental Requirements: Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied. Surfaces to be coated shall be between 65°F and 90°F. Do not apply coating system at temperatures beyond those limits stated in the manufacturer's technical data sheet unless given written permission by the manufacturer.

1. Do not apply finish in areas where dust is being generated.

B. Protections: Cover or otherwise protect finished work of other trades and surfaces not being coated concurrently or not to be coated.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Aggregate Filled Epoxy Floor and Wall Coating System: Selected high performance

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floor and wall coating system shall be applied over cured concrete slabs on grade, shot blasted or mechanically abraded to profile as recommended by the selected manufacturer. Prior to system application, the concrete shall be free of laitance, form release agents, curing agents, oil, grease and other contaminants. Surface shall be free of fins, projections, and loosely adhering concrete, dirt & dust particles. (PC 310K, 322). Optional PC 630 membrane.

B. Available Manufacturers: Selected high performance wall and ceiling coatings based on spray applied fiber-reinforced, 100% solids accelerated aliphatic amine cured epoxy system with glaze coat finish and anti-microbial as manufactured by Prime Coat Coating Systems in Libertyville, IL. (PC 100, 200, 400, 499). Subject to compliance with these requirements, provide this product or an acceptable equivalent.

1. EP-1200 DynaPoxy Two-Part Epoxy Security Sealant, by Prime Coat Coating Systems.
2. CRYL-A-SHIELD, by Dura-A-Flex, Inc.
3. Stonglaze VSC, by Stonhard, Inc.
4. Or Approved Equal.

C. Include on labels of containers:

1. Manufacturer's name.
2. Product name.
3. Product number.
4. Color.
5. Instructions for reducing, where applicable.
6. Component description.

D. Product Characteristics:

1. Compressive Strength: 11,700 psi (ASTM D-695-77).
2. Tensile Strength: 3,900 psi (ASTM D638-77a).
3. Tensile Elongation: 2% (ASTM D 638-77a).
4. Flexural Modulus: 1.8 x 10⁶ psi (ASTM D 790-71).

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5. Flexural Strength: 10,400 psi (ASTM D 790-71).
 6. Water Absorption: 0.1% (ASTM C 413).
 7. Heat Resistance Limitation: Continuous exposure: 140 F; Intermittent spills 200 F.
 8. Abrasion Resistance: 0.03 gm. maximum weight loss (ASTM D 4060, Taber Abrader CS- 17 wheel, 1,000 gm load, 1,000 revolutions).
 9. Flammability: Self-extinguishing (ASTM D 635).
 10. Hardness: 88 Shore D (ASTM D 2240).
 11. Bond Strength: >400 psi or substrate failure (ASTM D4541).
- E. Product Composition:
1. Must contain chopped fiberglass strands, premixed into the material.
 2. Must form a horizontal matrix within the finished coating.
 3. All coatings used must be 100% solids products.
 4. Color must be continuous throughout the entire system.
- F. Colors: Colors shall be selected by the Architect/Engineer from Manufacturer's standard palette of not less than 18 standard colors. Walls and floors are to be the same color.

2.02 ACCESSORIES

A. Epoxy Coating for Steel:

1. A two component, high-solids epoxy designed as a fast-curing steel or concrete coating with resistance to water, chemicals and abrasion to be used on metal such as access panels in wet areas where required.
2. Product specification for accessories based on PC Quickcoat, manufactured by Prime Coat Coating Systems in Libertyville, IL. Subject to compliance with these requirements, provide this product or an approved equivalent.

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2.03 FABRICATION

A. Shop Assembly/ Mixing:

1. Accomplish job mixing and application only when acceptable to the Architect/Engineer.
2. Mix components only in containers furnished by the manufacturer.
3. Proportioning of two-part and three-part coatings shall be done in strict accordance with manufacturer's recommended procedures.
4. Prime coat shall be mixed using a variable speed drill with a PS Jiffyblade. Parts A and B shall be pre-mixed and then combined and mixed together a minimum of two minutes. Ensure full blending of both parts with all material measured into the mixing container. Apply the mixed material within the pot life and temperatures recommended by the manufacturer.
5. Intermediate fiber reinforced coats (not less than two (2)) shall be mixed similar to that method employed for the prime coat.
6. Glaze coat, consisting of Parts A and B, shall be mixed similar to that method employed for the prime coat.
7. For all mixing operations, the flooring system components shall be considered as hazardous materials. Read and observe container label warnings and Material Safety Data Sheets for health and safety information prior to starting mixing operations.
8. Do not reseal mixed material. Permit final chemical set to occur in the

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container and when set has been achieved; dispose of hardened material by legal means.

9. Do not apply any material that has exceeded shelf and pot life as determined by manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine surfaces scheduled to receive coating for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into an acceptable condition through preparatory work as included in 3.02. PREPARATION OF SURFACES.

B. Notify Owner's agent immediately upon determination that surfaces scheduled to receive coating are unacceptable for proper adhesion or subsequent performance.

C. Do not proceed with surface preparation or coating application until conditions are suitable.

3.02 PREPARATION OF SURFACES

A. Concrete Masonry Unit: Prior to installation of high performance coatings, CMU walls shall receive a visual inspection by the onsite manufacturer's representative to assure that the substrate is acceptable for coating. The Masonry Contractor is to correct deficiencies.

1. Mortar joints are struck clean and filled tightly to avoid gaps or holes and provide a neat, uniform appearance in accordance with procedures as outlined under Division 4 -"Masonry".

2. Removal of all mortar spatter, protruding mortar edges, and other excessive mortar.

3. All rough edges shall be ground smooth.

4. CMU to be cleaned as specified under requirements as outlined under Division 4 "Masonry".

5. All surfaces shall be clean, dry and free of contaminants prior to installing coating system.

B. Old Glazed Block and Ceramic Tile:

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1. Abrasive blast or mechanically abrade to create a CSP2 or CSP3 anchor profile for coating.
2. Apply coating as per manufacturer's recommendations.
3. All surfaces shall be clean, dry and free of contaminants prior to installing coating system.

C. Gypsum Board and Cement Board: Prior to installation of high performance coatings, walls and ceilings shall receive a visual inspection by the onsite manufacturer's representative to assure that the substrate is acceptable for coating. The Drywall Contractor is to correct deficiencies.

1. Remove all loose coating using random orbital sanders.
2. Patch damaged areas using Gypsum patching materials.
3. All surfaces shall be clean, dry and free of contaminants prior to installing coating system.

D. Concrete Walls and Ceilings:

1. Abrasive blast or mechanically abrade to create CSP2 or CSP3 anchor profile.
2. All surfaces shall be clean, dry and free of contaminants prior to installing coating system.

E. New Concrete Floors Slabs on Grade:

1. Smooth troweled dense finish concrete, which shall have been properly cured not less than twenty-eight (28) days after placement.
2. Employ a radio frequency moisture meter to determine that residual un-combined moisture content of concrete slab is less than five (5) percent by weight. Conduct ASTM F 1869 to further record the Moisture Vapor Emission Rate. Do not apply high performance floor coatings to floor slabs that exceed 5 percent moisture content or 3 pounds per 1,000 square feet per 24 hours unless approved by the material manufacturer.
3. Shot blast to profile all concrete floor surfaces scheduled to receive high performance floor coatings to a classification of CSP-5.
4. Remove and legally dispose of all debris and contaminants produced by the shot blasting process. Steel media resulting from the shot blasted floor slab surface shall be

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removed from cracks, slab edges, construction joints, and corners by magnets, magnetic broom, air blast, vacuum, or stiff bristle broom.

F. Old Concrete Floors Slabs on Grade:

1. Employ a radio frequency moisture meter to determine that residual un-combined moisture content of concrete slab is less than five (5) percent by weight. Conduct ASTM F 1869 to further record the Moisture Vapor Emission Rate. Do not apply high performance floor coatings to floor slabs that exceed 5 percent moisture content or 3 pounds per 1,000 square feet per 24 hours unless approved by the material manufacturer.

2. Shot blast to profile all concrete floor surfaces scheduled to receive high performance floor coatings to a classification of CSP-5.

3. Where visual inspection of shot blasted surface indicates that oil-based penetration of the surface has occurred, the stained areas shall be treated with a 15% by volume solution of aqueous tri-sodium phosphate (TSP) or other proprietary de-greasing agent. Rinse and dry all floor surfaces scheduled to receive high performance floor system finish prior to commencement of prime coat application.

4. Remove and legally dispose of all debris and contaminants produced by the shot blasting process. Steel media resulting from the shot blasted floor slab surface shall be removed from cracks, slab edges, construction joints, and corners by magnets, magnetic broom, air blast, vacuum, or stiff bristle broom.

G. Metal Surfaces:

1. Surfaces to be coated must be free from dirt, moisture, grease, oil and old coatings.

2. PC QUICKCOAT is a two component product supplied in equal ratio of components.

3. The entire contents of the kits should be power mixed together. Thirty minute induction time is required.

3.03 APPLICATION

A. General Requirements:

1. Do not apply initial coating until moisture content of surface is within limitations recommended by coating manufacturer and never install coatings when the substrate temperature is less than 5 degrees above dew point unless specifically approved, in writing, by the manufacturer.

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2. Apply primer at coverage rates recommended by Manufacturer but at a rate that will produce a dry film thickness not less 8 mils. Airless spray, brush or rollers may be used to apply the primer.

3. After primer has become tacky apply the fiber reinforced epoxy system using a 45:1 air powered airless spray rig with a gravity fed hopper attachment.

4. When the fiber reinforced epoxy system has cured, abrade the substrates to remove exposed fiberglass and other surface imperfections. Apply glazing coat with a brush, roller or airless sprayer. A total DFT of the complete system shall be a minimum 45mils thick.

5. Keep all application equipment free from contaminates and suitable for the finish required.

6. Comply with recommendation of product manufacturer for cure times and re-coat windows. Unless specifically allowed by the manufacturer re-coat windows will not be violated.

7. Finish coats shall be smooth to the touch and free of skipped or missed areas. An orange peel texture with occasional fiberglass lumps is normal and acceptable.

8. Where walls and floors abut and are both of a resinous material, obtain all coating materials from a single manufacture being sure to meet all re-coat windows to insure a seamless installation.

9. Make edges where adjoining other materials or colors, clean and sharp with no overlapping.

10. Change colors at points designated by Owner's agent and/or on color schedule where colors differ between adjoining spaces or rooms and where door frames match wall colors.

B. Floors (Build Coat):

1. Apply primer at coverage rates as recommended by manufacturer but at a rate that will produce a dry film thickness not less 8 mils. Airless spray, brushes, rollers or squeegee may be used in coating application.

2. Comply with recommendations of manufacturer of high performance floor system for drying time between prime and succeeding coats.

3. Install 2" cant cove base and thresholds (see detailed drawings) consisting of 100% solids epoxy and aggregate mixture per drawings and/or the Room Finish Schedule.

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4. Apply one build coat of clear, mixed liquids at a rate of one (1) gallon per 80 square feet of floor surface or approximately 20 mils wet film thickness. Broadcast onto the liquid surface colored quarts aggregate passing 40 to 60 mesh screen to rejection. Remove excess aggregate after film is dried by broom sweeping or industrial grade vacuum. A total dry film thickness of the intermediate coat shall be not less than forty-two & one half (42.5) mils including encapsulated aggregate.

C. Walls, Ceilings & Floors Seamless System:

1. Apply primer to walls, ceilings and floor system at coverage rates recommended by Manufacturer but at a rate that will produce a dry film thickness not less than 8 mils. Airless spray, brush or rollers may be used to apply the primer.

2. After primer has become tacky apply the fiber reinforced epoxy system using a 45:1 air powered airless spray rig with a gravity fed hopper attachment to wrap walls, ceilings and floors.

3. When the fiber reinforced epoxy system has cured, abrade the substrates to remove exposed fiberglass and other surface imperfections. Apply glazing coat to walls and ceilings with a brush, roller or airless sprayer. A total DFT of the complete wall and ceiling system shall be a minimum 45 mils thick.

4. Topcoat floors with one final glazing coat to a dry film thickness of 10 mils. Floor glazing shall have non-skid additive incorporated into the resin to provide non-skid texture. The finished floor must meet ADA specifications for this project. Use a Sullmair FSC 2000-1346 Floor tester to validate ADA requirements. Please note to achieve the required ADA coefficient of friction, additional topcoat material or anti-slip additives may be necessary.

5. Finished product shall be uniform in color and texture and free of skipped or missed areas.

D. Metal Surfaces: PC QUICKCOAT can be applied using brush, roller or spray equipment. For conventional application, use a fluid tip of .070" to .086" and an air cap with good break-up. Personal protective equipment should be used, especially during application. Where airless equipment is used, a 20:1 pump and a .019 to .023 tip size will provide a good spray pattern. Ideally, the fluid hose should not be less than 3/8" I.D. and not longer than 50 feet. For easier spray application, thinning of up to 5% (using Xylene) is acceptable; consult your Prime Coat Coating Systems Representative.

3.04 CLEANING

A. Remove debris promptly from work area and dispose of properly.

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- B. Remove spilled, splashed, or splattered coating materials from all surfaces.
- C. Do not mar surface finish of items being cleaned.

3.05 FINISH SCHEDULE

- A. Apply high performance coating systems to all areas shown on the drawings or specified in the Room Finish Schedule.
- B. Install cant cove base shown in the Finish Schedule and detailed in the drawings.
- C. Unless directed by the contract documents do not install high performance coatings on:
 - 1. Ferrous metals installed in concrete slabs
 - 2. Non-ferrous metals installed in or adjacent to concrete slabs.
 - 3. Pipe, conduit, floor drains, insulated conductors, or other electrical, mechanical or process-related equipment.

3.06 GUARANTEE/WARRANTY

- A. Provide Owner's agent with an appropriate form of warranty against defects in material and workmanship for a period of one year from date of substantial completion, or date of beneficial occupancy, if earlier than date of substantial completion.
- B. Issuance of Warranty to Owner's agent shall be a conditional precedent to receipt of final payment to the coating contractor.
- C. Extent of Warranty shall be limited to the repair or replacement of defective surfaces at no cost to the Owner, and for any damage directly resulting from such defects during the warranty period. The warranty shall not include any remedy for defects caused by abuse, improper maintenance or operation, or by normal wear, tear and usage.

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END OF SECTION

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SECTION 09900 - PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide painting work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Scrape, prime and paint all exposed surfaces of the following existing items on or above the roof work areas.

- a. Ladders.
- b. Doors and Frames.
- c. Plumbing vents.
- d. Hatches.
- e. Ducts.
- f. Grillages

2. "Paint" as used herein means all coating systems materials, including primer, emulsions, enamels, sealers, and other applied materials whether used as prime, intermediate or finish coats.

1.02 SUBMITTALS

A. In accordance with the requirements of the General Conditions, Governing All Contracts, samples, shop drawings, manufacturer's product data, test reports, and material certifications shall be submitted to the "Commissioner" for review and approval.

- 1. Product data for each type of paint.
- 2. Color chart showing entire range.

1.03 PRODUCT HANDLING

A. Deliver materials in original, new and unopened packages and containers bearing

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manufacturer's name and label, and following information:

1. Name and title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacture.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color and number.

1.04 JOB CONDITIONS

A. Apply solvent -thinned paints only when temperature of surface to be painted and surrounding air temperatures are between forty-five (45) degrees Fahrenheit and ninety-five (95) degrees Fahrenheit unless otherwise permitted by paint manufacturer's printed instructions.

B. Do not apply paint in snow, rain, fog or mist' or when relative humidity exceeds eighty-five (85) percent or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

1.05 PROTECTION

A. Place paint or solvent soaked rags, waste or other materials which might constitute a fire hazard in metal containers and remove from premises at the close of each day's work. Take every precaution to avoid damage by fire.

B. Provide suitable coverings to protect surfaces not requiring painting.

PART 2 - PRODUCTS

2.01 COLORS AND FINISHES

A. Gloss Ratings: Specular gloss of finished surfaces shall be within the following ranges when measured at sixty (60) degrees Fahrenheit in accordance with ASTM D523.

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Degree of Gloss
Gloss

Gloss Units
Above 90

- B. Paint Coordination: Provide finish coats which are compatible with prime paints used.
- C. Color to be selected by the "Commissioner."

2.02 MATERIAL QUALITY

- A. Provide best quality grade of various type of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.
- B. Provide undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

2.03 EXTERIOR PAINT SYSTEMS

- A. Ferrous Metal:

1st Coat - Zinc chromate pigmented primer (TT-P-86).

2nd Coat - High gloss alkyd enamel (TT-E-489).

3rd Coat - High gloss alkyd enamel (TT-E-489).

PART 3 - EXECUTION

3.01 INSPECTION

- A. The following schedule is taken from PPG Industries, Inc. to indicate minimum requirements for this project:

- 1. Ferrous Metal (i.e. Lintels):

1st Coat - "Speedhide" red rust inhibitive steel primer (6-208 series).

2nd Coat - "Pitt-glaze" acrylic-epoxy gloss coating (solvent base 16 line).

3rd Coat - "Pitt-glaze" acrylic epoxy gloss coating (solvent base 16 line).

- B. Examine areas and conditions under which painting work is to be applied for conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected.

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C. Starting of painting work will be considered as acceptance of surfaces and conditions within any particular area.

D. Do not paint over dirt, rust scale, grease, moisture scuffed surfaces, or other conditions detrimental to formation of a durable paint film.

3.02 SURFACE PREPARATION

A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

B. Ferrous Metals: Clean ferrous surfaces which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

3.03 APPLICATION

A. Clean-Up:

1. During progress of work, at the end of each day, remove discarded paint materials, rubbish, can and rags from site.

2. Upon completion of painting work, clean paint-splattered surfaces. Remove splattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

B. Protection:

1. Protect work of other areas, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the "Commissioner."

2. Provide "Wet Paint" signs as required to indicate newly-painted finishes. Remove temporary protective wrappings provided for protection of adjacent areas, after completion of painting operations.

3. At the completion of work, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION

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SECTION 09910 - PAINT REMOVAL

PART 1- GENERAL

1.01 SUMMARY

A. Work Included: Provide paint stripping work in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Remove paint and finishes from woodwork,
2. Remove paint from ironwork and provide one coat of primer.
3. Remove paint from masonry.
4. Comply with all Governmental regulations regarding removal of lead based paint.
5. Protect pedestrian and vehicular traffic, adjacent materials and buildings, workers, and building occupants and contents during paint stripping.

B. Related Work: The following related work is to be performed under the designated sections.

1. Painting - Section 09900

1.02 QUALITY ASSURANCE

A. Engage an experienced firm that has recently completed Paint Removal projects similar in scope, cost, material, design, and extent to that indicated by this section (i.e. paint removal work on buildings that are considered to be landmark, landmark quality or buildings of equivalent historical or architectural significance) and whose work has a record of successful in-service performance.

B. The Contractor shall comply with all applicable 051-1A regulations for lead based paint removal, including Lead in Construction (29 CFR 1926.62) and Hazard Communication Standard (29 CFR 1910.1200).

C. The Contractor shall comply with all applicable Federal, state, and local regulations for the containment, labeling, storage, transportation, and disposal of hazardous waste.

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D. Field tests for chemical stripping: For chemical paint removal methods, prepare the following test panels prior to beginning work. Prepare a separate test panel of each product specified herein. Prepare a separate set of test panels for each different material to be stripped.

1. Preparation of test panels shall be done in the presence of the Resident Engineer. Provide minimum 48 hours notice prior to performing tests.

2. Provide 2' x 2' area using each type of paint stripper specified. Repeat testing as needed to achieve specified results and as directed by the Resident Engineer.

E. All Subcontractors are bound by the same requirements as the Contractor. Subcontractors shall not begin work unless approved by the Resident Engineer.

F. The Contractor shall maintain a steady work crew made up of qualified craftsmen and a full time foreman who reads and speaks fluent English. The Contractor shall confirm that all workmen understand the job's requirements.

G. Metal Cleaning Standards: Cleaning of metals shall conform to the Requirement of the Steel Structures Painting Council (SSPC).

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, material safety data sheets and general recommendations for each specified product. Include test reports and certificates substantiating the product's compliance with the specified requirements.

B. Program of Work:

1. Prior to the start-up of work, submit written description of protection to be employed during the course of the work. Do not begin work until submittal has been approved. Include description of materials and attachments and other information as needed to completely describe method of protection for workers, the general public, other building elements, vehicular traffic, and the sidewalk.

2. If alternate methods and materials to those specified are proposed for any phase of the work, provide written description. Provide evidence of successful use on comparable projects and demonstrate their effectiveness for use on this project.

1.04 PROJECT CONDITIONS

A. The coatings on all elements to be stripped may contain lead based paint. Take all necessary precautions to protect all persons (whether engaged in the work of this Section or

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not) from all hazards of any kind associated with the work of this Section. Perform all work of this Section in accordance with, all Federal, State, and local regulations regarding the containment, labeling, storage, transportation and disposal of the waste products involved.

1. The City shall test paint for the presence of lead and will notify the Contractor if lead is present. If the Contractor must disturb paint which has not been tested, and which the Contractor suspects may contain lead, the Contractor must inform the Resident Engineer who will arrange for the testing of the paint. The Contractor shall not proceed with the work until the presence or absence of lead in the paint has been confirmed.

B. Take all necessary precautions to prevent fire and spread of fire.

C. The interior of the building will be occupied and in use during the work of this contract. The Contractor shall take all necessary precautions to protect all people in the building from any hazards which may arise from the work of this section.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Follow manufacturer's guidelines concerning temperature requirements for products specified herein.

B. Store all materials in spaces designated by the City. All such spaces shall meet pertinent City, State and Federal code and fire regulation standards and shall be locked and inaccessible to those not employed under this section, except the City's Representatives. All storage spaces shall maintain the minimum storage temperatures recommended by the product manufacturers.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide the following alkaline based and non-methylene chloride solvent based chemical paint removal products:

1. "Heavy Duty Paint Stripper", as manufactured by ProSoCo, Inc. or approved equal.

2. "EnviroStrip #2, and #3 as manufactured by ProSoCo, Inc., or approved equal.

3. "Peel Away 1" and "Peel Away 7" as manufactured by Dumond Chemicals, or approved equal.

4. "Back to Nature 1" and "Back to Nature 4" as manufactured by Dynacraft Industries, or approved equal.

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5. "Back to Nature 2", "Back to Nature 3", and "Back to Nature S" as manufactured by Dynacraft Industries, or approved equal.

B. Products for neutralizing alkaline paint removers:

1. "Heavy Duty Restoration Cleaner", manufactured by ProSoCo, Inc., Kansas City, KS, or approved equal.

C. Hand tools with vacuum attachments. Acceptable manufacturers include:

1. Desco Manufacturing Company, Long Beach, CA , or approved equal.
2. The Marindus Company, Englewood, NJ, or approved equal.

D. Scrapers for removing paint residue:

1. Scrapers shall be shaped to follow the profiles of the work to be stripped. It may be necessary to custom grind tools for this work, in order not to damage the profiles of the substrate.

E. Primers for Ferrous Metals (approved equals will also be accepted):

1. Primer for abrasive blast cleaned iron: Series 90-97 Tneme-Zinc, manufactured by Tnerne Company, Inc. Provide 2.5 - 3.5 mil dry film thickness. Provide one (1) coat.

2. Primer for metal cleaned to SPI 1: Series 135 ChemBuild, manufactured by Tneme Company, Inc., Woburn, MA. Provide 4 - 6 mil dry film thickness.

PART 3 - EXECUTION

3.01 STRIPPING: GENERAL

A. Coatings on all elements contain lead based paint. Protect workers and general public from hazards associated with lead based paint removal. Contain, store, transport, and dispose of waste in accordance with all applicable regulations.

B. Protect adjacent materials from damage by the paint stripping agents. Damage to adjacent materials shall be repaired by the Contractor to the satisfaction of the Resident Engineer at no additional cost to the City.

3.02 APPLICATIONS, GENERAL

A. Apply cleaning and stripping materials to comply with the manufacturer's recommendations and to match the results obtained in the approved test applications.

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- B. Perform cleaning and stripping in a manner which results in uniform results on all surfaces, including corners and moldings, without streaking or damage. Do not gouge or disfigure the substrate.
- C. Use the least aggressive method necessary to remove all paint from specified surfaces.
- D. On completion of stripping, clean residue from treated suites and neutralize surface if necessary.

3.03 PAINT REMOVAL METHODS, GENERAL

- A. At the Contractor's option, prior to the start of wet chemical paint stripping methods, vacuum all surfaces to remove loose and flaking paint to the greatest extent possible without damaging the substrate. Use vacuums equipped with HEPA filters only.
- B. Ensure that debris created by wet chemical methods does not come in contact with other building elements, the sidewalk, vehicular traffic, workers not performing work under this section, or the general public.
- C. Ensure that methods used do not damage existing surfaces being stripped.

3.04 CHEMICAL PAINT REMOVAL METHODS

A. Selection:

- 1. Use solvent based paint strippers for stripping paint from wood elements.
 - 2. Test both alkaline and solvent based strippers on masonry and metal.
- B. Strip all coatings using the following procedure. Procedure is subject to modification during the mock-up phase.
- 1. Install protection to ensure that chemical paint stripper and waste products created do not come in contact with other building elements, the sidewalk, vehicular traffic, workers not performing work under this section, or the general public.
 - 2. Apply chemical paint stripper as directed by the manufacturer Allow to dwell for approved time, as determined by test panels and as approved by the Resident Engineer. Cover with plastic sheeting if necessary to ensure that stripper does not dry out.
 - 3. Manually scrape off paint stripper and softened paint to the greatest extent

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possible.

4. Repeat process as needed to remove all traces of paint and other coatings.
5. Rinse exterior surfaces using pressurized water.
 - a. Water pressure shall be maximum of 500 psi. Pressure rinser shall have a working pressure gauge.
6. Rinse all surfaces to be stripped on the interior of the building with solvents recommended by the manufacturer of the paint stripper.
7. Neutralize surfaces as directed and as required by paint stripper used.
8. Rinse exterior surfaces using pressurized water. Water pressure shall be maximum of 500 psi. Pressure rinser shall have a working pressure gauge.

C. Peelable Paint Remover: For masonry surfaces containing lead-based paint, remove paint from masonry surfaces as follows:

1. Apply 1/4" layer of paste using corrosion resistant trowel or other suitable applicator.
Apply paper backing and press it into the paste.
2. Allow 24-48 hour dwell time or time determined by the Resident Engineer.
3. If stripper becomes dry and is no longer flexible, mist the surface with water until the stripper is softened.
4. Remove the stripper and dissolved paint by inserting a corrosion resistant spatula, trowel, or other suitable scraping device through the paste and carefully lifting the paint and paste from the surface in one piece. Remove as much residue from the surface as possible.
5. If paint remains on the surface, repeat steps 1 through 4.
6. Rinse using pressurized water.
7. When all the paint is removed, neutralize the surface with an acidic afterwash if required by the Manufacturer. Dilute the afterwash according to the manufacturer's recommendations. Brush apply the solution in a gentle scrubbing manner.
8. Allow the solution to remain on the surface according to the manufacturer's recommendations.

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9. Pressure rinse with water. Rinse from the bottom to the top, covering each section of the surface with a concentrated stream of water,

10. Verify the neutralization of the surface by testing for pH.

3.05 PROCEDURES FOR REMOVABLE FERROUS METAL UNITS

A. Remove ferrous metal units from site.

B. Remove ferrous metal units to shop for removal of paint and corrosion by abrasive grit blasting.

C. Immediately following grit blasting procedure, wipe cleaned metal with solvent recommended by primer manufacturer and apply prime paint.

1. See Section 09900 for primer.

3.06 PROCEDURES: ABRASIVE GRIT BLASTING

A. Abrasive blasting shall be used for the removal of paint from all iron items to be removed from the site for restoration

B. Remove all paint and scale from all surfaces, both interior and exterior of all cast iron, by abrasive grit blasting to bare metal. Blasting procedures shall comply with the standards of the Steel Structures Painting Council (SSPC).

C. Blasting procedures shall comply with all Federal, State, and local regulations for the containment and disposal of blasting material and paint. Laborers shall be equipped with proper protective clothing, equipment, and training according to OSHA and all other applicable regulations.

3.07 CLEAN-UP AND PROTECTION

A. Clean-up: Properly contain all run-off from stripping. Remove rubbish, rags and effluent from the site at the end of each work day, in appropriately marked containers.

B. Protection: Protect the work of other trades against damage by stripping work. Correct any damage by cleaning, repairing, or replacing, as acceptable to the Resident Engineer, at no additional cost to the City.

C. Removal and disposal of paint residue and stripping materials shall comply with all Federal, State, and local regulations. Workers shall be equipped with proper protective

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clothing, equipment, and training according to OSHA and all other applicable regulations.

END OF SECTION

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SECTION 09910 - INTERIOR PAINTS

PART 1 - GENERAL

3.04 Summary

- A. *This Section includes interior painting and related surface preparation.*
- B. *This Section excludes coating the following metal surfaces: stainless steel, anodized aluminum, copper, bronze, and brass.*

3.05 Submittals

- A. *Product Data: For each product specified in Part 2 - Products.*
- B. *Samples: For each paint type and color to be incorporated in the Work. Samples shall be fully cured, 8" square, with stepped coats to show each coat required for system; label each coat.*

PART 2 - PRODUCTS

2.01 General

- A. *Provide products for use within each paint system that are compatible with one another and substrates indicated.*
- B. *Acceptable Manufacturers of paint products are as follows:*
 - 1. Benjamin Moore
 - 2. Dutch Boy Paints
 - 3. Sherwin Williams
- C. *Colors of paint: Colors shall match the colors of the existing paint at the affected areas.*

2.02 Primers/Sealers

- A. *Interior Latex primers and sealers (see acceptable manufacturers)*

2.03 Base and Top Coats

- B. *Institutional Low-Odor VOC Latex Semi-gloss (see acceptable manufacturers)*

PART 3 - EXECUTION

3.01 Preparation

- A. *Surface Preparation:*

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1. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, and incompatible paints and encapsulants.
2. Perform surface preparation and cleaning in compliance with coating manufacturer's instructions for the particular substrate conditions.
 - a. Where the manufacturer indicates more than one preparation standard, the better preparation (as determined in writing by the Architect) shall apply.

3.02 Application

A. *Apply paint as follows:*

1. Apply paint to produce uniform surface films without cloudiness, holidays, laps, brush marks, runs, sags, or other surface imperfections.
2. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

3.03 Touch-up

- B. *At completion of the Work of other trades, touch up and restore damaged or defaced coated surfaces.*

END OF SECTION

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SECTION 09970 – COATINGS FOR STEEL

PART 1 - GENERAL

1.01 Summary

- A. *This Section includes coatings on steel substrates.*
- B. *This Section excludes coating the following metal surfaces: stainless steel, anodized aluminum, copper, bronze, and brass.*

1.02 Submittals

- A. *Product Data: For each product specified in Part 2 - Products.*
- B. *Samples: For each coating type, color and steel substrate combination to be incorporated in the Work. Samples shall be fully cured, 8" square, with stepped coats to show each coat required for system; label each coat.*

1.03 Project Conditions

- A. *Apply coatings only when temperature of surfaces to be coated and surrounding air temperature are within manufacturer recommendations, and will remain so for at least 24 hours. Verify minimum temperatures listed with products in Part 2 of this Section with manufacturer.*
- B. *Do not apply coatings under the following conditions:*
 - 1. *When conditions are outside the limitations permitted by the product manufacturer.*
 - 2. *In snow, rain, fog, or mist.*
 - 3. *When relative humidity exceeds 85 percent.*
 - 4. *When temperatures are less than 5° F above the dew point.*
 - 5. *When surfaces are damp or wet, or when ice or frost is present on surfaces.*

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PART 2 - PRODUCTS

2.01 General

A. *Product Callout Abbreviations Key: Steel coating product callouts (e.g. 3ER) include the following abbreviations:*

2	2 coats
3	3 coats
I	Interior
E	Exterior
N	New steel
R	Restoration of steel

B. *Coatings by Category:*

1. Universal Alkyd:
 - a. Sherwin Williams: Kem Bond HS Primer (1 part).
3 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 40° F.
 - b. PPG: MultPrime 94-258 (1 part).
3 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 50° F.
 - c. PPG: MultPrime 94-269 (1 part).
3 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 50° F.
2. Modified Alkyd:
 - a. Tnemec: V10 Primer (1 part).
2.5 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 40° F.
3. Epoxy:
 - a. PPG: Amerlock 2 (2 parts).
6 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 20° F.
4. Polyamidoamine Epoxy:
 - a. Sherwin Williams: Macropoxy 646 Fast Cure Epoxy (2 parts).
6 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 35° F.
5. Aliphatic Polyurethane:
 - a. PPG: Amercoat 450H (2 parts).
3.5 mils (dry film thickness) per coat.
Minimum application air and surface temperature is 20° F.

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6. Acrylic Polyurethane:

- a. Sherwin Williams: Acrolon 218 HS (2 parts).
4 mils (dry film thickness) per coat.

Minimum application air and surface temperature is 35° F.

C. *Colors of Coatings: Where not specifically indicated, Architect will select colors through the sample submittal process.*

2.02 Exterior Steel Coatings (Restoration of Steel)

A. Steel Coating: 2ER

1. Sherwin Williams 2-Coat System:

Prime Coat (Mill White Color):	Macropoxy 646 Fast Cure Epoxy	Sherwin Williams
Top Coat (Gray):	Macropoxy 646 Fast Cure Epoxy	Sherwin Williams

OR

2. PPG 2-Coat System:

Prime Coat (Red Color)	Amerlock 2	PPG
Second Coat (Gray Color)	Amerlock 2	PPG

B. Steel Coating: 3ER

3. Sherwin Williams 3-Coat System:

Prime Coat (Mill White Color):	Macropoxy 646 Fast Cure Epoxy	Sherwin Williams
Second Coat (Gray Color):	Macropoxy 646 Fast Cure Epoxy	Sherwin Williams
Top Coat (Black Color):	Acrolon 218 HS	Sherwin Williams

OR

4. PPG 3-Coat System:

Prime Coat (Red Color):	Amerlock 2	PPG
Second Coat (Gray Color)	Amerlock 2	PPG
Top Coat (Black Color):	Amercoat 450H	PPG

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2.03 Exterior Steel Coatings (New Steel)

A. Steel Coating: 2EN

1. Tnemec 2-Coat System:

Prime Coat (Red Color):	Primer V10	Tnemec
Top Coat (Gray Color):	Primer V10	Tnemec

OR

2. Sherwin Williams 2-Coat System:

Prime Coat (Red Oxide Color):	Kem Bond HS Primer	Sherwin Williams
Top Coat (Gray Color):	Kem Bond HS Primer	Sherwin Williams

OR

3. PPG 2-Coat System:

Prime Coat (Red Oxide Color):	MultiPrime 94-258	PPG
Top Coat (Gray Color):	MultiPrime 94-269	PPG

PART 3 - EXECUTION

3.01 Preparation

A. Surface Preparation:

1. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, and incompatible paints and encapsulants.
2. Perform surface preparation and cleaning in compliance with coating manufacturer's instructions for the particular substrate conditions.
 - a. Where the manufacturer indicates more than one preparation standard, the better preparation (as determined in writing by the Architect) shall apply.
 - b. For exterior steel in restoration work, where the coating manufacturer does not specify preparation, prepare substrate in accordance with the following SSPC standard:
 - 1) For Restoration Work: SSPC-SP 3 "Power Tool Cleaning" and SSPC-VIS 3 "Guide and Reference Photographs for Steel Surfaces Prepared by Power and Hand Tool Cleaning"
 - c. For exterior steel in new construction work, where the coating

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manufacturer does not specify preparation, prepare substrate in accordance with the following SSPC standard:

- 1) For New Construction Work: SSPC-SP 6 "Commercial Blast Cleaning" and
- 2) SSPC-VIS 1 "Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning"
3. For galvanized metal substrates, comply with manufacturer's instructions and ASTM D 6386.

3.02 Application

A. *Apply coating systems as indicated on Drawings, and as follows:*

1. New Members (steel and galvanized steel):
 - a. Perform any indicated shop fabrication prior to application of coatings.
 - b. Apply complete coating system to all surfaces in shop prior to delivery to Project.
 - c. Touch up shop applied coating after erection. Clean field welds, bolted connections and abraded areas, and apply primer, intermediate coat (where applicable), and top coat.
2. Existing Members (steel and galvanized steel):
 - a. Perform any indicated, drilling, structural welding or bolting prior to field application of coatings.
 - b. Apply coating system to all surfaces in field.
3. Apply coatings to produce uniform surface films without cloudiness, holidays, laps, brush marks, runs, sags, or other surface imperfections.
4. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

3.03 Touch-up

A. *At completion of the Work of other trades, touch up and restore damaged or defaced coated surfaces.*

END OF SECTION

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SECTION 10155 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide toilet compartments in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Type: Steel, color-coated finish and stainless steel compartments.
2. Compartment Style: Overhead braced and floor anchored or ceiling hung
3. Toilet compartment hardware, brackets, anchoring and accessories
4. Urinal screens: Wall hung

B. Related Sections:

1. Division 5 Section "Metal Fabrications" for supports that attach units to overhead structural system.

1.02 SUBMITTALS

A. Product Data: For each type and style of toilet compartment and screen specified. Include details of construction relative to materials, fabrication, and installation. Include details of anchors, hardware, and fastenings.

B. Shop Drawings: For fabrication and installation of toilet compartment and screen assemblies. Include plans, elevations, sections, details, and attachments to other work.

1. Show locations of reinforcement and cutouts for compartment-mounted toilet accessories.

2. Show detailed layout of work, fabrication, erection, anchoring, jointing, construction, etc. for Architect's approval.

C. Samples for Initial Selection: Manufacturer's color charts consisting of sections of actual units showing the full range of colors, textures, and patterns available for each type of compartment or screen indicated.

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D. Samples for Verification: Of each compartment or screen color and finish required, prepared on 6-inch (150-mm) square Samples of same thickness and material indicated for Work.

1.03 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions in areas of installation by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Examination: Verify all ceiling conditions for ceiling hung installations and notify Project Manager immediately of any conditions that would cause delay in the Work.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Accurate Partitions Corporation.
2. All American Metal Corp.
3. American Sanitary Partition Corp.
4. Ampco Products, Inc.
5. Bobrick Washroom Equipment, Inc.
6. Flush - Metal Partition Corp.
7. General Partitions Mfg. Corp.
8. Global Steel Products Corp.
9. Knickerbocker Partition Corporation.
10. Metpar Corp.
11. Sanymetal Products, Co.
12. Or an approved equal.

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2.02 MATERIALS

A. General: Provide materials that have been selected for surface flatness and smoothness. Exposed surfaces that exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are unacceptable.

B. Steel Sheets for Color-Coated Finish: Provide mill-phosphatized steel sheet that is leveled to stretcher-leveled flatness complying with the requirements of standards indicated below:

1. Hot-Dip Galvanized or Galvannealed Steel Sheet: ASTM A 653 (ASTM A 653M), in manufacturer's standard coating designation and of the following minimum thicknesses:

- a. Pilasters (Overhead Braced): 0.040 inch (1.0 mm).
- b. Panels and Screens: 0.040 inch (1.0 mm).
- c. Doors: 0.034 inch (0.85 mm).
- d. Tapping Reinforcement: 0.079 inch (2.0 mm).

C. Stainless-Steel Sheet: ASTM A 666, Type 302 or 304, that is leveled to stretcher-leveled flatness, finished on exposed faces as indicated in the "Stainless-Steel Sheet Finishes" Article, and of the following minimum thicknesses:

1. Pilasters (Overhead Braced): 0.0375 inch (0.95 mm).
2. Pilasters (Unbraced): 0.0500 inch (1.3 mm).
3. Panels and Screens: 0.0375 inch (0.95 mm).
4. Doors: 0.0312 inch (0.8 mm).
5. Tapping Reinforcement: 0.0781 inch (2.0 mm).

D. Core Material for Metal-Faced Units: Manufacturer's standard sound-deadening honeycomb of resin-impregnated kraft paper in thickness required to provide finished thickness of 1 inch (25 mm) minimum for doors, panels, and screens and 1-1/4 inches (32 mm) minimum for pilasters.

E. Pilaster Shoes and Sleeves (Caps): ASTM A 666, Type 302 or 304 stainless steel, not less than 0.0312 inch (0.8 mm) thick and 3 inches (75 mm) high, finished to match hardware.

F. Stirrup Brackets: Manufacturer's standard ear or U-brackets for attaching panels and

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screens to walls and pilasters of the following material:

1. Material: Stainless steel.

G. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories of the following material:

1. Material: Stainless steel.
2. All hardware except hooks shall be through bolted. One way type theft and vandal proof screws and fasteners shall be provided.

H. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile in manufacturer's standard finish.

I. Anchorage and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match hardware, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use hot-dip galvanized or other rust-resistant, protective-coated steel.

J. Fittings for ceiling hung stainless steel toilet compartment:

1. Wall brackets shall be stainless steel. Door strikes and hinges shall be fastened by means of "one-way" head tamper proof stainless steel bolts.

2. All pilasters to have a 3" high stainless steel shoe, 14-gauge minimum. Hinge brackets and stops shall have clamp flanges to transmit the strain of door closing to the pilaster.

2.03 FABRICATION

A. General: Provide standard doors, panels, screens, and pilasters fabricated for compartment system. Provide units with cutouts and drilled holes to receive compartment-mounted hardware, accessories, and grab bars, as indicated.

1. Provide internal reinforcement in metal units for compartment-mounted hardware, accessories, and grab bars, as indicated.

B. Stainless Steel Toilet Compartment:

1. Doors, panels and pilasters shall be constructed of 2 face plates, with formed edges, assembled over and cemented under pressure to the sound deadening core. The formed edges shall be bound, locked and sealed with die-drawn locking strips which shall hold the plates with a tension grip. The outer face of the locking strips shall be uniformly rounded, except the strip on the panel edge in contact with the pilaster, which shall be flat. Locking strips shall be mitered and welded corners with welds ground smooth, and doors shall be further strengthened by internally brazing or welding the locking strips to the formed

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edges halfway in elevation on each side.

2. Doors and panels shall finish uniformly one (1) inch thick and pilasters shall finish uniformly 1-1/4" thick, with a tolerance of 1/32 inches plus or minus in each case. Surfaces shall be smooth and free from wave, warp and buckle. Doors, panels and pilasters shall have concealed tapped reinforcement for the attachment of hardware. Variations in width of enclosures, where necessary, shall be made by varying the width of the doors, leaving width of pilasters uniform.

3. Doors, panels and pilasters shall be formed as if one piece, flush, rack-proof unit that will remain flat under torsional stress.

4. Panels shall be attached to pilasters by not less than 3 hooks. The hooks shall be built into the contact edge of the panel and shall be designed to draw the panel and pilaster together with a tension grip when inserted into vertical openings in the pilaster and forced downward.

5. Pilaster bases shall be stainless steel, with clamp flanges for attachment to panels and pilasters and shall be provided with 2 holes for bolting to the wall.

C. Metal-Faced Toilet Compartments and Screens: Pressure laminate seamless face sheets to core material and provide continuous, interlocking molding strip or lapped and formed edges. Seal corners by welding or clips. Grind exposed welds smooth.

D. Overhead-Braced-and-Floor-Anchored Compartments: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, fasteners, and anchors at pilasters to suit floor conditions. Make provisions for setting and securing continuous head rail at top of each pilaster. Provide shoes at pilasters to conceal supports and leveling mechanism.

E. Floor-Anchored Compartments: Provide manufacturer's standard corrosion-resistant anchoring assemblies complete with threaded rods, lock washers, and leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage.

F. Wall-Hung Screens: Provide units in sizes indicated of same construction and finish as compartment panels, unless otherwise indicated.

1. Provide metal-faced screens with integral full-height flanges for attachment to wall.

G. Floor-Anchored Screens: Provide pilasters and panels of same construction and finish as toilet compartments. Provide manufacturer's standard corrosion-resistant anchoring assemblies complete with threaded rods, lock washers, and leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage.

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H. Doors: Unless otherwise indicated, provide 24-inch (610-mm) wide in-swinging doors for standard toilet compartments and 36-inch (914-mm) wide out-swinging doors with a minimum 32-inch (813-mm) wide clear opening for compartments indicated to be handicapped accessible. Doors shall be provided with gravity, spring-loaded hinges with stainless steel cam, and corrosion resistant pintles concealed within the door.

1. Hinges: Manufacturer's standard self-closing type that can be adjusted to hold door open at any angle up to 90 degrees or closed when not latched. Upper hinge shall have a pivot pin of stainless steel, to be recessed and inset into edge of door approximately 2" below top of door, operating in a self-lubricating bushing, mounted, within the door structure, supported both above and below the pivot bracket. Hinge shall operate without raising or lowering the door on a fixed horizontal plane.

2. Latch and Keeper: Manufacturer's standard surface-mounted latch unit with combination rubber-faced door strike and keeper designed for emergency access. Provide units that comply with accessibility requirements of authorities having jurisdiction at compartments indicated to be handicapped accessible.

3. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent door from hitting compartment-mounted accessories. Combination coat hook and bumper shall be fitted with renewable rubber bumper, have a minimum projection of 3-5/8 inches with base not less than 1-1/2" X 2", or 1-3/4" diameter. Mount in center of door with center of base 3 inches below the top edge, with 1/4" through bolt fastening of acorn cone unit.

4. Door Bumper: Manufacturer's standard rubber-tipped bumpers at out-swinging doors or entrance screen doors.

5. Door Pull: Manufacturer's standard unit that complies with accessibility requirements of authorities having jurisdiction at all doors. Provide units on both sides of doors at compartments indicated to be handicapped accessible. Door pulls shall be cast chrome plated brass.

6. Push Plate: Push plate shall be 2-3/4 X 10 inches, chrome plated brass and shall be mounted with the bottom of the plate 30 inches from the bottom edge of the door.

2.04 ZINC- OR ZINC-ALLOY-COATED STEEL SHEET FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying finishes.

B. Color-Coated Finish: Provide manufacturer's standard baked finish complying with coating manufacturer's written instructions for pretreatment, application, baking, and minimum dry film thickness.

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1. Color: One color in each room as selected by the Architect from manufacturer's a)full range of colors.

2.05 STAINLESS-STEEL SHEET FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.

1. Remove or blend tool and die marks and stretch lines into finish.

2. Grind and polish surfaces to produce uniform, directional textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

3. All corners shall be mitered, welded and ground smooth.

B. Finish: Satin Finish # 304 Stainless Steel

C. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

D. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.

PART 5. - EXECUTION

3.01 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, plumb, and level. Provide clearances of not more than ½ inch (13 mm) between pilasters and panels and not more than 1 inch (25 mm) between panels and walls. Secure units in position with manufacturer's recommended anchoring devices.

1. Secure panels to walls and panels with not less than 2 stirrup brackets attached near top and bottom of panel. Locate wall brackets so holes for wall anchors occur in masonry or tile joints. Align brackets at pilasters with brackets at walls.

2. Each wall bracket shall be through bolted to the panel with 1/4 inch bolts with spanner heads and attached to the wall with two 1/4 inch bolts of suitable type.

B. Overhead-Braced-and-Floor-Anchored Compartments: Secure pilasters to floor and

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level, plumb, and tighten. Secure continuous head rail to each pilaster with not less than 2 fasteners. Hang doors and adjust so tops of doors are parallel with overhead brace when doors are in closed position.

C. Floor-Anchored Compartments: Set pilaster units with anchors penetrating not less than 2 inches (50 mm) into structural floor, unless otherwise indicated in manufacturer's written instructions. Level, plumb, and tighten pilasters. Hang doors and adjust so tops of doors are level with tops of pilasters when doors are in closed position.

D. Screens: Attach with anchoring devices according to manufacturer's written instructions and to suit supporting structure. Set units level and plumb and to resist lateral impact.

E. Ceiling Hung Compartments:

1. Each pilaster shall be supported independent of the finished floor and fastened to the structural slab above by means of a built-in, welded, anchoring device designed to transmit the strains of lateral thrust and pull to the structure through two, 3/8 inch diameter, cadmium-plated stub bolts secured in expansion shields having a penetration of not less than 2 inches into the structural concrete. The anchoring device shall be readily accessible for leveling, plumbing and tightening the installation, and shall be concealed by base fitting.

2. All evidence of drilling, cutting and fitting of wall and/or ceiling finish shall be concealed by the finished work. The clearance at vertical edges of doors shall be uniform from top to bottom and shall not exceed 3/16 inch.

3. The Contractor is responsible to cut and fit, accurately and neatly, all anchoring device components. The Contractor shall be responsible to repair any and all damage caused by the installation to the ceiling or suspended ceiling system at no additional cost to the City.

3.02 ADJUSTING AND CLEANING

A. Hardware Adjustment: Adjust and lubricate hardware according to manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors and swing doors in entrance screens to return to fully closed position.

B. Brackets shall be adjusted to provide uniform clearances not exceeding:

1. Pilaster and wall: 1 inch
2. Panels and wall: 1 inch

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3. Pilasters and panels: ½ inch
 4. Pilasters and doors: 3/16 inch
- C. Provide final protection and maintain conditions that ensure toilet compartments and screens are without damage or deterioration at the time of Substantial Completion.
- D. Upon completion of the Work, the Contractor shall thoroughly clean all Work per manufacturer's recommendations. Finished surfaces shall be cleaned and left free of imperfections.

END OF SECTION

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SECTION 10265 - WALL SURFACE PROTECTION SYSTEMS

PART 1- GENERAL

1.01 SUMMARY

A. Work Included: Provide wall surface protection system in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Wall guards.
2. Corner guards.

B. Related Sections:

1. Section 06100 - Rough Carpentry.

1.02 SUBMITTALS

A. Product data for each wall surface protection system component and installation accessory required, including installation methods for each type of substrate. Provide written data on each required component including physical characteristics, such as durability, resistance to fading, and flame resistance.

B. Shop drawings showing locations, extent, and installation details of wall and corner guards, and other protection systems. Show methods of attachment to adjoining construction.

C. Samples for initial Selection: For initial selection of color, pattern and surface texture, provide the manufacturer's standard color chips consisting of actual sections of each vinyl plastic material required showing the full range of materials, colors, and textures available.

D. Samples for Verification Purposes: Submit the following samples, prepared from the same material to be used in the Work, for verification of color, pattern, and texture selected and for compliance with requirements indicated:

1. 12 inch (300 mm) long samples of each type of wall and corner guard required. Include examples of joinery, corners, and field splices.

E. Product test reports from a qualified independent testing laboratory showing compliance of wall surface protection system components with requirements indicated based on tests performed by the laboratory within the past five years.

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- F. Maintenance data for wall surface protection system components.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has previously installed wall surface protection systems similar in material, design, and extent to the systems indicated for this Project.

B. Manufacturer Qualifications: Firm experienced in manufacturing wall surface protection system components that are similar to those required for this Project and that have a record of successful in-service performance.

C. Fire Performance Characteristics: Provide wall surface protection system components that are identical to those tested in accordance with ASTM E 84 for the fire performance characteristics indicated below. Identify wall surface protection system components with appropriate markings from the testing and inspection organization.

1. Flame Spread: 25 or less.
2. Smoke Developed: 450 or less.

D. Impact Strength: Provide wall surface protection system components with a minimum impact resistance of 25.4 ft. x lb/sq. ft. (370 J/sq. m) when tested in accordance with ASTM D 256 (Izod impact, ft. x lb/in. (J/m) notch).

E. Single Source Responsibility: Obtain each color, grade, finish, and type of wall surface protection system component from a single source with resources to provided products of consistent quality in appearance and physical properties without delaying progress of the Work.

F. Design Criteria: The drawings indicate the size, profile and dimensional requirements of wall surface protection system components required and are based on the specific types and models indicated. Wall surface protection system components by other manufacturers may be considered provided deviations in dimensions and profiles are minor and do not change the design concept as judged by the Architect. The burden of proof of equality is on the proposer.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original factory wrappings and containers, clearly labeled with identification of manufacturer brand name, quality or grade, and fire hazard classification.

B. Store wall surface protection materials in original undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, extreme

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temperatures, and humidity.

1. Maintain room temperature within the storage area at not less than 70 deg F (21 deg C) during the period plastic materials are stored. Keep sheet material out of direct sunlight to avoid surface distortion.

2. Store rigid plastic corner guard covers in a vertical position, and rigid plastic wall guard and handrail cover in a horizontal position for a minimum of 72 hours, or until the plastic material attains the minimum room temperature of 70 deg F (21 deg C).

1.05 PROJECT CONDITIONS

A. Environmental Conditions: Do not install wall surface protection system components until the space is enclosed and weatherproof and until the ambient temperature within the building is maintained at not less than 70 deg F (21 deg C) for not less than 72 hours prior to beginning of the installation. Do not install rigid plastic wall surface protection systems until that temperature has been attained and is stabilized.

1.06 MAINTENANCE

A. Maintenance Instructions: Provide the manufacturer's instructions for maintenance of installed work. Include recommended methods and frequency for maintaining optimum condition under anticipated traffic and use conditions. Include precautions against cleaning materials and methods that may be detrimental to finishes and performance.

B. Replacement Materials: After completion of work, deliver not less than 2 percent of each type, color, and pattern of wall surface protection materials and components. Include accessory components as required. Replacement materials shall be from the same production run as materials installed. Package replacement materials with protective covering, identified with appropriate labels.

PART2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products for wall surface protection which may be incorporated into the Work include, but are not limited to, the following:

1. American Floor Products Co., Inc.

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2. Balco, Inc.
3. Brown Manufacturing Co.
4. Construction Specialties, Inc.
5. K. J. Miller Corporation
6. A. R. Nelson Co., Inc.
7. Pawling Corporation.
8. Tepromark International, Inc.
9. Tri-Guards, Inc.
10. Tubular Specialties.
11. Wilkinson Company, Inc.
12. Or approved equal.

2.02 MATERIALS

A. Rigid Plastic Material: Extruded, textured, chemical- and stain resistant, high-impact, polyvinyl chloride (PVC) or acrylic modified vinyl plastic, thickness as indicated. Comply with specified requirements of ASTM D 256 for impact resistance and ASTM E 84 for flame spread and smoke developed characteristics.

1. Colors and Textures of Plastic Material: Provide extruded plastic material that matches colors and textures indicated by reference to the manufacturer's standard color and texture designations.

B. Aluminum Extrusions: Provide alloy and temper recommended by the manufacturer for the type of use and finish indicated, but with not less than the strength and durability properties specified in ASTM B 221 (ASTM B 221M) for 6563-T5.

C. Stainless Steel: AISI Type 304, stainless steel plate, minimum 0.06 inch (1.5 mm), No.4 satin finish.

D. Fasteners: Provide aluminum, nonmagnetic stainless steel, or other non-corrosive metal screws, bolts, and other fasteners compatible with aluminum components, hardware, anchors, and other items being fastened. Use theft-proof fasteners where exposed to view.

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2.03 WALL GUARDS

A. Crash Rail Type Wall Guards: Provide nominal 8 inch (200 mm) high by 1 inch (25 mm) deep, heavy duty crash rail wall guard assembly consisting of a snap-on-type plastic cover installed over a continuous aluminum retainer moured at height indicated.

1. Cover shall be extruded, rigid, impact-resistant plastic, minimum 0.110 inch (2.8 mm) thick, in profile indicated.

2. Retainer: Manufacturer's standard continuous, one-piece, extruded aluminum retainer, minimum 0.0625 inch (1.6 mm) thick, with continuous rubber or vinyl bumper cushion centered in the extrusion.

a. Mounting Type: Surface-mounted flush on wall.

3. Accessories: Provide prefabricated, injection-molded end caps and inside and outside corners with concealed splices, cushions, mounting hardware, and other accessories as required.

a. End caps and inside and outside corners shall match plastic cover color and shall be field adjustable for close alignment with snap-on plastic covers.

2.04 CORNER GUARDS

A. Surface-Mounted, Resilient Plastic Corner Guards: Provide surface-mounted, resilient plastic corner guard assembly consisting of a snap-on-type plastic cover installed over a continuous aluminum retainer, height as indicated.

B. Stainless Steel Corner Guards: Provide manufacturer's standard paper-covered satin finish, 0.059 inch (1.5 mm) minimum, stainless steel sheet corner guards, height as indicated. Provide 90-degree turn, unless otherwise indicated, and formed edges.

1. Wing Size: 2-1/2 x 2-1/2 inch (64 x 64 mm) wings, unless otherwise indicated.

2. Mounting Method: Countersunk screws with mounting holes 8 inches (200 mm) on center.

3. Corner Radius: 1/8 inch (3 mm), unless otherwise indicated.

2.05 FABRICATION

A. General: Fabricate wall and door protection systems to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thicknesses of components.

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- B. Preassemble components in the shop to the greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.
- C. Fabricate components with tight seams and joints with exposed edges rolled. Provide surfaces free of evidence of wrinkling, chipping, uneven coloration, dents, and other imperfections Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.
- D. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors for interconnection of members to other construction
- E. Provide inserts and other anchorage devices for connecting components to concrete or masonry. Fabricate anchoring devices to be capable of withstanding imposed loads. Coordinate anchoring devices with the supporting structure.

2.06 FINISHES

- A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.
- B. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.
- C. Aluminum Mill Finish: AA-M10 (Mechanical Finish: as fabricated, unspecified).
- D. Stainless Steel: Provide AISI No. 4 finish (bright directional polish).

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions in which wall surface protection components and wall protection systems will be installed.

- 1. Complete all finishing operations, including painting, before beginning installation of wall surface protection system materials.
- B. Do not proceed with installations until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Prior to installation, clean substrate to remove dust, debris, and loose particles.
 - 1. Do not use materials with chips, cracks, voids, stains, or other defects that

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might be visible in the finished work.

3.03 INSTALLATION

A. General: Install wall surface protection units plumb, level, and true to line without distortions.

B. Install aluminum retainers, mounting brackets, and other accessories in strict accordance with the manufacturer's instructions,

1. Where splices occur in horizontal runs of over 20 feet (6 m), splice aluminum retainer and plastic cover at different locations along the run.

3.04 CLEANING

A. General: Immediately upon completion of installation, clean plastic covers and accessories using a standard ammonia based household cleaning agent. Clean metal components in accordance with the manufacturer's recommendations

B. Remove excess adhesive using methods and materials recommended by manufacturer.

C. Remove surplus materials, rubbish, and debris resulting from installation upon completion of work and leave areas of installation in neat, clean condition.

END OF SECTION

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SECTION 10522 - FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide fire extinguisher cabinets in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Fire extinguisher cabinets.

B. Related Sections:

1. Section 09250 - Gypsum Drywall.

1.02 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain fire extinguisher cabinets from one source from a single manufacturer.

1.03 SUBMITTALS

A. Product Data: Submit product data for each type of product specified. For fire extinguisher cabinets include roughing-in dimensions and details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type and materials, trim style and door construction, and panel style and materials.

B. Samples: Submit samples of each required finish on metal of same gage as used for production. Where normal color variations are to be expected, include 2 or more units in each sample set showing limits of variation.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include but are not limited to the following:

1. Croker.

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2. Allenco
3. Larsen's Manufacturing Co.
4. Potter-Roemer, Inc.
5. J.L. Industries,
6. Or approved equal,

B. Products: Subject to compliance with requirements, provide 2600 Series - Model #2606 fire extinguisher cabinets as manufactured by Croker, or approved equal by specified manufacturers.

2.02 FIRE EXTINGUISHER CABINETS

A. General: Provide fire extinguisher cabinets where indicated, of suitable size for housing fire extinguishers of types and capacities indicated.

B. Construction: Manufacturer's standard enameled steel box, with trim, frame, door and hardware to suit cabinet type, trim style, and door style indicated. Weld all joints and grind smooth. Miter and weld door frames.

C. Cabinet Type: Suitable for mounting conditions indicated, of the following types:

1. Trimless Cabinet Type: Cabinet box recessed in walls of sufficient depth to suit style, for trimless installation.

D. Trim Style: Fabricate trim in one piece with corners mitered, welded, and ground smooth.

1. Trimless: Surface of surrounding wall finishes flush with exterior finished surface of frame and door of fire extinguisher cabinet, without any overlapping trim attached to cabinet.

2. Trimless with hidden flange of same metal and finish as box that overlaps surrounding wall finish and is concealed from view by an overlapping door.

E. Door Material and Construction: Manufacturer's standard door construction, of material indicated, coordinated with cabinet types and trim styles selected.

1. Stainless Steel: Manufacturer's standard door construction, fabricated from austenitic stainless steel type 304 with No.4 finish complying with A5Th4 A 167, and clear bubble insert.

F. Door Style: Manufacturer's standard design as indicated below, or equal from

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approved manufacturer.

1. Break Bubble: Clear bubble with stainless steel trim.

G. Door Hardware: Provide manufacturer's standard door operating hardware of proper type for cabinet and door indicated. Provide friction latch and continuous hinge permitting door to open 180 degrees.

2.04 FACTORY FINISH

A. General: Factory finish fire extinguisher cabinets to comply with NAAMM "Metal Finishes Manual" after products are assembled. Protect cabinets with plastic or paper covering, prior to shipment.

B. Stainless Steel Finish: AISI No. 4 finish, bright, directional polish finish.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install items of this section in locations and at mounting heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities.

1. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions, Report to Resident Engineer in writing any unsatisfactory conditions and do not proceed with installation until such conditions have been corrected.

- a. "Trimless" fire extinguisher cabinets must be installed before drywall is installed.

2. Securely fasten fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer's instructions.

3. Clean all exposed surfaces and repair any damage to products or finish to match original or replace.

END OF SECTION

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SECTION 10801 - TOILET ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide toilet accessories in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Mirror units with shelf (Staff toilets)
2. Grab bars with concealed mounting, 1-1/2" dia. (for Handicapped toilets)
3. Recessed toilet paper holder. (Inmate toilet/shower areas)
4. Surface mounted multi-roll toilet paper holder. (Staff toilets)
5. Surface mounted combination towel dispenser/waste receptacle (Staff toilets)
6. Surface mounted sanitary napkin dispenser/disposal unit (Staff toilets)
7. Towel hook (Staff toilets)
8. Janitor's shelf and utility unit.
9. Double robe hook (Staff toilets)
10. Surface mounted electric hand dryer (Staff toilets)
11. Breakaway hook (Inmate toilet/shower areas)
12. Shower Seat (Inmate handicapped shower areas)
13. Framed mirror (Inmate toilet/shower areas)

B. Related Work: Refer to other Sections for the following:

1. Section 10160 - Toilet and Shower Partitions;
2. Division 16 - Electrical; for electrical connections.

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1.02 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise acceptable to DOC.
- B. Accessory Locations: Coordinate accessory locations with other work to avoid interference and to assure proper operation and servicing of accessory units.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data on each accessory item specified, including details of construction relative to materials, dimensions, gauges, profiles, method of mounting, specified options, and finishes.
- B. Shop Drawings: Provide setting drawings, templates, instructions, and directions for installation of anchorage devices in other work.

1.04 PROJECT CONDITIONS

- A. Coordination: Coordinate accessory locations, installation, and sequencing with other work to avoid interference and to assure proper installation, operation, adjustment, cleaning, and servicing of toilet accessory items.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering toilet accessories may be incorporated in the Work include, but not limited to the following:

1. Bobrick Washroom Equipment, Inc.
2. American Specialties, Inc.
3. Bradley Corporation.

2.01 MATERIALS, GENERAL

- A. Stainless Steel: AISI Type 302/304, with satin finish, 22 gauge minimum, unless otherwise indicated.
- B. Brass: Leaded and unleaded, flat products, ASTM 8-19; rods, shapes, forging, and

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flat products with finished edges, ASTM 8-16; castings, ASTM 8-30.

C. Steel: Cold-rolled, commercial quality ASTM A—366, 20 gauge minimum, unless otherwise indicated. Surface preparation and metal pretreatment as required for applied finish.

D. Galvanized Steel Sheet: ASTM A-527, G-60.

E. Chromium Plating: Nickel and chromium electro-deposited on base metal, ASTM 8-456, Type SC-2.

F. Mirror Glass: Nominal 6.0 mm thick, conforming to ASTM C-1036 and with silvering, electroplated copper coating, and protective organic coating; refer to Section 08800 - Glass and Glazing.

G. Galvanized Steel Mounting Devices: ASTM A-153, hot-dip galvanized after fabrication.

H. Fasteners: Screws, bolts, and other devices of same material as accessory unit or of galvanized steel where concealed.

I. Keys: Unless otherwise indicated, provide universal keys for access to toilet accessory units requiring internal access for servicing, resupply, etc.

J. Miscellaneous Materials: Manufacturer's standard as required for use indicated.

2.03 FABRICATION

A. General: No names or labels are permitted on exposed faces of toilet accessory units. On either interior surface not exposed to view or an back surfaces, provide identification of each accessory item by either a printed waterproof label or a stamped nameplate indicating manufacturer's name and model number.

B. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with tight seams and joints exposed edges rolled. Provide concealed anchorage wherever possible.

1. Provide through wall security type anchoring where required for items specified.

C. Recessed Toilet Accessories: Except where otherwise indicated, fabricate units of all welded construction, without mitered corners. Hang doors or access panels with full-length stainless steel piano hinges. Provide anchorage which is fully concealed when unit is closed.

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2.04 SCHEDULE OF ACCESSORIES

A. Provide the following accessories where indicated.

<u>TYPE</u>	<u>MODEL</u>	<u>DESCRIPTION</u>
TA-1	B-292	Mirror units with shelf (Staff toilets)
TA-2	B-6206	Grab bars with concealed mounting 1-1/2" dia. Handicapped toilets)
TA-3	B-952	Recessed toilet paper holder. (Inmate toilet/shower areas)
TA-4	B-6977	Surface mounted multi-roll toilet paper holder. (Staff toilets)
TA-5	B-3609	Surface mounted combination towel dispenser/waste receptacle (Staff toilets)
TA-6	B-35079X2	Surface mounted sanitary napkin dispenser/disposal unit (Staff toilets)
TA-7	B-677	Towel hook (Staff toilets)
TA-B	B-239X34	Janitor's shelf and utility unit.
TA-9	B-672	Double robe hook (Staff toilets)
TA-10	B-701	Surface mounted electric hand dryer (Staff toilets)
TA-11	B-983	Breakaway hook (Inmate toilet/shower areas)
TA-12	B-5191	Shower Seat (Inmate handicapped shower areas)
TA-13	B-9446	Framed mirror (Inmate toilet/shower areas)

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PART 3 - EXECUTION

3.01 INSTALLATION

A. Install accessory units in accordance with the manufacturer's instructions, using fasteners which are appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations and heights indicated or as per manufacturer's standard installation instructions.

B. Secure mirrors to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, in accordance with manufacturer's instructions for type of substrate involved.

3.02 ADJUSTING AND CLEANING

A. Adjust accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish all exposed surfaces in strict accordance with manufacturer's recommendations after removing labels and protective coverings.

END OF SECTION

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SECTION 11090 - MISCELLANEOUS EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide miscellaneous equipment in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Talk-thru units.
2. Pass-thru units.
3. T.V. Mounting Brackets.

B. Related Work: Refer to other Sections for the following:

1. Division 16 - Electrical; for electrical service connections.
2. Division 16 - Electrical; for installation of electrical controls.

1.02 QUALITY ASSURANCE

A. References: Applicable trade association names and titles of general standards are referred to by accepted abbreviations.

B. Performance Requirements: Provide only those electrical equipment which has UL labels.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, installation instructions and template drawings. Include wiring diagrams and operating instructions and maintenance manuals for electrical equipment.

B. Shop Drawings: Provide shop drawings showing adjacent construction and installation details. Locate service connections for electrical equipment.

C. Samples: Submit samples of finishes and other items as requested.

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1.04 PRODUCT HANDLING

A. Deliver products in manufacturer's undamaged protective containers. Store and handle units in accordance with the manufacturer's instructions, to avoid damage, soiling and deterioration.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Specified manufacturers and model numbers establish required standards for design, size and quality of the respective items, unless otherwise specified.

B. Equivalent items by other qualified manufacturers will be acceptable, subject to compliance with specified requirements.

2.02 TALK-THRU

A. Frames: Provide frames formed of 13 gauge, 304 stainless steel on all four sides. Corners shall be uniformly welded and ground smooth.

B. Wire Cloth: Stainless steel wire cloth shall be 12 x 12 mesh per inch with 0.028" dia. high tensile strength type 302/304 (18/8) wire. Stainless steel wire shall test not less than 800 lbs. per lineal inch after weaving.

2.03 PASS-THRU UNITS

A. Product: Allied Safe and Vault Co. Model #ACTU-Manual or approved equal. Modify as required to fit wall conditions.

2.04 TELEVISION SET MOUNTING BRACKETS

A. Provide adjustable overhead T.V. brackets for wall mounted swinging T.V. Yoke Style Wall Kit by Peerless Sales Co., or approved equal.

PART 3 - EXECUTION

3.01 PREPARATION

A. Examine the adjoining construction and the conditions under which the work is to be installed. Proceed with the work after unsatisfactory conditions have been corrected,

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B. Provide information and service as necessary for the proper coordination of other work with the work of this Section.

3.02 INSTALLATION

A. Install miscellaneous equipment in accordance with the manufacturer's instructions and final shop drawings. Provide accessories, anchors and other items required for proper installation and attachment to adjoining construction.

3.03 ADJUSTING AND CLEANING

A. Upon completion of installation, including work of other trades, lubricate, test and adjust operable equipment to operate easily and in compliance with manufacturer's specifications.

B. Clean installed equipment on exposed and semi-exposed surfaces. Touch-up shop applied finishes to restore damaged or soiled areas.

END OF SECTION

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SECTION 11160 - HYDRAULIC DOCK LEVELERS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide hydraulic dock levelers in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. HYDRAULIC DOCK LEVELERS

1.02 SUBMITTALS

A. Submit shop drawings showing pit dimension (length, width and depth), and anchorage of curb angle and embedded plates.

1. Submit (3) copies of manufacturer's Owner's Manual, Maintenance Manual and Master Service Manual to DOC.
2. Submit (1) copy of manufacturer's maintenance video tape.

1.03 GUARANTEE/WARRANTY

A. In accordance with the Article on "GUARANTEES" in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees all workmanship and materials described in this Section for a period of two (2) years. In addition, the Contractor shall furnish the TEN (10) year Guarantee/Warranty in the standard Guarantee/Warranty form of the manufacturer.

1. This warranty is based on a standard fork lift truck operating procedure. A standard procedure is; no load shall exceed the rated lift capacity of the truck, and no load shall be pre-staged or stacked and pushed or pulled over the dock leveler into or out of the truck and shall be based on the following criteria:

- a. Gross weight of fork lift and load shall not exceed 25000 lbs.
- b. Lift truck speed shall be no more than 5 mph.
- c. Leveler grade shall be no more than the recommended grade as determined by the material handling equipment manufacturer and never more than 7.17%.

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2. Dock leveler parts covered under the warranty shall include:
 - a. Lip Assembly.
 - b. Front Hinge.
 - c. Assembly Rear Hinges and Hinge Pins.
 - d. Platform Assembly.
 - e. Front Hinge and Hinge Pins.
 - f. Subframe.
3. Base hydraulic system shall be covered under a (10) year warranty.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. HYDRAULIC DOCK LEVELERS MODEL 4000 “ C CAPACITY” shall be manufactured by Rite-Hite, or an approved equal. Dock levelers shall be sized by the manufacturer to meet the warranty requirements specified herein.

1. Recessed adjustable dock levelers shall be 85” wide x 87” long, with a minimum 2 POINT CROWN lip and a 25000 lb. capacity rating. Unit to have an operational range of 12” above and below dock level. Equip each unit with two (2), 12” high x 4” deep laminated dock bumpers.
2. Dock leveler shall meet ANSI MH30.1-2000 test load specifications with proper documentation from a 3rd party.
3. Platform shall have a minimum of (8) interior deck beams plus external working range toeguards with no more than 8” spacing between the beams.
 4. When leveler is in stored position, the leveler lip will provide an integral and automatically- positioned, impact-rated, solid barrier 5” above building floor to help prevent accidental falls from vacant dock positions. Unobstructed end loading shall be possible from below dock level.
 5. Overlapping platform barriers or pinch points are not acceptable.
6. Levelers shall automatically return to safe, stored position if the trailer

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departs.

7. Automatic night locks to be integral part of manufacturer's standard dock levelers.

8. Full operating range telescoping toe guards to close off sides when leveler is in the highest upward position. Working range of 12".

9. Positive acting Safe-T-Strut™ maintenance support system will support lip and deck. This system must withstand a 10,000 lb. moving load and provide OSHA approved lockout/tag-out capabilities.

10. Levelers shall have ramp flex of 4" to compensate for unlevel trailer beds. Rear hinges shall be fixed and shall not rise above floor level.

11. Dock leveler control box - All individual components, as well as the complete box unit, shall be UL-approved.

a. Control box shall include infinite lip control to extend the lip at any time during the operation of the leveler AND shall also provide a constant pressure emergency stop.

12. Leveler shall include brush style weatherseal.

13. Hydraulic fluid shall be biodegradable and have a pour point of -80 degrees below zero.

PART 3 – EXECUTION

3.01 INSTALLATION

A. INSTALLER shall examine the substrate and conditions under which dock levelers and truck restraints are to be installed and notify DOC in writing of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

B. DOCK LEVELER MANUFACTURER'S REPRESENTATIVE shall install dock levelers in accordance with approved shop drawings and manufacturer's recommendations. Location of dock levelers shall be indicated on drawings.

C. SHIM DOCK LEVELERS as necessary, weld into pit.

D. ADJUST UNITS to operate smoothly.

E. AFTER INSTALLATION is completed, a representative of the manufacturer shall examine the installation and require that all connections and adjustments necessary to

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assure proper operation of dock levelers be made.

F. Before acceptance, a demonstration shall be conducted in the presence of the owner's representative to guarantee that all levelers operate properly in every respect. In addition, a detailed user/operator training session shall be conducted at time and place agreed upon by owner's representative and manufacturer's representative.

END OF SECTION

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SECTION 14240 - HYDRAULIC ELEVATOR

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide hydraulic elevator in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Hydraulic passenger elevator, as indicated.

B. Related Work: Refer to other Sections for the following:

1. Section 03300 - Cast-In-Place Concrete.
2. Division 16000 - Electrical Work.

1.02 QUALITY ASSURANCE

A. Installer qualifications: Either the elevator manufacturer or a licensee of the manufacturer, who has not less than three (3) years' successful experience with the installation of similar elevators.

B. Regulatory Requirements:

1. Elevator Code: Except for more stringent governing regulations, comply with applicable requirements of ANSI/ASME A-17.1, Safety Code for Elevators, and Escalators (hereinafter referred to as the "Code").

2. NFPA Code: Comply with applicable NFPA codes, and specifically with sections relating to electrical work and elevators.

3. Fire Resistance of Entrances: Comply with NFPA No.80, and provide units bearing UL labels with 30-minute temperature rise.

4. NEII Standards for Handicapped: Except as otherwise indicated, comply with NEII "Suggested Minimum Passenger Elevator Requirements for the Handicapped".

5. N.Y. City Building Code and Reference Standards for Elevator Construction and Safety - latest edition.

6. All passenger elevators shall meet the requirements of the N.Y. City Building

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Code for Elevators, Section 213 - "Passenger Elevators Designed to Accommodate the Handicapped".

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for each principal component, and include certified test reports on required testing. List and describe features of control system, performances, and operating characteristics.

B. Shop Drawings: Submit plans, elevations and details of hoistway, jack and guide rail requirements, car enclosures and hoistway entrances. Prepare elevating diagrams to show service to each level.

C. Samples: Submit 8" square or 12" long samples of exposed finishes of car enclosures, hoistway entrances, and signal equipment.

D. Certificates and Permits: Furnish DOC with copies of all construction permits, inspection/ acceptance certificates and operating permits as required by authorities having jurisdiction to allow normal, unrestricted use of elevators, including the following:

1. Board of Fire Underwriters.
2. Building Department, City of New York.
3. Other City and State Department having jurisdiction.
4. Furnish certificates before final acceptance.

E. Maintenance Manuals: Submit bound manual with operating and maintenance instructions, parts listing, recommended parts inventory, purchase source for critical components, emergency instructions, and similar information.

1.04 INITIAL MAINTENANCE AND WARRANTY

A. Maintenance Service: Provide full maintenance service by the elevator installer for 12 months after date of substantial completion. Include monthly preventive maintenance, during normal working hours. Include repair/replacement of worn or defective parts and lubrication, cleaning and adjusting as required for proper elevator operation. Include 24 hour/day, 7 days/week emergency callback service. Exclude only repair/replacement due to misuse, abuse, accidents or neglect by persons other than installer's personnel.

B. Warranty: Furnish warranty, signed by the Contractor, Installer, and Manufacturer, agreeing to replace or repair defective materials and workmanship during warranty period for (12) months starting on date of written acceptance of elevator work by DOC.

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1. "Defective" includes, without limitation, control system failures, performances below minimums, excessive wear, unusual deterioration or aging of materials or finishes, unsafe conditions, the need for excessive maintenance and abnormal noises or vibration.

1.05 PERMITS AND INSPECTIONS

- A. Obtain and pay for necessary Municipal and State inspection and permits for elevator only.
- B. Have tests made called for by the regulations of these authorities.
- C. Tests shall be made in the presence of the authorized representatives of such authorities.

1.06 OPERATING INSTRUCTIONS

- A. Upon completion and acceptance of all work, furnish to the Owner four completed sets of instructions and lubricating charts describing the operation and proper maintenance procedure of the elevator equipment. Complete wiring diagrams shall be included with one set mounted within each machine room, as directed.
- B. The Contractor shall provide instructions for a period of not less than one seven-hour day, at a time to be established by Owner to fully and adequately instruct the personnel appointed by the Owner in the proper maintenance and operation of the elevator equipment.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but not limited to the following:
 - 1. Dover Elevator Systems, Inc.
 - 2. Dura-Lift Elevator Co.
 - 3. Montgomery Elevator Co.
 - 4. Schindler Haughton Elevator Corp.

2.01 MATERIALS AND COMPONENTS

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A. General Requirement: Where components are not otherwise indicated, provide standard components of the manufacturer as required for a complete system.

B. Hydraulic Machines and Elevator Equipment: Provide manufacturer's hydraulic piston jack unit for elevator, with electric pump-tank-control system equipment in machine room.

1. Piping: Provide size, type, and weight piping recommended by manufacturer, and provide isolation couplings to prevent sound/vibration transmission from power unit.

2. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for the installation of elevator work; where installation of device is the work of another specification section.

3. Car Frame and Platform: Manufacturer's standard welded steel units, unless otherwise indicated.

C. Control Systems: Provide manufacturer's standard automatic control system.

D. Auxiliary Operations/Controls: In addition to primary control system features, provide the following features for passenger elevators.

1. Emergency Power Operation: Provide an emergency generator for elevator operation (refer to Division 166 - Electrical Work).

2. Automatic 2-way leveling.

3. Automatic dispatching of loaded car.

4. Handicapped signal and control features.

E. Signal Equipment: Provide manufacturer's standard signal equipment. Provide car control station and car position indicator in car, and ball push-button station on each landing. Provide acrylic buttons and signal which light-up when activated and remain lighted until call or other function has been fulfilled. Except for buttons and illuminated signal elements, fabricate signal equipment with exposed surfaces of stainless steel with manufacturer's standard brushed finish.

1. Car Control Stations: Provide flush-mounted metal faceplates, with call button for each landing served, and with other buttons, switches and controls required for operation and control. Mount at height complying with NEII "Suggested Minimum Passenger Elevator Requirements for the Handicapped". Mount in return panel adjacent to car door. Provide operating device symbols as required by Code. Mark other buttons and switches with manufacturer's standard identification for required function.

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2. Car Position Indicator: Provide illuminated-signal type or digital-display type, located near top of car. Include direction-of-next travel signal if not provided in car control station.

a. In addition to visual indicator, provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served.

3. Hall Push-Button Station: Provide type with flat face plate for surface mounting on wall finish (body of unit recessed). Provide 1-button station where only one direction of travel is available and indicate which direction that is, provide 2-button stations at other locations. Call buttons shall be stainless steel, 3/4" in the smallest dimension and vandal-proof design, centered 42" above finished floor.

4. Hall Lanterns: Provide units with illuminated "up" and "down" signal arrows, but provide single arrow where only one direction is possible. Provide units projecting from face plate. Match materials, finishes and mounting method with hall push—button stations.

a. Provide an audible signal to indicate that a car is arriving and to indicate direction of car travel. Signal shall sound once for up direction of travel and twice for down direction.

5. Hall Position Indicator: Provide illuminated-signal type or digital-display type, located above each hoistway entrance at first floor. Match materials, finishes and mounting method with hall push-button stations.

a. At manufacturer's option, first floor hall lantern signals may be integrated with hall position indicators.

6. Telephone: Provide rough-in telephone hand set in each car, contained in flush-mounted cabinet and complete with identification and instructions for use.

7. Alarm System: Provide emergency alarm bell properly located within building and audible outside hoistways, equipped to sound automatically in response to emergency stops and in response to "Alarm" button at each car control station.

F. Passenger Elevator Car Enclosures: Provide car enclosures, of the selections indicated unless otherwise indicated. Include exhaust fan ventilation, lighting, finishes, access doors, center opening doors, power door operators, sill, trim and accessories. Provide horizontal sliding door of standard flush panel type, as indicated. Provide standard protective edge trim for door and wall panels.

1. Stainless Steel Wall Panels: AISI Type 302/304; 16 gauge minimum; with manufacturer's standard directional satin finish.

2. Aluminum Sills: Cast or extruded aluminum with grooved surface minimum 1/4" thickness; mill finish.

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3. **Stainless Steel Ceiling Panels:** Provide panels of flush metal design, self-edged and seamless, not less than 0.75" thick. AISI Type 302/304 with No.4 satin finish. Design, texture and pattern as indicated on drawings and/or as selected by DOC. Fabricate panels of 20 gauge face sheet with stiffening channels on back, spot welded 4" o.c. to face sheet. Apply sound-deadening compound or laminated insulation on back of hollow panels.

4. Fabricate car with recesses and cutouts for signal equipment.

5. **Ceiling:** Fluorescent light fixtures and suspended ceiling panels faced with stainless steel.

6. **Floor Finish** Fabricate cab floor to receive 1/8" vinyl tile specified in Section 09650.

7. **Handrails:** Provide manufacturer's standard stainless steel handrails, on side walls and back wall in accordance with ANSI Standards.

8. **Door Edge Protective Device:** Provide retractable edge shoe on leading edges of elevator entrance doors which, upon contracting on obstruction in entrance, causes doors to stop and reopen.

9. **Photo-Eye Detection Device:** Provide electronic photo-eye device with timed cut-out, projecting dual light beams across car entrance at 5" and 29" heights, which, when interrupted, will cause closing doors to stop and reopen. provide keyed switch in car operating panel for disconnecting photo-eye device.

a. **Nudging Feature:** After car doors are prevented from closing by the detection device or door edge protective device, a loud buzzer shall sound and doors shall then close at reduced speed, unless door edge protective device hits an obstruction, which shall cause doors to reopen. Process shall repeat until obstruction is removed.

G. **Passenger Hoistway Entrances:** Unless otherwise shown, provide manufacturer's standard center opening, hollow metal, sliding door and frame hoistway entrances; complete with track systems, hardware, safeties, sills and accessories, match car enclosure door for size, and door panel movement. Coordinate frame size and profile with hoistway wall construction. Provide not less than the following:

1. **Factory Finished Steel Panels:** Flush hollow metal construction, fabricated from ASTM A-366 cold- rolled steel, commercial quality, Class 1, matte finish, stretcher leveled. Provide with factory applied, prime coat and powder coat thermally finished color coating.

a. Provide "Duracron Powder Coating" by PPG. Color as selected by DOC.

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2. Aluminum Sills: Cast or extruded aluminum, with grooved surface, 1/4" thickness; mill or finish.

H. Emergency Car Lighting: Provide emergency power unit that will illuminate elevator car and provide current to the alarm bell, in the event of power failure.

I. Fan: A stock design fan with stainless steel frame. provide key switch in car operating panel for operation of the fan.

J. Certificate Frame, No Smoking Frame: Stock designs formed of stainless steel.

2.03 ELECTRICAL WIRING

A. Furnish and install complete, necessary insulated wiring to connect all parts of the equipment.

B. Provide wiring on car with light sockets or receptacles under the car platform and on top of car for inspection purposes.

C. Insulated wiring shall have a flame-retarding and moisture resisting outer cover and shall be run in metal conduit, metallic tubing or wire ducts.

D. Travelling cables between car and hoistway shall have flame retarding and moisture-resisting outer cover. They shall be flexible and shall be suitably suspended to relieve strains in the individual conductors.

E. All insulated conductors and conduit, or tubing, as well as fitting, including metal boxes, troughs and ducts, shall comply with the requirements of the Electric Code of New York City.

2.04 FIRE EMERGENCY SERVICE

A. Automatic Operation Elevation:

1. At the street floor, a three position switch shall be provided for the elevator to be controlled. Such switches shall be located in the corridor call button fixture or in a separate fixture which shall be located four feet or less from the corridor call button fixture and not exceeding seven feet above the floor level.

a. The keyed switch shall have the following positions: "Normal", "Firemen Service" and "Door Open".

b. In lieu of the "Door Open" position on the keyed switch, a "Door Open" button may be provided which shall be operable only when the keyed switch is in the "Firemen Service"

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position. Such "Door Open" button shall be located in the same fixture as the keyed switch.

2. In each elevator, there shall be a two position keyed switch and a "Door Open" button. The position of the keyed switch shall be "Normal" and "Firemen Service".

B. Keyed Switches and Buttons:

1. All keyed switches required by this section shall be operable only by a city-wide standard key and shall also be made operable by the Fire Department standard key.

2. Corridor switches in the "Door Open" positions as well as "Door Open" buttons shall be of the momentary contact type and keys shall be removable from switches only in the "Normal" or "Firemen Service" positions.

C. "Firemen Service" Operation:

1. When a keyed switch is placed in the "Firemen Service" position, all elevators controlled by the switch shall return nonstop to the street floor. Such action shall override any other programming for car stops, but shall not affect the elevator circuits.

2. Buildings shall be equipped with heat and/or smoke sensing devices at elevator landings, the activation of any such device shall cause the elevator or elevators servicing the floor on which the sensing device is activated, to return nonstop to the street floor. Such action shall override any other programming for car stops, but shall not affect the elevator safety circuits.

3. When "Firemen Service" is indicated:

a. An elevator travelling away from the street floor or from a lowest landing floor shall reverse at the next landing floor without opening its doors.

b. Door reopening devices for power operated doors which may be affected by smoke or heat so as to prevent door closure shall be rendered inoperative.

4. when the elevator car reaches the street floor, the car and hoistway door shall open. The doors shall reclose after remaining open for not less than eight seconds nor more than one minute.

5. Subsequent operation of the car and hoistway doors shall be controlled in the following manner:

a. By the keyed switch "Door Open" position or where a "Door Open" button is provided, by such button when the keyed switch is turned to "Firemen Service".

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b. The car and hoistway doors shall reclose after remaining open for not less than eight seconds nor more than one minute.

D. Operation of Elevators on "Firemen Service":

1. To operate an elevator on "Firemen Service", the keyed switch inside such elevator car shall be turned to the "Firemen Service" position.

2. Such action shall put the elevators on manual operation and override any other keyed switch controls and elevator landing call buttons.

3. Elevators on "Firemen Service" shall be operable only by a person in the elevator car. Means shall be provided within the car to permit such person after having made floor selection to change such selection or direction of travel prior to reaching the original selected floor.

4. when the elevator car reaches the selected floor, the car and hoistway door shall open only in response to the "Door Open" button in the car and shall remain open. If the "Door Open" button is released while the door is in the process of opening, the doors shall automatically reclose. Means for closing the car doors at such selected floor shall be provided within the car.

E. Identification of Switches and Buttons:

1. All keyed switch position and buttons required by this rule shall be identified with the appropriate designation in red lettering.

2. All cover plates for such switches and buttons shall bear the lettering "FOR FIRE DEPARTMENT USE ONLY".

2.04 MASTER CONTROL LOCK SWITCH

A. Elevators shall be designed to operate in two ways:

1. Push button controlled.

2. Key activated push button controlled.

3. Operation:

a. On the first floor, adjacent to the elevator and five (5) feet above the floor install a Master Control lock switch to select push button on the "On" position and key activated push button control in the "Of f" position.

b. Master control switch shall be key operated and shall be installed in a flush mounted

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box, complete with faceplate. On faceplate shall be inscribed in 1/4" block letters the following:

c. Near the top of the faceplate inscribed "PUSH BUTTON MASTER CONTROL", adjacent to the key switch inscribe "PUSH BUTTON", on the "ON" side of the key switch and "KEY OPERATION" on the "OFF" side of the switch.

d. At each hall call button location and on the control panel inside the cab install a key switch. Key switch shall fit a #211 key and shall be used to activate the push buttons at each landing and inside the cab when the Master Control switch is in the "OFF" (key operation) position.

e. When Master Control switch is turned to the "OFF" (key operation) position, all previously registered calls shall be cancelled and the car shall return to the first floor, where the Master Control switch is located. Thereafter, until the Master Control switch is turned back to the "ON" position the elevator call and car call buttons must be activated by a key switch before a call can be registered.

PART 3 - EXECUTION

3.01 INSPECTION

A. Prior to installation, visit job site and verify all critical dimensions, and examine all other conditions under which elevator work is to be installed. Notify Owner's Representative in writing of any conditions detrimental to the proper installation or performance of elevator work. Proceed with elevator installation after unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF ELEVATOR SYSTEM

A. General: Comply with elevator manufacturer's instructions.

B. Install piston-cylinder units plumb and accurately centered for elevator car position and travel; anchor securely in place.

C. Welded Construction: Provide welded connections where bolted connections are not required for removal or for normal operation, adjustment, inspection and maintenance. Comply with AWS Standards for workmanship and for welding operators.

D. Coordination: Coordinate elevator work with work of other trades, to avoid delays. Use benchmarks, lines and levels designated by Owner's Representative.

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- E. Sound Isolation: Mount rotating and vibrating elevator equipment and components on vibration-absorption mounts, to prevent transmission of vibrations to structure.
- F. Install piping without routing underground, where possible; where not possible, cover underground piping with permanent protective wrapping before backfilling.
- G. Lubricate operating parts of systems, as recommended by manufacturer.
- H. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails, for accurate alignment of entrances with cars. Where possible, delay final adjustment of sills and doors until car is operable. Reduce clearances to minimum, safe, workable dimensions at each landing.
- I. Leveling Tolerances: 1/2" maximum, up or down, regardless of load or direction of travel.
- J. Grout sills with non-staining, non-shrink grout. Set units accurately aligned with or slightly above finished floor.

3.03 FIELD QUALITY CONTROL

- A. Acceptance Testing: Upon nominal completion of elevator installation, and before permitting use of elevator (either temporary or permanent), perform acceptance tests as required and recommended by Code and by governing regulations or agencies.
 - 1. Perform tests in presence of Owner's Representative.
- B. Operating Tests: Load elevator to its rated capacity and operate continuously for 30 minutes over its full travel distance, stopping at each level and proceeding immediately to the next. Record temperature rise of pump motor during 30-minute test period. Record failures of elevator to perform as required and notify Owner's Representative.
- C. Advise Regulatory Agency Inspector and Owner's Representative in advance of dates and times tests are to be performed on elevators.

3.04 PROTECTION

- A. At time of substantial completion of elevator work, provide suitable protective coverings, barriers, devices, signs or such other methods or procedures to protect elevator work from damage or deterioration. Maintain protective measures throughout remainder of construction period.
- B. Provide similar protective measures for elevator which will be placed in temporary

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service, including inspection and maintenance service during period of temporary service.

3.05 INSTRUCTION AND MAINTENANCE

A. Provide a system knowledgeable technician for one day and instruct Owner's Representative in proper use, operations and maintenance of elevators. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies. Train Owner's Representative in normal procedures to be followed in checking for sources of operational failures or malfunctions. Confer with Owner on requirements for a complete elevator maintenance program.

B. Make a final check of elevator operation, with Owner's Representative present and just prior to date of substantial completion. Determine that all systems and operating devices are functioning properly.

C. Continuing Maintenance: Installer shall provide a continuing maintenance proposal to Owner, in the form of standard yearly (or other period) maintenance agreement, starting on date of construction contract maintenance requirements are concluded. State services, obligations, conditions and terms for agreement period, and for renewal options.

3.06 ELEVATOR SCHEDULE

A. In addition to specified requirements, provide elevator which complies with the following:

1. Location: As shown.
2. Model: "Cimarron" by Dover Elevator Systems, Inc.
3. Type: Passenger, with Class A loading capacity.
4. Capacity and Speed: 2500 pounds at 100 FPM up.
5. Operation: As selected by DOC.
6. Control: "Oildraulic" controller.
7. Microprocessor: All major functions are microprocessor controlled. Call allocation, logic functions, door control, speed sensing, and position are computer controlled.
8. Net Travel: As shown.
9. Stops and Openings: As shown.

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10. Clear Car Inside: 5'- 8" x 7'- 9-1/2"
11. Entrances: Single speed, center-opening doors, factory-finished.
12. Door Operation: Microprocessor controlled, direct current powered.
13. Signals: Impulse signal fixtures; Car buttons mounted at 20 deg. angle;
Position indicator in car.
14. Electric Power supply: 3 phase, 60 HZ.
15. Manufacturer: Dover Elevator Systems, Inc., or approved equal.
16. Standard Features: Dover DLP-1 cab; stainless steel front with swing panel; baked enamel doors with stainless steel kickplate; telephone compartment; light and alarm bell; oil line shut-off valve; jack cylinder wrapped with corrosion-resistant protective tape; "Oildraulic" silencer; NEMA 1 (fully enclosed) controller cabinet. Emergency service in accordance with ANSI/ASME A-17.1.
17. Provisions for Handicapped: Elevator dimension and location of car operating station, telephone compartment and handrail comply with the requirements of ANSI A-17.1 for use by the physically handicapped. Other features that may be required by local elevator codes are available as options, including electronic door sensing device, visual and audible signals, tactile markings and single-slide door.
18. Optional Features: Special requirements of State or Local Codes.

END OF SECTION

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SECTION 14420 - WHEELCHAIR LIFTS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Provide wheelchair lifts in accordance with the Contract Documents. The Contract Documents are as defined in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated March 2017. The Work of this Section shall include but not be limited to the following:

1. Vertical wheelchair lifts.
2. Stairway (incline) wheelchair lifts.
3. Retractable stairway and vertical lift combination unit.

B. Related Sections:

1. Section 03300 - Cast-in-place Concrete.
2. Section 04200 - Unit Masonry.
3. Section 06200 - Millwork
4. Section 06410 - Architectural Woodwork Restoration.

1.02 SUBMITTALS

A. Submittals Package: Submit the Shop Drawings, product data, samples, specified below at the same time as a package, except for the following:

1. Test Reports - (Quality Control Submittal)

B. Shop Drawings: Submit drawing showing general layout, details required clearances and wiring requirements, Layout drawings to indicate adjacent construction points of attachment and equipment loads.

C. Product Data: Submit manufacturers catalog sheets, specifications and installation for each component specified.

D. Test Reports: Acceptance Test Report.

1.03 QUALITY ASSURANCE

A. Installers Qualifications: The firm must have recent successful experience with comparable installations of this type with a record of satisfactory operation.

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B. Manufacturer's Qualifications: A company with not less than three (3) years experience in the design and fabrication of vertical wheelchair lifts,

C. Technical Services: Manufacturer and authorized dealer shall work with Resident Engineers, Structural Engineers and Contractors to adapt the wheelchair lift product to the design and structural requirements of the building, site and code requirements.

D. Lifts designed and installed in compliance with ANSI A 17,1 and local governing authorities having jurisdiction and applicable ADA requirements,

1.04 DELIVERY, STORAGE, HANDLING

A. Deliver, store, and handle product as recommended by the Manufacturer, to protect from damage.

1.05 TESTING

A. The lift shall be designed and tested for five time static load safety factor of its rated capacity in compliance with ANSI A 17.1. Materials such as cast iron shall not be used in the lift structure.

B. Load the vertical lift unit to rated capacity and test for several cycles to insure proper operation. No mechanical failures shall occur and no wear that would effect the reliability of the unit should be detected.

1.06 GUARANTEE/WARRANTY

A. In accordance with the Article on "GUARANTEES" in the CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT dated April 2006, the Contractor hereby guarantees all workmanship and materials described in this Section for a period of one (1) year. In addition, the Contractor shall furnish the Manufacturer's standard written warranty complying with the following.

1. Unit shall have a one (1) year limited warranty on the basic unit and electrical system with a two (2) year warranty on drive components.

PART 2 - PRODUCTS

2.01 PLATFORM LIFT MANUFACTURER AND PRODUCT

A. Product: Subject to compliance with requirements, provide Vertical Wheelchair Lift Model: "PORCH-LIFT, PL-TG 48" as manufactured by Access Industries, Inc., or approved equal.

1. Capacity: 750 lbs., with minimum safety factor of 5X.

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2. Nominal Speed: 12 fpm.
3. Maximum Lift: 84 inches.
4. Platform Size: 36 inches by 48 inches and 36 inches by 60 inches.
5. Drive System: Motor - 120 VAC, 60 Hz, 10amp single-phase motor with minimum 1/2 hp, 1725 rpm instant reverse capability. Lift stops automatically at desired landings. Drive - Ball bearing drive nut and screw, three groove pulleys with matched multi-V-belts and broken belt monitoring system.
6. Static Load Test All load ratings and safety factors shall meet or exceed those specified in ANSI A17.1, Part XX Section 2000 for public buildings and shall be certified by a professional engineer.

2.02 FABRICATION

- A. Machine Tower: 16 ga. steel sheet
- B. Base Frame: 1-1/2" x 1-1/2" x 3/16", hot rolled steel tube frame.
- C. Lift Weldment: 3/8", hot rolled steel plate and 2" x 2" x 1/4", wall structural steel tubing.
- D. Tower Cap: 7 ga. hot rolled, pickled, oiled steel plate.
- E. Side Guard Panels: 22 ga. steel sheet panel in 1" x 1" x 14 p., steel tubing frame.
- F. Front Panel: 18 ga. steel sheet.
- G. Platform: 11 ga. galvanized steel plate; slip resistant surface.
- H. Access Ramp: 11 ga. galvanized steel plate; slip resistant surface.
- I. All Welded Parts: Welders certified in accordance with requirement of AWS D 1.1.
- J. Coatings/Surfacing: Lift shall be finished by the following process: alkaline detergent wash, clear water rinse, iron phosphate coating, clear water rinse, non-chromate rinse, electrostatically applied thermosetting powder coat finish for indoor or outdoor use.
- K. Color: Standard or custom color as selected by Resident Engineer.

2.03 CONTROLS AND SAFETY DEVICES

- A. Platform Controls: 24 VAC ON/OFF key switch, constant pressure directional push buttons (or option: paddle switches), emergency stop switch.
- B. Landing Controls: ON/OFF key switch and constant pressure Call/Send buttons.

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Call/Send controls shall be installed in upper landing gate.

- C. Toe-guard design with upwardly telescoping wall that shield underside of platform during ascent/descent.
- D. Ball screw safety device.
- E. Electro-mechanical brake.
- F. Grounded electrical system with upper, lower and final limit switches and 24 VAC operating controls.
- G. 31-1/2", long fixed access ramp (not required with pit mounted units). 42", high side guard panels and non-slip platform and access ramp surfaces,
- H. Security key locks at controls for limited access that meet requirements of ASME/ANSI A 17.1.
- I. 51", self-closing gate on platform and at top landing, gate at lower landing and 6'- 8" (2032mm) flush mount 1-1/2 hr. fire rated door with wire glass window, lockset and keys, self-closure, and electric door strike. Tamper resistant, electro-mechanical gate/door locks shall allow platform ascent/descent only when gates are closed and locked.
- J. Grab rail on platform for rider security.
- K. Emergency stop shall cut off power to lift. Signaling device shall provide audio alarm that can be activated from platform or landings for emergency assistance.
- L. Hand crank for manually raising/lowering platform in event of power or component failure.
- M. Obstruction sensor mounted in platform under-panel.

2.04 STAIR WAY WHEELCHAIR LIFT

- A. Type: End-load for straight-run stairway, with the following characteristics:
 - 1. Load Rating: 500 lbs.
 - 2. Travel Speed: 20 feet per minute.
 - 3. Rail System: Two steel rails. Rails and supporting members: secured to wall or to supports behind wall. Layout as shown.
 - 4. Driving Machine Frame: fabricated from rectangular steel tubing.
 - 5. Front Panel: vinyl coated sheet metal.
 - 6. Pivotal Roller Carriage: fabricated with steel plate which wraps around rail in manner that even with rollers removed, carriage can not come away from rail; provide over-

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speed brake device that will stop and hold the unit automatically in the event of a mechanical failure.

7. Drive Unit: instant reversing electric motor and integral self-locking work gear reducer with an intermediate chain drive to jackshaft sprocket driven by jackshaft shall engage a stationary roller within the lower rail. A pivotal carriage with guide rollers and idler sprockets shall maintain a constant loop in the stationary chain and assure that the drive sprocket is positively engaged with the chain at all times. Provide two key-operated station Controls located in walls (recessed), one near foot of stair and one at head of stair. Exact locations and heights shall be as indicated on the Drawings, or as directed.

8. Platform: constructed of fabricated steel with integral steel reinforcing ribs. Provide obstruction sensor devices at leading and trailing edges and on underside of platform; equipment will stop in its upward or downward travel if an obstruction is encountered. Provide an automatically actuated steel ramp (slope 1 in 6) for exiting platform. The platform shall be protected opposite the drive unit with a 6" high steel panel; a metal guard, the full width of the platform, shall raise as the unit travels to maintain the passenger on the platform. Platform shall be of type that can be folded against the wall and extend a maximum of 12" from the wall in the folded position. Size: As indicated on the Drawings.

9. Electrical Requirements: As shown.

10. Manufacturers:

- a. Access Industries
- b. National Wheel-O-Vator
- c. Garaventa
- d. Or approved equal.

2.05 RETRACTABLE STAIRWAY AND VERTICAL LIFT COMBINATION UNIT

A. Product: Furnish and install complete, ADA compliant retractable stairway and vertical lift combination unit. Normally used as a stairway assembly, but when activated by push button, stairs convert into a vertical lift to desired level (4 to 60 inches of level change) and unit returns into stair configuration until activated again. Stair/vertical lift shall consume minimal or no additional floor space and can be customized for materials, colors and surface treatments to preserve architectural aesthetics. Unit can be powered by available supply. Features include microprocessor for monitoring safety points, sensor system, automatic internal battery back-up and rated at 750 pounds working load.

B. Manufacturer "AccesStair VHM" by Vertical Mobility, L.L.C. 3949-J Dayton Park Drive Dayton, Ohio 45414, Telephone: (unavailable) (manufacturing facility is ISO 9001 registered) or an approved equal.

C. Lift Equipment:

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1. Model: Vertical Mobility AccesStair VMH, or approved equal.
2. Capacity: 750 pounds with 5X-safety factor.
3. Nominal Speed: 10 fpm.
4. Drive: Electric motor
5. Finish: Wall Treatment: Millwork to match existing woodwork. Floor Treatment: Vinyl composition tile to match existing, unless noted otherwise.
6. Platform: Standard: Nominally 36" x 54"
7. AC Power: 115 VAC 15 amp single phase
8. Dimensions: 47-3/4" wide x 90" long (may vary due to actual site measurements and lift requirements)
9. Weight: Approximately 1500 pounds
10. Handrails: As specified and detailed by the Architect

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Verify that walls or other supporting members are adequate for the attachment and continued support of the lift installations.
- B. Install lifts in accordance with the Manufacturer's recommendations and as indicated on the Drawings.
- C. Units shall be installed in accordance with National Electrical Code (N.E.C.) N.F.P.A. 70.
- D. Units shall be installed and operated in accordance with American National Standards Institute (ANSI) AI 7.1 Parts 2000 and 2100.
- E. All external mounted controls shall be properly grounded.
- F. A separate 20 amp electrical circuit with a manual disconnect switch and ground fault indicator shall be supplied by electrical contractor at job site.
- G. The installation of lifts shall be made in accordance with the approved plans and specifications and the manufacturer's installation instructions.
- H. Lift Contractor shall provide and install all specified lift components. Landing gates and doors shall be installed by others. Electrical piping and wiring by others. Final electrical connections and lift adjustments by lift Contractor.

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3.02 TESTS AND ADJUSTING

- A. Operate lifts at full loading, stopping at each landing, traveling in each direction; perform in presence of Resident Engineer.
- B. Adjust all equipment, switches and controls as required for proper operation.

3.03 CLEANING

- A. Clean all surfaces of the lifts upon completion of the Work of this Section; remove debris from area.

END OF SECTION

PART D: STANDARD CONSTRUCTION CONTRACT 2017

NOTICE TO BIDDERS

The City of New York has issued a new Standard Construction Contract. The new Contract, which is incorporated in this bid, is different from the 2013 version previously used by the City. Some of the significant changes are listed below. In addition, this March 2017 version incorporates the Insurance Rider (Articles 22.1.1(c) and 22.3.3), the Paid Sick Leave Law Contract Rider (Article 35.5), and the Hiring and Employment Rider: HireNYC and Reporting Requirements (Article 35.6). This notice is only a partial listing. Please refer to the Contract itself for a full understanding of the changes and the actual text of the changes that were made. The text of the revised Standard Construction Contract is the controlling document if there are any discrepancies between this notice and the Standard Construction Contract.

Significant changes include the following:

- **ARTICLE 11 - DAMAGES CAUSED BY DELAYS:** Article 11 no longer provides for agencies to make determinations on claims for damages for delay or make payments for those claims through a change order. Instead claims will be submitted to the Comptroller in accordance with the standards in the Contract. The revised Article 11 also sets forth additional detail of what delay costs are compensable and how they are to be calculated.
- **ARTICLE 12 - COORDINATION WITH OTHER CONTRACTORS:** The March 2017 version revises Article 12.3 concerning the Engineer's failure to issue directions to an Other Contractor.
- **ARTICLE 14 - COMPLETION AND FINAL ACCEPTANCE OF THE WORK:** The March 2017 version clarifies Article 14.2.2 concerning the dates to complete punch list work.
- **ARTICLE 30 - NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS:** The March 2017 version clarifies the relationship between the requirements in Article 30.1 concerning when the contractor must submit notice and documentation of claims for delay damages, extra work, and other claims and the requirements that are set forth in Articles 11 and 27.
- **ARTICLE 56 - CLAIMS AND ACTIONS THEREON:** The March 2017 version revises Article 56.2.2 concerning the time to commence an action arising out of the Commissioner's exercise of his/her right to complete punch list or unsatisfactory work.
- **ARTICLE 78 - EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS:** The March 2017 version adds a new Article 78 requiring pre-bid viewing of the site and allowing the contractor to obtain a change order for extra work due to changed subsurface conditions.

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STANDARD CONSTRUCTION CONTRACT

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WITNESSETH:

The parties, in consideration of the mutual agreements contained herein, agree as follows:

CHAPTER I: THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

1.1 Except for titles, subtitles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of this **Contract**:

1.1.1 All provisions required by law to be inserted in this **Contract**, whether actually inserted or not;

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The **Contract**;

1.1.5 The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and, if used, the Bid Booklet;

1.1.6 All Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed or the Order to Work.

1.2 Should any conflict occur in or between the Drawings and Specifications, the **Contractor** shall be deemed to have estimated the most expensive way of doing the **Work**, unless the **Contractor** shall have asked for and obtained a decision in writing from the **Commissioner** of the **Agency** that is entering into this **Contract**, before the submission of its bid, as to what shall govern.

ARTICLE 2. DEFINITIONS

2.1 The following words and expressions, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless a different meaning is clear from the context:

2.1.1 “**Addendum**” or “**Addenda**” shall mean the additional Contract provisions and/or technical clarifications issued in writing by the Commissioner prior to the receipt of bids.

2.1.2 “**Agency**” shall mean a city, county, borough or other office, position, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury.

2.1.3 “**Agency Chief Contracting Officer**” (**ACCO**) shall mean a person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the CCPO, or his/her duly authorized representative.

2.1.4 **“Allowance”** shall mean a sum of money which the Agency may include in the total amount of the Contract for such specific contingencies as the Agency believes may be necessary to complete the Work, *e.g.*, lead or asbestos remediation, and for which the Contractor will be paid on the basis of stipulated unit prices or a formula set forth in the Contract or negotiated between the parties provided, however, that if the Contractor is not directed to use the Allowance, the Contractor shall have no right to such money and it shall be deducted from the total amount of the Contract.

2.1.5 **“City”** shall mean the City of New York.

2.1.6 **“City Chief Procurement Officer” (CCPO)** shall mean a person delegated authority by the Mayor to coordinate and oversee the procurement activity of Mayoral agency staff, including the ACCO and any offices which have oversight responsibility for the procurement of construction, or his/her duly authorized representative.

2.1.7 **“Commissioner”** shall mean the head of the Agency that has entered into this Contract, or his/her duly authorized representative.

2.1.8 **“Comptroller”** shall mean the Comptroller of the City of New York.

2.1.9 **“Contract”** or **“Contract Documents”** shall mean each of the various parts of the contract referred to in Article 1 hereof, both as a whole and severally.

2.1.10 **“Contract Drawings”** shall mean only those drawings specifically entitled as such and listed in the Specifications or in any Addendum, or any drawings furnished by the Commissioner, pertaining or supplemental thereto.

2.1.11 **“Contract Work”** shall mean everything required to be furnished and done by the Contractor by any one or more of the parts of the Contract referred to in Article 1, except Extra Work as hereinafter defined.

2.1.12 **“Contractor”** shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and its, their, his/her successors, personal representatives, executors, administrators, and assigns, and any person, firm, partnership, joint venture, individual, or corporation which shall at any time be substituted in the place of the Contractor under this Contract.

2.1.13 **“Days”** shall mean calendar days, except where otherwise specified.

2.1.14 **“Engineer”** or **“Architect”** or **“Project Manager”** shall mean the person so designated in writing by the Commissioner in the Notice to Proceed or the Order to Work to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be. Subject to written approval by the Commissioner, the Engineer, Architect or Project Manager may designate an authorized representative.

2.1.15 **“Engineering Audit Officer” (EAO)** shall mean the person so designated by the Commissioner to perform responsible auditing functions hereunder.

2.1.16 **“Extra Work”** shall mean Work other than that required by the Contract at the time of award which is authorized by the Commissioner pursuant to Chapter VI of this Contract.

- 2.1.17 **“Federal-Aid Contract”** shall mean a contract in which the United States (federal) Government provides financial funding as so designated in the Information for Bidders.
- 2.1.18 **“Final Acceptance”** shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.
- 2.1.19 **“Final Approved Punch List”** shall mean a list, approved pursuant to Article 14.2.2, specifying those items of Work to be completed by the Contractor after Substantial Completion and dates for the completion of each item of Work.
- 2.1.20 **“Law”** or **“Laws”** shall mean the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a statute of the United States or of the State of New York, a local law of the City of New York, any ordinance, rule or regulation having the force of law, or common law.
- 2.1.21 **“Materialman”** shall mean any corporation, firm, partnership, joint venture, or individual, other than employees of the Contractor, who or which contracts with the Contractor or any Subcontractor, to fabricate or deliver, or who actually fabricates or delivers, plant, materials or equipment to be incorporated in the Work.
- 2.1.22 **“Means and Methods of Construction”** shall mean the labor, materials, temporary structures, tools, plant, and construction equipment, and the manner and time of their use, necessary to accomplish the result intended by this Contract.
- 2.1.23 **“Notice to Proceed”** or **“Order to Work”** shall mean the written notice issued by the Commissioner specifying the time for commencement of the Work and the Engineer, Architect or Project Manager.
- 2.1.24 **“Other Contractor(s)”** shall mean any contractor (other than the entity which executed this Contract or its Subcontractors) who or which has a contract with the City for work on or adjacent to the building or Site of the Work.
- 2.1.25 **“Payroll Taxes”** shall mean State Unemployment Insurance (SUI), Federal Unemployment Insurance (FUI), and payments pursuant to the Federal Insurance Contributions Act (FICA).
- 2.1.26 **“Project”** shall mean the public improvement to which this Contract relates.
- 2.1.27 **“Procurement Policy Board” (PPB)** shall mean the Agency of the City of New York whose function is to establish comprehensive and consistent procurement policies and rules which shall have broad application throughout the City.
- 2.1.28 **“Required Quantity”** in a unit price Contract shall mean the actual quantity of any item of Work or materials which is required to be performed or furnished in order to comply with the Contract.
- 2.1.29 **“Resident Engineer”** shall mean the representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the Work.
- 2.1.30 **“Site”** shall mean the area upon or in which the Contractor’s operations are carried on, and such other areas adjacent thereto as may be designated as such by the Engineer.

2.1.31 “**Small Tools**” shall mean items that are ordinarily required for a worker’s job function, including but not limited to, equipment that ordinarily has no licensing, insurance or substantive storage costs associated with it; such as circular and chain saws, impact drills, threaders, benders, wrenches, socket tools, etc.

2.1.32 “**Specifications**” shall mean all of the directions, requirements, and standards of performance applying to the Work as hereinafter detailed and designated under the Specifications.

2.1.33 “**Subcontractor**” shall mean any person, firm or corporation, other than employees of the Contractor, who or which contracts with the Contractor or with its subcontractors to furnish, or actually furnishes labor, or labor and materials, or labor and equipment, or superintendence, supervision and/or management at the Site. Wherever the word Subcontractor appears, it shall also mean sub-Subcontractor.

2.1.34 “**Substantial Completion**” shall mean the written determination by the Engineer that the Work required under this Contract is substantially, but not entirely, complete and the approval of the **Final Approved Punch List**.

2.1.35 “**Work**” shall mean all services required to complete the Project in accordance with the Contract Documents, including without limitation, labor, material, superintendence, management, administration, equipment, and incidentals, and obtaining any and all permits, certifications and licenses as may be necessary and required to complete the Work, and shall include both Contract Work and Extra Work.

CHAPTER II: THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

3.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications, and Addenda**, the **Work** shall be performed in accordance with the best modern practice, utilizing, unless otherwise specified in writing, new and unused materials of standard first grade quality and workmanship and design of the highest quality, to the satisfaction of the **Commissioner**.

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

4.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications, and Addenda**, the **Means and Methods of Construction** shall be such as the **Contractor** may choose; subject, however, to the **Engineer’s** right to reject the **Means and Methods of Construction** proposed by the **Contractor** which in the opinion of the **Engineer**:

4.1.1 Will constitute or create a hazard to the **Work**, or to persons or property; or

4.1.2 Will not produce finished **Work** in accordance with the terms of the **Contract**; or

4.1.3 Will be detrimental to the overall progress of the **Project**.

4.2 The **Engineer’s** approval of the **Contractor’s Means and Methods of Construction**, or his/her failure to exercise his/her right to reject such means or methods, shall not relieve the **Contractor**

of its obligation to complete the **Work** as provided in this **Contract**; nor shall the exercise of such right to reject create a cause of action for damages.

ARTICLE 5. COMPLIANCE WITH LAWS

5.1 The **Contractor** shall comply with all **Laws** applicable to this **Contract** and to the **Work** to be done hereunder.

5.2 Procurement Policy Board Rules: This **Contract** is subject to the Rules of the **PPB** (“**PPB Rules**”) in effect at the time of the bid opening for this **Contract**. In the event of a conflict between the **PPB Rules** and a provision of this **Contract**, the **PPB Rules** shall take precedence.

5.3 Noise Control Code provisions.

5.3.1 In accordance with the provisions of Section 24-216(b) of the Administrative Code of the **City** (“Administrative Code”), Noise Abatement Contract Compliance, devices and activities which will be operated, conducted, constructed or manufactured pursuant to this **Contract** and which are subject to the provisions of the **City** Noise Control Code shall be operated, conducted, constructed, or manufactured without causing a violation of the Administrative Code. Such devices and activities shall incorporate advances in the art of noise control development for the kind and level of noise emitted or produced by such devices and activities, in accordance with regulations issued by the **Commissioner** of the **City** Department of Environmental Protection.

5.3.2 The **Contractor** agrees to comply with Section 24-219 of the Administrative Code and implementing rules codified at 15 Rules of the City of New York (“RCNY”) Section 28-100 *et seq.* In accordance with such provisions, the **Contractor**, if the **Contractor** is the responsible party under such regulations, shall prepare and post a Construction Noise Mitigation Plan at each **Site**, in which the **Contractor** shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the **Contractor** cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the **City** Department of Environmental Protection. In addition, the **Contractor**’s certified Construction Noise Mitigation Plan is subject inspection by the **City** Department of Environmental Protection in accordance with Section 28-101 of Title 15 of RCNY. No **Contract Work** may take place at a **Site** unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the **Contractor** shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties pursuant to the applicable provisions of the Administrative Code and RCNY.

5.4 Ultra Low Sulfur Diesel Fuel: In accordance with the provisions of Section 24-163.3 of the Administrative Code, the **Contractor** specifically agrees as follows:

5.4.1 Definitions. For purposes of this Article 5.4, the following definitions apply:

5.4.1(a) “Contractor” means any person or entity that enters into a Public Works Contract with a **City Agency**, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such Public Works Contract.

5.4.1(b) “Motor Vehicle” means any self-propelled vehicle designed for transporting persons or property on a street or highway.

5.4.1(c) “Nonroad Engine” means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.4.1(d) “Nonroad Vehicle” means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this term shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) horsepower or less and that are not used in any construction program or project.

5.4.1(e) “Public Works Contract” means a contract with a **City Agency** for a construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a **City Agency** for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a **City Agency** for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

5.4.1(f) “Ultra Low Sulfur Diesel Fuel” means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.4.2 Ultra Low Sulfur Diesel Fuel

5.4.2(a) All **Contractors** shall use Ultra Low Sulfur Diesel Fuel in diesel-powered Nonroad Vehicles in the performance of this **Contract**.

5.4.2(b) Notwithstanding the requirements of Article 5.4.2(a), **Contractors** may use diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) to fulfill the requirements of this Article 5.4.2, where the Commissioner of the **City** Department of Environmental Protection (“DEP Commissioner”) has issued a determination that a sufficient quantity of Ultra Low Sulfur Diesel Fuel is not available to meet the needs of **Agencies** and **Contractors**. Any such determination shall expire after six (6) months unless renewed.

5.4.2(c) **Contractors** shall not be required to comply with this Article 5.4.2 where the **City Agency** letting this **Contract** makes a written finding, which is approved, in writing, by the DEP Commissioner, that a sufficient quantity of Ultra Low Sulfur Diesel Fuel, or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is not available to meet the requirements of Section 24-163.3 of the Administrative Code, provided that such **Contractor** in its fulfillment of the

requirements of this **Contract**, to the extent practicable, shall use whatever quantity of Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is available. Any finding made pursuant to this Article 5.4.2(c) shall expire after sixty (60) **Days**, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the **City Agency** renews the finding in writing and such renewal is approved by the DEP Commissioner.

5.4.2(d) **Contractors** may check on determinations and approvals issued by the DEP Commissioner pursuant to Section 24-163.3 of the Administrative Code, if any, at www.dep.nyc.gov or by contacting the **City Agency** letting this **Contract**.

5.4.2(e) The requirements of this Article 5.4.2 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.3 Best Available Technology

5.4.3(a) All **Contractors** shall utilize the best available technology for reducing the emission of pollutants for diesel-powered Nonroad Vehicles in the performance of this **Contract**. For determinations of best available technology for each type of diesel-powered Nonroad Vehicle, **Contractors** shall comply with the regulations of the **City** Department of Environmental Protection, as and when adopted, Chapter 14 of Title 15 of the Rules of the City of New York (RCNY). The **Contractor** shall fully document all steps in the best available technology selection process and shall furnish such documentation to the **City Agency** or the DEP Commissioner upon request. The **Contractor** shall retain all documentation generated in the best available technology selection process for as long as the selected best available technology is in use.

5.4.3(b) No **Contractor** shall be required to replace best available technology for reducing the emission of pollutants or other authorized technology utilized for a diesel-powered Nonroad Vehicle in accordance with the provisions of this Article 5.4.3 within three (3) years of having first utilized such technology for such vehicle.

5.4.3(c) This Article 5.4.3 shall not apply to any vehicle used to satisfy the requirements of a specific Public Works Contract for fewer than twenty (20) **Days**.

5.4.3(d) The **Contractor** shall not be required to comply with this Article 5.4.3 with respect to a diesel-powered Nonroad Vehicle under the following circumstances:

5.4.3(d)(i) Where the **City Agency** makes a written finding, which is approved, in writing, by the DEP Commissioner, that the best available technology for reducing the emission of pollutants as required by this Article 5.4.3 is unavailable for such vehicle, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(ii) Where the DEP Commissioner has issued a written waiver based upon the **Contractor** having demonstrated to the DEP Commissioner that the use of the best available technology for reducing the emission of pollutants might endanger the operator of such vehicle or those working near such vehicle, due to engine malfunction, the **Contractor** shall use whatever technology for

reducing the emission of pollutants, if any, is available and appropriate for such vehicle, which would not endanger the operator of such vehicle or those working near such vehicle.

5.4.3(d)(iii) In determining which technology to use for the purposes of Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above, the **Contractor** shall primarily consider the reduction in emissions of particulate matter and secondarily consider the reduction in emissions of nitrogen oxides associated with the use of such technology, which shall in no event result in an increase in the emissions of either such pollutant.

5.4.3(d)(iv) The **Contractor** shall submit requests for a finding or a waiver pursuant to this Article 5.4.3(d) in writing to the DEP Commissioner, with a copy to the **ACCO** of the **City Agency** letting this **Contract**. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above shall expire after one hundred eighty (180) **Days**, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the **City Agency** renews the finding, in writing, and the DEP Commissioner approves such finding, in writing, or the DEP Commissioner renews the waiver, in writing.

5.4.3(e) The requirements of this Article 5.4.3 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.4 Section 24-163 of the Administrative Code. The **Contractor** shall comply with Section 24-163 of the Administrative Code related to the idling of the engines of motor vehicles while parking.

5.4.5 Compliance

5.4.5(a) The **Contractor's** compliance with Article 5.4 may be independently monitored. If it is determined that the **Contractor** has failed to comply with any provision of Article 5.4, any costs associated with any independent monitoring incurred by the **City** shall be reimbursed by the **Contractor**.

5.4.5(b) Any **Contractor** who violates any provision of Article 5.4, except as provided in Article 5.4.5(c) below, shall be liable for a civil penalty between the amounts of one thousand (\$1,000) and ten thousand (\$10,000) dollars, in addition to twice the amount of money saved by such **Contractor** for failure to comply with Article 5.4.

5.4.5(c) No **Contractor** shall make a false claim with respect to the provisions of Article 5.4 to a **City Agency**. Where a **Contractor** has been found to have done so, such **Contractor** shall be liable for a civil penalty of twenty thousand (\$20,000) dollars, in addition to twice the amount of money saved by such **Contractor** in association with having made such false claim.

5.4.6 Reporting

5.4.6(a) For all Public Works Contracts covered by this Article 5.4, the **Contractor** shall report to the **City Agency** the following information:

5.4.6(a)(i) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(a)(ii) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(a)(iii) The number of such Nonroad Vehicles that utilized the best available technology for reducing the emission of pollutants, including a breakdown by vehicle model and the type of technology;

5.4.6(a)(iv) The number of such Nonroad Vehicles that utilized such other authorized technology in accordance with Article 5.4.3, including a breakdown by vehicle model and the type of technology used for each such vehicle;

5.4.6(a)(v) The locations where such Nonroad Vehicles were used; and

5.4.6(a)(vi) Where a determination is in effect pursuant to Article 5.4.2(b) or 5.4.2(c), detailed information concerning the **Contractor's** efforts to obtain Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm).

5.4.6(b) The **Contractor** shall submit the information required by Article 5.4.6(a) at the completion of **Work** under the Public Works Contract and on a yearly basis no later than August 1 throughout the term of the Public Works Contract. The yearly report shall cover **Work** performed during the preceding fiscal year (July 1 - June 30).

5.5 Ultra Low Sulfur Diesel Fuel. In accordance with the Coordinated Construction Act for Lower Manhattan, as amended:

5.5.1 Definitions. For purposes of this Article 5.5, the following definitions apply:

5.5.1(a) "Lower Manhattan" means the area to the south of and within the following lines: a line beginning at a point where the United States pierhead line in the Hudson River as it exists now or may be extended would intersect with the southerly line of West Houston Street in the Borough of Manhattan extended, thence easterly along the southerly side of West Houston Street to the southerly side of Houston Street, thence easterly along the southerly side of Houston Street to the southerly side of East Houston Street, thence northeasterly along the southerly side of East Houston Street to the point where it would intersect with the United States pierhead line in the East River as it exists now or may be extended, including tax lots within or immediately adjacent thereto.

5.5.1(b) "Lower Manhattan Redevelopment Project" means any project in Lower Manhattan that is funded in whole or in part with federal or State funding, or any project intended to improve transportation between Lower Manhattan and the two air terminals in the **City** known as LaGuardia Airport and John F. Kennedy International Airport, or between Lower Manhattan and the air terminal in Newark known as Newark Liberty International Airport, and that is funded in whole or in part with federal funding.

5.5.1(c) “Nonroad Engine” means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.5.1(d) “Nonroad Vehicle” means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower (HP) and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) HP or less and that are not used in any construction program or project.

5.5.1(e) “Ultra Low Sulfur Diesel Fuel” means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.5.2 Requirements. **Contractors** and **Subcontractors** are required to use only Ultra Low Sulfur Diesel Fuel to power the diesel-powered Nonroad Vehicles with engine HP rating of fifty (50) HP and above used on a Lower Manhattan Redevelopment Project and, where practicable, to reduce the emission of pollutants by retrofitting such Nonroad Vehicles with oxidation catalysts, particulate filters, or technology that achieves lowest particulate matter emissions.

5.6 Pesticides. In accordance with Section 17-1209 of the Administrative Code, to the extent that the **Contractor** or any **Subcontractor** applies pesticides to any property owned or leased by the **City**, the **Contractor**, and any **Subcontractor** shall comply with Chapter 12 of the Administrative Code.

5.7 Waste Treatment, Storage, and Disposal Facilities and Transporters. In connection with the **Work**, the **Contractor** and any **Subcontractor** shall use only those waste treatment, storage, and disposal facilities and waste transporters that possess the requisite license, permit or other governmental approval necessary to treat, store, dispose, or transport the waste, materials or hazardous substances.

5.8 Environmentally Preferable Purchasing. The **Contractor** shall ensure that products purchased or leased by the **Contractor** or any **Subcontractor** for the **Work** that are not specified by the **City** or are submitted as equivalents to a product specified by the **City** comply with the requirements of the New York City Environmentally Preferable Purchasing Program contained in Chapter 11 of Title 43 of the RCNY, pursuant to Chapter 3 of Title 6 of the Administrative Code.

ARTICLE 6. INSPECTION

6.1 During the progress of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall at all times afford the representatives of the **City** every reasonable, safe, and proper facility for inspecting all **Work** done or being done at the **Site** and also for inspecting the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

6.2 The **Contractor’s** obligation hereunder shall include the uncovering or taking down of finished **Work** and its restoration thereafter; provided, however, that the order to uncover, take down and restore shall be in writing, and further provided that if **Work** thus exposed proves satisfactory, and if the **Contractor** has complied with Article 6.1, such uncovering or taking down and restoration shall be

considered an item of **Extra Work** to be paid for in accordance with the provisions of Article 26. If the **Work** thus exposed proves unsatisfactory, the **City** has no obligation to compensate the **Contractor** for the uncovering, taking down or restoration.

6.3 Inspection and approval by the **Commissioner**, the **Engineer**, **Project Manager**, or **Resident Engineer**, of finished **Work** or of **Work** being performed, or of materials and equipment at the place of manufacture or preparation, shall not relieve the **Contractor** of its obligation to perform the **Work** in strict accordance with the **Contract**. Finished or unfinished **Work** not found to be in strict accordance with the **Contract** shall be replaced as directed by the **Engineer**, even though such **Work** may have been previously approved and paid for. Such corrective **Work** is **Contract Work** and shall not be deemed **Extra Work**.

6.4 Rejected **Work** and materials shall be promptly taken down and removed from the **Site**, which must at all times be kept in a reasonably clean and neat condition.

ARTICLE 7. PROTECTION OF WORK AND OF PERSONS AND PROPERTY; NOTICES AND INDEMNIFICATION

7.1 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall be under an absolute obligation to protect the finished and unfinished **Work** against any damage, loss, injury, theft and/or vandalism and in the event of such damage, loss, injury, theft and/or vandalism, it shall promptly replace and/or repair such **Work** at the **Contractor's** sole cost and expense, as directed by the **Resident Engineer**. The obligation to deliver finished **Work** in strict accordance with the **Contract** prior to **Final Acceptance** shall be absolute and shall not be affected by the **Resident Engineer's** approval of, or failure to prohibit, the **Means and Methods of Construction** used by the **Contractor**.

7.2 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall take all reasonable precautions to protect all persons and the property of the **City** and of others from damage, loss or injury resulting from the **Contractor's**, and/or its **Subcontractors'** operations under this **Contract**. The **Contractor's** obligation to protect shall include the duty to provide, place or replace, and adequately maintain at or about the **Site** suitable and sufficient protection such as lights, barricades, and enclosures.

7.3 The **Contractor** shall comply with the notification requirements set forth below in the event of any loss, damage or injury to **Work**, persons or property, or any accidents arising out of the operations of the **Contractor** and/or its **Subcontractors** under this **Contract**.

7.3.1 The **Contractor** shall make a full and complete report in writing to the **Resident Engineer** within three (3) **Days** after the occurrence.

7.3.2 The **Contractor** shall also send written notice of any such event to all insurance carriers that issued potentially responsive policies (including commercial general liability insurance carriers for events relating to the **Contractor's** own employees) no later than twenty (20) days after such event and again no later than twenty (20) days after the initiation of any claim and/or action resulting therefrom. Such notice shall contain the following information: the number of the insurance policy, the name of the Named Insured, the date and location of the incident, and the identity of the persons injured or property damaged. For any policy on which the **City** and/or the **Engineer**, **Architect**, or **Project Manager** are Additional Insureds, such notice shall expressly specify that "this notice is

being given on behalf of the City of New York as Additional Insured, such other Additional Insureds, as well as the Named Insured.”

7.3.2(a) Whenever such notice is sent under a policy on which the **City** is an Additional Insured, the **Contractor** shall provide copies of the notice to the **Comptroller**, the **Commissioner** and the **City** Corporation Counsel. The copy to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller’s Office, 1 Centre Street – Room 1222, New York, New York, 10007. The copy to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions. The copy to the **City** Corporation Counsel shall be sent to Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

7.3.2(b) If the **Contractor** fails to provide any of the foregoing notices to any appropriate insurance carrier(s) in a timely and complete manner, the **Contractor** shall indemnify the **City** for all losses, judgments, settlements, and expenses, including reasonable attorneys’ fees, arising from an insurer’s disclaimer of coverage citing late notice by or on behalf of the **City**.

7.4 To the fullest extent permitted by law, the **Contractor** shall defend, indemnify, and hold the **City**, its employees, and officials (the “Indemnitees”) harmless against any and all claims (including but not limited to claims asserted by any employee of the **Contractor** and/or its **Subcontractors**) and costs and expenses of whatever kind (including but not limited to payment or reimbursement of attorneys’ fees and disbursements) allegedly arising out of or in any way related to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract** or from the **Contractor’s** and/or its **Subcontractors’** failure to comply with any of the provisions of this **Contract** or of the **Law**. Such costs and expenses shall include all those incurred in defending the underlying claim and those incurred in connection with the enforcement of this Article 7.4 by way of cross-claim, third-party claim, declaratory action or otherwise. The parties expressly agree that the indemnification obligation hereunder contemplates (1) full indemnity in the event of liability imposed against the Indemnitees without negligence and solely by reason of statute, operation of **Law** or otherwise; and (2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing or contributing to the underlying claim (in which case, indemnification will be limited to any liability imposed over and above that percentage attributable to actual fault whether by statute, by operation of **Law**, or otherwise). Where partial indemnity is provided hereunder, all costs and expenses shall be indemnified on a pro rata basis.

7.4.1 Indemnification under Article 7.4 or any other provision of the **Contract** shall operate whether or not **Contractor** or its **Subcontractors** have placed and maintained the insurance specified under Article 22.

7.5 The provisions of this Article 7 shall not be deemed to create any new right of action in favor of third parties against the **Contractor** or the **City**.

CHAPTER III: TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

8.1 The **Contractor** shall commence the **Work** on the date specified in the **Notice to Proceed** or the **Order to Work**. The time for performance of the **Work** under the **Contract** shall be computed from

the date specified in the **Notice to Proceed** or the **Order to Work**. **TIME BEING OF THE ESSENCE** to the **City**, the **Contractor** shall thereafter prosecute the **Work** diligently, using such **Means and Methods of Construction** as are in accord with Article 4 herein and as will assure its completion not later than the date specified in this Contract, or on the date to which the time for completion may be extended.

ARTICLE 9. PROGRESS SCHEDULES

9.1 To enable the **Work** to be performed in an orderly and expeditious manner, the **Contractor**, within fifteen (15) **Days** after the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule based on the Critical Path Method in the form of a bar graph or in such other form as specified by the **Engineer**, and monthly cash flow requirements, showing:

9.1.1 The anticipated time of commencement and completion of each of the various operations to be performed under this **Contract**; and

9.1.2 The sequence and interrelation of each of these operations with the others and with those of other related contracts; and

9.1.3 The estimated time required for fabrication or delivery, or both, of all materials and equipment required for the **Work**, including the anticipated time for obtaining required approvals pursuant to Article 10; and

9.1.4 The estimated amount in dollars the **Contractor** will claim on a monthly basis.

9.2 The proposed schedule shall be revised as directed by the **Engineer**, until finally approved by the **Engineer**, and after such approval, subject to the provisions of Article 11, shall be strictly adhered to by the **Contractor**.

9.3 If the **Contractor** shall fail to adhere to the approved progress schedule, or to the schedule as revised pursuant to Article 11, it shall promptly adopt such other or additional **Means and Methods of Construction**, at its sole cost and expense, as will make up for the time lost and will assure completion in accordance with the approved progress schedule. The approval by the **City** of a progress schedule which is shorter than the time allotted under the **Contract** shall not create any liability for the **City** if the approved progress schedule is not met.

9.4 The **Contractor** will not receive any payments until the proposed progress schedule is submitted.

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

10.1 From time to time as the **Work** progresses and in the sequence indicated by the approved progress schedule, the **Contractor** shall submit to the **Engineer** a specific request in writing for each item of information or approval required by the **Contractor**. These requests shall state the latest date upon which the information or approval is actually required by the **Contractor**, and shall be submitted in a reasonable time in advance thereof to provide the **Engineer** a sufficient time to act upon such submissions, or any necessary re-submissions thereof.

10.2 The **Contractor** shall not have any right to an extension of time on account of delays due to the **Contractor's** failure to submit requests for the required information or the required approval in accordance with the above requirements.

ARTICLE 11. NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY

11.1 After the commencement of any condition which is causing or may cause a delay in completion of the **Work**, including conditions for which the **Contractor** may be entitled to an extension of time, the following notifications and submittals are required:

11.1.1 Within fifteen (15) **Days** after the **Contractor** becomes aware or reasonably should be aware of each such condition, the **Contractor** must notify the **Resident Engineer** or **Engineer**, as directed by the **Commissioner**, in writing of the existence, nature and effect of such condition upon the approved progress schedule and the **Work**, and must state why and in what respects, if any, the condition is causing or may cause a delay. Such notice shall include a description of the construction activities that are or could be affected by the condition and may include any recommendations the **Contractor** may have to address the delay condition and any activities the **Contractor** may take to avoid or minimize the delay.

11.1.2 If the **Contractor** shall claim to be sustaining damages for delay as provided for in this Article 11, within forty-five (45) **Days** from the time such damages are first incurred for each such condition, the **Contractor** shall submit to the **Commissioner** a verified written statement of the details and estimates of the amounts of such damages, including categories of expected damages and projected monthly costs, together with documentary evidence of such damages as the **Contractor** may have at the time of submission ("statement of delay damages"), as further detailed in Article 11.6. The **Contractor** may submit the above statement within such additional time as may be granted by the **Commissioner** in writing upon written request therefor.

11.1.3 Articles 11.1.1 and 11.1.2 do not relieve the **Contractor** of its obligation to comply with the provisions of Article 44.

11.2 Failure of the **Contractor** to strictly comply with the requirements of Article 11.1.1 may, in the discretion of the **Commissioner**, be deemed sufficient cause to deny any extension of time on account of delay arising out of such condition. Failure of the **Contractor** to strictly comply with the requirements of both Articles 11.1.1 and 11.1.2 shall be deemed a conclusive waiver by the **Contractor** of any and all claims for damages for delay arising from such condition and no right to recover on such claims shall exist.

11.3 When appropriate and directed by the **Engineer**, the progress schedule shall be revised by the **Contractor** until finally approved by the **Engineer**. The revised progress schedule must be strictly adhered to by the **Contractor**.

11.4 Compensable Delays

11.4.1 The **Contractor** agrees to make claim only for additional costs attributable to delay in the performance of this **Contract** necessarily extending the time for completion of the **Work** or resulting from acceleration directed by the **Commissioner** and required to maintain the progress schedule, occasioned solely by any act or omission to act of the **City** listed below. The **Contractor** also agrees that delay from any other cause shall be

compensated, if at all, solely by an extension of time to complete the performance of the **Work**.

- 11.4.1.1 The failure of the **City** to take reasonable measures to coordinate and progress the **Work** to the extent required by the **Contract**, except that the City shall not be responsible for the **Contractor's** obligation to coordinate and progress the **Work** of its **Subcontractors**.
- 11.4.1.2 Unreasonable delays attributable to the review of shop drawings, the issuance of change orders, or the cumulative impact of change orders that were not brought about by any act or omission of the **Contractor**.
- 11.4.1.3 The unavailability of the **Site** caused by acts or omissions of the **City**.
- 11.4.1.4 The issuance by the **Engineer** of a stop work order that was not brought about through any act or omission of the **Contractor**.
- 11.4.1.5 Differing site conditions or environmental hazards that were neither known nor reasonably ascertainable on a pre-bid inspection of the **Site** or review of the bid documents or other publicly available sources, and that are not ordinarily encountered in the **Project's** geographical area or neighborhood or in the type of **Work** to be performed.
- 11.4.1.6 Delays caused by the **City's** bad faith or its willful, malicious, or grossly negligent conduct;
- 11.4.1.7 Delays not contemplated by the parties;
- 11.4.1.8 Delays so unreasonable that they constitute an intentional abandonment of the **Contract** by the **City**; and
- 11.4.1.9 Delays resulting from the **City's** breach of a fundamental obligation of the **Contract**.

11.4.2 No claim may be made for any alleged delay in **Substantial Completion** of the **Work** if the **Work** will be or is substantially completed by the date of **Substantial Completion** provided for in Schedule A unless acceleration has been directed by the **Commissioner** to meet the date of **Substantial Completion** set forth in Schedule A, or unless there is a provision in the **Contract** providing for additional compensation for early completion.

11.4.3 The provisions of this Article 11 apply only to claims for additional costs attributable to delay and do not preclude determinations by the **Commissioner** allowing reimbursements for additional costs for **Extra Work** pursuant to Articles 25 and 26 of this **Contract**. To the extent that any cost attributable to delay is reimbursed as part of a change order, no additional claim for compensation under this Article 11 shall be allowed.

11.5 Non-Compensable Delays. The **Contractor** agrees to make no claim for, and is deemed to have included in its bid prices for the various items of the **Contract**, the extra/additional costs attributable to any delays caused by or attributable to the items set forth below. For such items, the **Contractor** shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**, in accordance with the provisions of Article 13. Such extensions of time will be granted, if at all, pursuant to the grounds set forth in Article 13.3.

11.5.1 The acts or omissions of any third parties, including but not limited to **Other Contractors**, public/ governmental bodies (other than **City Agencies**), utilities or private enterprises, who are disclosed in the **Contract Documents** or are ordinarily encountered or generally recognized as related to the **Work**;

11.5.2 Any situation which was within the contemplation of the parties at the time of entering into the **Contract**, including any delay indicated or disclosed in the **Contract Documents** or that would be generally recognized by a reasonably prudent contractor as related to the nature of the **Work**, and/or the existence of any facility or appurtenance owned, operated or maintained by any third party, as indicated or disclosed in the **Contract Documents** or ordinarily encountered or generally recognized as related to the nature of the **Work**;

11.5.3 Restraining orders, injunctions or judgments issued by a court which were caused by a Contractor's submission, action or inaction or by a Contractor's **Means and Methods of Construction**, or by third parties, unless such order, injunction or judgment was the result of an act or omission by the **City**;

11.5.4 Any labor boycott, strike, picketing, lockout or similar situation;

11.5.5 Any shortages of supplies or materials, or unavailability of equipment, required by the **Contract Work**;

11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God, or acts of war or of the public enemy or terrorist acts, including the **City's** reasonable responses thereto; and

11.5.7 **Extra Work** which does not significantly affect the overall completion of the **Contract**, reasonable delays in the review or issuance of change orders or field orders and/or in shop drawing reviews or approvals.

11.6 Required Content of Submission of Statement of Delay Damages

11.6.1 In the verified written statement of delay damages required by Article 11.1.2, the following information shall be provided by the **Contractor**:

11.6.1.1 For each delay, the start and end dates of the claimed periods of delay and, in addition, a description of the operations that were delayed, an explanation of how they were delayed, and the reasons for the delay, including identifying the applicable act or omission of the City listed in Article 11.4.

11.6.1.2 A detailed factual statement of the claim providing all necessary dates, locations and items of **Work** affected by the claim.

11.6.1.3 The estimated amount of additional compensation sought and a breakdown of that amount into categories as described in Article 11.7.

11.6.1.4 Any additional information requested by the **Commissioner**.

11.7 Recoverable Costs

11.7.1 Delay damages may be recoverable for the following costs actually and necessarily incurred in the performance of the **Work**:

11.7.1.1 Direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits, based on time and materials records;

11.7.1.2 Necessary materials (including transportation to the **Site**), based on time and material records;

- 11.7.1.3 Reasonable rental value of necessary plant and equipment other than small tools, plus fuel/energy costs according to the applicable formula set forth in Articles 26.2.4 and/or 26.2.8, based on time and material records;
- 11.7.1.4 Additional insurance and bond costs;
- 11.7.1.5 Extended **Site** overhead, field office rental, salaries of field office staff, on-site project managers and superintendents, field office staff vehicles, **Project**-specific storage, field office utilities and telephone, and field office consumables;
- 11.7.1.6 Labor escalation costs based on actual costs;
- 11.7.1.7 Materials and equipment escalation costs based on applicable industry indices unless documentation of actual increased cost is provided;
- 11.7.1.8 Additional material and equipment storage costs based on actual documented costs and additional costs necessitated by extended manufacturer warranty periods; and
- 11.7.1.9 Extended home office overhead calculated based on the following formula:
 - (1) Subtract from the original **Contract** amount the amount earned by original contractual **Substantial Completion** date (not including change orders);
 - (2) Remove 15% overhead and profit from the calculation in item (1) by dividing the results of item (1) by 1.15;
 - (3) Multiply the result of item (2) by 7.25% for the total home office overhead;
 - (4) Multiply the result of item (3) by 7.25% for the total profit; and
 - (5) The total extended home office overhead will be the total of items (3) and (4).

11.7.2 Recoverable Subcontractor Costs. When the **Work** is performed by a **Subcontractor**, the **Contractor** may be paid the actual and necessary costs of such subcontracted **Work** as outlined above in Articles 11.7.1.1 through 11.7.1.8, and an additional overhead of 5% of the costs outlined in Articles 11.7.1.1 through 11.7.1.3.

11.7.3 Non-Recoverable Costs. The parties agree that the **City** will have no liability for the following items and the **Contractor** agrees it shall make no claim for the following items:

- 11.7.3.1 Profit, or loss of anticipated or unanticipated profit, except as provided in Article 11.7.1.9;
- 11.7.3.2 Consequential damages, including, but not limited to, construction or bridge loans or interest paid on such loans, loss of bonding capacity, bidding opportunities, or interest in investment, or any resulting insolvency;
- 11.7.3.3 Indirect costs or expenses of any nature except those included in Article 11.7.1;
- 11.7.3.4 Direct or indirect costs attributable to performance of **Work** where the **Contractor**, because of situations or conditions within its control, has not progressed the **Work** in a satisfactory manner; and
- 11.7.3.5 Attorneys' fees and dispute and claims preparation expenses.

- 11.8 Any claims for delay under this Article 11 are not subject to the jurisdiction of the Contract Dispute Resolution Board pursuant to the dispute resolution process set forth in Article 27.
- 11.9 Any compensation provided to the **Contractor** in accordance with this Article 11 will be made pursuant to a claim filed with the **Comptroller**. Nothing in this Article 11 extends the time for the **Contractor** to file an action with respect to a claim within six months after **Substantial Completion** pursuant to Article 56.

ARTICLE 12. COORDINATION WITH OTHER CONTRACTORS

12.1 During the progress of the **Work**, **Other Contractors** may be engaged in performing other work or may be awarded other contracts for additional work on this **Project**. In that event, the **Contractor** shall coordinate the **Work** to be done hereunder with the work of such **Other Contractors** and the **Contractor** shall fully cooperate with such **Other Contractors** and carefully fit its own **Work** to that provided under other contracts as may be directed by the **Engineer**. The **Contractor** shall not commit or permit any act which will interfere with the performance of work by any **Other Contractors**.

12.2 If the **Engineer** determines that the **Contractor** is failing to coordinate its **Work** with the work of **Other Contractors** as the **Engineer** has directed, then the **Commissioner** shall have the right to withhold any payments otherwise due hereunder until the **Contractor** completely complies with the **Engineer's** directions.

12.3 The **Contractor** shall notify the **Engineer** in writing if any **Other Contractor** on this **Project** is failing to coordinate its work with the **Work** of this **Contract**. If the **Engineer** finds such charges to be true, the **Engineer** shall promptly issue such directions to the **Other Contractor** with respect thereto as the situation may require. The **City** shall not, however, be liable for any damages suffered by any **Other Contractor's** failure to coordinate its work with the **Work** of this **Contract** or by reason of the **Other Contractor's** failure to promptly comply with the directions so issued by the **Engineer**, or by reason of any **Other Contractor's** default in performance, it being understood that the **City** does not guarantee the responsibility or continued efficiency of any contractor. The **Contractor** agrees to make no claim against the **City** for any damages relating to or arising out of any directions issued by the **Engineer** pursuant to this Article 12 (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to the **Contractor's** failure to comply with the **Engineer's** directions promptly. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.5 Should the **Contractor** sustain any damage through any act or omission of any **Other Contractor** having a contract with the **City** for the performance of work upon the **Site** or of work which may be necessary to be performed for the proper prosecution of the **Work** to be performed hereunder, or through any act or omission of a subcontractor of such **Other Contractor**, the **Contractor** shall have no claim against the **City** for such damage, but shall have a right to recover such damage from the **Other**

Contractor under the provision similar to the following provisions which apply to this **Contract** and have been or will be inserted in the contracts with such **Other Contractors**:

12.5.1 Should any **Other Contractor** having or who shall hereafter have a contract with the **City** for the performance of work upon the **Site** sustain any damage through any act or omission of the **Contractor** hereunder or through any act or omission of any **Subcontractor** of the **Contractor**, the **Contractor** agrees to reimburse such **Other Contractor** for all such damages and to defend at its own expense any action based upon such claim and if any judgment or claim (even if the allegations of the action are without merit) against the **City** shall be allowed the **Contractor** shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and agrees to indemnify and hold the **City** harmless from all such claims. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.6 The **City's** right to indemnification hereunder shall in no way be diminished, waived or discharged by its recourse to assessment of liquidated damages as provided in Article 15, or by the exercise of any other remedy provided for by **Contract** or by **Law**.

ARTICLE 13. EXTENSION OF TIME FOR PERFORMANCE

13.1 If performance by the **Contractor** is delayed for a reason set forth in Article 13.3, the **Contractor** may be allowed a reasonable extension of time in conformance with this Article 13 and the **PPB** Rules.

13.2 Any extension of time may be granted only by the **ACCO** or by the Board for the Extension of Time (hereafter "Board") (as set forth below) upon written application by the **Contractor**.

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

13.3.1 By the acts or omissions of the **City**, its officials, agents or employees; or

13.3.2 By the act or omissions of **Other Contractors** on this **Project**; or

13.3.3 By supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, excessive inclement weather, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the **Contractor**).

13.3.4 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

13.4 The **Contractor** shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the **Work** as determined by the **ACCO** or the Board, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the **Contractor** or of its **Subcontractors** or **Materialmen**, and would of itself (irrespective

of the concurrent causes) have delayed the **Work**, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.

13.5 The determination made by the **ACCO** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The **ACCO** or the Board acting entirely within their discretion may grant an application for an extension of time for causes of delay other than those herein referred.

13.7 Permitting the **Contractor** to continue with the **Work** after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the **Contractor** after such time, shall in no way operate as a waiver on the part of the **City** of any of its rights under this **Contract**.

13.8 Application for Extension of Time:

13.8.1 Before the **Contractor's** time extension request will be considered, the **Contractor** shall notify the **ACCO** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **ACCO** identifying:

13.8.1(a) The **Contractor**; the registration number; and **Project** description;

13.8.1(b) Liquidated damage assessment rate, as specified in the **Contract**;

13.8.1(c) Original total bid price;

13.8.1(d) The original **Contract** start date and completion date;

13.8.1(e) Any previous time extensions granted (number and duration); and

13.8.1(f) The extension of time requested.

13.8.2 In addition, the application for extension of time shall set forth in detail:

13.8.2(a) The nature of each alleged cause of delay in completing the **Work**;

13.8.2(b) The date upon which each such cause of delay began and ended and the number of **Days** attributable to each such cause;

13.8.2(c) A statement that the **Contractor** waives all claims except for those delineated in the application, and the particulars of any claims which the **Contractor** does not agree to waive. For time extensions for **Substantial Completion** and final completion payments, the application shall include a detailed statement of the dollar amounts of each element of claim item reserved; and

13.8.2(d) A statement indicating the **Contractor's** understanding that the time extension is granted only for purposes of permitting continuation of **Contract** performance and payment for **Work** performed and that the **City** retains its right to conduct an investigation and assess liquidated damages as appropriate in the future.

13.9 Analysis and Approval of Time Extensions:

13.9.1 For time extensions for partial payments, a written determination shall be made by the **ACCO** who may, for good and sufficient cause, extend the time for the performance of the **Contract** as follows:

13.9.1(a) If the **Work** is to be completed within six (6) months, the time for performance may be extended for sixty (60) **Days**;

13.9.1(b) If the **Work** is to be completed within less than one (1) year but more than six (6) months, an extension of ninety (90) **Days** may be granted;

13.9.1(c) If the **Contract** period exceeds one (1) year, besides the extension granted in Article 13.9.1(b), an additional thirty (30) **Days** may be granted for each multiple of six (6) months involved beyond the one (1) year period; or

13.9.1(d) If exceptional circumstances exist, the **ACCO** may extend the time for performance beyond the extensions in Articles 13.9.1(a), 13.9.1(b), and 13.9.1(c). In that event, the **ACCO** shall file with the Mayor's Office of Contract Services a written explanation of the exceptional circumstances.

13.9.2 For extensions of time for **Substantial Completion** and final completion payments, the **Engineer**, in consultation with the **ACCO**, shall prepare a written analysis of the delay (including a preliminary determination of the causes of delay, the beginning and end dates for each such cause of delay, and whether the delays are excusable under the terms of this **Contract**). The report shall be subject to review by and approval of the Board, which shall have authority to question its analysis and determinations and request additional facts or documentation. The report as reviewed and made final by the Board shall be made a part of the **Agency** contract file. Neither the report itself nor anything contained therein shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

13.9.3 Approval Mechanism for Time Extensions for **Substantial Completion** or Final Completion Payments: An extension shall be granted only with the approval of the Board which is comprised of the **ACCO** of the **Agency**, the **City** Corporation Counsel, and the **Comptroller**, or their authorized representatives.

13.9.4 Neither the granting of any application for an extension of time to the **Contractor** or any **Other Contractor** on this **Project** nor the papers, records or reports related to any application for or grant of an extension of time or determination related thereto shall be referred to or offered in evidence by the **Contractor** or its attorneys in any action or proceeding.

13.10 No Damage for Delay: The **Contractor** agrees to make no claim for damages for delay in the performance of this **Contract** occasioned by any act or omission to act of the **City** or any of its representatives, except as provided for in Article 11.

ARTICLE 14. COMPLETION AND FINAL ACCEPTANCE OF THE WORK

14.1 Date for **Substantial Completion**: The **Contractor** shall substantially complete the **Work** within the time fixed in Schedule A of the General Conditions, or within the time to which such **Substantial Completion** may be extended.

14.2 Determining the Date of **Substantial Completion**: The **Work** will be deemed to be substantially complete when the two conditions set forth below have been met.

14.2.1 Inspection: The **Engineer** or **Resident Engineer**, as applicable, has inspected the **Work** and has made a written determination that it is substantially complete.

14.2.2 Approval of **Final Approved Punch List** and Date for **Final Acceptance**: Following inspection of the **Work**, the **Engineer/Resident Engineer** shall furnish the **Contractor** with a final punch list, specifying all items of **Work** to be completed and proposing dates for the completion of each specified item of **Work**. The **Contractor** shall then submit in writing to the **Engineer/Resident Engineer** within ten (10) **Days** of the **Engineer/Resident Engineer** furnishing the final punch list either acceptance of the dates or proposed alternative dates for the completion of each specified item of **Work**. If the **Contractor** neither accepts the dates nor proposes alternative dates within ten (10) **Days**, the schedule proposed by the **Engineer/Resident Engineer** shall be deemed accepted. If the **Contractor** proposes alternative dates, then, within a reasonable time after receipt, the **Engineer/Resident Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, the **Engineer/Resident Engineer** shall establish dates for the completion of each item of **Work**. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 Date of **Substantial Completion**. The date of approval of the **Final Approved Punch List**, shall be the date of **Substantial Completion**. The date of approval of the **Final Approved Punch List** shall be either (a) if the **Contractor** approves the final punch list and proposed dates for completion furnished by the **Engineer/Resident Engineer**, the date of the **Contractor's** approval; or (b) if the **Contractor** neither accepts the dates nor proposes alternative dates, ten (10) **Days** after the **Engineer/Resident Engineer** furnishes the **Contractor** with a final punch list and proposed dates for completion; or (c) if the **Contractor** proposes alternative dates, the date that the **Engineer/Resident Engineer** sends written notification to the **Contractor** either approving the **Contractor's** proposed alternative dates or establishing dates for the completion for each item of **Work**.

14.4 Determining the Date of **Final Acceptance**: The **Work** will be accepted as final and complete as of the date of the **Engineer's/Resident Engineer's** inspection if, upon such inspection, the **Engineer/Resident Engineer** finds that all items on the **Final Approved Punch List** are complete and no further **Work** remains to be done. The **Commissioner** will then issue a written determination of **Final Acceptance**.

14.5 Request for Inspection: Inspection of the **Work** by the **Engineer/Resident Engineer** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within fourteen (14) **Days** after receipt of the **Contractor's** written request therefor.

14.6 Request for Re-inspection: If upon inspection for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** determines that there are items of **Work** still to be performed, the **Contractor** shall promptly perform them and then request a re-inspection. If upon re-inspection, the **Engineer/Resident Engineer** determines that the **Work** is substantially complete or finally accepted, the date of such re-inspection shall be the date of **Substantial Completion** or **Final Acceptance**. Re-inspection by the **Engineer/Resident Engineer** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.7 Initiation of Inspection by the **Engineer/Resident Engineer**: If the **Contractor** does not request inspection or re-inspection of the **Work** for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** may initiate such inspection or re-inspection.

ARTICLE 15. LIQUIDATED DAMAGES

15.1 In the event the **Contractor** fails to substantially complete the **Work** within the time fixed for such **Substantial Completion** in Schedule A of the General Conditions, plus authorized time extensions, or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the sum fixed in Schedule A of the General Conditions, for each and every **Day** that the time consumed in substantially completing the **Work** exceeds the time allowed therefor; which said sum, in view of the difficulty of accurately ascertaining the loss which the **City** will suffer by reason of delay in the **Substantial Completion** of the **Work** hereunder, is hereby fixed and agreed as the liquidated damages that the **City** will suffer by reason of such delay, and not as a penalty. This Article 15 shall also apply to the **Contractor** whether or not the **Contractor** is defaulted pursuant to Chapter X of this **Contract**. Neither the failure to assess liquidated damages nor the granting of any time extension shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

15.2 Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the **City's** right to indemnification, or the **Contractor's** obligation to indemnify the **City**, or to any other remedy provided for in this **Contract** or by **Law**.

15.3 The **Commissioner** may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the **City**, the **Contractor** shall be liable to pay the difference.

ARTICLE 16. OCCUPATION OR USE PRIOR TO COMPLETION

16.1 Unless otherwise provided for in the **Specifications**, the **Commissioner** may take over, use, occupy or operate any part of the **Work** at any time prior to **Final Acceptance**, upon written notification to the **Contractor**. The **Engineer** or **Resident Engineer**, as applicable, shall inspect the part of the **Work** to be taken over, used, occupied, or operated, and will furnish the **Contractor** with a written statement of the **Work**, if any, which remains to be performed on such part. The **Contractor** shall not object to, nor interfere with, the **Commissioner's** decision to exercise the rights granted by Article 16. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work**:

16.1.1 the **Engineer/Resident Engineer** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

16.1.2 the **Contractor** shall be relieved of its absolute obligation to protect such part of the unfinished **Work** in accordance with Article 7;

16.1.3 the **Contractor's** guarantee on such part of the **Work** shall begin on the date of such use by the **City**; and;

16.1.4 the **Contractor** shall be entitled to a return of so much of the amount retained in accordance with Article 21 as it relates to such part of the **Work**, except so much thereof as may be retained under Articles 24 and 44.

CHAPTER IV: SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

17.1 The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price fixed in Schedule A of the General Conditions, without prior written permission from the **Commissioner**. All subcontracts made by the **Contractor** shall be in writing. No **Work** may be performed by a **Subcontractor** prior to the **Contractor** entering into a written subcontract with the **Subcontractor** and complying with the provisions of this Article 17.

17.2 Before making any subcontracts, the **Contractor** shall submit a written statement to the **Commissioner** giving the name and address of the proposed **Subcontractor**; the portion of the **Work** and materials which it is to perform and furnish; the cost of the subcontract; the VENDEX questionnaire if required; the proposed subcontract if requested by the **Commissioner**; and any other information tending to prove that the proposed **Subcontractor** has the necessary facilities, skill, integrity, past experience, and financial resources to perform the **Work** in accordance with the terms and conditions of this **Contract**.

17.3 In addition to the requirements in Article 17.2, **Contractor** is required to list the **Subcontractor** in the web based Subcontractor Reporting System through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip.¹ For each **Subcontractor** listed, **Contractor** is required to provide the following information: maximum contract value, description of **Subcontractor's** Work, start and end date of the subcontract and identification of the **Subcontractor's** industry. Thereafter, **Contractor** will be required to report in the system the payments made to each **Subcontractor** within 30 days of making the payment. If any of the required information changes throughout the Term of the **Contract**, **Contractor** will be required to revise the information in the system.

Failure of the **Contractor** to list a **Subcontractor** and/or to report **Subcontractor** payments in a timely fashion may result in the **Commissioner** declaring the **Contractor** in default of the **Contract** and will subject **Contractor** to liquidated damages in the amount of \$100 per day for each day that the **Contractor** fails to identify a **Subcontractor** along with the required information about the **Subcontractor** and/or fails to report payments to a **Subcontractor**, beyond the time frames set forth herein or in the notice from the **City**. Article 15 shall govern the issue of liquidated damages.

17.4 If an approved **Subcontractor** elects to subcontract any portion of its subcontract, the proposed sub-subcontract shall be submitted in the same manner as directed above.

17.5 The **Commissioner** will notify the **Contractor** in writing whether the proposed **Subcontractor** is approved. If the proposed **Subcontractor** is not approved, the **Contractor** may submit another proposed **Subcontractor** unless the **Contractor** decides to do the **Work**. No **Subcontractor** shall be permitted to enter or perform any work on the **Site** unless approved.

17.6 Before entering into any subcontract hereunder, the **Contractor** shall provide the proposed **Subcontractor** with a complete copy of this document and inform the proposed **Subcontractor** fully and completely of all provisions and requirements of this **Contract** relating either directly or indirectly to the **Work** to be performed and the materials to be furnished under such subcontract, and every such

¹ In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at www.nyc.gov/pip. Additional assistance with PIP may be obtained by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

Subcontractor shall expressly stipulate that all labor performed and materials furnished by the **Subcontractor** shall strictly comply with the requirements of this **Contract**.

17.7 Documents given to a prospective **Subcontractor** for the purpose of soliciting the **Subcontractor's** bid shall include either a copy of the bid cover or a separate information sheet setting forth the **Project** name, the **Contract** number (if available), the **Agency** (as noted in Article 2.1.6), and the **Project's** location.

17.8 The **Commissioner's** approval of a **Subcontractor** shall not relieve the **Contractor** of any of its responsibilities, duties, and liabilities hereunder. The **Contractor** shall be solely responsible to the **City** for the acts or defaults of its **Subcontractor** and of such **Subcontractor's** officers, agents, and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the **Contractor** to the extent of its subcontract.

17.9 If the **Subcontractor** fails to maintain the necessary facilities, skill, integrity, past experience, and financial resources (other than due to the **Contractor's** failure to make payments where required) to perform the **Work** in accordance with the terms and conditions of this **Contract**, the **Contractor** shall promptly notify the **Commissioner** and replace such **Subcontractor** with a newly approved **Subcontractor** in accordance with this Article 17.

17.10 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** maintain all insurance required by **Law**.

17.11 The **Contractor** shall promptly, upon request, file with the **Engineer** a conformed copy of the subcontract and its cost. The subcontract shall provide the following:

17.11.1 Payment to **Subcontractors**: The agreement between the **Contractor** and its **Subcontractor** shall contain the same terms and conditions as to method of payment for **Work**, labor, and materials, and as to retained percentages, as are contained in this **Contract**.

17.11.2 Prevailing Rate of Wages: The agreement between the **Contractor** and its **Subcontractor** shall include the prevailing wage rates and supplemental benefits to be paid in accordance with Labor Law Section 220.

17.11.3 Section 6-123 of the Administrative Code: Pursuant to the requirements of Section 6-123 of the Administrative Code, every agreement between the **Contractor** and a **Subcontractor** in excess of fifty thousand (\$50,000) dollars shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in Title VIII of the Administrative Code (Section 8-101 *et seq.*).

17.11.4 All requirements required pursuant to federal and/or state grant agreement(s), if applicable to the **Work**.

17.12 The **Commissioner** may deduct from the amounts certified under this **Contract** to be due to the **Contractor**, the sum or sums due and owing from the **Contractor** to the **Subcontractors** according to the terms of the said subcontracts, and in case of dispute between the **Contractor** and its **Subcontractor**, or **Subcontractors**, as to the amount due and owing, the **Commissioner** may deduct and withhold from the amounts certified under this **Contract** to be due to the **Contractor** such sum or sums as may be claimed by such **Subcontractor**, or **Subcontractors**, in a sworn affidavit, to be due and owing until such time as such claim or claims shall have been finally resolved.

17.13 On contracts where performance bonds and payment bonds are executed, the **Contractor** shall include on each requisition for payment the following data: **Subcontractor's** name, value of the subcontract, total amount previously paid to **Subcontractor** for **Work** previously requisitioned, and the amount, including retainage, to be paid to the **Subcontractor** for **Work** included in the requisition.

17.14 On **Contracts** where performance bonds and payment bonds are not executed, the **Contractor** shall include with each requisition for payment submitted hereunder, a signed statement from each and every **Subcontractor** and/or **Materialman** for whom payment is requested in such requisition. Such signed statement shall be on the letterhead of the **Subcontractor** and/or **Materialman** for whom payment is requested and shall (i) verify that such **Subcontractor** and/or **Materialman** has been paid in full for all **Work** performed and/or material supplied to date, exclusive of any amount retained and any amount included on the current requisition, and (ii) state the total amount of retainage to date, exclusive of any amount retained on the current requisition.

ARTICLE 18. ASSIGNMENTS

18.1 The **Contractor** shall not assign, transfer, convey or otherwise dispose of this **Contract**, or the right to execute it, or the right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise any of the monies due or to become due under this **Contract**, unless the previous written consent of the **Commissioner** shall first be obtained thereto, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments.

18.2 Such assignment, transfer, conveyance or other disposition of this **Contract** shall not be valid until filed in the office of the **Commissioner** and the **Comptroller**, with the written consent of the **Commissioner** endorsed thereon or attached thereto.

18.3 Failure to obtain the previous written consent of the **Commissioner** to such an assignment, transfer, conveyance or other disposition, may result in the revocation and annulment of this **Contract**. The **City** shall thereupon be relieved and discharged from any further liability to the **Contractor**, its assignees, transferees or sublessees, who shall forfeit and lose all monies therefor earned under the **Contract**, except so much as may be required to pay the **Contractor's** employees.

18.4 The provisions of this clause shall not hinder, prevent, or affect an assignment by the **Contractor** for the benefit of its creditors made pursuant to the **Laws** of the State of New York.

18.5 This **Contract** may be assigned by the **City** to any corporation, agency or instrumentality having authority to accept such assignment.

CHAPTER V: CONTRACTOR'S SECURITY AND GUARANTEE

ARTICLE 19. SECURITY DEPOSIT

19.1 If performance and payment bonds are required, the **City** shall retain the bid security to ensure that the successful bidder executes the **Contract** and furnishes the required payment and performance security within ten (10) **Days** after notice of the award of the **Contract**. If the successful bidder fails to execute the **Contract** and furnish the required payment and performance security, the **City** shall retain such bid security as set forth in the Information for Bidders. If the successful bidder executes the

Contract and furnishes the required payment and performance security, the **City** shall return the bid security within a reasonable time after the furnishing of such bonds and execution of the **Contract** by the **City**.

19.2 If performance and payment bonds are not required, the bid security shall be retained by the **City** as security for the **Contractor**'s faithful performance of the **Contract**. If partial payments are provided, the bid security will be returned to the **Contractor** after the sum retained under Article 21 equals the amount of the bid security, subject to other provisions of this **Contract**. If partial payments are not provided, the bid security will be released when final payment is certified by the **City** for payment.

19.3 If the **Contractor** is declared in default under Article 48 prior to the return of the deposit, or if any claim is made such as referred to in Article 23, the amount of such deposit, or so much thereof as the **Comptroller** may deem necessary, may be retained and then applied by the **Comptroller**:

19.3.1 To compensate the **City** for any expense, loss or damage suffered or incurred by reason of or resulting from such default, including the cost of re-letting and liquidated damages; or

19.3.2 To indemnify the **City** against any and all claims.

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where one hundred (100%) percent performance bonds and payment bonds are executed, this Article 20 does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond or where the **Contract** does not require a payment bond for one hundred (100%) percent of the **Contract** price, the **City** shall, in accordance with the terms of this Article 20, guarantee payment of all lawful claims for:

20.2.1 Wages and compensation for labor performed and/or services rendered; and

20.2.2 Materials, equipment, and supplies provided, whether incorporated into the **Work** or not, when demands have been filed with the **City** as provided hereinafter by any person, firm, or corporation which furnished labor, material, equipment, supplies, or any combination thereof, in connection with the **Work** performed hereunder (hereinafter referred to as the "beneficiary") at the direction of the **City** or the **Contractor**.

20.3 The provisions of Article 20.2 are subject to the following limitations and conditions:

20.3.1 If the **Contractor** provides a payment bond for a value that is less than one hundred (100%) percent of the value of the **Contract Work**, the payment bond provided by the **Contractor** shall be primary (and non-contributing) to the payment guarantee provided under this Article 20.

20.3.2 The guarantee is made for the benefit of all beneficiaries as defined in Article 20.2 provided that those beneficiaries strictly adhere to the terms and conditions of Article 20.3.4 and 20.3.5.

20.3.3 Nothing in this Article 20 shall prevent a beneficiary providing labor, services or material for the **Work** from suing the **Contractor** for any amounts due and owing the beneficiary by the **Contractor**.

20.3.4 Every person who has furnished labor or material, to the **Contractor** or to a **Subcontractor** of the **Contractor**, in the prosecution of the **Work** and who has not been paid in full therefor before the expiration of a period of ninety (90) **Days** after the date on which the last of the labor was performed or material was furnished by him/her for which the claim is made, shall have the right to sue on this payment guarantee in his/her own name for the amount, or the balance thereof, unpaid at the time of commencement of the action; provided, however, that a person having a direct contractual relationship with a **Subcontractor** of the **Contractor** but no contractual relationship express or implied with the **Contractor** shall not have a right of action upon the guarantee unless he/she shall have given written notice to the **Contractor** within one hundred twenty (120) **Days** from the date on which the last of the labor was performed or the last of the material was furnished, for which his/her claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or for whom the labor was performed. The notice shall be served by delivering the same personally to the **Contractor** or by mailing the same by registered mail, postage prepaid, in an envelope addressed to the **Contractor** at any place where it maintains an office or conducts its business; provided, however, that where such notice is actually received by the **Contractor** by other means, such notice shall be deemed sufficient.

20.3.5 Except as provided in Labor Law Section 220-g, no action on this payment guarantee shall be commenced after the expiration of the one-year limitations period set forth in Section 137(4)(b) of the State Finance Law.

20.3.6 The **Contractor** shall promptly forward to the **City** any notice or demand received pursuant to Article 20.3.4. The **Contractor** shall inform the **City** of any defenses to the notice or demand and shall forward to the **City** any documents the **City** requests concerning the notice or demand.

20.3.7 All demands made against the **City** by a beneficiary of this payment guarantee shall be presented to the **Engineer** along with all written documentation concerning the demand which the **Engineer** deems reasonably appropriate or necessary, which may include, but shall not be limited to: the subcontract; any invoices presented to the **Contractor** for payment; the notarized statement of the beneficiary that the demand is due and payable, that a request for payment has been made of the **Contractor** and that the demand has not been paid by the **Contractor** within the time allowed for such payment by the subcontract; and copies of any correspondence between the beneficiary and the **Contractor** concerning such demand. The **City** shall notify the **Contractor** that a demand has been made. The **Contractor** shall inform the **City** of any defenses to the demand and shall forward to the **City** any documents the **City** requests concerning the demand.

20.3.8 The **City** shall make payment only if, after considering all defenses presented by the **Contractor**, it determines that the payment is due and owing to the beneficiary making the demand.

20.3.9 No beneficiary shall be entitled to interest from the **City**, or to any other costs, including, but not limited to, attorneys' fees, except to the extent required by State Finance Law Section 137.

20.4 Upon the receipt by the **City** of a demand pursuant to this Article 20, the **City** may withhold from any payment otherwise due and owing to the **Contractor** under this **Contract** an amount sufficient to satisfy the demand.

20.4.1 In the event the **City** determines that the demand is valid, the **City** shall notify the **Contractor** of such determination and the amount thereof and direct the **Contractor** to immediately pay such amount to the beneficiary. In the event the **Contractor**, within seven (7) **Days** of receipt of such notification from the **City**, fails to pay the beneficiary, such failure shall constitute an automatic and irrevocable assignment of payment by the **Contractor** to the beneficiary for the amount of the demand determined by the **City** to be valid. The **Contractor**, without further notification or other process, hereby gives its unconditional consent to such assignment of payment to the beneficiary and authorizes the **City**, on its behalf, to take all necessary actions to implement such assignment of payment, including without limitation the execution of any instrument or documentation necessary to effectuate such assignment.

20.4.2 In the event that the amount otherwise due and owing to the **Contractor** by the **City** is insufficient to satisfy such demand, the **City** may, at its option, require payment from the **Contractor** of an amount sufficient to cover such demand and exercise any other right to require or recover payment which the **City** may have under **Law** or **Contract**.

20.4.3 In the event the **City** determines that the demand is invalid, any amount withheld pending the **City's** review of such demand shall be paid to the **Contractor**; provided, however, no lien has been filed. In the event a claim or an action has been filed, the terms and conditions set forth in Article 23 shall apply. In the event a lien has been filed, the parties will be governed by the provisions of the Lien Law of the State of New York.

20.5 The provisions of this Article 20 shall not prevent the **City** and the **Contractor** from resolving disputes in accordance with the **PPB** Rules, where applicable.

20.6 In the event the **City** determines that the beneficiary is entitled to payment pursuant to this Article 20, such determination and any defenses and counterclaims raised by the **Contractor** shall be taken into account in evaluating the **Contractor's** performance.

20.7 Nothing in this Article 20 shall relieve the **Contractor** of the obligation to pay the claims of all persons with valid and lawful claims against the **Contractor** relating to the **Work**.

20.8 The **Contractor** shall not require any performance, payment or other bonds of any **Subcontractor** if this **Contract** does not require such bonds of the **Contractor**.

20.9 The payment guarantee made pursuant to this Article 20 shall be construed in a manner consistent with Section 137 of the State Finance Law and shall afford to persons furnishing labor or materials to the **Contractor** or its **Subcontractors** in the prosecution of the **Work** under this **Contract** all of the rights and remedies afforded to such persons by such section, including but not limited to, the right to commence an action against the **City** on the payment guarantee provided by this Article 20 within the one-year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires one hundred (100%) percent performance and payment security, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and

retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.2 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded does not exceed one million (\$1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded exceeds one million (\$1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, up to ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher. The percentage to be retained is set forth in Schedule A of the General Conditions.

ARTICLE 22. INSURANCE

22.1 Types of Insurance: The **Contractor** shall procure and maintain the following types of insurance if, and as indicated, in Schedule A of the General Conditions (with the minimum limits and special conditions specified in Schedule A). Such insurance shall be maintained from the date the **Contractor** is required to provide Proof of Insurance pursuant to Article 22.3.1 through the date of completion of all required **Work** (including punch list work as certified in writing by the **Resident Engineer**), except for insurance required pursuant to Article 22.1.4, which may terminate upon **Substantial Completion** of the **Contract**. All insurance shall meet the requirements set forth in this Article 22. Wherever this Article requires that insurance coverage be “at least as broad” as a specified form (including all ISO forms), there is no obligation that the form itself be used, provided that the **Contractor** can demonstrate that the alternative form or endorsement contained in its policy provides coverage at least as broad as the specified form.

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide Commercial General Liability Insurance covering claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this insurance shall be at least as broad as that provided by the latest edition of Insurance Services Office (“ISO”) Form CG 0001. Such insurance shall be “occurrence” based rather than “claims-made” and include, without limitation, the following types of coverage: premises operations; products and completed operations; contractual liability (including the tort liability of another assumed in a contract); broad form property damage; independent contractors; explosion, collapse and underground (XCU); construction means and methods; and incidental malpractice. Such insurance shall contain a “per project” aggregate limit, as specified in Schedule A, that applies separately to operations under this **Contract**.

22.1.1(a) Such Commercial General Liability Insurance shall name the **City** as an Additional Insured. Coverage for the City shall specifically include the **City’s** officials and employees, be at least as broad as the latest edition of ISO Form CG 20 10 and provide completed operations coverage at least as broad as the latest edition of ISO Form CG 20 37.

22.1.1(b) Such Commercial General Liability Insurance shall name all other entities designated as additional insureds in Schedule A but only for claims arising from the

Contractor's operations under this **Contract**, with coverage at least as broad as the latest edition of ISO Form CG 20 26.

22.1.1(c) If the **Work** requires a permit from the Department of Buildings pursuant to 1 RCNY Section 101-08, the **Contractor** shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08 or greater limits required by the Agency in accordance with Schedule A. If the **Work** does not require such a permit, the minimum limits shall be those provided for in Schedule A.

22.1.1(d) If any of the **Work** includes repair of a waterborne vessel owned by or to be delivered to the **City**, such Commercial General Liability shall include, or be endorsed to include, Ship Repairer's Legal Liability Coverage to protect against, without limitation, liability arising from navigation of such vessels prior to delivery to and acceptance by the **City**.

22.1.2 Workers' Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance: The **Contractor** shall provide, and shall cause its **Subcontractors** to provide, Workers Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance in accordance with the **Laws** of the State of New York on behalf of all employees providing services under this **Contract** (except for those employees, if any, for which the **Laws** require insurance only pursuant to Article 22.1.3).

22.1.3 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: If specified in Schedule A of the General Conditions or if required by **Law**, the **Contractor** shall provide insurance in accordance with the United States Longshoremen's and Harbor Workers Act and/or the Jones Act, on behalf of all qualifying employees providing services under this **Contract**.

22.1.4 Builders Risk Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall provide Builders Risk Insurance on a completed value form for the total value of the **Work** through **Substantial Completion** of the **Work** in its entirety. Such insurance shall be provided on an All Risk basis and include coverage, without limitation, for windstorm (including named windstorm), storm surge, flood and earth movement. Unless waived by the **Commissioner**, it shall include coverage for ordinance and law, demolition and increased costs of construction, debris removal, pollutant clean up and removal, and expediting costs. Such insurance shall cover, without limitation, (a) all buildings and/or structures involved in the **Work**, as well as temporary structures at the **Site**, and (b) any property that is intended to become a permanent part of such building or structure, whether such property is on the **Site**, in transit or in temporary storage. Policies shall name the **Contractor** as Named Insured and list the **City** as both an Additional Insured and a Loss Payee as its interest may appear.

22.1.4(a) Policies of such insurance shall specify that, in the event a loss occurs at an occupied facility, occupancy of such facility is permitted without the consent of the issuing insurance company.

22.1.4(b) Such insurance may be provided through an Installation Floater, at the **Contractor's** option, if it otherwise conforms with the requirements of this Article 22.1.4.

22.1.5 Commercial Automobile Liability Insurance: The **Contractor** shall provide Commercial Automobile Liability Insurance for liability arising out of ownership,

maintenance or use of any owned (if any), non-owned and hired vehicles to be used in connection with this **Contract**. Coverage shall be at least as broad as the latest edition of ISO Form CA0001. If vehicles are used for transporting hazardous materials, the Automobile Liability Insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90.

22.1.6 Contractors Pollution Liability Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Contractors Pollution Liability Insurance covering bodily injury and property damage. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, action, or proceedings arising from the operations under this **Contract**. Such insurance shall be in the **Contractor's** name and list the **City** as an Additional Insured and any other entity specified in Schedule A. Coverage shall include, without limitation, (a) loss of use of damaged property or of property that has not been physically injured, (b) transportation, and (c) non-owned disposal sites.

22.1.6(a) Coverage for the **City** as Additional Insured shall specifically include the **City's** officials and employees and be at least as broad as provided to the **Contractor** for this **Project**.

22.1.6(b) If such insurance is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this **Contract**, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three (3) years from the time the **Work** under this **Contract** is completed.

22.1.7 Marine Insurance:

22.1.7(a) Marine Protection and Indemnity Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Marine Protection and Indemnity Insurance with coverage at least as broad as Form SP-23. The insurance shall provide coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured for bodily injury and property damage arising from marine operations under this **Contract**. Coverage shall include, without limitation, injury or death of crew members (if not fully provided through other insurance), removal of wreck, damage to piers, wharves and other fixed or floating objects and loss of or damage to any other vessel or craft, or to property on such other vessel or craft.

22.1.7(b) Hull and Machinery Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Hull and Machinery Insurance with coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the latest edition of American Institute Tug Form for all tugs used under this

Contract and Collision Liability at least as broad as the latest edition of American Institute Hull Clauses.

22.1.7(c) Marine Pollution Liability Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Pollution Liability Insurance covering itself (or the Subcontractor doing such Work) as Named Insured and the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured. Coverage shall be at least as broad as that provided by the latest edition of Water Quality Insurance Syndicate Form and include, without limitation, liability arising from the discharge or substantial threat of a discharge of oil, or from the release or threatened release of a hazardous substance including injury to, or economic losses resulting from, the destruction of or damage to real property, personal property or natural resources.

22.1.8 The **Contractor** shall provide such other types of insurance, at such minimum limits and with such conditions, as are specified in Schedule A of the General Conditions.

22.2 General Requirements for Insurance Coverage and Policies:

22.2.1 All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A-/VII or a Standard and Poor's rating of at least A, unless prior written approval is obtained from the **City** Corporation Counsel.

22.2.2 The **Contractor** shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the **City** is an insured under the policy.

22.2.3 In his/her sole discretion, the **Commissioner** may, subject to the approval of the **Comptroller** and the **City** Corporation Counsel, accept Letters of Credit and/or custodial accounts in lieu of required insurance.

22.2.4 The **City's** limits of coverage for all types of insurance required pursuant to Schedule A of the General Conditions shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the **Contractor** as Named Insured under all primary, excess, and umbrella policies of that type of coverage.

22.2.5 The **Contractor** may satisfy its insurance obligations under this Article 22 through primary policies or a combination of primary and excess/umbrella policies, so long as all policies provide the scope of coverage required herein.

22.2.6 Policies of insurance provided pursuant to this Article 22 shall be primary and non-contributing to any insurance or self-insurance maintained by the **City**.

22.3 Proof of Insurance:

22.3.1 For all types of insurance required by Article 22.1 and Schedule A, except for insurance required by Articles 22.1.4 and 22.1.7, the **Contractor** shall file proof of insurance in accordance with this Article 22.3 within ten (10) **Days** of award. For insurance

provided pursuant to Articles 22.1.4 and 22.1.7, proof shall be filed by a date specified by the **Commissioner** or ten (10) **Days** prior to the commencement of the portion of the **Work** covered by such policy, whichever is earlier.

22.3.2 For Workers' Compensation Insurance provided pursuant to Article 22.1.2, the **Contractor** shall submit one of the following forms: C-105.2 Certificate of Workers' Compensation Insurance; U-26.3 - State Insurance Fund Certificate of Workers' Compensation Insurance; Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. For Disability Benefits Insurance provided pursuant to Article 22.1.2, the Contractor shall submit DB-120.1 - Certificate Of Insurance Coverage Under The NYS Disability Benefits Law, Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. ACORD forms are not acceptable.

22.3.3 For policies provided pursuant to all of Article 22.1 other than Article 22.1.2, the **Contractor** shall submit one or more Certificates of Insurance on forms acceptable to the **Commissioner**. All such Certificates of Insurance shall certify (a) the issuance and effectiveness of such policies of insurance, each with the specified minimum limits (b) for insurance secured pursuant to Article 22.1.1 that the **City** and any other entity specified in Schedule A is an Additional Insured thereunder; (c) in the event insurance is required pursuant to Article 22.1.6 and/or Article 22.1.7, that the City is an Additional Insured thereunder; (d) the company code issued to the insurance company by the National Association of Insurance Commissioners (the NAIC number); and (e) the number assigned to the **Contract** by the **City**. All such Certificates of Insurance shall be accompanied by either a duly executed "Certification by Insurance Broker or Agent" in the form contained in Part III of Schedule A or copies of all policies referenced in such Certificate of Insurance as certified by an authorized representative of the issuing insurance carrier. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

22.3.4 Documentation confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such proofs of insurance shall comply with the requirements of Articles 22.3.2 and 22.3.3.

22.3.5 The **Contractor** shall be obligated to provide the **City** with a copy of any policy of insurance provided pursuant to this Article 22 upon the demand for such policy by the **Commissioner** or the **City** Corporation Counsel.

22.4 Operations of the **Contractor**:

22.4.1 The **Contractor** shall not commence the **Work** unless and until all required certificates have been submitted to and accepted by the **Commissioner**. Acceptance by the **Commissioner** of a certificate does not excuse the **Contractor** from securing insurance consistent with all provisions of this Article 22 or of any liability arising from its failure to do so.

22.4.2 The **Contractor** shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this **Contract** and shall be authorized to perform **Work** only during the effective period of all required coverage.

22.4.3 In the event that any of the required insurance policies lapse, are revoked, suspended or otherwise terminated, for whatever cause, the **Contractor** shall immediately stop all **Work**, and shall not recommence **Work** until authorized in writing to do so by the **Commissioner**. Upon quitting the **Site**, except as otherwise directed by the **Commissioner**, the **Contractor** shall leave all plant, materials, equipment, tools, and supplies on the **Site**. **Contract** time shall continue to run during such periods and no extensions of time will be granted. The **Commissioner** may also declare the **Contractor** in default for failure to maintain required insurance.

22.4.4 In the event the **Contractor** receives notice, from an insurance company or other person, that any insurance policy required under this Article 22 shall be cancelled or terminated (or has been cancelled or terminated) for any reason, the **Contractor** shall immediately forward a copy of such notice to both the **Commissioner** and the New York City Comptroller, attn: Office of Contract Administration, Municipal Building, One Centre Street, room 1005, New York, New York 10007. Notwithstanding the foregoing, the **Contractor** shall ensure that there is no interruption in any of the insurance coverage required under this Article 22.

22.4.5 Where notice of loss, damage, occurrence, accident, claim or suit is required under an insurance policy maintained in accordance with this Article 22, the **Contractor** shall notify in writing all insurance carriers that issued potentially responsive policies of any such event relating to any operations under this **Contract** (including notice to Commercial General Liability insurance carriers for events relating to the **Contractor**'s own employees) no later than 20 days after such event. For any policy where the **City** is an Additional Insured, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Insured as well as the Named Insured." Such notice shall also contain the following information: the number of the insurance policy, the name of the named insured, the date and location of the damage, occurrence, or accident, and the identity of the persons or things injured, damaged or lost. The **Contractor** shall simultaneously send a copy of such notice to the City of New York c/o Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

22.4.6 In the event of any loss, accident, claim, action, or other event that does or can give rise to a claim under any insurance policy required under this Article 22, the **Contractor** shall at all times fully cooperate with the **City** with regard to such potential or actual claim.

22.5 **Subcontractor Insurance:** In the event the **Contractor** requires any **Subcontractor** to procure insurance with regard to any operations under this **Contract** and requires such **Subcontractor** to name the **Contractor** as an **Additional Insured** thereunder, the **Contractor** shall ensure that the **Subcontractor** name the **City**, including its officials and employees, as an Additional Insured with coverage at least as broad as the most recent edition of ISO Form CG 20 26.

22.6 Wherever reference is made in Article 7 or this Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth in Schedule A of the General Conditions. In the event no address is set forth in Schedule A, such documents are to be sent to the **Commissioner**'s address as provided elsewhere in this **Contract**.

22.7 Apart from damages or losses covered by insurance provided pursuant to Articles 22.1.2, 22.1.3, or 22.1.5, the **Contractor** waives all rights against the **City**, including its officials and employees, for any damages or losses that are covered under any insurance required under this Article 22 (whether or

not such insurance is actually procured or claims are paid thereunder) or any other insurance applicable to the operations of the **Contractor** and/or its employees, agents, or **Subcontractors**.

22.8 In the event the **Contractor** utilizes a self-insurance program to satisfy any of the requirements of this Article 22, the **Contractor** shall ensure that any such self-insurance program provides the **City** with all rights that would be provided by traditional insurance under this Article 22, including but not limited to the defense and indemnification obligations that insurers are required to undertake in liability policies.

22.9 Materiality/Non-Waiver: The **Contractor's** failure to secure policies in complete conformity with this Article 22, or to give an insurance company timely notice of any sort required in this **Contract** or to do anything else required by this Article 22 shall constitute a material breach of this **Contract**. Such breach shall not be waived or otherwise excused by any action or inaction by the **City** at any time.

22.10 Pursuant to General Municipal Law Section 108, this **Contract** shall be void and of no effect unless **Contractor** maintains Workers' Compensation Insurance for the term of this **Contract** to the extent required and in compliance with the New York State Workers' Compensation Law.

22.11 Other Remedies: Insurance coverage provided pursuant to this Article 22 or otherwise shall not relieve the **Contractor** of any liability under this **Contract**, nor shall it preclude the **City** from exercising any rights or taking such other actions available to it under any other provisions of this **Contract** or **Law**.

ARTICLE 23. MONEY RETAINED AGAINST CLAIMS

23.1 If any claim shall be made by any person or entity (including **Other Contractors** with the **City** on this **Project**) against the **City** or against the **Contractor** and the **City** for any of the following:

- (a) An alleged loss, damage, injury, theft or vandalism of any of the kinds referred to in Articles 7 and 12, plus the reasonable costs of defending the **City**, which in the opinion of the **Comptroller** may not be paid by an insurance company (for any reason whatsoever); or
- (b) An infringement of copyrights, patents or use of patented articles, tools, etc., as referred to in Article 57; or
- (c) Damage claimed to have been caused directly or indirectly by the failure of the **Contractor** to perform the **Work** in strict accordance with this **Contract**,

the amount of such claim, or so much thereof as the **Comptroller** may deem necessary, may be withheld by the **Comptroller**, as security against such claim, from any money due hereunder. The **Comptroller**, in his/her discretion, may permit the **Contractor** to substitute other satisfactory security in lieu of the monies so withheld.

23.2 If an action on such claim is timely commenced and the liability of the **City**, or the **Contractor**, or both, shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the **Contractor** to be valid, the **Comptroller** shall pay such judgment or admitted claim out of the monies retained by the **Comptroller** under the provisions of this Article 23, and return the balance, if any, without interest, to the **Contractor**.

ARTICLE 24. MAINTENANCE AND GUARANTY

24.1 The **Contractor** shall promptly repair, replace, restore or rebuild, as the **Commissioner** may determine, any finished **Work** in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of **Substantial Completion** (or use and occupancy in accordance with Article 16), except where other periods of maintenance and guaranty are provided for in Schedule A.

24.2 As security for the faithful performance of its obligations hereunder, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to one (1%) percent of the price (or the amount fixed in Schedule A of the General Conditions) in cash or certified check upon a state or national bank and trust company or a check of such bank and trust company signed by a duly authorized officer thereof and drawn to the order of the **Comptroller**, or obligations of the **City**, which the **Comptroller** may approve as of equal value with the sum so required.

24.3 In lieu of the above, the **Contractor** may make such security payment to the **City** by authorizing the **Commissioner** in writing to deduct the amount from the **Substantial Completion** payment which shall be deemed the deposit required above.

24.4 If the **Contractor** has faithfully performed all of its obligations hereunder the **Commissioner** shall so certify to the **Comptroller** within five (5) **Days** after the expiration of one (1) year from the date of **Substantial Completion** and acceptance of the **Work** or within thirty (30) **Days** after the expiration of the guarantee period fixed in the **Specifications**. The security payment shall be repaid to the **Contractor** without interest within thirty (30) **Days** after certification by the **Commissioner** to the **Comptroller** that the **Contractor** has faithfully performed all of its obligations hereunder.

24.5 Notice by the **Commissioner** to the **Contractor** to repair, replace, rebuild or restore such defective or damaged **Work** shall be timely, pursuant to this article, if given not later than ten (10) **Days** subsequent to the expiration of the one (1) year period or other periods provided for herein.

24.6 If the **Contractor** shall fail to repair, replace, rebuild or restore such defective or damaged **Work** promptly after receiving such notice, the **Commissioner** shall have the right to have the **Work** done by others in the same manner as provided for in the completion of a defaulted **Contract**, under Article 51.

24.7 If the security payment so deposited is insufficient to cover the cost of such **Work**, the **Contractor** shall be liable to pay such deficiency on demand by the **Commissioner**.

24.8 The **Engineer's** certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective **Work** when performed by one other than the **Contractor**, shall be binding and conclusive upon the **Contractor** as to the amount thereof.

24.9 The **Contractor** shall obtain all manufacturers' warranties and guaranties of all equipment and materials required by this **Contract** in the name of the **City** and shall deliver same to the **Commissioner**. All of the **City's** rights and title and interest in and to said manufacturers' warranties and guaranties may be assigned by the **City** to any subsequent purchasers of such equipment and materials or lessees of the premises into which the equipment and materials have been installed.

CHAPTER VI: CHANGES, EXTRA WORK, AND DOCUMENTATION OF CLAIM

ARTICLE 25. CHANGES

25.1 Changes may be made to this **Contract** only as duly authorized in writing by the **Commissioner** in accordance with the **Law** and this **Contract**. All such changes, modifications, and amendments will become a part of the **Contract**. **Work** so ordered shall be performed by the **Contractor**.

25.2 **Contract** changes will be made only for **Work** necessary to complete the **Work** included in the original scope of the **Contract** and/or for non-material changes to the scope of the **Contract**. Changes are not permitted for any material alteration in the scope of **Work** in the **Contract**.

25.3 The **Contractor** shall be entitled to a price adjustment for **Extra Work** performed pursuant to a written change order. Adjustments to price shall be computed in one or more of the following ways:

25.3.1 By applicable unit prices specified in the **Contract**; and/or

25.3.2 By agreement of a fixed price; and/or

25.3.3 By time and material records; and/or

25.3.4 In any other manner approved by the **CCPO**.

25.4 All payments for change orders are subject to pre-audit by the **Engineering Audit Officer** and may be post-audited by the **Comptroller** and/or the **Agency**.

ARTICLE 26. METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK

26.1 Overrun of Unit Price Item: An overrun is any quantity of a unit price item which the **Contractor** is directed to provide which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule.

26.1.1 For any unit price item, the **Contractor** will be paid at the unit price bid for any quantity up to one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule. If during the progress of the **Work**, the actual quantity of any unit price item required to complete the **Work** approaches the estimated quantity for that item, and for any reason it appears that the actual quantity of any unit price item necessary to complete the **Work** will exceed the estimated quantity for that item by twenty-five (25%) percent, the **Contractor** shall immediately notify the **Engineer** of such anticipated overrun. The **Contractor** shall not be compensated for any quantity of a unit price item provided which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule without written authorization from the **Engineer**.

26.1.2 If the actual quantity of any unit price item necessary to complete the **Work** will exceed one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule, the **City** reserves the right and the **Contractor** agrees to negotiate a new unit price for such item. In no event shall such negotiated new unit price exceed the unit bid price. If the **City** and **Contractor** cannot agree on a new unit price, then the **City** shall order the **Contractor** and the **Contractor** agrees to provide additional quantities of

the item on the basis of time and material records for the actual and reasonable cost as determined under Article 26.2, but in no event at a unit price exceeding the unit price bid.

26.2 Extra Work: For **Extra Work** where payment is by agreement on a fixed price in accordance with Article 25.3.2, the price to be paid for such **Extra Work** shall be based on the fair and reasonable estimated cost of the items set forth below. For **Extra Work** where payment is based on time and material records in accordance with Article 25.3.3, the price to be paid for such **Extra Work** shall be the actual and reasonable cost of the items set forth below, calculated in accordance with the formula specified therein, if any.

26.2.1 Necessary materials (including transportation to the **Site**); plus

26.2.2 Necessary direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits; plus

26.2.3 Sales and personal property taxes, if any, required to be paid on materials not incorporated into such **Extra Work**; plus

26.2.4 Reasonable rental value of **Contractor**-owned (or **Subcontractor**-owned, as applicable), necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per operating hour: $(.035) \times (\text{HP rating}) \times (\text{Fuel cost/gallon})$. Reasonable rental value is defined as the lower of either seventy-five percent of the monthly prorated rental rates established in "The AED Green Book, Rental Rates and Specifications for Construction Equipment" published by Equipment Watch (the "Green Book"), or seventy-five percent of the monthly prorated rental rates established in the "Rental Rate Blue Book for Construction Equipment" published by Equipment Watch (the "Blue Book") (the applicable Blue Book rate being for rental only without the addition of any operational costs listed in the Blue Book). The reasonable rental value is deemed to be inclusive of all operating costs except for fuel/energy consumption and equipment operator's wages/costs. For multiple shift utilization, reimbursement shall be calculated as follows: first shift shall be seventy-five (75%) percent of such rental rates; second shift shall be sixty (60%) percent of the first shift rate; and third shift shall be forty (40%) percent of the first shift rate. Equipment on standby shall be reimbursed at one-third (1/3) the prorated monthly rental rate. **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment includes equipment from rental companies affiliated with or controlled by the **Contractor** (or **Subcontractor**, as applicable), as determined by the **Commissioner**. In establishing cost reimbursement for non-operating **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment (scaffolding, sheeting systems, road plates, etc.), the **City** may restrict reimbursement to a purchase-salvage/life cycle basis if less than the computed rental costs; plus

26.2.5 Necessary installation and dismantling of such plant and equipment, including transportation to and from the **Site**, if any, provided that, in the case of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) equipment rented from a third party, the cost of installation and dismantling are not allowable if such costs are included in the rental rate; plus

26.2.6 Necessary fees charged by governmental entities; plus

26.2.7 Necessary construction-related service fees charged by non-governmental entities, such as landfill tipping fees; plus

26.2.8 Reasonable rental costs of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per hour of operation: $(.035) \times (\text{HP rating}) \times (\text{Fuel cost/gallon})$. In lieu of renting, the **City** reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs; plus

26.2.9 Workers' Compensation Insurance, and any insurance coverage expressly required by the **City** for the performance of the **Extra Work** which is different than the types of insurance required by Article 22 and Schedule A of the General Conditions. The cost of Workers' Compensation Insurance is subject to applicable payroll limitation caps and shall be based upon the carrier's Manual Rate for such insurance derived from the applicable class Loss Cost ("LC") and carrier's Lost Cost Multiplier ("LCM") approved by the New York State Department of Financial Services, and with the exception of experience rating, rate modifiers as promulgated by the New York Compensation Insurance Rating Board ("NYCIRB"); plus

26.2.10 Additional costs incurred as a result of the **Extra Work** for performance and payment bonds; plus

26.2.11 Twelve percent (12%) percent of the total of items in Articles 26.2.1 through 26.2.5 as compensation for overhead, except that no percentage for overhead will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes. Overhead shall include without limitation, all costs and expenses in connection with administration, management superintendence, small tools, and insurance required by Schedule A of the General Conditions other than Workers' Compensation Insurance; plus

26.2.12 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus the items in Article 26.2.11, as compensation for profit, except that no percentage for profit will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes; plus

26.2.13 Five (5%) percent of the total of items in Articles 26.2.6 through 26.2.10 as compensation for overhead and profit.

26.3 Where the **Extra Work** is performed in whole or in part by other than the **Contractor's** own forces pursuant to Article 26.2, the **Contractor** shall be paid, subject to pre-audit by the **Engineering Audit Officer**, the cost of such **Work** computed in accordance with Article 26.2 above, plus an additional allowance of five (5%) percent to cover the **Contractor's** overhead and profit.

26.4 Where a change is ordered, involving both **Extra Work** and omitted or reduced **Contract Work**, the **Contract** price shall be adjusted, subject to pre-audit by the **EAO**, in an amount based on the difference between the cost of such **Extra Work** and of the omitted or reduced **Work**.

26.5 Where the **Contractor** and the **Commissioner** can agree upon a fixed price for **Extra Work** in accordance with Article 25.3.2 or another method of payment for **Extra Work** in accordance with

Article 25.3.4, or for **Extra Work** ordered in connection with omitted **Work**, such method, subject to pre-audit by the **EAO**, may, at the option of the **Commissioner**, be substituted for the cost plus a percentage method provided in Article 26.2; provided, however, that if the **Extra Work** is performed by a **Subcontractor**, the **Contractor** shall not be entitled to receive more than an additional allowance of five (5%) percent for overhead and profit over the cost of such **Subcontractor's Work** as computed in accordance with Article 26.2.

ARTICLE 27. RESOLUTION OF DISPUTES

27.1 All disputes between the **City** and the **Contractor** of the kind delineated in this Article 27.1 that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this Article 27 and the **PPB Rules**. This procedure for resolving all disputes of the kind delineated herein shall be the exclusive means of resolving any such disputes.

27.1.1 This Article 27 shall not apply to disputes concerning matters dealt with in other sections of the **PPB Rules**, or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

27.1.2 This Article 27 shall apply only to disputes about the scope of **Work** delineated by the **Contract**, the interpretation of **Contract** documents, the amount to be paid for **Extra Work** or disputed work performed in connection with the **Contract**, the conformity of the **Contractor's Work** to the **Contract**, and the acceptability and quality of the **Contractor's Work**; such disputes arise when the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** makes a determination with which the **Contractor** disagrees.

27.2 All determinations required by this Article 27 shall be made in writing clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this Article 27 shall be deemed a non-determination without prejudice that will allow application to the next level.

27.3 During such time as any dispute is being presented, heard, and considered pursuant to this Article 27, the **Contract** terms shall remain in force and the **Contractor** shall continue to perform **Work** as directed by the **ACCO** or the **Engineer**. Failure of the **Contractor** to continue **Work** as directed shall constitute a waiver by the **Contractor** of its claim.

27.4 Presentation of Disputes to **Commissioner**.

Notice of Dispute and Agency Response. The **Contractor** shall present its dispute in writing ("Notice of Dispute") to the **Commissioner** within thirty (30) Days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the **Contract**. The Notice of Dispute shall include all the facts, evidence, documents, or other basis upon which the **Contractor** relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the **Contractor** in the dispute was arrived at. Within thirty (30) Days after receipt of the detailed written submission comprising the complete Notice of Dispute, the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** shall submit to the **Commissioner** all materials he or she deems pertinent to the dispute. Following initial submissions to the **Commissioner**, either party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise

protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the **Commissioner** whose decision shall be final. Willful failure of the **Contractor** to produce any requested material whose relevancy the **Contractor** has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the **Contractor** of its claim.

27.4.1 **Commissioner Inquiry.** The **Commissioner** shall examine the material and may, in his or her discretion, convene an informal conference with the **Contractor**, the **ACCO**, and the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** to resolve the issue by mutual consent prior to reaching a determination. The **Commissioner** may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The **Commissioner's** ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the dispute presented, whether or not the **Commissioner** participated therein. The **Commissioner** may or, at the request of any party to the dispute, shall compel the participation of any **Other Contractor** with a contract related to the **Work** of this **Contract**, and that **Contractor** shall be bound by the decision of the **Commissioner**. Any **Other Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this Article 27 as the **Contractor** initiating the dispute.

27.4.2 **Commissioner Determination.** Within thirty (30) **Days** after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the **Commissioner** shall make his or her determination and shall deliver or send a copy of such determination to the **Contractor**, the **ACCO**, and **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner**, as applicable, together with a statement concerning how the decision may be appealed.

27.4.3 **Finality of Commissioner's Decision.** The **Commissioner's** decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board pursuant to this Article 27. The **City** may not take a petition to the Contract Dispute Resolution Board. However, should the **Contractor** take such a petition, the **City** may seek, and the Contract Dispute Resolution Board may render, a determination less favorable to the **Contractor** and more favorable to the **City** than the decision of the **Commissioner**.

27.5 **Presentation of Dispute to the Comptroller.** Before any dispute may be brought by the **Contractor** to the Contract Dispute Resolution Board, the **Contractor** must first present its claim to the **Comptroller** for his or her review, investigation, and possible adjustment.

27.5.1 **Time, Form, and Content of Notice.** Within thirty (30) **Days** of its receipt of a decision by the **Commissioner**, the **Contractor** shall submit to the **Comptroller** and to the **Commissioner** a Notice of Claim regarding its dispute with the **Agency**. The Notice of Claim shall consist of (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written decision of the **Commissioner**; and (iii) a copy of all materials submitted by the **Contractor** to the **Agency**, including the Notice of Dispute. The **Contractor** may not present to the **Comptroller** any material not presented to the **Commissioner**, except at the request of the **Comptroller**.

27.5.2 Response. Within thirty (30) **Days** of receipt of the Notice of Claim, the **Agency** shall make available to the **Comptroller** a copy of all material submitted by the **Agency** to the **Commissioner** in connection with the dispute. The **Agency** may not present to the **Comptroller** any material not presented to the **Commissioner** except at the request of the **Comptroller**.

27.5.3 **Comptroller** Investigation. The **Comptroller** may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in Sections 7-201 and 7-203 of the Administrative Code. In addition, the **Comptroller** may demand of either party, and such party shall provide, whatever additional material the **Comptroller** deems pertinent to the claim, including original business records of the **Contractor**. Willful failure of the **Contractor** to produce within fifteen (15) **Days** any material requested by the **Comptroller** shall constitute a waiver by the **Contractor** of its claim. The **Comptroller** may also schedule an informal conference to be attended by the **Contractor**, **Agency** representatives, and any other personnel desired by the **Comptroller**.

27.5.4 Opportunity of **Comptroller** to Compromise or Adjust Claim. The **Comptroller** shall have forty-five (45) **Days** from his or her receipt of all materials referred to in Article 27.5.3 to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the **Contractor** and the **Comptroller**, to a maximum of ninety (90) **Days** from the **Comptroller's** receipt of all materials. The **Contractor** may not present its petition to the Contract Dispute Resolution Board until the period for investigation and compromise delineated in this Article 27.5.4 has expired. In compromising or adjusting any claim hereunder, the **Comptroller** may not revise or disregard the terms of the **Contract** between the parties.

27.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

27.6.1 The chief administrative law judge of the Office of Administrative Trials and Hearings (OATH) or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this Article 27 as may be necessary in the execution of the Contract Dispute Resolution Board's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

27.6.2 The **CCPO** or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated; and

27.6.3 A person with appropriate expertise who is not an employee of the **City**. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH with appropriate background to act as decision-makers in a dispute. Such individual may not have a contract or dispute with the **City** or be an officer or employee of any company or organization that does, or regularly represents persons, companies, or organizations having disputes with the **City**.

27.7 Petition to the Contract Dispute Resolution Board. In the event the claim has not been settled or adjusted by the **Comptroller** within the period provided in this Article 27, the **Contractor**,

within thirty (30) **Days** thereafter, may petition the Contract Dispute Resolution Board to review the **Commissioner's** determination.

27.7.1 **Form and Content of Petition by Contractor.** The **Contractor** shall present its dispute to the Contract Dispute Resolution Board in the form of a petition, which shall include (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written Decision of the **Commissioner**, (iii) copies of all materials submitted by the **Contractor** to the Agency; (iv) a copy of the written decision of the **Comptroller**, if any, and (v) copies of all correspondence with, or written material submitted by the **Contractor**, to the **Comptroller**. The **Contractor** shall concurrently submit four (4) complete sets of the Petition: one set to the **City Corporation Counsel** (Attn: Commercial and Real Estate Litigation Division) and three (3) sets to the Contract Dispute Resolution Board at OATH's offices with proof of service on the **City Corporation Counsel**. In addition, the **Contractor** shall submit a copy of the written statement of the substance of the dispute, cited in (i) above, to both the **Commissioner** and the **Comptroller**.

27.7.2 **Agency Response.** Within thirty (30) **Days** of its receipt of the Petition by the **City Corporation Counsel**, the **Agency** shall respond to the brief written statement of the **Contractor** and make available to the Contract Dispute Resolution Board all material it submitted to the **Commissioner** and **Comptroller**. Three (3) complete copies of the **Agency** response shall be provided to the Contract Dispute Resolution Board and one to the **Contractor**. Extensions of time for submittal of the **Agency** response shall be given as necessary upon a showing of good cause or, upon consent of the parties, for an initial period of up to thirty (30) **Days**.

27.7.3 **Further Proceedings.** The Contract Dispute Resolution Board shall permit the **Contractor** to present its case by submission of memoranda, briefs, and oral argument. The Contract Dispute Resolution Board shall also permit the **Agency** to present its case in response to the **Contractor** by submission of memoranda, briefs, and oral argument. If requested by the **City Corporation Counsel**, the **Comptroller** shall provide reasonable assistance in the preparation of the **Agency's** case. Neither the **Contractor** nor the **Agency** may support its case with any documentation or other material that was not considered by the **Comptroller**, unless requested by the Contract Dispute Resolution Board. The Contract Dispute Resolution Board, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on its own or upon application of a party, any such additional material from any party as it deems fit. The Contract Dispute Resolution Board, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

27.7.4 **Contract Dispute Resolution Board Determination.** Within forty-five (45) **Days** of the conclusion of all written submissions and oral arguments, the Contract Dispute Resolution Board shall render a written decision resolving the dispute. In an unusually complex case, the Contract Dispute Resolution Board may render its decision in a longer period, not to exceed ninety (90) **Days**, and shall so advise the parties at the commencement of this period. The Contract Dispute Resolution Board's decision must be consistent with the terms of the **Contract**. Decisions of the Contract Dispute Resolution Board shall only resolve matters before the Contract Dispute Resolution Board and shall not have precedential effect with respect to matters not before the Contract Dispute Resolution Board.

27.7.5 Notification of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board shall send a copy of its decision to the **Contractor**, the **ACCO**, the Engineer, the **Comptroller**, the **City** Corporation Counsel, the **CCPO**, and the **PPB**. A decision in favor of the **Contractor** shall be subject to the prompt payment provisions of the **PPB** Rules. The Required Payment Date shall be thirty (30) Days after the date the parties are formally notified of the Contract Dispute Resolution Board's decision.

27.7.6 Finality of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board's decision shall be final and binding on all parties. Any party may seek review of the Contract Dispute Resolution Board's decision solely in the form of a challenge, filed within four (4) months of the date of the Contract Dispute Resolution Board's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Law and Rules. Such review by the court shall be limited to the question of whether or not the Contract Dispute Resolution Board's decision was made in violation of lawful procedure, was affected by an error of **Law**, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the Contract Dispute Resolution Board in accordance with this Article 27.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this Article 27 shall not affect or impair the ability of the **Commissioner** or Contract Dispute Resolution Board to make a binding and final decision pursuant to this Article 27.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK OR WORK ON A TIME & MATERIALS BASIS

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Work** on a time and material basis or **Extra Work** on a time and material basis ordered by the **Commissioner** under Article 25, or where the **Contractor** believes that it or any of its **Subcontractors** is performing **Extra Work** but a final determination by **Agency** has not been made, or the **Contractor** or any of its **Subcontractors** is performing disputed **Work** (whether on or off the **Site**), or complying with a determination or order under protest in accordance with Articles 11, 27, and 30, in each such case the **Contractor** shall furnish the **Resident Engineer** daily with three (3) copies of written statements signed by the **Contractor's** representative at the **Site** showing:

28.1.1 The name, trade, and number of each worker employed on such **Work** or engaged in complying with such determination or order, the number of hours employed, and the character of the **Work** each is doing; and

28.1.2 The nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such **Work** or compliance with such determination or order, and from whom purchased or rented.

28.2 A copy of such statement will be countersigned by the **Resident Engineer**, noting thereon any items not agreed to or questioned, and will be returned to the **Contractor** within two (2) **Days** after submission.

28.3 The **Contractor** and its **Subcontractors**, when required by the **Commissioner**, or the **Comptroller**, shall also produce for inspection, at the office of the **Contractor** or **Subcontractor**, any and all of its books, bid documents, financial statements, vouchers, records, daily job diaries and reports,

and cancelled checks, and any other documents relating to showing the nature and quantity of the labor, materials, plant and equipment actually used in the performance of such **Work**, or in complying with such determination or order, and the amounts expended therefor, and shall permit the **Commissioner** and the **Comptroller** to make such extracts therefrom, or copies thereof, as they or either of them may desire.

28.4 In connection with the examination provided for herein, the **Commissioner**, upon demand therefor, will produce for inspection by the **Contractor** such records as the **Agency** may have with respect to such **Extra Work** or disputed **Work** performed under protest pursuant to order of the **Commissioner**, except those records and reports which may have been prepared for the purpose of determining the accuracy and validity of the **Contractor's** claim.

28.5 Failure to comply strictly with these requirements shall constitute a waiver of any claim for extra compensation or damages on account of the performance of such **Work** or compliance with such determination or order.

ARTICLE 29. OMITTED WORK

29.1 If any **Contract Work** in a lump sum **Contract**, or if any part of a lump sum item in a unit price, lump sum, or percentage-bid **Contract** is omitted by the **Commissioner** pursuant to Article 33, the **Contract** price, subject to audit by the EAO, shall be reduced by a pro rata portion of the lump sum bid amount based upon the percent of **Work** omitted subject to Article 29.4. For the purpose of determining the pro rata portion of the lump sum bid amount, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be the determining factor.

29.2 If the whole of a lump sum item or units of any other item is so omitted by the **Commissioner** in a unit price, lump sum, or percentage-bid **Contract**, then no payment will be made therefor except as provided in Article 29.4.

29.3 For units that have been ordered but are only partially completed, the unit price shall be reduced by a pro rata portion of the unit price bid based upon the percentage of **Work** omitted subject to Article 29.4.

29.4 In the event the **Contractor**, with respect to any omitted **Work**, has purchased any non-cancelable material and/or equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated into the **Work**, the **Contractor** shall be paid for such material and/or equipment in accordance with Article 64.2.1(b); provided, however, such payment is contingent upon the **Contractor's** delivery of such material and/or equipment in acceptable condition to a location designated by the **City**.

29.5 The **Contractor** agrees to make no claim for damages or for loss of overhead and profit with regard to any omitted **Work**.

ARTICLE 30. NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS

30.1 If the **Contractor** shall claim to be sustaining damages by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter to the extent additional damages are being incurred for the same condition, verified statements of the details and the amounts of such

damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to strictly comply with the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action or dispute resolution procedure arising under or by reason of this **Contract** shall not be different from or in excess of the statements and documentation made pursuant to this Article 30. This Article 30.1 does not apply to claims submitted to the **Commissioner** pursuant to Article 11 or to claims disputing a determination under Article 27.

30.2 In addition to the foregoing statements, the **Contractor** shall, upon notice from the **Commissioner**, produce for examination at the **Contractor's** office, by the **Engineer, Architect or Project Manager**, all of its books of account, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**, and submit itself and persons in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.3 In addition to the statements required under Article 28 and this Article 30, the **Contractor** and/or its **Subcontractor** shall, within thirty (30) **Days** upon notice from the **Commissioner** or **Comptroller**, produce for examination at the **Contractor's** and/or **Subcontractor's** office, by a representative of either the **Commissioner** or **Comptroller**, all of its books of account, bid documents, financial statements, accountant workpapers, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**. Further, the **Contractor** and/or its **Subcontractor** shall submit any person in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.4 Unless the information and examination required under Article 30.3 is provided by the **Contractor** and/or its **Subcontractor** upon thirty (30) **Days'** notice from the **Commissioner** or **Comptroller**, or upon the **Commissioner's** or **Comptroller's** written authorization to extend the time to comply, the **City** shall be released from all claims arising under, relating to or by reason of this **Contract**, except for sums certified by the **Commissioner** to be due under the provisions of this **Contract**. It is further stipulated and agreed that no person has the power to waive any of the foregoing provisions and that in any action or dispute resolution procedure against the **City** to recover any sum in excess of the sums certified by the **Commissioner** to be due under or by reason of this **Contract**, the **Contractor** must allege in its complaint and prove, at trial or during such dispute resolution procedure, compliance with the provisions of this Article 30.

30.5 In addition, after the commencement of any action or dispute resolution procedure by the **Contractor** arising under or by reason of this **Contract**, the **City** shall have the right to require the **Contractor** to produce for examination under oath, up until the trial of the action or hearing before the Contract Dispute Resolution Board, the books and documents described in Article 30.3 and submit itself and all persons in its employ for examination under oath. If this Article 30 is not complied with as required, then the **Contractor** hereby consents to the dismissal of the action or dispute resolution procedure.

CHAPTER VII: POWERS OF THE RESIDENT ENGINEER, THE ENGINEER OR ARCHITECT AND THE COMMISSIONER

ARTICLE 31. THE RESIDENT ENGINEER

31.1 The **Resident Engineer** shall have the power to inspect, supervise, and control the performance of the **Work**, subject to review by the **Commissioner**. The **Resident Engineer** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 32. THE ENGINEER OR ARCHITECT OR PROJECT MANAGER

32.1 The **Engineer** or **Architect** or **Project Manager**, in addition to those matters elsewhere herein delegated to the **Engineer** and expressly made subject to his/her determination, direction or approval, shall have the power, subject to review by the **Commissioner**:

32.1.1 To determine the amount, quality, and location of the **Work** to be paid for hereunder; and

32.1.2 To determine all questions in relation to the **Work**, to interpret the **Contract Drawings, Specifications, and Addenda**, and to resolve all patent inconsistencies or ambiguities therein; and

32.1.3 To determine how the **Work** of this **Contract** shall be coordinated with **Work** of **Other Contractors** engaged simultaneously on this **Project**, including the power to suspend any part of the **Work**, but not the whole thereof; and

32.1.4 To make minor changes in the **Work** as he/she deems necessary, provided such changes do not result in a net change in the cost to the **City** or to the **Contractor** of the **Work** to be done under the **Contract**; and

32.1.5 To amplify the **Contract Drawings**, add explanatory information and furnish additional **Specifications** and drawings, consistent with this **Contract**.

32.2 The foregoing enumeration shall not imply any limitation upon the power of the **Engineer** or **Architect** or **Project Manager**, for it is the intent of this **Contract** that all of the **Work** shall generally be subject to his/her determination, direction, and approval, except where the determination, direction or approval of someone other than the **Engineer** or **Architect** or **Project Manager** is expressly called for herein.

32.3 The **Engineer** or **Architect** or **Project Manager** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 33. THE COMMISSIONER

33.1 The **Commissioner**, in addition to those matters elsewhere herein expressly made subject to his/her determination, direction or approval, shall have the power:

33.1.1 To review and make determinations on any and all questions in relation to this **Contract** and its performance; and

33.1.2 To modify or change this **Contract** so as to require the performance of **Extra Work** (subject, however, to the limitations specified in Article 25) or the omission of **Contract Work**; and

33.1.3 To suspend the whole or any part of the **Work** whenever in his/her judgment such suspension is required:

33.1.3(a) In the interest of the **City** generally; or

33.1.3(b) To coordinate the **Work** of the various contractors engaged on this **Project** pursuant to the provisions of Article 12; or

33.1.3(c) To expedite the completion of the entire **Project** even though the completion of this particular **Contract** may thereby be delayed.

ARTICLE 34. NO ESTOPPEL

34.1 Neither the **City** nor any **Agency**, official, agent or employee thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this **Contract** by the **City**, the **Commissioner**, the **Engineer**, the **Resident Engineer**, or any other official, agent or employee of the **City**, either before or after the final completion and acceptance of the **Work** and payment therefor:

34.1.1 From showing the true and correct classification, amount, quality or character of the **Work** actually done; or that any such determination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular, or that the **Work**, or any part thereof, does not in fact conform to the requirements of this **Contract**; and

34.1.2 From demanding and recovering from the **Contractor** any overpayment made to it, or such damages as the **City** may sustain by reason of the **Contractor's** failure to perform each and every part of its **Contract**.

CHAPTER VIII: LABOR PROVISIONS

ARTICLE 35. EMPLOYEES

35.1 The **Contractor** and its **Subcontractors** shall not employ on the **Work**:

35.1.1 Anyone who is not competent, faithful and skilled in the **Work** for which he/she shall be employed; and whenever the **Commissioner** shall inform the **Contractor**, in writing, that any employee is, in his/her opinion, incompetent, unfaithful or disobedient, that employee shall be discharged from the **Work** forthwith, and shall not again be employed upon it; or

35.1.2 Any labor, materials or means whose employment, or utilization during the course of this **Contract**, may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of **Work** or similar troubles by workers employed by the **Contractor** or its **Subcontractors**, or by any of the trades working in or about the buildings and premises where **Work** is being performed under this **Contract**, or by **Other Contractors** or their **Subcontractors** pursuant to other contracts, or on any other building or premises owned or operated by the **City**, its **Agencies**, departments, boards or authorities. Any violation by the **Contractor** of this requirement may, upon certification of the **Commissioner**, be considered as proper and sufficient cause for declaring the **Contractor** to be in default, and for the **City** to take action against it as set forth in Chapter X of this **Contract**, or such other article of this **Contract** as the Commissioner may deem proper; or

35.1.3 In accordance with Section 220.3-e of the Labor Law of the State of New York (hereinafter "Labor Law"), the **Contractor** and its **Subcontractors** shall not employ on the **Work** any apprentice, unless he/she is a registered individual, under a bona fide program registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the **Contractor** as to its work force on any job under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the **Comptroller** of the **City** for the classification of **Work** actually performed. The **Contractor** or **Subcontractor** will be required to furnish written evidence of the registration of its program and apprentices as well as all the appropriate ratios and wage rates, for the area of the construction prior to using any apprentices on the **Contract Work**.

35.2 If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand (\$250,000) dollars, all laborers, workers, and mechanics employed in the performance of the **Contract** on the public work site, either by the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by the **Contract**, shall be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

35.3 In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the Administrative Code, respectively,

35.3.1 The **Contractor** shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this **Contract** to (a) the Commissioner of the Department of Investigation, (b) a member of the New York City Council, the Public Advocate, or the **Comptroller**, or (c) the **CCPO**, **ACCO**, **Agency** head, or **Commissioner**.

35.3.2 If any of the **Contractor**'s officers or employees believes that he or she has been the subject of an adverse personnel action in violation of Article 35.3.1, he or she shall be entitled to bring a cause of action against the **Contractor** to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (a) an injunction to restrain continued retaliation, (b) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (c) reinstatement of full fringe benefits and seniority rights, (d) payment of two times back

pay, plus interest, and (e) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.

35.3.3 The **Contractor** shall post a notice provided by the **City** in a prominent and accessible place on any site where work pursuant to the **Contract** is performed that contains information about:

35.3.3(a) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising out of or in connection with the **Contract**; and

35.3.3(b) the rights and remedies afforded to its employees under Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection with the reporting of allegations of fraud, false claims, criminality or corruption in connection with the **Contract**.

35.3.4 For the purposes of this Article 35.3, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

35.3.5 This Article 35.3 is applicable to all of the **Contractor's Subcontractors** having subcontracts with a value in excess of \$100,000; accordingly, the **Contractor** shall include this rider in all subcontracts with a value a value in excess of \$100,000.

35.4 Article 35.3 is not applicable to this **Contract** if it is valued at \$100,000 or less. Articles 35.3.1, 35.3.2, 35.3.4, and 35.3.5 are not applicable to this **Contract** if it was solicited pursuant to a finding of an emergency.

35.5 Paid Sick Leave Law.

35.5.1 Introduction and General Provisions.

35.5.1(a) The Earned Sick Time Act, also known as the Paid Sick Leave Law ("PSLL"), requires covered employees who annually perform more than 80 hours of work in New York City to be provided with paid sick time.² Contractors of the **City** or of other governmental entities may be required to provide sick time pursuant to the PSLL.

35.5.1(b) The PSLL became effective on April 1, 2014, and is codified at Title 20, Chapter 8, of the New York City Administrative Code. It is administered by the City's Department of Consumer Affairs ("DCA"); DCA's rules promulgated under the PSLL are codified at Chapter 7 of Title 6 of the Rules of the City of New York ("Rules").

² Pursuant to the PSLL, if fewer than five employees work for the same employer, as determined pursuant to New York City Administrative Code § 20-912(g), such employer has the option of providing such employees uncompensated sick time.

35.5.1(c) The **Contractor** agrees to comply in all respects with the PSLL and the Rules, and as amended, if applicable, in the performance of this **Contract**. The **Contractor** further acknowledges that such compliance is a material term of this **Contract** and that failure to comply with the PSLL in performance of this **Contract** may result in its termination.

35.5.1(d) The **Contractor** must notify the **Agency Chief Contracting Officer** of the **Agency** with whom it is contracting in writing within ten (10) days of receipt of a complaint (whether oral or written) regarding the PSLL involving the performance of this **Contract**. Additionally, the **Contractor** must cooperate with DCA's education efforts and must comply with DCA's subpoenas and other document demands as set forth in the PSLL and Rules.

35.5.1(e) The PSLL is summarized below for the convenience of the **Contractor**. The **Contractor** is advised to review the PSLL and Rules in their entirety. On the website www.nyc.gov/PaidSickLeave there are links to the PSLL and the associated Rules as well as additional resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which the **Contractor** can get more information about how to comply with the PSLL. The **Contractor** acknowledges that it is responsible for compliance with the PSLL notwithstanding any inconsistent language contained herein.

35.5.2 Pursuant to the PSLL and the Rules: Applicability, Accrual, and Use.

35.5.2(a) An employee who works within the City of New York for more than eighty hours in any consecutive 12-month period designated by the employer as its "calendar year" pursuant to the PSLL ("Year") must be provided sick time. Employers must provide a minimum of one hour of sick time for every 30 hours worked by an employee and compensation for such sick time must be provided at the greater of the employee's regular hourly rate or the minimum wage. Employers are not required to provide more than 40 hours of sick time to an employee in any Year.

35.5.2(b) An employee has the right to determine how much sick time he or she will use, provided that employers may set a reasonable minimum increment for the use of sick time not to exceed four hours per **Day**. In addition, an employee may carry over up to 40 hours of unused sick time to the following Year, provided that no employer is required to allow the use of more than forty hours of sick time in a Year or carry over unused paid sick time if the employee is paid for such unused sick time and the employer provides the employee with at least the legally required amount of paid sick time for such employee for the immediately subsequent Year on the first **Day** of such Year.

35.5.2(c) An employee entitled to sick time pursuant to the PSLL may use sick time for any of the following:

- i. such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;
- ii. such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild or grandparent, or the child or parent of an employee's spouse or domestic partner) who has a mental

- illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;
- iii. closure of such employee's place of business by order of a public official due to a public health emergency; or
 - iv. such employee's need to care for a child whose school or childcare provider has been closed due to a public health emergency.

35.5.2(d) An employer must not require an employee, as a condition of taking sick time, to search for a replacement. However, an employer may require an employee to provide: reasonable notice of the need to use sick time; reasonable documentation that the use of sick time was needed for a reason above if for an absence of more than three consecutive work days; and/or written confirmation that an employee used sick time pursuant to the PSL. However, an employer may not require documentation specifying the nature of a medical condition or otherwise require disclosure of the details of a medical condition as a condition of providing sick time and health information obtained solely due to an employee's use of sick time pursuant to the PSL must be treated by the employer as confidential.

35.5.2(e) If an employer chooses to impose any permissible discretionary requirement as a condition of using sick time, it must provide to all employees a written policy containing those requirements, using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny sick time to an employee because of non-compliance with such a policy.

35.5.2(f) Sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the sick time was used.

35.5.3 Exemptions and Exceptions. Notwithstanding the above, the PSL does not apply to any of the following:

35.5.3(a) an independent contractor who does not meet the definition of employee under section 190(2) of the New York State Labor Law;

35.5.3(b) an employee covered by a valid collective bargaining agreement in effect on April 1, 2014, until the termination of such agreement;

35.5.3(c) an employee in the construction or grocery industry covered by a valid collective bargaining agreement if the provisions of the PSL are expressly waived in such collective bargaining agreement;

35.5.3(d) an employee covered by another valid collective bargaining agreement if such provisions are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the PSL for such employee;

35.5.3(e) an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines his or her own schedule, has the ability to reject or accept any assignment referred to him or her, and is paid an average hourly wage that is at least four times the federal minimum wage;

35.5.3(f) an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;

35.5.3(g) an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or

35.5.3(h) a participant in a Work Experience Program (WEP) under section 336-c of the New York State Social Services Law.

35.5.4 Retaliation Prohibited. An employer may not threaten or engage in retaliation against an employee for exercising or attempting in good faith to exercise any right provided by the PSL. In addition, an employer may not interfere with any investigation, proceeding, or hearing pursuant to the PSL.

35.5.5 Notice of Rights.

35.5.5(a) An employer must provide its employees with written notice of their rights pursuant to the PSL. Such notice must be in English and the primary language spoken by an employee, provided that DCA has made available a translation into such language. Downloadable notices are available on DCA's website at <http://www.nyc.gov/html/dca/html/law/PaidSickLeave.shtml>.

35.5.5(b) Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed fifty dollars for each employee who was not given appropriate notice.

35.5.6 Records. An employer must retain records documenting its compliance with the PSL for a period of at least three years, and must allow DCA to access such records in furtherance of an investigation related to an alleged violation of the PSL.

35.5.7 Enforcement and Penalties.

35.5.7(a) Upon receiving a complaint alleging a violation of the PSL, DCA has the right to investigate such complaint and attempt to resolve it through mediation. Within **30 Days** of written notification of a complaint by DCA, or sooner in certain circumstances, the employer must provide DCA with a written response and such other information as DCA may request. If DCA believes that a violation of the PSL has occurred, it has the right to issue a notice of violation to the employer.

35.5.7(b) DCA has the power to grant an employee or former employee all appropriate relief as set forth in New York City Administrative Code § 20-924(d). Such relief may include, among other remedies, treble damages for the wages that should have been paid, damages for unlawful retaliation, and damages and reinstatement for unlawful discharge. In addition, DCA may impose on an employer found to have violated the PSL civil penalties not to exceed \$500 for a first violation, \$750 for a second violation within two years of the first violation, and \$1,000 for each succeeding violation within two years of the previous violation.

35.5.8 More Generous Policies and Other Legal Requirements. Nothing in the PSL is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous sick time policy, or the obligation of an employer to comply with any contract,

collective bargaining agreement, employment benefit plan or other agreement providing more generous sick time. The PSLL provides minimum requirements pertaining to sick time and does not preempt, limit or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of sick leave or time, whether paid or unpaid, or that extends other protections to employees. The PSLL may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

35.6 HireNYC: Hiring and Reporting Requirements. This Article 35.6 applies to construction contracts of \$1,000,000 or more. The **Contractor** shall comply with the requirements of Articles 35.6.1-35.6.5 for all non-trades jobs (e.g., for an administrative position arising out of **Work** ant located in New York City). The **Contractor** shall reasonably cooperate with SBS and the **City** on specific outreach events, including “Hire-on-the-Spot” events, for the hiring of trades workers in connection with the **Work**. If provided elsewhere in this **Contract**, this **Contract** is subject to a project labor agreement.

35.6.1 Enrollment. The **Contractor** shall enroll with the HireNYC system, found at www.nyc.gov/sbs, within thirty (30) days after the registration of this **Contract** pursuant to Section 328 of the New York City Charter. The **Contractor** shall provide information about the business, designate a primary contact and say whether it intends to hire for any entry to mid-level job opportunities arising from this **Contract** and located in New York City, and, if so, the approximate start date of the first hire.

35.6.2 Job Posting Requirements.

35.6.2(a) Once enrolled in HireNYC, the **Contractor** agrees to update the HireNYC portal with all entry to mid-level job opportunities arising from this **Contract** and located in New York City, if any, which shall be defined as jobs requiring no more than an associate degree, as provided by the New York State Department of Labor (see Column F of <https://labor.ny.gov/stats/2012-2022-NYS-Employment-Prospects.xls>). The information to be updated includes the types of entry and mid-level positions made available from the work arising from the **Contract** and located in New York City, the number of positions, the anticipated schedule of initiating the hiring process for these positions, and the contact information for the **Contractor’s** representative charged with overseeing hiring. The **Contractor** must update the HireNYC portal with any hiring needs arising from the contract and located in New York City, and the requirements of the jobs to be filled, no less than three weeks prior to the intended first day of employment for each new position, except with the permission of SBS, not to be unreasonably withheld, and must also update the HireNYC portal as set forth below.

35.6.2(b) After enrollment through HireNYC and submission of relevant information, SBS will work with the **Contractor** to develop a recruitment plan which will outline the candidate screening process, and will provide clear instructions as to when, where, and how interviews will take place. HireNYC will screen applicants based on employer requirements and refer applicants whom it believes are qualified to the **Contractor** for interviews. The **Contractor** must interview referred applicants whom it believes are qualified.

35.6.2(c) After completing an interview of a candidate referred by HireNYC, the **Contractor** must provide feedback via the portal within twenty (20) business days to indicate which candidates were interviewed and hired, if any. In addition, the **Contractor** shall provide the start date of new hires, and additional information

reasonably related to such hires, within twenty (20) business days after the start date. In the event the **Contractor** does not have any job openings covered by this Rider in any given year, the **Contractor** shall be required to provide an annual update to HireNYC to that effect. For this purpose, the reporting year shall run from the date of the registration of the **Contract** pursuant to Charter section 328 and each anniversary date.

35.6.2(d) These requirements do not limit the **Contractor's** ability to assess the qualifications of prospective workers, and to make final hiring and retention decisions. No provision of this Article 35.6 shall be interpreted so as to require the **Contractor** to employ any particular worker.

35.6.2(e) In addition, the provisions of this Article 35.6 shall not apply to positions that the **Contractor** intends to fill with employees employed pursuant to the job retention provision of Section 22-505 of the Administrative Code of the City of New York. The **Contractor** shall not be required to report such openings with HireNYC. However, the **Contractor** shall enroll with the HireNYC system pursuant to Article 35.6.1, above, and, if such positions subsequently become open, then the remaining provisions of this Article 35.6 will apply.

35.6.3 Breach and Liquidated Damages. If the **Contractor** fails to comply with the terms of the **Contract** and this Article 35.6 (1) by not enrolling its business with HireNYC; (2) by not informing HireNYC, as required, of open positions; or (3) by failing to interview a qualified candidate, the **Agency** may assess liquidated damages in the amount of two-thousand five hundred dollars (\$2,500) per breach. For all other events of noncompliance with the terms of this Article 35.6, the **Agency** may assess liquidated damages in the amount of five hundred dollars (\$500) per breach. Furthermore, in the event the **Contractor** breaches the requirements of this Article 35.6 during the term of the **Contract**, the **City** may hold the **Contractor** in default of this **Contract**.

35.6.4 Audit Compliance. In addition to the auditing requirements set forth in other parts of the **Contract**, the **Contractor** shall permit SBS and the **City** to inspect any and all records concerning or relating to job openings or the hiring of individuals for work arising from the **Contract** and located in New York City. The **Contractor** shall permit an inspection within seven (7) business days of the request.

35.6.5 Other Reporting Requirements. The **Contractor** shall report to the **City**, on a monthly basis, all information reasonably requested by the **City** that is necessary for the **City** to comply with any reporting requirements imposed by **Law**, including any requirement that the **City** maintain a publicly accessible database. In addition, the **Contractor** agrees to comply with all reporting requirements imposed by **Law**, or as otherwise requested by the **City**.

35.6.6 Federal Hiring Requirements. If this **Contract** is federally funded (as indicated elsewhere in this **Contract**), the **Contractor** shall comply with all federal hiring requirements as may be set forth in this **Contract**, including, as applicable: (a) Section 3 of the HUD Act of 1968, which requires, to the greatest extent feasible, economic opportunities for 30 percent of new hires be given to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing and Executive Order 11246, which prohibits discrimination in employment due to race, color, religion, sex or national origin, and requires the implementation of goals for minority and female participation for work involving any construction trade.

ARTICLE 36. NO DISCRIMINATION

36.1 The **Contractor** specifically agrees, as required by Labor Law Section 220-e, as amended, that:

36.1.1 In the hiring of employees for the performance of **Work** under this **Contract** or any subcontract hereunder, neither the **Contractor**, **Subcontractor**, nor any person acting on behalf of such **Contractor** or **Subcontractor**, shall by reason of race, creed, color or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the **Work** to which the employment relates;

36.1.2 Neither the **Contractor**, **Subcontractor**, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of **Work** under this **Contract** on account of race, creed, color or national origin;

36.1.3 There may be deducted from the amount payable to the **Contractor** by the **City** under this **Contract** a penalty of fifty (\$50.00) dollars for each person for each **Day** during which such person was discriminated against or intimidated in violation of the provisions of this **Contract**; and

36.1.4 This **Contract** may be cancelled or terminated by the **City** and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this Article 36.

36.1.5 This Article 36 covers all construction, alteration and repair of any public building or public work occurring in the State of New York and the manufacture, sale, and distribution of materials, equipment, and supplies to the extent that such operations are performed within the State of New York pursuant to this **Contract**.

36.2 The **Contractor** specifically agrees, as required by Section 6-108 of the Administrative Code, as amended, that:

36.2.1 It shall be unlawful for any person engaged in the construction, alteration or repair of buildings or engaged in the construction or repair of streets or highways pursuant to a **Contract** with the **City** or engaged in the manufacture, sale or distribution of materials, equipment or supplies pursuant to a **Contract** with the **City** to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

36.2.2 It shall be unlawful for any person or any servant, agent or employee of any person, described in Article 36.1.2, to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color or creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

36.2.3 Breach of the foregoing provisions shall be deemed a violation of a material provision of this **Contract**.

36.2.4 Any person, or the employee, manager or owner of or officer of such firm or corporation who shall violate any of the provisions of this Article 36.2 shall, upon

conviction thereof, be punished by a fine of not more than one hundred (\$100.00) dollars or by imprisonment for not more than thirty (30) **Days**, or both.

36.3 This **Contract** is subject to the requirements of Executive Order No. 50 (1980) (“E.O. 50”), as revised, and the rules and regulations promulgated thereunder. No contract will be awarded unless and until these requirements have been complied with in their entirety. By signing this **Contract**, the **Contractor** agrees that it:

36.3.1 Will not engage in any unlawful discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, marital status or sexual orientation with respect to all employment decisions including, but not limited to, recruitment, hiring, upgrading, demotion, downgrading, transfer, training, rates of pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment; and

36.3.2 Will not engage in any unlawful discrimination in the selection of **Subcontractors** on the basis of the owner’s race, color, creed, national origin, sex, age, disability, marital status or sexual orientation; and

36.3.3 Will state in all solicitations or advertisements for employees placed by or on behalf of the **Contractor** that all qualified applicants will receive consideration for employment without unlawful discrimination based on race, creed, color, national origin, sex, age, citizens status, disability, marital status, sexual orientation, or that it is an equal employment opportunity employer; and

36.3.4 Will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or memorandum of understanding, written notification of its equal employment opportunity commitments under E.O. 50 and the rules and regulations promulgated thereunder; and

36.3.5 Will furnish, before the award of the **Contract**, all information and reports, including an employment report, that are required by E.O. 50, the rules and regulations promulgated thereunder, and orders of the **City** Department of Business Services, Division of Labor Services (**DLS**) and will permit access to its books, records, and accounts by the **DLS** for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

36.4 The **Contractor** understands that in the event of its noncompliance with the nondiscrimination clauses of this **Contract** or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this **Contract** and noncompliance with E.O. 50 and the rules and regulations promulgated thereunder. After a hearing held pursuant to the rules of the **DLS**, the Director of the **DLS** may direct the **Commissioner** to impose any or all of the following sanctions:

36.4.1 Disapproval of the **Contractor**; and/or

36.4.2 Suspension or termination of the **Contract**; and/or

36.4.3 Declaring the **Contractor** in default; and/or

36.4.4 In lieu of any of the foregoing sanctions, the Director of the **DLS** may impose an employment program.

In addition to any actions taken under this **Contract**, failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in a **City Agency** declaring the **Contractor** to be non-responsible in future procurements. The **Contractor** further agrees that it will refrain from entering into any **Contract** or **Contract** modification subject to E.O. 50 and the rules and regulations promulgated thereunder with a **Subcontractor** who is not in compliance with the requirements of E.O. 50 and the rules and regulations promulgated thereunder.

36.5 The **Contractor** specifically agrees, as required by Section 6-123 of the Administrative Code, that:

36.5.1 The **Contractor** will not engage in any unlawful discriminatory practice in violation of Title 8 of the Administrative Code; and

36.5.2 Any failure to comply with this Article 36.5 may subject the **Contractor** to the remedies set forth in Section 6-123 of the Administrative Code, including, where appropriate, sanctions such as withholding of payment, imposition of an employment program, finding the **Contractor** to be in default, cancellation of the **Contract**, or any other sanction or remedy provided by **Law** or **Contract**.

ARTICLE 37. LABOR LAW REQUIREMENTS

37.1 The **Contractor** shall strictly comply with all applicable provisions of the Labor Law, as amended. Such compliance is a material term of this **Contract**.

37.2 The **Contractor** specifically agrees, as required by Labor Law Sections 220 and 220-d, as amended, that:

37.2.1 Hours of **Work**: No laborer, worker, or mechanic in the employ of the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by this **Contract** shall be permitted or required to work more than eight (8) hours in any one (1) **Day**, or more than five (5) **Days** in any one (1) week, except as provided in the Labor Law and in cases of extraordinary emergency including fire, flood, or danger to life or property, or in the case of national emergency when so proclaimed by the President of the United States of America.

37.2.2 In situations in which there are not sufficient laborers, workers, and mechanics who may be employed to carry on expeditiously the **Work** contemplated by this **Contract** as a result of such restrictions upon the number of hours and **Days** of labor, and the immediate commencement or prosecution or completion without undue delay of the **Work** is necessary for the preservation of the **Site** and/or for the protection of the life and limb of the persons using the same, such laborers, workers, and mechanics shall be permitted or required to work more than eight (8) hours in any one (1) **Day**; or five (5) **Days** in any one (1) week; provided, however, that upon application of any **Contractor**, the **Commissioner** shall have first certified to the Commissioner of Labor of the State of New York (hereinafter "Commissioner of Labor") that such public **Work** is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public; and provided, further, that such Commissioner of Labor shall have determined that such an emergency does in fact exist as provided in Labor Law Section 220.2.

37.2.3 Failure of the **Commissioner** to make such a certification to the Commissioner of Labor shall not entitle the **Contractor** to damages for delay or for any cause whatsoever.

37.2.4 Prevailing Rate of Wages: The wages to be paid for a legal day's **Work** to laborers, workers, or mechanics employed upon the **Work** contemplated by this **Contract** or upon any materials to be used thereon shall not be less than the "prevailing rate of wage" as defined in Labor Law Section 220, and as fixed by the **Comptroller** in the attached Schedule of Wage Rates and in updated schedules thereof. The prevailing wage rates and supplemental benefits to be paid are those in effect at the time the **Work** is being performed.

37.2.5 Requests for interpretation or correction in the Information for Bidders includes all requests for clarification of the classification of trades to be employed in the performance of the **Work** under this **Contract**. In the event that a trade not listed in the **Contract** is in fact employed during the performance of this **Contract**, the **Contractor** shall be required to obtain from the **Agency** the prevailing wage rates and supplementary benefits for the trades used and to complete the performance of this **Contract** at the price at which the **Contract** was awarded.

37.2.6 Minimum Wages: Except for employees whose wage is required to be fixed pursuant to Labor Law Section 220, all persons employed by the **Contractor** and any **Subcontractor** in the manufacture or furnishing of the supplies, materials, or equipment, or the furnishing of work, labor, or services, used in the performance of this **Contract**, shall be paid, without subsequent deduction or rebate unless expressly authorized by **Law**, not less than the sum mandated by **Law**.

37.3 Working Conditions: No part of the **Work**, labor or services shall be performed or rendered by the **Contractor** in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this **Contract**. Compliance with the safety, sanitary, and factory inspection **Laws** of the state in which the **Work** is to be performed shall be prima facie evidence of compliance with this Article 37.3.

37.4 Prevailing Wage Enforcement: The **Contractor** agrees to pay for all costs incurred by the **City** in enforcing prevailing wage requirements, including the cost of any investigation conducted by or on behalf of the **Agency** or the **Comptroller**, where the **City** discovers a failure to comply with any of the requirements of this Article 37 by the **Contractor** or its **Subcontractor(s)**. The **Contractor** also agrees that, should it fail or refuse to pay for any such investigation, the **Agency** is hereby authorized to deduct from a **Contractor's** account an amount equal to the cost of such investigation.

37.4.1 The Labor Law Section 220 and Section 220-d, as amended, provide that this **Contract** shall be forfeited and no sum paid for any **Work** done hereunder on a second conviction for willfully paying less than:

37.4.1(a) The stipulated prevailing wage scale as provided in Labor Law section 220, as amended, or

37.4.1(b) The stipulated minimum hourly wage scale as provided in Labor Law section 220-d, as amended.

37.4.2 For any breach or violation of either working conditions (Article 37.3) or minimum wages (Article 37.2.6) provisions, the party responsible therefor shall be liable to the **City** for liquidated damages, which may be withheld from any amounts due on any contracts with the **City** of such party responsible, or may be recovered in actions brought by the **City**

Corporation Counsel in the name of the **City**, in addition to damages for any other breach of this **Contract**, for a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of this **Contract**. In addition, the **Commissioner** shall have the right to cancel contracts and enter into other contracts for the completion of the original contract, with or without public letting, and the original **Contractor** shall be liable for any additional cost. All sums withheld or recovered as deductions, rebates, refunds, or underpayment of wages hereunder, shall be held in a special deposit account and shall be paid without interest, on order of the **Comptroller**, directly to the employees who have been paid less than minimum rates of pay as set forth herein and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within two (2) years from the date of actual notice to the **Contractor** of the withholding or recovery of such sums by the **City**.

37.4.3 A determination by the **Comptroller** that a **Contractor** and/or its **Subcontractor** willfully violated Labor Law Section 220 will be forwarded to the **City's** five District Attorneys for review.

37.4.4 The **Contractor's** or **Subcontractor's** noncompliance with this Article 37.4 and Labor Law Section 220 may result in an unsatisfactory performance evaluation and the **Comptroller** may also find and determine that the **Contractor** or **Subcontractor** willfully violated the New York Labor **Law**.

37.4.4(a) An unsatisfactory performance evaluation for noncompliance with this Article 37.4 may result in a determination that the **Contractor** is a non-responsible bidder on subsequent procurements with the **City** and thus a rejection of a future award of a contract with the **City**, as well as any other sanctions provided for by **Law**.

37.4.4(b) Labor Law Section 220-b, as amended, provides that when two (2) final determinations have been rendered against a **Contractor** or **Subcontractor** within any consecutive six (6) year period determining that such **Contractor** or **Subcontractor** has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with the Labor Law and this Article 37.4, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public works projects are rendered simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the second final determination. If the final determination involves the falsification of payroll records or the kickback of wages or supplements, the **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the first final determination.

37.4.4(c) Labor Law Section 220, as amended, provides that the **Contractor** or **Subcontractor** found to have violated this Article 37.4 may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

37.5 The **Contractor** and its **Subcontractors** shall within ten (10) **Days** after mailing of a Notice of Award or written order, post in prominent and conspicuous places in each and every plant, factory, building, and structure where employees of the **Contractor** and its **Subcontractors** engaged in the

performance of this **Contract** are employed, notices furnished by the **City**, in relation to prevailing wages and supplements, minimum wages, and other stipulations contained in Sections 220 and 220-h of the Labor Law, and the **Contractor** and its **Subcontractors** shall continue to keep such notices posted in such prominent and conspicuous places until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services required to be furnished or rendered under this **Contract**.

37.6 The **Contractor** shall strictly comply with all of the provisions of Articles 37.6.1 through 37.6.5, and provide for all workers, laborers or mechanics in its employ, the following:

37.6.1 Notices Posted At **Site**: Post, in a location designated by the **City**, schedules of prevailing wages and supplements for this **Project**, a copy of all re-determinations of such schedules for the **Project**, the Workers' Compensation **Law** Section 51 notice, all other notices required by **Law** to be posted at the **Site**, the **City** notice that this **Project** is a public works project on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the **City** directs the **Contractor** to post. The **Contractor** shall provide a surface for such notices which is satisfactory to the **City**. The **Contractor** shall maintain and keep current such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The **Contractor** shall post such notices before commencing any **Work** on the **Site** and shall maintain such notices until all **Work** on the **Site** is complete; and

37.6.2 Daily **Site** Sign-in Sheets: Maintain daily **Site** sign-in sheets, and require that **Subcontractors** maintain daily **Site** sign-in sheets for its employees, which include blank spaces for an employee's name to be both printed and signed, job title, date started and Social Security number, the time the employee began work and the time the employee left work, until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services to be furnished or rendered under this **Contract** unless exception is granted by the **Comptroller** upon application by the **Agency**. In the alternative, subject to the approval of the **CCPO**, the **Contractor** and **Subcontractor** may maintain an electronic or biometric sign-in system, which provides the information required by this Article 37.6.2; and

37.6.3 Individual Employee Information Notices: Distribute a notice to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public works project on which each worker, laborer or mechanic is entitled to receive the prevailing rate of wages and supplements for the occupation at which he or she is working. If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand (\$250,000) dollars, such notice shall also include a statement that each worker, laborer or mechanic must be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration. Such notice shall be distributed to each worker before he or she starts performing any **Work** of this **Contract** and with the first paycheck after July first of each year. "Worker, laborer or mechanic" includes employees of the **Contractor** and all **Subcontractors** and all employees of suppliers entering the **Site**. At the time of distribution, the **Contractor** shall have each worker, laborer or mechanic sign a statement, in a form provided by the **Agency**, certifying that the worker has received the notice required by this Article 37.6.3, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3(a) The **Contractor** and each **Subcontractor** shall notify each worker, laborer or mechanic employed under this **Contract** in writing of the prevailing rate of

wages for their particular job classification. Such notification shall be given to every worker, laborer, and mechanic on their first pay stub and with every pay stub thereafter; and

37.6.4 **Site Laminated Identification Badges:** The **Contractor** shall provide laminated identification badges which include a photograph of the worker's, laborer's or mechanic's face and indicate the worker's, laborer's or mechanic's name, trade, employer's name, and employment starting date (month/day/year). Further, the **Contractor** shall require as a condition of employment on the **Site**, that each and every worker, laborer or mechanic wear the laminated identification badge at all times and that it may be seen by any representative of the **City**. The **Commissioner** may grant a written waiver from the requirement that the laminated identification badge include a photograph if the **Contractor** demonstrates that the identity of an individual wearing a laminated identification badge can be easily verified by another method; and

37.6.5 **Language Other Than English Used On Site:** Provide the **ACCO** notice when three (3) or more employees (worker and/or laborer and/or mechanic) on the **Site**, at any time, speak a language other than English. The **ACCO** will then provide the **Contractor** the notices described in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under this Article 37; and

37.6.6 **Provision of Records:** The **Contractor** and **Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller**, such records as are required to be kept by this Article 37.6; and

37.6.7 The **Contractor** and **Subcontractor(s)** shall pay employees by check or direct deposit. If this **Contract** is for an amount greater than one million (\$1,000,000) dollars, checks issued by the **Contractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**). For any subcontract for an amount greater than seven hundred fifty thousand (\$750,000) dollars, checks issued by a **Subcontractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**); and

37.6.8 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 37.6.1 through 37.6.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

37.7 The **Contractor** and its **Subcontractors** shall keep such employment and payroll records as are required by Section 220 of the Labor Law. The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of this Article 37.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

37.8 At the time the **Contractor** makes application for each partial payment and for final payment, the **Contractor** shall submit to the **Commissioner** a written payroll certification, in the form provided by this **Contract**, of compliance with the prevailing wage, minimum wage, and other provisions and stipulations required by Labor Law Section 220 and of compliance with the training requirements of Labor Law Section 220-h set forth in Article 35.2. This certification of compliance shall be a condition precedent to payment and no payment shall be made to the **Contractor** unless and until each such certification shall have been submitted to and received by the **Commissioner**.

37.9 This **Contract** is executed by the **Contractor** with the express warranty and representation that the **Contractor** is not disqualified under the provisions of Section 220 of the Labor Law from the award of the **Contract**.

37.10 Any breach or violation of any of the foregoing shall be deemed a breach or violation of a material provision of this **Contract**, and grounds for cancellation thereof by the **City**.

ARTICLE 38. PAYROLL REPORTS

38.1 The **Contractor** and its **Subcontractor(s)** shall maintain on the **Site** during the performance of the **Work** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain and shall submit such original payrolls or transcripts, subscribed and affirmed by it as true, within thirty (30) **Days** after issuance of its first payroll, and every thirty (30) **Days** thereafter, pursuant to Labor Law Section 220(3-a)(a)(iii). The **Contractor** and **Subcontractor(s)** shall submit such original payrolls or transcripts along with each and every payment requisition. If payment requisitions are not submitted at least once a month, the **Contractor** and its **Subcontractor(s)** shall submit original payrolls and transcripts both along with its payment requisitions and independently of its payment requisitions.

38.2 The **Contractor** shall maintain payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract**. If such payrolls and transcripts are maintained outside of New York City after the completion of the **Work** and their production is required pursuant to this Article 38, the **Contractor** shall produce such records in New York City upon request by the **City**.

38.3 The **Contractor** and **Subcontractor(s)** shall comply with any written order, direction, or request made by the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)**, or the **Comptroller**, to provide to the requesting party any of the following information and/or records within five (5) **Days** of such written order, direction, or request:

38.3.1 Such original payrolls or transcripts thereof subscribed and affirmed by it as true and the statements signed by each worker pursuant to this Chapter VIII; and/or

38.3.2 Attendance sheets for each **Day** on which any employee of the **Contractor** and/or any of the **Subcontractor(s)** performed **Work** on the **Site**, which attendance sheet shall be in a form acceptable to the **Agency** and shall provide information acceptable to the **Agency** to identify each such employee; and/or

38.3.3 Any other information to satisfy the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)** or the **Comptroller**, that this Chapter VIII and the Labor Law, as to the hours of employment and prevailing rates of wages and/or supplemental benefits, are being observed.

38.4 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 38.1 and/or 38.2 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

ARTICLE 39. DUST HAZARDS

39.1 Should a harmful dust hazard be created in performing the **Work** of this **Contract**, for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals

of the City of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this **Contract** voidable at the sole discretion of the **City**.

CHAPTER IX: PARTIAL AND FINAL PAYMENTS

ARTICLE 40. CONTRACT PRICE

40.1 The **City** shall pay, and the **Contractor** agrees to accept, in full consideration for the **Contractor's** performance of the **Work** subject to the terms and conditions hereof, the lump sum price or unit prices for which this **Contract** was awarded, plus the amount required to be paid for any **Extra Work** ordered by the **Commissioner** under Article 25, less credit for any **Work** omitted pursuant to Article 29.

ARTICLE 41. BID BREAKDOWN ON LUMP SUM

41.1 Within fifteen (15) **Days** after the commencement date specified in the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Resident Engineer**, the **Contractor** shall submit to the **Resident Engineer** a breakdown of its bid price, or of lump sums bid for items of the **Contract**, showing the various operations to be performed under the **Contract**, as directed in the progress schedule required under Article 9, and the value of each of such operations, the total of such items to equal the lump sum price bid. Said breakdown must be approved in writing by the **Resident Engineer**.

41.2 No partial payment will be approved until the **Contractor** submits a bid breakdown that is acceptable to the **Resident Engineer**.

41.3 The **Contractor** shall also submit such other information relating to the bid breakdown as directed by the **Resident Engineer**. Thereafter, the breakdown may be used only for checking the **Contractor's** applications for partial payments hereunder, but shall not be binding upon the **City**, the **Commissioner**, or the **Engineer** for any purpose whatsoever.

ARTICLE 42. PARTIAL PAYMENTS

42.1 From time to time as the **Work** progresses satisfactorily, but not more often than once each calendar month (except where the **Commissioner** approves in writing the submission of invoices on a more frequent basis and for invoices relating to **Work** performed pursuant to a change order), the **Contractor** may submit to the **Engineer** a requisition for a partial payment in the prescribed form, which shall contain an estimate of the quantity and the fair value of the **Work** done during the payment period.

42.2 Partial payments may be made for materials, fixtures, and equipment in advance of their actual incorporation in the **Work**, as the **Commissioner** may approve, and upon the terms and conditions set forth in the General Conditions.

42.3 The **Contractor** shall also submit to the **Commissioner** in connection with every application for partial payment a verified statement in the form prescribed by the **Comptroller** setting forth the information required under Labor Law Section 220-a.

42.4 Within thirty (30) **Days** after receipt of a satisfactory payment application, and within sixty (60) **Days** after receipt of a satisfactory payment application in relation to **Work** performed pursuant to a change order, the **Engineer** will prepare and certify, and the **Commissioner** will approve, a voucher for a partial payment in the amount of such approved estimate, less any and all deductions authorized to be made by the **Commissioner** under the terms of this **Contract** or by **Law**.

ARTICLE 43. PROMPT PAYMENT

43.1 The Prompt Payment provisions of the **PPB** Rules in effect at the time of the bid will be applicable to payments made under this **Contract**. The provisions require the payment to the **Contractor** of interest on payments made after the required payment date, except as set forth in the **PPB** Rules.

43.2 The **Contractor** shall submit a proper invoice to receive payment, except where the **Contract** provides that the **Contractor** will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

43.3 Determination of interest due will be made in accordance with the **PPB** Rules.

43.4 If the **Contractor** is paid interest, the proportionate share(s) of that interest shall be forwarded by the **Contractor** to its **Subcontractor(s)**.

43.5 The **Contractor** shall pay each **Subcontractor** or **Materialman** not later than seven (7) **Days** after receipt of payment out of amounts paid to the **Contractor** by the **City** for **Work** performed by the **Subcontractor** or **Materialman** under this **Contract**.

43.5.1 If **Contractor** fails to make any payment to any **Subcontractor** or **Materialman** within seven (7) **Days** after receipt of payment by the **City** pursuant to this Article 43.5, then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at the rate of interest in effect on the date such payment is made by the **Contractor** computed in accordance with Section 756-b (1)(b) of the New York General Business Law. Accrual of interest shall commence on the **Day** immediately following the expiration of the seventh **Day** following receipt of payment by the **Contractor** from the **City** and shall end on the date on which payment is made.

43.6 The **Contractor** shall include in each of its subcontracts a provision requiring each **Subcontractor** to make payment to each of its **Subcontractors** or **Materialmen** for **Work** performed under this **Contract** in the same manner and within the same time period set forth above.

ARTICLE 44. SUBSTANTIAL COMPLETION PAYMENT

44.1 The **Contractor** shall submit with the **Substantial Completion** requisition:

44.1.1 A final verified statement of any pending Article 27 disputes in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the

Contractor claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay.

44.1.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City Corporation Counsel** shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 44.1.1(a) is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor** upon acceptance of the **Substantial Completion** payment pursuant to this Article 44, will have waived any such claims.

44.1.2 **A Final Approved Punch List.**

44.1.3 Where required, a request for an extension of time to achieve **Substantial Completion** or final extension of time.

44.2 The **Commissioner** shall issue a voucher calling for payment of any part or all of the balance due for **Work** performed under the **Contract**, including monies retained under Article 21, less any and all deductions authorized to be made by the **Commissioner**, under this **Contract** or by **Law**, and less twice the amount the **Commissioner** considers necessary to ensure the completion of the balance of the **Work** by the **Contractor**. Such a payment shall be considered a partial and not a final payment. No **Substantial Completion** payment shall be made under this Article 44 where the **Contractor** failed to complete the **Work** within the time fixed for such completion in the Schedule A of the General Conditions, or within the time to which completion may have been extended, until an extension or extensions of time for the completion of **Work** have been acted upon pursuant to Article 13.

44.3 No further partial payments shall be made to the **Contractor** after **Substantial Completion**, except the **Substantial Completion** payment and payment pursuant to any **Contractor's** requisition that were properly filed with the **Commissioner** prior to the date of **Substantial Completion**; however, the **Commissioner** may grant a waiver for further partial payments after the date of **Substantial Completion** to permit payments for change order **Work** and/or release of retainage and deposits pursuant to Articles 21 and 24. Such waiver shall be in writing.

44.4 The **Contractor** acknowledges that nothing contained in this Article 44 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 45. FINAL PAYMENT

45.1 After completion and **Final Acceptance** of the **Work**, the **Contractor** shall submit all required certificates and documents, together with a requisition for the balance claimed to be due under the **Contract**, less the amount authorized to be retained for maintenance under Article 24. Such submission shall be within 90 days of the date of the **Commissioner's** written determination of **Final Acceptance**, or within such additional time as may be granted by the **Commissioner** in writing. If the **Contractor** fails to submit all required certificates and documents within the time allowed, no payment of the balance claimed shall be made to the **Contractor** and the **Contractor** shall be deemed to have forfeited its right to payment of any balance claimed. A verified statement similar to that required in connection with applications for partial payments shall also be submitted to the **Commissioner**.

45.2 Amended Verified Statement of Claims: The **Contractor** shall also submit with the final requisition any amendments to the final verified statement of any pending dispute resolution procedures in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) that have occurred subsequent to **Substantial Completion**, setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each such item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay. With reference to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 45.2, is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor**, upon acceptance of the Final Payment pursuant to Article 46, will have waived any such claims.

45.3 Preparation of Final Voucher: Upon determining the balance due hereunder other than on account of claims, the **Engineer** will prepare and certify, for the Commissioner's approval, a voucher for final payment in that amount less any and all deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**. In the case of a lump sum **Contract**, the **Commissioner** shall certify the voucher for final payment within thirty (30) **Days** from the date of completion and acceptance of the **Work**, provided all requests for extensions of time have been acted upon.

45.3.1 All prior certificates and vouchers upon which partial payments were made, being merely estimates made to enable the **Contractor** to prosecute the **Work** more advantageously, shall be subject to correction in the final voucher, and the certification of the **Engineer** thereon and the approval of the **Commissioner** thereof, shall be conditions precedent to the right of the **Contractor** to receive any money hereunder. Such final voucher shall be binding and conclusive upon the **Contractor**.

45.3.2 Payment pursuant to such final voucher, less any deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**, shall constitute the final payment, and shall be made by the **Comptroller** within thirty (30) **Days** after the filing of such voucher in his/her office.

45.4 The **Contractor** acknowledges that nothing contained in this Article 45 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 46. ACCEPTANCE OF FINAL PAYMENT

46.1 The acceptance by the **Contractor**, or by anyone claiming by or through it, of the final payment, whether such payment be made pursuant to any judgment of any court, or otherwise, shall constitute and operate as a release of the **City** from any and all claims of and liability to the **Contractor** for anything heretofore done or furnished for the **Contractor** relating to or arising out of this **Contract** and the **Work** done hereunder, and for any prior act, neglect or default on the part of the **City** or any of its officials, agents or employees, excepting only a claim against the **City** for the amounts deducted or retained in accordance with the terms and provisions of this **Contract** or by **Law**, and excepting any claims, not otherwise waived, or any pending dispute resolution procedures which are contained in the

verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45.

46.2 The **Contractor** is warned that the execution by it of a release, in connection with the acceptance of the final payment, containing language purporting to reserve claims other than those herein specifically excepted from the operation of this Article 46, or those for amounts deducted by the **Commissioner** from the final requisition or from the final payment as certified by the **Engineer** and approved by the **Commissioner**, shall not be effective to reserve such claims, anything stated to the **Contractor** orally or in writing by any official, agent or employee of the **City** to the contrary notwithstanding.

46.3 Should the **Contractor** refuse to accept the final payment as tendered by the **Comptroller**, it shall constitute a waiver of any right to interest thereon.

46.4 The **Contractor**, however, shall not be barred by this Article 46 from commencing an action for breach of **Contract** to the extent permitted by **Law** and by the terms of the **Contract** for any claims that are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45 or that arose after submission of the final payment requisition, provided that a detailed and verified statement of claim is served upon the contracting **Agency** and **Comptroller** not later than forty (40) **Days** after the making of such final payment by electronic funds transfer (EFT) or the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items.

ARTICLE 47. APPROVAL BY PUBLIC DESIGN COMMISSION

47.1 All works of art, including paintings, mural decorations, stained glass, statues, bas-reliefs, and other sculptures, monuments, fountains, arches, and other structures of a permanent character intended for ornament or commemoration, and every design of the same to be used in the performance of this **Contract**, and the design of all bridges, approaches, buildings, gates, fences, lamps, or structures to be erected, pursuant to the terms of this **Contract**, shall be submitted to the Art Commission, d/b/a the Public Design Commission of the City of New York, and shall be approved by the Public Design Commission prior to the erection or placing in position of the same. The final payment shall not become due or payable under this **Contract** unless and until the Public Design Commission shall certify that the design for the **Work** herein contracted for has been approved by the said Public Design Commission, and that the same has been executed in substantial accordance with the design so approved, pursuant to the provisions of Chapter 37, Section 854 of the **City** Charter, as amended.

CHAPTER X: CONTRACTOR'S DEFAULT

ARTICLE 48. COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT

48.1 In addition to those instances specifically referred to in other Articles herein, the **Commissioner** shall have the right to declare the **Contractor** in default of this **Contract** if:

48.1.1 The **Contractor** fails to commence **Work** when notified to do so by the **Commissioner**; or if

48.1.2 The **Contractor** shall abandon the **Work**; or if

48.1.3 The **Contractor** shall refuse to proceed with the **Work** when and as directed by the **Commissioner**; or if

48.1.4 The **Contractor** shall, without just cause, reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the **Commissioner**, to complete the **Work** in accordance with the progress schedule; or if

48.1.5 The **Contractor** shall fail or refuse to increase sufficiently such working force when ordered to do so by the **Commissioner**; or if

48.1.6 The **Contractor** shall sublet, assign, transfer, convert or otherwise dispose of this **Contract** other than as herein specified; or sell or assign a majority interest in the **Contractor**; or if

48.1.7 The **Contractor** fails to secure and maintain all required insurance; or if

48.1.8 A receiver or receivers are appointed to take charge of the **Contractor's** property or affairs; or if

48.1.9 The **Commissioner** shall be of the opinion that the **Contractor** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the **Work**, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

48.1.10 The **Commissioner** shall be of the opinion that the **Contractor** is or has been willfully or in bad faith violating any of the provisions of this **Contract**; or if

48.1.11 The **Commissioner** shall be of the opinion that the **Work** cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the **Commissioner's** opinion, attributable to conditions within the **Contractor's** control; or if

48.1.12 The **Work** is not completed within the time herein provided therefor or within the time to which the **Contractor** may be entitled to have such completion extended; or if

48.1.13 Any statement or representation of the **Contractor** in the **Contract** or in any document submitted by the **Contractor** with respect to the **Work**, the **Project**, or the **Contract** (or for purposes of securing the **Contract**) was untrue or incorrect when made; or if

48.1.14 The **Contractor** or any of its officers, directors, partners, five (5%) percent shareholders, principals, or other persons substantially involved in its activities, commits any of the acts or omissions specified as the grounds for debarment in the **PPB Rules**.

48.2 Before the **Commissioner** shall exercise his/her right to declare the **Contractor** in default, the **Commissioner** shall give the **Contractor** an opportunity to be heard, upon not less than two (2) **Days'** notice.

ARTICLE 49. EXERCISE OF THE RIGHT TO DECLARE DEFAULT

49.1 The right to declare the **Contractor** in default for any of the grounds specified or referred to in Article 48 shall be exercised by sending the **Contractor** a notice, signed by the **Commissioner**, setting forth the ground or grounds upon which such default is declared (hereinafter referred to as a “Notice of Default”).

49.2 The **Commissioner’s** determination that the **Contractor** is in default shall be conclusive, final, and binding on the parties and such a finding shall preclude the **Contractor** from commencing a plenary action for any damages relating to the **Contract**. If the **Contractor** protests the determination of the **Commissioner**, the **Contractor** may commence an action in a court of competent jurisdiction of the State of New York under Article 78 of the New York Civil Practice Law and Rules.

ARTICLE 50. QUITTING THE SITE

50.1 Upon receipt of such notice the **Contractor** shall immediately discontinue all further operations under this **Contract** and shall immediately quit the **Site**, leaving untouched all plant, materials, equipment, tools, and supplies then on the **Site**.

ARTICLE 51. COMPLETION OF THE WORK

51.1 The **Commissioner**, after declaring the **Contractor** in default, may then have the **Work** completed by such means and in such manner, by contract with or without public letting, or otherwise, as he/she may deem advisable, utilizing for such purpose such of the **Contractor’s** plant, materials, equipment, tools, and supplies remaining on the **Site**, and also such **Subcontractors**, as he/she may deem advisable.

51.2 After such completion, the **Commissioner** shall make a certificate stating the expense incurred in such completion, which shall include the cost of re-letting and also the total amount of liquidated damages (at the rate provided for in the **Contract**) from the date when the **Work** should have been completed by the **Contractor** in accordance with the terms hereof to the date of actual completion of the **Work**. Such certificate shall be binding and conclusive upon the **Contractor**, its sureties, and any person claiming under the **Contractor**, as to the amount thereof.

51.3 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, and any liquidated damages assessed against the **Contractor**, shall be charged against and deducted out of monies which are earned by the **Contractor** prior to the date of default. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

ARTICLE 52. PARTIAL DEFAULT

52.1 In case the **Commissioner** shall declare the **Contractor** in default as to a part of the **Work** only, the **Contractor** shall discontinue such part, shall continue performing the remainder of the **Work** in strict conformity with the terms of this **Contract**, and shall in no way hinder or interfere with any **Other Contractor(s)** or persons whom the **Commissioner** may engage to complete the **Work** as to which the **Contractor** was declared in default.

52.2 The provisions of this Chapter relating to declaring the **Contractor** in default as to the entire **Work** shall be equally applicable to a declaration of partial default, except that the **Commissioner** shall be entitled to utilize for completion of the part of the **Work** as to which the **Contractor** was declared in default only such plant, materials, equipment, tools, and supplies as had been previously used by the **Contractor** on such part.

ARTICLE 53. PERFORMANCE OF UNCOMPLETED WORK

53.1 In completing the whole or any part of the **Work** under the provisions of this Chapter X, the **Commissioner** shall have the power to depart from or change or vary the terms and provisions of this **Contract**, provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the **Commissioner's** certificate of the cost of completion referred to in Article 51, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the **Contractor** hereunder but for its default.

ARTICLE 54. OTHER REMEDIES

54.1 In addition to the right to declare the **Contractor** in default pursuant to this Chapter X, the **Commissioner** shall have the absolute right, in his/her sole discretion and without a hearing, to complete or cause to be completed in the same manner as described in Articles 51 and 53, any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List**. A written notice of the exercise of this right shall be sent to the **Contractor** who shall immediately quit the **Site** in accordance with the provisions of Article 50.

54.2 The expense of completion permitted under Article 54.1, including any and all related and incidental costs, as so certified by the **Commissioner**, shall be charged against and deducted out of monies which have been earned by the **Contractor** prior to the date of the exercise of the right set forth in Article 54.1; the balance of such monies, if any, subject to the other provisions of this **Contract**, to be paid to the **Contractor** without interest after such completion. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

54.3 The previous provisions of this Chapter X shall be in addition to any and all other remedies available under **Law** or in equity.

54.4 The exercise by the **City** of any remedy set forth herein shall not be deemed a waiver by the **City** of any other legal or equitable remedy contained in this **Contract** or provided under **Law**.

CHAPTER XI: MISCELLANEOUS PROVISIONS

ARTICLE 55. CONTRACTOR'S WARRANTIES

55.1 In consideration of, and to induce, the award of this **Contract** to the **Contractor**, the **Contractor** represents and warrants:

55.1.1 That it is financially solvent, sufficiently experienced and competent to perform the **Work**; and

55.1.2 That the facts stated in its bid and the information given by it pursuant to the Information for Bidders is true and correct in all respects; and

55.1.3 That it has read and complied with all requirements set forth in the **Contract**.

ARTICLE 56. CLAIMS AND ACTIONS THEREON

56.1 Any claim, that is not subject to dispute resolution under the **PPB** Rules or this **Contract**, against the **City** for damages for breach of **Contract** shall not be made or asserted in any action, unless the **Contractor** shall have strictly complied with all requirements relating to the giving of notice and of information with respect to such claims, as herein before provided.

56.2 Nor shall any action be instituted or maintained on any such claims unless such action is commenced within six (6) months after **Substantial Completion**; except that:

56.2.1 Any claims arising out of events occurring after **Substantial Completion** and before **Final Acceptance** of the **Work** shall be asserted within six (6) months of **Final Acceptance** of the **Work**;

56.2.2 If the **Commissioner** exercises his/her right to complete or cause to complete any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List** pursuant to Article 54, any such action shall be commenced within six (6) months from the date the **Commissioner** notifies the **Contractor** in writing that he/she has exercised such right. Any claims for monies deducted, retained or withheld under the provisions of this **Contract** shall be asserted within six (6) months after the date when such monies otherwise become due and payable hereunder; and

56.2.3 If the **Commissioner** exercises his/her right to terminate the **Contract** pursuant to Article 64, any such action shall be commenced within six (6) months of the date the **Commissioner** exercises said right.

ARTICLE 57. INFRINGEMENT

57.1 The **Contractor** shall be solely responsible for and shall defend, indemnify, and hold the **City** harmless from any and all claims (even if the allegations of the lawsuit are without merit) and judgments for damages and from costs and expenses to which the **City** may be subject to or which it may suffer or incur allegedly arising out of or in connection with any infringement by the **Contractor** of any copyright, trade secrets, trademark or patent rights or any other property or personal right of any third party by the **Contractor** and/or its **Subcontractors** in the performance or completion of the **Work**. Insofar as the facts or **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent permitted by **Law**.

ARTICLE 58. NO CLAIM AGAINST OFFICIALS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any official, agent or employee of the **City** for, or on account of, anything done or omitted to be done in connection with this **Contract**.

ARTICLE 59. SERVICE OF NOTICES

59.1 The **Contractor** hereby designates the business address, fax number, and email address specified in its bid, as the place where all notices, directions or other communications to the **Contractor** may be delivered, or to which they may be mailed. Any notice, direction, or communication from either party to the other shall be in writing and shall be deemed to have been given when (i) delivered personally; (ii) sent by certified mail, return receipt requested; (iii) delivered by overnight or same day courier service in a properly addressed envelope with confirmation; or (iv) sent by fax or email and, unless receipt of the fax or e-mail is acknowledged by the recipient by fax or e-mail, deposited in a post office box regularly maintained by the United States Postal Service in a properly addressed, postage pre-paid envelope.

59.2 **Contractor's** notice address, email address, or fax number may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor**, and delivered to the **Commissioner**.

59.3 Nothing herein contained shall, however, be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the **Contractor** personally, or, if the **Contractor** is a corporation, upon any officer thereof.

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

60.1 If this **Contract** contains any unlawful provision not an essential part of the **Contract** and which shall not appear to have been a controlling or material inducement to the making thereof, the same shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the **Contract** without affecting the binding force of the remainder.

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

61.1 It is the intent and understanding of the parties to this **Contract** that each and every provision of **Law** required to be inserted in this **Contract** shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted, or is not inserted in correct form, then this **Contract** shall forthwith upon the application of either party be amended by such insertion so as to comply strictly with the **Law** and without prejudice to the rights of either party hereunder.

ARTICLE 62. TAX EXEMPTION

62.1 The **City** is exempt from payment of Federal, State, and local taxes, including sales and compensating use taxes of the State of New York and its cities and counties on all tangible personal property sold to the **City** pursuant to the provisions of this **Contract**. These taxes are not to be included in bids. However, this exemption does not apply to tools, machinery, equipment or other property leased by or to the **Contractor**, **Subcontractor** or **Materialman** or to tangible personal property which, even

though it is consumed, is not incorporated into the completed **Work** (consumable supplies) and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**. The **Contractor** and its **Subcontractors** and **Materialmen** shall be responsible for and pay any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property and upon all such consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all tangible personal property, other than consumable supplies and other tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**, that is required, necessary or proper for or incidental to the construction of the **Project** covered by this **Contract**. The sum paid under this **Contract** for such tangible personal property shall be in full payment and consideration for the sale of such tangible personal property.

62.2.1 The **Contractor** agrees to construct the **Project** and to perform all **Work**, labor and services rendered, necessary, proper or incidental thereto for the sum shown in the bid for the performance of such **Work**, labor, and services, and the sum so paid pursuant to this **Contract** for such **Work**, labor, and services, shall be in full consideration for the performance by the **Contractor** of all its duties and obligations under this **Contract** in connection with said **Work**, labor, and services.

62.3 20 NYCRR Section 541.3(d) provides that a **Contractor's** purchases of tangible personal property that is either incorporated into real property owned by a governmental entity or purchased for and sold to a governmental entity are exempt from sales and use tax. The **City** shall not pay sales tax for any such tangible personal property that it purchases from the **Contractor** pursuant to the **Contract**. With respect to such tangible personal property, the **Contractor**, at the request of the **City**, shall furnish to the **City** such bills of sale and other instruments as may be required by the **City**, properly executed, acknowledged and delivered assuring to the **City** title to such tangible personal property, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such tangible personal property as the property of the **City**.

62.4 Title to all tangible personal property to be sold by the **Contractor** to the **City** pursuant to the provisions of the **Contract** shall immediately vest in and become the sole property of the **City** upon delivery of such tangible personal property to the **Site**. Notwithstanding such transfer of title, the **Contractor** shall have the full and continuing responsibility to install such tangible personal property in accordance with the provisions of this **Contract**, protect it, maintain it in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional tangible personal property in place of any that may be lost, stolen or rendered unusable, without cost to the **City**, until such time as the **Work** covered by the **Contract** is fully accepted by the **City**. Such transfer of title shall in no way affect any of the **Contractor's** obligations hereunder. In the event that, after title has passed to the **City**, any of the tangible personal property is rejected as being defective or otherwise unsatisfactory, title to all such tangible personal property shall be deemed to have been transferred back to the **Contractor**.

62.5 The purchase by **Subcontractors** or **Materialmen** of tangible personal property to be sold hereunder shall be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid sales and compensating use taxes, provided that the subcontracts and purchase agreements provide for the resale of such tangible personal property and that such subcontracts and purchase agreements are in a form similar to this **Contract** with respect to the separation of the sale of consumable supplies and tangible personal property that the

Contractor is required to remove from the **Site** during or upon completion of the **Work** from the **Work** and labor, services, and any other matters to be provided, and provided further that the subcontracts and purchase agreements provide separate prices for tangible personal property and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for tangible personal property from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and **Materialmen** shall furnish a **Contractor** Exempt Purchase Certificate to all persons, firms or corporations from which they purchase tangible personal property for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this Article 62 shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this Article 62 shall control.

ARTICLE 63. INVESTIGATION(S) CLAUSE

63.1 The parties to this **Contract** agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a United States, a State of New York (State) or a **City** governmental agency or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental agency that is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit or license that is the subject of the investigation, audit or inquiry.

63.2 If any person who has been advised that his/her statement, and any information from such statement, will not be used against him/her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision or public authority thereof, or the Port Authority of New York and New Jersey, or any local development corporation within the **City**, or any public benefit corporation organized under the **Laws** of the State of New York, or;

63.3 If any person refuses to testify for a reason other than the assertion of his/her privilege against self incrimination in an investigation, audit or inquiry conducted by a **City** or State governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental agency that is a party in interest in, and is seeking testimony concerning the award of, or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision thereof or any local development corporation within the **City**, then;

63.4 The **Commissioner** whose **Agency** is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license shall convene a hearing, upon not less than five (5) **Days**' written notice to the parties involved to determine if any penalties should attach for the failure of a person to testify.

63.5 If any non-governmental party to the hearing requests an adjournment, the **Commissioner** who convened the hearing may, upon granting the adjournment, suspend any contract, lease, permit, or license, pending the final determination pursuant to Article 63.7 without the **City** incurring any penalty or damages for delay or otherwise.

63.6 The penalties which may attach after a final determination by the **Commissioner** may include but shall not exceed:

63.6.1 The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any contract, lease, permit or license with or from the **City**; and/or

63.6.2 The cancellation or termination of any and all such existing **City** contracts, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this **Contract**, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the **City** incurring any penalty or damages on account of such cancellation or termination; monies lawfully due for goods delivered, work done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the **City**.

63.7 The **Commissioner** shall consider and address in reaching his/her determination and in assessing an appropriate penalty the factors in Articles 63.7.1 and 63.7.2. The **Commissioner** may also consider, if relevant and appropriate, the criteria established in Articles 63.7.3 and 63.7.4, in addition to any other information which may be relevant and appropriate:

63.7.1 The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

63.7.2 The relationship of the person who refused to testify to any entity that is a party to the hearing, including but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility the person has within the entity.

63.7.3 The nexus of the testimony sought to the subject entity and its contracts, leases, permits or licenses with the **City**.

63.7.4 The effect a penalty may have on an unaffiliated and unrelated party or entity that has a significant interest in an entity subject to penalties under Article 63.6, provided that the party or entity has given actual notice to the **Commissioner** upon the acquisition of the interest, or at the hearing called for in Article 63.4, gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity shall present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

63.8 Definitions:

63.8.1 The term "license" or "permit" as used in this Article 63 shall be defined as a license, permit, franchise or concession not granted as a matter of right.

63.8.2 The term "person" as used in this Article 63 shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

63.8.3 The term “entity” as used in this Article 63 shall be defined as any firm, partnership, corporation, association, joint venture, or person that receives monies, benefits, licenses, leases, or permits from or through the **City** or otherwise transacts business with the **City**.

63.8.4 The term “member” as used in this Article 63 shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

63.9 In addition to and notwithstanding any other provision of this **Contract**, the **Commissioner** may in his/her sole discretion terminate this **Contract** upon not less than three (3) **Days**’ written notice in the event the **Contractor** fails to promptly report in writing to the **Commissioner** of the Department of Investigations (“DOI”) of the **City** any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the **City** or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this **Contract** by the **Contractor**, or affecting the performance of this **Contract**.

ARTICLE 64. TERMINATION BY THE CITY

64.1 In addition to termination pursuant to any other article of this **Contract**, the **Commissioner** may, at any time, terminate this **Contract** by written notice to the **Contractor**. In the event of termination, the **Contractor** shall, upon receipt of such notice, unless otherwise directed by the **Commissioner**:

64.1.1 Stop **Work** on the date specified in the notice;

64.1.2 Take such action as may be necessary for the protection and preservation of the **City**’s materials and property;

64.1.3 Cancel all cancelable orders for material and equipment;

64.1.4 Assign to the **City** and deliver to the **Site** or another location designated by the **Commissioner**, any non-cancelable orders for material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract** and not incorporated in the **Work**;

64.1.5 Take no action which will increase the amounts payable by the **City** under this **Contract**.

64.2 In the event of termination by the **City** pursuant to this Article 64, payment to the **Contractor** shall be in accordance with Articles 64.2.1, 64.2.2 or 64.2.3, to the extent that each respective article applies.

64.2.1 Lump Sum Contracts or Items: On all lump sum **Contracts**, or on lump sum items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.1(a) and 64.2.1(b), less all payments previously made pursuant to this **Contract**. On lump sum **Contracts** only, the **City** will also pay the **Contractor** an additional sum as provided in Article 64.2.1(c).

64.2.1(a) For **Work** completed prior to the notice of termination, the **Contractor** shall be paid a pro rata portion of the lump sum bid amount, plus approved change orders, based upon the percent completion of the **Work**, as determined by the

Commissioner. For the purpose of determining the pro rata portion of the lump sum bid amount to which the **Contractor** is entitled, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be dispositive. The **Commissioner's** determination hereunder shall be final, binding, and conclusive.

64.2.1(b) For non-cancelable material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated in the **Work**, the **Contractor** shall be paid the lesser of the following, less salvage value:

64.2.1(b)(i) The Direct Cost, as defined in Article 64.2.4; or

64.2.1(b)(ii) The fair and reasonable value, if less than Direct Cost, of such material and equipment, plus necessary and reasonable delivery costs.

64.2.1(b)(iii) In addition, the **Contractor** shall be paid five (5%) percent of the amount described in Article 64.2.1(b)(i) or Article 64.2.1(b)(ii), whichever applies.

64.2.1(c) Except as otherwise provided in Article 64.2.1(d), on all lump sum **Contracts**, the **Contractor** shall be paid the percentage indicated below applied to the difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to Articles 64.2.1(a) and 64.2.1(b):

64.2.1(c)(i) Five (5%) percent of the first five million (\$5,000,000) dollars; and

64.2.1(c)(ii) Three (3%) percent of any amount between five million (\$5,000,000) dollars and fifteen million (\$15,000,000) dollars; plus

64.2.1(c)(iii) One (1%) percent of any amount over fifteen million (\$15,000,000) dollars.

64.2.1(d) In the event the **City** terminates a lump sum **Contract** pursuant to this Article 64 within ninety (90) **Days** after registration of the **Contract** with the **Comptroller**, the **Contractor** shall be paid one (1%) percent of the difference between the lump sum bid amount and the total of all payments made pursuant to this Article 64.2.

64.2.2 Unit Price Contracts or Items: On all unit price **Contracts**, or on unit price items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.2(a) and 64.2.2(b), less all payments previously made pursuant to this **Contract**:

64.2.2(a) For all completed units, the unit price stated in the **Contract**, and

64.2.2(b) For units that have been ordered but are only partially completed, the **Contractor** will be paid:

64.2.2(b)(i) A pro rata portion of the unit price stated in the **Contract** based upon the percent completion of the unit and

64.2.2(b)(ii) For non-cancelable material and equipment, payment will be made pursuant to Article 64.2.1(b).

64.2.3 Time and Materials Contracts or Items Based on Time and Material Records: On all **Contracts** or items in a **Contract** where payment for the **Work** is based on time and material records, the **Contractor** shall be paid in accordance with Article 26, less all payments previously made pursuant to this **Contract**.

64.2.4 Direct Costs: Direct Costs as used in this Article 64.2 shall mean:

64.2.4(a) The actual purchase price of material and equipment, plus necessary and reasonable delivery costs,

64.2.4(b) The actual cost of labor involved in construction and installation at the **Site**, and

64.2.4(c) The actual cost of necessary bonds and insurance purchased pursuant to requirements of this **Contract** less any amounts that have been or should be refunded by the **Contractor's** sureties or insurance carriers.

64.2.4(d) Direct Costs shall not include overhead.

64.3 In no event shall any payments under this Article 64 exceed the **Contract** price for such items.

64.4 All payments pursuant to Article 64 shall be in the nature of liquidated damages and shall be accepted by the **Contractor** in full satisfaction of all claims against the **City**.

64.5 The **City** may deduct or set off against any sums due and payable pursuant to this Article 64, any deductions authorized by this **Contract** or by **Law** (including but not limited to liquidated damages) and any claims it may have against the **Contractor**. The **City's** exercise of the right to terminate the **Contract** pursuant to this Article 64 shall not impair or otherwise effect the **City's** right to assert any claims it may have against the **Contractor** in a plenary action.

64.6 Where the **Work** covered by the **Contract** has been substantially completed, as determined in writing by the **Commissioner**, termination of the **Work** shall be handled as an omission of **Work** pursuant to Articles 29 and 33, in which case a change order will be issued to reflect an appropriate reduction in the **Contract** sum, or if the amount is determined after final payment, such amount shall be paid by the **Contractor**.

ARTICLE 65. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

65.1 This **Contract** shall be deemed to be executed in the **City** regardless of the domicile of the **Contractor**, and shall be governed by and construed in accordance with the **Laws** of the State of New York and the **Laws** of the United States, where applicable.

65.2 The parties agree that any and all claims asserted against the **City** arising under this **Contract** or related thereto shall be heard and determined in the courts of the State of New York ("New York State Courts") located in the **City** and County of New York. To effect this **Contract** and intent, the **Contractor** agrees:

65.2.1 If the **City** initiates any action against the **Contractor** in Federal court or in a New York State Court, service of process may be made on the **Contractor** either in person, wherever such **Contractor** may be found, or by registered mail addressed to the **Contractor** at its address as set forth in this **Contract**, or to such other address as the **Contractor** may provide to the **City** in writing; and

65.2.2 With respect to any action between the **City** and the **Contractor** in a New York State Court, the **Contractor** hereby expressly waives and relinquishes any rights it might otherwise have:

65.2.2(a) To move to dismiss on grounds of forum non conveniens;

65.2.2(b) To remove to Federal Court; and

65.2.2(c) To move for a change of venue to a New York State Court outside New York County.

65.2.3 With respect to any action brought by the **City** against the **Contractor** in a Federal Court located in the **City**, the **Contractor** expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a Federal Court outside the **City**.

65.2.4 If the **Contractor** commences any action against the **City** in a court located other than in the **City** and County of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a New York State Court of competent jurisdiction located in the **City** and County of New York or, if the Court where the action is initially brought will not or cannot transfer the action, the **Contractor** shall consent to dismiss such action without prejudice and may thereafter reinstate the action in a New York State Court of competent jurisdiction in New York County.

65.3 If any provision(s) of this Article 65 is held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

66.1 The **Contractor** agrees that neither the **Contractor** nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the Federal Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce (Commerce Department) promulgated thereunder.

66.2 Upon the final determination by the Commerce Department or any other agency of the United States as to, or conviction of the **Contractor** or a substantially-owned affiliated company thereof for participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the **Comptroller** may, at his/her option, render forfeit and void this **Contract**.

66.3 The **Contractor** shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code and the rules and regulations issued by the **Comptroller** thereunder.

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

67.1 This **Contract** is subject to the requirements of Section 6-108.1 of the Administrative Code and regulations promulgated thereunder. No construction contract shall be awarded unless and until these requirements have been complied with in their entirety; however, compliance with this Article 67 is not required if the Agency sets Subcontractor Participation Goals for Minority- and Women-Owned Business Enterprises (M/WBEs).

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the **City** Department of Business Services, if any portion of the **Contract** is subcontracted, not less than ten (10%) percent of the total dollar amount of the **Contract** shall be awarded to locally based enterprises (LBEs); except that where less than ten (10%) percent of the total dollar amount of the **Contract** is subcontracted, such lesser percentage shall be so awarded.

67.3 The **Contractor** shall not require performance and payment bonds from LBE **Subcontractors**.

67.4 If the **Contractor** has indicated prior to award that no **Work** will be subcontracted, no **Work** shall be subcontracted without the prior approval of the **Commissioner**, which shall be granted only if the **Contractor** makes a good faith effort beginning at least six (6) weeks before the **Work** is to be performed to obtain LBE **Subcontractors** to perform the **Work**.

67.5 If the **Contractor** has not identified sufficient LBE **Subcontractors** prior to award, it shall sign a letter of compliance stating that it complies with Section 6-108.1 of the Administrative Code, recognizes that achieving the LBE requirement is a condition of its **Contract**, and shall submit documentation demonstrating its good faith efforts to obtain LBEs. After award, the **Contractor** shall begin to solicit LBE's to perform subcontracted **Work** at least six (6) weeks before the date such **Work** is to be performed and shall demonstrate that a good faith effort has been made to obtain LBEs on each subcontract until it meets the required percentage.

67.6 Failure of the **Contractor** to comply with the requirements of Section 6-108.1 of the Administrative Code and the regulations promulgated thereunder shall constitute a material breach of this **Contract**. Remedy for such breach may include the imposition of any or all of the following sanctions:

67.6.1 Reducing the **Contractor's** compensation by an amount equal to the dollar value of the percentage of the LBE subcontracting requirement not complied with;

67.6.2 Declaring the **Contractor** in default;

67.6.3 If the **Contractor** is an LBE, de-certifying and declaring the **Contractor** ineligible to participate in the LBE program for a period of up to three (3) years.

ARTICLE 68. ANTITRUST

68.1 The **Contractor** hereby assigns, sells, and transfers to the **City** all right, title, and interest in and to any claims and causes of action arising under the antitrust **Laws** of New York State or of the United States relating to the particular goods or services purchased or procured by the **City** under this **Contract**.

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective **Contractors**:

69.1.1 Local Law No. 34 of 1991 became effective on September 10, 1991 and added Section 6-115.1 of the Administrative Code. The local **Law** provides for certain restrictions on **City Contracts** to express the opposition of the people of the **City** to employment discrimination practices in Northern Ireland to promote freedom of work-place opportunity.

69.1.2 Pursuant to Section 6-115.1, prospective **Contractors** for **Contracts** to provide goods or services involving an expenditure of an amount greater than ten thousand (\$10,000.) dollars, or for construction involving an amount greater than fifteen thousand (\$15,000.) dollars, are asked to sign a rider in which they covenant and represent, as a material condition of their **Contract**, that any business operations in Northern Ireland conducted by the **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** will be conducted in accordance with the MacBride Principles of nondiscrimination in employment.

69.1.3 Prospective **Contractors** are not required to agree to these conditions. However, in the case of **Contracts** let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five (5%) percent of the lowest responsible bid for a **Contract** to supply goods, services or construction of comparable quality, the **Agency** shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable **Law**, that it is in the best interest of the **City** that the **Contract** be awarded to other than the lowest responsible pursuant to Section 313(b)(2) of the **City** Charter.

69.1.4 In the case of **Contracts** let by other than competitive sealed bidding, if a prospective **Contractor** does not agree to these conditions, no **Agency**, elected official or the **City** Council shall award the **Contract** to that bidder unless the **Agency** seeking to use the goods, services or construction certifies in writing that the **Contract** is necessary for the **Agency** to perform its functions and there is no other responsible **Contractor** who will supply goods, services or construction of comparable quality at a comparable price.

69.2 In accordance with Section 6-115.1 of the Administrative Code, the **Contractor** stipulates that such **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** either:

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 “MacBride Principles” shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling to and from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall, and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade, and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to assess, identify, and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article 69 is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another **Contractor** or **Contractors**. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. ELECTRONIC FILING/NYC DEVELOPMENT HUB

70.1 The **Contractor** shall electronically file all alteration type-2 and alteration type-3 applications via the New York City Development Hub Web site, except applications for the following types of minor alterations: enlargements, curb cuts, legalizations, fire alarms, builders pavement plans, and jobs filed on Landmark Preservation Commission calendared properties. All such filings must be professionally certified. Information about electronic filing via the New York City Development Hub is available on the **City** Department of Buildings Web site at www.nyc.gov/buildings.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance Law (Finance Law), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance Law.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the **City** Charter and other related provisions of the **City** Charter, the Administrative Code, and the Penal Law are applicable under the terms of this **Contract** in relation to conflicts of interest and shall be extended to **Subcontractors** authorized to perform **Work**, labor and services pursuant to this **Contract** and further, it shall be the duty and responsibility of the **Contractor** to so inform its respective **Subcontractors**. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The written **Contract** herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this **Contract** shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Specifications** and **Addenda** thereto, numbered as shown in Schedule A.

ARTICLE 75. COMPENSATION TO BE PAID TO CONTRACTOR

75.1 The **City** will pay and the **Contractor** will accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein, the total sum shown in Schedule A, this said sum being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the Administrative Code, the **Contractor** agrees to accept payments under this **Contract** from the **City** by electronic funds transfer (EFT). An EFT is any

transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this **Contract**, the **Contractor** shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of the **City** Department of Finance with information necessary for the **Contractor** to receive electronic funds transfer payments through a designated financial institution or authorized payment agent. The crediting of the amount of a payment to the appropriate account on the books of a financial institution or other authorized payment agent designated by the **Contractor** shall constitute full satisfaction by the **City** for the amount of the payment under this **Contract**. The account information supplied by the **Contractor** to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by **Law**.

76.2 The **Commissioner** may waive the application of the requirements of this Article 76 to payments on contracts entered into pursuant to Section 315 of the **City** Charter. In addition, the Commissioner of the Department of Finance and the Comptroller may jointly issue standards pursuant to which the **Agency** may waive the requirements of this Article 76 for payments in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the **City**.

ARTICLE 77. RECORDS RETENTION

77.1 The **Contractor** agrees to retain all books, records, and other documents relevant to this **Contract** for six years after the final payment or termination of this **Contract**, whichever is later. **City**, state, and federal auditors and any other persons duly authorized by the **City** shall have full access to and the right to examine any such books, records, and other documents during the retention period.

ARTICLE 78. EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS

78.1 Pre-Bidding (Investigation) Viewing of Site – Bidders must carefully view and examine the **Site** of the proposed **Work**, as well as its adjacent area, and seek other usual sources of information, for they will be conclusively presumed to have full knowledge of any and all conditions and hazards on, about or above the **Site** relating to or affecting in any way the performance of the **Work** to be done under the **Contract** that were or should have been known by a reasonably prudent bidder. To arrange a date for visiting the **Site**, bidders are to contact the **Agency** contact person specified in the bid documents.

78.2 Should the **Contractor** encounter during the progress of the **Work** site conditions or environmental hazards at the **Site** materially differing from any shown on the **Contract Drawings** or indicated in the **Specifications** or such conditions or environmental hazards as could not reasonably have been anticipated by the **Contractor**, which conditions or hazards will materially affect the cost of the **Work** to be done under the **Contract**, the attention of the **Commissioner** must be called immediately to such conditions or hazards before they are disturbed. The **Commissioner** shall thereupon promptly investigate the conditions or hazards. If the **Commissioner** finds that they do so materially differ, and that they could not have been reasonably anticipated by the **Contractor**, the **Contract** may be modified with the **Commissioner's** written approval.

PART E: GENERAL CONDITIONS

Schedule “A” (Bonding and Insurance Requirements, etc.)

Performance Bond Form, if applicable

Payment Bond Form, if applicable

SCHEDULE A
GENERAL CONDITIONS TO CONSTRUCTION CONTRACT
(INCLUDING GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)

PART I. REQUIRED INFORMATION

<p style="text-align: center;"><u>INFORMATION FOR BIDDERS</u> <u>BID BOND</u></p> <p>The Contractor shall obtain a bid bond in the amount indicated to the right.</p>	<p style="text-align: center;">1%</p>										
<p style="text-align: center;"><u>INFORMATION FOR BIDDERS</u> <u>PERFORMANCE AND PAYMENT BONDS</u></p> <p>The Contractor shall obtain performance and payment bonds in the amount indicated to the right.</p>	<p style="text-align: center;">100%</p>										
<p style="text-align: center;"><u>CONTRACT ARTICLE 14.</u> <u>DATE FOR SUBSTANTIAL COMPLETION</u></p> <p>The Contractor shall substantially complete the Work in the number of calendar days indicated to the right.</p>	<p style="text-align: center;">730 consecutive calendar days</p>										
<p style="text-align: center;"><u>CONTRACT ARTICLE 15.</u> <u>LIQUIDATED DAMAGES</u></p> <p>If the Contractor fails to substantially complete the Work within the time fixed for substantial completion plus authorized time extensions or if the Contractor, in the sole determination of the Commissioner, has abandoned the Work, the Contractor shall pay to the City the amount indicated to the right based on the value of Specific Work Order.</p>	<p style="text-align: center;">Value of Specific Work Order</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">\$10,001 - \$ 50,000-</td> <td style="text-align: right;">\$200/Day</td> </tr> <tr> <td>\$50,001 - \$100,000-</td> <td style="text-align: right;">\$400/Day</td> </tr> <tr> <td>\$100,001 - \$250,000-</td> <td style="text-align: right;">\$600/Day</td> </tr> <tr> <td>\$250,001 - \$500,000-</td> <td style="text-align: right;">\$800/Day</td> </tr> <tr> <td>\$500,001 and Over-</td> <td style="text-align: right;">\$1,000/Day</td> </tr> </table>	\$10,001 - \$ 50,000-	\$200/Day	\$50,001 - \$100,000-	\$400/Day	\$100,001 - \$250,000-	\$600/Day	\$250,001 - \$500,000-	\$800/Day	\$500,001 and Over-	\$1,000/Day
\$10,001 - \$ 50,000-	\$200/Day										
\$50,001 - \$100,000-	\$400/Day										
\$100,001 - \$250,000-	\$600/Day										
\$250,001 - \$500,000-	\$800/Day										
\$500,001 and Over-	\$1,000/Day										
<p style="text-align: center;"><u>CONTRACT ARTICLE 17.</u> <u>SUB-CONTRACTOR</u></p> <p>The Contractor shall not make subcontracts totaling an amount more than the percentage of the total Contract price indicated to the right.</p>	<p style="text-align: center;">Not to exceed 49% of the Contract price</p>										
<p style="text-align: center;"><u>CONTRACT ARTICLE 21.</u> <u>RETAINAGE</u></p>	<p style="text-align: center;">1% of the value of the Work</p>										

<p>The Commissioner shall deduct and retain until the substantial completion of the Work the percent value of the Work indicated to the right.</p>	
<p style="text-align: center;"><u>CONTRACT ARTICLE 22.</u></p> <p style="text-align: center;"><u>(Per Directions Below)</u></p>	
<p style="text-align: center;"><u>CONTRACT ARTICLE 24.</u> <u>DEPOSIT GUARANTEE</u></p> <p>As security for the faithful performance of its obligations, the Contractor, upon filing its requisition for payment on Substantial Completion, shall deposit with the Commissioner a sum equal to the percentage of the Contract price indicated to the right.</p>	<p>1% of Contract price</p>
<p style="text-align: center;"><u>CONTRACT ARTICLE 24.</u> <u>PERIOD OF GUARANTEE</u></p> <p>Periods of maintenance and guarantee other than the period set forth in Article 24.1 are indicated to the right.</p>	<p>2 Years</p>
<p style="text-align: center;"><u>CONTRACT ARTICLE 74.</u> <u>STATEMENT OF WORK</u></p> <p>The Contractor shall furnish all labor and materials and perform all Work in strict accordance with the Contract Drawings, Specifications, and all Addenda thereto, numbered as shown in the column to the right.</p>	<p>Insert the Required Information Below.</p>
<p style="text-align: center;"><u>CONTRACT ARTICLE 75.</u> <u>COMPENSATION TO BE PAID TO CONTRACTOR</u></p> <p>The City shall pay and the Contractor shall accept in full consideration for the performance of the Contract, subject to additions and deductions as provided herein, the total sum shown in the column to the right, this</p>	<p>Amount for which the Contract was awarded:</p> <p>\$ N/A</p> <p>[Agency: If the Bid Price, or any portion thereof, is based on unit prices, insert the words “Not to</p>

said sum being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

Exceed” before the amount.]

PART II. TYPES OF INSURANCE, MINIMUM LIMITS AND SPECIAL CONDITIONS

Note: All certificate(s) of insurance submitted pursuant to Contract Article 22.3.3 must be accompanied by a Certification by Broker consistent with Part III below and include the following information:

- For each insurance policy, the name and NAIC number of issuing company, number of policy, and effective dates;
- Policy limits consistent with the requirements listed below;
- Additional insureds or loss payees consistent with the requirements listed below; and
- The number assigned to the Contract by the City (in the “Description of Operations” field).

Insurance indicated by a blackened box (■) or by X in a □ to left will be required under this contract

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<p>■ Commercial General Liability Art. 22.1.1</p>	<p>The minimum limits shall be \$2,000,000.00 per occurrence and \$4,000,000.00 per project aggregate applicable to this Contract unless the Work requires a permit from the Department of Buildings and greater limits of Commercial General Liability Insurance are required pursuant to 1 RCNY section 101-08.</p> <p>Additional Insureds:</p> <p>1. City of New York, including its officials and employees, with coverage at least as broad as ISO Forms CG 20 10 and CG 20 37, and</p> <p>2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the Contract requires to be named as Additional Insured(s), with coverage at least as broad as ISO Form CG 20 26. The Additional Insured endorsement shall either specify the entity's name, if known, or the entity's title (e.g., Project Manager).</p> <p>3. <i>[Agency: If appropriate, insert</i></p>

	<p><i>names of other entities to be covered as Additional Insureds.]</i></p>
<p> <input checked="" type="checkbox"/> Workers' Compensation Art. 22.1.2 <input checked="" type="checkbox"/> Disability Benefits Insurance Art. 22.1.2 <input checked="" type="checkbox"/> Employers' Liability Art. 22.1.2 <input type="checkbox"/> Jones Act Art. 22.1.3 <input type="checkbox"/> U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.3 </p>	<p>Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction.</p> <p>Note: The following forms are acceptable: (1) New York State Workers' Compensation Board Form No. C-105.2, (2) State Insurance Fund Form No. U-26.3, (3) New York State Workers' Compensation Board Form No. DB-120.1 and (3) Request for WC/DB Exemption Form No. CE-200. The City will not accept an ACORD form as proof of Workers' Compensation or Disability Insurance.</p> <p>Jones Act and U.S. Longshoremen's and Harbor Workers' Compensation Act: Statutory per U.S. law.</p>
<p><u><input type="checkbox"/> Builders Risk Art. 22.1.4</u></p>	<p><u>100 % of total value of Work</u></p> <p><u>Contractor the Named Insured; the City both an Additional Insured and one of the loss payees as its interests may appear.</u></p> <p><u>If the Work does not involve construction of a new building or gut renovation work, the Contractor may provide an installation floater in lieu of Builders Risk insurance.</u></p> <p><u>Note: Builders Risk Insurance may terminate upon Substantial Completion of the Work in its entirety.</u></p>

<input checked="" type="checkbox"/> Commercial Auto Liability	Art. 22.1.5	<p>\$1,000,000.00 per accident combined single limit</p> <p>If vehicles are used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90</p>
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<input type="checkbox"/> Contractors Pollution Liability	Art. 22.1.6	<p>\$N/A per occurrence</p> <p>\$N/A aggregate</p> <p>Additional Insureds:</p> <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, and 2. _____ 3. _____
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<input type="checkbox"/> Marine Protection and Indemnity	Art. 22.1.7(a)	<p>\$ N/A per occurrence</p> <p>\$ N/A aggregate</p> <p>Additional Insureds:</p> <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, and 2. _____ 3. _____
--	----------------	--

	<hr/>
<input type="checkbox"/> Hull and Machinery Insurance Art. 22.1.7(b)	<p>\$ N/A per occurrence</p> <p>\$ N/A aggregate</p> <p>Additional Insureds:</p> <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, and 2. <hr/> <p>3.</p> <hr/> <hr/>
<input type="checkbox"/> Marine Pollution Liability Art. 22.1.7(c)	<p>\$ N/A each occurrence</p> <p>Additional Insureds:</p> <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, and 2. <hr/> <p>3.</p> <hr/> <hr/>

<p>[OTHER]</p> <p>Art. 22.1.8</p> <p><input type="checkbox"/> _____</p>	<p><i>[If other type(s) of insurance need to be required under the Contract, the Contracting Agency should (a) check the box and fill in the type of insurance in left-hand column, and (b) in this right-hand column, specify appropriate limit(s) and appropriate Named Insured and Additional Insured(s). Note that if Railroad Protective Liability Insurance is required, the appropriate Named Insured is the owner of the railroad and there are no additional insureds.]</i></p>
<p>[OTHER]</p> <p>Art. 22.1.8</p> <p><input type="checkbox"/> _____</p>	<p><i>[See directly above.]</i></p>

SCHEDULE A

CERTIFICATES OF INSURANCE

Instructions to New York City Agencies, Departments, and Offices

All certificates of insurance (except certificates of insurance solely evidencing Workers' Compensation Insurance, Employer's Liability Insurance, and/or Disability Benefits Insurance) must be accompanied by one of the following:

- (1) the Certification by Insurance Broker or Agent on the following page setting forth the required information and signatures;

-- OR --

- (2) copies of all policies as certified by an authorized representative of the issuing insurance carrier that are referenced in such certificate of insurance. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)

PART IV. ADDRESS OF COMMISSIONER

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

[**Note to Contracting Agency:** Fill in Risk Manager, ACCO or other person responsible for insurance]

PAYMENT BOND FORM

WE _____

_____ hereinafter
referred to as the "Principal," and _____

hereinafter referred to as the "Surety" (Sureties) are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns, in the penal sum of _____

(\$ _____) Dollars, lawful money of the United States of America for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a contract in writing with the City for _____ a copy of which Contract is annexed to and hereby made a part of this Bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns and other Subcontractors to whom work under this Contract is sublet and his or their successors and assigns shall promptly pay or cause to be paid all lawful claims for:

- a) Wages and compensation for labor performed and services rendered by all persons engaged in the prosecution of the work under said Contract, and any amendment or extension thereof or addition thereto, whether such persons be agents, servants or employees of the Principal or of any such Subcontractor, including all persons so engaged who perform the work of laborers or mechanics

at or in the vicinity of the site of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the Project; and/or

- b)** Materials and supplies (*where incorporated in the permanent structure or not*), as well as fuels, oils, implements or machinery furnished, used or consumed by said Principal or any Subcontractor at or in the vicinity of the site of the Project in the prosecution of the work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void; otherwise to remain in full force and effect and the Surety shall fulfill its obligations under this Payment Bond.

This bond is subject to the following additional conditions, limitations and agreements:

- a)** The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialman or laborer having a just claim, as well as the City itself.
- b)** All persons who have performed labor, rendered services or furnished materials and supplies, as aforesaid, shall have a direct right of action against the Principal and its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other person as party plaintiff.
- c)** The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs or otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.
- d)** The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workers' Compensation Law.

- e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two (2) years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the right of the City to require a bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm, or corporation, including Subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed, rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be placed in this Payment Bond.

And the Surety (Sureties) for values received, for itself and its successors and assigns hereby stipulate(s) and agree(s) that the obligation of said Surety (Sureties), and its bonds shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or of the said Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any part thereof, or of any work to be performed, or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal.

IN WITNESS WHEREOF, the Principal and the Surety (Sureties) have hereunto set their hands and seals and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers this ____ day of _____, 20__.

Principal (LS)

(Seal) **By:** _____

Surety

(Seal) **By:** _____

Surety

(Seal) **By:** _____

Surety

(Seal) **By:** _____

Performance Bond \$5 Million Or Less (SBA Approved)

PERFORMANCE BOND

KNOW ALL PEOPLE BY THESE PRESENTS:

That we, _____

hereinafter referred to as the "Principal,"

and, _____

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns in the penal sum of _____

(\$ _____) Dollars, lawful money of the United States for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, The Principal is about to enter, or has entered, into a Contract in writing with the City for

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work

Performance Bond \$5 Million Or Less (SBA Approved)

and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making good any such default and shall protect the said City of New York against, and pay any and all amounts, damages, cost and judgments which may or shall be recovered against said City or its officers or agents or which the said City of New York may be called upon to pay any person or corporation by reason of any damages arising or growing out of the Principal's default of the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety (Sureties), for value received, hereby stipulates and agrees, upon written notice from the City that the City has determined that the Principal is in default of the Contract, to (1) pay the City the cost to complete the contract as determined by the City in excess of the balance of the Contract held by the City, plus any damages or costs to which the City is entitled, up to the full amount of the above penal sum, (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof, or (3) tender a completion Contractor that is acceptable to the City. The Surety (Sureties) further agrees, at its option, either to notify the City that it elects to pay the city the cost of completion plus any applicable damages and costs under option (1) above, or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereof from the City and, if the Surety elects to fully perform and complete the Work, then to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. If the Surety elects to tender payment pursuant to (1) above, then the Surety shall tender such amount within fifteen (15) business days notification from the City of the cost of completion. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to pay the City the cost of completion, to commence and complete all Work as provided herein, or to tender a completion contractor.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or to the said Contract or the Work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, and waivers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to subcontractors shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal. Notwithstanding the above, if the City makes payments to the Principal before the time required by the contract that in the aggregate exceed \$100,000 or 10% of the Contract price, whichever is less, and that have not become earned prior to the Principal being found to be in default, then all payments made to the Principal before the time required by the Contract shall be added to the remaining contract value available to be paid for the completion of

Performance Bond \$5 Million Or Less (SBA Approved)

the Contract as if such sums had not been paid to the Principal, but shall not provide a basis for non-performance of its obligation to pay the City the cost of completion, to commence and to complete all Work as provided herein, or to tender a completion contractor

IN WITNESS WHEREOF, The Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this

_____ day of _____ 20__
(Seal)

_____ (L.S.) Principal

By _____

By _____

By _____

By _____

By _____

By _____

Performance Bond \$5 Million Or Less (SBA Approved)

Bond Premium Rate _____.

Bond Premium Cost _____.

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Performance Bond \$5 Million Or Less (SBA Approved)

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____ 20 _____ before me personally came _____, to me known, who, being by me duly sworn did depose and say that he/she resides at _____; that he/she is the _____ of _____ the corporation described in and which executed the foregoing instrument; and that he signed his name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____ 20 _____ before me personally came _____, to me known, who, being by me duly sworn did depose and say that he/she resides at _____; that he/she is _____ partner of _____, a limited/general partnership existing under the laws of the State of _____, the partnership described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

Notary Public or Commissioner of Deeds.

Performance Bond \$5 Million Or Less (SBA Approved)

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____ 20 _____ before me personally
came _____

to me known, who, being by me duly sworn did depose and say that he/she resides
at _____

_____, and that he/she is the individual whose
name is subscribed to the within instrument and acknowledged to me that by his/her signature on
the instrument, said individual executed the instrument.

Notary Public or Commissioner of Deeds.

Affix Acknowledgments and justification of Sureties

PART F:

ATTACHMENTS

Attachment A	Participation By Minority-Owned And Women-Owned Business Enterprises In City Procurement <ul style="list-style-type: none">• Notice to Prospective Contractors• Schedule B
Attachment B	Construction Employment Report
Attachment C	Whistleblower Protection Expansion Act Rider
Attachment D	Sub-contracting Compliance Notice
Attachment E	Undue Familiarity and Prevention of Sexual Abuse of Inmates by Staff and Other Inmates -
Attachment F	Security Clearance Request and Authorization Form -
Attachment G	Security Requirements For All Work Performed On Riker's Island -
Attachment H	Prevailing Wage Schedule
Attachment I	NOTICE TO BIDDERS APPRENTICESHIP AGREEMENTS
Attachment K	Uniform Federal Contract Provisions Rider for Federally Funded Procurement Contracts

ATTACHMENT A

**PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED
BUSINESS ENTERPRISES IN CITY
PROCUREMENT**

NOTICE TO ALL PROSPECTIVE CONTRACTORS

PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter “Section 6-129”). Section 6-129 establishes the program for participation in City procurement (“M/WBE Program”) by minority-owned business enterprises (“MBEs”) and women-owned business enterprises (“WBEs”), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City’s procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services (“DSBS”) promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the “M/WBE Utilization Plan”), and are detailed below.

The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129.

Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts.

Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

1. The **MBE and/or WBE Participation Goals** established for this Contract or Task Orders issued pursuant to this Contract, (“**Participation Goals**”), as applicable, are set forth on Schedule B, Part I to this Contract (see Page 1, line 1 Total Participation Goals) or will be set forth on Schedule B, Part I to Task Orders issued pursuant to this Contract, as applicable.

The **Participation Goals** represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with New York City Department of Small Business Services as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint

ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If **Participation Goals** have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the **Participation Goals**, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If **Participation Goals** have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant **Participation Goal**, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant **Participation Goal**. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If **Participation Goals** have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals**, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE **Participation Goals**, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part II (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified **Participation Goals** by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals** that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed non-responsive.

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether

the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART II). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS (SEE SECTION V OF PART II) WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART III). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multi-year contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below \$3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work. In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.**

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the firms' commencement of work. A list of MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include,

but not be limited to,; the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's **M/WBE Utilization Plan**, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its **M/WBE Utilization Plan** in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an **M/WBE Utilization Plan** has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or \$500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the **Participation Goals** should be modified.

10. Pre-award waiver of **the Participation Goals**. (a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the Participation Goals in accordance with Section 6-129, which requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part III (Page 5) of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at _____ or via facsimile at () _____. Bidders, proposers, or contractors, as applicable, who have submitted requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its **M/WBE Utilization Plan**. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the **M/WBE Utilization Plan** is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of **M/WBE Utilization Plan**. (a) A Contractor may request a modification of its **M/WBE Utilization Plan** after award of this Contract. **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below \$3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission.** The Agency may grant a request for Modification of a Contractor's **M/WBE Utilization Plan** if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the **Participation Goals**. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;

(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;

(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;

(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the **M/WBE Utilization Plan**, and for which the Contractor claims an inability to retain MBEs or WBEs;

(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;

(vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;

(vii) Timely written requests for assistance made by the Contractor to Agency's **M/WBE liaison officer** and to **DSBS**;

(viii) Description of how recommendations made by **DSBS** and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's **M/WBE officer** shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the **Participation Goals** when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its **M/WBE Utilization Plan** would be awarded to subcontractors.

12. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an **M/WBE Utilization Plan** and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Participation Goals**, the Contractor will not be deemed in violation of the **M/WBE Program requirements** for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

13. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its **M/WBE** Utilization Plan, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

14. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B

MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of a **M/WBE** Utilization Plan, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the **M/WBE** Utilization Plan.

2. Pursuant to DSBS rules, construction contracts that include a requirement for a **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the **M/WBE** Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the **M/WBE** Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor

describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:

- (a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
- (b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
- (c) making a finding that the Contractor is in default of the Contract;
- (d) terminating the Contract;
- (e) declaring the Contractor to be in breach of Contract;
- (f) withholding payment or reimbursement;
- (g) determining not to renew the Contract;
- (h) assessing actual and consequential damages;

(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;

(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or

- (k) taking any other appropriate remedy.

4. If an **M/WBE** Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its **Participation Goals** contained in its **M/WBE** Utilization Plan or the **Participation Goals** as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the **Participation Goals** and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the **Participation Goals**, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6-129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its **M/WBE** Utilization Plan shall be a factor in the evaluation of its performance. Whenever Agency determines that a Contractor's compliance with an **M/WBE** Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in VENDEX as caution data.

Tax ID #: _____

APT E-
PIN #: _____

SCHEDULE B – M/WBE Utilization Plan

Part I: M/WBE Participation Goals

Part I to be completed by contracting agency

Contract Overview

APT E- Pin # _____ FMS Project ID#: _____
 Project Title/ Agency PIN # _____ PIN: 072201801CPD
 Bid/Proposal Response Date _____
 Contracting Agency _____ New York City Department of Correction
 Agency Address _____ 75-20 Astoria Blvd. Ste. 160 _____ City _____ E. Elmhurst _____ State _____ NY _____ Zip Code _____ 11370
 Contact Person _____ Phillip Emmanuel Intatano _____ Title _____ Contract Manager
 Telephone # _____ 718-546-0692 _____ Email _____ Phillip.intatano@doc.nyc.gov

Project Description *(attach additional pages if necessary)*

AS NEEDED GENERAL CONSTRUCTION REQUIREMENTS CONTRACT FOR VARIOUS NYC-DEPARTMENT OF CORRECTION FACILITIES

M/WBE Participation Goals for Services

Enter the percentage amount for each group or for an unspecified goal. Please note that there are no goals for Asian Americans in Professional Services.

Prime Contract Industry: _____

Group	Percentage
Unspecified	25%
or	
Black American	%
Hispanic American	%
Asian American	%
Women	%
Total Participation Goals	%

Line 1

SCHEDULE B - Part II: M/WBE Participation Plan

Part II to be completed by the bidder/proposer.

Please note: For Non-M/WBE Prime Contractors who will NOT subcontract any services and will self-perform the entire contract, you must obtain a FULL waiver by completing the Waiver Application on pages 5 and 6 and timely submitting it to the contracting agency pursuant to the Notice to Prospective Contractors. Once a FULL WAIVER is granted, it must be included with your bid or proposal and you do not have to complete or submit this form with your bid or proposal.

Section I: Prime Contractor Contact Information	
Tax ID # _____	FMS Vendor ID # _____
Business Name _____	Contact Person _____
Address _____	
Telephone # _____	Email _____

Section II: M/WBE Utilization Goal Calculation: Check the applicable box and complete subsection.

PRIME CONTRACTOR ADOPTING AGENCY M/WBE PARTICIPATION GOALS					
<input type="checkbox"/> For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals. Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	Total Bid/Proposal Value	X	Agency Total Participation Goals (Line 1, Page 1)	=	Calculated M/WBE Participation Amount \$ Line 2
\$					

PRIME CONTRACTOR OBTAINED PARTIAL WAIVER APPROVAL: ADOPTING MODIFIED M/WBE PARTICIPATION GOALS					
<input type="checkbox"/> For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Modified M/WBE Participation Goals. Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	Total Bid/Proposal Value	X	Adjusted Participation Goal (From Partial Waiver)	=	Calculated M/WBE Participation Amount \$ Line 3
\$					

Section III: M/WBE Utilization Plan: How Proposer/Bidder Will Fulfill M/WBE Participation Goals. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation. Check applicable box. The Proposer or Bidder will fulfill the M/WBE Participation Goals:

- As an M/WBE Prime Contractor that will self-perform and/or subcontract to other M/WBE firms a portion of the contract the value of which is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals. Please check all that apply to Prime Contractor:
 MBE WBE
- As a Qualified Joint Venture with an M/WBE partner, in which the value of the M/WBE partner's participation and/or the value of any work subcontracted to other M/WBE firms is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals.
- As a non M/WBE Prime Contractor that will enter into subcontracts with M/WBE firms the value of which is at least the amount located on Lines 2 or 3 above, as applicable.

Section IV: General Contract Information

What is the expected percentage of the total contract dollar value that you expect to award in subcontracts for services, regardless of M/WBE status? % _____

Enter brief description of the type(s) and dollar value of subcontracts for all/any services you plan on subcontracting if awarded this contract. For each item, indicate whether the work is designated for participation by MBEs and/or WBEs and the time frame in which such work is scheduled to begin and end. Use additional sheets if necessary.

✓ Scopes of Subcontract Work

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____

Section V: Vendor Certification and Required Affirmations

I hereby:

- 1) acknowledge my understanding of the M/WBE participation requirements as set forth herein and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York ("Section 6-129"), and the rules promulgated thereunder;*
- 2) affirm that the information supplied in support of this M/WBE Utilization Plan is true and correct;*
- 3) agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;*
- 4) agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and*
- 5) agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or If a partial waiver is obtained or such goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.*

Signature _____

Date _____

Print Name _____

Title _____

SCHEDULE B – PART III – REQUEST FOR WAIVER OF M/WBE PARTICIPATION REQUIREMENT

Contract Overview		
Tax ID # _____	FMS Vendor ID # _____	
Business Name _____		
Contact Name _____	Telephone # _____	Email _____
Type of Procurement	<input type="checkbox"/> Competitive Sealed Bids	<input type="checkbox"/> Other
APT E-PIN # (for this procurement): _____		Bid/Response Due Date _____
		Contracting Agency: _____

M/WBE Participation Goals as described in bid/solicitation documents

_____ %
Agency M/WBE Participation Goal

Proposed M/WBE Participation Goal as anticipated by vendor seeking waiver

_____ % of the total contract value anticipated in good faith by the bidder/proposer to be subcontracted for services and/or credited to an M/WBE Prime Contractor or Qualified Joint Venture.

Basis for Waiver Request: Check appropriate box & explain in detail below (attach additional pages if needed)

- Vendor does not subcontract services, and has the capacity and good faith intention to perform all such work itself with its own employees.
- Vendor subcontracts *some* of this type of work but at a *lower* % than bid/solicitation describes, and has the capacity and good faith intention to do so on this contract. (Attach subcontracting plan outlining services that the vendor will self-perform and subcontract to other vendors or consultants.)
- Vendor has other legitimate business reasons for proposing the M/WBE Participation Goal above. Explain under separate cover.

References

List 3 most recent contracts performed for NYC agencies (if any). Include information for each subcontract awarded in performance of such contracts. Add more pages if necessary.

CONTRACT NO. _____	AGENCY _____	DATE COMPLETED _____
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____
CONTRACT NO. _____	AGENCY _____	DATE COMPLETED _____
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____
CONTRACT NO. _____	AGENCY _____	DATE COMPLETED _____
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____

List 3 most recent contracts performed for other entities. Include information for each subcontract awarded in performance of such contracts. Add more pages if necessary.

(Complete ONLY if vendor has performed fewer than 3 New York City contracts.)

TYPE OF Contract _____	ENTITY _____	DATE COMPLETED _____
Manager at entity that hired vendor (Name/Phone No./Email) _____		
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	_____
Type of Work Subcontracted _____	_____	_____

TYPE OF Contract _____	AGENCY/ENTITY _____	DATE COMPLETED _____
Manager at agency/entity that hired vendor (Name/Phone No./Email) _____		
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	_____
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____

TYPE OF Contract _____	AGENCY/ENTITY _____	DATE COMPLETED _____
Manager at entity that hired vendor (Name/Phone No./Email) _____		
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	_____
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____

VENDOR CERTIFICATION: I hereby affirm that the information supplied in support of this waiver request is true and correct, and that this request is made in good faith.

Signature: _____	Date: _____
Print Name: _____	Title: _____

Shaded area below is for agency completion only

AGENCY CHIEF CONTRACTING OFFICER APPROVAL

Signature: _____	Date: _____
-------------------------	--------------------

CITY CHIEF PROCUREMENT OFFICER APPROVAL

Signature: _____	Date: _____
-------------------------	--------------------

Waiver Determination

Full Waiver Approved:

Waiver Denied:

Partial Waiver Approved:

Revised Participation Goal: _____%

ATTACHMENT B
CONSTRUCTION EMPLOYMENT REPORT

The City of New York Department of Small Business Services
Division of Labor Services Contract Compliance Unit
110 William Street, New York, New York 10038
Phone: (212) 513 - 6323
Fax: (212) 618-8879

CONSTRUCTION EMPLOYMENT REPORT

GENERAL INFORMATION

- 1. Your contractual relationship in this contract is: Prime contractor ___ Subcontractor ___
- 1a. Are M/WBE goals attached to this project? Yes ___ No ___
- 2. Please check one of the following if your firm would like information on how to certify with the City of New York as a:

<input type="checkbox"/> Minority Owned Business Enterprise	<input type="checkbox"/> Locally Based Business Enterprise
<input type="checkbox"/> Women Owned Business Enterprise	<input type="checkbox"/> Emerging Business Enterprise
<input type="checkbox"/> Disadvantaged Business Enterprise	
- 2a. If you are certified as an **MBE, WBE, LBE, EBE** or **DBE**, what city/state agency are you certified with? _____ Are you DBE certified? Yes ___ No ___
- 3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes ___ No ___
- 4. Is this project subject to a project labor agreement? Yes ___ No ___
- 5. Are you a Union contractor? Yes ___ No ___ If yes, please list which local(s) you affiliated with _____
- 6. Are you a Veteran owned company? Yes ___ No ___

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

- 7. _____
Employer Identification Number or Federal Tax I.D. _____ Email Address _____
- 8. _____
Company Name _____
- 9. _____
Company Address and Zip Code _____
- 10. _____
Chief Operating Officer _____ Telephone Number _____
- 11. _____
Designated Equal Opportunity Compliance Officer _____ Telephone Number _____
(If same as Item #10, write "same")
- 12. _____
Name of Prime Contractor and Contact Person _____
(If same as Item #8, write "same")

13. Number of employees in your company: _____

14. Contract information:

(a) _____ (b) _____
Contracting Agency (City Agency) Contract Amount

(c) _____ (d) _____
Procurement Identification Number (PIN) Contract Registration Number (CT#)

(e) _____ (f) _____
Projected Commencement Date Projected Completion Date

(g) Description and location of proposed contract:

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes___ No___

If yes, attach a copy of certificate.

16. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes___ No___

If yes, attach a copy of certificate.

NOTE: DLS WILL NOT ISSUE A CONTINUED CERTIFICATE OF APPROVAL IN CONNECTION WITH THIS CONTRACT UNLESS THE REQUIRED CORRECTIVE ACTIONS IN PRIOR CONDITIONAL CERTIFICATES OF APPROVAL HAVE BEEN TAKEN.

17. Has an Employment Report already been submitted for a different contract (not covered by this Employment Report) for which you have not yet received compliance certificate?

Yes___ No___ If yes,

Date submitted: _____

Agency to which submitted: _____

Name of Agency Person: _____

Contract No: _____

Telephone: _____

18. Has your company in the past 36 months been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP)? Yes___ No___

If yes,

(a) Name and address of OFCCP office.

(b) Was a Certificate of Equal Employment Compliance issued within the past 36 months?
Yes___ No___

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes___ No___

If yes, attach a copy of such requirements or agreements.

(d) Were any deficiencies found? Yes___ No___

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes___ No___

If yes, attach a list of such associations and all applicable CBA's.

PART II: DOCUMENTS REQUIRED

20. For the following policies or practices, attach the relevant documents (e.g., printed booklets, brochures, manuals, memoranda, etc.). If the policy(ies) are unwritten, attach a full explanation of the practices. See instructions.

___ (a) Health benefit coverage/description(s) for all management, nonunion and union employees (whether company or union administered)

___ (b) Disability, life, other insurance coverage/description

___ (c) Employee Policy/Handbook

___ (d) Personnel Policy/Manual

___ (e) Supervisor's Policy/Manual

___ (f) Pension plan or 401k coverage/description for all management, nonunion and union employees, whether company or union administered

___ (g) Collective bargaining agreement(s).

___ (h) Employment Application(s)

___ (i) Employee evaluation policy/form(s).

___ (j) Does your firm have medical and/or non-medical (i.e. education, military, personal, pregnancy, child care) leave policy?

21. To comply with the Immigration Reform and Control Act of 1986 when and of whom does your firm require the completion of an I-9 Form?
- | | |
|--|--------------|
| (a) Prior to job offer | Yes___ No___ |
| (b) After a conditional job offer | Yes___ No___ |
| (c) After a job offer | Yes___ No___ |
| (d) Within the first three days on the job | Yes___ No___ |
| (e) To some applicants | Yes___ No___ |
| (f) To all applicants | Yes___ No___ |
| (g) To some employees | Yes___ No___ |
| (h) To all employees | Yes___ No___ |

22. Explain where and how completed I-9 Forms, with their supportive documentation, are maintained and made accessible.

23. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes___ No___

If yes, is the medical examination given:

- | | |
|-----------------------------------|--------------|
| (a) Prior to a job offer | Yes___ No___ |
| (b) After a conditional job offer | Yes___ No___ |
| (c) After a job offer | Yes___ No___ |
| (d) To all applicants | Yes___ No___ |
| (e) Only to some applicants | Yes___ No___ |

If yes, list for which applicants below and attach copies of all medical examination or questionnaire forms and instructions utilized for these examinations.

24. Do you have a written equal employment opportunity (EEO) policy? Yes___ No___

If yes, list the document(s) and page number(s) where these written policies are located.

25. Does the company have a current affirmative action plan(s) (AAP)

- ___ Minorities and Women
- ___ Individuals with handicaps
- ___ Other. Please specify _____

26. Does your firm or collective bargaining agreement(s) have an internal grievance procedure with respect to EEO complaints? Yes___ No___

If yes, please attach a copy of this policy.

If no, attach a report detailing your firm's unwritten procedure for handling EEO complaints.

27. Has any employee, within the past three years, filed a complaint pursuant to an internal grievance procedure or with any official of your firm with respect to equal employment opportunity? Yes___ No___

If yes, attach an internal complaint log. See instructions.

28. Has your firm, within the past three years, been named as a defendant (or respondent) in any administrative or judicial action where the complainant (plaintiff) alleged violation of any anti-discrimination or affirmative action laws? Yes___ No___

If yes, attach a log. See instructions.

29. Are there any jobs for which there are physical qualifications? Yes___ No___

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes___ No___

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).

SIGNATURE PAGE

I, (print name of authorized official signing) _____ hereby certify that the information submitted herewith is true and complete to the best of my knowledge and belief and submitted with the understanding that compliance with New York City's equal employment requirements, as contained in Chapter 56 of the City Charter, Executive Order No. 50 (1980), as amended, and the implementing Rules and Regulations, is a contractual obligation. I also agree on behalf of the company to submit a certified copy of payroll records to the Division of Labor Services on a monthly basis.

Contractor's Name

Name of person who prepared this Employment Report Title

Name of official authorized to sign on behalf of the contractor Title

Telephone Number

Signature of authorized official Date

If contractors are found to be underutilizing minorities and females in any given trade based on Chapter 56 Section 3H, the Division of Labor Services reserves the right to request the contractor's workforce data and to implement an employment program.

Contractors who fail to comply with the above mentioned requirements or are found to be in noncompliance may be subject to the withholding of final payment.

Willful or fraudulent falsifications of any data or information submitted herewith may result in the termination of the contract between the City and the bidder or contractor and in disapproval of future contracts for a period of up to five years. Further, such falsification may result in civil and/or criminal prosecution.

To the extent permitted by law and consistent with the proper discharge of DLS' responsibilities under Charter Chapter 56 of the City Charter and Executive Order No. 50 (1980) and the implementing Rules and Regulations, all information provided by a contractor to DLS shall be confidential.

Only original signatures accepted.

Sworn to before me this _____ day of _____ 20 _____

Notary Public Authorized Signature Date

FORM A. CONTRACT BID INFORMATION: USE OF SUBCONTRACTORS/TRADES

1. Do you plan to subcontractor work on this contract? Yes___ No___
2. If yes, complete the chart below.

NOTE: All proposed subcontractors with a subcontract in excess of \$750,000 must complete an Employment Report for review and approval before the contract may be awarded and work commences.

SUBCONTRACTOR'S NAME*	OWNERSHIP (ENTER APPROPRIATE CODE LETTERS BELOW)	WORK TO BE PERFORMED BY SUBCONTRACTOR	TRADE PROJECTED FOR USE BY SUBCONTRACTOR	PROJECTED DOLLAR VALUE OF SUBCONTRACT

***If subcontractor is presently unknown, please enter the trade (craft name).**

OWNERSHIP CODES

- W: White
- B: Black
- H: Hispanic
- A: Asian
- N: Native American
- F: Female

FORM B: PROJECTED WORKFORCE

TRADE CLASSIFICATION CODES

- (J) Journeylevel Workers (A) Apprentice
- (H) Helper (TRN) Trainee
- (TOT) Total by Column

For each trade to be engaged by your company for this project, enter the projected workforce for Males and Females by trade classification on the charts below.

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): _____

Total Female (Col. #6 – 10): _____

	MALES					FEMALES				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	White Non Hisp.	Black Non Hisp.	Hisp.	Asian	Native Amer.	White Non Hisp.	Black Non Hisp.	Hisp.	Asian	Native Amer.
J										
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

FORM B: PROJECTED WORKFORCE

Trade:

Union Affiliation, if applicable

Total (Col. #1-10):

Total Minority, Male & Female
(Col. #2,3,4,5,7,8,9, & 10):

Total Female
(Col. #6 – 10):

MALES

	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.
J					
H					
A					
TRN					
TOT					

FEMALES

	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J					
H					
A					
TRN					
TOT					

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

FORM C: CURRENT WORKFORCE

TRADE CLASSIFICATION CODES

- (J) Journeylevel Workers (A) Apprentice
- (H) Helper (TRN) Trainee
- (TOT) Total by Column

For each trade currently engaged by your company for all work performed in New York City, enter the current workforce for Males and Females by trade classification on the charts below.

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): _____

Total Female (Col. #6 – 10): _____

	MALES					FEMALES				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	White Non Hisp.	Black Non Hisp.	Hisp.	Asian	Native Amer.	White Non Hisp.	Black Non Hisp.	Hisp.	Asian	Native Amer.
J										
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

FORM C: CURRENT WORKFORCE

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): _____

Total Female (Col. #6 – 10): _____

MALES

FEMALES

	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J										
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

ATTACHMENT C

Whistleblower Protection Expansion Act Rider

WHISTLEBLOWER PROTECTION EXPANSION ACT RIDER

1. In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the New York City Administrative Code, respectively,
 - (a) Contractor shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this Contract to (i) the Commissioner of the Department of Investigation, (ii) a member of the New York City Council, the Public Advocate, or the Comptroller, or (iii) the City Chief Procurement Officer, ACCO, Agency head, or Commissioner.
 - (b) If any of Contractor's officers or employees believes that he or she has been the subject of an adverse personnel action in violation of subparagraph (a) of paragraph 1 of this rider, he or she shall be entitled to bring a cause of action against Contractor to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (i) an injunction to restrain continued retaliation, (ii) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (iii) reinstatement of full fringe benefits and seniority rights, (iv) payment of two times back pay, plus interest, and (v) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.
 - (c) Contractor shall post a notice provided by the City in a prominent and accessible place on any site where work pursuant to the Contract is performed that contains information about:
 - (i) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising out of or in connection with the Contract; and
 - (ii) the rights and remedies afforded to its employees under New York City Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection with the reporting of allegations of fraud, false claims, criminality or corruption in connection with the Contract.
 - (d) For the purposes of this rider, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

(e) This rider is applicable to all of Contractor's subcontractors having subcontracts with a value in excess of \$100,000; accordingly, Contractor shall include this rider in all subcontracts with a value a value in excess of \$100,000.

2. Paragraph 1 is not applicable to this Contract if it is valued at \$100,000 or less. Subparagraphs (a), (b), (d), and (e) of paragraph 1 are not applicable to this Contract if it was solicited pursuant to a finding of an emergency. Subparagraph (c) of paragraph 1 is neither applicable to this Contract if it was solicited prior to October 18, 2012 nor if it is a renewal of a contract executed prior to October 18, 2012.



REPORTING INFORMATION TO THE NEW YORK CITY DEPARTMENT OF INVESTIGATION

If you have information of any corrupt or fraudulent activities or unethical conduct relating to a New York City funded project or contract, contact:

**Department of Investigation (DOI) Complaint Bureau
212-825-5959**

**or by mail or in person at:
DEPARTMENT OF INVESTIGATION
80 MAIDEN LANE, 17th FLOOR
NEW YORK, NEW YORK 10038
Attention: COMPLAINT BUREAU
or file a complaint on-line at:
www.nyc.gov/doi**

All communications are confidential.

THE LAW PROTECTS EMPLOYEES OF CITY CONTRACTORS WHO REPORT CORRUPTION

- Any employee of a contractor or subcontractor that has a contract with the City or a City contractor of more than \$100,000 is protected under the law from retaliation by his or her employer if the employee reports wrongdoing related to the contract to the DOI.
- To be protected by this law, an employee must report information about fraud, false claims, corruption, criminality, conflict of interest, gross mismanagement, or abuse of authority relating to a City contract over \$100,000 to DOI or to certain other government officials all of whom must forward the report to DOI.
- Any employee who has made such a report and who believes he or she has been dismissed, demoted, suspended, or otherwise subject to an adverse personnel action because of that report is entitled to bring a lawsuit against the contractor and recover damages.



ATTACHMENT D

Sub-contracting Compliance Notice

SUB-CONTRACTING COMPLIANCE NOTICE

Notice for Bidders:

As of March 2013 the City has implemented a new web based subcontractor reporting system through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip. In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at that site. Additional assistance with PIP may be received by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

In order to obtain subcontractor approval under Article 11 of Part D, section 3.02 of Appendix A or Article 17 of the Standard Construction Contract and PPB Rule §4-13, Contractor is required to list the subcontractor in the system. For each subcontractor listed, Contractor is required to provide the following information: maximum contract value, description of subcontractor work, start and end date of the subcontract and identification of the subcontractor's industry. Thereafter, Contractor will be required to report in the system the payments made to each subcontractor within 30 days of making the payment. If any of the required information changes throughout the term of the contract, Contractor will be required to revise the information in the system.

Failure of the Contractor to list a subcontractor and/or to report subcontractor payments in a timely fashion may result in the Agency declaring the Contractor in default of the Contract and will subject Contractor to liquidated damages in the amount of \$100 per day for each day that the Contractor fails to identify a subcontractor along with the required information about the subcontractor and/or fails to report payments to a subcontractor, beyond the time frames set forth herein or in the notice from the City. For construction contracts, the provisions of Article 15 of the Standard Construction Contract shall govern the issue of liquidated damages. Contractor hereby agrees to these provisions.

**CITY OF NEW YORK
SUBCONTRACTOR APPROVAL FORM**

For subcontracts to be approved before contract registration
Column on left indicates whom that section is to be completed by

PRIME CONTRACT INFORMATION

AGENCY

Agency:	Unit/Div:
PIN:	
Contract Description:	

PRIME CONTRACTOR IDENTIFICATION

Name:	EIN/SSN:
-------	----------

SUBCONTRACTOR INFORMATION

PRIME CONTRACTOR

Name:	PIP Vendor #:	
*Phone:	*Fax:	
*Address:	*City:	*State/Zip:
*EIN/SSN:	*E-Mail:	
Subcontract Description:		
Approx Subcontract Value:\$	Approx Start Date ___/___/___	Approx End Date ___/___/___
Subcontractor is DSBS-certified as: M/WBE <input type="checkbox"/> EBE <input type="checkbox"/> or LBE <input type="checkbox"/> (check all that apply & note status below)		
YES <input type="checkbox"/>	Application Pending <input type="checkbox"/>	Intends to Apply <input type="checkbox"/> NO <input type="checkbox"/>
Prime Contractor Certification: I hereby affirm that the information supplied is true and correct.		
Signature _____	Title _____	
Print Name _____	Date _____	
Email _____	Phone _____	

**AGENCY PRELIMINARY REVIEW
PLEASE SEE PAGE 2 FOR INSTRUCTIONS**

AGENCY

Agency Preliminary Review Completed By: _____		Date _____
1. VENDEX <input type="checkbox"/>	2. Employment <input type="checkbox"/>	3. References <input type="checkbox"/>
4. PLA <input type="checkbox"/>	5. Apprenticeship <input type="checkbox"/>	6. Licenses <input type="checkbox"/>

PRIME CONTRACTOR RESPONSE

PRIME CONTRACTOR

For each of the boxes checked in the agency preliminary response above, I have informed the Subcontractor of all relevant requirements and provided all requested documentation.

*Not required if subcontractor is in PIP

**CITY OF NEW YORK
SUBCONTRACTOR APPROVAL FORM**

For subcontracts to be approved after contract registration
Column on left indicates whom that section is to be completed by

PRIME CONTRACT INFORMATION

AGENCY

Agency:	Unit/Div:	
Contract ID:	Prime Vendor:	
Prime Contract Description:		
Subcontractor Name:		
Subcontract ID (from PIP):		
Agency Preliminary Review Completed By: _____		Date _____
1. VENDEX <input type="checkbox"/>	2. Employment <input type="checkbox"/>	3. References <input type="checkbox"/>
4. PLA <input type="checkbox"/>	5. Apprenticeship <input type="checkbox"/>	6. Licenses <input type="checkbox"/>

PRIME CONTRACTOR RESPONSE

PRIME CONTRACTOR

For each of the boxes checked in the agency preliminary response above, I have informed the Subcontractor of all relevant requirements and provided all requested documentation.

**CITY OF NEW YORK
SUBCONTRACTOR APPROVAL FORM**

Page 2
Prime Vendor Preliminary Review Follow-up Instructions

After completing the Preliminary Review, the agency will mark, on Page 1, the box for any item requiring follow-up and return the form to the Prime Vendor. The Prime Vendor should follow the instructions below for each of the boxes checked in the Agency Preliminary Review on Page 1, and return the form to the agency with any required documentation.

1. VENDEX

If Box 1 (VENDEX) is checked, the agency has granted preliminary approval, and determined that the subcontractor is required to file VENDEX Questionnaires with the Mayor's Office of Contract Services. A VENDEX Vendor Questionnaire and Principal Questionnaire must be filed where the subcontract dollar amount is \geq \$100,000 or where the aggregate business with the City is \geq \$100,000 during the preceding twelve months. The VENDEX Questionnaires and Guide can be downloaded from <http://www.nyc.gov/html/selltonyc/html/tocvendex.html>.

2. Employment

If Box 2 (Employment) is checked, the subcontractor must complete a Division of Labor Services (DLS) Construction Employment Report. A subcontractor selected to perform work on a construction project funded or assisted by the City of New York must complete a DLS Construction Employment Report if the subcontract dollar amount $>$ \$750,000. For construction projects funded in whole or in part by the federal government, a DLS Construction Employment Report must be completed if the proposed subcontract value $>$ \$10,000. For non-construction goods/services subcontracts $>$ \$100,000, employment reports are required for any subcontractor with $>$ 50 employees, and a certificate is required for those with fewer employees.

3. References

If Box 3 (References) is checked, you as the prime contractor must provide references with respect to the subcontractor's ability to perform, consisting of a list of three completed comparable projects. References shall include a full description/location of each project, scope of work, value of project, and the names and phone numbers of owners, architect or engineer who supervised the work. Please attach your documentation to your response.

4. PLA

If Box 4 (PLA) is checked, you as the prime contractor must obtain signed Letter of Assent from the subcontractor which demonstrates that the subcontractor agrees to the terms of the PLA. Please attach the subcontractor's signed Letter of Assent to your response.

5. Apprenticeship

If Box 5 (Apprenticeship) is checked, you as the prime contractor must provide the agency with proof that the subcontractor maintains an apprenticeship agreement appropriate for the scope of work to be performed, that the apprenticeship agreement has been registered with and approved by the New York State Commission of Labor, and that the program has three years of current, successful experience in providing career opportunities.

6. Licenses

If Box 6 (Licenses) is checked, you as the prime contractor must document that the subcontractor has all required licenses. Please attach your documentation to your response.

ATTACHMENT E

Undue Familiarity and Prevention of Sexual Abuse of Inmates by Staff and Other Inmates



Dated _____

RE: “Undue Familiarity and Prevention of Sexual Abuse of Inmates by Staff and Other Inmates”, Memorandum number 01/08, effective 2/07/08.

Dear Vendor:

All current Department of Correction contractors are required to acknowledge receipt and full compliance of the Agency’s current “Undue Familiarity and Prevention of Sexual Abuse of Inmates by Staff and Other Inmates,” which is attached to this memorandum. You have ten (10) days from the date of receipt of this letter to return the signed acknowledgement page in the enclosed self-address envelope. Failure to do so may cause the Agency to commence contract termination procedures.

Please contact me at 718-546-0690 if you have any questions. I may also be reached by email at docacco@doc.nyc.gov. In the interim, I thank you for your full cooperation and compliance.

Yours truly,

Ava B. Rice

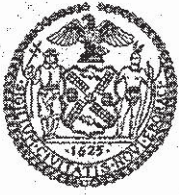
I hereby acknowledge receipt of the “Undue Familiarity and Prevention of Sexual Abuse by Staff and other Inmates”.

Vendor Name

Vendor Representative’s Name (Print)

Vendor Representative’s Signature

Date



THE CITY OF NEW YORK
DEPARTMENT OF CORRECTION



MEMORANDUM

<input type="checkbox"/> NEW		<input checked="" type="checkbox"/> REVISED		SUBJECT
EFFECTIVE DATE 02/07/08	NUMBER 01/08	PAGE 1 OF 3 PAGES	UNDUE FAMILIARITY AND PREVENTION OF SEXUAL ABUSE OF INMATES BY STAFF AND OTHER INMATES	

TO : ALL STAFF

FROM : MARTIN F. HORN, COMMISSIONER



This message is addressed to all of you who work in our jails, whether you are an employee of the Department of Correction, an employee of another agency, a volunteer, contractor or vendor. Our collective mission is to keep our jails, the inmates, and staff, safe.

We take pride in providing a safe environment for all individuals who are committed to our custody. It is the professionalism of all of us that has established the Department as a leader in the field of corrections. We maintain high standards of behavior and demand the highest level of integrity.



- The way we behave around inmates is key to our success. We must perform our job with integrity. When boundaries are crossed, we become ineffective and the safety of each of us is threatened.
- Once you accept a gift or favor, introduce a single piece of contraband or single an inmate out for special treatment---with the first letter you carry in or out, the first cigarette you provide, the infraction you quash---the door is opened for the inmate to control you and influence your further actions.

And that becomes a serious threat to the safety of fellow staff and other inmates.

- 'Undue familiarity' is a direct violation of our Rules and Regulations. It is the Department's policy to seek termination of those who violate this rule. This behavior includes any social activity with an inmate that is not directly related to one's duties. Such behavior may involve, for example, the granting of a special favor or privilege, a phone call, accepting of a gift, bringing in contraband, a romantic relationship or at its worst, sexual conduct. Undue familiarity is not only a violation of our rules and regulations, but may also be a criminal offense.
- One of the worst offenses staff can commit is to engage in any sexual conduct with an inmate, or make sexual threats.

	EFFECTIVE DATE 02/07/08	SUBJECT UNDUE FAMILIARITY AND PREVENTION OF SEXUAL ABUSE OF INMATES BY STAFF AND OTHER INMATES	
	MEMORANDUM		
	NUMBER 01/08	PAGE 2 OF 3 PAGES	

- The Department of Correction has zero tolerance for sexual abuse of inmates. **No one** is allowed to have sexual contact with any person who is incarcerated. Other inmates and employees are prohibited from asking, demanding, forcing, or participating in a sexual act with an inmate. This applies to EVERYONE including uniformed and civilian employees of the Department, as well as contractors, vendors, volunteers, and employees of other agencies who work in the jails.
- In addition to the Department policy, New York State Law clearly states that inmates are not able to give consent to sexual conduct with an employee. (Penal Law §130.05, subdivision 3). Individuals considered employees under this law include not only uniformed and civilian employees of the Department, but contractors, vendors, volunteers, employees of other agencies and all other persons who provide a direct service to inmates. In the same way that an underage minor can not consent to sex with an adult, so too an inmate can not consent to sex with employees. **There is no such thing as consensual sex between employees and inmates.** Any such sexual misconduct is a sex crime---whether it occurs inside a correctional facility, during transportation, or at any other time during an inmate's custody.
- The personal consequences for an employee who has any sexual contact with an inmate or sexually threatens an inmate are severe. Not only will that individual be terminated but they will also be arrested and criminally prosecuted. **If convicted they face imprisonment and registration as a sex offender.** The employee may also be required to pay monetary damages to the inmate out of his or her own pocket.
- This illegal behavior also poses a grave risk to all staff. The offending employee has totally compromised himself or herself, no different than if he or she were to smuggle weapons to an inmate.
- All allegations of sexual abuse and sexual threats will be investigated promptly and thoroughly.
- You all play a critical role in identifying and preventing a potential incident of sexual abuse, and responding if such an incident occurs.
- Equally important to us is the protection of inmates from sexual assaults by other inmates. The Department prohibits sexual acts between inmates, whether voluntary or coerced. Inmates who are observed engaging in a sexual act or soliciting a sexual act with another inmate must be ordered to cease their actions. Where the sex is voluntary, infractions will be processed for all the involved parties. Inmates who commit sexual abuse or assaults will be re-arrested and prosecuted to the full extent of the law. **Employees who fail to stop such assaults as they are occurring and/or fail to report them are subject to disciplinary action, including termination.** Inmates who are victims or in danger must be protected.

	EFFECTIVE DATE 02/07/08	SUBJECT UNDUE FAMILIARITY AND PREVENTION OF SEXUAL ABUSE OF INMATES BY STAFF AND OTHER INMATES	
	MEMORANDUM		
	NUMBER 01/08	PAGE 3 OF 3 PAGES	

- Each of us is responsible for being alert to signs of potential situations in which sexual abuse might occur as well as signs of victimization. And all of us also have the duty to report any knowledge or information we may have about an employee who sexually abuses or engages in undue familiarity with an inmate. You may either contact the Department of Investigation confidentially (numbers are posted in the facilities) or, DOC employees may report to the Tour Commander. You must report, or you will face disciplinary action yourself. All allegations must be reported.
- Any employee who receives a report of inmate-on-inmate sexual abuse, must immediately notify their supervisor. An employee who intentionally fails to report such information will be subject to disciplinary charges.
- There is another role for staff to play in the prevention of sexual abuse of inmates, and that is to encourage inmates to report sexual abuse as well as any other concerns about their safety. If an inmate makes an allegation against staff or other inmates they will be offered immediate protection, medical examination and mental health services and counseling by our chaplains. And the complaint will be reported to the appropriate law enforcement officials and thoroughly investigated. We need your help in getting that message out to the inmates so that they will not be afraid to come forward if they are being victimized.

The Department is very proud of its work force and all of you who come to work day in and day out and perform your jobs professionally, with integrity. Our tradition of excellence requires that we all join together and do everything possible to make sure our zero tolerance policy is part of our culture and value system, because it is the right thing to do!


 MARTIN F. HORN
 COMMISSIONER

Attachment:

Directive #5010, Preventing Inmate Sexual Abuse, dated 05/01/07 (as amended).

Supersedes:

Memorandum #02/07, UNDUE FAMILIARITY AND PREVENTION OF SEXUAL ABUSE OF INMATES BY STAFF AND OTHER INMATES, dated 05/01/07.

ATTACHMENT F

Security Clearance Request and Authorization Form

The City of New York
Department of Correction



Special Operations Division
Rikers Island Security Unit

Form SOD/RISU2

CLEARANCE REQUEST AND AUTHORIZATION FORM

Effective 3/16/98

SECTION #1 –

Complete all of the required information in Sections #2, #3 and #4. Submission of a clearance request does not necessitate approval. The command receives Notification of denials via fax and/or in writing. Confirmation of approvals shall be telephonically effected as follows:

Wardens/Commanding Officers or Deputy Wardens shall initiate facility clearance requests. All other commands (bureaus, divisions or units) – Senior Staff Members or Commanding Officers or Executive Officers, only. It is the responsibility of each facility/command to ensure that visitors are advised of the security/safety issues of the Riker's Is. Correctional Complex (e.g., speed limit, securing vehicles, display of ID/pass, unauthorized items)

Category	Clearance Location	Telephone #
Vehicle Access/Pass	Construction Control Trailer	(718) 546-1578
Public Transportation	Rikers Is. Main Control Bldg.	(718) 546-1565
Problems/Information	Rikers Is. Clearance Office	(718) 546-1539

SECTION #2 – Command Requests / Escort Information

Date Requested:	Requested By (Print Last and First Name)	Rank/Title:	Shield/ID#	Command	Telephone #:
Uniform Escort Provided? <input type="checkbox"/> Yes <input type="checkbox"/> No	Escort Officer (Print Last and First Name)	Rank:	Shield #:	Command:	Telephone #: (___) ___ - ____
Command Authorization <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	Sr. Staff/Comm. Off./Dep. Warden/Exec. Off.:	Rank/Title:	Shield/ID #:	Command:	Telephone #:

SECTION #3 – Clearance / Visit Information - COMPANY NAME:

Date of Visit:	Visitors' Full Name	Title	Visitors' Full Name	Title	Visitors' Full Name	Title
	1.		6.		11.	
Estimated Time of Arrival:	2.		7.		12.	
	3.		8.		13.	
Agency / DOC Affiliation	4.		9.		14.	
	5.		10.		15.	

Destinations (Check All That Apply):

- | | | | | | |
|-----------------------------------|------------------------------------|---|---|--|--|
| <input type="checkbox"/> ARDC | <input type="checkbox"/> JATC | <input type="checkbox"/> Assets Management/Environmental Health | <input type="checkbox"/> Correction Industries Div./Support Services Unit | <input type="checkbox"/> Riker's Is Main Control Bldg | <input type="checkbox"/> Riker's Is Visitor Control Bldg |
| <input type="checkbox"/> AMKC | <input type="checkbox"/> NIC | <input type="checkbox"/> Bureau Chiefs' Trailer | <input type="checkbox"/> DGS (Dept. of General Svcs.) Trailer | <input type="checkbox"/> Transportation Div. | |
| <input type="checkbox"/> CIFM/HHP | <input type="checkbox"/> OBCC/CPSU | <input type="checkbox"/> Chapel | <input type="checkbox"/> Dockhouse/Ferryboats (OBCC Annex) | <input type="checkbox"/> Shore Rd. Trailer (Specify Area/Unit) | |
| <input type="checkbox"/> GMDC | <input type="checkbox"/> RMSC/STEP | <input type="checkbox"/> Chief of Department's Field Office | <input type="checkbox"/> Firehouse/K-9 Unit | <input type="checkbox"/> Special Operations Div. (Specify Area/Unit) | |
| <input type="checkbox"/> GRVC | <input type="checkbox"/> WF/CDU | <input type="checkbox"/> Construction Management Unit | <input type="checkbox"/> Powerhouse | <input type="checkbox"/> Other (Specify Location): | |

Reason For Visit	<input type="checkbox"/> Construction	<input type="checkbox"/> Delivery	<input type="checkbox"/> Repair	<input type="checkbox"/> Volunteer Work	Type of Access/Pass	<input type="checkbox"/> Gate #1 Restricted	<input type="checkbox"/> East/West Parking Field
	<input type="checkbox"/> Clergy	<input type="checkbox"/> Meeting	<input type="checkbox"/> Survey	<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Gate #2 Restricted	<input type="checkbox"/> Gate #1 Unrestricted	<input type="checkbox"/> Other (Specify) _____

SECTION #4 – Vehicle Information

Check Here if None In the event the number of vehicles exceeds four (4), attach additional vehicle information on a 600ar.

Vehicle	Year	Make	Model	Color	License Plate	State	Vehicle Type				
#1							<input type="checkbox"/> Car	<input type="checkbox"/> Van	<input type="checkbox"/> Bus	<input type="checkbox"/> Truck	<input type="checkbox"/> Other
#2							<input type="checkbox"/> Car	<input type="checkbox"/> Van	<input type="checkbox"/> Bus	<input type="checkbox"/> Truck	<input type="checkbox"/> Other
#3							<input type="checkbox"/> Car	<input type="checkbox"/> Van	<input type="checkbox"/> Bus	<input type="checkbox"/> Truck	<input type="checkbox"/> Other
#4							<input type="checkbox"/> Car	<input type="checkbox"/> Van	<input type="checkbox"/> Bus	<input type="checkbox"/> Truck	<input type="checkbox"/> Other

SECTION #5 – FOR SOD USE ONLY:

Date Received: / /	Reviewed By (Clearance Officer)	Rank:	Shield #:	SOD Time Stamp
Time Received: : hr.	Approved By (SOD/RISU Supervisor)	Rank:	Shield #:	
Final Determination <input type="checkbox"/> Approved <input type="checkbox"/> Denied	Type of Access/Pass:	<input type="checkbox"/> Gate #1 Restricted	<input type="checkbox"/> East/West Parking Field	
		<input type="checkbox"/> Gate #2 Restricted	<input type="checkbox"/> Gate #1 Unrestricted	<input type="checkbox"/> Other (Specify) _____

Remarks:

ATTACHMENT G

Security Requirements For All Work Performed On Riker's Island



NEW YORK CITY DEPARTMENT OF CORRECTION
 Cynthia Brann, Acting Commissioner
 Ava B. Rice, Assistant Commissioner
 Contracts and Procurement
 Agency Chief Contracting Officer
 75-20 Astoria Boulevard, Suite 160
 East Elmhurst, NY 11370
 Office: 718 546-0690
 Fax: 718 278-6205

Dated _____

RE: Security Requirements

Dear Vendor:

All current Department of Correction contractors are required to acknowledge receipt and full compliance of the Agency's current "Security Requirements", which is attached to this memorandum. You have ten (10) days from the date of receipt of this letter to return the signed acknowledgement page. Failure to do so may cause the Agency to commence contract termination procedures.

Please contact Ava B. Rice at 718-546-0690 if you have any questions. I may also be reached by email at docacco@doc.nyc.gov. In the interim, I thank you for your full cooperation and compliance.

Yours truly,

Ava B. Rice

I hereby acknowledge receipt of the "Security Requirements".

Vendor Name

Vendor Representative's Name (Print)

Vendor Representative's Signature

Date

CONSTRUCTION CONTRACTS: SECURITY REQUIREMENTS FOR ALL WORK PERFORMED ON RIKERS ISLAND AND BOROUGH FACILITIES

All contractors and their employees including subcontractors must comply with all security and traffic regulations instituted by the Department of Correction.

For the purpose of these security requirements, subcontractors and their employees shall be considered employees of the contractor. Contractors are responsible for informing all subcontractors of these requirements. When the term contractor is used herein it shall mean contractor and subcontractor.

DOC may perform a background investigation on any employee of the Contractor who enters DOC premises. Contractor agrees to replace any employee deemed a security risk by DOC.

S1: IDENTIFICATION OF EMPLOYEES

1. All contractors and their employees who have authorized business at a DOC facility are required to report for identification and approval at established security control points. For employees working on Rikers Island, the security control point shall be the Construction Registration trailer, located in the parking field directly adjacent to the Queens side of the Rikers Island Bridge. At off island facilities the security control point shall be the facility's front entrance.
2. Each contractor shall furnish its employees with an identification (ID) card. The ID card shall be standard size (approximately 2 inches by 3 inches), laminated and furnished with either a clip or light chain so that it may be secured to the person wearing it. The ID cards shall be sequentially numbered and contain the following:
 - The company name;
 - A recognizable photo of the employee;
 - The employee's printed name and signature; and
 - Expiration date (to be provided by the Department's Construction Management Unit).
3. These ID cards are typically exchanged at a facility for an institutional pass when the employee enters the facility. ID cards/institutional passes must be prominently displayed and secured while the wearer is at a DOC facility. Additionally, identification must be produced upon demand of Department of Correction personnel assigned to various checkpoints, as well as security patrols.
4. The contractor shall furnish the Department's Construction Management Unit (CMU) with a duplicate employee identification card for record keeping purposes.
5. The loss of any ID card or institutional pass must be reported immediately to the nearest officer on duty. The officer shall then promptly notify his/her supervisor who shall then take appropriate action.
6. The contractor must notify the Construction Management Unit of the termination of any of its employees by close of business on the day of the termination.

7. Each contractor shall arrange clearances for all new employees through the Construction Management Unit.
8. Each contractor shall keep the Construction Management Unit informed at all times as to the employment status of its employees.

S2: DELIVERING MATERIAL AND EQUIPMENT TO JOB SITES

1. Contractors must obtain clearance from the Construction Management Unit for all deliveries of material and equipment to Department facilities. Upon receiving approval, the delivery shall be made directly to the loading platform of the facility involved. All employees reporting for business (non-delivery staff) shall arrive at the main entrance of the respective facility and abide by that facility's security procedures.
- 2.a. To avoid any potential traffic congestion, the Construction Management Unit must receive advance notice of all deliveries of material and heavy equipment to or from Rikers Island that require the use of wide load vehicles.
- b. For vehicles delivering material and equipment to Rikers Island also refer to Section S3.
3. All vehicles and material contained therein are subject to random searches and inspections. Searches may involve the use of the Canine Unit.
4. In order to remove any materials or equipment from DOC property, Contractor's supervisors will sign their names on a form "Authorization to Take Materials Out of DOC Facilities"; to certify that the property being taken from the DOC facility is their property only, and not that of the City of New York, except in the event that removal of DOC property is specified by contract documents, which shall be reported to the Construction Management Unit. Such authorization must be received prior to the removal of any material from a Department facility. All materials to be removed are to be scheduled and verified by the Construction Management Unit.

S3: CONTRACTOR'S VEHICLES

1. Drivers of contractor vehicles intending to drive to Rikers Island are directed to report to the security control point (see S1.1) on the date and time of the scheduled delivery. The driver will be required to produce the following current and valid documents to the officer:
 - i. A drivers license;
 - ii. The vehicle's registration; and
 - iii. Vehicle Insurance Card.

Additionally, all occupants of the vehicle will be required to produce their employee ID cards and some form of government issued identification with photo (i.e., Driver's license) to the officer.

Upon producing the above noted documents to the officer's satisfaction, the officer will issue the driver a vehicle access pass and allow the driver and the occupants of the vehicle access to Rikers Island.

Note: Access to Rikers Island and/or any Department of Correction facility shall be limited to employees of the contractors (as described herein). Employees shall remain on Rikers Island and/or in the facility for only the time needed to carry out their business.

2. The vehicle access pass must be prominently displayed in the windshield inside the vehicle at all times.
3. Vehicles must be secured when not occupied. The vehicle must be turned off and the ignition key must be removed. Additionally, all windows must be closed and doors and trunks locked.
4. Vehicles are not permitted to be left at DOC facilities or on DOC Property at the conclusion of each workday.
5. Vehicle access passes and any issued DOC identification cards/tags must be turned in upon leaving Rikers Island.
6. All vehicles are subject to a search at any time while on Rikers Island or on the grounds of any DOC facility and also will be searched prior to departing Rikers Island and borough facilities. Searches will include a visual inspection of the vehicle's trunk, passenger and/or cargo compartment and the undercarriage. Additionally, all vehicle occupants will be required to produce their identification cards prior to departing Rikers Island or any DOC facility.

S4: TRAFFIC REGULATIONS

1. Drivers shall obey all posted traffic regulations and speed restrictions.
2. Passing vehicles on the Rikers Island Bridge is strictly prohibited.
3. Drivers and the occupants of their vehicles must produce their identification at all checkpoints.
4. Drivers must yield to all emergency vehicles.
5. The maximum weight limit on Rikers Island Bridge is 36 Tons.

S5: SECURITY PROCEDURES AND ISSUES

1. Contractors and their employees must remain within the physical limits of their work area. Contractors are forbidden to move into any other area on the Island unless permission is obtained by the Construction Management Unit. There is no walking permitted on Rikers Island outside of the respective work site or delivery destination.
2. Contractors, subcontractors, and their employees are forbidden to take or bring into a DOC facility, any articles for an inmate.
3. Contractors and their employees shall not contact, or communicate with or give anything to inmates.

4. Contractors and their employees shall not possess on their person any contraband as described in paragraph #9 of this section.
5. Contractors will not place or install any trailers, tool sheds, or security shanties on a job site without approval of the Construction Management Unit after requesting such permission.
- 6.a. Contractors are responsible for the control and security of all tools, supplies, materials, and equipment used by employees regardless of actual ownership of the items. Trailers, tool sheds, or security shanties that are approved by the Construction Management Unit must be kept secured and locked by the contractor. Tools not in use must be kept under lock and key. Tools used during working hours must be checked into the contractor's storage sheds at the end of working hours.
- b. Each contractor shall be responsible for the:
 - i. Control of all tools used by their employees; and
 - ii. Prevention of theft of tools by inmates
- c. Each contractor shall establish rules to insure such control.
7. The personal vehicles of the contractor's employees are not permitted on Rikers Island or at Borough facility loading docks. No personal vehicles will be permitted to enter a DOC facility (not even for the purpose of carrying tools and equipment).
- 8.a. Food or lunch packages of the contractor's employees are subject to inspection by Department of Correction custodial personnel.
- b. No food services are available to contractor's employees at DOC facilities.
- 9.a. Arrest and prosecution will follow violations of Sections 205.00, 205.20 and 205.25 of the New York State Penal Law, which are summarized as follows:

SECTION 205.00.3 Contraband means any article or thing which a person confined in a detention facility is prohibited from obtaining or possessing by statute, rule, regulation or order.

SECTION 205.00.4 Dangerous contraband means contraband which is capable of such use as may endanger the safety or security of a detention facility or any person therein.

SECTION 205.20 A person is guilty of promoting prison contraband in the second degree when:

1. He knowingly and unlawfully introduces any contraband into a detention facility.

SECTION 205.25 A person is guilty of promoting prison contraband in the first degree when:

1. He knowingly and unlawfully introduces any dangerous contraband into a detention facility.

- b. Contraband is described as any article, the presence of which, within the prison may jeopardize safety, security and good order, or impair the moral and physical welfare of prisoners or employees, or which is prohibited by Rules and Regulations of any institution.
 - c. Items that are considered contraband include but are not limited to: unauthorized clothing, unattended tools, loose or unattended vehicle keys, knives, and items to be considered as such, prescription and over the counter medicines, spices, alcoholic beverages, money in the possession of inmates, tobacco and tobacco related products (see Section S7), unauthorized written communications to and from inmates that were not processed through the institutional mail rooms, unauthorized packages and carrying cases, as well as unsafe conditions of articles which in the opinion of the Warden would affect the security of the institution.
10. The introduction of electronic/recording devices into any facility without the approval of the Construction Management Unit and the Commanding Officer of that facility is strictly prohibited. Electronic/recording devices are defined as any type of instrument, which is designed to transmit and/or receive telephonic, electronic, digital, cellular or radio communication as well as any type of instrument designed to have sound and/or image recording or capturing capabilities. Examples of electronic/recording devices include but are not limited to: cellular or digital phones, any type of pager, two-way radio, text messaging or modem devices, cameras (digital or film), video recorders and tape or digital recording devices.
11. Any violation of the polices and procedures described herein or of any law, Departmental rule and regulation or institutional policy or procedure may result in criminal prosecution (when applicable) and /or the violating individual being banned from future access to Rikers Island or any Departmental facility.

S6: CONDUCT OF CONTRACTORS AND THEIR EMPLOYEES

1. The New York City Department of Correction has a zero tolerance policy with regard to sexual abuse and sexual threats directed at inmates in its custody. **No one** is allowed to have sexual contact with any person who is incarcerated. Other inmates and staff are prohibited from asking, demanding, forcing or participating in a sexual act with an inmate. This applies to EVERYONE including contractors, vendors, volunteers and employees of other agencies who work in the jails.
2. Rikers Island and all Department of Correction facilities are secure facilities. Any person working within secure areas shall exercise extreme caution at all times. Each contractor and its employees must comply with the following security regulations of the Department of Correction:
- a. Personal identification must be produced on demand by the Department of Correction personnel assigned to checkpoints and security patrols.
 - b. Employees must remain in the area of their work assignment.
 - c. Employees shall not bring any article, letters, notes or messages on the premises for the purpose of giving them to an inmate.
 - d. Employees shall not take any article, letters, notes or messages from an inmate to any other person including another inmate.

- e. Employees shall not bring alcoholic beverages (beer, wine or liquor) on the premises at any time. Nor shall employees bring drugs or medicines except those required to stock the first aid cabinets in the contractor's field offices.
- f. Contractors and their employees are prohibited from burning and/or dumping any refuse, debris or rubble on Department property.
- g. When one person engages in conduct, which constitutes a criminal offense, another person is criminally liable for such conduct when, acting with the culpability required for the commission thereof, he or she solicits, requests, commands, importunes, or intentionally aids such person to engage in such conduct.

S7: SMOKING PROHIBITION

1. The Department of Correction maintains a smoke-free environment in accordance with Local Law 47 of 2002, the Smoke Free Air Act which prohibits smoking in public places and workplaces. The following restrictions and procedures apply to all contractors and their employees.
 - a. The use of tobacco related products within any Department facility, office, and vehicle is prohibited;
 - b. This prohibition applies to all persons, including staff, inmates, and visitors;
 - c. In addition to the smoking restrictions, contractors and their employees are prohibited from introducing any type of tobacco products and lighting agents into any department premises that houses or detains inmates, or utilize inmate work details, including the entire area of Rikers Island.

For the purpose of this document, tobacco products include but are not limited to cigarettes, cigars, pipes, loose tobacco and rolling paper. Lighting agents include cigarette lighters and matches.

Securing these items in Construction Management Unit-approved trailers, tool sheds and security shanties located outside the premises or contractor vehicles is permitted.
2.
 - a. Inmates are prohibited from smoking and possessing any form of tobacco products including but not limited to cigarettes, lighting agents, cigars, pipes, loose tobacco and rolling paper.
 - b. Any contractor or employee providing an inmate tobacco related products shall be deemed as promoting prison contraband and shall be subject to arrest.

ATTACHMENT H
PREVAILING WAGE SCHEDULE

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE**

LABOR LAW §220 PREVAILING WAGE SCHEDULE

Workers, Laborers and Mechanics employed on a public work project must receive not less than the prevailing rate of wage and benefits for the classification of work performed by each upon such public work. Pursuant to Labor Law §220 the Comptroller of the City of New York has promulgated this schedule solely for Workers, Laborers and Mechanics engaged by private contractors on New York City public work contracts.

This schedule is a compilation of separate determinations of the prevailing rate of wage and supplements made by the Comptroller for each trade classification listed herein pursuant to New York State Labor Law section 220 (5). The source of the wage and supplement rates, whether a collective bargaining agreement, survey data or other, is listed at the end of each classification.

Agency Chief Contracting Officers should contact the Bureau of Labor Law's Classification Unit with any questions concerning trade classifications, prevailing rates or prevailing practices with respect to procurement on New York City public works contracts. Contractors are advised to review the Comptroller's Prevailing Wage Schedule before bidding on public works contracts. Contractors with questions concerning trade classifications, prevailing rates or prevailing practices with respect to public works contracts in the procurement stage must contact the contracting agency responsible for the procurement.

Any error as to compensation under the prevailing wage law or other information as to trade classification, made by the contracting agency in the contract documents or in any other communication, will not preclude a finding against the contractor of prevailing wage violation.

Any questions concerning trade classifications, prevailing rates or prevailing practices on New York City public works contracts that have already been awarded may be directed to the Bureau of Labor Law's Classification Unit by calling (212) 669-4443. All callers must have the agency name and contract registration number available when calling with questions on public works contracts. Please direct all other compliance issues to: Bureau of Labor Law, Attn: Wasyl Kinach, P.E., Office of the Comptroller, 1 Centre Street, Room 651, New York, N.Y. 10007; Fax (212) 669-4002.

The appropriate schedule of prevailing wages and benefits must be posted at all public work sites pursuant to Labor Law §220 (3-a) (a).

This schedule is applicable to work performed during the effective period, unless otherwise noted. Changes to this schedule are published on our web site www.comptroller.nyc.gov. Contractors must pay the wages and supplements in effect when the worker, laborer, mechanic performs the work. Preliminary schedules for future one-year periods appear in the City Record on or about June 1 each succeeding year. Final schedules appear on or about July 1 in the City Record and on our web site www.comptroller.nyc.gov.

The Comptroller's Office has attempted to include all overtime, shift and night differential, Holiday, Saturday, Sunday or other premium time work. However, this schedule does not set forth every prevailing practice with respect to such rates with which employers must comply. All such practices are nevertheless part of the employer's prevailing wage obligation and contained in the collective bargaining agreements of the prevailing wage unions. These collective bargaining agreements are available for inspection by appointment. Requests for appointments may be made by calling (212) 669-4443, Monday through Friday between the hours of 9 a.m. and 5 p.m.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Prevailing rates and ratios for apprentices are attached to this schedule in the Appendix. Pursuant to Labor Law §220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant, registered with the New York State Department of Labor, may be employed on a public work project. Workers who are not journey persons or not registered apprentices pursuant to Labor Law §220 (3-e) may not be substituted for apprentices and must be paid as journey persons.

Public Work construction, reconstruction, demolition, excavation, rehabilitation, repair, renovation, alteration, or improvement contracts awarded pursuant to a Project Labor Agreement (“PLA”) in accordance with Labor Law section 222 may have different labor standards for shift, premium and overtime work. Please refer to the PLA’s pre-negotiated labor agreements for wage and benefit rates applicable to work performed outside of the regular workday. More information is available at the Mayor’s Office of Contract Services (MOCS) web page at <http://www.nyc.gov/html/mocs/html/vendors/pla.shtml>.

All the provisions of Labor Law section 220 remain applicable to PLA work including, but not limited to, the enforcement of prevailing wage requirements by the Comptroller; however, we will enforce shift, premium, overtime and other non-standard rates as they appear in a project’s pre-negotiated labor agreement.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

- 1) Provide bona fide fringe benefits which cost the employer no less than the prevailing supplemental benefits rate; or
- 2) Supplement the employee’s hourly wage by an amount no less than the prevailing supplemental benefits rate; or
- 3) Provide a combination of bona fide fringe benefits and wage supplements which cost the employer no less than the prevailing supplemental benefits rate in total.

Although prevailing wage laws do not require employers to provide bona fide fringe benefits (as opposed to wage supplements) to their employees, other laws may. For example, the Employee Retirement Income Security Act, 29 U.S.C. § 1001 et seq., the Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 et seq., and the New York City Paid Sick Leave Law, N.Y.C. Admin. Code § 20-911 et seq., require certain employers to provide certain benefits to their employees. Labor agreements to which employers are a party may also require certain benefits. The Comptroller’s Office does not enforce these laws or agreements.

Employers must provide prevailing supplemental benefits at the straight time rate for each hour worked unless otherwise noted in the classification.

Wasył Kinach, P.E.
Director of Classifications
Bureau of Labor Law

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OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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ASBESTOS HANDLER

(Hazardous Material; Disturbs, removes, encapsulates, repairs, or encloses friable asbestos material)

Asbestos Handler

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$36.00**

Supplemental Benefit Rate per Hour: **\$16.45**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Sunday.

Time and one half the regular hourly rate after 40 hours in any work week.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Easter

Paid Holidays

None

(Local #78 and Local #12A)

BLASTER

Blaster

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.27**

Supplemental Benefit Rate per Hour: **\$47.99**

Blaster (Hydraulic)

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$47.15**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Trac Drill Hydraulic

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$41.29**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$40.46**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Operators of Jack Hammers

Chippers: Spaders: Concrete Breakers: and all other pneumatic tools of like usage: Walk Behind Self Propelled Hydraulic Asphalt and Concrete Breakers: Hydro (Water) Demolition

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$39.34**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Powder Carriers

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$35.17**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Hydraulic Trac Drill Chuck Tender

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$33.81**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Chuck Tender & Nipper

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$33.00**
Supplemental Benefit Rate per Hour: **\$47.99**

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$18.22**
Supplemental Benefit Rate per Hour: **\$47.99**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Overtime Description

Magazine Keepers:

Time and one half for work performed in excess of forty (40) hours per week and for work performed on Saturdays, Sundays and Holidays.

All Other Employees:

Time and one-half for the first two hours of overtime Monday through Friday, the first ten hours, the first ten hours of work on Saturday and for Make-up Time. Double time for all hours over ten Monday through Saturday (except make-up hours) and for all hours worked on Sunday and Holidays.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

A single shift shall be 8 hours plus an unpaid lunch, starting at 8:00 A.M (or between 6:00 A.M. and 10:00 A.M. on weekdays). When two (2) shifts are employed, each shift shall be 8 hours plus ½ hour unpaid lunch. When three (3) shifts are employed, each shift will work seven and one-half (7 ½) hours, but will be paid for eight (8) hours, since only one-half (½) hour is allowed for mealtime. When two (2) or more shifts are employed, single time will be paid for each shift. The first 8 hours of any and all work performed Monday through Friday inclusive of any off-shift shall be at the single time rate.

(Local #29)

BOILERMAKER

Boilermaker

Effective Period: 7/1/2017 - 12/31/2017

Wage Rate per Hour: **\$55.23**

Supplemental Benefit Rate per Hour: **\$42.96**

Supplemental Note: For time and one half overtime - \$63.82 For double overtime - \$84.68

Effective Period: 1/1/2018 - 6/30/2018

Wage Rate per Hour: **\$57.17**

Supplemental Benefit Rate per Hour: **\$43.62**

Supplemental Note: For time and one half overtime - \$64.81 For double overtime - \$86.00

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Overtime Description

For Repair and Maintenance work:

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

For New Construction work:

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Columbus Day

Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

Quadruple time the regular rate for work on the following holiday(s).

Labor Day

Paid Holidays

Good Friday

Day after Thanksgiving

Day before Christmas

Day before New Year's Day

Shift Rates

When shifts are required, the first shift shall work eight (8) hours at the regular straight-time hourly rate. The second shift shall work seven and one-half (7 ½) hours and receive eight hours at the regular straight time hourly rate plus twenty-five cents (\$0.25) per hour. The third shift shall work seven (7) hours and receive eight hours at the regular straight time hourly rate plus fifty cents (\$0.50) per hour. A thirty (30) minute lunch period shall not be considered as time worked. Work in excess of the above shall be paid overtime at the appropriate new construction work or repair work overtime wage and supplemental benefit hourly rate.

(Local #5)

BRICKLAYER

Bricklayer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$55.10**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: **\$31.20**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Overtime rates to be paid outside the regular scheduled work day.

(Bricklayer District Council)

CARPENTER - BUILDING COMMERCIAL

Building Commercial

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.50**

Supplemental Benefit Rate per Hour: **\$46.28**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

The second shift will receive one hour at the double time rate of pay for the last hour of the shift; eight hours pay for seven hours of work, nine hours pay for eight hours of work. There must be a first shift in order to work a second shift.

(Carpenters District Council)

CARPENTER - HEAVY CONSTRUCTION WORK **(Construction of Engineering Structures and Building Foundations)**

Heavy Construction Work

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.63**

Supplemental Benefit Rate per Hour: **\$49.66**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS **(Excludes Engineering Structures and Building Foundations)**

Carpenter High Rise A

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.78**

Supplemental Benefit Rate per Hour: **\$41.49**

Carpenter High Rise B

Carpenter High Rise B worker is excluded from high risk operations such as erection decking, perimeter debris netting, leading edge work, self-climbing form systems, and the installation of cocoon systems unless directly supervised by a Carpenter High Rise A worker.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$39.07**

Supplemental Benefit Rate per Hour: **\$16.65**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

The second shift wage rate shall be 113% of the straight time hourly wage rate. There must be a first shift in order to work a second shift.

(Carpenters District Council)

CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST

Carpenter - Hod Hoist

(Assisted by Mason Tender)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.50**

Supplemental Benefit Rate per Hour: **\$39.46**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays
None

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Shift Rates

The second shift will receive one hour at the double time rate of pay for the last hour of the shift; eight hours pay for seven hours of work, nine hours pay for eight hours of work. There must be a first shift in order to work a second shift.

(Carpenters District Council)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.48**

Supplemental Benefit Rate per Hour: **\$26.00**

Supplemental Note: \$29.50 on Saturdays; \$33.00 on Sundays & Holidays

Cement & Concrete Worker - (Hired after 2/6/2016)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$32.00**

Supplemental Benefit Rate per Hour: **\$18.00**

Supplemental Note: \$19.50 on Saturdays; \$21.00 on Sundays & Holidays

Overtime Description

Time and one half the regular rate after 7 hour day (time and one half the regular rate after an 8 hour day when working with Dockbuilders on pile cap forms and for work below street level to the top of the foundation wall, not to exceed 2 feet or 3 feet above the sidewalk-brick shelf, when working on the foundation and structure.)

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

1/2 day before Christmas Day
1/2 day before New Year's Day

Shift Rates

On shift work extending over a twenty-four hour period, all shifts are paid at straight time.

(Cement Concrete Workers District Council)

CEMENT MASON

Cement Mason

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.62**

Supplemental Benefit Rate per Hour: **\$38.96**

Supplemental Note: For time and one half overtime - \$48.21; For double overtime - \$57.46

Overtime Description

Time and one-half the regular rate after an 8 hour day, double time the regular rate after 10 hours. Time and one-half the regular rate on Saturday, double time the regular rate after 10 hours. Double time the regular rate on Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

Shift Rates

For an off shift day, (work at times other than the regular 7:00 A.M. to 3:30 P.M. work day) a cement mason shall be paid at the regular hourly rate plus a 25% per hour differential. Four Days a week at Ten (10)hour day.

(Local #780) (BCA)

CORE DRILLER

Core Driller

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$38.82**

Supplemental Benefit Rate per Hour: **\$24.66**

Core Driller Helper

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$30.96**

Supplemental Benefit Rate per Hour: **\$24.66**

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$27.86**

Supplemental Benefit Rate per Hour: **\$24.66**

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$24.77**

Supplemental Benefit Rate per Hour: **\$24.66**

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$21.67**

Supplemental Benefit Rate per Hour: **\$24.66**

Overtime Description

Time and one half the regular rate for work on a holiday plus Holiday pay when worked.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Memorial Day

Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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Labor Day
Thanksgiving Day
Christmas Day

Shift Rates

The shift day shall be the continuous eight and one-half (8½) hours from 6:00 A.M. to 2:30 P.M. and from 2:30 P.M. to 11:00 P.M., including one-half (½) hour of employees regular rate of pay for lunch. When two (2) or more shifts are employed, single time shall be paid for each shift, but those employees employed on a shift other than from 8:00 A.M. to 5:00 P.M. shall, in addition, receive seventy-five cents (\$0.75) per hour differential for each hour worked. When three (3) shifts are needed, each shift shall work seven and one-half (7½) hours paid for eight (8) hours of labor and be permitted one-half (½) hour for mealtime.

(Carpenters District Council)

DERRICKPERSON AND RIGGER

Derrick Person & Rigger

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.86**

Supplemental Benefit Rate per Hour: **\$51.40**

Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. \$52.82 - For work performed in Staten Island.

Derrick Person & Rigger - Site Work

Assists the Stone Mason-Setter in the setting of stone

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$40.29**

Supplemental Benefit Rate per Hour: **\$39.23**

Overtime Description

The first two hours of overtime on weekdays and the first seven hours of work on Saturdays are paid at time and one half for wages and supplemental benefits. All additional overtimes is paid at double time for wages and supplemental benefits. Deduct \$1.42 from the Staten Island hourly benefits rate before computing overtime.

Overtime

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Good Friday

Memorial Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

(Local #197)

DIVER

Diver (Marine)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$66.66**

Supplemental Benefit Rate per Hour: **\$49.66**

Diver Tender (Marine)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.34**

Supplemental Benefit Rate per Hour: **\$49.66**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

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Shift Rates

When three shifts are utilized each shift shall work seven and one half-hours (7 1/2 hours) and paid for 8 hours, allowing for one half hour for lunch.

(Carpenters District Council)

DOCKBUILDER - PILE DRIVER

Dockbuilder - Pile Driver

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.63**

Supplemental Benefit Rate per Hour: **\$49.66**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

DRIVER: TRUCK (TEAMSTER)

Driver - Dump Truck

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.18**

Supplemental Benefit Rate per Hour: **\$44.79**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$19.94; at double time rate - \$26.58

Driver - Tractor Trailer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.22**

Supplemental Benefit Rate per Hour: **\$45.40**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$17.55; at double time rate - \$23.40

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.78**

Supplemental Benefit Rate per Hour: **\$45.40**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$17.55 at double time rate - \$23.40

Overtime Description

For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay. For Thanksgiving week, the prorated share shall be 5 1/3 hours of holiday pay for each day worked in Thanksgiving week.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

New Year's Day

President's Day

Memorial Day

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§220 PREVAILING WAGE SCHEDULE

Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Off single shift work commencing between 6:00 P.M. and 5:00 A.M. shall work eight and one half hours allowing for one half hour for lunch and receive 9 hours pay for 8 hours of work.

Driver Redi-Mix (Sand & Gravel)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$38.40**

Supplemental Benefit Rate per Hour: **\$42.12**

Supplemental Note: Over 40 hours worked: time and one half rate \$15.99, double time rate \$21.33

Overtime Description

For Paid Holidays: Employees working two (2) days in the calendar week in which the holiday falls are to paid for these holidays, provided they shape each remaining workday during that calendar week.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

President's Day

Columbus Day

Veteran's Day

Triple time the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

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Election Day
Thanksgiving Day
Christmas Day

(Local #282)

ELECTRICIAN

(Including all low voltage cabling carrying data; video; and voice in combination with data and or video.)

Electrician "A" (Regular Day / Day Shift)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$56.00**

Supplemental Benefit Rate per Hour: **\$54.35**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$56.00**

Supplemental Benefit Rate per Hour: **\$55.72**

Electrician "A" (Regular Day Overtime after 7 hrs / Day Shift Overtime after 8 hrs)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$84.00**

Supplemental Benefit Rate per Hour: **\$57.86**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$84.00**

Supplemental Benefit Rate per Hour: **\$59.23**

Electrician "A" (Swing Shift)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$65.71**

Supplemental Benefit Rate per Hour: **\$61.94**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$65.71**

Supplemental Benefit Rate per Hour: **\$63.52**

Electrician "A" (Swing Shift Overtime After 7.5 hours)

Effective Period: 7/1/2017 - 5/9/2018

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Wage Rate per Hour: **\$98.57**
Supplemental Benefit Rate per Hour: **\$66.05**

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: **\$98.57**
Supplemental Benefit Rate per Hour: **\$67.64**

Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: **\$73.60**
Supplemental Benefit Rate per Hour: **\$68.33**

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: **\$73.60**
Supplemental Benefit Rate per Hour: **\$70.09**

Electrician "A" (Graveyard Shift Overtime After 7 hours)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: **\$110.40**
Supplemental Benefit Rate per Hour: **\$72.95**

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: **\$110.40**
Supplemental Benefit Rate per Hour: **\$74.70**

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on a holiday.
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

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When so elected by the Employer, one or more shifts of at least five days duration may be scheduled as follows:
Day Shift: 8:00 am to 4:30 pm, Swing Shift 4:30 pm to 12:30 am, Graveyard Shift: 12:30 am to 8:00 am.

For multiple shifts of temporary light and/or power, the temporary light and/or power employee shall be paid for 8 hours at the straight time rate. For three or less workers performing 8 hours temporary light and/or power the supplemental benefit rate is \$25.67 and effective 5/10/18 \$25.92.

Electrician "M" (First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$28.50**

Supplemental Benefit Rate per Hour: **\$22.10**

First and Second Year "M" Wage Rate Per Hour: **\$24.00**

First and Second Year "M" Supplemental Rate: **\$19.80**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$29.00**

Supplemental Benefit Rate per Hour: **\$22.65**

First and Second Year "M" Wage Rate Per Hour: **\$24.50**

First and Second Year "M" Supplemental Rate: **\$20.30**

Electrician "M" (Overtime After First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$42.75**

Supplemental Benefit Rate per Hour: **\$23.89**

First and Second Year "M" Wage Rate Per Hour: **\$36.00**

First and Second Year "M" Supplemental Rate: **\$21.30**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$43.50**

Supplemental Benefit Rate per Hour: **\$24.47**

First and Second Year "M" Wage Rate Per Hour: **\$36.75**

First and Second Year "M" Supplemental Rate: **\$21.84**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

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Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Local #3)

ELECTRICIAN - ALARM TECHNICIAN

(Scope of Work - Inspect, test, repair, and replace defective, malfunctioning, or broken devices, components and controls of Fire, Burglar and Security Systems)

Alarm Technician

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$32.40**

Supplemental Benefit Rate per Hour: **\$16.10**

Supplemental Note: \$14.60 only after 8 hours worked in a day

Overtime Description

Time and one half the regular rate for work on the following holidays: Columbus Day, Veterans Day, Day after Thanksgiving.

Double time the regular rate for work on the following holidays: New Year's day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Paid Holidays

New Year's Day

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Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Night Differential is based upon a ten percent (10%) differential between the hours of 4:00 P.M. and 12:30 A.M. and a fifteen percent (15%) differential for the hours 12:00 A.M. to 8:00 A.M.

Vacation

At least 1 year of employment.....ten (10) days
5 years or more of employment.....fifteen (15) days
10 years of employment.....twenty (20) days
Plus one Personal Day per year

Sick Days:

One day per Year. Up to 4 vacation days may be used as sick days.

(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2017 - 5/15/2018
Wage Rate per Hour: **\$56.00**
Supplemental Benefit Rate per Hour: **\$56.26**

Effective Period: 5/16/2018 - 6/30/2018
Wage Rate per Hour: **\$56.00**
Supplemental Benefit Rate per Hour: **\$57.63**

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2017 - 5/15/2018
Wage Rate per Hour: **\$41.54**
Supplemental Benefit Rate per Hour: **\$41.02**

Effective Period: 5/16/2018 - 6/30/2018
Wage Rate per Hour: **\$42.16**
Supplemental Benefit Rate per Hour: **\$42.19**

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Electrician - Electro Pole Maintainer

Effective Period: 7/1/2017 - 5/16/2018

Wage Rate per Hour: **\$35.58**

Supplemental Benefit Rate per Hour: **\$36.89**

Effective Period: 5/17/2018 - 6/30/2018

Wage Rate per Hour: **\$36.11**

Supplemental Benefit Rate per Hour: **\$37.93**

Overtime Description

Electrician - Electro Pole Electrician: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week.

Electrician - Electro Pole Foundation Installer: Time and one half the regular rate after 8 hours within a 24 hour period and Saturday and Sunday.

Electrician - Electro Pole Maintainer: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week. Saturdays and Sundays may be used as a make-up day at straight time when a day is lost during the week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Local #3)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate per Hour: **\$62.64**

Supplemental Benefit Rate per Hour: **\$34.25**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate per Hour: **\$64.48**

Supplemental Benefit Rate per Hour: **\$35.85**

Overtime Description

For New Construction: work performed after 7 or 8 hour day, Saturday, Sunday or between 4:30pm and 7:00am shall be paid at double time rate.

Existing buildings: work performed after an 8 hour day, Saturday, Sunday or between 5:30pm and 7:00 am shall be paid time and one half.

Overtime

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Vacation

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate per Hour: **\$49.14**

Supplemental Benefit Rate per Hour: **\$34.11**

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate per Hour: **\$50.49**

Supplemental Benefit Rate per Hour: **\$35.71**

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§220 PREVAILING WAGE SCHEDULE

Overtime Description

For Scheduled Service Work: Double time - work scheduled in advance by two or more workers performed on Sundays, Holidays, and between midnight and 7:00am.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Afternoon shift - regularly hourly rate plus a (15%) fifteen percent differential. Graveyard shift - time and one half the regular rate.

Vacation

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ENGINEER

Engineer - Heavy Construction Operating Engineer I

Cherry pickers 20 tons and over and Loaders (rubber tired and/or tractor type with a manufacturer's minimum rated capacity of six cubic yards and over).

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$67.32**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$107.71**

Engineer - Heavy Construction Operating Engineer II

Backhoes, Basin Machines, Groover, Mechanical Sweepers, Bobcat, Boom Truck, Barrier Transport (Barrier Mover) & machines of similar nature. Operation of Churn Drills and machines of a similar nature, Stetco Silent Hoist and machines of similar nature, Vac-Alls, Meyers Machines, John Beam and machines of a similar nature, Ross Carriers and Travel Lifts and machines of a similar nature, Bulldozers, Scrapers and Turn-a-Pulls: Tugger Hoists (Used exclusively for handling excavated material); Tractors with attachments, Hyster and Roustabout Cranes, Cherrypickers. Austin Western, Grove and machines of a similar nature, Scoopmobiles, Monorails, Conveyors, Trenchers: Loaders-Rubber Tired and Tractor: Barber Greene and Eimco Loaders and Eimco Backhoes; Mighty Midget and similar breakers and Tampers, Curb and Gutter Pavers and Motor Patrol, Motor Graders and all machines of a similar nature. Locomotives 10 Tons or under. Mini-Max, Break-Tech and machines of a similar nature; Milling machines, robotic and demolition machines and machines of a similar nature, shot blaster, skid steer machines and machines of a similar nature including bobcat, pile rig rubber-tired excavator (37,000 lbs. and under), 2 man auger.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$65.31**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$104.50**

Engineer - Heavy Construction Operating Engineer III

Minor Equipment such as Tractors, Post Hole Diggers, Ditch Witch (Walk Behind), Road Finishing Machines, Rollers five tons and under, Tugger Hoists, Dual Purpose Trucks, Fork Lifts, and Dempsey Dumpers, Fireperson.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$61.93**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$99.09**

Engineer - Heavy Construction Maintenance Engineer I

Installing, Repairing, Maintaining, Dismantling and Manning of all equipment including Steel Cutting, Bending and Heat Sealing Machines, Mechanical Heaters, Grout Pumps, Bentonite Pumps & Plants, Screening Machines, Fusion Coupling Machines, Tunnel Boring Machines Moles and Machines of a similar nature, Power Packs, Mechanical Hydraulic Jacks; all drill rigs including but not limited to Churn, Rotary Caisson, Raised Bore & Drills of a similar nature; Personnel, Inspection & Safety Boats or any boats used to perform functions of same, Mine Hoists, Whirlies, all Climbing Cranes, all Tower Cranes, including but not limited to Truck Mounted and Crawler Type and machines of similar nature; Maintaining Hydraulic Drills and machines of a similar nature; Well Point System-Installation and dismantling; Burning, Welding, all Pumps regardless of size and/or motor power, except River Cofferdam Pumps and Wells Point Pumps; Motorized Buggies (three or more); equipment used in the cleaning and televising of sewers, but not limited to jet-rodder/vacuum truck, vacall/vactor, closed circuit television inspection equipment; high powered water pumps, jet pumps; screed machines and concrete finishing machines of a similar nature; vermeers.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$65.00**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$104.00**

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$85.53**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$136.85**

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.73**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$68.37**

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$43.86**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$70.18**

Engineer - Heavy Construction Oilers I

Gradalls, Cold Planer Grader, Concrete Pumps, Driving Truck Cranes, Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.57**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$93.71**

Engineer - Heavy Construction Oilers II

All gasoline, electric, diesel or air operated Shovels, Draglines, Backhoes, Keystones, Pavers, Gunitite Machines, Battery of Compressors, Crawler Cranes, two-person Trenching Machines.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$40.36**

Supplemental Benefit Rate per Hour: **\$36.87**

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Supplemental Note: \$66.34 on overtime
Shift Wage Rate: \$64.58

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$61.13
Supplemental Benefit Rate per Hour: \$35.41
Supplemental Note: \$63.67 on overtime
Shift Wage Rate: \$97.81

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$57.21
Supplemental Benefit Rate per Hour: \$35.41
Supplemental Note: \$63.67 on overtime
Shift Wage Rate: \$91.54

Engineer - Steel Erection Oiler II

On a Crawler Crane

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$43.54
Supplemental Benefit Rate per Hour: \$35.41
Supplemental Note: \$63.67 on overtime
Shift Wage Rate: \$69.66

Overtime Description

On jobs of more than one shift, if the next shift employee fails to report for work through any cause over which the employer has no control, the employee on duty who works the next shift continues to work at the single time rate.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Engineer - Building Work Maintenance Engineers I

Installing, repairing, maintaining, dismantling (of all equipment including: Steel Cutting and Bending Machines, Mechanical Heaters, Mine Hoists, Climbing Cranes, Tower Cranes, Linden Peine, Lorain, Liebherr, Mannes, or machines of a similar nature, Well Point Systems, Deep Well Pumps, Concrete Mixers with loading Device, Concrete Plants, Motor Generators when used for temporary power and lights), skid steer machines of a similar nature including bobcat.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.30**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 on overtime

Engineer - Building Work Maintenance Engineers II

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.28**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 on overtime

Engineer - Building Work Oilers I

All gasoline, electric, diesel or air operated Gradealls: Concrete Pumps, Overhead Cranes in Power Houses: Their duties shall be to assist the Engineer in oiling, greasing and repairing of all machines; Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks, Cherrypickers (hydraulic cranes) over 70,000 GVW, and machines of a similar nature.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$55.42**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 on overtime

Engineer - Building Work Oilers II

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Guniting Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2017 - 6/30/2018

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Wage Rate per Hour: **\$41.16**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 on overtime

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

Off Shift: double time the regular hourly rate.

(Local #15)

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$38.18**

Supplemental Benefit Rate per Hour: **\$20.15**

Supplemental Note: Overtime Benefit Rate - \$27.65 per hour (time & one half) \$35.15 per hour (double time).

Instrument Person

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$31.47**

Supplemental Benefit Rate per Hour: **\$20.15**

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Supplemental Note: Overtime Benefit Rate - \$27.65 per hour (time & one half) \$35.15 per hour (double time).

Rodperson

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$27.24**

Supplemental Benefit Rate per Hour: **\$20.15**

Supplemental Note: Overtime Benefit Rate - \$27.65 per hour (time & one half) \$35.15 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (BUILDING CONSTRUCTION)
(Construction of Building Projects, Concrete Superstructures, etc.)

Field Engineer - BC Party Chief

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$60.10**

Supplemental Benefit Rate per Hour: **\$32.15**

Supplemental Note: Overtime Benefit Rate - \$44.90 per hour (time & one half) \$57.65 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.69**

Supplemental Benefit Rate per Hour: **\$32.15**

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Supplemental Note: Overtime Benefit Rate - \$44.90 per hour (time & one half) \$57.65 per hour (double time).

Field Engineer - BC Rodperson

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$30.20**

Supplemental Benefit Rate per Hour: **\$32.15**

Supplemental Note: Overtime Benefit Rate - \$44.90 per hour (time & one half) \$57.65 per hour (double time).

Overtime Description

Time and one half the regular rate after a 7 hour work and time and one half the regular rate for Saturday for the first seven hours worked, Double time the regular time rate for Saturday for work performed in excess of seven hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (HEAVY CONSTRUCTION)

(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations, Engineering Structures etc.)

Field Engineer - HC Party Chief

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$70.25**

Supplemental Benefit Rate per Hour: **\$34.18**

Supplemental Note: Overtime benefit rate - \$47.82 per hour (time & one half), \$61.46 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$51.64**

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Supplemental Benefit Rate per Hour: **\$34.18**

Supplemental Note: Overtime benefit rate - \$47.82 per hour (time & one half), \$61.46 per hour (double time).

Field Engineer - HC Rodperson

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$43.37**

Supplemental Benefit Rate per Hour: **\$34.18**

Supplemental Note: Overtime benefit rate - \$47.82 per hour (time & one half), \$61.46 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (STEEL ERECTION)

Field Engineer - Steel Erection Party Chief

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$63.64**

Supplemental Benefit Rate per Hour: **\$33.04**

Supplemental Note: Overtime benefit rate - \$46.11 per hour (time & one half), \$59.18 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$49.59**

Supplemental Benefit Rate per Hour: **\$33.04**

Supplemental Note: Overtime benefit rate - \$46.11 per hour (time & one half), \$59.18 per hour (double time).

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Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$33.20**

Supplemental Benefit Rate per Hour: **\$33.04**

Supplemental Note: Overtime benefit rate - \$46.11 per hour (time & one half), \$59.18 per hour (double time).

Overtime Description

Time and one half the regular rate for Saturday for the first eight hours worked.

Double time the regular rate for Saturday for work performed in excess of eight hours.

Overtime

Time and one half the regular rate after an 8 hour day.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - OPERATING

Operating Engineer - Road & Heavy Construction I

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$76.60**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$122.56**

Operating Engineer - Road & Heavy Construction II

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

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Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$79.28**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$126.85**

Operating Engineer - Road & Heavy Construction III

Mine Hoists, Cranes, etc. (Used as Mine Hoists)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$81.80**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$130.88**

Operating Engineer - Road & Heavy Construction IV

Gradealls, Keystones, Cranes on land or water (with digging buckets), Bridge Cranes, Vermeer Cutter and machines of a similar nature, Trenching Machines.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$79.85**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$127.76**

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (employing Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$78.29**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$125.26**

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$74.42**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$119.07**

Operating Engineer - Road & Heavy Construction VII

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Barrier Movers , Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$60.22**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$96.35**

Operating Engineer - Road & Heavy Construction VIII

Utility Compressors

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.88**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$58.92**

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$70.79**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$113.26**

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$65.12**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$104.19**

Operating Engineer - Road & Heavy Construction XI

Compressors (Portable 3 or more in battery), Driving of Truck Mounted Compressors, Well-point Pumps, Tugger Machines Well Point Pumps, Churn Drill.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.73**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$81.17**

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$75.19**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$120.30**

Operating Engineer - Road & Heavy Construction XIII

Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$72.84**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$116.54**

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$69.67**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$111.47**

Operating Engineer - Road & Heavy Construction XV

Compressors (Portable Single or two in Battery, not over 100 feet apart), Pumps (River Cofferdam) and Welding Machines, Push Button Machines, All Engines Irrespective of Power (Power-Pac) used to drive auxiliary equipment, Air, Hydraulic, etc.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.18**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$75.49**

Operating Engineer - Road & Heavy Construction XVI

Concrete Breaking Machines, Hoists (Single Drum), Load Masters, Locomotives (over ten tons) and Dinkies over ten tons, Hydraulic Crane-Second Engineer.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$66.56**

Supplemental Benefit Rate per Hour: **\$31.10**

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Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: \$106.50

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$67.07
Supplemental Benefit Rate per Hour: \$31.10
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: \$107.31

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$95.98
Supplemental Benefit Rate per Hour: \$31.10
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: \$153.57

Operating Engineer - Paving I

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$74.42
Supplemental Benefit Rate per Hour: \$31.10
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: \$119.07

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$72.50
Supplemental Benefit Rate per Hour: \$31.10
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: \$116.00

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$61.43

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Supplemental Benefit Rate per Hour: **\$31.10**
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: **\$98.29**

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$79.50**
Supplemental Benefit Rate per Hour: **\$31.10**
Supplemental Note: \$56.50 overtime hours

Operating Engineer - Concrete II

Compressors

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$47.54**
Supplemental Benefit Rate per Hour: **\$31.10**
Supplemental Note: \$56.50 overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$63.66**
Supplemental Benefit Rate per Hour: **\$31.10**
Supplemental Note: \$56.50 overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$82.23**
Supplemental Benefit Rate per Hour: **\$31.10**
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: **\$131.57**

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$79.04**
Supplemental Benefit Rate per Hour: **\$31.10**
Supplemental Note: \$56.50 overtime hours
Shift Wage Rate: **\$126.46**

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.14**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$75.42**

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.91**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$71.86**

Operating Engineer - Building Work I

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$62.87**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Operating Engineer - Building Work II

Compressors, Welding Machines (Cutting Concrete-Tank Work), Paint Spraying, Sandblasting, Pumps (with the exclusion of Concrete Pumps), All Engines irrespective of Power (Power-Pac) used to drive Auxiliary Equipment, Air, Hydraulic, Jacking System, etc.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.01**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$71.60**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$75.87**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$69.88**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$69.14**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Operating Engineer - Building Work VII

Rack & Pinion and House Cars

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$54.92**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

For New House Car projects Wage Rate per Hour \$43.77

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

For House Cars and Rack & Pinion only: Overtime paid at time and one-half for all hours in excess of eight hours in a day, Saturday, Sunday and Holidays worked.

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

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§220 PREVAILING WAGE SCHEDULE

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

For Steel Erection Only: Shifts may be worked at the single time rate at other than the regular working hours (8:00 A.M. to 4:30 P.M.) on the following work ONLY: Heavy construction jobs on work below the street level, over railroad tracks and on building jobs.

(Operating Engineer Local #14)

FLOOR COVERER

(Interior vinyl composition tile, sheath vinyl linoleum and wood parquet tile including site preparation and synthetic turf not including site preparation)

Floor Coverer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.50**

Supplemental Benefit Rate per Hour: **\$45.88**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day

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Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

Two shifts may be utilized with the first shift working 8:00 A.M. to the end of the shift at the straight time of pay. The second shift will receive one hour at double time rate for the last hour of the shift. (eight for seven, nine for eight).

(Carpenters District Council)

GLAZIER (New Construction, Remodeling, and Alteration)

Glazier

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.70**

Supplemental Benefit Rate per Hour: **\$40.99**

Supplemental Note: Supplemental Benefit Overtime Rate: \$50.09

Overtime Description

An optional 8th hour can be worked at straight time rate. If 9th hour is worked, then both hours or more (8th & 9th or more) will be at the double time rate of pay.

Overtime

Double time the regular rate after a 7 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

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Paid Holidays

None

Shift Rates

Shifts shall be any 7 hours beyond 4:00 P.M. for which the glazier shall receive 8 hours pay for 7 hours worked.

(Local #1281)

GLAZIER - REPAIR & MAINTENANCE

(For the Installation of Glass - All repair and maintenance work on a particular building, whenever performed, where the total cumulative contract value is under \$127,628. Except where enumerated (i.e. plate glass windows) does not apply to non-residential buildings.)

Craft Jurisdiction for repair, maintenance and fabrication

Plate glass replacement, Residential glass replacement, Residential mirrors and shower doors, Storm windows and storm doors, Residential replacement windows, Herculite door repairs, Door closer repairs, Retrofit apartment house (non commercial buildings), Glass tinting.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$24.13**

Supplemental Benefit Rate per Hour: **\$21.12**

Overtime

Time and one half the regular rate after an 8 hour day.

Double time the regular rate for Sunday.

Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

(Local #1281)

HEAT AND FROST INSULATOR

Heat & Frost Insulator

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.38**

Supplemental Benefit Rate per Hour: **\$39.46**

Overtime Description

Double time shall be paid for supplemental benefits during overtime work.
8th hour paid at time and one half.

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Triple time the regular rate for work on the following holiday(s).

Labor Day

Paid Holidays

None

Shift Rates

The first shift shall work seven hours at the regular straight time rate. The second and third shift shall work seven hours the regular straight time hourly rate plus a fourteen percent wage and benefit premium. Off hour work in occupied or retail buildings may be worked on weekdays with an increment of \$1.00 per hour and eight hours pay for seven (7) hours worked. Double time will apply for over seven (7) hours worked on weekdays, weekends or holidays.

(Local #12) (BCA)

HOUSE WRECKER (TOTAL DEMOLITION)

House Wrecker - Tier A

On all work sites the first, second, eleventh and every third House Wrecker thereafter will be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). Other House Wreckers may be Tier B House Wreckers.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$36.33**

Supplemental Benefit Rate per Hour: **\$29.22**

House Wrecker - Tier B

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$25.56**

Supplemental Benefit Rate per Hour: **\$21.63**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL

Iron Worker - Ornamental

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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Wage Rate per Hour: **\$44.20**

Supplemental Benefit Rate per Hour: **\$51.57**

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description

Time and one half the regular rate after a 7 hour day for a maximum of two hours on any regular work day (the 8th and 9th hour) and double time shall be paid for all work on a regular work day thereafter, time and one half the regular rate for Saturday for the first seven hours of work and double time shall be paid for all work on a Saturday thereafter.

Overtime

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

For off shift work - 8 hours pay for 7 hours of work. When two or three shifts are employed on a job, Monday through Friday, the workday for each shift shall be seven hours and paid for ten and one-half hours at the single time rate. When two or three shifts are worked on Saturday, Sunday or holidays, each shift shall be seven hours and paid fifteen and three-quarters hours.

(Local #580)

IRON WORKER - STRUCTURAL

Iron Worker - Structural

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.05**

Supplemental Benefit Rate per Hour: **\$72.53**

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description

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Monday through Friday- the first eight hours are paid at straight time, the 9th and 10th hours are paid at time and one-half the regular rate, all additional weekday overtime is paid at double the regular rate. Saturdays- the first eight hours are paid at time and one-half the regular rate, double time thereafter. Sunday-all shifts are paid at double time.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

Monday through Friday - First Shift: First eight hours are paid at straight time, the 9th & 10th hours are paid at time and a half, double time paid thereafter. Second and third Shifts: First eight hours are paid at time and one-half, double time thereafter. Saturdays: All shifts, first eight hours paid at time and one-half, double time thereafter: Sunday all shifts are paid at double time.

(Local #40 & #361)

LABORER

(Foundation, Concrete, Excavating, Street Pipe Layer and Common)

Laborer

Excavation and foundation work for buildings, heavy construction, engineering work, and hazardous waste removal in connection with the above work. Landscaping tasks in connection with heavy construction work, engineering work and building projects. Projects include, but are not limited to pollution plants, sewers, parks, subways, bridges, highways, etc.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.50**

Supplemental Benefit Rate per Hour: **\$40.63**

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Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

Labor Day
Thanksgiving Day

Shift Rates

When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

LANDSCAPING

(Landscaping tasks, as well as tree pruning, tree removing, spraying and maintenance in connection with the planting of street trees and the planting of trees in city parks but not when such activities are performed as part of, or in connection with, other construction or reconstruction projects.)

Landscaper (Above 6 years experience)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$28.75**
Supplemental Benefit Rate per Hour: **\$15.55**

Landscaper (3 - 6 years experience)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$27.75**
Supplemental Benefit Rate per Hour: **\$15.55**

Landscaper (up to 3 years experience)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$25.25**
Supplemental Benefit Rate per Hour: **\$15.55**

Groundperson

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$25.25**
Supplemental Benefit Rate per Hour: **\$15.55**

Tree Remover / Pruner

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$33.75**
Supplemental Benefit Rate per Hour: **\$15.55**

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$23.75**
Supplemental Benefit Rate per Hour: **\$15.55**

Watering - Plant Maintainer

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$18.72**
Supplemental Benefit Rate per Hour: **\$15.55**

Overtime Description

For all overtime work performed, supplemental benefits shall include an additional seventy-five (\$0.75) cents per hour.

Overtime

- Time and one half the regular rate after an 8 hour day.
- Time and one half the regular rate for Saturday.
- Double time the regular rate for Sunday.
- Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day

Shift Rates

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Work performed on a 4pm to 12am shift has a 15% differential. Work performed on a 12am to 8am shift has a 20% differential.

(Local #175)

MARBLE MECHANIC

Marble Setter

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.74**

Supplemental Benefit Rate per Hour: **\$38.67**

Marble Finisher

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.46**

Supplemental Benefit Rate per Hour: **\$36.64**

Marble Polisher

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.93**

Supplemental Benefit Rate per Hour: **\$28.33**

Overtime Description

Supplemental Benefit contributions are to be made at the applicable overtime rates. Time and one half the regular rate after a 7 hour day or time and one half the regular rate after an 8 hour day - chosen by Employer at the start of the project and then would last for the full duration of the project.

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

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Christmas Day

Paid Holidays

None

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.90**

Supplemental Benefit Rate per Hour: **\$30.59**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

The Employer may work two (2) shifts with the first shift at the straight time wage rate and the second shift receiving eight (8) hours paid for seven (7) hours work at the straight time wage rate.

(Local #79)

MASON TENDER (INTERIOR DEMOLITION WORKER)

Mason Tender Tier A

Tier A Interior Demolition Worker performs all burning, chopping, and other technically skilled tasks related to interior demolition work.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$36.19**

Supplemental Benefit Rate per Hour: **\$24.25**

Mason Tender Tier B

Tier B Interior Demolition Worker performs manual work and work incidental to demolition work, such as loading and carting of debris from the work site to an area where it can be loaded in to bins/trucks for removal. Also performs clean-up of the site when demolition is completed.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$25.38**

Supplemental Benefit Rate per Hour: **\$18.57**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

(Local #79)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2017 - 6/30/2018

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Wage Rate per Hour: **\$46.28**

Supplemental Benefit Rate per Hour: **\$42.92**

Supplemental Note: Supplemental benefits for overtime are paid at the appropriate overtime rate.

Overtime Description

Overtime would be time and one half the regular rate after a seven (7) or eight (8) hours workday, which would be set at the start of the job.

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

There will be no shift differential paid on the first shift if more than one shift is employed. The shift differential will remain \$12/hour on the second and third shift for the first eight (8) hours if worked. There will be no pyramiding on overtime worked on second and third shifts. The time and one half (1.5x) rate will be against the base wage rate, not the shift differential

(Local #46)

MILLWRIGHT

Millwright

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$51.50**

Supplemental Benefit Rate per Hour: **\$52.41**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

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Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

The first shift shall receive the straight time rate of pay. The second shift receives the straight time rate of pay plus fifteen (15%) per cent. Members of the second shift shall be allowed one half hour to eat, with this time being included in the hours of the workday established. There must be a first shift to work a second shift. All additional hours worked shall be paid at the time and one-half rate of pay plus fifteen (15%) per cent for weekday hours.

(Local #740)

MOSAIC MECHANIC

Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.86**

Supplemental Benefit Rate per Hour: **\$40.65**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$51.67 per hour.

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.26**

Supplemental Benefit Rate per Hour: **\$40.63**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$51.65 per hour.

Mosaic Mechanic - Machine Operator Grinder

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.26**

Supplemental Benefit Rate per Hour: **\$40.63**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$51.65 per hour.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Good Friday

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.50**

Supplemental Benefit Rate per Hour: **\$28.62**

Supplemental Note: \$ 33.25 on overtime

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.50**

Supplemental Benefit Rate per Hour: **\$28.62**

Supplemental Note: \$ 33.25 on overtime

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Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

(District Council of Painters #9)

PAINTER - METAL POLISHER

METAL POLISHER

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$29.73**

Supplemental Benefit Rate per Hour: **\$7.06**

METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$30.68**

Supplemental Benefit Rate per Hour: **\$7.06**

METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$33.23**

Supplemental Benefit Rate per Hour: **\$7.06**

Overtime Description

All work performed on Saturdays shall be paid at time-in-a half. The exception being; for suspended scaffold work and work deemed as a construction project; an eight (8) hour shift lost during the week due to

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circumstances beyond the control of the employer, up to a maximum of eight (8) hours per week, may be worked on Saturday at the straight time rate.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Triple time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Four Days a week at Ten (10) hours straight a day.

Local 8A-28A

PAINTER - STRIPER

Striper (paint)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$35.00**

Supplemental Benefit Rate per Hour: **\$12.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$8.02; New Hire Rate (0-3 months) - \$0.00

Lineperson (thermoplastic)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$39.00**

Supplemental Benefit Rate per Hour: **\$12.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$8.02; New Hire Rate (0-3 months) - \$0.00

Overtime

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Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Employees hired before April 1, 2003: 15% night shift premium differential for work commenced at 9:00 PM or later.

Vacation

Employees with one to two years service shall accrue vacation based on hours worked: 250 hours worked - 1 day vacation; 500 hours worked - 2 days vacation; 750 hours worked - 3 days vacation; 900 hours worked - 4 days vacation; 1,000 hours worked - 5 days vacation. Employees with two to five years service receive two weeks vacation. Employees with five to twenty years service receive three weeks vacation. Employees with twenty to twenty-five years service receive four weeks vacation. Employees with 25 or more years service receive five weeks vacation. Vacation must be taken during winter months. 2 Personal Days except employees hired after 4/1/12 who do not have 2 years of service.

(Local #917)

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2017 - 9/30/2017
Wage Rate per Hour: **\$49.50**
Supplemental Benefit Rate per Hour: **\$37.08**

Effective Period: 10/1/2017 - 6/30/2018
Wage Rate per Hour: **\$50.00**
Supplemental Benefit Rate per Hour: **\$38.33**

Painter - Power Tool

Effective Period: 7/1/2017 - 9/30/2017
Wage Rate per Hour: **\$55.50**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: **\$37.08**

Overtime Wage Rate: \$6.00 above the "Painters on Structural Steel" overtime rate.

Effective Period: 10/1/2017 - 6/30/2018

Wage Rate per Hour: **\$56.00**

Supplemental Benefit Rate per Hour: **\$38.33**

Overtime Wage Rate: \$6.00 above the "Painters on Structural Steel" overtime rate.

Overtime Description

Supplemental Benefits shall be paid for each hour worked, up to forty (40) hours per week for the period of May 1st to November 15th or up to fifty (50) hours per week for the period of November 16th to April 30th.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Regular hourly rates plus a ten per cent (10%) differential

(Local #806)

PAPERHANGER

Paperhanger

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.89**

Supplemental Benefit Rate per Hour: **\$31.13**

Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

Evening shift - 4:30 P.M. to 12:00 Midnight (regular rate of pay); any work performed before 7:00 A.M. shall be at time and one half the regular base rate of pay.

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.85**

Supplemental Benefit Rate per Hour: **\$40.98**

Paver & Roadbuilder - Laborer

Paving and road construction work, regardless of material used, including but not limited to preparation of job sites, removal of old surfaces, asphalt and/or concrete, by whatever method, including but not limited to milling; laying of concrete; laying of asphalt for temporary, patchwork, and utility paving (but not production paving); site preparation and incidental work before the installation of rubberized materials and similar surfaces; installation and repair of temporary construction fencing; slurry seal coating, maintenance of safety surfaces; play equipment installation, and other related work.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.98**

Supplemental Benefit Rate per Hour: **\$40.98**

Production Paver & Roadbuilder - Screed Person

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

(Production paving is asphalt paving when using a paving machine or on a project where a paving machine is traditionally used)

Adjustment of paving machinery on production paving jobs.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.45**

Supplemental Benefit Rate per Hour: **\$40.98**

Production Paver & Roadbuilder - Raker

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.85**

Supplemental Benefit Rate per Hour: **\$40.98**

Production Paver & Roadbuilder - Shoveler

General laborer (except removal of surfaces - see Paver and Roadbuilder-Laborer) including but not limited to tamper, AC paint and liquid tar work.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.37**

Supplemental Benefit Rate per Hour: **\$40.98**

Overtime Description

If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Shift Rates

When two shifts are employed, the work period for each shift shall be a continuous eight (8) hours. When three shifts are employed, each shift will work seven and one half (7 ½) hours but will be paid for eight (8) hours since only one half (1/2) hour is allowed for meal time.

When two or more shifts are employed, single time will be paid for each shift.

Night Work - On night work, the first eight (8) hours of work will be paid for at the single time rate, except that production paving work shall be paid at 10% over the single time rate for the screed person, rakers and shovelers directly involved only. This differential is to be paid when there is only one shift and the shift works at night. All other workers will be exempt. Hours worked over eight (8) hours during said shift shall be paid for at the time and one-half rate.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

(Local #1010)

PLASTERER

Plasterer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.93**

Supplemental Benefit Rate per Hour: **\$25.15**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

When it is not possible to conduct alteration work during regular work hours, in a building occupied by tenants, said work shall proceed on a shift basis: however work over seven (7) hours in any twenty four (24) hour period, the time after seven (7) hours shall be considered overtime.

The second shift shall start at a time between 3:30 p.m. and 7:00 p.m. and shall consist of seven (7) working hours and shall receive eight (8) hours of wages and benefits at the straight time rate. The workers on the second shift shall be allowed one-half (½) hour to eat with this time being included in the seven (7) hours of work.

(Local #262)

PLASTERER - TENDER

Plasterer - Tender

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.90**

Supplemental Benefit Rate per Hour: **\$30.59**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

When work commences outside regular work hours, workers receive an hour additional (differential) wage and supplement payment. Eight hours pay for seven hours work or nine hours pay for eight hours work.

(Mason Tenders District Council)

PLUMBER

Plumber

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$67.25**

Supplemental Benefit Rate per Hour: **\$31.80**

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Plumber - Temporary Services

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Temporary Services - When there are no Plumbers on the job site, there may be three shifts designed to cover the entire twenty-four hour period, including weekends if necessary, at the following rate straight time.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$53.88**

Supplemental Benefit Rate per Hour: **\$25.36**

Overtime Description

Double time the regular rate after a 7 hour day - unless for new construction site work where the plumbing contract price is \$1.5 million or less, the hours of labor can be 8 hours per day at the employers option. On Alteration jobs when other mechanical trades at the site are working an eighth hour at straight time, then the plumber shall also work an eighth hour at straight time.

Overtime

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Shift work, when directly specified in public agency or authority documents where plumbing contract is \$8 million or less, will be permitted. 30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)

(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Plumber

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.20**

Supplemental Benefit Rate per Hour: **\$15.41**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Plumbers Local # 1)

PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.66**

Supplemental Benefit Rate per Hour: **\$22.95**

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates

30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday.
50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER: PUMP & TANK
Oil Trades (Installation and Maintenance)

Plumber - Pump & Tank

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$64.22**
Supplemental Benefit Rate per Hour: **\$23.21**

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

**POINTER, WATERPROOFER, CAULKER, SANDBLASTER,
STEAMBLASTER
(Exterior Building Renovation)**

Journey person

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.57**

Supplemental Benefit Rate per Hour: **\$25.80**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

All work outside the regular work day (an eight hour workday between the hours of 6:00 A.M. and 4:30 P.M.) is to be paid at time and one half the regular rate.

(Bricklayer District Council)

ROOFER

Roofer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.50**

Supplemental Benefit Rate per Hour: **\$32.27**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Second shift - Regular hourly rate plus a 10% differential. Third shift - Regular hourly rate plus a 15% differential.

(Local #8)

SHEET METAL WORKER

Sheet Metal Worker

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$48.90**

Supplemental Benefit Rate per Hour: **\$48.00**

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Fan Maintenance

(The temporary operation of fans or blowers in new or existing buildings for heating and/or ventilation, and/or air conditioning prior to the completion of the project.)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$39.12**

Supplemental Benefit Rate per Hour: **\$48.00**

Sheet Metal Worker - Duct Cleaner

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$12.90**

Supplemental Benefit Rate per Hour: **\$8.07**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

Work that can only be performed outside regular working hours (eight hours of work between 7:30 A.M. and 3:30 P.M.) - First shift (work between 3:30 P.M. and 11:30 P.M.) - 10% differential above the established hourly rate.

Second shift (work between 11:30 P.M. and 7:30 A.M.) - 15% differential above the established hourly rate.

For Fan Maintenance: On all full shifts of fan maintenance work the straight time hourly rate of pay will be paid for each shift, including nights, Saturdays, Sundays, and holidays.

(Local #28)

**SHEET METAL WORKER - SPECIALTY
(Decking & Siding)**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Sheet Metal Specialty Worker

The first worker to perform this work must be paid at the rate of the Sheet Metal Worker. The second and third workers shall be paid the Specialty Worker Rate. The ratio of One Sheet Metal Worker, then Two Specialty Workers shall be utilized thereafter.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.57**

Supplemental Benefit Rate per Hour: **\$25.02**

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

(Local #28)

SHIPYARD WORKER

Shipyard Mechanic - First Class

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$28.12**

Supplemental Benefit Rate per Hour: **\$3.03**

Shipyard Mechanic - Second Class

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$23.35**

Supplemental Benefit Rate per Hour: **\$2.85**

Shipyard Laborer - First Class

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$20.96**

Supplemental Benefit Rate per Hour: **\$2.76**

Shipyard Laborer - Second Class

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$15.24**

Supplemental Benefit Rate per Hour: **\$2.54**

Shipyard Dockhand - First Class

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$22.89**

Supplemental Benefit Rate per Hour: **\$2.83**

Shipyard Dockhand - Second Class

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$16.51**

Supplemental Benefit Rate per Hour: **\$2.58**

Overtime Description

Work performed on holiday is paid double time the regular hourly wage rate plus holiday pay.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays

New Year's Day

Martin Luther King Jr. Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Based on Survey Data

SIGN ERECTOR

(Sheet Metal, Plastic, Electric, and Neon)

Sign Erector

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.67**

Supplemental Benefit Rate per Hour: **\$50.67**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Time and one half the regular hourly rate is to be paid for all hours worked outside the regular workday either (7:00 A.M. through 2:30 P.M.) or (8:00 A.M. through 3:30 P.M.)

(Local #137)

STEAMFITTER

Steamfitter I

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$55.50**

Supplemental Benefit Rate per Hour: **\$55.29**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Supplemental Note: Overtime supplemental benefit rate: \$109.84

Steamfitter -Temporary Services

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$42.18

Supplemental Benefit Rate per Hour: \$44.84

Overtime

Double time the regular rate after a 7 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

Work performed between 3:30 P.M. and 7:00 A.M. and on Saturdays, Sundays and Holidays shall be at double time the regular hourly rate and paid at the overtime supplemental benefit rate above.

Steamfitter II

For heating, ventilation, air conditioning and mechanical public works contracts with a dollar value not to exceed \$15,000,000 and for fire protection/sprinkler public works contracts not to exceed \$1,500,000.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$55.50

Supplemental Benefit Rate per Hour: \$55.29

Supplemental Note: Overtime supplemental benefit rate: \$109.84

Steamfitter -Temporary Services

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.18**

Supplemental Benefit Rate per Hour: **\$44.84**

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

May be performed outside of the regular workday except Saturday, Sunday and Holidays. A shift shall consist of eight working hours. All work performed in excess of eight hours shall be paid at double time. No shift shall commence after 7:00 P.M. on Friday or 7:00 P.M. the day before holidays. All work performed after 12:01 A.M. Saturday or 12:01 A.M. the day before a Holiday will be paid at double time. When shift work is performed the wage rate for regular time worked is a thirty percent premium together with fringe benefits.

On Transit Authority projects, where work is performed in the vicinity of tracks all shift work on weekends and holidays may be performed at the regular shift rates.

Local #638

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER (Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$39.50**
Supplemental Benefit Rate per Hour: **\$15.81**

Refrigeration and Air Conditioner Service Person V

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$32.46**
Supplemental Benefit Rate per Hour: **\$14.16**

Refrigeration and Air Conditioner Service Person IV

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$26.89**
Supplemental Benefit Rate per Hour: **\$12.80**

Refrigeration and Air Conditioner Service Person III

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$23.08**
Supplemental Benefit Rate per Hour: **\$11.79**

Refrigeration and Air Conditioner Service Person II

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$19.14**
Supplemental Benefit Rate per Hour: **\$10.85**

Refrigeration and Air Conditioner Service Person I

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$14.00**
Supplemental Benefit Rate per Hour: **\$9.76**

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day
Christmas Day

Double time and one half the regular rate for work on the following holiday(s).

Martin Luther King Jr. Day
President's Day
Memorial Day
Columbus Day

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #638B)

STONE MASON - SETTER

Stone Mason - Setter

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$53.62**

Supplemental Benefit Rate per Hour: **\$41.65**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Washington's Birthday
Good Friday

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates

For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.82**

Supplemental Benefit Rate per Hour: **\$22.68**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

(Local #1974)

TELECOMMUNICATION WORKER (Voice Installation Only)

Telecommunication Worker

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$40.35**

Supplemental Benefit Rate per Hour: **\$13.19**

Supplemental Note: The above rate applies for Manhattan, Bronx, Brooklyn, Queens. \$12.64 for Staten Island only.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Lincoln's Birthday

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

Paid Holidays

New Year's Day

Lincoln's Birthday

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees have the option of observing either Martin Luther King's Birthday or the day after Thanksgiving instead of Lincoln's Birthday

Shift Rates

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

For any workday that starts before 8A.M. or ends after 6P.M. there is a 10% differential for the applicable worker's hourly rate.

Vacation

After 6 months.....one week.
After 12 months but less than 7 years.....two weeks.
After 7 or more but less than 15 years.....three weeks.
After 15 years or more but less than 25 years.....four weeks.

(C.W.A.)

TILE FINISHER

Tile Finisher

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$41.13**
Supplemental Benefit Rate per Hour: **\$31.18**

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$53.19**

Supplemental Benefit Rate per Hour: **\$35.35**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TIMBERPERSON

Timberperson

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$48.00**

Supplemental Benefit Rate per Hour: **\$49.16**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Time and one half the regular hourly rate after 40 hours in any work week.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Local #1536)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$62.37

Supplemental Benefit Rate per Hour: \$52.39

Tunnel Workers (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$60.21

Supplemental Benefit Rate per Hour: \$50.65

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$59.11**
Supplemental Benefit Rate per Hour: **\$49.74**

Outside Lock Tender, Outside Gauge Tender, Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$58.04**
Supplemental Benefit Rate per Hour: **\$48.81**

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$58.04**
Supplemental Benefit Rate per Hour: **\$48.81**

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$50.87**
Supplemental Benefit Rate per Hour: **\$46.11**

Blasters (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$59.52**
Supplemental Benefit Rate per Hour: **\$50.03**

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$56.97**
Supplemental Benefit Rate per Hour: **\$47.89**

All Others (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$52.63**
Supplemental Benefit Rate per Hour: **\$44.29**

Microtunneling (Free Air Rates)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$45.58**
Supplemental Benefit Rate per Hour: **\$38.31**

Overtime Description

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 PREVAILING WAGE SCHEDULE

For Repair-Maintenance Work on Existing Equipment and Facilities - Time and one half the regular rate after a 7 hour day, or for Saturday, or for Sunday. Double time the regular rate for work on a holiday.
For Small-Bore Micro Tunneling Machines - Time and one-half the regular rate shall be paid for all overtime.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #147)

WELDER

**TO BE PAID AT THE RATE OF THE JOURNEYPERSON IN THE TRADE
PERFORMING THE WORK.**

OFFICE OF THE COMPTROLLER

CITY OF NEW YORK

220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

APPENDIX

Pursuant to Labor Law §220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant and registered with the New York State Department of Labor, may be employed on a public work project.

Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the journey person wage rate for the classification of work he actually performed.

Apprentice ratios are established to ensure the proper safety, training and supervision of apprentices. A ratio establishes the number of journey workers required for each apprentice in a program and on a job site. Ratios are interpreted as follows: in the case of a 1:1, 1:4 ratio, there must be one journey worker for the first apprentice, and four additional journey workers for each subsequent apprentice.

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ASBESTOS HANDLER

(Ratio of Apprentice Journeyperson: 1 to 1, 1 to 3)

Asbestos Handler (First 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 78% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$14.25

Asbestos Handler (Second 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$14.25

Asbestos Handler (Third 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 83% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$14.25

Asbestos Handler (Fourth 1000 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 89% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$14.25

(Local #78)

BOILERMAKER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Boilermaker (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.84
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$31.26

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$32.57
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$33.02

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$34.29
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$34.78

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$36.03
Effective 1/1/2018- Supplemental Benefit Rate Per Hour: \$36.56

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$37.76
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$38.32

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$39.51
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$40.09

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$41.22
Effective 1/1/2018- Supplemental Benefit Rate Per Hour: \$41.84

(Local #5)

BRICKLAYER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Bricklayer (First 750 Hours)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$18.80

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$18.80

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$18.80

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$18.80

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$18.80

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$18.80

(Bricklayer District Council)

CARPENTER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Carpenter (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

Carpenter (Second Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyman's rate

Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

Carpenter (Third Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyman's rate

Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

Carpenter (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyman's rate

Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

(Carpenters District Council)

**CARPENTER - HIGH RISE CONCRETE FORMS
(Ratio of Apprentice to Journeyman: 1 to 1, 2 to 5)**

Carpenter - High Rise (First Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$16.86

Supplemental Benefit Rate per Hour: \$16.20

Carpenter - High Rise (Second Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$23.16

Supplemental Benefit Rate per Hour: \$16.33

Carpenter - High Rise (Third Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$29.61

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: \$16.46

Carpenter - High Rise (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$37.07

Supplemental Benefit Rate per Hour: \$16.61

(Carpenters District Council)

CEMENT MASON

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Cement Mason (First Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's Rate

Cement Mason (Second Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's Rate

Cement Mason (Third Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 70% of Journeyman's Rate

(Local #780)

CEMENT AND CONCRETE WORKER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Cement & Concrete Worker (First 1333 hours)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$17.75

Cement & Concrete Worker (Second 1333 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$23.03

Cement & Concrete Worker (Last 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$24.30

Cement & Concrete Worker (Hired after 2/6/2016 - First 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: \$16.96
Supplemental Benefit Rate Per Hour: \$11.80

Cement & Concrete Worker (Hired after 2/6/2016 - Second 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: \$22.08
Supplemental Benefit Rate Per Hour: \$16.49

Cement & Concrete Worker (Hired after 2/6/2016 - Last 1334 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: \$27.20
Supplemental Benefit Rate Per Hour: \$17.33

(Cement Concrete Workers District Council)

**DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)**

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Benefit Rate Per Hour: 50% of Journeyman's rate

Derrickperson & Rigger (stone) - Second Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyman's rate

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 90% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

DOCKBUILDER/PILE DRIVER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

(Carpenters District Council)

ELECTRICIAN

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Electrician (First Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$14.00**

Supplemental Benefit Rate per Hour: **\$12.37**

Overtime Supplemental Rate Per Hour: **\$13.29**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$14.50**

Supplemental Benefit Rate per Hour: **\$12.63**

Overtime Supplemental Rate Per Hour: **\$13.58**

Electrician (First Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$15.00**

Supplemental Benefit Rate per Hour: **\$12.88**

Overtime Supplemental Rate Per Hour: **\$13.87**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$15.50**

Supplemental Benefit Rate per Hour: **\$13.14**

Overtime Supplemental Rate Per Hour: **\$14.16**

Electrician (Second Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$16.00**

Supplemental Benefit Rate per Hour: **\$13.39**

Overtime Supplemental Rate Per Hour: **\$14.44**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$16.50**

Supplemental Benefit Rate per Hour: **\$13.64**

Overtime Supplemental Rate Per Hour: **\$14.73**

Electrician (Second Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$17.00**

Supplemental Benefit Rate per Hour: **\$13.90**

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§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Overtime Supplemental Rate Per Hour: \$15.02

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$17.50

Supplemental Benefit Rate per Hour: \$14.15

Overtime Supplemental Rate Per Hour: \$15.31

Electrician (Third Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$18.00

Supplemental Benefit Rate per Hour: \$14.41

Overtime Supplemental Rate Per Hour: \$15.59

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$18.50

Supplemental Benefit Rate per Hour: \$14.66

Overtime Supplemental Rate Per Hour: \$15.88

Electrician (Third Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$19.00

Supplemental Benefit Rate per Hour: \$14.92

Overtime Supplemental Rate Per Hour: \$16.17

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$19.50

Supplemental Benefit Rate per Hour: \$15.17

Overtime Supplemental Rate Per Hour: \$16.45

Electrician (Fourth Term: 0-6 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$20.00

Supplemental Benefit Rate per Hour: \$15.43

Overtime Supplemental Rate Per Hour: \$16.74

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$20.50

Supplemental Benefit Rate per Hour: \$15.68

Overtime Supplemental Rate Per Hour: \$17.03

Electrician (Fourth Term: 7-12 Months)

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$22.00

Supplemental Benefit Rate per Hour: \$16.44

Overtime Supplemental Rate Per Hour: \$17.89

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: **\$22.50**
Supplemental Benefit Rate per Hour: **\$16.70**
Overtime Supplemental Rate Per Hour: \$18.18

Electrician (Fifth Term: 0-12 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: **\$24.00**
Supplemental Benefit Rate per Hour: **\$19.80**
Overtime Supplemental Rate Per Hour: \$21.30

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: **\$24.50**
Supplemental Benefit Rate per Hour: **\$20.30**
Overtime Supplemental Rate Per Hour: \$21.84

Electrician (Fifth Term: 13-18 Months)

Effective Period: 7/1/2017 - 5/9/2018
Wage Rate per Hour: **\$28.50**
Supplemental Benefit Rate per Hour: **\$22.10**
Overtime Supplemental Rate Per Hour: \$23.89

Effective Period: 5/10/2018 - 6/30/2018
Wage Rate per Hour: **\$29.00**
Supplemental Benefit Rate per Hour: **\$22.65**
Overtime Supplemental Rate Per Hour: \$24.47

Overtime Description

Overtime Wage paid at time and one half the regular rate

(Local #3)

ELEVATOR CONSTRUCTOR
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 2)

Elevator (Constructor) - First Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$29.88

Effective Period: 3/17/2018 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.35

Elevator (Constructor) - Second Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$30.31

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.80

Elevator (Constructor) - Third Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.19

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$32.70

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$32.07

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.60

(Local #1)

ELEVATOR REPAIR & MAINTENANCE
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator Service/Modernization Mechanic (First Year)

Effective Period: 7/1/2017 - 3/16/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: \$29.80

Effective Period: 3/17/2018 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Per Hour: \$31.28

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 55% of Journeyperson's rate

Supplemental Benefit Per Hour: \$30.23

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 55% of Journeyperson's rate

Supplemental Benefit Per Hour: \$31.72

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Per Hour: \$31.09

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Per Hour: \$32.60

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 75% of Journeyperson's rate

Supplemental Benefit Per Hour: \$31.95

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 75% of Journeyperson's rate

Supplemental Benefit Per Hour: \$33.49

(Local #1)

ENGINEER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Engineer - First Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$24.77

Supplemental Benefit Rate per Hour: \$24.62

Engineer - Second Year

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Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$30.97**
Supplemental Benefit Rate per Hour: **\$24.62**

Engineer - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$34.06**
Supplemental Benefit Rate per Hour: **\$24.62**

Engineer - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$37.16**
Supplemental Benefit Rate per Hour: **\$24.62**

(Local #15)

ENGINEER - OPERATING
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 5)

Operating Engineer - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour 40% of Journeyman's Rate
Supplemental Benefit Per Hour: **\$20.85**

Operating Engineer - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyman's Rate
Supplemental Benefit Per Hour: **\$20.85**

Operating Engineer - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyman's Rate
Supplemental Benefit Per Hour: **\$20.85**

(Local #14)

FLOOR COVERER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Floor Coverer (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$31.14

Floor Coverer (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$31.14

Floor Coverer (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Rate Per Hour: \$31.14

Floor Coverer (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Rate Per Hour: \$31.14

(Carpenters District Council)

GLAZIER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Glazier (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$15.26

Glazier (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyman's rate

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Supplemental Rate Per Hour: \$25.36

Glazier (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$28.62

Glazier (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$34.67

(Local #1281)

HEAT & FROST INSULATOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #12)

**HOUSE WRECKER
(TOTAL DEMOLITION)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)**

House Wrecker - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$21.17**
Supplemental Benefit Rate per Hour: **\$18.54**

House Wrecker - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$22.32**
Supplemental Benefit Rate per Hour: **\$18.54**

House Wrecker - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$23.97**
Supplemental Benefit Rate per Hour: **\$18.54**

House Wrecker - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$26.53**
Supplemental Benefit Rate per Hour: **\$18.54**

(Mason Tenders District Council)

**IRON WORKER - ORNAMENTAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

Iron Worker (Ornamental) - 1st Ten Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: **\$39.40**

Iron Worker (Ornamental) - 11 -16 Months

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Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$40.62

Iron Worker (Ornamental) - 17 - 22 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$41.83

Iron Worker (Ornamental) - 23 - 28 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$44.27

Iron Worker (Ornamental) - 29 - 36 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$46.70

(Local #580)

IRON WORKER - STRUCTURAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$26.12
Supplemental Benefit Rate per Hour: \$50.22

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$26.72
Supplemental Benefit Rate per Hour: \$50.22

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$27.32

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Supplemental Benefit Rate per Hour: **\$50.22**

(Local #40 and #361)

LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)

(Ratio Apprentice to Journeyman: 1 to 1, 1 to 3)

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - First 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$40.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Second 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Rate Per Hour: \$40.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Third 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyman's rate
Supplemental Rate Per Hour: \$40.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Fourth 1000 hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyman's rate
Supplemental Rate Per Hour: \$40.63

(Local #731)

MARBLE MECHANICS

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 55% of Journeyman's rate

Cutters & Setters - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 65% of Journeyman's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyman's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 85% of Journeyman's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 95% of Journeyman's rate

Polishers & Finishers - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Polishers & Finishers - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Polishers & Finishers - Third 750 Hours

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Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Polishers & Finishers - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

MASON TENDER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Mason Tender - First Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$21.39**

Supplemental Benefit Rate per Hour: **\$19.65**

Mason Tender - Second Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$22.54**

Supplemental Benefit Rate per Hour: **\$19.65**

Mason Tender - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$24.29**

Supplemental Benefit Rate per Hour: **\$19.70**

Mason Tender - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$26.95**

Supplemental Benefit Rate per Hour: **\$19.70**

(Local #79)

METALLIC LATHER (Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Metallic Lather (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$28.38**
Supplemental Benefit Rate per Hour: **\$10.96**

Metallic Lather (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$32.38**
Supplemental Benefit Rate per Hour: **\$12.96**

Metallic Lather (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$35.38**
Supplemental Benefit Rate per Hour: **\$17.12**

Metallic Lather (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$37.38**
Supplemental Benefit Rate per Hour: **\$17.92**

(Local #46)

MILLWRIGHT (Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Millwright (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$28.33**
Supplemental Benefit Rate per Hour: **\$34.28**

Millwright (Second Year)

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Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$33.48**
Supplemental Benefit Rate per Hour: **\$37.88**

Millwright (Third Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$38.63**
Supplemental Benefit Rate per Hour: **\$42.13**

Millwright (Fourth Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$48.93**
Supplemental Benefit Rate per Hour: **\$48.69**

(Local #740)

PAVER AND ROADBUILDER
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Paver and Roadbuilder - First Year (Minimum 1000 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$27.86**
Supplemental Benefit Rate per Hour: **\$19.25**

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$29.50**
Supplemental Benefit Rate per Hour: **\$19.25**

(Local #1010)

PAINTER
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Painter - Brush & Roller - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$17.00**
Supplemental Benefit Rate per Hour: **\$13.42**

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$21.25**
Supplemental Benefit Rate per Hour: **\$17.43**

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$25.50**
Supplemental Benefit Rate per Hour: **\$20.50**

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$34.00**
Supplemental Benefit Rate per Hour: **\$26.20**

(District Council of Painters)

PAINTER - METAL POLISHER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metal Polisher (First Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$11.75**
Supplemental Benefit Rate per Hour: **\$5.13**

Metal Polisher (Second Year)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$13.00**
Supplemental Benefit Rate per Hour: **\$5.13**

Metal Polisher (Third Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$15.75

Supplemental Benefit Rate per Hour: \$5.13

(Local 8A-28)

PAINTER - STRUCTURAL STEEL

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Painters - Structural Steel (First Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Painters - Structural Steel (Second Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 80% of Journeyman's rate

(Local #806)

PLASTERER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Plasterer - First Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyman's rate

Supplemental Rate Per Hour: \$13.59

Plasterer - First Year: 2nd Six Months

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Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$14.07

Plasterer - Second Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$16.04

Plasterer - Second Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$17.12

Plasterer - Third Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$19.29

Plasterer - Third Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$20.37

(Local #530)

PLASTERER - TENDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plasterer Tender - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$21.39
Supplemental Benefit Rate per Hour: \$19.65

Plasterer Tender - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: \$22.54

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Supplemental Benefit Rate per Hour: **\$19.65**

Plasterer Tender - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$24.29**

Supplemental Benefit Rate per Hour: **\$19.70**

Plasterer Tender - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$26.95**

Supplemental Benefit Rate per Hour: **\$19.70**

(Local #79)

PLUMBER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$16.28**

Supplemental Benefit Rate per Hour: **\$5.43**

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$19.28**

Supplemental Benefit Rate per Hour: **\$6.43**

Plumber - Second Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$26.35**

Supplemental Benefit Rate per Hour: **\$17.10**

Plumber - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$28.45**

Supplemental Benefit Rate per Hour: **\$17.10**

Plumber - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$31.30**
Supplemental Benefit Rate per Hour: **\$17.10**

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$32.70**
Supplemental Benefit Rate per Hour: **\$17.10**

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$44.77**
Supplemental Benefit Rate per Hour: **\$17.10**

(Plumbers Local #1)

**POINTER, WATERPROOFER, CAULKER, SANDBLASTER,
STEAMBLASTER
(Exterior Building Renovation)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$25.89**
Supplemental Benefit Rate per Hour: **\$13.64**

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$28.97**
Supplemental Benefit Rate per Hour: **\$18.15**

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate per Hour: **\$34.12**
Supplemental Benefit Rate per Hour: **\$20.90**

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$41.33

Supplemental Benefit Rate per Hour: \$21.60

(Bricklayer District Council)

ROOFER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 2)

Roofer - First Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 35% of Journeyman's Rate

Roofer - Second Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's Rate

Roofer - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's Rate

Roofer - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyman's Rate

(Local #8)

SHEET METAL WORKER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Sheet Metal Worker (0-6 Months)

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Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 25% of Journeyperson's rate
Supplemental Rate Per Hour: \$6.35

Sheet Metal Worker (7-18 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: \$17.12

Sheet Metal Worker (19-30 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$23.54

Sheet Metal Worker (31-36 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$27.70

Sheet Metal Worker (37-42 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$29.11

Sheet Metal Worker (43-48 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.96

Sheet Metal Worker (49-54 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$36.07

Sheet Metal Worker (55-60 Months)

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$38.15

(Local #28)

SIGN ERECTOR

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Sign Erector - First Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 35% of Journeyman's rate
Supplemental Rate Per Hour: \$14.72

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$16.71

Sign Erector - Second Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 45% of Journeyman's rate
Supplemental Rate Per Hour: \$18.68

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$20.68

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 55% of Journeyman's rate
Supplemental Rate Per Hour: \$27.72

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Rate Per Hour: \$30.57

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Rate Per Hour: \$33.31

Sign Erector - Fourth Year: 2nd Six Months

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Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$35.83

Sign Erector - Fifth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$38.32

Sign Erector - Sixth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$40.81

(Local #137)

STEAMFITTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Steamfitter - First Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

Steamfitter - Second Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

Steamfitter - Third Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate per Hour: 65% of Journeyperson's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate Per Hour: 80% of Journeyperson's rate.

Steamfitter - Fifth Year

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate and Supplemental Rate Per Hour: 85% of Journeyperson's rate.

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(Local #638)

STONE MASON - SETTER
(Ratio Apprentice of Journeyman: 1 to 1, 1 to 2)

Stone Mason - Setters - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Rate Per Hour: 50% of Journeyman's rate

Stone Mason - Setters - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 70% of Journeyman's rate
Supplemental Rate Per Hour: 50% of Journeyman's rate

Stone Mason - Setters - Fourth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Rate Per Hour: 50% of Journeyman's rate

Stone Mason - Setters - Fifth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 90% of Journeyman's rate
Supplemental Rate Per Hour: 50% of Journeyman's rate

Stone Mason - Setters - Sixth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018
Wage Rate Per Hour: 100% of Journeyman's rate
Supplemental Rate Per Hour: 50% of Journeyman's rate

(Bricklayers District Council)

TAPER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Drywall Taper - First Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Drywall Taper - Second Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Drywall Taper - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 80% of Journeyman's rate

(Local #1974)

TILE LAYER - SETTER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Tile Layer - Setter - First 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

Tile Layer - Setter - Second 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 55% of Journeyman's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 65% of Journeyman's rate

Tile Layer - Setter - Fourth 750 Hours

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Tile Layer - Setter - Sixth 750 Hours

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

(Local #7)

TIMBERPERSON

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Timberperson - First Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

Timberperson - Second Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

Timberperson - Third Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

Timberperson - Fourth Year

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

(Local #1536)

ATTACHMENT I

NOTICE TO BIDDERS APPRENTICESHIP AGREEMENTS

NOTICE TO BIDDERS - APPRENTICESHIP AGREEMENTS

Please be advised that, pursuant to the authority granted to the City under Labor Law §816-b, the Department of Correction hereby requires that the contractor awarded a contract as a result of this solicitation, and any of its subcontractors with subcontracts worth two million dollars or over, have, prior to entering into such contract or subcontract, apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor. In addition, the contractor and its subcontractors will be required to show that such apprenticeship programs have successfully passed the two year Probation period following the initial registration date of such programs with the New York State Department of Labor.

The failure to prove, upon request, that these requirements have been met shall result in the contract not being awarded to the contractor or the subcontractor not being approved.

Please be further advised that, pursuant to Labor Law §220, the allowable ratio of apprentices to journeypersons in any craft classification shall not be greater than the ratio permitted to the contractor as to its workforce on any job under the registered apprenticeship program.

Attachment K

**Uniform Federal Contract Provisions Rider
for Federally Funded Procurement Contracts**

**UNIFORM FEDERAL CONTRACT PROVISIONS RIDER
FOR FEDERALLY FUNDED PROCUREMENT CONTRACTS
(11/10/2015)**

[Instructions to Agencies: This Uniform Federal Contract Provisions Rider for Federally Funded Procurement Contracts (“Rider”) must be attached to all federally funded procurement contracts (of any dollar amount) that are subject to 2 CFR Part 200 (Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards). This Rider does not apply to subrecipient or subaward agreements. Procurement contracts funded by the U.S. Department of Housing and Urban Development CDBG Program or CDBG-DR Program must also include the CDBG or CDBG-DR Rider, as applicable.]

A. Definitions. As used in this Rider:

- (1) “Awarding Entity” means the entity awarding the Contract. The Awarding Entity may be the City or a contractor at any tier.
- (2) “City” means the City of New York.
- (3) “Commissioner” means the head of the City agency entering into this Contract.
- (4) “Construction” means the building, rehabilitation, alteration, conversion, extension, demolition, painting or repair of any improvement to real property.
- (5) “Contract” refers to the contract or the agreement between the Awarding Entity and the Contractor.
- (6) “Contractor” means the entity performing the services pursuant to a Contract.
- (7) “Federal Agency” means the U.S. agency or agencies funding this Contract in whole or in part.
- (8) “Government” means the U.S. government.
- (9) “Rider” means this Uniform Federal Contract Provisions Rider.

B. Termination and Remedies for Breach of Contract. The following provisions concerning remedies for breach of contract and termination apply to Contracts between the City and the City’s Contractor.

- (1) **Remedies for Breach of Contract.** If the Contractor violates or breaches the Contract, the City may avail itself of any or all of the remedies provided for elsewhere in this Contract. If there are no remedies provided for elsewhere in this Contract, the City may avail itself of any or all of the following remedies.

After declaring the Contractor in default pursuant to the procedures in paragraph (a) of subdivision (2) of this section (B) below, the City may (i) withhold payment for unsatisfactory services, (ii) suspend or terminate the Contract in whole or in part; and/or

(iii) have the services under this Contract completed by such means and in such manner, by contract procured with or without competition, or otherwise, as the City may deem advisable in accordance with all applicable Contract provisions and law. After completion of the services under this Contract, the City shall certify the expense incurred in such completion, which shall include the cost of procuring that contract. Should the expense of such completion, as certified by the City, exceed the total sum which would have been payable under the Contract if it had been completed by the Contractor, any excess shall be promptly paid by the Contractor upon demand by the City. The excess expense of such completion, including any and all related and incidental costs, as so certified by the City may be charged against and deducted out of monies earned by the Contractor.

(2) **Termination.** The City shall have the right to terminate the Contract in whole or in part for cause, for convenience, due to force majeure, or due to reductions in federal funding. If the Contract does not include termination provisions elsewhere, the following termination provisions apply:

a. **Termination for Cause.** The City shall have the right to terminate the Contract, in whole or in part, for cause upon a determination that the Contractor is in default of the Contract. Unless a shorter time is determined by the City to be necessary, the City shall effect termination according to the following procedure:

i. *Notice to Cure.* The City shall give written notice of the conditions of default signed by the Commissioner, setting forth the ground or grounds upon which such default is declared (“Notice to Cure”). The Contractor shall have ten (10) days from receipt of the Notice to Cure or any longer period that is set forth in the Notice to Cure to cure the default. The Commissioner may temporarily suspend services under the Contract pending the outcome of the default proceedings pursuant to this section.

ii. *Opportunity to be Heard.* If the conditions set forth in the Notice to Cure are not cured within the period set forth in the Notice to Cure, the Commissioner may declare the Contractor in default. Before the Commissioner may exercise his or her right to declare the Contractor in default, the Contractor must be given an opportunity to be heard upon not less than five (5) business days’ notice. The Commissioner may, in his or her discretion, provide for such opportunity to be in writing or in person. Such opportunity to be heard shall not occur prior to the end of the cure period but notice of such opportunity to be heard may be given prior to the end of the cure period and may be given contemporaneously with the Notice to Cure.

iii. *Notice of Termination.* After an opportunity to be heard, the Commissioner may terminate the Contract, in whole

or in part, upon finding the Contractor in default. The Commissioner shall give the Contractor written notice of such termination (“Notice of Termination”), specifying the applicable provision(s) under which the Contract is terminated and the effective date of termination. If no date is specified in the Notice of Termination, the termination shall be effective either 10 calendar days from the date the notice is personally delivered or 15 calendar days from the date Notice of Termination is sent by another method. The Notice of Termination shall be personally delivered, sent by certified mail return receipt requested, or sent by fax and deposited in a post office box regularly maintained by the United States Postal Service in a postage pre-paid envelope.

iv. *Grounds for Default.* The City shall have the right to declare the Contractor in default:

1. Upon a breach by the Contractor of a material term or condition of this Contract, including unsatisfactory performance of the services;

2. Upon insolvency or the commencement of any proceeding by or against the Contractor, either voluntarily or involuntarily, under the Bankruptcy Code or relating to the insolvency, receivership, liquidation, or composition of the Contractor for the benefit of creditors;

3. If the Contractor refuses or fails to proceed with the services under the Contract when and as directed by the Commissioner;

4. If the Contractor or any of its officers, directors, partners, five percent (5%) or greater shareholders, principals, or other employee or person substantially involved in its activities are indicted or convicted after execution of the Contract under any state or federal law of any of the following:

a. a criminal offense incident to obtaining or attempting to obtain or performing a public or private contract;

b. fraud, embezzlement, theft, bribery, forgery, falsification, or destruction of records, or receiving stolen property;

c. a criminal violation of any state or federal antitrust law;

d. violation of the Racketeer Influence and Corrupt Organization Act, 18 U.S.C. § 1961 et seq., or the Mail Fraud Act, 18

U.S.C. § 1341 et seq., for acts in connection with the submission of bids or proposals for a public or private contract;

e. conspiracy to commit any act or omission that would constitute grounds for conviction or liability under any statute described in subparagraph (d) above; or

f. an offense indicating a lack of business integrity that seriously and directly affects responsibility as a City vendor.

5. If the Contractor or any of its officers, directors, partners, five percent (5%) or greater shareholders, principals, or other employee or person substantially involved in its activities are subject to a judgment of civil liability under any state or federal antitrust law for acts or omissions in connection with the submission of bids or proposals for a public or private contract; or

6. If the Contractor or any of its officers, directors, partners, five percent (5%) or greater shareholders, principals, or other employee or person substantially involved in its activities makes or causes to be made any false, deceptive, or fraudulent material statement, or fail to make a required material statement in any bid, proposal, or application for City or other government work.

v. *Basis of Settlement.* The City shall not incur or pay any further obligation pursuant to this Contract beyond the termination date set by the City in its Notice of Termination. The City shall pay for satisfactory services provided in accordance with this Contract prior to the termination date. In addition, any obligation necessarily incurred by the Contractor on account of this Contract prior to receipt of notice of termination and falling due after the termination date shall be paid by the City in accordance with the terms of this Contract. In no event shall such obligation be construed as including any lease or other occupancy agreement, oral or written, entered into between the Contractor and its landlord.

b. **Termination for Convenience.** The City shall have the right to terminate the Contract for convenience, by providing written notice (“Notice of Termination”) according to the following procedure. The Notice of Termination shall specify the applicable provision(s) under which the Contract is terminated and the effective date of termination, which shall be not less than 10 calendar days from the date the notice is personally delivered or 15 days from the date the Notice of Termination is sent by another method. The Notice of Termination shall be personally

delivered, sent by certified mail return receipt requested, or sent by fax and deposited in a post office box regularly maintained by the United States Postal Service in a postage pre-paid envelope. The basis of settlement shall be as provided for in subparagraph (iv) of paragraph (a) of subdivision (2) of this section (B), above.

c. Termination due to Force Majeure

- i. For purposes of this Contract, a force majeure event is an act or event beyond the control and without any fault or negligence of the Contractor (“Force Majeure Event”). Force Majeure Events may include, but are not limited to, fire, flood, earthquake, storm or other natural disaster, civil commotion, war, terrorism, riot, and labor disputes not brought about by any act or omission of the Contractor.
- ii. In the event the Contractor cannot comply with the terms of the Contract (including any failure by the Contractor to make progress in the performance of the services) because of a Force Majeure Event, then the Contractor may ask the Commissioner to excuse the nonperformance and/or terminate the Contract. If the Commissioner, in his or her reasonable discretion, determines that the Contractor cannot comply with the terms of the Contract because of a Force Majeure Event, then the Commissioner shall excuse the nonperformance and may terminate the Contract. Such a termination shall be deemed to be without cause.
- iii. If the City terminates the Contract due to a Force Majeure Event, the basis of settlement shall be as provided for in subparagraph (iv) of paragraph (a) of subdivision (2) of this section (B), above.

d. Termination due to Reductions in Federal Funding

- i. This Contract is funded in whole or in part by funds secured from the Federal government. Should the Federal government reduce or discontinue such funds, the City shall have, in its sole discretion, the right to terminate this Contract in whole or in part, or to reduce the funding and/or level of services of this Contract caused by such action by the Federal government, including, in the case of the reduction option, but not limited to, the reduction or elimination of programs, services or service components; the reduction or elimination of contract-reimbursable staff or staff-hours, and corresponding reductions in the budget of this Contract and in the total amount payable under this Contract. Any reduction in funds pursuant to this

paragraph shall be accompanied by an appropriate reduction in the services performed under this Contract.

- ii. In the case of the reduction option referred to in subparagraph (i), above, any such reduction shall be effective as of the date set forth in a written notice thereof to the Contractor, which shall be not less than 30 calendar days from the date of such notice. Prior to sending such notice of reduction, the City shall advise the Contractor that such option is being exercised and afford the Contractor an opportunity to make within seven calendar days any suggestion(s) it may have as to which program(s), service(s), service component(s), staff or staff-hours might be reduced or eliminated, provided, however, that the City shall not be bound to utilize any of the Contractor's suggestions and that the City shall have sole discretion as to how to effectuate the reductions.
- iii. If the City reduces funding pursuant to this paragraph (c), the basis of settlement shall be as provided for in subparagraph (iv) of paragraph (a) of subdivision (2) of this section (B), above.

C. Standard Provisions. The Contractor shall comply with, include in its subcontracts, and cause its subcontractors to comply with the following provisions, as applicable:

- (1) *Reporting.* Contractor shall be required to produce and deliver such reports relating to the services performed under the Contract as may be required by the Awarding Entity, City or any other State or Federal governmental agency with jurisdiction.
- (2) *Non-Discrimination.* Contractor shall not violate any Federal, State, or City law prohibiting discrimination concerning employment, the provision of services, and, if applicable, housing, funded by this Contract.
- (3) *Environmental Protection.* If the Contract is in excess of \$150,000, the Contractor shall comply with all applicable standards, orders, or regulations issued under the Clean Air Act (42 U.S.C. § 7401-7671q), Federal Water Pollution control Act (33 U.S.C. §§ 1251-1387) Section 508 of the Clean Water Act (33 U.S.C. § 1368), Executive Order 11738, and Environmental Protection Agency regulations (provisions of 40 CFR Part 50 and 2 CFR Part 1532 related to the Clean Air Act and Clean Water Act). Violations must be reported to the Federal Agency and the Regional Office of the Environmental Protection Agency (EPA). The Contractor shall include this provision in all subcontracts.
- (4) *Energy Efficiency.* The Contractor shall comply with mandatory standards and policies relating to energy efficiency that are contained in the New York State energy conservation plan issued in compliance with the Energy Policy Conservation Act (Pub. L. 94-163).
- (5) *Debarment.* The Contractor certifies that neither it nor its principals is currently in a state of debarment, suspension, or other ineligible status as a result of prior performance, failure, fraud, or violation of City laws. The Contractor further certifies that neither it nor

its principals is debarred, suspended, otherwise excluded from or ineligible for participation in Federal assistance programs. The City reserves the right to terminate this Contract if knowledge of debarment, suspension or other ineligibility has been withheld by the Contractor.

- (6) *Byrd Anti-Lobbying Amendment (31 USC §1352)*. Contractor certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any Federal agency, a member of Congress, officer or employee of Congress, or any employee of a member of Congress in connection with obtaining this Contract. If the Contract is \$100,000 or more, the Contractor shall disclose to the City any lobbying with non-Federal funds that took place in connection with obtaining this Contract. Each lower tier subcontractor shall make such certification and forward any required disclosures from tier to tier up to the City as grant recipient. (Certification appears in Federal Appendix A)
- (7) *Solid Waste Disposal Act*. Pursuant to 2 CFR § 200.322, Contractor must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (codified at 42 USC § 6962). The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$ 10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$ 10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.
- (8) *Documentation of Costs*. All costs shall be supported by properly executed payrolls, time records, invoices, or vouchers, or other official documentation evidencing in proper detail the nature and propriety of the charges. All checks, payrolls, invoices, contracts, vouchers, orders or other accounting documents, pertaining in whole or in part to the Agreement, shall be clearly identified and regularly accessible.
- (9) *Records Retention*. The Contractor shall retain all books, documents, papers, and records relating to the services performed under the Contract for three years after final payment under the Contract is made and all other pending matters are closed.
- (10) *Records Access*. The Contractor shall grant access to the City, State or any other pass-through entity, the Federal Agency, Inspectors General, and/or the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and/or records of the Contractor that are pertinent to the Contract for the purpose of making audits, examinations, excerpts, and transcripts. The right also includes timely and reasonable access to the Contractor's personnel for the purpose of interview and discussion related to such documents. The rights of access in this section are not limited to the required retention period but last as long as the records are retained.
- (11) *Small Firms, M/WBE Firms, and Labor Surplus Area Firms*. Contractor shall take the following affirmative steps in the letting of subcontracts, if subcontracts are to be let, in order to ensure that minority firms, women's business enterprises, and labor surplus area firms are used when possible:

- a. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- b. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
- d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
- e. Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce.

(12) *Intangible Property.*

- a. Pursuant to 2 CFR § 200.315(d), the Government reserves a royalty-free, non-exclusive, and irrevocable right to obtain, reproduce, publish, or otherwise use, and to authorize others to use, for Government purposes: (a) the copyright in any work developed under the Contract or subcontract; and (b) any rights of copyright to which a Contractor purchases ownership with grant support.
- b. Any reports, documents, data, photographs, deliverables, and/or other materials produced pursuant to the Contract ("Copyrightable Materials"), and any and all drafts and/or other preliminary materials in any format related to such items produced pursuant to the contract, shall upon their creation become the exclusive property of the City. The Copyrightable Materials shall be considered "work-made-for-hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 U.S.C. § 101, and the City shall be the copyright owner thereof and of all aspects, elements and components thereof in which copyright protection might exist. To the extent that the Copyrightable Materials do not qualify as "work-made-for-hire," the Contractor hereby irrevocably transfers, assigns and conveys exclusive copyright ownership in and to the Copyrightable Materials to the City, free and clear of any liens, claims, or other encumbrances. The Contractor shall retain no copyright or intellectual property interest in the Copyrightable Materials. The Copyrightable Materials shall be used by the Contractor for no purpose other than in the performance of this Contract without the prior written

permission of the City. The City may grant the Contractor a license to use the Copyrightable Materials on such terms as determined by the City and set forth in the license.

- c. The Contractor acknowledges that the City may, in its sole discretion, register copyright in the Copyrightable Materials with the United States Copyright Office or any other government agency authorized to grant copyright registrations. The Contractor shall fully cooperate in this effort, and agrees to provide any and all documentation necessary to accomplish this.
- d. The Contractor represents and warrants that the Copyrightable Materials: (i) are wholly original material not published elsewhere (except for material that is in the public domain); (ii) do not violate any copyright law; (iii) do not constitute defamation or invasion of the right of privacy or publicity; and (iv) are not an infringement, of any kind, of the rights of any third party. To the extent that the Copyrightable Materials incorporate any non-original material, the Contractor has obtained all necessary permissions and clearances, in writing, for the use of such non-original material under this Contract, copies of which shall be provided to the City upon execution of this Contract.
- e. The Contractor shall promptly and fully report to the City any discovery or invention arising out of or developed in the course of performance of this Contract and the Contractor shall promptly and fully report to the Government to make a determination as to whether patent protection on such invention shall be sought and how the rights in the invention or discovery, including rights under any patent issued thereon, shall be disposed of and administered in order to protect the public interest.
- f. If the Contractor publishes a work dealing with any aspect of performance under this Agreement, or with the results of such performance, the City shall have a royalty-free, non-exclusive irrevocable license to reproduce, publish, or otherwise use such work for City governmental purposes.

D. Special Provisions for Construction Contracts. If this Contract involves Construction work, design for Construction, or Construction services, all such work or services performed by the Contractor and its subcontractors shall be subject to the following requirements in addition to those set forth above in paragraphs (A), (B), and (C):

(1) *Federal Labor Standards.* The Contractor will comply with the following:

- a. The Davis-Bacon Act (40 U.S.C. §§ 3141-3148): If required by the federal program legislation, in Construction contracts involving an excess of \$2000, and subject to any other federal program limitations, all laborers and mechanics must be paid at a

rate not less than those determined by the Secretary of Labor to be prevailing for the City, which rates are to be provided by the City. These wage rates are a federally mandated minimum only, and will be superseded by any State or City requirement mandating higher wage rates. The Contractor also agrees to comply with Department of Labor Regulations pursuant to the Davis-Bacon Act found in 29 CFR Parts 1, 3, 5 and 7 which enforce statutory labor standards provisions.

- b. If required by the federal program legislation and subject to any other federal program limitations, Sections 103 and 107 of the Contract Work Hours and Safe Standards Act (40 U.S.C. §§ 3701-3708), which provides that no laborer or mechanic shall be required or permitted to work more than eight hours in a calendar day or in excess of forty hours in any workweek, unless such laborer or mechanic is paid at an overtime rate of 1½ times his/her basic rate of pay for all hours worked in excess of these limits, under any Construction contract costing in excess of \$2000. In the event of a violation of this provision, the Contractor shall not only be liable to any affected employee for his/her unpaid wages, but shall be additionally liable to the United States for liquidated damages.
- c. The Copeland “Anti-Kickback” Act (18 U.S.C. § 874), as supplemented by the regulations contained in 29 CFR Part 3, requiring that all laborers and mechanics shall be paid unconditionally and not less often than once a week, and prohibiting all but “permissible” salary deductions.
- d. If this Contract involves Construction work, design for Construction, or Construction services, a more complete detailed statement of Federal Labor Standards annexed hereto as FEDERAL EXHIBIT 2.

(2) *Equal Employment Opportunity*. Executive Order 11246, as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR chapter 60) for Construction contracts or subcontracts in excess of \$10,000. The Contractor shall include the notice found at FEDERAL EXHIBIT I in all Construction subcontracts. For the purposes of the Equal Opportunity Construction Contract Specifications and Clause below, the term “Construction Work” means the construction, rehabilitation, alteration, conversion, extension, demolition or repair of buildings, highways, or other changes or improvements to real property, including facilities providing utility services. The term also includes the supervision, inspection, and other onsite functions incidental to the actual construction .

Standard Federal Equal Employment Opportunity Construction Contract Specifications for Contracts and Subcontracts in Excess of \$10,000.

- 1. As used in these specifications:
 - a. “Covered area” means the geographical area described in the solicitation from which this Contract resulted;

b. “Director” means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. “Employer identification number” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. “Minority” includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any Construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this Contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor’s or subcontractor’s failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this Contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each Construction trade in which it has employees in the covered area. Covered Construction Contractors performing Construction Work in geographical areas where they do not have a Federal or federally assisted Construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal

procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each Construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where Construction Work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of Construction Work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female Construction contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a Contractor association, joint Contractor-union, Contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the Program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246 or suspended or is otherwise excluded from or ineligible for participation in federal assistance programs.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, Construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for hiring of local or other areas residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

- (3) (A) **Equal Opportunity Clause** (for contracts for Construction Work) required by 41 CFR Part 6-1.4(b). **[Effective through January 10, 2016]**

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(B) **Equal Opportunity Clause** (for contracts for Construction Work) required by 41 CFR Part 6-1.4(b). **[Effective starting January 11, 2016]**

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation

conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

E. Rights to Inventions. [Special Provisions For Contracts Involving Experimental, Developmental, or Research Work.]

(1) If this Contract involves the performance of experimental, developmental, or research work by the Contractor or its subcontractors, and the entity performing such work is a Nonprofit Organization or Small Business Firm as defined below, the following provisions apply in addition to those set forth above in paragraphs (A), (B), and (C), unless the Contract specifically states that this provision is superseded:

a. Definitions. The following definitions apply to this section (D).

- i. "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. § 2321 *et seq.*).
 - ii. "Subject invention" means any invention of the Contractor conceived or first actually reduced to practice in the performance of work under this Contract, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d)) must also occur during the period of Contract performance.
 - iii. "Practical Application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or government regulations, available to the public on reasonable terms.
 - iv. "Made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.
 - v. "Small Business Firm" means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.
 - vi. "Nonprofit Organization" means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c) and exempt from taxation under section 501(a) of the Internal Revenue Code (25 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.
- b. *Allocation of Principal Rights.* The Contractor may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the Contractor retains title, the Federal government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to

practice or have practiced for or on behalf of the United States the subject invention throughout the world.

c. *Invention Disclosure, Election of Title and Filing of Patent Application by Contractor.*

- i. The Contractor will disclose each subject invention to the City and the Federal Agency within two months after the inventor discloses it in writing to Contractor personnel responsible for patent matters. Such disclosure shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after such disclosure, the Contractor will promptly notify the City and the Federal Agency of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor.
- ii. The Contractor will elect in writing whether or not to retain title to any such invention by notifying the City and the Federal Agency within two years of disclosure to the City and the Federal Agency. However, in any case where publication, on sale or public use has initiated the one year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by the Federal Agency to a date that is no more than 60 days prior to the end of the statutory period.
- iii. The Contractor will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application or six months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign

patent applications where such filing has been prohibited by a Secrecy Order.

- iv. Requests for extension of the time for disclosure, election, and filing under subparagraphs (1), (2), and (3) may be granted at the discretion of the Federal Agency.

d. Conditions When the Government May Obtain Title

The Contractor will convey to the Federal Agency, upon written request, title to any subject invention --

- i. If the Contractor fails to disclose or elect title to the subject invention within the times specified in (c), above, or elects not to retain title; provided that the Federal Agency may only request title within 60 calendar days after learning of the failure of the Contractor to disclose or elect within the specified times.
 - ii. In those countries in which the Contractor fails to file patent applications within the times specified in (c) above; provided, however, that if the Contractor has filed a patent application in a country after the times specified in (c) above, but prior to its receipt of the written request of the Federal Agency, the Contractor shall continue to retain title in that country.
 - iii. In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.
- e. Minimum Rights to Contractor and Protection of the Contractor Right to File
- i. The Contractor will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Contractor fails to disclose the invention within the times specified in (c), above. The Contractor's license extends to its domestic subsidiary and affiliates, if any, within the corporate structure of which the Contractor is a party and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the Contract was awarded. The license is transferable only with the approval of the Federal Agency except when transferred to the successor of that party of the Contractor's business to which the invention pertains.

- ii. The Contractor's domestic license may be revoked or modified by the funding Federal Agency to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR Part 404 and agency licensing regulations (if any). This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of the funding Federal Agency to the extent the Contractor, its licensees, or the domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.
 - iii. Before revocation or modification of the license, the funding Federal Agency will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed thirty calendar days (or such other time as may be authorized by the funding Federal Agency for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable regulations in 37 CFR Part 404 and Federal Agency regulations (if any) concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of the license.
- f. Contractor Action to Protect the Government's Interest
- i. The Contractor agrees to execute or to have executed and promptly deliver to the Federal Agency all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Contractor elects to retain title, and (ii) convey title to the Federal Agency when requested under paragraph (d) above and to enable the Government to obtain patent protection throughout the world in that subject invention.
 - ii. The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c), above, and to execute all papers necessary

to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by (c)(1), above. The Contractor shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

- iii. The Contractor will notify the Federal Agency of any decisions not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than thirty calendar days before the expiration of the response period required by the relevant patent office.
- iv. The Contractor agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under (identify the contract) awarded by (identify the Federal Agency). The government has certain rights in the invention."

g. Subcontracts

- i. The Contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental or research work to be performed by a small business firm or domestic nonprofit organization. The subcontractor will retain all rights provided for the Contractor in this clause, and the Contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.
 - ii. The Contractor will include in all other subcontracts, regardless of tier, for experimental developmental or research work the patent rights clause required by 2 CFR § 200.315(c) and Appendix II to 2 CFR Part 200.
- h. *Reporting on Utilization of Subject Inventions.* The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as the Federal

Agency may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by the Federal Agency in connection with any march-in proceeding undertaken by the Federal Agency in accordance with paragraph (j) of this clause. As required by 35 U.S.C. § 202(c)(5), the Federal Agency agrees it will not disclose such information to persons outside the Government without permission of the Contractor.

- i. *Preference for United States Industry.* Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the Federal Agency upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.
- j. *March-in Rights.* The Contractor agrees that with respect to any subject invention in which it has acquired title, the Federal Agency has the right in accordance with the procedures in 37 CFR § 401.6 and any supplemental regulations of the Federal Agency to require the Contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request the Federal Agency has the right to grant such a license itself if the Federal Agency determines that:
 - i. Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use.
 - ii. Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee or their licensees;
 - iii. Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee or licensees; or

- iv. Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.
- k. *Special Provisions for Contracts with Nonprofit Organizations.*
If the Contractor is a nonprofit organization, it agrees that:
- i. Rights to a subject invention in the United States may not be assigned without the approval of the Federal Agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the Contractor;
 - ii. The Contractor will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when the Federal Agency deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. § 202(e) and 37 CFR § 401.10;
 - iii. The balance of any royalties or income earned by the Contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific research or education; and
 - iv. It will make efforts that are reasonable under the circumstances to attract licensees of subject invention that are Small Business Firms and that it will give a preference to a Small Business Firm when licensing a subject invention if the Contractor determines that the Small Business Firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not Small Business Firms; provided, that the Contractor is also satisfied that the Small Business Firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Contractor. However, the Contractor agrees that the Secretary may review the Contractor's licensing program and decisions regarding Small Business Firm applicants, and the Contractor will negotiate changes to its licensing policies, procedures, or practices with the Secretary when the Secretary's review discloses that the Contractor could take reasonable steps

to implement more effectively the requirements of this paragraph (k)(iv).

1. *Communication.* The central point of contact at the Federal Agency for communications on matters relating to this clause may be obtained from the City upon request.


Certification Regarding Lobbying

The undersigned Contractor certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form L.L.L., "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, ABCD Construction Corp certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.



Signature of Contractor's Authorized Official

Dimitrios Balomas, President

Name and Title of Contractor's Authorized Official

9-15-2016

Date

FEDERAL EXHIBIT 1

NOTICE TO BIDDERS

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246, as amended) FOR ALL CONSTRUCTION CONTRACTS AND SUB-CONTRACTS IN EXCESS OF \$10,000.

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all Construction Work in the covered area, are as follows:

Goals and Timetables for Minorities

<u>Trade</u>	<u>Goal</u> <u>(percent)</u>
Electricians	9.0 to 10.2
Carpenters	27.6 to 32.0
Steamfitters	12.2 to 13.5
Metal Lathers	24.6 to 25.6
Painters	28.6 to 26.0
Operating Engineers	25.6 to 26.0
Plumbers	12.0 to 14.5
Iron Workers (structural)	25.9 to 32.0
Elevator Constructors	5.5 to 6.5
Bricklayers	13.4 to 15.5
Asbestos Workers	22.8 to 28.0
Roofers	6.3 to 7.5
Iron Workers (ornamental)	22.4 to 23.0
Cement Masons	23.0 to 27.0
Glazers	16.0 to 20.0
Plasterers	15.8 to 18.0
Teamsters	22.0 to 22.5
Boilermakers	13.0 to 15.5
All Other	16.4 to 17.5

Goals and Timetables for Women

From April 1, 1980 until the present 6.9

These goals are applicable to all the Contractor's Construction Work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs Construction Work in a geographical area located outside of the covered area, it shall apply the goals established for such

geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved Construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any Construction subcontract in excess of \$10,000 at any tier for Construction Work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Contract, the "covered area" is the City of New York.

**FEDERAL EMERGENCY MANAGEMENT AGENCY (“FEMA”) RIDER
(10/27/2015)**

**For use with contracts funded by the FEMA Grant and Cooperative Agreement Programs,
including the Public Assistance Program**

(This Rider should not be used with contracts funded by the following FEMA Programs: Emergency Management Preparedness Grant Program, Homeland Security Grant Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant Program, Port Security Grant Program, and Transit Security Grant Program. This Rider should be accompanied by the Uniform Federal Contract Provisions Rider for Federally Funded Procurement Contracts.)

1. Suspension and Debarment. Section C(5) of the Uniform Federal Contract Provisions Rider for Federally Funded Procurement Contracts is supplemented with the following provisions:
 - (a) This contract is a covered transaction for purposes of 2 C.F.R. Parts 180 and 3000. As such the Contractor is required to verify that none of the Contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). By entering into this contract, the Contractor certifies that it is in compliance with 2 C.F.R. Parts 180 and 3000.
 - (b) The Contractor must comply with 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C during the term of this contract and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
 - (c) The certification in paragraph (a), above, and section C(5) of the Uniform Federal Contract Provisions Rider for Federally Funded Procurement Contracts is a material representation of fact relied upon by the City of New York. If it is later determined that the Contractor did not comply with 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C, in addition to remedies available to the City of New York and, if applicable, the State of New York, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
2. Davis-Bacon Act. For the purposes of Section D(1)(a) of the Uniform Federal Contract Provisions Rider, compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3148) is not required of the Contractor pursuant to FEMA regulations. However, if this Contract is funded by another federal funding source (e.g., the U.S. Department of Housing and Urban Development CDBG or CDBG-DR programs), compliance with the Davis-Bacon Act is required to the extent required by law and as set forth in the contract documents.
3. Rights to Inventions Made Under a Contract or Agreement. Section E of the Uniform Federal Contract Provisions Rider for Federally Funded Procurement Contracts does not

apply to the following FEMA Programs: Public Assistance Program, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling Assistance and Training Grant Program, Disaster Case Management Program, and Federal Assistance to Individuals and Households – Other Needs Assistance Grant Program.

4. Copeland “Anti-Kickback” Act. The Contractor shall comply with provisions of the Copeland “Anti-Kickback” Act (18 U.S.C. § 874) as delineated in the Uniform Federal Contract Provisions Rider, FEMA Exhibit 2, Section (A).
5. Contract Work Hours and Safety Standards Act. The Contractor shall comply with the provisions of the Contract Work Hours and Safety Standards Act as delineated in the Uniform Federal Contract Provisions Rider, FEMA Exhibit 2, Section (B).
6. Access to Records.
 - (a) The Contractor agrees to provide the City of New York, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
 - (b) The Contractor agrees to permit any of the foregoing parties to reproduce said documents by any means or to copy excerpts and transcriptions as reasonably needed.
 - (c) The Contractor agrees to provide the FEMA Administrator or his/her authorized representative access to construction or other work sites pertaining to the work being completed under the contract.
7. Logos. The Contractor shall not use DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.
8. Compliance with Law. The Contractor acknowledges that FEMA financial assistance will be used to fund the contract only and agrees to comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.
9. Federal Government not a Party. The Contractor acknowledges and understands that the Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the City, Contractor or any other party pertaining to any matter resulting from the contract.
10. False Claims. The Contractor acknowledges that 31 U.S.C. Chap. 38 applies to the Contractor’s actions pertaining to this contract.

EXHIBIT 2
Federal Labor Standards Provisions (Non-Davis Bacon)¹
Federal Emergency Management Agency
(10/27/2015)

Applicability: The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. Compliance with the Copeland “Anti-Kickback” Act.

1. **Contractor.** The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
2. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clause in paragraph 1 above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
3. **Breach.** A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

B. Compliance with the Contract Work Hours and Safety Standards Act. The provisions of this Section B are applicable where the amount of the prime contract exceeds \$100,000.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1) of this Section B the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In

¹ This version of Exhibit 2 applies to contracts funded by FEMA Grant and Cooperative Agreement Programs, including the Public Assistance Program. Do not use this version of Exhibit 2 in connection with FEMA programs that are subject to the Davis-Bacon Act; such programs are the Emergency Management Preparedness Grant Program, the Homeland Security Grant Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant Program, Port Security Grant Program, and Transit Security Grant Program.

addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. **Withholding for unpaid wages and liquidated damages.** The City of New York shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this Section B and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section B.

C. **Health and Safety.** The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

1. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
2. The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.
3. The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as FEMA or the Secretary of Labor shall direct as a means of enforcing such provisions.

CONTRACT NO.

**CITY OF NEW YORK
DEPARTMENT OF CORRECTION**



**FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND
REQUIRED FOR:**

**AS NEEDED GENERAL CONSTRUCTION REQUIREMENTS
CONTRACT FOR VARIOUS NYC-DEPARTMENT OF CORRECTION
FACILITIES**

PROCUREMENT IDENTIFICATION NUMBER

PIN 072201801CPD

EPIN 072180001

