



**NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
SAFETY AND SITE SUPPORT**

OFFICE OF QUALITY ASSURANCE

OPERATIONS MANUAL

**CITY OF NEW YORK
BILL DE BLASIO, MAYOR**

DEPARTMENT OF DESIGN AND CONSTRUCTION

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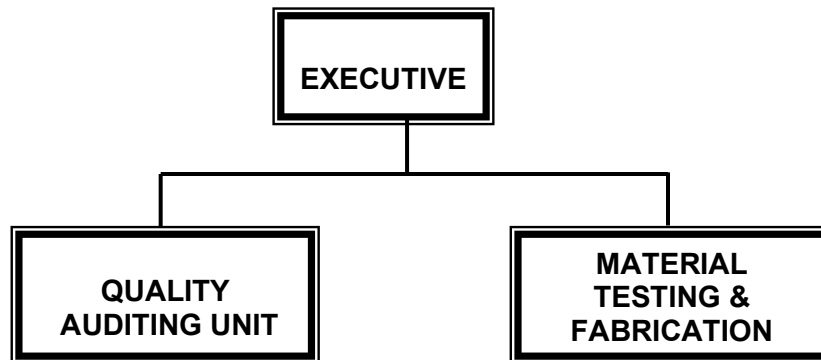
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SECTION I – INTRODUCTION

A. MISSION STATEMENT

The goal of the Office of Quality Assurance is to ensure the quality of construction projects and their conformance to regulations, specifications, plans and referenced standards. This is accomplished by monitoring construction activities from material testing and fabrication review stage to project substantial completion. Various scheduled safety and quality inspections and audits are performed during construction activities to ensure that work complies with the applicable regulations. The quality of materials is verified by performing inspections of fabrication plants during production and performing materials testing inspections in the field. Lists of qualified private laboratory technicians, construction inspectors, and approved vendors are maintained.

B. ORGANIZATION CHART OF THE OFFICE OF QUALITY ASSURANCE



C. KEY PERSONNEL AND CONTACT INFORMATION

The Office of Quality Assurance consists of 13 Engineers, Quality Assurance Auditors and administrative staff located on the third floor of 30-30 Thomson Avenue, Long Island City, NY 11101. The Office is organized into the following sections: Executive, Quality Auditing, and Material Testing & Fabrication Inspection Units.

The responsible personnel of these sections and contact persons for the Office of Quality Assurance:

1. **Executive**
John M. DeVito, Director
(718)391-1395; (718)391-2885 (fax)
VACANT, Deputy Director, Quality Assurance
Geneva Payne-Nathaniel, Executive Assistant
(718)391-1153; (718)391-2885 (fax)

2. **Quality Auditing Unit**
Elyas Jalalzai, Senior QA Auditor
(718)391-1329; (718)391-2885 (fax)

3. **Material Testing and Fabrication Inspection Unit**
Juan Martinez,, Engineer-In-Charge
(718)391-1669; (718)391-2885 (fax)

D. ROLE OF THE OFFICE OF QUALITY ASSURANCE

The Office of Quality Assurance (QA) plays an active role in Infrastructure and Public Buildings projects during pre-construction, construction and post-construction phases. The following activities are performed by each of the QA Units during various project phases:

1. QUALITY AUDITING UNIT

- a. Quality Inspections
- b. Critical Phase and Progress Meetings
- c. Substantial Completion Inspections and Sign off
- d. Management and Record Reviews

2. MATERIAL TESTING & FABRICATION INSPECTION UNIT

- a. Mix Design Reviews
- b. Plant, Laboratory and Vendor Approval
- c. Certification Program
- d. Sampling and Testing
- e. Plant Inspections
- f. Fabrication, Production and Verification Inspections
- g. Certification of Welders and Procedures
- h. Material Acceptance and Product Acceptability

E. INFRASTRUCTURE/PUBLIC BUILDINGS QUALITY INTERFACE REQUIREMENTS

Execution of the Quality Assurance Program requires close cooperation between QA personnel and Infrastructure/Public Buildings construction personnel to allow for orderly and timely access to activities, information records and meetings. This is to facilitate QA inspections and audits of construction, manufacturing and fabrication, approval and certification of suppliers, examinations of records and project documentation, and participation in various construction meetings.

The following guidelines are provided to acquaint the Resident Engineers and Construction Project Manager with the specific matters and notices that QA requires to perform its mandated duties:

1. Meetings Notifications to QA:

- a. Progress
- b. Critical Phase
- c. Substantial Completion/Final Inspection

2. Activity Notifications to QA:

- a. Daily Concrete and Asphalt Placement
- b. Daily Backfill Operations
- c. Confirmation for Scheduled Inspections/Audits

3. Postings

The Resident Engineer and/or Project Manager is responsible to post the following documents in the project field office:

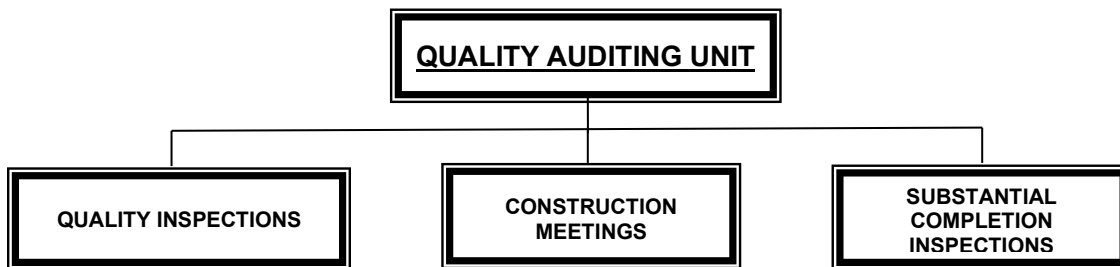
- a. Emergency and Accident Notification and Response Protocol
- b. Project Key Personnel Contacts
- c. NYS DOL Job Safety and Health Protection Poster
- d. Notice of Public Works Project Poster

SECTION II – OVERVIEW AND FUNCTIONS OF FIELD AUDITING UNITS

A. QUALITY AUDITING UNIT

1. OVERVIEW AND ORGANIZATION

The Quality Auditing Unit performs scheduled quality field inspections and substantial completion audits of Public Buildings and Infrastructure construction projects for conformance to the established practices, specifications, and referenced standards. This Unit identifies quality deviations and develops the data needed for an overall project evaluation. It also participates in various construction meetings such as pre-construction, progress, and critical phase, and conducts Infrastructure substantial completion inspections and sing offs. The Quality Auditing Unit consists of Public Buildings Quality Auditing and Infrastructure Quality Auditing. The goal of the Quality Auditing Unit is to visit all construction projects during the active construction phase.



2. FUNCTIONS

- **Quality Inspections** – Quality Auditors perform scheduled daily inspections of construction projects. The quality inspections are short duration site visits with emphases on on-going construction field activities. The Resident Engineer and Project Manager are responsible to escort the Quality Auditors during the inspection and provide full access to the construction site and applicable records. The purpose of the quality inspections is to detect significant quality deviations, assign a level of risk, identify needs for corrective actions and develop the data needed for an overall project evaluation. QA goal for quality inspections frequency is to perform field audits at least twice per construction phase, however, all active DDC projects will receive at least one quality inspection during the fiscal year.
- **Construction Meetings** - The Quality Auditing Unit shall be invited to Critical Phase and Progress meetings to provide information on DDC QA Program, to outline the QA expectations and to ensure closure on QA deliverables at the end of the project. The Resident

Engineers and Project Managers shall notify the Quality Auditing Unit via fax or e-mail at least one week prior to the meeting.

- **Substantial Completion Inspection and Sign Offs** – The Infrastructure Division project staff shall notify the Quality Auditing Unit at least one week prior to the project substantial completion field inspection. The Quality Auditing Unit will attend the substantial completion field inspections and document observed nonconformance. The Infrastructure Division project staff shall generate and forward to the Quality Auditing Unit a punch list with all identified items and corrective actions for final acceptance.

D. DUTIES AND RESPONSIBILITIES OF QUALITY AUDITORS

1. PHASE I – AUDIT PREPARATION

- Auditors shall print out and review the previous quality & safety audit reports for the assigned project/s. Auditors must take hard copies of the previous audit report/s and photographs to the field to verify if the previously documented deviations were corrected. Unresolved/repeat deviations must be captured in their new reports. Repeat deviation Scorecard entries must include the following sentence. “This was a repeat deviation noted in an audit dated x/x/x.”

2. PHASE II- FIELD AUDITS

- Where possible, auditors should be escorted by DDC CPM, CM, EIC/RE or DDC designated alternate. If project staff is not on site, audit to be completed unescorted. Auditors are required to identify themselves to the contractor, client, etc. staff prior to conducting an unescorted audit.
- Auditors are required to conduct audits using the appropriate QA checklist, paying special attention to their discipline. The checklist, a product of the Office of Quality Assurance is organized into six parts: Project Management and Recordkeeping, Safety, Quality Infrastructure, Quality Public Buildings, and Material Testing.
- Auditors are responsible to assign risk level (high, medium, or low) to all deviations identified during the inspection/audit. When hazardous conditions are encountered requiring immediate action, auditors shall inform the project staff and request immediate corrective actions.
- Auditors must call their direct supervisor and notify them of critical safety deviations, immediately upon discovering them.
- Auditors shall report their findings based on the scope of the work, construction quality, OSHA standards, applicable drawings, project requirements, DDC and DOB specifications, etc.
- Auditors shall take photographs of all deviations. At least one photograph of the active jobsite is required even if no deviations were found.
- Auditors shall prepare a clear and comprehensive written Exit Conference Report for the DDC CPM, CM, EIC/RE or DDC designated alternate’s review, written response and should be signed by project staff along with printed name.
- All items on the Exit Conference Report should be completed in the field and should include the deviation number/s and/or description of work activities. An Exit Conference Report is required even if no deviations were found.

- The white copy is DDC's copy. The yellow copy of this report shall be provided to the DDC CPM, CM, EIC/RE or DDC designated alternate onsite. The pink copy is to be retained by the QA auditor.
- An Exit Conference shall be held between the QA auditor and project staff. The discussion shall include the observations and findings, an explanation of the cautionary and high-risk ratings of checklist items.

3. PHASE III – REPORT COMPLETION AND CORRECTIVE ACTIONS

- Auditors shall enter their audit results into Scorecard, including project information, deviations, photographs, and project staff responses. The photographs must include the project number and deviation number.
- Scorecard is an internal database utilized by QA to capture quality and safety audit results and corrective actions.
- The completed Scorecard reports are distributed to the applicable project staff for corrective actions.
- The DDC project staff shall respond to the distributed ScoreCard audit reports via e-mail and submit corrective actions for all deviations previously identified during the audit.
- All unresolved high-risk deviations cited during the audit require an immediate response from DDC project personnel to QA detailing steps taken to mitigate the deviations. Responses received by QA will be evaluated and entered into the ScoreCard database as part of the project file records.

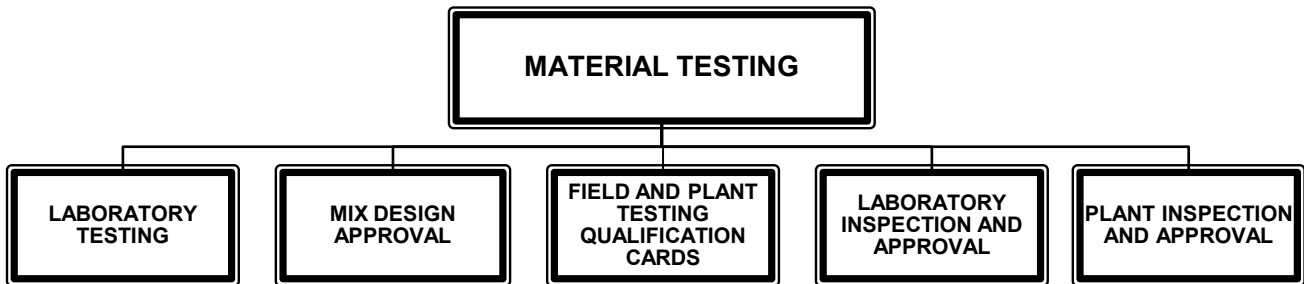
SECTION III – MATERIALS TESTING & FABRICATION INSPECTION UNIT

A. MATERIAL TESTING

1. OVERVIEW OF FUNCTIONAL AREAS

The Material Testing Section retains the services of Material Testing laboratories to perform field and laboratory verification testing of materials incorporated in construction, as well as the final Commissioner concrete and asphalt core testing for payment. This section also qualifies private testing laboratories and technicians, approves concrete and asphalt plants, and performs independent quality assurance sampling and testing in the field to ensure compliance with specifications.

2. ORGANIZATION OF FUNCTIONAL AREAS



3. MAIN FUNCTIONS

3.1 Laboratory Testing

Material samples from DDC Infrastructure projects are delivered to QA for testing. Data Sheets and Chain-Of-Custody tracing will be per Infrastructure SCOP 01-012C, or more current version. All the tests are currently being performed by consulting laboratories on contract with the QA

Tests will be performed to the requirements of Infrastructure SCOP 01-012C, unless project specific specifications are identified on the data sheet and provided to QA with the samples.

QA has procedures to prevent Conflict of Interest, including:

- The contractor name or Project ID is not provided to the Testing Laboratory; all samples will be referenced to the QA provided Chain-Of-Custody number.
- QA has contracts with multiple testing laboratories. The laboratories provide QA with a list of projects they are performing services on; where possible samples from these projects will be sent to another laboratory.

QA routinely tests the following materials:

- Concrete Cylinders. Cylinders must be 6x12 sets of 3, stripped, unless project specifications require otherwise.
- Concrete Cores
- Asphalt Cores
- Asphalt (Bagged)
- Aggregate and soil for Backfill
- Other materials as requested.

QA maintains original PE stamped test reports for FOIL requests. Records are kept by Borough and Project ID.

Scans of the PE stamped reports are distributed via email to the Infrastructure Borough Director.

Notes for Laboratory Testing on Federally Funded Projects:

- The Contractor may not have custody of the samples at any point in time (Contractor may not drop off samples to QA).
 - At the option of DDC Infrastructure, the laboratory testing may be done by a laboratory hired by DDC Infrastructure or the Resident Engineering consultant. The laboratory must be submitted for Vendor Approval to MTFU.
 - DDC Infrastructure must notify QA of any other project specific requirements.
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3.2 Mix Design Approval

QA reviews concrete and asphalt mix designs, per the current version of the “QA Mix Design, Laboratory, and Plant Acceptance Protocol” to the requirements of the NYC DOT Standard Highway Specifications and the NYC DEP Standard Water and Sewer Specifications, as applicable.

For generic mix designs, records including original PE stamped reports are kept by plant. For project specific mix designs, records are kept by Borough and Project ID.

3.3 Field and Plant Testing Qualification Cards

QA provides qualification ID cards for field and plant testing personnel as required by Infrastructure SCOP 05-009G, or more current version. Required reference qualifications are as provided in the current version of the “QA Mix Design, Laboratory, and Plant Acceptance Protocol.”

QA staff must verify the applicant’s ID and qualifications per the QA “Checklist for Qualification Cards.”

QA also provides qualification cards for field and plant welders. The qualification and acceptance is per Section 18 of the NYC DEP "SPECIFICATION FOR FURNISHING, DELIVERING AND LAYING STEEL PIPE AND APPURTENANCES - MARCH 1999" or more current version.

Welding and testing of weld coupons will be witnessed by QA staff or consultant inspectors, at the discretion of the MTFU EIC. Welder qualification cards will only be issued for welders performing work on DDC projects.

Welding qualification cards may be renewed, at the discretion of the QA Director, if the requirements of ASME Boiler and Pressure Vessel Code, Section IX, paragraph QW-322.1(a) are met:

- No gaps in qualification greater than 6 months:
- In the last 6 months has welded using the Process.

The welder's employer must submit this documentation to the MTFU EIC for review.

3.4 Laboratory Inspection and Approval

QA maintains a list of testing laboratories that are accepted for providing services to DDC Infrastructure projects. The requirements for DDC Laboratory Acceptance are per the current version of the "QA Mix Design, Laboratory, and Plant Acceptance Protocol." If a laboratory does not maintain the required accreditation (DOB, AMRL, CCRL), DDC approval will be revoked.

Acceptance of a testing laboratory does not relieve the laboratory personnel from the Field and Plant Qualification Card requirements.

Laboratories will be audited by QA personnel annually to maintain acceptance. Laboratories with QA testing contracts will be subject to unannounced monthly periodic audits.

3.5 Plant Inspection and Approval

QA maintains a list of concrete and asphalt plants that are accepted for providing materials to DDC Infrastructure projects. The requirements for DDC Plant Acceptance are per the current version of the "QA Mix Design, Laboratory, and Plant Acceptance Protocol." If a laboratory does not maintain the required accreditation (DOB, AMRL, CCRL), DDC approval will be revoked.

Plants will be audited by QA personnel or consultant staff annually to maintain acceptance. Plants will be subject to unannounced periodic audits to maintain compliance.

B. MATERIAL FABRICATION

1. OVERVIEW OF FUNCTIONAL AREAS

The Material Fabrication Section performs on-site inspection of pipe and appurtenances at the various fabricators and manufacturers plants to verify compliance with the specifications. Unless waived, these inspections are a prerequisite to the release of materials for shipment to the job sites. This Section reviews and approves the qualifications of the vendors proposed by contractors on DDC projects or wishing to establish their credentials for future work. A list of qualified vendors is maintained by QA.

2. ORGANIZATION OF FUNCTIONAL AREAS



3. MAIN FUNCTIONS

3.1 Vendor Approval

QA maintains the following approved vendor lists:

- Concrete Plants;
- Asphalt Plants;
- Testing Laboratories;
- Water & Sewer Items (Approval of these items is by DEP-BWSO).

QA reviews vendor approval (VA) requests from DDC Infrastructure projects. The requests must be submitted on the current "Vendor Approval Data Sheet". If a request is missing the Vendor Approval Data Sheet or it is filled out incorrectly, it will be returned to the project's EIC for corrections and resubmittal.

QA only performs vendor approval for items listed on the Vendor Approval Data Sheet. All other items must be approved by the project's Engineer, as defined in the project specifications.

QA staff will check the submitted vendors against the approved vendor lists and process a Vendor Approval letter. The Vendor Approval letter will be sent to the Borough Director.

3.2 Material Inspection and Shipping Release

Water and Sewer items require QA Shipping Release, as required by Infrastructure SCOP 05-011G or more current version. *Table 1 below indicates which items require QA Shipping Release.*

The Shipping Release process is as follows:

1. Fabricator emails a “Fabrication Inspection Request” to QA for water and sewer items. The MTFU EIC determines if inspection is necessary, and responds to the request. If inspection is necessary, the MTFU EIC will schedule the inspection using QA staff or consultant inspectors. Table 1 below indicates typical inspection frequencies.
2. The inspector uses the DDC specifications and the QA checklists to determine acceptability. Any unacceptable items will have “WSNY” or “NYC” marks ground off in the presence of the inspector. The inspector submits an inspection report with pictures to the MTFU EIC for review.
3. Fabricator submits (via email, hard copy, or CD) a test report package (MTR) to QA for approval.
4. QA reviews the MTR package against the applicable specifications. If acceptable, a “Material Release and Shipping Authorization” will be processed and emailed to the fabricator.

Table 1 – Nominal Inspection Frequencies and Shipping Release Requirements

Item	QA Vendor Approval Required	Shop Inspection by MTFU Staff or Consultant		QA Shipping Release Required
		During Production	After Production	
Butterfly Valves	Yes	Hydrotest Only	100%	Yes
Clay Pipe	Yes	None	Annually	Yes
Ductile Iron Pipe	Yes	100%	None	Yes
Ductile Iron Pipe Fittings	Yes	None	100%	Yes
Fasteners	Yes	None	Semi-Annually	Yes
Flanges for Steel Watermains	Yes	None	Annually	Yes
Gate Valves	Yes	None	100%	Yes
Hydrants	Yes	None	100%	Yes
Iron Castings for Valves	No	New Vendors Only	None	No
Municipal Castings	Yes	None	100%	Yes
Precast Concrete Box Culverts	Yes	Hydrotest Only	None	No
Precast Concrete Manholes & Catch Basins	Yes	None	None	No
Pressure Regulator Valves	Yes	None	100%	Yes
Reinforced Concrete Pipe	Yes	None	100%	Yes
Spiralweld Steel Pipe	Yes	100% of Pipe Welding	Quarterly	Yes
Stainless Tapping Sleeves	Yes	None	100%	Yes
Steel Faced Curb	Yes	None	None	No
Watermain Couplings & Expansion Joints	Yes	Annually	Annually	Yes
Wedge Restraint Glands	Yes	None	Domestic: Annually Imported: 100%	Yes

3.3 Procedure Review

QA reviews the following procedures:

- Welding Procedure Specification (WPS), for both shop and field welding
- Procedure Qualification Report (PQR), for both shop and field welding
- Test procedures for use by fabricators.
- Specification variance requests from fabricators.

WPS and PQR review and acceptance are per Section 18 of the NYC DEP “SPECIFICATION FOR FURNISHING, DELIVERING AND LAYING STEEL PIPE AND APPURTENANCES - MARCH 1999” or more current version. Welding and testing of weld coupons will be witnessed by QA staff or consultant inspectors, at the discretion of the MTFU EIC.

Fabricator test procedures are reviewed per the appropriate specification. Procedures are only reviewed for the items listed in Table 1 “Nominal Inspection Frequencies and Shipping Release Requirements.”, Section III, B, 3.2

While QA does not have the authority to approve variances to the specifications, QA will, at the request of a fabricator, act as an intermediary with the group that can approve variances (DDC Infrastructure Design or DEP BWSO, depending on the request). Approvals or disapprovals of variance requests will reference the response of DDC Infrastructure Design or DEP BWSO.