DIVISION 14

SECTION 14A ELEVATORS

14A.01 GENERAL: Comply with all of the Contract Documents.

14A.02 SCOPE OF WORK: Refer to "Division Scope of Work"

14A.03 WORK NOT INCLUDED

A. The following items are excluded from the work of this Section:

1. Masonry by Section 4A.

14A.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use products produced by manufacturers regularly engaged in the business of manufacturing, installing and servicing elevators of the type required by this Section of these Specifications and with a history of successful production acceptable to Architect/Engineer.

C. Codes and Standards

1. In addition to complying with pertinent regulations of Governmental Agencies having jurisdiction, comply with:

a. Local Law 58/87 specifically Section 4.10 and all references made by that section.

b. ANSI/ASME A17.1, Safety Code for Elevators, Escalators and Supplements A17, 1a-1997 as modified.

c. ANSI A117.1 American National Standard for Buildings and Facilities providing accessibility and usability for Physically Handicapped People as modified.

d. ANSI C1, "National Electrical Code."

e. An attached copy of the approved waiver to certain specific requirement of Section 4.10 of ANSI A117.1-1986 is provided (if applicable). It must be included in the ELEVATOR APPLICATION filed with the Department of Buildings.

f. NYC Building Code RS18-1 requires MEA numbering of the following elevator equipment: oil buffers, hoistway door, panels and frames, hoistway door interlocks, and wedge type suspension rope shackles.

g. ICC/ANSI A117.1-1998 Table 407.2.11.2 and ASME A17.1-2000 Table 2.26.12.1 Braille Symbol Indefication.

2. Terms used in this Section have the meaning defined in the ANSI Code.

3. In cases where a device or part of the equipment is referred to in this Section by the singular number (such as "motor"), it is intended that such reference applies to as many such devices as are required to complete the installation.

14A.04 SUBMITTALS

A. Product date: Within 35 calendar days after the Contractor has received the Architect's/Engineer's Notice to Proceed, submit:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to provide compliance with the specified requirements.

3. Shop drawings in sufficient detail to show fabrication, installation, anchorage and interface of the work of this Section with the work of adjacent trades.

4. Manufacturer's recommended installation procedures which, when approved by Architect/Engineer, will become the basis for accepting or rejecting actual installation procedures used on the work.

B. Upon completion of this portion of the work and a condition of its acceptance, deliver to Architect/Engineer three copies of an operation and maintenance manual compiled in accordance with the provisions of Section 1, and containing, in addition to other prescribed data:

1. Copy of the proposed plans that have been approved by the Buildings Department.

2. Sequence of operation of controls.

3. Operating instructions, including complete details, adjustments and instructions related to the controls and movement of the systems.

4. Parts list.

5. Lubrication requirements.

6. Maintenance requirements for all equipment.

7. Schedule of all required DOB inspections.

14A.05 GENERAL REQUIREMENTS

A. Delivery: All elevator materials, components and equipment shall be delivered to the job site in manufacturer's protective packaging.

B. Storage: All materials, components, equipment, and tools delivered to the job site shall be store in a dry and protected area, assigned to the contractor without cost. Materials shall be protected and handle in accordance with manufacturer's recommendations to prevent damage, soiling or deterioration.

C. Painting: Exposed existing metal work and metal work furnished by the contractor under these specifications shall be properly cleaned and painted after installation except as otherwise specified.

D. Temporary Service: Should the service of any elevator be required before completion and final acceptance, permission in writing must first be obtained from Architect/Engineer. In addition, the user agrees to sign the contractor's temporary acceptance form and be bound by the terms and conditions thereof.

E. Maintenance Service: The contractor shall furnish maintenance and call-back service on each elevator after it is completed and placed in operation for a period of one (1) year. This service shall consist of examinations of the equipment, adjustments, lubrication, cleaning, supplies and parts to keep the equipment in proper operation, except such adjustments, parts or repairs made necessary by abuse, misuse or any other causes beyond the control of the contractor. All work will be done by trained employees of the contractor during regular working hours of the trade.

F. Elevator Contractor shall file the necessary plans and applications with the Department of Buildings, The Department of Water Supply, Gas and Electricity and obtain the required permits and approvals. All work shall be done in a neat and workmanlike manner, and in accordance with the rules and regulations of any Department having jurisdiction.

G. Warranty: The contractor shall warrant the equipment installed by him under these specifications against defects in materials and workmanship and will correct any defects not due to ordinary wear or tear or improper use or care which may develop within one year from the date each elevator is completed and placed in operation. The warranty is not intended to supplant normal maintenance service and shall not be construed to mean that the contractor will provide free service for periodic examination, lubrication, or adjustment due to normal use, beyond that included in the specifications; or will the

contractor correct, without charge, breakage, maladjustment's, or other trouble arising from abuse, misuse, improper or inadequate maintenance, or any other causes beyond his control. If there is more than one unit in this specification, this section shall apply separately to each unit as completed and placed in operation.

H. The elevator contractor shall obtain all elevator Violation Dismissals from the Department of Buildings when Scope of Work pertains to Violations on file. Any additional Violations must be brought to the attention of Architect/Engineer for Compliance.

14A.06 BIDDERS QUALIFICATIONS

A. In the interest of unified responsibility, the elevator contractor shall be one regularly engaged in the business of manufacturing, installing and servicing elevators of the type and character required by these specifications and he shall manufacture the entire (power unit, controller, machine, generator, safety, controller, governor) and all other parts of the equipment including door operators and signal fixtures and he shall so state in his request for approval listing the items he manufactures. A representative of a national manufacturer will be considered a qualified contractor providing the manufacturer produces the specified items.

B. Where a contractor proposes to use an item of equipment other than that specified or detailed on the drawings which requires any redesign of the structure, partitions, foundations, piping, wiring, or of any other part of the mechanical, electrical or architectural layout, all such redesign and all new drawings and detailing required therefore shall, with the approval of Architect/Engineer, be prepared by the contractor at his own expense.

14A.07 MANUFACTURERS

A. Approved manufactures shall include Montgomery, Hollister-Whitney, GAL, Thyssen-Krupp, Kone Elevator Company or approved equal as determined by Architect/Engineer.

14A.08 DESCRIPTION OF EQUIPMENT

A. General:

Number A	total of one (1) elevator
Type	Passenger
Load and Speed	2100 lbs. at 100 FPM
Travel	Per Drawings

Stops and Openings	Number of stops and openings as per drawings
Power Supply	208 volts, 3 phase, 60 cycles, A.C.
Operation	Single automatic push-button control
Control	Variable voltage/Variable frequency A.C. for speeds up to 150 FPM.
Machine	Geared traction type
Hatchway Size	See drawings
Platform Size	See drawings
Car Size	See drawings
Car Enclosure	See Paragraph, T – “Elevator Car"
Safety and Buffers	Instantaneous type safety and spring buffers.
Door Operator	Electric power operator for car and hoist-way doors.
Car Doors	Two/three speed sliding doors, as indicated on the drawings
Hoist-Way Doors	Two/three speed sliding doors or swing self-closing door, as indicated on the drawings.
Signals	Horizontal electric car position indicators in the car and at lobby located above elevator door.
Additional Features:	Protective moving pads and hooks, leveling device, single speed car fan, with key operated switch and in car push-button operating station.

B. Car Operating Station

1. Car Operating Station (panel) shall be mounted on the sidewall of the car.

2. Provide a main car control station containing the devices required for specific operation, including:

   a. Door open, door close and alarm buttons.

   b. Keyed emergency stop switch.

   c. Floor buttons, which illuminate, when a call is registered and will remain illuminated until the call is answered.

   d. Fire service features in accordance with applicable Code requirements.

3. Provide a 2” dot matrix with LED position indicator mounted in the control panel for optimum viewing. As the car travels, its position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing.

4. Car Operating Station shall have the following handicapped features:
   a. All control buttons shall be at least 3/4" in their smallest dimension. Buttons shall be flush and arranged in ascending order from right to left.

   b. All control buttons shall be designated by raised standard alphabet characters for letters, Arabic characters for numerals and shall be raised 1/32" minimum. Raised character shall be at least 5/8" high but no higher than a nominal 2". Floor buttons shall be provided with visual indicators to show when a call is registered and these indicators shall extinguish when call is answered. A star shall designate the lobby floor.

   c. All floor buttons shall be no higher than 54" from finish floor. All emergency controls shall be no higher than 35 inches.

   d. Braille characters shall be accompanied by Grade II Braille complying with 703.5.1 through 407.3.5.4 and table 703.5. Braille dots shall have a domed or rounded shape and shall be 3/16” under baseline of control button identification character.

5. Provide an emergency light. Emergency light shall illuminate automatically upon loss of the building’s normal power supply.

6. Provide an emergency communication device complying with New York City Codes.

C. Hall Call Buttons and Lanterns:

1. Provide a hall control panel containing the devices required for specific operation, including:

a. Call buttons shall be centered at 42 inches above finish floor.

b. Call buttons shall have visual signals to indicate when each call is registered and when it is answered.

c. Each call button shall be a minimum of 3/4" inches in the smallest dimension and the button designating up shall be on top.

2. Hall Lanterns:

a. A visible and audible signal shall be provided at each hoist-way entrance. Audible signals shall sound once for the up direction and twice for the down direction.

b. Hall lanterns shall be mounted so that their centerline is at least 72 inches above the finish floor.

c. Hall lantern shall be at least 2 1/2 inches in the smallest dimension.

D. Floor Designation:

1. All elevator hoist-way entrances shall have raised characters provided on both jambs.

2. The baseline of the characters shall be 60 inches from the finished floor.

3. Characters shall be a nominal 2 inches and raised 1/32 inch.

4. Braille dots translation of the character, shall have a domed or rounded shape and shall be ½" (min) under baseline of character according ICC/ANSI A117.1-1998 703.3.2.

E. Door Protective and Reopening Device:

1. Elevators doors shall open and close automatically.

2. The door shall be equipped with an electric eye with two beam located at 5 inches and 29 inches above the finish floor. If one of the light beams is broken, the elevator door shall stop and reopen for 20 seconds.

F. Signal and Door Timing:

1. The hall lantern's audible signal shall alert passenger 5 second before the car answers the call. The signal shall be 20 decibels loud.

2. The minimum time for elevator door to remain open in response to a call shall be 3 seconds.

3. The hall lantern's audible signal shall alert passenger 5 second before the car answers the call. The signal shall be 20 decibels loud.

4. The minimum time for elevator door to remain open in response to a call shall be 3 seconds.

G. Machine Beams, Buffer Braces, Etc.:

1. The elevator contractor shall furnish necessary beams for machine, governors, rope hitches and necessary braces for buffers.

H. Wiring:

1. All necessary wiring for the proper operation of the equipment beginning at the power and light outlets furnished by others as herein before described shall be supplied and installed by the elevator contractor.

2. All wiring shall be National Electric Code Standard.

3. All ducts or conduits in the elevator hatch or in the floors shall be installed in an orderly manner.

4. Trailer cables shall be of the best grade for the service. They shall be hung so that the proper size loop may be obtained. They shall have a fire resistant outer braid, which will meet the Underwriter's standard test.

5. The entire wiring system shall be tested for insulation to grounds.

I. Elevator Control System:

1. The elevator will be provided with full selective collective control, up and down.

2. The Elevator Control system shall be microprocessor based. The system shall operate in real time, continuously analyzing the car changing position, condition, and workload. Controller and operational circuits including the drive system shall be digital. Control of the elevator shall be automatic in operation by means of push buttons in the car numbered to correspond to floors served, for registering car stops, and by “up-down” push buttons at each landing (floor) and single direction push buttons at terminal landings.

a. Momentary pressing of one or more buttons shall dispatch the car to the designated landings (floors), in order in which the landings (floors) are

reached by the car, irrespective of sequence in which the buttons are pressed. Each landing (floor) call shall be canceled when answered.

b. When car is traveling in the up direction, it shall stop at all floors for which car buttons or “up” hall buttons have been pressed. The car shall not stop at all floors where “down” button have been pressed, unless the stop for that floor has been registered by a car button or unless the down call is at the highest floor for which any buttons have been pressed. Pressing the “up” button when the car is traveling in the down direction shall not intercept the travel unless the stop for that floor has been registered by a car button or unless the up call is the lowest for which any button has been pressed.

c. When the car has responded to its highest or lower stop, and stops are registered for the opposite direction, its direction of travel shall reverse automatically and it shall then answer the calls registered for that direction. If both up and down calls are registered at an intermediate floor, only the call corresponding to the direction of car travel shall be canceled upon the stopping of the car at the floor landing.

d. A car that is stopping for the last hall call in the preference direction and that hall call is for the opposite direction with no onward car calls, shall reverse preference when the selector position advances to the landing at which the car is committed to stop. A car that is stopping for the last hall call in the preference direction, and that hall call is for the same direction, shall hold its preference until the door is almost closed allowing time for a passenger to register an onward car call, which will maintain the preference. If no car call is registered before the door is almost closed, the car will lose its preference and shall be available to accept calls in either direction.

3. All Control System wiring shall be neatly formed and tied. All leads except for control and signal circuits shall be provided with either solder or solder-less lugs. Control and signal wires shall be brought to accessible washer type or soldered terminals or studs. The wiring on the back of the panel shall be the flame resisting type or flame protected.

4. The controller will be equipped with a reverse phase relay, which protects the elevator equipment against phase reversal or open phase.

5. The elevator drive shall be variable voltage, variable frequency (VV/VF) type.

a. Control; Controlled pulse-width modulated AC drive. The variable voltage variable frequency drive shall convert the AC power supply using a two-step process to a variable voltage variable frequency power supply for use

by the hoist motor. Speed control shall be by means of vector control providing independed excitation and torque current.

6. Elevator car shall be provided with a self-leveling feature to automatically bring the car to the floor landings and correct for over or under travel. Self-leveling shall, within its zone, be automatic. The car shall be maintained approximately level with the landing irrespective of its load

J. Worm Geared Machine:

1. The geared traction machine shall be designed to meet the severe service encountered in elevator operation (Basement/Overhead type manufactured by "Holister-Whitney" model # 34 or approved equal). A properly grooved sheave shall be driven through a worm and gear by a moderate speed motor. The sheave wheel shall be mounted with heavy anti-friction bearings on a rigid shaft be firmly pressed onto a shaft supported by sleeve or anti-friction bearings of ample capacity.

2. The gear housing shall be divided horizontally at the center line of shaft to provide access to the worm gear. A gasket inspection hand hole shall be provided in the lower half of the housing to permit inspection of the gear. Suitable drain plugs, overflow pipes and oil level indicator shall be provided.

3. The sheave and gear spider shall be cast integral. The bronze worm gear shall be secured bolted to the spider. The sheave material shall be of semi-steel of the proper hardness to give minimum wear of sheave and cables. Surface of sheave shall show hardness between 220 and 240 Brinnell and plainly stamped in approved manner. The diameter of driving sheaves shall be not less than forty (40) times the diameter of hoisting cable.

4. The work gear shall be machined from a heavy ring casting of special gear bronze and shall have accurately hobbled teeth. Bolts, which secure the gear to the spider shall be fitted into reamed holes to secure a snug fit.

5. The worm and its shaft shall be accurately machined in one piece of special forged steel. The brake wheel shall be securely mounted on the worm shaft and machined to obtain a smooth and accurate face. The worm shaft shall be mounted on at least two bearings, one of which shall be an oversize double acting preloaded ball bearing or a self-aligning thrust bearing, and the other a radial ball bearing. An oil seal shall be provided at the motor end of the worm shaft.

6. The brake shall be spring applied electric brake, held open by an electro-magnet actuated by the controller and designed to make smooth, positive stops. Break shall be of heavy construction and having a proper braking area for the load and

speeds specified. The brake shall have sufficient power to stop and hold the car with contract load. Brake shall be designed to automatically apply in event of interruption of power supply from any cause.

K. Hoisting Motor:

1. The motor shall be reversible and shall have high starting torque with low starting current and shall be designed to stand the severe loads encountered in elevator service. It shall be rated in accordance with the standards of the A.N.S.I. for 50 degrees C., 30-minute continuous operation motors and shall have sufficient capacity to operate with the contract load and speed without over heating.

3. The motor shall be totally enclosed, non-ventilated (10 horsepower for 2000 lb capacity), AC motor with class F insulation. Motor armature shall be dynamically balanced and supported by ball bearings of ample capacity.

3. The machine shall be furnished with soundproofing to minimize noise transmission.

L. Control Panel:

The controller is the electro-magnetic type. All magnetic switches are mounted on panels, being of ample size and capacity. The up and down switches are mechanically and electrically interlocked and the car cannot start on the reverse motion until brought to a full stop. Starting is controlled by magnets, giving smooth and gradual starting acceleration.

M. Signals:

1. Hall Buttons - Hall button face plates of stainless steel, #4 finish, shall be installed on each landing, for operation of the elevator from the outside.

2. Car Button Station - The operating device in the cars shall consist of a series of push buttons to correspond to the landings served. The push button plate in the car shall be of #4 finish stainless steel and shall have stop switch and alarm button and connected by means of traveling cable to the main controller.

3. Car Position Indicator - Furnish and install an electric car position indicator over the door within the cab and in lobby over hoist-way door with numbered lights to indicate the position of the elevator at all times, as well as the direction of travel by means of UP-DOWN arrow lights. Indicator plate shall be #4 finish stainless steel.

4. An emergency stop switch shall be provided in the car to interrupt the power supply and apply the brake independently of the regular operating device.

5. The operation of any of the aforementioned emergency circuits shall not cancel registered calls; and after the circuits are closed the car shall continue to answer its calls.

6. All buttons shall be vandal-proof, mushroom type, stainless steel.

N. Guides:

1. The guides shall be accurately machined standard section guides rails with tongued and grooved joints for car and counterweight,, weighing not less than specified in the A.N.S.I. Code. Substantial machined fishplates shall be used to form the rail joints.

2. These guides shall be erected plumb within 1/8" and in strong substantial manner. They shall be strongly and properly supported and placed, so as to not become distorted by eccentric loading of by application of safety devices.

3. Rails shall be suitably bottomed in the pit and shall extend to the underside of the overhead slab or grating.

O. Hoist and Governor Cables:

1. The hoist cables shall be high traction steel especially designed for elevator service having a factor of safety at least equal to that specified in the A.N.S.I. Code. They shall be securely attached at both ends into the shackles, using the method specified in the A.N.S.I. Code.

2. The governor cables shall not be less than 3/8" iron especially designed for elevator service. The two ends shall be securely fastened together at the car and shall be attached to the safety operating mechanism. The governor cable is to pass over the governor sheave and over a tension device at the bottom of the hoist-way.

P. Buffers:

1. Suitable spring buffers with the necessary blocking and supports shall be furnished.

2. The type of buffer used shall have been tested by a qualified testing laboratory and approved as complying with the A.N.S.I. Code.

Q. Terminal Stopping Device:

1. Upper and lower normal terminal stopping devices shall be provided and arranged to stop the car automatically from any speed obtained under normal operation

within the top and bottom over travels independent of the operating device, final terminal stopping devices and buffers.

2. Final terminal stopping devices shall be provided and arranged to stop the car and counterweight automatically from speed specified within the top clearance and bottom over travel independent of the operation of the normal terminal stopping device but with the buffers operative and when operated shall prevent normal operation.

R. Counterweights:

Counterweights shall be designed for smooth and economical operation and shall consist of a structural steel frame securely riveted or bolted, and necessary cast iron sub-weights shall be held within the frame by not less than two tie rods passing through holes in all weights. The rods shall be equipped with lock nuts secured by cotter pins at each end.

S. Car Frame and Platform:

1. The car frame shall be made of steel members, with a factor of safety as required by the A.N.S.I. Code. The mechanical safety device shall be mounted under the car and securely fastened to the car frame.

2. The platform shall consist of a steel frame and necessary steel stringers and covered with a wood (plywood) sub-floor. The underside of wooden (plywood) sub-floor shall be fireproofed by steel sheet, not less than # 26 gauge in thickness.

3. Vinyl composition tile, as selected, shall be attached securely to the new floor. A car threshold shall be included with necessary grooves for car sliding doors.

4. Substantial supports shall be provided for all auxiliary apparatus.

T. Elevator Car:

1. Elevator car enclosure - Install complete new car in new frame. Provide car fabricated either by the elevator manufacturer, or by a firm, which has specialized for at least five (5) years in the fabrication of passenger elevator cars similar to required, and which is acceptable to the elevator manufacturer. Provide manufacturer's standard car enclosure, of type and style required, finished and equipped as indicated, and as selected by the Architect/Engineer. Prepared to receive signal equipment and other operating and safety devices as specified and as otherwise indicated and/or required. Insulate exterior of enclosure with rubber insulation to cushion noise.

   a. Walls: Finished with high-pressure plastic laminate.

b. Car Doors: Hollow metal, insulated core; faced with plastic laminate or stainless steel, horizontal sliding type.

c. Ceiling: Plastic laminate.

d. Lighting: Recessed vandal-proof fluorescent fixture.

e. Ventilation *: Single speed exhaust fan mounted in the car transom.
* **Note** – Ventilation calculation shall be a part of elevator cab layout submission.

f. Entrance column: Stainless steel, satin finish.

g. Handrail: Provide 2" aluminum satin finish handrail at rear wall.

h. Floor: Vinyl composition tile.

i. Base: Stainless steel with concealed vent openings.

j. Accessories: Provide protective pad hooks, hall view mirror, extruded aluminum sill, and frame for inspection certificate.

U. Car Door Contact:

The car door shall be equipped with a contact, which will prevent operation of the car unless the car door is closed. The contact shall be of an approved type and tested as required by Code. The car door safety edges shall be fabricated of aluminum, hard plastic bonded to aluminum or approved equal by Architect/Engineer.

V. Governor and Safety:

1. A mechanical safety shall be mounted under the car platform and securely bolted to the frame. It shall be actuated by a centrifugal governor mounted in the overhead and connected to the safety tripping mechanism by a continuous governor cable attached to the car frame, passing over a governor sheave and a weighted tension sheave in the pit.

2. The governor jaws shall grip the cable in a minimum time after the governor reaches tripping speed and shall be held in engagement with the cables by springs and the tension of the governor rope. The governor jaws shall be so designed that the governor rope may slide through them after the safety has been set without damage to the rope.

3. The operation of the governor on over speed, shall open a switch disconnecting the power from the elevator, and shall trip the safety mechanism. The safety

mechanism when tripped shall engage the rails with sufficient force to stop the car from governor tripping speed with full load in car. The pressure of the two pairs of jaws on the rails shall be equalized.

4. The governor shall be accurately adjusted and sealed with the tripping speed specified in the A.N.S.I. Code.

W. Hoist-way Doors:

1. Each entrance shall be equipped with two/three speed sliding door or self-closing swing door as indicated on the drawings.

2. The hoist-way sliding doors shall be hollow metal, insulated core doors with manufactures shop prime coat. Door shall be horizontal sliding type, thoroughly lubricated with heavy-duty components for heavy usage encounter in elevator service.

3. The hoist-way manual swing doors shall be hollow metal, insulated core doors with manufactures shop prime coat. Vision glass panel and standard manufacturer's hardware shall be provided.

4. Unit Frame: Each unit frame shall be of not less than # 14 gauge steel welded or bolted at corners to form the unit frame and shall be fastened to the sill and jambs. Each frame shall be backed with suitable sound deadening material.

5. Sill: Each sill shall be of extruded aluminum, not less than 7/16" thick with non-slip surface. Each sill shall be supported on steel anchors securely fastened to the floor construction.

6. Finished: All exposed surfaces shall have all oil, dirt and other impurities removed and shall be thoroughly cleaned before painting. Materials shall be treated for rust prevention before finishing. Exposed areas of doors and unit frames shall have a smooth surface and shall have an enamel finish in color as selected by Architect/Engineer.

X. Automatic Door Operator:

1. Provide a door electric operator designed to operate the car and hoist-way doors simultaneously. The door control system shall be closed loop with electronic and digital operation. The closed loop circuit shall give constant feedback on the position and velocity of the doors. The motor torque shall be constantly adjusted to maintain the correct door speed based on its position and load. Door movements shall be electrically cushioned at both limits of travel, and the door operating mechanism shall be arranged for manual operation in event of power failure. Doors shall automatically open when the car arrives at the landing and

automatically close after an adjustable time interval or when the car is dispatched to another landing (floor).

2. The elevator cannot move away from a landing, until the car doors are fully closed.

Y. Interlocks:

Each type of hoist-way entrance shall be equipped with an approved type interlock tested as required by Code. The interlock shall prevent operation of the car away from the landing until the doors are locked in the closed position as defined by the Code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at the landing or is in the leveling zone and stopped at that landing.

Z. Hoist-way Door Unlocking Device:

Hoist-way door-unlocking devices conforming to the requirements of the A.N.S.I. Code shall be provided to permit authorized persons to gain access to hoist-way when the elevator is away from the landing.

AA. Car Door Hangers:

1. The hangers shall be of the sheave type suitable for the type door operation specified. There shall be two hanger units or one continuous unit per door panel bolted to the top of the panel.

2. The sheave wheels shall be made of or tired with a suitable sound reducing material and shall rotate on a grease packed precision ball bearing. The up-thrust shall be taken by a roller mounted on the hanger and arranged to ride on the underside of the track. The roller shall be mounted on an eccentric stud to provide adjustment. The hanger track shall be of formed cold rolled steel or of cold drawn steel and shall be rounded on the track surface to receive the hanger sheaves. Provision shall be made for attaching the hanger assembly to the hanger support.

BB. Levelator:

1. Furnish and install a "Levelator" on the car to automatically measure the car load and preset the stops to correct for floors stop errors normally due to load variations on the car.

CC. Motor Room Door, Frame and Hardware (Provided and installed by GC):

1. Hollow metal door shall be 1 3/4" thick, flush type, 18 U.S. gauge (interior) & 14 U.S. gauge (exterior), 1 1/2 hour F.P.S.C. size 3'-0" wide by 7'-0" high. Door shall be reinforced for installation of hardware. Insulation between panels of hollow metal doors shall be mineral rock wool. Provide shop prime coat of paint.

2. Hollow metal frames shall be 16 U.S. gauge (interior) & 12 U.S. gauge (exterior) of cold rolled steel. All corners welded clear through and shall be smoothly finished, properly anchored to adjoining walls. Frame shall be provided with all necessary reinforcing, spot-welded in place, for the proper installation of hardware. The stop at the lock style shall be punched to receive three (3) door silencers. Frame shall be shop primed.

3. Hardware:

a. Elevator Machine Room:

1 1/2 (pair) Spring Hinges	2006R 4 ½" x 4 ½" x USP	- (Stanley)
1 Lockset	# 4840-HG Mul-T-Lock	- (Securitech)
1 Cylinder	Securitech Profile - Type 3	- (Securitech)
1 Guard Plate	Securitech # 4000GP	- (Securitech)
1 Dummy Trim	BM09HSL.113/114 x US32D	- (Arrow)
3 Rubber Silencers for Metal Frames	# 20 Gray	- (Ives)
1 Floor Stop/Holder	# FS446 x US26D or to suit	- (Ives)
1 Door Saddle	# 6570A [♿] or to suit	- (Zero Int.)

b. Elevator Bulkhead:

1 1/2 (pair) Spring Hinges	2006R 4 ½" x 4 ½" x USP	- (Stanley)
1 Lockset	# 4840-HG Mul-T-Lock	- (Securitech)
1 Cylinder	Securitech Profile - Type 3	- (Securitech)
1 Guard Plate	Securitech # 4000GP	- (Securitech)
1 Latchset	BM01HSL x US32D	- (Arrow)
1 Heavy Duty Crash Chain w/Spring	# HDCC w/Vinyl cover	- (Don-Jo)
3 Rubber Silencers for Metal Frames	# 20 Gray	- (Ives)
1 Floor Stop/Holder	# FS446 x US26D or to suit	- (Ives)
1 Door Saddle	# 6570A [♿] or to suit	- (Zero Int.)

DD. <u>Vinyl Composition Floor Tile for Cab Floor:</u>

1. Provide new 12" x 12" x 1/8" thick or 9" x 9" x 1/8" thick vinyl composition tile, standard grade in shades of marble or terrazzo color. Samples of floor tiles and floor base shall be submitted to Architect/Engineer, for approval prior to installation.

2. Adhesive shall be as recommended by the manufacturer of tile.

3. Upon completion of the work provide sufficient number of tiles for future replacement, delivered to the Owner.

14A.09 GUARANTEES

A. Guarantee all items of work furnished and installed under this Section for (1) one year, in addition to manufacturer's standard warranties. All guarantees to be from the date, when **Final Certificate of Occupancy** is issued from Department of Buildings.

END OF SECTION