EXHIBIT A –

Grand Central Madison
Construction and Safety Rules

FOREWARD

The Grand Central Madison (GCM) Site Construction and Safety Rules as set forth herein have been developed in the interest of the safe, efficient, and environmentally sensitive operation of Grand Central Madison. The Grand Central Madison Site Manager (GCM Site Manager) is charged with ensuring the safe operations for all persons at GCM, including all employees, contractors, and vendors.

TABLE OF CONTENTS

b. Materials prohibited
c. Storage guidelines
d. Storage requirements
e. Incident response

5. Firearms, weapons, and explosives

Part D. GCM Site reclamation, construction and maintenance activity

REFERENCE SPECIFICATION SECTION 01 35 00

Part E. Code Compliance

REFERENCE SPECIFICATION SECTION 01 33 40

Part F. Attached Specification Sections

01 30 00	**ADMINISTRATIVE REQUIREMENTS**
01 33 40	Code Compliance
01 35 00	**SPECIAL PROCEDURES**
01 35 10	Construction Safety Requirements
01 35 30	Environmental Requirements
01 35 50	Security Procedures
01 35 60	Noise and Vibration Control

PART A. GENERAL CONDITIONS

1. Use of premises may be denied or withdrawn

   The GCM Site Manager or the person designated to act in his or her stead, may deny permission to enter or remain on the GCM Site to person who violate GCM rules And Regulations, GCM Construction and Safety Rules, GCM policies or procedures, applicable laws, ordinances or regulations of other government bodies, or for such reason as may be permitted by law.

2. Closed and restricted areas
   a. No person shall enter or remain in any area posted as closed area, or otherwise identified as closed, without the permission of the GCM Site Manager, or persons designated to act in his or her stead.
   b. No person shall enter or remain in any area posted as restricted area, or otherwise identified as restricted area, unless such person complies with any applicable restriction or is given permission to enter by the GCM Site Manager, or persons designated to act in his or her stead.

3. Fences
   a. The climbing, marking, painting, affixing of materials, or removal of any fence is prohibited.

4. Compliance with orders

   No person shall refuse to follow the lawful order of any GCM Employee including an MTA Police Officer

5. Endangering persons or property

   NO person shall do or omit to do any act if the doing or omission thereof unreasonably endangers persons or property.

6. Interference with traffic or activities

   No person shall unreasonably interfere with:
   a. Pedestrian or vehicular traffic
   b. Use of a doorway, entrance, or exit; stairway or landing entrance or exit thereof; escalator or landing thereof; loading or unloading area, sidewalk cut or sidewalk adjacent to crosswalk.
   c. Entry or exit from any vehicle
   d. The formation of any line of persons waiting to enter or use anything, place or service described in (b) or (c) above.
   e. Any reclamation, and construction or maintenance activity
   f. The duties of a flag person
   g. Instructions or information on or within a sign, pavement marking, or traffic signal.
   h. The storage of materials, equipment, supplies, vehicles, debris, waste, garbage, or refuse.

7. Duty of individuals involved in accidents:
   a. Any individual involved in an accident at GCM which results in death, personal injury or property damage shall provide his or her name and address, and if a motor vehicle is involved, display the operator's license, vehicle registration and proof of insurance document.

8. Defacing or damaging of property

   No person shall mark, damage, or affix any thing or object to, any wall, post, surface, walkway, street fixture or any other property at GCM

9. Garbage disposal
   a. Public areas

      No person shall dispose of garbage, debris, or any refuse except by depositing such material in waste containers as shall be placed at GCM for such purpose. If no waste containers are available, all garbage, debris, or refuse shall be carried out from GCM

   b. Closed and restricted areas
      i. Each person is responsible for garbage he/she generates and any other garbage within his or her control.
      ii. Each entity is responsible for the garbage generated within its area of control.
      iii. All garbage, debris, or refuse generated by persons individually or on behalf of others, shall be disposed of by the person(S) generating such garbage, debris, or refuse, or by the person(s) controlling the area within which the garbage, debris or refuse is located, or by the entity controlling the area.
      iv. Such garbage, debris, or refuse shall be disposed of in containers provided by the entity controlling the area. Such containers shall be emptied regularly to lawful disposal locations outside GCM, at a frequency that prevents the attraction of rodents and other pests, odors, seepage, and overflow.
   b. SEE SECTION 01 35 30 for additional requirements.

10. Alcoholic beverages
    a. Public Areas

       No person shall drink, or carry an open container of, any alcoholic beverage in a public area.

    b. Closed and restricted areas

       Alcoholic beverages are prohibited within closed and restricted areas. No person shall drink, carry an open container of, or carry a closed container of, any alcoholic beverage in closed and restricted area.

11. Smoking
    a. The use of tobacco products, including but not limited to, cigarettes, cigars, pipes, etc. or any item involving an open flame or heat source are prohibited in all areas of GCM.
    b. The above includes all areas of the site including open areas, outdoor areas, enclosed areas, sheds, shanties, trailers, containers, vehicles, etc.

12. Sitting, lying, sleeping
    a. Public areas
       i. Except for a person in a wheelchair, stroller, or other similar apparatus, or a person waiting for emergency medical assistance, no person may sit down or lye down.
       ii. No person may sleep at GCM
    b. No person may sleep at the GCM.

13. Skateboarding, roller-skating, bicycle riding
    a. Skateboarding, roller-skating, bicycle riding or use of a scooter or other similar motorized apparatus is prohibited.
    b. This section is not applicable to use of a wheelchair or similar apparatus by a disabled person, or to use of a motorized or self-propelled apparatus used in reclamation, construction, or maintenance activity.

14. Noise
    a. Noise resulting from activity other than reclamation, construction, or maintenance activity.
        i. No person may make or cause to be made and sound in excess of 50 dBA on the A weighted scale measured at 5 feet from the source of the sound.
        ii. No person shall operate or use any personal radio, CD, tape recorder, or other sound reproduction device in such a manner that the sound reproduction device is audible to another person.

    b. Noise resulting from reclamation, construction, or maintenance activity:
        Tenants, contractors, and subcontractors, or other parties performing reclamation, construction, or maintenance activity, shall comply with all applicable federal laws and regulations with respect to noise control and mitigation.

    c. SEE SPEC SECTION 01 35 60

15. Distribution or sales

    The following is prohibited , whether for free or for payment.
    a. The distribution of any merchandise
    b. The provision of any service including, but not limited to, shoe shining.

16. Gambling and contests

    The conduct of any actual or purported game of chance or skill is prohibited.

17. Emergencies

    In the event of an emergency, contact MTA Police

PART B GCM SITE SECURITY

1. Adherence to security procedures, rules, and regulations.

   All persons entering GCM shall comply with all applicable security policies, procedures, rules, and regulations, whether contained in these Construction and Safety Rules or communicated via the site manager or his/her designee.

2. SEE SPECIFICATION SECTION 01 35 50

PART C GCM SITE SAFETY

1. General
    a. Tenants, contractors, subcontractors, and all others performing work at GCM shall prepare and implement the programs, plans, and procedures required by GCM to protect worker health and safety.

b. Individuals who do not follow the programs, plans, shall be subject to immediate removal from the site and suspension or revocation of privileges to enter closed and restricted areas.
c. SEE SPEC SECTION 01 35 10

2. Personal protective equipment
    a. Personal protective equipment appropriate to the hazard of the respective work sites shall be worn at all times in closed or restricted areas of the GCM site, and shall at a minimum include
        i. Hard hat
        ii. Orange reflective safety vest
        iii. Work boots
        iv. Safety glasses or goggles
        v. Hearing protection (when required or directed)
        vi. Respirator (when required or directed)
    b. Additional PPE, as noted on signage around specific areas, or as required by each employer to conform with federal, state, and local codes, rules, regulations, and ordinances, and comply with programs, plans, and procedures required by GCM, shall also be worn at times by individuals in designated areas.
    c. SEE SPEC SECTION 01 35 10

3. Hazardous material / Chemical Management
    a. SEE SPEC SECTION 01 35 30
    b. SEE SPEC SECTION 01 35 10

4. Firearms, weapons, and explosives

    No person shall carry, keep, store, handle, use, dispense, or transport, into or through GCM, any firearm, weapon, or any explosive device or material.

GENERAL REQUIREMENTS – SECTION 01 33 40

CODE COMPLIANCE

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes requirements for the management and coordination of code compliance issues, including but not limited the following:

1. Obtaining a Design Approval
2. Obtaining a Construction or Demolition Permit
3. Obtaining and Monitoring Third-Party Special Inspections
4. Obtaining an Approval for Temporary Certificate of Occupancy (TCO)
5. Obtaining a Final Approval for Certificate of Occupancy (COO)
6. Obtaining a Final Approval for Certificate of Completion (COC)
7. Stop Work Orders and Revocation of Permits and Certificates as required by the BCNYS and the ECCCNYS
8. Scheduling and providing access for inspection by others
9. Scheduling and providing access for Code Compliance Manager
10. Obtaining a Variance

B. Definitions

1. Approved Construction Documents: Contract Documents that have been signed and sealed by a Professional Engineer licensed in the State of New York, submitted in accordance with the requirements herein, and approved by the MTA Code Compliance Unit.
2. MTA C&D (OR OTHER DESIGNEE OF THE MTA) is designated as a construction permitting agency by the NYS Division of Code Enforcement (DCEA) per 19 NYCRR 1204.16. This authority provides for code compliance oversight as required by 19 NYCRR 1204. The MTA C&D (OR OTHER DESIGNEE OF THE MTA) Code Compliance Unit ("CCU") is the AHJ that reviews design and construction phases for conformance to the NYS Uniform Fire Prevention and Building Code ("Uniform Code"). The CCU issues legal construction-related permits and certificates of compliance.
3. Construction Permit: A permit that authorizes the Design-Builder to undertake construction. The CCU Construction Permit Application, Attachment #1, is required to be approved for issuance of a construction permit.
4. Demolition Permit: A permit that authorizes the Design-Builder to commence demolition. The CCU Construction Permit Application (Attachment #1) is required to be approved for issuance of a demolition

   permit.
5. Hold Points: Hold point shall be identified as an item during construction where

a required inspection by a regulatory agency is mandated. These are items are listed in the BCNYS Part 1204.8 Inspections During Construction and items identified by the CCU. These hold points must be inspected by the CCU prior to advancing, covering or proceeding with the scope of work which will prohibit the visual inspection.

6. Designer-of-Record is a licensed Professional as defined by BCNYS and licensed by the State of New York.

1.02 REFERENCED SECTIONS

A. Section 01 32 10, Contract Schedule Requirements

B. Section 01 33 00, Submittal Procedures

1.03 NOTED RESTRICTIONS

A. Construction activities at the Work Site shall not commence until permits applicable to the Work are issued by the CCU the permitting AHJs, and the code compliance kickoff meeting has occurred.

B. The Design-Builder shall use the latest form code compliance checklists and required form for Submittals to the CCU when submitting forms to CCU. The CCU reserves the right to update the checklists and forms as necessary during the Contract to meet applicable requirements. Forms which require a professional seal and signature shall be submitted to the CCU bearing the original signature of that professional.

1.04 CODES AND STANDARDS

The following codes and reference standards shall apply:

A. Americans with Disabilities Act Accessibility Guidelines (ADAAG).

B. Uniform Code, which incorporates by reference the following publications (collectively, the 2007 New York State Code Books):

1. 2007 Residential Code of New York State
2. 2007 Building Code of New York State (BCNYS)
3. 2007 Plumbing Code of New York State
4. 2007 Mechanical Code of New York State
5. 2007 Fuel Gas Code of New York State
6. 2007 Fire Code of New York State
7. 2007 Property Maintenance Code of New York State
8. 2007 Existing Building Code of New York State

C. The New York State Energy Conservation Construction Code (“Energy Code”), which incorporates by reference the following publications:

1. 2007 Energy Conservation Construction Code of New York State (ECCCNYS)

2. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2016, as amended by 19 NYCRR 1240

D. Other standards as incorporated by reference in the Uniform Code and the Energy Code.

E. Other New York Codes, Rules, Regulations (NYCRR). Additional Codes, Rules, and Regulations exist that may affect new and existing buildings, structures, systems, and equipment. Such regulations include, but are not limited to:

1. 19 NYCRR 1209, Regulations and Fees for Factory Manufactured Buildings
2. 19 NYCRR 1264, Identification of Buildings Utilized Truss Type Construction
3. 12 NYCRR Chapter 1, Subchapter A, the Industrial Code

F. Additional requirements relating to building codes, such as conditions of previously granted system wide variances and the Occupational Safety and Health Act of 1970, as amended (OSHA).

1.05 SUBMITTALS

A. Code Compliance Coordinator/Liaison

B. Code Compliance Plan.

C. Applications, and supporting documentation, including drawings signed and sealed by a licensed design professional registered in New York State and signed and sealed code analysis or code drawing sheets.

D. Signed code compliance checklists.

D. Request for Construction Permit Determination (RCPD).

E. Copies of any permit filings and certifications with associated documentation obtained from any other AHJ.

F. Requests for variances, as require, and associated documentation.

G. Documentation of Design-Builder's current Workers Compensation Insurance Certificate and Disability Benefits Certificate.

H. Requests for pre-final inspections and final inspections

I. Requests for code compliance certificates.

J. All Submittals of hard-copy drawings shall be accompanied by electronic files.

1.06 DELIVERABLES

A. Monthly status reports of Special Inspections

B. Monthly status reports for other CCU forms when directed by the CCU.

PART 2 PRODUCTS

[not used]

PART 3 EXECUTION

3.01 DESIGN-BUILDER'S CODE COMPLIANCE COORDINATOR

A. The Design-Builder shall assign a Code Compliance Coordinator to act as the main coordinator/liaison for all code compliance issues.

B. Within thirty (30) Days of NTP, the Design-Builder shall submit the name and resume

of the proposed Design-Builder's Code Compliance Coordinator to the MTA. The Code Compliance Coordinator does not need to be a full-time position and may perform other functions for the Design-Builder under this Contract. The Code Compliance Coordinator is not Key Personnel.

C. The Code Compliance Coordinator's duties and responsibilities, at a minimum, shall include:

1. Coordinate code compliance activities between the Design-Builder, AHJs, MTA C&D (OR OTHER DESIGNEE OF THE MTA), project management consultants, the Railroad, and the CCU.

2. Monitor and control all code compliance activities.

3. Ensure conformance with code compliance requirements.

3.02 CODE COMPLIANCE PLAN

A. The Design-Builder shall develop and submit a code compliance plan within forty-five (45) Days from NTP.

B. The Code Compliance Plan shall include, but not be limited to the following:

1. Identification of Third-Party testing laboratories.

2. A schedule, which shall include the following items:

i. Permits required for performance of the Work.

ii. Submission dates for permit applications.

iii. Special Inspections to be performed by Third-Party inspectors.

iv. Inspections to be performed by others.

v. Inspections to be performed by the Design-Builder's Construction Manager prior to inspections performed by the CCU.

vi. Inspections to be performed by the CCU.

vii. Application dates for code compliance certificates.

viii. Identification of Hold Points that enable inspections to be performed. This information shall be incorporated into the Contract Schedule and Six Week Look Ahead Schedules.

ix. The Design-Builder shall ensure that a copy of the Code Compliance Plan is maintained and available at each Work Site.

C. Resubmit an updated Code Compliance Plan a minimum of every 6 months or when directed by the CCU to reflect changes.

3.03 KICKOFF MEETING

A. The Design-Builder shall coordinate with the CCU to schedule a code compliance kickoff meeting within sixty (60) Days of NTP. The date and meeting location shall be determined by the CCU.

B. The Project Manager, Design Manager, Designer of Record, Construction Manager, Code Compliance Manager and each lead discipline designer shall attend

the kickoff meeting.

C. At the kickoff meeting, the CCU will review and discuss the Design-Builder's Code Compliance Plan and advise on the elements of the Work that are subject to code compliance requirements.

D. The CCU will provide the applicable CCU forms during Kick-off meeting.

3.04 CONSTRUCTION PERMIT

A. A construction permit issued by the CCU is required prior to the start of construction activities, except for projects or activities that are exempt from the construction permit requirements as set forth in 19 NYCRR 1204..

B. The Design-Builder shall submit a RCPD (available upon request) to the CCU to construct the Work, or portions thereof. The RCPD shall be filled out in its entirety and include the location and description of the Work. For all Work that requires a permit, the Design-Builder shall provide relevant code compliance documents, including checklists, calculations, a statement of special inspections, and signed and sealed Design Documents for that portion of the Work.

1. The entity named on the permit shall be the same as the entity named on Design-Builder's current Workers Compensation Insurance Certificate and Disability Benefits Certificate, copies of which shall be submitted with the application.

C. The Design-Builder shall modify its application for a construction permit to incorporate any comments provided by the CCU and resubmit until its application it is approved.

D. The Design-Builder shall submit drawings for any changes to the Design Documents made after the issuance of a construction permit for review and approval by the CCU prior to construction of any such changes. The Design- Builder shall apply for any required amendments when changes are made to the Work on a previously-approved construction permit.

E. The CCU has the right, pursuant to 19 NYCRR 1204.7 and 1204.11, to revoke or suspend a construction permit.

3.05 REQUESTS FOR INSPECTION

A. The Design-Builder shall submit requests for inspection using the request-for-inspection form at least three (3) Work Days prior to the requested inspection time with copies of all required Design Documents.

B. Pre-final inspections are required by the CCU where needed to ensure that Work is not concealed prior to inspection during any construction activities. As the AHJ, the CCU has the authority to periodically visit the Work Site and perform pre-final inspections and issue Punch List items at its discretion. A minimum of one pre-final and one final inspection is required.

C. At the conclusion of the Work, or portion thereof, the Design-Builder shall request a final inspection of the Work by submitting a completed Request for Final Inspection form at least fourteen (14) Work Days prior to the date requested with the following information attached: Record Drawings, amplifying drawings, testing results, material certifications, certificates of installations, Special Inspection reports if any were required, and any additional documentation required by Chapter 17 of the Building Code.

D. Upon receipt of a compliant Request for Final Inspection, the CCU will perform a Final Inspection to determine whether to issue a Code Compliance Certificate or Certificate of Occupancy. The CCU will use the Record Drawings to check the Work as constructed. The Design-Builder shall correct deficiencies found, if any. Where code-related deficiencies are found, a reinspection is required. The Design- Builder shall correct CCU Punch List items and they must be verified by reinspection by the CCU prior to the issuance of a Code Compliance Certificate. The CCU will use the approved Design Documents and amplifying drawings to check the Work as constructed.

E. Upon completion of a satisfactory Final Inspection, the Design-Builder shall submit three (3) sets of Record Drawings for the certification issuance, that includes the correction of all punch list items provided by the CCU during inspections.

F. The CCU will issue the Code Compliance Certificate, Temporary Certificate of Occupancy or Final Certificate of Occupancy for Work at its discretion. One (1) set will be returned to the Design-Builder.

3.06 CODE COMPLIANCE CERTIFICATE

A. The CCU will issue a Code Compliance Certificate after final inspections, inspection reports, and site inspections and after acceptance approval of all required administrative submissions in order to close a construction permit.

B. The Code Compliance Certificate signifies that Work constructed under the Contract complies with the Uniform Code.

C. A Temporary Certificate for Occupancy may be issued at the discretion of the CCU if it determines that a building or structure or a designated portion of a building or structure is sufficiently complete and without any safety-related punch list items so that it may be safely occupied, or that Work performed pursuant to a construction permit may safely put to the use for which it is intended. A Temporary Certificate for Occupancy does not eliminate the need for a Code Compliance Certificate when all the Work as described herein has been satisfied.

D. No building or structure for which a construction permit was issued shall be occupied without a Code Compliance Certificate or Temporary Certificate for Occupancy.

3.07 STOP WORK ORDER AND REVOCATION OF PERMITS

A. The CCU may revoke a construction permit, a Code Compliance Certificate, or a Temporary Certificate for Occupancy, or issue a Stop Work Order halting construction if violations of the Uniform Code are discovered and it is determined to be in the best interests of public safety or of the State of New York to do so.

3.08 REQUESTS FOR VARIANCE

A. During the course of design or construction activities, the Design-Builder may determine that a variance is required for any portions of the design that are not in compliance with the Uniform Code.

B. The Design-Builder shall submit a complete request for a variance to the CCU which will be submitted to NYS Department of State on the Design-Builder’s behalf after review and approval by the CCU. The Design-Builder shall modify the variance

request and associated materials where requested by the CCU.

C. The request for a variance shall include, but is not limited to, the following:

1. All materials required by 19 NYCRR 1205 and the AHJ from the Designer of Record, as requested by the CCU, including a written variance justification/description and associated drawings identifying the non- compliant features.

2. Number of required sets of the variance materials as required by the AHJ.

3. Any additional supporting documentation for variance.

D. If a variance hearing is required by NYS Department of State, the Design-Builder shall be required to present the variance documentation if directed to by the CCU. The Design-Builder shall be responsible for payment of any fees required for the filing of a variance with NYS Department Of State.

E. The Design-Builder shall prepare and present the documentation to the AHJ where requested by the AHJ.

END OF SECTION

GENERAL REQUIREMENTS – SECTION 01 35 10
CONSTRUCTION SAFETY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies the requirements that the Design-Builder shall follow to create and maintain a safe work environment.

1.02 RELATED DOCUMENTS

A. Section 01 35 30, Environmental Requirements

B. Section 01 35 50, Security Procedures

1.03 SUBMITTALS

A. Accident Protection Plan (APP)

B. Safe Work Plans (SWPs)

C. Accident/Incident Investigation Reports

D. Daily Site Reports

E. Monthly Safety Reports

F. Safety Data Sheets

G. Infectious Disease (COVID)/Pandemic Plan

1.04 DELIVERABLES

A. Tool Box Talk Summary and Sign-In Sheets

B. Safe Work Plans (SWPs)

C. Accident/Incident Investigation Reports

D. Daily Site Reports

E. Monthly Safety Reports

F. Safety Data Sheets

G. Names and qualifications of proposed Designated Competent Persons for each task, each crew and each shift

H. First aid and CPR certificates for Design-Builder's Safety Supervisor and Safety

Representatives

I. Copies of Hot Work Permits

1.05 CODES AND STANDARDS

The following codes and reference standards shall apply:

- American National Standards Institute (ANSI)
  - Z49.1 - Safety in Welding and Cutting
  - Z87.1 - Occupation and Education Eye and Face Protection
  - Z89.1 - Requirements for Industrial Head Protection
- Factory Mutual (FM)
- National Fire Protection Association (NFPA):
  - 70 - National Electrical Code (NEC)
  - 704 - Identification of the Fire Hazards of Materials for Emergency Response (Hazard Warning System - NFR Diamond)
- Underwriters Laboratory (UL).
- American Conference of Governmental Industrial Hygienists (ACGIH).
- Compressed Gas Association (CGA).
- Building Code of the City of New York (NYC)
  - RS-16 Plumbing and Gas Piping
  - Chapter 33, Safeguards during Construction or Demolition
- BCNYS.
- Code of Federal Regulations (CFR):
  - 29 CFR 1910.1200 – Hazard Communication
  - 29 CFR 1910 - Occupational Safety and Health Administration (OSHA)
  - 29 CFR 1926 - Safety and Health Regulations for Construction
  - 36 CFR 1191.1 - ADA Accessibility Guidelines
- New York City Department of Environmental Protection (NYCDEP).

- New York State Department of Environmental Conservation (NYSDEC).
- New York State Industrial Code.
- U.S. Environmental Protection Administration (USEPA).
- Other applicable rules and regulations of AHJs.
- 49 CFR Part 655, Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations

PART 2 PRODUCTS

2.01 GENERAL

A. All products and materials used for this Contract shall be asbestos-free and lead- free.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS AND RESPONSIBILITIES

A. In addition to the cited standards, the Design-Builder shall comply with Long Island Railroad (LIRR) and Metro North (MNR) Safety Regulations as applicable.

B. The safety of passengers and other persons, MTA employees, employees of the Design-Builder and its Subcontractors, as well as the protection of property and the environment, shall be a primary concern of the Design-Builder. The Design- Builder shall assume the full responsibility and obligation to provide a safe working environment at all times and shall maintain safe, clean, and healthy Work Sites.

C. In the case of emergency involving danger to life, person or property, MTA C&D (OR OTHER DESIGNEE OF THE MTA) may order continuous Work with an increased workforce for such time as MTA C&D (OR OTHER DESIGNEE OF THE MTA) may deem necessary to eliminate the emergency.

D. All Work shall be done according to local conditions, best calculated to promote rapidity and accuracy in construction, to secure safety to life, person and property and to reduce to a minimum any interference with abutting property and public travel.

E. The Design-Builder shall comply with the most stringent provisions of the applicable statutes and regulations of the City and State of New York, and the United States, including without limitation, the provisions of the United States Department of Labor Occupational Safety and Health Administration (OSHA) and the New York State Department of Labor (NYSDOL), and shall ensure that the methods of performing the Work do not involve undue danger to the personnel employed thereon, the public and public or private property. Should charges of violation of any of the above be issued to the Design-Builder in the course of the Work, the Design-Builder shall immediately provide a copy of each charge and resolution to MTA C&D (OR OTHER DESIGNEE OF THE MTA).

F. The Design Builder shall immediately notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) in the event of the discovery of undetermined substances, included

suspected asbestos-containing materials (ACM) or lead-based paint (LBP), or lead-containing materials (LCM).

G. The Design-Builder shall issue and implement an Accident Prevention Plan (APP) for this Contract. The Design-Builder shall be responsible for monitoring safety and health conditions in accordance with the APP. MTA C&D (OR OTHER DESIGNEE OF THE MTA)'s approval of an APP shall not impose any liability on MTA C&D (OR OTHER DESIGNEE OF THE MTA) or any of its personnel nor does such approval relieve the Design-Builder of any responsibilities for safety under the Contract Documents or applicable law.

H. The Design-Builder shall conduct safety trainings and hold safety meetings to promote safety at the Work Sites.

I. The Design-Builder shall make Type I first aid facilities and medical kits available to all persons at each Work Site at least fourteen (14) Days prior the start of any construction activities at that Work Site. First aid kits shall be of adequate size and located at each Work Site, including remote locations, so as to be available to all persons within three (3) to four (4) minutes. The Design-

Builder shall conduct a hazard assessment to identify first aid supply needs and the physical location of the kits.

J. Prior to the use of any chemicals at a Work Site, the Safety Manager shall submit a Safety Data Sheet (SDS) to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for its review and approval. The SDS form is available upon request. Maintain a copy of all approval letters at each Work Site for the Contract duration.

K. At a minimum, the Design-Builder's Safety Manager or its Safety Coordinators shall be present at all Work Sites whenever physical Work is being performed.

L. The Design-Builder shall post construction information in a prominent location visible to members of the public including maps showing locations where pedestrian, bicycle, and/or wheelchair access may be difficult during construction.

3.02 DESIGN-BUILDER'S SAFETY MANAGER

A. The Design-Builder shall employ and assign a full time Safety Manager exclusively to this Contract. The Safety Manager's sole responsibility shall be the management of all safety and security matters during all Project phases including design, construction, start-up, commissioning and testing.

B. Safety Manager Responsibilities.

1. The Safety Manager shall participate in the development of and approve the APP, sign the APP, continually monitor the Design-Builder's implementation of, and adherence to, the APP, and shall revise the APP when required by field conditions or by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

2. Prepare a Daily Safety Report for all site security and safety matters documenting

all safety-related activities, safety deficiencies, and corrective actions.

3. Maintain the Daily Safety Reports at the Work Site for review and inspection.

4. Assign responsibilities for the Daily Safety Reports to Safety Coordinators as appropriate.

5. Completion of any safety documentation, plans, or safety reports.

6. Attendance at any safety-related meetings.

7. Develop and provide training for Design-Builder, Subcontractor, and MTA personnel to improve safety at the Work Sites.

8. Comply with all LIRR and Metro-North specific-safety rules and requirements.

9. Perform any actions required prior to the performance of Work under a Signal Bulletin.

10. Supervise the Safety Coordinators.

11. Comply with all other AHJ specific safety rules and requirements.

C. Safety Manager Qualifications. The Safety Manager shall meet all requirements set forth below:

1. Demonstrated safety or safety-related experience.

2. Successful completion of the 30-hour OSHA Construction Safety & Health (29 CFR 1926) Course.

3. Familiarity with the type of Work being performed.

4. Competent to instruct on-site personnel.

5. Able to read, write, and speak English fluently.

D. The Design-Builder shall submit a letter signed by its owner/president stating that the Safety Manager reports directly to the Project Manager and shall not be subordinate to any other personnel for safety matters.

E. Trainings. The Safety Manager shall receive a minimum of six (6) hours of relevant safety training courses on a yearly basis for the duration of the Contract.

F. The Safety Manager shall ensure that a Safety Coordinator is present at each Work Site while any Work is being performed. The Design-Builder shall be deemed

solely responsible for all failures to have a Safety Manager or a Safety Coordinator at a Work Site and such failures may result in a stoppage of the Work.

3.03 DESIGN-BUILDER'S SAFETY COORDINATORS

A. The Design-Builder shall engage at least one Safety Coordinator for each Work Site who shall report directly to the Safety Manager for the duration of the Contract to manage safety and security matters at that Work Site. The Safety Coordinators shall be independent of the physical construction effort and shall be available full- time to fulfill the requirements of the Contract. The Safety Coordinators shall have the authority to stop Work if they determine that Unsafe Conditions are present.

B. SC Responsibilities.

1. Report to the Safety Manager for daily Work activities.

2. Perform safety checks.

3. Document any safety findings and corrective actions taken.

4. Complete Daily Safety Reports.

5. Document any near misses or accidents.

6. Communicate with all designated Competent Persons before, during, and after completion of their work shifts.

3.04 COMPETENT PERSONS

A. The Safety Manager or Safety Coordinator shall assign Competent Persons at each Work Site to ensure continuous safety coverage during performance of the Work.

B. Competent Persons shall have a trade, as defined by 29 CFR 1926.32(f), designated by the Design-Builder.

C. The Design-Builder may use subcontractor personnel as Competent Persons or other personnel who have other responsibilities in addition to performing safety functions. MTA C&D (OR OTHER DESIGNEE OF THE MTA) may review the qualifications of any Competent Persons at its discretion.

D. Competent Person Qualifications. All Competent Persons shall have successfully completed the 30-Hour OSHA Construction Safety and Health Course.

E. A Competent Person shall not be used in place of the Safety Manager or a Safety Coordinator.

3.05 UNSAFE CONDITIONS

A. An Unsafe Condition shall mean a condition that gives rise to the imminent possibility of serious injury to workers or the public, of serious damage to property or the environment, or of affecting the safe movement of trains. When an Unsafe Condition exists at the Work Site, the Design-Builder shall stop Work in the affected area until the Unsafe Condition is

corrected and promptly notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) of the Unsafe Condition and, if applicable, immediately take corrective action. The Design-Builder shall take the corrective action necessary to fully resolve the Unsafe Condition. If MTA C&D (OR OTHER DESIGNEE OF THE MTA) specifies a time period for corrective action and the Design-Builder does not correct the Unsafe Condition within that time period, MTA C&D (OR OTHER DESIGNEE OF THE MTA) reserves the right to take whatever action is required to correct the Unsafe Condition and the Design-Builder will bear all associated costs.

B. MTA C&D (OR OTHER DESIGNEE OF THE MTA) reserves the right to immediately stop Work and to issue a Stop Work Order when Work Site conditions are dangerous to life, safety, and health as determined in the sole discretion of MTA C&D (OR OTHER DESIGNEE OF THE MTA). MTA C&D (OR OTHER DESIGNEE OF THE MTA) further reserves the right to immediately stop Work and to issue a Stop Work Order when the Design- Builder is in flagrant violation of an approved SWP in the sole discretion of MTA C&D (OR OTHER DESIGNEE OF THE MTA). MTA C&D (OR OTHER DESIGNEE OF THE MTA) reserves the right to take all appropriate corrective action and the Design-Builder will be responsible for all associated costs.

C. Examples of such violations include, but are not limited to, the following:

1. Failure to ensure that all personnel have attended track safety training.

2. Failure to have a Safety Manager or Safety Coordinator at the Work Site.

3. Commencement of Work without an approved SWP.

4. Failure to have third rail alarm box, wood covers, or rubber mats when working on or around the third rail.

D. In the event of a Stop Work Order related to safety, MTA C&D (OR OTHER DESIGNEE OF THE MTA) will schedule, and the Design-Builder and its personnel shall be required to attend, a Safety Stand- Down Meeting. Examples of Stop Work Orders related to safety include the following:

1. Recurring deficiencies revealed via trend analyses

2. Two (2) or more serious accidents or near misses

3. Flagrant disregard to comply with prescribed safety management procedures

4. Project-related fatality

5. Incidents resulting in multiple personnel being removed from the Work Sites for medical services.

E. MTA C&D (OR OTHER DESIGNEE OF THE MTA) reserves the right to refuse access to the Work Site(s) or require immediate removal from the Work Site(s) of any individual, including Subcontractor personnel, violating or alleged to have violated safety or security

regulations.

F. Use of Wireless Communications Devices. Use of cell phones or accessories, radios, portable electronic devices, portable digital assistants (PDAs), portable music players, pagers, tablets, laptops, or any other similar and evolving devices which may distract or impair an employee's attention is forbidden while performing physical Work or operating power tools, machinery, self-propelled equipment, or motor vehicles. Use of such devices is permitted at the Work Site(s) only while in a safe area away from the activities listed above and only while performing no other duties and while it is otherwise safe to do so.

3.06 DRUGS AND ALCOHOL

A. The Design-Builder shall implement the Drug and Alcohol Police in accordance with the Schedule submitted with its Proposal.

B. The Design-Builder shall ensure that the on-site Safety Manager or Safety Coordinator performs a fitness-for-duty inspection of all employees at the time they report for Work and throughout the Work Day.

C. The Design-Builder shall ensure that any employees who consume alcohol or use illegal drugs during their work shifts or whose alertness or functioning is impaired by the use of alcohol or illegal drugs are immediately removed from the Work Site and are removed from any Work on the Contract throughout the Contract duration.

D. The Design-Builder shall ensure that all employees who perform safety-sensitive functions are subject to drug and alcohol testing in accordance with 49 CFR Part 40, Procedures for Transportation Workplace Drug and Alcohol Testing Programs, 49 CFR Part 655, Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations, and any other drug and alcohol testing policies or programs required by the Contract Documents.

E. The Design-Builder shall conduct due diligence for all potential employees prior to their hire to ascertain whether any individuals have been fired or removed from any other project or contract, both in the public or private sector, within the immediate preceding three (3) years based upon charges or allegations of misconduct, including, but not limited to, alcohol and/or drug use, or whether reasonable grounds existed that such individual may have unlawfully used drugs or used unlawful drugs, worked on another project while impaired by alcohol or while using or being under the influence of alcohol or drugs (and whether or not the prospective worker has completed a drug/alcohol rehabilitation program).

1. In the event that the Design-Builder intends to utilize such a potential employee, provide notice to MTA C&D (OR OTHER DESIGNEE OF THE MTA) and obtain concurrence prior to hiring any such individual. The Design-Builder shall maintain records during the Project and for at least six (6) years thereafter, that are reasonably designed to satisfy the due diligence requirement.

F. The Design-Builder shall ensure that its drug and alcohol policy is compliant with all provisions set forth in 49 CFR Part 655.

3.07 ACCIDENT PREVENTION PROGRAM (APP)

A. The Design-Builder shall develop and submit to the MTA C&D (OR OTHER DESIGNEE OF THE MTA) a written, Contract- specific plan, referred to herein as the Accident Prevention Program (APP), to:

1. Protect the lives and health of all persons;

2. Prevent damage to property and environment;

3. Avoid work interruptions or delay to Railroad services;

4. Ensure high levels of Work Site safety for all tasks performed; and

5. Define personnel responsible to develop and ensure safe work practices.

B. The Design-Builder shall submit its APP to the MTA C&D (OR OTHER DESIGNEE OF THE MTA) within forty-five (45) Days of NTP for MTA C&D (OR OTHER DESIGNEE OF THE MTA)'s review and approval. The Design-Builder shall not commence any construction activities without MTA C&D (OR OTHER DESIGNEE OF THE MTA)'s approval of the APP with the exception of the surveying Work, which may be performed only if an approved SWP is in place.

C. Each Subcontractor and Supplier shall comply with the APP and provide written notification of its intent to adopt and comply with the APP. If a Subcontractor or supplier elects to submit its own program documents, the SM shall review and approve to ensure the program meets the requirements of this Section. Each Subcontractor or supplier's notice of intent to comply shall be readily available for review.

D. APP Organization. The APP shall be organized into the following sections with the following information:

1. Cover Page with the name of the Design-Builder, Contract number, Contract name, revision number and date (if applicable), name and signature of the SM indicating approval.

2. Table of contents listing all Sections and Exhibits.

3. Safety Policy Statement signed by an officer of the Design-Builder's company that shall include signatures of all Subcontractors as they are retained by the Design-Builder.

4. Comprehensive description of the Work, included any site-specific information.

5. Organization chart of Design-Builder and subcontractor personnel responsible for implementing the APP and their duties and responsibilities. The chart shall show the reporting relationship and integration of the Safety Manager and all top-level managers responsible for implementation of the APP.

6. Description of Safety Manager and other personnel's responsibilities.

7. Accident/Incident Response – Include a generic action plan for review, analysis and immediate action necessary to prevent recurrence of serious accidents or incidents including near misses. The Design-Builder shall review and, if necessary, revise the APP based on the occurrence of serious accidents or incidents including near misses or any changes in job conditions or as required by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

8. Procedures for accident reporting and accident investigation including the accident report forms to be used, and an accident investigation decision chart for identifying root causes to prevent recurrences.

9. Emergency Preparedness and Response Program including, but not limited to, the following:

    i. The identification of potential environmental accidents and emergencies associated with site-specific construction activities and the response procedures to construction site environmental accidents and emergencies, including for fire and tunnel collapse, flooding, property damage, utility damage, ventilation for underground areas.

    ii. Evacuation and emergency escape routes as applicable.

    iii. Telephone numbers of emergency agencies and Key Personnel.

    iv. Annual emergency preparedness drills including method to account for all personnel during an evacuation.

    v. Notification to the Construction Manager and all appropriate AHJs.

    vi. Annual reviews and revisions of the emergency preparedness procedures as well as reviews after the occurrence of environmental accidents and emergency situations.

    vii. Procedures to identify the root causes of accidents or incidents and processes to prevent recurrences

10. Orientation Program for new employees including, but not limited to, the following:

    i. Description of the Work.

    ii. Review of Safety Policy, including Alcohol, Drugs and Tobacco Policy, pre-employment drug testing and testing for cause.

    iii. Attendance requirements at "Just-in-time Training" Safety Meetings and Briefings, and adherence to Safe Work Plan (SWP) procedures.

    iv. Distribution of Project Safety documents.

v. Identification for all personnel.

vi. OSHA 30-hour training and any other applicable trainings.

vii. Emergency Preparedness and Response Procedures and Drill.

viii. Specific Work Site hazards and safe working methods.

ix. Review of hazardous materials communication program.

x. Track Safety Training as required.

xi. Accident/near miss/unsafe condition reporting and notification procedures.

xii. PPE and Safety Procedures.

xiii. Fire prevention.

xiv. Location of First Aid and medical facilities.

xv. Review of public safety concerns.

xvi. Attendance requirements at Worker Safety Meetings/Briefings.

xvii. Review of hazard communication program.

xviii. General Site Safety requirements.

xix. Construction equipment safety.

xx. Vehicle safety.

xxi. Warning devices and safety postings.

xxii. Disciplinary procedures.

xxiii. Safety awards program.

xxiv. Non-Harassment Plan.

xxv. Potential exposures to physical risk factors and prevention/mitigation strategies.

11. Description of anticipated work-related hazards and site configuration hazards, such as the following examples:

Work Related Hazards	Site Configuration Hazards
Temporary Construction	Access/Egress

Cranes & large equipment	Underpinning/Excavation
Power tools	Public protection/rodent control
Compressed gases	Support of Utilities
Flammables	Open Excavations
Hazardous Chemicals/Spills	Falling Objects, Fire
Unsafe Acts (other)	Flying Objects
Lockout/Tagout	Site Clean Up Falls From Elevation
	Noise Damage
Weather Conditions	Maintenance & Protection of Traffic
Slips, Trips and Falls	Site Security
Material Delivery	Confined Spaces
Cutting/Grinding/Chipping	Operating track/energized rail Fall
Protection	Unsafe Conditions (other)

12. Management and Recordkeeping of Safety Documents. Prepare a binder and maintain at each Work Site with the following documents:

    i. Minutes of safety meetings and sign-in sheets.

    ii. Training records including schedule for refresher training and plans for safety briefing subject matter.

    iii. Pictures of each employee's identification and OSHA 30-hour training card.

    iv. Training and orientation manuals for new employees.

    v. Daily logs prepared by the Safety Manager and/or Competent Persons.

    vi. Accident records including OSHA Form 300, accident investigation reports, and C-2 Forms.

    vii. Permit log consisting of: description of permit, permit number, date issued, date of expiration.

    The Design-Builder shall maintain copies of all safety documents for a period of at least six (6) years after Final Completion. The contents of the binder do not need to be included in the APP.

13. Hazard Communication (HazCom) Program to provide effective training to employees who are exposed to hazardous chemicals as required by OSHA Hazard Communications Standard. This HazCom Program shall include an introduction with:

    i. a brief explanation of the training requirements and how the training program is designed to meet the requirements;

ii. guidance for site-specific training;

iii. lessons, slides, and quizzes with examples of approaching hazards generally or that are site-specific that may be encountered; and

iv. for requirements on Hazardous Material, see Section 01 35 30, Environmental Requirements.

14. Hearing Conservation Program to prevent hearing loss due to noise for occupational exposure. This program shall include engineering controls; monitoring; testing; hearing protectors; training; and record keeping as set forth in 29 CFR 1910.95.

15. Respiratory Protection Program to protect employees for situations in which permissible exposure limits of airborne containment limits are exceeded or when respirators are required. This program shall include the evaluation methods for the Work Site prior to the start of Work; engineering controls; monitoring; testing; respiratory protectors; training and record keeping.

16. Confined Space Program to control and protect employees from permit space hazards and for regulating employee entry into permitted spaces. This program shall include the specifications for performing testing in the confined spaces.

17. Lockout/Tagout Program to control hazardous energy program for machinery or equipment where the release of stored energy could cause injury or death. This program shall include procedures to mark energy isolation points, lockout/tagout procedures, training, inspection procedures, and the use of lockout/tagout devices.

18. Fall Protection Program to identify and evaluate fall hazards to which employees may be exposed and provide training as required by 29 CFR 1926, Subpart M. This program shall include the type of fall protection measures, such as fixed barriers and surface opening protectors, and any site-specific fall hazards.

19. Procedures to use, store, inspect and handle compressed gas and equipment as well as the physical hazards associated with high pressure systems in compliance with 29 CFR 1910.101, 1910.101(a) and (b), 1910.1200, and 1910.1450.

20. General safety rules and procedures at all Work Sites for the following:

i. Plans for safe ingress and egress.

ii. Traffic control plans.

iii. Explosives handling, transportation, and storage.

iv. Public protection.

v. Plans for fire protection and emergency response.

vi. Plans for Lead and Asbestos Abatement.

vii. Site security.

21. Requirements for the preparation and maintenance of the Daily Safety Reports in compliance with this Section.

3.08 SAFE WORK PLANS (SWP)

A. The Design-Builder shall develop a Safe Work Plan (SWP) for each Work Site and submit a copy of its SWP to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for review and approval for each Work Site at least six (6) weeks prior to the anticipated date of any construction activities at that Work Site. Where the SWP does not adequately address all expected, foreseeable hazards for that Work Site, MTA C&D (OR OTHER DESIGNEE OF THE MTA) may require the Design-Builder to revise and resubmit the SWP within one (1) week of receipt of MTA C&D (OR OTHER DESIGNEE OF THE MTA)'s comments. The Design-Builder shall resubmit in accordance with this procedure until the SWP is approved by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

B. SWP Document Format Requirements. The SWP Document shall be structured to correlate with the current Six Week Look-Ahead Schedule with the following headings:

1. PRIMARY WORK ACTIVITY - Describe scope of Work.

2. TASK/SUBACTIVITY DESCRIPTION(S)- describe tasks to be performed at the Work Site.

3. EQUIPMENT AND METHOD OF CONSTRUCTION - List major equipment that will be used and how it will perform the task or subactivity.

4. HAZARD DESCRIPTION - Describe one foreseeable hazard present as a result of task or subactivity and all site-specific risks.

5. SAFETY CONTROLS/LOSS PREVENTION - Describe controls and procedures that will be implemented to reduce or eliminate the foreseeable hazards described above including:

i. Methods to prevent loss for the Work performed at the Work Site.

ii. Ingress and egress to the Work Site.

iii. Barricades and protection for pedestrians and passageways at and surrounding the Work Site.

iv. Barricades and protection of traffic at and surrounding the Work Site.

6. Priority shall be given as follows in controlling hazards:

i. Elimination of the hazard;

ii. Engineering controls;

iii. PPE; and

iv. Management controls and training.

7. Repeat the Hazard Description and Safety Control sections until all hazards are covered for a given task/subactivity before moving to the next task or subactivity.

C. Accident prevention procedures shall be based on industry standards including but not limited to:

1. OSHA Standards;

2. American National Standards Institute;

3. National Fire Protection Association; and

4. American Conference of Governmental Industrial Hygienists (ACGIH).

D. At the start of any operation requiring the submittal of a SWP, review the SWP at the daily toolbox meeting or at a special Worker Safety Meeting and inform the affected employees of the potential hazards and the preventative and/or abatement procedures that shall be utilized to eliminate the hazard(s) identified in performing this work including, but not limited to, the following:

1. Operations or tasks involving new equipment, machinery or procedure
2. Operations involving environmental remediation
3. Operations that have resulted in a significant incidence of accidents or near misses
4. Danger of striking against or being struck by
5. Potential injury from burns, including chemical, thermal and or radiation
6. Potential oxygen-deficient environments, limited access, or exit condition
7. Potential of being caught in, on, or between objects
8. Potential injury from strain by pushing, pulling, or lifting
9. Potential exposure to toxic/radioactive gases, vapors, mists, dusts, heat, cold or other physical stress agents
10. Potential for property damage or loss of functions (i.e., critical lifts, power outages, etc.)
11. Any change in process or procedures that effect the crews operation
12. Potential fire hazards

SWP Training: The SWP serves as an operating procedure and shall be made available to all personnel performing the Work. A copy of the reviewed SWP shall be provided to all supervisors. Personnel involved with the operation shall be informed as to the hazards involved and instructed in the methods required to eliminate the hazards, including

emergency action to be taken in the event of an accident. The absence of an applicable standard or regulation does not preclude the Design-Builder from providing appropriate controls within an SWP. Specific references in the SWP to codes, standards, and regulations are not necessary

3.09 DAILY SAFETY REPORTS

A. For each Day that Work is performed, the Safety Manager shall prepare a daily report for the Work generally at all Work Sites.

B. Each SC shall prepare a Daily Safety Report for their respective Work Sites, which includes the following components:

1. Title of the Contract and Contract Number.
2. Date.
3. Time of Shift.
4. Work areas inspected.
5. Weather conditions.
6. Project safety activities.
7. Entry for each safety deficiency with the location, description and time observed.
8. Entry for each OSHA-recordable incident.
9. Persons notified of any safety deficiencies and the method of communication.
10. Timeframe and nature of corrective actions for each safety deficiency.
11. Any outstanding safety deficiencies from prior Daily Safety Reports.
12. Description of any accidents, incidents, or injuries including the name of person or property owner affected, time, location, and description.
13. Safety meetings held and personnel in attendance.
14. Visits, if any, by safety representatives from the federal, state, or local authorities including their names, agencies, contact information, time, and outcome of visits

C. Maintain copies of the Daily Safety Reports at the Work Site(s). Submit copies of the Daily Safety Reports to MTA C&D (OR OTHER DESIGNEE OF THE MTA) at the end of each work shift.

3.10 SAFETY ORIENTATION AND TRAINING

A. The Design-Builder shall develop a written detailed plan for the safety orientation of

employees which includes an overview of the APP, applicable safety rules and regulations, and the responsibility of each employee to formally acknowledge receipt of safety rules, orientation, and training prior to the performance of any Work on the Contract. The safety orientation shall cover all topics addressed in the APP.

B. All Design-Builder personnel actively engaged in performing Work at the Work Sites shall have successfully completed at a minimum OSHA 10-hour training. All workers using supported scaffolding shall also complete an OSHA-compliant four (4) hour Supported Scaffold User & Refresher training course.

C. The Design-Builder shall maintain training records documenting the names of personnel and certification that they have successfully completed the required training.

D. The Design-Builder shall hold "just in time trainings" within one (1) week prior to the commencement of any new required activity. The SM or SC for the Work Site shall attend the just in time trainings. These sessions shall include:

1. Training presentation of the SWP;

2. Step by step analysis of the Work's hazards and all hazard control methods;

3. Review of all SDS forms for all materials or products to be used in the Work activity; and

4. PPE requirements, handling precautions, first aid and emergency responses.

E. The Design-Builder shall provide orientation training and "just in time training" to all new employees or to existing employees who performed other Work activities prior to their commencement of any Work at the Work Site.

F. The Design-Builder shall ensure that any employee who fails to attend any mandatory safety training does not perform any Work discussed during that meeting until the employee has been fully certified.

G. The Design-Builder shall hold a safety training briefing (toolbox talks) at the start of every day that personnel will be physical present on Work Site at each Work Site to instruct all employees of that day's Work hazards. All employees working at the Work Site shall attend and sign the attendance sheet for verification. The briefing may include a walk-through to demonstrate the description of the day's hazards.

H. The Design-Builder shall provide an interpreter for any non-English speaking employees for the contents of any mandatory safety trainings, just in time trainings, or daily safety briefings, as well as any other safety-related instructions.

3.11 SAFETY MEETINGS

A. Safety and Security Kickoff Meeting. The Design-Builder shall schedule and hold the Safety and Security Kickoff Meeting.

Safety Walk-Thru Meeting. On a monthly basis, MTA C&D (OR OTHER DESIGNEE

OF THE MTA) will schedule a Safety Walk-Thru Meeting which shall be attended, at a minimum, by the Construction Manager, the Safety Manager, and any other personnel required by MTA C&D (OR OTHER DESIGNEE OF THE MTA). The Safety Manager shall bring copies of the current Six-Week Look Ahead Schedule, the SWPs, and the SDSs for reference purposes. The Walk-Thru Meeting shall include visits to the field offices; review and inspection of the Daily Safety Reports and other safety documents; and review of implementation of SWPs. The Safety Manager shall prepare an attendance sheet and record the activities and observations made during the Walk-Thru Meeting. Following the Walk-Thru Meeting, MTA C&D (OR OTHER DESIGNEE OF THE MTA) will review any new safety findings, any outstanding safety findings, and any corrective actions to be taken.

B. General Safety Meetings. The Design-Builder shall hold safety meetings at least once every two (2) weeks or more frequently if required by the Safety Manager or MTA C&D (OR OTHER DESIGNEE OF THE MTA). The safety meetings shall commence as of the start date of construction activities and continue until Final Completion. Each safety meeting shall be a minimum of thirty (30) minutes and attended by the Project Manager, Construction Manager, Safety Manager, Safety Coordinators, and other relevant personnel.

1. The Design-Builder shall notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) at least one (1) week in advance of each scheduled safety meeting so that an MTA C&D (OR OTHER DESIGNEE OF THE MTA) representative may attend.

2. Prepare meeting minutes with a signed list of attendees and submit a copy to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for Review and Comment within three (3) Work Days of the meeting.

3. Each meeting shall include general safety items and discussion of safe working methods and applicable rules required for the safe performance of Work scheduled during the two (2) week period following the meeting.

4. Each meeting shall include review of parts of the APP and discussion of recent revisions.

3.12 ACCIDENT REPORTING AND INVESTIGATION

A. The Design-Builder shall provide such equipment and facilities as necessary or required to provide first aid service to anyone who may be injured during the progress of Work within the limits of the Work Sites. In addition, the Design- Builder shall have standing arrangements for the removal and hospital treatment of any person who may be injured or who may become ill at the Work Sites.

B. A Serious Accident is defined as an accident that results in any of the consequences listed below two one or more individuals or causes more than $5,000.00 (estimated) in property damage:

1. Death.

2. Injury that can cause death.

3. Amputations or crushing injuries.

4. Eye injuries causing partial or full loss of sight.

5. Hospitalization.

6. Paralysis.

7. Spinal cord injuries.

8. Loss of consciousness.

9. Injuries causing loss of hearing.

10. Severe head injuries.

11. Electric shock at 100 volts or greater;

12. Burns to 10 percent or more of the body;

13. Incident resulting in multiple personnel being removed from site for medical services.

14. Any injury resulting in more than 24 hours hospitalization.

15. Any accident resulting in more than $5,000 in property damage.

C. The Design-Builder shall immediately notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) of all accidents involving personal injury, vehicle accidents, and damage to property or the public, and shall furnish in writing, full information including testimony of witnesses regarding any and all, accidents and injuries and all near misses. The Design-Builder shall submit a copy of an Occurrence Report within twenty-four (24) hours following each accident.

D. The Design-Builder must, within forty-eight (48) hours, report in to MTA C&D (OR OTHER DESIGNEE OF THE MTA) all accidents whatsoever, occurring upon the site of the Work, or arising out of or in connection with the performance of the Work (whether or not on or adjacent to the Site) which cause death, personal injury, or property damage, giving full details and statements of witnesses.

E. In addition to the above reporting requirements, if death or serious injuries or property damage is caused, the accident shall be reported immediately to MTA C&D (OR OTHER DESIGNEE OF THE MTA) orally and filed in writing within twenty-four (24) hours.

F. If any claim is made by any third person against the Design-Builder on account of any accident, the Design-Builder shall, within forty-eight (48) hours, report the fact in writing to MTA C&D (OR OTHER DESIGNEE OF THE MTA), giving full details of the claim.

G. The Design-Builder shall immediately report all near misses (an incident in which no property was damaged and no personal injury was sustained, but where, given a slight shift

in time or position, damage or injury easily could have occurred) to MTA C&D (OR OTHER DESIGNEE OF THE MTA), followed by in-writing notification within forty-eight (48) hours, and hold a lesson learned session.

H. For incidents classified as OSHA-recordable, the Design-Builder shall provide a compiled copy of the New York State Worker's Compensation Form.

I. In the event of a Serious Accident, the Design-Builder shall convene an investigative meeting with the SM as the Chair, the Design-Builder's Representative, and MTA C&D (OR OTHER DESIGNEE OF THE MTA) in attendance to determine the cause of the accident and actions to be taken to prevent a recurrence. The Design-Builder shall notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) of the date and time of the investigative meeting with sufficient time to allow MTA C&D (OR OTHER DESIGNEE OF THE MTA) safety personnel to attend.

J. The Design Builder shall hold a lessons-learned session with all relevant personnel, subcontractor personnel, and MTA C&D (OR OTHER DESIGNEE OF THE MTA) following an accident.

K. On a monthly basis, the Design-Builder shall submit a summary report for all accidents, including those involving subcontractors or suppliers, that occurred during the prior month that includes the following:

1. Number of first aid cases.

2. Number of OSHA-recordable cases.

3. Number of lost time cases.

4. Number of Days lost.

5. Total manhours worked each month on yearly injury record.

3.13 PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. The Design-Builder shall take all safety measures and precautions necessary to protect its employees and shall be solely responsible for enforcing personnel protection requirements. The Design-Builder shall ensure that all its personnel, including its Subcontractors and Suppliers, wear mandatory PPE at all times at the Work Sites.

B. The following PPE requirements are mandatory. Notwithstanding, the Design- Builder shall ensure compliance with any additional PPE requirements from Federal, State, or Local regulations.

1. Eye and Face Protection. Grinding or chipping requires a face shield.

2. Head Protection. SEI Certified hard hats meeting the latest version ANSI Z89.1 requirements for Type I Class E protection. Bump caps or cowboy- type hard hats are prohibited. If an employee is required to wear a personal fall protection device, head protection shall consist of a climbing of rescue type helmet with chin strap

and side impact protection.

3. High Visibility Safety Vests. All personnel exposed to vehicular traffic or motorized moving equipment shall wear flame retardant safety vests that have 360-degree reflective visibility, and 100% rip away capabilities. The front of the vest shall be fitted with a transparent plastic pocket, flush mounted, to accommodate a photo ID that shall be supplied by the Design- Builder. The Design-Builder and all Subcontractors shall utilize safety vests with a label on the front and back identifying them as a "Design- Builder" as manufactured by:

   The Industries for the Blind of New York State
   296 Washington Avenue Extension
   Albany, New York 12203-5316
   Tel. (800) 421-9010 Fax (518) 456-3587

   The Industries for the Blind of New York State has been designated as a "preferred source" for this item pursuant to Section 163 of the New York State Finance Law. This item may be obtained from an alternate supplier only if it is not available from the preferred source.

4. Work Shoes. Shoes shall be in good condition without breaks or splits, at least six (6) inches high, (preferably leather with safety toe), and be completely laced or buckled. The shoe shall have defined heels that are no more than one inch high (sneakers/gym shoes are prohibited). The sole shall be at least ¼-inch thick at all points and provide good traction under slippery conditions.

5. Acceptable clothing for heavy construction work (no tank tops, or short trousers of any type).

6. Rubber-insulating gloves in accordance with 29 CFR 1926.97.

7. Hearing protection in accordance with 29 CFR 1926.101.

8. Respiratory protection in accordance with 29 CFR 1910.134.

9. Any activity-specific PPE required by the task or work activity.

3.14 EQUIPMENT AND POWER HAND TOOLS

A. All equipment and hand tools must be operated in accordance with manufacturers' operating and maintenance instructions.

B. All operators of powder actuated tools shall be certified in their use in accordance with the manufacturer's instructions. A FDNY Certificate of Fitness is required within New York City.

C. Use a ground fault circuit interrupter (GFCI) designed for personnel protection on all electrical services used by workers. Assured grounding may only be used for temporary light circuits. All other power sources, including portable generators (regardless of wattage), as well as extension cords plugged into permanent power sources, shall be

protected by GFCI.

D. Apply lockout/tagout to all energy sources when Work is required on live equipment machinery and/or systems.

E. The use of butane, or propane-powered equipment in the underground stations, tunnels, shafts and trenches is prohibited. Electric or air-operated equipment and diesel-powered equipment equipped with scrubbers and proper air ventilation are approved for use.

F. The use of gasoline-powered equipment (GPE) is prohibited on site.

3.15 SAFETY REQUIREMENTS FOR CONFINED OR ENCLOSED SPACES

A. The Design-Builder may be required to enter confined or enclosed space locations as defined in OSHA 29 CFR Part 1910.146, Confined Spaces, and NYCT Policy Instruction 10.19.1 (available upon request). The Design-Builder shall ensure that all the requirements for entering a confined space as listed in OSHA 29 CFR 1910.146 and NYCT Policy Instruction are strictly adhered to.

B. The Design-Builder shall ensure that all personnel entering confined or enclosed spaces are trained in and follow precautionary work practices for entry into confined or enclosed spaces.

C. The Design-Builder shall provide confined or enclosed space entry protection to all personnel authorized to enter the confined or enclosed space.

3.16 WELDING AND CUTTING

A. Welding and cutting equipment and operations shall meet the requirements of the ANSI Z49.1 Standard, and the requirements of this Section.

B. The Design-Builder shall supply a list of certified operators and fire watch personnel to MTA C&D (OR OTHER DESIGNEE OF THE MTA) who will be performing cutting and welding as well as documentation of their training and FDNY Certificates of Fitness for Work performed in New York City.

C. Prior to performing any welding, cutting or burning in Work areas, the Design- Builder shall obtain a Hot Work Permit and submit to MTA C&D (OR OTHER DESIGNEE OF THE MTA)

D. Daily Inspection and Operation: Inspect welding apparatus and equipment daily, prior to use. Do not use defective apparatus and equipment and remove from service

until repaired or replaced. Gas welding and cutting equipment shall be listed by Underwriters Laboratories (UL) or by Factory Mutual Laboratories (FM).

E. Only use pressure reducing regulators for the gas for which they were designed. Except for opening the valve slightly to remove dust or dirt, do not release gas from a cylinder under pressure without attaching the pressure-reducing regulator to the cylinder valve. Do not adjust acetylene regulators to permit a discharge greater than 15 lb./in2 (gauge).

F. Locate fire extinguishing equipment at welding and cutting operations and other areas as designated on the SWP and/or directed by MTA C&D (OR OTHER DESIGNEE OF THE MTA). Ensure that fire extinguishers rated at ten (10) ABC or larger are immediately available whenever welding or cutting is being performed.

G. Close cylinder valves and the gas supply shut off when Work is suspended. Check torch valves for leaks at the start of each Work shift. Only use friction lights or other approved devices to light torches.

H. All oxygen, MAPP, or other fuel gas-oxygen combinations used in cutting or welding shall have reverse flow check valves installed or otherwise built into the torch barrel.

I. Only properly marked and identified hose in good condition and specifically manufactured for oxy/acetylene service shall be used for gas welding and cutting.

J. Arc Welding Cables: Splices or repaired insulation shall not be permitted within 10-feet of the electrode holder. Cables shall be positioned so as not to interfere or create obstructions on walkways, scaffolds, stairs or ladders. Splices shall be equal to or greater than the original insulation on the cable.

K. Use portable welding screens or shields to protect other workers and/or the public in the immediate area.

L. Fire Guards/Watches: When normal fire prevention precautions are not adequate for welding, cutting or heating activities, assign and maintain fire guards or fire watches for a minimum of sixty (60) minutes following the completion of the Work to ensure that no possibility of fire exists. Fire Guards shall be provided with necessary fire protection equipment and be trained in its use.

3.17 COMPRESSED GAS CYLINDER USE AND STORAGE

A. Transport and store all compressed gas cylinders in a safe manner in accordance with the Compressed Gas Association guidelines, NFPA Standards, and the requirements of this Section.

B. All cylinders will be considered to be either in transport, storage or use. Cylinders in storage shall have the proper protective cap in place and the cylinders shall be

stored upright and secured against movement. Mixed gases shall not be stored together and shall be stored in accordance with the NFPA, Federal, State, and Local regulations. Improperly stored cylinders shall be immediately removed from the Work Site. Excessive or unreasonable storage of cylinders on the Work Site is prohibited. Compressed gas cylinders may not be stored in stations or on or near the ROW.

C. Compressed gas cylinders shall be transported and used in portable welding carts with the cylinders securely chained to the cart. Valve protector caps shall be in place at all times except when the cylinders are in use. Stored compressed gas cylinders (full or empty) shall be chained or secured in an upright position to a firm base and protected from sources of heat. An operable dry chemical fire extinguisher rated not less than 2 ¾ pounds of chemical shall be mounted on each portable welding cart in use.

D. Store compressed fuel cylinders at least twenty (20) feet from oxygen cylinders unless separated by a noncombustible wall at least five (5) feet in height. Compressed gas cylinders and liquid petroleum cylinders shall be properly identified and have a valid hydrostatic test date noted on or attached to the cylinder.

E. All flame-cutting Work requires a stable compressed gas similar to a MAPP-type gas as manufactured by MAPP Products or an approved equal gas and in accordance with manufacturer's recommendations.

F. The amount of oxygen or MAPP-type gas on any MTA Group property may not exceed one (1) day's requirement. Remove all tanks from MTA Group property daily at the conclusion of that day's Work. Prior to their removal, remove gauges and install protective caps.

3.18 FIRE PROTECTION AND PREVENTION

A. Smoking is not permitted on the Work Site, Access Route or Staging and Access Areas.

B. Install and maintain firefighting equipment of suitable types to provide sufficient firefighting protection for any type of fire that may occur. Periodically inspect this equipment to ensure that it is ready for use. The equipment shall always be fully charged, in good condition, and placed in readily accessible locations. Fire extinguishers shall be at a minimum, ten (10) pound, steel cylinder type with Underwriters Laboratory rating of 10 A B C.

C. Perform a daily, documented fire hazard inspection and assessment for each Work Site and task to determine the type of exposure and location of required equipment. Immediate correction of substandard conditions is mandatory.

D. Open flames are prohibited within one hundred (100) feet of explosive or flammable materials.

E. Notification of Intent: Notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) and obtain written permission from the AHJ before shutting off water servicing a fire hydrant.

F. Obtain written permission from the AHJ before blocking roadways, hydrants, post indicator valves, and access to fire-fighting equipment.

G. The SM shall designate appropriately trained personnel to act as firewatchers who shall:

1. Be familiar with hazards at the Work Site.

2. Be trained in the operation of each type of fire extinguisher at the Work Site.

3. Designate one (1) or more assembly areas for personnel and ensure that each person is accounted for in the event of a fire or other emergency.

4. Provide the means for communications in the event of an emergency.

H. Flammable liquids shall be stored in Factory Mutual (FM) approved safety cans equipped

with self-closing lids and flame arrestors. Storage of flammable materials in buildings or sheds at the Work Sites shall have prior written permission from the property owner. Flammable liquid fuels may not be stored in stations or in subway tunnels.

I. Temporary Construction: All temporary structures shall be constructed of properly identified fire-rated material.

J. In the event of a fire at any Work Site, the Design-Builder shall immediately contact the local fire department by the fastest possible means followed by the appropriate site personnel. Advise of all the relevant information, which must include a description of the exact location of the fire. If the fire is located on or adjacent to the roadway, the location description shall include bridge lamppost or tunnel marker number, lane direction and lane number.

K. Comply with the recommendations of the NFPA and applicable regulations of the FDNY.

L. The operation and maintenance of temporary heating equipment shall not create fire hazards. Clothing shall note be dried by placing on or near heaters.

3.19 FALL PROTECTION

A. The Design-Builder shall enforce a 100% fall protection policy with zero tolerance for non-compliance at all work areas where a worker or other person is exposed to

an unprotected fall from an elevation greater than six (6) feet or into an excavation of five (5) feet.

B. Where 100% fall protection is not feasible or would create a greater hazard, the SM may allow for a task-specific variance from this requirement. Document the reasons for the task-specific variance in the SWP, assess alternative solutions, and submit a signed copy to MTA C&D (OR OTHER DESIGNEE OF THE MTA).

C. Cases where fall protection cannot be utilized or more risk will be added, means and methods must be included in SWP and alternative solutions considered.

3.20 MOTOR VEHICLES AND MOBILE CONSTRUCTION EQUIPMENT

A. Any Design-Builder motor vehicles and mobile construction equipment, whether owned, leased, or rented, and the equipment of all its Subcontractors or Suppliers shall be suitable for safe and efficient performance of the Work. The Design- Builder shall operate its vehicles in compliance with applicable laws.

B. The Design-Builder and all Subcontractors shall maintain equipment in accordance with the manufacturer's recommendations and guidelines. The Design-Builder shall regularly inspect such equipment and immediately remove any equipment found to be unsafe. The Design Builder shall repair or replace the equipment at no additional cost to MTA C&D (OR OTHER DESIGNEE OF THE MTA) and without a delay to the completion of the Work. Modification of equipment affecting its safety shall not be performed unless approved by the manufacturer in writing.

C. The Design-Builder shall require its drivers to inspect motor vehicles before and after each

tour of duty and file daily vehicle status reports with their supervisors. Drivers must report any unsafe or unsatisfactory condition(s) to their supervisor before continuing to operate the equipment or vehicle. The daily vehicle status reports shall be maintained by the Design-Builders as a business record.

D. The Design-Builder shall develop a written policy for motor vehicles to ensure compliance with the following:

1. All drivers must have a valid driver's license specific to their job activities and to the class of motor vehicle they operate.

2. Allow only authorized personnel as passengers of vehicles.

3. Operate vehicles on MTA C&D (OR OTHER DESIGNEE OF THE MTA) property for business-related purposes only. Utilize appropriate safety equipment (e.g., seat belts, shoulder harnesses, etc.).

4. Perform pre-trip and post-trip vehicle inspections to ensure that the vehicle and associated safety features are in good working order. Provide a copy of

   the vehicle status report to their supervisors, and if necessary, initiate repairs.

5. Make certain vehicle contains all required documentation (e.g. vehicle inspection report, registration, insurance documentation, etc.

6. Observe traffic laws and, when applicable, hazardous material regulations

E. Vehicle and equipment operators shall inspect and test essential controls, safety equipment, and safety devices before placing the vehicle or equipment in use. Construction equipment, whether owned, leased, or rented, shall be removed from service if unsafe.

F. Self-propelled equipment shall be equipped with backup lights and a reverse signal alarm. The alarm shall produce a 0.2 to 0.5 second audible warning within the initial 3 feet of backward movement of the vehicle on which it is mounted and at regular intervals thereafter of not more than three (3) seconds, throughout the backward movement. The alarm shall automatically cut out when backward movement ceases. Sound intensity shall range from 90-dbs. to 100-dbs. at a distance of five
(5) feet from the alarm. Actuation shall be automatic by direct connection to any part of the equipment that moves or acts in a manner distinctive only of rearward movement of the vehicle, with no manual controls between the source of actuation and the alarm.

G. The Design-Builder or its Subcontractors shall not allow the use of any earthmoving, compacting, or any other mechanized equipment having an obstructed view to the rear unless the equipment has a reverse signal alarm distinguishable from the surrounding noise level; or the equipment is backed up only when an observer signals that it is safe to do so.

H. Outriggers, wheel blocks and any other stabilizing devices recommended by the manufacturer of the equipment shall be in place before beginning any operation with that piece of equipment.

I. All Mobile Elevated Work Platforms (formerly known as Aerial Lifts) shall be designed operated and maintained in accordance with the latest ANSI A92 standard.

J. The use of Powered Industrial Trucks (PITs) for hoisting is prohibited. PITs include but are not limited to, fork trucks, lulls, and other similar equipment.

K. Vehicle loads shall be secure and no vehicle is to be loaded beyond its rated capacity. Vehicle Drivers shall assure safe passage of the vehicle and load under power lines and other overhead obstructions. Vehicle drivers shall not permit any person to ride on vehicles or equipment that is not specifically designed for carrying passenger.

L. Check all mechanized equipment at the beginning of each shift to ensure that all parts, equipment, and accessories that affect the safe operation are in proper operating condition and free from defects and leaks. All defects shall be corrected before the equipment is placed into service.

3.21 SCAFFOLDING

A. Training, construction, modification, inspections, removal and log book information for scaffolding shall follow requirements set forth in NYC Building Code, Section 3314, regardless of permitting or jurisdictional issues.

B. Designate a CP for support scaffolding who possesses a Certificate of Completion of a NYCDOB authorized 32 Hour Erector/Dismantler Supported Scaffold Training Course and has relevant experience.

C. The CP shall inspect scaffolding daily and record the inspection on a tag affixed to the scaffold. Scaffold that is not safe for use must be tagged “out of service.”

D. Scaffolding installed above the existing (45th, 46th, 47th & 48th Street) Escalator Wellways, in the Concourse, shall comply with the requirements specified in Sections 01 14 00 and 01 50 00.

3.22 MAINTENANCE OF SAFETY RECORDS

A. The Design-Builder shall maintain the following Safety Records pertinent to the Work Site at the Work Site for the duration of the Contract and make them available for review by MTA C&D (OR OTHER DESIGNEE OF THE MTA) upon request. In addition, the Design-Builder shall maintain these records for six (6) years after Final Completion of the Contract.

1. Accident Prevention Program/Hazard Communication Program;

2. Safe Work Plans;

3. Daily Safety Reports;

4. Worker Safety Meeting records;

5. Training records and Certification Cards including, Safety Orientation, NYCT

Track Safety and all other training provided to employees;

6. Competent Person Designations;

7. Safety Data Sheets (SDS);

8. Accident/Incident reports including; Report of Injury, Accident Investigation Report,

9. OSHA Form 300 for Design-Builder and each Subcontractor;

10. Written notice of Citations, Suits, or Complaints; and

11. Other compliance records as required by Local, City, State, and Federal Agencies.

3.23 CONCRETE AND MASONRY CONSTRUCTION

A. The Design-Builder shall include its means and methods for safe concrete pumping operations in its SWPs.

B. Provide adequate public protection when performing concrete and masonry construction such as ramps, barriers, flaggers, and overhead protection.

C. Pumping systems, piping, and hoses must have positive fail-safe joint connectors and discharge pipes shall be provided with pipe supports designed for 100% overloads.

D. Only clean the concrete delivery systems with compressed air when no other method is practical and only when the following conditions have been met:

1. Operation is planned and supervised by a Competent Person;

2. System to be cleaned has been secured against movement;

3. All flexible hoses in line and at the discharge have been removed;

4. Discharge end is routed to a safe location;

5. Discharge is properly secured to limit flying debris and pipe displacement; and

6. Ball catcher is used at the discharge.

3.24 DESIGNATED WALKWAYS

A. The Design-Builder shall maintain clearly-delineated walkways throughout each Work Site that are no less than forty-eight (48) inches wide and illuminated at no less than ten (10) foot candles.

B. Keep designated walkways free of equipment, tools, hoses, cords, construction materials, debris and any other objects which may impede safe access and egress or cause a slip trip

and fall hazard.

3.25 DEMOLITION

A. The Design-Builder shall perform all necessary explorations and probes to determine the protection required prior to performing any demolition.

3.26 TEMPORARY BARRIERS AND ENCLOSURES

A. For all Work, The Design-Builder shall submit a request for the use of temporary enclosures/structures with drawings. The Design-Builder shall coordinate any MTA C&D (OR OTHER DESIGNEE OF THE MTA) requests for Work Site inspections. The enclosure/structure may not be released for use without inspection by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

B. The Design-Builder shall construct all temporary structures with metal, incombustible, or fire-proofed materials.

C. The Design-Builder shall paint and repaint temporary structures as required but no less than every six (6) months with two (2) costs of an approved paint color selected by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

D. Remove graffiti every seventy-two (72) hours.

END OF SECTION

GENERAL REQUIREMENTS - SECTION 01 35 30
ENVIRONMENTAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes requirements for furnishing all labor, materials, tools, equipment, and performing all operations necessary for environmental compliance as specified herein, including requirements that supplement Federal, State, and local regulatory conditions and permits.

B. These requirements are consistent with the Project's goal of protecting environmental resources and minimizing adverse effects on communities in the Contract area.

1.02 CITED STANDARDS

A. Green Seal (GS) (http://www.greenseal.org): GS-11 Standard for Architectural Coatings

B. "Choose Green" Report on Architectural Paints

1.03 NOTED RESTRICTIONS

A. No Work shall commence at the Work Site until the Environmental Compliance Plan is submitted and found compliant by the Construction Manager

1.04 QUALITY CONTROL

A. Regulatory Requirements: Comply with all applicable laws, rules and regulations, including, but not limited to, the following:

1. New York City (NYC)

   i. Department of Environmental Protection (NYCDEP)

   ii. Department of Transportation (NYCDOT)

2. New York State Department of Environmental Conservation (NYSDEC)

   i. 6 NYCRR Part 703, Surface Water and Groundwater Quality Standard and Groundwater Effluent Limitations, Section 703.5, Water Quality Standards for Taste-, Color-, and Odor-Producing

Toxic and Other Deleterious Material , 248 – Use of Ultra Low Sulfur Diesel Fuel and Best Available Retrofit Technology, Section 6.1 Reporting Requirements

3. New York State Environmental Conservation Law (ECL) Amendment 19- 0323.

B. The Design-Builder shall implement and maintain an environmental quality control program as part of construction operations, including daily environmental quality control inspections and monitoring to confirm compliance with environmental requirements.

C. The Design-Builder shall be responsible for management of environmental issues and implementation of mitigation measures ranging from protection of cultural resources to waste management.

D. The Design-Builder shall comply with all environmental regulatory requirements applicable to their specific activities, including the protection of wetland resources; cultural resources; air quality; implementation of effective noise and traffic controls; and proper management of soils, water, hazardous materials, and waste.

1.05 SUBMITTALS

A. Contract-Specific Environmental Compliance Plan: Within 30 days after Notice of Award submit an Environmental Compliance Plan (ECP) that outlines in detail the measures to be implemented by Design-Builder to minimize adverse impacts to the environment and nearby communities and to comply with this Section and the above-listed sections, and all applicable laws, regulations, and permits, and all other Contract requirements. The ECP shall include:

1. Hazardous materials management plan

2. Spill prevention and control plan.

3. Dust control plan, including odor control plan

4. Traffic and parking management, including pedestrian access and flow

5. Control of diesel emissions

6. Protection of archaeological, cultural, and historical resources

7. Compliance with State and Local permits

8. Recycling plan

B. Stormwater Pollution Prevention Plan: Within 30 days after Notice of Award, and before commencing any physical Work on the Work Site, submit a Stormwater Pollution Prevention Plan (SWPPP).

1. The Construction Manager, or an MTA C&D (OR OTHER DESIGNEE OF THE MTA)-designated representative, shall sign the SWPPP when it is determined that that plan addresses all of the elements of General Permit 02-01, Part III.

2. Additionally, per Part III.A.3, no Work shall commence on site until the SWPPP is approved, the Design-Builder submits the Notice of Intent, and all appropriate stormwater control measures are in place to comply with applicable requirements of NYS DEC Stormwater Management Design Manual of 2015.

C. Approved Haul Route(s): Design-Builder shall develop and implement a Maintenance and Protection of Traffic Plan (MPT Plan) for removal of excavated materials from the Work Site by truck (see Section 01 55 00). Further to the MPT Plan requirements, provide the truck haul route(s) as approved by NYCDOT.

D. Environmental Coordinator: Within 30 days after Notice of Award, designate an Environmental Coordinator and submit the name and resume for this position. The Design-Builder's Environmental Manager shall be the Design-Builder's single point of contact for all environmental performance, coordination and reporting issues.

1. The Environmental Coordinator does not need to be a full-time position.

2. The Environmental Coordinator shall have a Bachelor's degree from an accredited college; a minimum of 10-years' experience in the environmental industry; current 40-hour HAZWOPER certification; and knowledge of Federal, State, and New York City environmental regulations and standards; experience in managing environmental requirements in New York State Superfund sites.

E. Waste Management Plan: Within 30 days after the date of the Notice of Award, submit Waste Management Plan by which the Design-Builder proposes to implement the requirements of this Section. Implement the accepted Waste Management Plan, which shall contain the following:

1. Analysis of proposed work site waste to be generated including types and quantities. Types can typically be separated into the following categories: land clearing debris, soil, rock, concrete, brick, concrete masonry unit, asphalt, metals/steel, cardboard/packaging, glass, wood, plastic, gypsum board, universal waste (batteries, fluorescent bulbs).

2. Proposed Alternatives to Landfilling: A list of each material to be salvaged, reused, or recycled during the course of the Contract, the proposed destination for each material, and the projected amount of recycling (by weight or volume).

3. A description of the means by which materials specified herein above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with the requirements for acceptance by recycling processors to be utilized.

4. For materials that cannot be salvaged, reused, or recycled, identify the name of the landfill where waste will be disposed of.

5. Waste characterization and sampling plan describing sampling to be performed for the purpose of waste management in accordance with applicable NYDEC requirements. The plan will include procedure used for on-site segregation, storage and disposal of contaminated materials from clean materials using real-time olfactory, visual and VOC screening during any excavation work that shows evidence of contamination.

6. A description of the means of transportation for recyclable and non- recyclable waste. Identify licensed haulers for all waste. Identify whether recyclable materials will be separated on-site or whether mixed materials will be collected by a hauler and removed from the Work Site for off-site sorting and recycling.

7. Sample of Progress Report as described herein below

1.06 DELIVERABLES

A. Combined Sewer Discharge Monitoring Report: The Design-Builder shall negotiate the terms of the discharge permit with the oversight agency, NYCDEP.

1. Provide sufficient information to demonstrate to the Construction Manager the monitoring report requirements.

2. Provide the monitoring reports to the Construction Manager in a timely fashion.

B. Environmental Performance Report: Provide an Environmental Performance Report every six months. This report shall include a copy of Environmental Performance Records for the reporting period, and shall detail environmental issues of significance including but not limited to: hazardous materials abatement performed; waste management records; any non-compliance with environmental permit requirements; spills that occurred and/or were reported to DEC, and; records of employee training performed during the reporting period.

C. Provide a copy of all environmental-related training documents and the log of personnel trained, prior to commencement of physical Work.

D. Provide bi-weekly Compliance Reports for non-road diesel equipment.

E. Provide the "Regulated Entity and Contractors Annual Report Form (Excel)" and the "Regulated Entity and Contractor Vehicle Inventory Form (Excel)" to the Construction Manager no later than September 1st of each calendar year.

F. Provide a recycling progress report on a monthly basis, as determined by the Construction Manager. Each report shall contain the following information:

1. Contract title, number, contractor name, and the period covered by the report.

2. Certification that the Design-Builder has complied with the required daily, weekly and monthly inspections required under the Contract and by regulatory agencies.

3. Report on the disposal of all waste, including:

i. Recycled Material: For each material, provide quantity, dates removed from the Work Site, receiving party.

ii. Reused or Salvaged Material: For each material, provide quantity, dates removed from the Work Site, intended/actual use.

iii. Landfilled Material: For each material, provide quantity, dates removed from the Work Site, name of landfill.

iv. All quantities shall be in tons or cubic yards.

v. The percentage of each material recycled, reused, salvaged, and/or landfilled shall be indicated, both for the progress period and cumulatively for the Contract. The total percentage of waste diverted from landfilling, both for the progress period and cumulative total, shall be clearly indicated.

4. Include legible copies of on-site logs, weight tickets, and receipts. Receipts shall be from recycling and/or disposal facilities who can legally accept the materials for the intended purpose.

i. If mixed construction and demolition (C&D) waste is sorted off- site, provide documentation from the processor stating the average percentage of mixed C&D waste they recycle.

ii. The documentation shall be the latest annual recycling report to the NYSDEC pursuant to 6 NYCRR Part 360 regulations, or a letter from the processor containing the equivalent information, if the report is not available.

5. The Design-Builder shall ensure transporters utilized comply with the tracking document requirements of both Section 361-5.6 and Section 364-

5.1 for the transport of C&D Debris, including using the NYDEC required Construction & Demolition Debris Form.

6. In the event the Design-Builder cannot fulfill the diversion rate specified herein, the Design-Builder shall immediately notify the Construction Manager.

   i. Submit documentation showing a good faith effort was made to achieve the diversion rate.

   ii. Such documentation shall include a record of contacts with construction and demolition (C&D) recycling businesses and shall include the following: date and time of contacts; name of business and individual spoken to; telephone number; and results.

7. Provide valid current permits and certifications issued by the local, state, and federal agencies to the solid waste facilities, waste recycling plants and landfills. Provide a copy of the valid insurance certificate of the disposal facility and transporters.

G. Provide daily confirmation for all muck, soil and contaminated materials disposed of off-site through daily scanned electronic copies of all executed manifests. Provide legible hard copies of the executed manifests on a monthly basis.

PART 2 PRODUCTS

2.01 DUST SUPPRESSION

A. Dust suppression wetting agents shall be water soluble, non-toxic, non-reactive, non-volatile, and non-foaming.

2.02 MATERIALS USED IN CONSTRUCTION

A. The following environmental requirements apply to materials used for temporary construction, and to effects of materials used in the permanent works.

B. Asphalt and Concrete:

1. Asphalt concrete paving shall be produced with a minimum of 25% recycled content by weight.

2. Concrete masonry units shall be produced with a minimum of 50% recycled content

3. The use of fly ash in concrete shall meet product specifications listed in the USEPA Comprehensive Procurement Guideline for Procurement of Products Containing Recovered Materials 65 Federal Register 3,070 (Final, January 19, 2000, codified as 40 CFR 247.1). "EPA CPG" Specifications available at http://www.epa.gov/cpg. Fly ash cannot be obtained from facilities where hazardous waste materials are included in the fuel mix used to create the ash.

4. Record Pulverized Fly Ash (PFA) and Ground Blast Furnace Slag (GBFS) contents in concrete and grouts in the Environmental Performance Records.

5. Use only non-hazardous bond breakers, curing compounds, and form release agents. All bond breakers, curing compounds and form release agents shall be composed on non-petroleum based, non-hazardous (i.e., without chlorinated solvents or heavy metals) ingredients.

C. Formwork:

1. Formwork made from expanded polystyrene shall be manufactured without the use of chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs).

2. Use maximum 350g/L VOC content in form release agents, including liquid membrane-forming curing and sealing compounds.

D. Metals:

1. Structural Steel: Framing steel shall be manufactured with a minimum of 80% recycled steel content.

2. Steel studs, runners, and channels for framing shall maximize recycled steel content.

3. Provide the minimum recyclable content in the following materials or products:

i. Reinforcing Steel in Concrete: 80% recycled scrap steel

ii. Reinforcing Bars in Precast Concrete: 80% recycled steel

iii. Reinforcing Bars in Concrete Unit Masonry: 60% recycled steel

E. Timber: The use of Chromated Copper Arsenate (CCA) as a wood treating material is not permitted. Use of Alkaline Copper Quaternary (ACQ) is acceptable.

F. Joint Sealants:

1. Interior sealants shall not contain mercury, butyl rubber, neoprene, SBR (styrene butadiene rubber), or nitrile.

2. Silicone sealant shall be low VOC content, maximum 50-g/L.

3. Polyurethane sealant containing mercury shall not be used.

4. Compressible foam joint fillers such as polyester polyurethane foam impregnated with neoprene rubber or acrylic ester styrene copolymer shall not be manufactured with CFC blowing agents.

5. Sealants formulated with aromatic solvents (organic solvent with a benzene ring in its molecular structure), fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, or their components shall not be used.

6. Without sacrificing cost or product performance all joint compounds shall be low VOC content, maximum 20-g/L and shall not contain any antifreeze.

7. Only paper joint tape (no fiberglass tape) shall be used.

G. Paints:

1. Water-based paints formulated with aromatic hydrocarbons (organic solvent with a benzene ring in its molecular structure), formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides, shall not be used. Water-based paints shall have a maximum VOC content of 150-g/L and shall have a flash point of 61 degrees Centigrade or greater.

2. Where it is necessary to use solvent-based paints, they shall be formulated for low VOC emissions, maximum 380-g/L, and shall not be formulated with formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides, nor formulated with more than 10-percent aromatic hydrocarbons by weight.

3. The following shall have a maximum VOC content as listed below and shall not be formulated with aromatic hydrocarbons (organic solvent with a benzene ring in its molecular structure) formaldehyde, halogenated solvents, mercury or mercury compounds, or tint with pigments of lead, cadmium, chromium VI and their oxides:

   i. High performance water-based acrylic coatings, VOC 250-g/L

   ii. Pigmented acrylic sealers, VOC 250-g/L

   iii. Catalyzed epoxy coatings, VOC 250-g/L

   iv. High performance silicone grafted epoxy coatings, 250-g/L

4. Use of paints containing more than 0.06% lead is prohibited

5. Interior and Exterior Paints: Chemical exclusions and low volatile organic compound (VOC) content: Unless it can be justified by life-cycle hazard analysis that other systems are defensible, interior and exterior paints used as topcoats must meet the product-specific performance and environmental requirements of GS-l1 and GS “Choose Green Report on Architectural Paints”. In case requirements are not met, after justification, appropriate precautions shall be taken.

H. Solder: Use solder that does not contain lead.

I. Ozone Depletents: Use no CFC refrigerants, insulation, or solvents.

J. Ductwork: Comply with NYS "low VOC" requirements. Confirm the use of low VOC materials and record actual VOC content in the Environmental Performance Records.

K. Millwork and casework adhesives shall be water-based, formaldehyde-free, low- VOC adhesives, maximum 20-g/L.

L. Hydraulic Fluids: Where practical, use environmentally-friendly substitutes for hydraulic fluids, such as vegetable-oil based fluids

PART 3 EXECUTION

3.01 GENERAL

A. Comply with all environmental regulatory requirements applicable to activities performed. Cooperate fully in implementing contract-specific procedures and guidelines developed with regard to environmental compliance. Communicate in a timely manner any environmental problems to the Construction Manager.

B. Designate the Environmental Coordinator as point of contact for environmental issues.

C. Environmental Training:

1. Train personnel to be thoroughly familiar with spills, waste handling, and emergency procedures. Ensure that employees handling universal wastes are thoroughly familiar with the proper handling and emergency procedures related to their responsibilities.

2. For those personnel whose duties are to handle hazardous wastes, additional training such as the OSHA 40-Hour Hazardous Waste Site Operation, shall be required.

3. Conduct "tool box" talks with all labor forces to explain and highlight aspects of environmental compliance relevant to their site and activities. Such efforts shall especially be employed when Work is proceeding towards areas of environmental sensitivity (e.g., cultural resources, sensitive communities).

D. Evaluate in advance the need for site-specific mitigation measures, and tailor mitigation measures to the need before initiating construction activities. Initiate timely corrective actions to protect communities and environmental resources.

E. Incorporate environmental issues into daily planning, in a similar way as done for safety planning (e.g. include environmental compliance issues in readiness review meetings and daily "tool box" talks).

F. Environmental Performance Records: Maintain records of environmental performance, including a materials logbook, and obtain verification that materials used have been reviewed for environmental considerations as required herein. Records shall include the usage of local materials in conformance with the "Buy America" program.

1. The records shall provide documentation of compliance with the environmental requirements for materials used in construction, as specified herein.

2. Include a list of landfills, recycling facilities and their permits used in previous 6 months.

3. Include a list of waste haulers used in previous 6 months.

4. Include copies of all the permits Design-Builder has obtained from the local, state and federal agencies.

5. Label each section with the Technical Requirements number, and record the VOC content, the recycled content, and other environmental specifications of each material. Include the Materials Safety Data Sheet (MSDS), product label and/or manufacturer's data verifying conformance to applicable environmental specifications; and shall identify in general terms where the product is to be used in the Work.

6. Include compliance reports for non-road diesel equipment.

7. Include daily/weekly field inspections to ensure proper housekeeping, spill prevention measures and stormwater management controls required under the Contract and/or required by regulatory agencies.

8. Maintain records on a weekly basis, and submit per the Environmental Performance Report requirements above.

9. Ensure that the Environmental Performance Records are accessible to the Construction Manager at all times, and submit as part of the Environmental Performance Report.

G. Comply with the following environmental performance commitments:

1. Select products that minimize consumption of non-renewable resources due to their manufacture packaging or transportation that consumes reduced amounts of energy and minimizes amounts of pollution produced, and employs recycled and or recyclable materials.

2. Communicate in a timely manner on any environmental problem to the Construction Manager.

3. Initiate timely corrective actions to protect communities and environmental resources.

4. Minimize the impact to the environment from waste and sanitation collection generated by construction activities.

5. Conserve water.

H. Environmental Coordinator: Design-Builder's Environmental Coordinator shall act as the Design-Builder's main coordinator/liaison for all environmental-related issues. The Environmental Manager's duties and responsibilities shall include:

1. Shall be onsite full time overseeing all environmental operations. Provide daily reports to the Construction Manager during all periods of excavation activity.

    i. Daily Reports shall include work summary, air sampling results, odor and dust problems and corrective actions, complaints received from the public, and environmental contamination/spills observed/reported to DEC, if any.

2. Participate during bi-weekly environmental compliance inspections performed by the Construction Manager. This joint inspection process will be used to help ensure communication, and timely corrective action at the Work Site. Action items identified during environmental compliance inspection shall be communicated to the Design-Builder by the Environmental Manager.

3. Coordinate, review, and oversee in preparation of all environmental plans, records, and reports.

4. Monitor and control Design-Builder's environmental-related Work activities, including compliance with recycling and waste management plans.

5. Ensure Design-Builder's compliance with environmental requirements.

6. Communicate with the Construction Manager for compliance with the requirements specified herein.

I. Environmental Coordination Meetings: In addition to the requirement for environmental plans, records and reports, regular coordination meetings will be held with the Construction Manager to review environmental issues, including implementation of waste management plans, and monitor the status of Environmental Performance Records and Environmental Performance Reports.

J. In instances where the Construction Manager observes and reports environmental non-compliance, implement corrective actions within 24 hours, and maintain as necessary. Monitor all Work daily to confirm compliance with environmental requirements. Adjust and deploy mitigation measures based on observations made during inspections and upcoming scheduled activities.

K. Community Relations: Support the Construction Manager in providing communications to the community. Such support may include attending meetings, advising of Design-Builder's progress and performance, and Design- Builder conformance to its permits and obligations.

L. Evaluate, test and implement (where possible) the use of vegetable oil based hydraulic fluids for all on-site construction equipment.

3.02 ON-ROAD VEHICLE EMISSION CONTROL

A. Maintain all records required by 6 NYCRR Part 248 and comply with N.Y. ENV. LAW Section 19-0323. Keep records on site and available for weekly inspection.

1. Records shall include, but not be limited to, documentation of: vehicle, chassis and engine information; type(s) of retrofit or Original Equipment Manufacturer (OEM) devices; OEM air pollution control devices; estimated annual mileage for on-road vehicles and usage hours for off- road vehicles; emissions opacity results and date of test; replacement/repower information; vehicle/engine retired date; BART waiver and issue date; fuel characteristic type and quantity of ULSD used.

2. Comply with the Vehicle and Equipment Labeling Requirements specified in the regulations.

3. Submit monthly reports to the Construction Manager including a copy of the latest HDV Inventory and all the information needed by MTA C&D (OR OTHER DESIGNEE OF THE MTA) to fulfill their reporting requirements to the NYSDEC (6 NYCRR Part 248- 6.1).

B. Utilize the "Regulated Entity and Contractors Annual Report Form (Excel)", and the "Regulated Entity and Contractor Vehicle Inventory Form (Excel)" available on the NYSDEC website, http://www.dec.ny.gov/chemical/4754.html, under 6 NYCRR Part 248.

C. Establish truck-staging zones for vehicles waiting to load or unload material at the Work Site. Such zones shall be located where diesel emissions have the least impact on abutters and the general public.

D. Limit idling time to three consecutive minutes for delivery and dump trucks and all other diesel powered equipment except as follows:

1. When a "mobile source" is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control

2. When it is necessary to operate heating, cooling or auxiliary equipment installed on the "mobile source" when such equipment is necessary to accomplish the intended use of the "mobile source"

3. To bring the "mobile source" to the manufacturer's recommended operating temperature

4. When the outdoor temperature is below 25 degrees Fahrenheit

5. When the "mobile source" is being repaired

E. Ensure that diesel emissions do not cause harmful effects to adjacent sensitive receptors. Sensitive receptors include but are not limited to hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.

F. Ensure that diesel powered engines are located away from fresh air intakes, air

conditioners, and windows.

G. Equipment shall prominently display a clean exhaust message such as: "Machine is equipped with an air pollution control device and uses Ultra-Low Sulfur Diesel fuel".

H. All on-road vehicles serving the worksite shall use ultra-low sulfur diesel fuel (15-ppm sulfur content). Copies of fuel delivery slips indicating date, fuel quantity, fuel quality, and vehicle VIN number shall be included in the bi-weekly compliance reports for diesel equipment.

I. Rail equipment is exempt from these requirements.

3.03 OFF-ROAD VEHICLE EMISSION CONTROL

A. All Design-Builder and subcontractor non-road vehicles, on-road vehicles with auxiliary power source, and construction equipment powered by an internal combustion engine with gross engine horsepower ratings of 50 horsepower and above, that are on the Work Site or are assigned to the Contract shall be:

1. Minimum Tier 2 certified diesel engines (emissions meeting Tier 2 standards), fitted with retrofit technology, such as Diesel Particulate Filter (DPF) or better, that removes greater than 90-percent particulate matter without increasing NOx, and uses ultra-low sulfur diesel fuel (maximum 15 parts per million of sulfur).

2. The retrofit technology/retrofit emission control device shall be certified by the USEPA; or certified by California Air Resources Board (CARB); or have satisfactorily met all the criteria of VERT and recommended for use on construction equipment.

B. The vehicles and construction equipment shall be inspected by the Project's environmental coordinator prior to their use at the Work Site. Upon passing of the inspection, the environmental coordinator will issue an "MTA C&D (OR OTHER DESIGNEE OF THE MTA) Low Emission" sticker for the vehicle or equipment. The MTA C&D (OR OTHER DESIGNEE OF THE MTA) Low Emission sticker must be affixed on the vehicle or equipment at all times.

C. In the event that Design-Builder is unable to use Diesel Particulate Filter (DPF) technology, request approval to use an alternative retrofit technology. Request shall be made in writing, 30 working days prior to use of equipment. Request shall:

1. Provide, in original, letters from equipment or retrofit manufacturer stating reasons for their inability to provide suitable Diesel Particulate Filter for the specific equipment and application.

2. Document efforts made to implement Diesel Particulate Filter.

3. Document efforts made to source Diesel Particulate Filter.

4. Provide, in original, letters from EPA verified suppliers stating reasons for their inability to provide suitable Diesel Particulate Filter for the specific equipment

and application.

5. Demonstrate selected alternative retrofit technology is next best to DPF that can achieve lowest particulate matter emission without increasing NOx.

D. The reduction of emissions of carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NOx), and particulate matter (PM) shall be accomplished by installing retrofit technology. Retrofit technology can be:

1. Diesel Particulate Filter or next best available retrofit technology (BART)

2. Engine upgrade

3. Early engine replacement

4. Combination of above

E. Submit to the Construction Manager, before commencing construction work, a list of non-road powered construction equipment that will be or has been retrofitted. The list is to be included in the Environmental Performance Records and shall include:

1. Design-Builder/subcontractor name/address/contact person

2. MTA C&D (OR OTHER DESIGNEE OF THE MTA) Low Emission sticker number issued for each piece of construction equipment;

3. Equipment type, model, serial number

4. Engine serial number, make, model, year of manufacture, horsepower

5. Retrofit type, make, model, manufacturer, EPA verification number, and installation date

6. Certificate from original engine manufacturer stating engine serial number and that engine is Tier 2 or 3 or 4 certified

F. Maintain copies of fuel deliveries identifying source of supply, quantity of fuel, and quality of fuel. These copies shall be available for review by the Construction Manager.

G. Design-Builder will be issued a Notice of Non-Compliance when any diesel powered non-road construction equipment is in non-compliance with this specification.

1. Correct non-compliances within a 24-hour period.

2. If unable to correct non-complying conditions within the 24-hour period, remove the affected equipment from the Work Site.

H. Provide a bi-weekly Compliance Report of the equipment. This report shall

include:

1. An update of the initial list of non-road diesel equipment showing addition and deletion of diesel equipment

2. Log of engine hour meter reading

3. Log of equipment on site and off site

4. Fuel filled log by date for each item of equipment

5. Summary of fuel deliveries

6. Digital photographs of equipment showing engine and retrofit installations

I. Rail equipment is exempt from these requirements.

3.04 DUST CONTROL

A. At a minimum, utilize wet suppression to provide temporary control of dust. Several applications per day may be necessary to control dust depending upon meteorological conditions and Work activity. Apply wet suppression on a routine basis as necessary to control dust.

1. Wet suppression consists of the application of water or a wetting agent in solution with water. Ensure wetting agent is not used on plantable soils.

2. Wet suppression equipment shall consist of sprinkler pipelines, tanks, tank trucks equipped with water cannon, or other devices capable of providing regulated flow, uniform spray, and positive shut-off.

B. Provide wind-screens and wind barriers in locations where they would be effective in minimizing wind erosion and spread of dust. Submit proposed locations as part of Design-Builder's dust control plan. Keep wind-screens and barriers in good repair for the life of the Contract.

C. Use the following measures to control dust on public roadways:

1. For trucks hauling soil or rock (muck), completely cover the truck bed with a tarp or similar protective cover before the truck leaves the Work Site. The truck bed shall remain covered until the truck reaches the disposal site.

2. Before any vehicle leaves the Work Site, clean the vehicle body and/or wheels of mud and dirt to control tracking. Apply gravel cover to soil (unpaved) surfaces where they will be regularly traveled at egress and ingress routes from/to Work Sites.

3. Immediately clean vehicle mud and dirt carryout, material spills, and soil washout onto public roadways, walkways, and other paved areas.

D. Perform a daily clean up of public roadways and walkways affected by Work of this Contract.

1. A wet spray power vacuum sweeper or similar equipment shall be used on paved roadways.

2. Dry power sweeping is prohibited.

E. Utilize the following methods to control dust and wind erosion of active and inactive stockpiles:

1. Keep stockpiles covered at all times with appropriate anchored tarps.

2. Secure plastic tarps on stockpiles with sandbags or an equivalent method to prevent the cover from being dislodged by the wind. Repair or replace covers whenever damaged or dislodged.

F. Protect existing drains and catch basins from receiving dust and debris generated from the construction operations. Utilize the following methods to control dust and wind erosion of active and inactive stockpiles:

G. Keep stockpiles covered at all times with appropriate anchored tarps.

H. Secure plastic tarps on stockpiles with sandbags or an equivalent method to prevent the cover from being dislodged by the wind. Repair or replace covers whenever damaged or dislodged.

I.

3.05 HAZARDOUS MATERIAL LABELING AND STORAGE

A. Ensure that each hazardous material is clearly marked or labeled in accordance with either the NFPA 704 (NFR Diamond) or the new color bar format (HMIG labels) as specified in 29 CFR 1910.1200. Store each hazardous material in accordance with the manufacturer's recommendations

3.06 TRAFFIC MANAGEMENT

A. Employ the following methods to minimize adverse impacts to pedestrians and traffic:

1. Advance public notice to motorists of the nature, extent, and duration of lane closings and detours

2. Placement of detour signage in strategic locations, and use of appropriate warning signs

3. Performing construction activities that impact traffic during off-peak hours, whenever feasible

B. Minimize disruption of access to residences and businesses; maintain at least one entrance to a property where multiple entrances exist

C. Coordinate with other contracts in the area that have potential to impact roadways and

create cumulative effects

D. Select truck routes to limit roadway and traffic impacts

E. Adopt a parking policy for construction workers that will minimize impacts to residents and businesses

F. Install signage and barriers to protect and guide pedestrians

3.07 ENVIRONMENTAL PERMIT COMPLIANCE

A. Further to General Provisions Article 14.12 - "LAWS AND PERMITS", the permits listed herein shall be obtained by Design-Builder and issued by the NYSDEC or NYCDEP to MTA C&D (OR OTHER DESIGNEE OF THE MTA). The Design-Builder shall be responsible for execution of the Permits and complying with all of the terms of each Permit. Immediately notify the Construction Manager of any deviations from any Permit conditions, along with recommendations for correction and/or mitigation.

B. Combined Sewer Discharge Permit: This permit is required by NYCDEP for the groundwater treatment system discharge. All treatment process equipment shall be functionally maintained at all times. Make every effort to maintain the functionality of the process system, collect system and effluent monitoring samples in a timely fashion, and optimize the operation of the system.

C. SPDES General Permit for Stormwater Discharges from Construction Activities: This permit is required by NYSDEC for sediment and erosion control due to stormwater run-off. Make every effort to comply with the SPDES General Permit and the SWPPP, update the SWPPP as the Work site changes, and maintain erosion control features. Incorporate post-construction measures in the compliance with NYSDEC Stormwater Management Design Manual of 2015

D. Design-Builder is advised that failure to comply with the permit requirements, including the timely submission of periodic monitoring reports, may result in the required shutdown of the dewatering system. In such cases, Design-Builder shall be fully responsible for any added costs and/or delays associated with the dewatering shutdown.

3.08 WASTE MANAGEMENT AND RECYCLING

A. Adopt processes that generate the least amount of waste.

B. Minimize the impact to the environment due to waste production from construction activities, including finding beneficial uses for excavated materials. Waste disposal in landfills or incinerators shall be minimized. Burning of material does not qualify as diversion from landfilling

C. Waste Management Plan: Design-Builder's waste management plan shall identify waste types; quantity by weight and volume; methods for handling and disposal; and transportation procedures. Plan shall include proposed methods for waste salvage, reuse, and disposal, including the name of applicable salvage, reuse and disposal

subcontractors and/or facilities.

D. Recycling Plan: Design-Builder's recycling plan shall outline the materials chosen to be recycled on- or off-site and include methods employed to recycle those materials, identify the off-site receiver of those materials, and details the ultimate use of those materials by the receiver. Include methods that will be used for separating recyclable waste.

E. Keep recycling and waste bin areas neat and clearly marked to avoid co-mingling of materials.

F. Include in material purchase agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable materials, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Ensure that subcontractors require the same provisions in their purchase agreements.

G. Instruct workers and oversee and document results of the Waste Management Plan. Provide on-site instruction covering separation, handling and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Contract.

H. Provide containers for the removal of all waste from the Work Site.

I. Designate a specific area to facilitate separation of materials for potential salvage, recycling and waste. Recycling and waste bin areas shall be kept neat and clean and clearly marked in order to avoid contamination of materials.

J. Job progress meetings shall discuss the implementation of the Waste Management Plan.

K. Research resources in salvage and recycling to minimize disposal costs and identify opportunities to sell salvage, or to donate salvage and accrue tax benefits, which would accrue to Design-Builder. Examples of resources are as follows:

1. Outlets: For assistance in finding outlets for specific materials on specific contracts, one possible resource is New York Waste Match. (www.wastematch.org)

2. Other Resources include:

i. www.usgbc.org - Website of the United States Green Building Council, with a description of the LEED certification process and requirements for C&D waste recycling. Design-Builder may use the Authority's corporate ID number to access member areas of the Work Site.

ii. www.epa.gov/epaoswer/non-hw/debris-new/recycle.htm - Website of the USEPA that provides information on C&D waste recycling.

END OF SECTION

GENERAL REQUIREMENTS – SECTION 01 35 50
SECURITY PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. The Section specifies requirements for the security of the Work and site security. The Design-Builder shall secure and maintain the Work Site(s) in a secure manner at all times.

1.02 RELATED DOCUMENTS

A. Section 01 35 10, Construction Safety Requirements

1.03 NOTED RESTRICTIONS

A. The Design-Builder shall not limit access to any MTA C&D (OR OTHER DESIGNEE OF THE MTA), NYSDOC, State, County, Village, AHJ, municipal authorities or Utility Owner personnel.

B. All persons entering the Work Site will be required to present their Photo IDs and may be required to pass through a security point where appropriate. Failure to present Photo ID may result in exclusion from the Work Site.

C. Non-Disclosure: The Design-Builder shall ensure that all of its employees, Subcontractors, or suppliers do not disseminate any Contract Documents, Design Documents, or related documents to any outside agency or individual without prior written permission from MTA C&D (OR OTHER DESIGNEE OF THE MTA).

1.04 SUBMITTALS

A. Site Security Plan.

B. Qualifications/Resume of Site Security Supervisor.

C. Personnel Roster.

D. Daily Site Security Reports.

1.05 CODES AND STANDARDS

The following codes and reference standards shall apply:

- New York City Building Code, Section 1814.3.

PART 2 PRODUCTS

2.01 PRODUCTS

PART 3 EXECUTION

CONSTRUCTION SECURITY – GENERAL

A. Exercise primary responsibility for its own internal security and control to include: establishing and maintaining systems for issue and accountability for tools, equipment, and materials; and providing for their storage, to include appropriate lock and key control.

B. Design-Builder's designated Security Representative shall act as Design-Builder's main coordinator/liaison for all security related issues. The Security Representative's duties and responsibilities, at a minimum, shall be:

1. Coordinate with the security services provided by the MTA.
2. Monitor and control Design-Builder's support of the MTA-provided security badge program.
3. Ensure Design-Builder's compliance with the Site Security Plan (SSP).

C. Emergency security assistance and serious incident reports may be made directly to MTA-PD or NYPD with subsequent timely notification to the Construction Manager and Site Security Supervisor, including copies of any incident reports.

D. Non-Disclosure: Do not disseminate any Contract Drawings, Specifications, Reports, or related documents to any outside agency, Contractor, or individual without prior written permission from the Construction Manager.

3.02 CONSTRUCTION SECURITY – MTA RESPONSIBILITY

A. The MTA C&D (OR OTHER DESIGNEE OF THE MTA) Construction Security Manager will coordinate the following:

1. Issuance of identification badges to all Design-Builder personnel who require access to the Work Site
2. Assignment of security guards to provide Site Access Control
3. Identification and distribution of applicable security regulations, policies and directives, and any special requirements for addressing concerns regarding general and/or Work Site-specific construction security operations and performance standards
4. Interface with Metropolitan Transportation Authority Police Department (MTA-PD), New York City Police Department (NYPD), Joint Infrastructure Task Force (JITF), and other appropriate agencies.
5. Preparation, implementation, and maintenance of the Project-wide Construction Security Plan.
6. Oversight of the installation, operation, and maintenance of technical security systems and equipment, and all other security management

programs.

7. Implementation of no-notice contraband inspections with the MTA-PD and with Design-Builder. Efforts will be made to minimize interference with scheduled Work.

B. The MTA C&D (OR OTHER DESIGNEE OF THE MTA) Security Services Contractor will provide Work Site access control. These services will include day-to-day management of construction security including Site Security Supervisors, Security Officers, Security Console Operators, a Security Control Center (SCC), and security systems' installation, maintenance, and central monitoring.

3.03 SITE SECURITY SUPERVISOR

A. Within ten (10) Work Days after NTP, the Design-Builder shall designate the Site Security Supervisor to be responsible for all security procedures to protect the Work and the Work Site. The Design-Builder shall submit the name and resume of the designated Site Security Supervisor. The Design-Builder's designated Site Security Supervisor shall act as Design-Builder's main coordinator/liaison for all security-related issues.

B. The Site Security Supervisor's duties and responsibilities, at a minimum, shall be:

1. Coordinate with the security services provided by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

2. Monitor and control Design-Builder's support of security badge program, as applicable.

3. Ensure Design-Builder's compliance with the Site Security Plan.

C. The Site Security Supervisor shall be responsible for the preparation and maintenance of the Daily Site Security Reports, which shall include:

1. Attendance log with the printed name of each individual at the Work Site, sign-in time and signature, and sign-out time and signature.

2. Vehicle log with each vehicle used and the driver/operator's name, start time, end time, and signature.

3. Printed name and signature of the person completing the report.

3.04 DESIGN-BUILDER RESPONSIBILITIES

A. The Design-Builder shall be responsible for developing and maintaining a Site Security Plan in accordance with Part 3.03.

B. The Design-Builder and its Subcontractors shall comply with the following requirements:

1. Lock field offices at the end of the day.

2. Install window guards on all windows.

3. Lock site gates/fences at the end of each day.

4. Limit the distribution of keys for locks to management staff and personnel designated by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

5. Enforce disciplinary procedures for violations of site security procedures.

C. The Design-Builder shall provide and maintain substantial, durable, and effective security devices including, but not limited to, barricades, fences, lights, warning signs, and other devices to ensure security. Security devices shall be designed to withstand the reasonably-anticipated forces in or around the Work Site including, but not limited to, wind, vibration, runoff, and other natural or man-made conditions.

D. The Design-Builder shall remove each security device when no longer required. Each security device shall be constructed of properly identified fire-rated materials.

E. The Design-Builder shall exercise primary responsibility for its own internal security and control which shall include establishing and maintaining systems for issue and accountability for tools, equipment, and materials; and providing for their storage, to include appropriate lock and key control

F. The Design-Builder shall provide and maintain barricades and fences in a continuous unbroken line along the Work Site where site security is required.

1. Barricades and fences shall be capable of preventing unauthorized entry into the Work Site.

2. The Design-Builder shall install lighting along any perimeter fences.

3. Fences shall have a minimum height of eight (8) feet.

4. Caution tape or unsupported fencing is not permitted as a barricade.

G. The Design-Builder shall prepare a site access roster annotated with any special restrictions for time and interior site areas and provide to the Site Security Supervisor.

H. The Design-Builder shall secure buildings, offices, trailers, tool cages, enclosures, vehicle and equipment locks and the like with perimeter security fencing, portals, gates and locks in accordance with its Site Security Plan.

I. The Design-Builder shall establish a pass system for authorized entry and exit from the Work Site for vehicles, equipment, tools and materials, personnel and visitors.

J. The Design-Builder shall perform random inspections and searches including searches of coolers and grips.

K. Personnel Roster: Prior to commencing any Work at a Work Site, the Design- Builder shall submit a personnel roster to MTA C&D (OR OTHER DESIGNEE OF THE MTA) listing the personnel requiring access to the Work Site. The requirements for the personnel roster are listed below.

1. Label with the Contract Number, revision number, and date of revision.

2. Annotate with any special restrictions for time of day, duration of access, limitations of Work Site access (interior Work Site areas), and related requirements.

3. Update and resubmit to ensure the roster is current, but no less than on a weekly basis.

4. Failure to maintain a current personnel roster will result in Design-Builder's personnel being restricted access to the Work Site.

5. If Work Site access badges are issued to employees, include the badge numbers and company affiliation on the roster.

L. The Design-Builder shall obtain consent from all its employees, including those of its subcontractors and suppliers, to perform random searches of their persons, vehicles, equipment, materials, and containers by MTAPD or other law enforcement official with jurisdiction while on MTA C&D (OR OTHER DESIGNEE OF THE MTA) property.

3.05 SITE SECURITY PLAN

A. The Design-Builder shall prepare a Site Security Plan for review and approval by MTA C&D (OR OTHER DESIGNEE OF THE MTA). The SSP shall define the management, organization, and strategy to provide site security throughout the duration of the Contract. The Site Security Plan shall define the personnel responsibilities for developing and delivering security-related practices.

B. The Site Security Plan shall be organized and include the following:

1. Table of Contents.

2. Site security policy statement.

3. Organization chart of personnel responsible for Site Security Plan implementation, including a description of their duties and responsibilities.

4. Description of security requirements including internal security accountability systems, lock and key controls, and controls of special equipment, materials, and high-value items.

5. Special security measures for dangerous items such as explosives, flammable liquids, and gasses.

6. Site security systems, which may include closed circuit television (CCTV), access control, intrusion detection, and central monitoring.

7. Personnel badging, vehicle decals, and gate passes for equipment, tools and materials, including a sample Photo ID.

8. Contraband identification and control (deterrence, denial, and detection).

9. Reporting procedures and responsibilities for security incidents.

10. Police (MTAPD and NYPD) support and coordination including process for requests for investigative and other support.

11. Planned responses to emergency situations such as fire, natural disaster, civil disruption, terrorism, work-place violence, and other serious incidents.

12. Accountability procedures for storage, requisition, and issue of material and equipment.

13. Control of material and equipment packaging, transportation, and delivery to the Work Site.

14. Process for reporting of security-related incidents, including trespassing, loss, theft, or vandalism

15. Disciplinary procedures for violations of site security procedures.

C. The Design-Builder shall submit the Site Security Plan to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for its review at least thirty (30) days prior to the start of construction at any Work Site. MTA C&D (OR OTHER DESIGNEE OF THE MTA), in its sole discretion, may determine the Site Security Plan is deficient or otherwise unsatisfactory, in which case MTA C&D (OR OTHER DESIGNEE OF THE MTA) may require the Design-Builder to attend a meeting to reach agreement on necessary changes and/or resubmit a revised Site Security Plan within seven (7) Days of notification.

D. Each Subcontractor and supplier shall comply with the SSP and shall provide written notification of its intent to adopt and comply. If a Subcontractor or

supplier elects to submits its own Site Security Plan, the Site Security Supervisor shall review and approve its compliance with all Contract requirements.

3.06 PHOTO IDENTIFICATION

A. All persons working on behalf of the Design-Builder (including employees of Subcontractors) in the performance of this Contract shall be required to obtain photo identification issued by the MTA if such person's Work requires that they be granted access to MTA work sites or facilities (including spaces leased by the MTA) on more than twenty (20) days (not necessarily consecutive) during any contract year

B. In order to be eligible for the MTA-issued credential, the individual is required to submit to a background check through the MTA's personnel assurance program provider. The Secure Worker Access Consortium ("SWAC") is approved by the MTA to conduct background screening and personal identity verification.
Information about SWAC, instructions, corporate enrollment, online applications, and location of processing centers is located at http://www.secureworker.com, or SWAC. may be contacted directly at (877) 522-7922. Upon the successful completion of the background screening by SWAC, the individual will be issued a SWAC identification card, which shall be used by the MTA as evidence of the
individual's eligibility of the MTA-issued photo identification

C. The Design-Builder and Subcontractor personnel shall carry, clearly visible photo identification (ID) card. Photo IDs shall be displayed outward on the outmost garment/safety vest.

D. The Design-Builder shall also provide Photo IDs for employees not eligible for an MTA-issued credential. These Photo ID card shall be laminated plastic, nominally 3.5-inch square, and shall contain the name and full-face color picture of the person. It shall also contain the Contract Number, name of the Design-Builder, name of the Firm employing the individual, and an expiration date which shall not exceed the date of construction completion.

E. Prior to each working shift, all Design-Builder and Subcontractor personnel shall identify themselves to the Site Security Supervisor and fill out the "Design- Builder Access Form." The form shall be dated and signed by the Site Security Supervisor. All personnel shall carry a copy of the daily Design-Builder Access Form for their Work Site at all times.

F. All Design-Builder and Subcontractor personnel shall identify themselves with their photo IDs and Design-Builder Access Form when asked at any time by MTA C&D (OR OTHER DESIGNEE OF THE MTA)-PD, MTA C&D (OR OTHER DESIGNEE OF THE MTA) personnel, NYPD, or Site Security Supervisor.

G. If any personnel are unable or unwilling to produce their required photo ID and or the Design-Builder Access Form, MTA C&D (OR OTHER DESIGNEE OF THE MTA) personnel may immediately report this matter to the appropriate authorities who will have the individual removed from the property.

H. Any personnel assigned to work in sensitive/critical MTA C&D (OR OTHER DESIGNEE OF THE MTA) facilities or areas may be required to wear a MTA C&D (OR OTHER DESIGNEE OF THE MTA)-issued identification card at all times while in the facility or area in addition to the Photo ID card.

I. Visitor Identification. Any authorized visitors of the Design-Builder shall have a government-issued photo identification which establishes the visitor's identity and documentation from the Design-Builder authorizing temporary access to the Work Site, with the name and signature of the Site Security Coordinator and the date and time of the authorized visit.

J. MTA C&D (OR OTHER DESIGNEE OF THE MTA)'s field personnel may perform ongoing spot checks of both the Design-Builder Photo ID cards and Design-Builder Access Forms as part of their daily inspection responsibilities.

K. All Design-Builder and Subcontractor personnel in Work Sites shall report unknown or unidentified personnel to the Site Security Supervisor. The Design- Builder shall immediately report any and all security incidents and infractions of security-related work rules to MTAPD or NYPD.

L. Other than officially-issued photo ID cards, no personnel shall be permitted to wear or display any item on their person that would identify them as MTA personnel.

3.07 BACKGROUND VERIFICATION

A. At a minimum, the Design-Builder shall engage a licensed and bonded investigative service to perform a background verification of any persons hired to perform Work for this Contract including:

1. Residence check.

2. Verification of American citizenship or visa for Foreign National status.

3. Professional license verification.

4. Check for sanctions.

5. Civil records check for gross negligence incidents.

6. Driver's license verification and check for serious infractions.

7. Criminal records check.

B. The authenticity of all Design-Builders employee documents may be verified by MTA C&D (OR OTHER DESIGNEE OF THE MTA). Where advisable, any aspect of the verification process may be referred to MTA C&D (OR OTHER DESIGNEE OF THE MTA) Police Department or other appropriate authority.

C. Background verifications performed prior to the Proposal submission date are not valid

for this Contract and must be re-performed.

3.08 COORDINATION REQUIREMENTS

A. The Design-Builder shall coordinate law enforcement emergency protocols and provide emergency contact information for law enforcement and other appropriate agencies to ensure:

1. Documented procedures in response to emergencies, incident reports, and assistance calls.

2. Appropriate patrol of the environment external to the Work Sites.

3. Provision of criminal investigative support.

B. In the event of a security incident, the Design-Builder shall contact law enforcement for an immediate response.

3.09 SITE ERECTION, INSTALLATION, AND APPLICATION

A. Comply with all Federal, State, and Local, laws, codes, rules, and regulations applicable during construction activities.

B. Illumination:

1. Provide and maintain exterior lighting furnishing adequate illumination of driveways and lanes.

2. Minimize glare and light spillage onto adjacent properties.

3. Provide illumination foot candle levels prescribed by the Illuminating Engineering Society of North America's (IES) The Lighting Handbook and OSHA requirements, set forth at 29 FCR Part 1926.56, for the particular application.

4. Illumination is not required for parking areas fenced and barricaded and not used between sunset and sunrise.

A. Site Inspections: In accordance with the various municipality building codes, a building official may periodically inspect existing Work Sites, or areas within, for compliance with the law with respect to posting. Alternatively, an inspection report from an authorized licensed professional engineer or architect may be accepted if the inspection and report specifies violations of the requirements of the Code with respect to the posting of floor load, fire grading, occupancy load, and use group of the building.

B. Periodic OSHA compliance inspections may be performed. If an OSHA compliance officer arrives at the Work Site and requests to see the person in

charge to get permission to perform an inspection and evaluation of work place conditions, cooperate with and assist the OSHA area compliance officer.

C. Mandatory Inspections. In accordance with the various municipality Building Codes, a building official will perform the following minimum quantity of inspections:

1. Foundation Inspection: Made after footing trenches are excavated and the necessary forms erected.

2. Mechanical, Plumbing, Fire Protection, and Electrical Inspection: Made after all pipes, ducts, and wiring are in place.

3. Frame and Masonry Inspection: Made after all framing, masonry walls, electrical, mechanical, firestopping, and bracing is in place.

4. Final Inspection: Upon completion of the building, structure, or facility, but before issuance of the Certificate of Use and Occupancy, a final inspection will be made.

D. Non-Conforming Work and Stop Work Orders.

1. Upon notice by a Stop Work Order from MTA C&D (OR OTHER DESIGNEE OF THE MTA) or any AHJ that Work on any station that is being prosecuted contrary to the provisions of various Building Code, or in an unsafe and dangerous manner, immediately stop Work.

E. All aspects of the Design-Builder's security processes and procedures will be subject to audit by MTA C&D (OR OTHER DESIGNEE OF THE MTA) or its representatives at any time and without prior notice at any location(s) identified in the course of the audit process.

3.10 SECURITY RISK ANALYSIS

A. The Design-Builder shall complete a security risk analysis of the Work Site(s), prepare findings, and include risk mitigation recommendations.

B. The Design-Builder shall take preemptive measures to preclude unauthorized access to these areas and to otherwise mitigate any security risks identified in its analysis.

3.11 LIRR SPECIFIC-SECURITY REQUIREMENTS

A. Provide a copy of Foreign National Registration Document (including I-94 cards and I-797 notices or Permanent Resident Cards) for each foreign national employee assigned to the Contract.

END OF SECTION

GENERAL REQUIREMENTS – SECTION 01 35 60 NOISE AND VIBRATION CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. Requirements for eliminating or minimizing noise and vibration generated by all construction activities, including temporary systems and facilities but excluding blasting operations, and of complying with applicable regulations, specification requirements, and noise and vibration limits specified within this Section.

B. Definitions

1. A-Weighted Noise Levels dB(A): Decibels (referenced to 20 micro- Pascal) as measured with A-weighing network of standard sound level meter.
2. Air-borne noise: noise, which is due to any construction activity that is not underground
3. Daytime: The period from 7:00 AM to 6:00 PM local time daily, except Sundays and legal holidays as defined in local ordinances.
4. Evening: The period from 6:00 PM to 10:00 PM local time daily, except Sundays and legal holidays as defined in local ordinances.
5. L10, dB(A) slow: The sound pressure level that is exceeded for 10% of the time for which the given sound is measured averaged over a 20-minute interval.
6. Lmax: Maximum sound level that occurs over a measured interval.
7. Night-Time: The period from 10:00 PM to 7:00 AM local time daily, except Sundays and legal holidays as defined in local ordinances
8. Noise and Vibration Sensitive Locations: Historic structures, residences, hotels, institutions, hospitals, office buildings and other locations identified herein
9. Noise Level Measurements: The processed data obtained from instruments specifically provided for measurement of noise levels as specified herein
10. Peak Particle Velocity (PPV): The maximum of the ground motion velocities measured in the vertical, longitudinal, and transverse directions measured in-inches per second (in/s). PPV is not the vector sum of the three components of motion
11. Surface Level Vibration: Vibration measured outside of surface structures at ground level
12. Vibration: The mechanical response of a building, structure or facility and measured as the maximum peak particle velocity (PPV)

13. Vibration Measurements: The processed data obtained from instruments specifically provided for measurement of vibration as specified herein

1.02 CITED STANDARDS

A. American National Standards Institute (ANSI)

1. S1.4 - Sound Level Meters
2. S1.13 - Methods of Measurement of Sound Pressure Levels
3. S2.4 - Method for Specifying the Characteristics of Auxiliary Analog Equipment for Shock and Vibration Measurements

B. ASTM International (ASTM)

1. C423 - Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
2. E90 - Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

C. Society of Automotive Engineers (SAE)

1. J994 - Alarm - Backup - Electric Laboratory Performance Testing
2. J1446 - On-Machine Alarm Test and Evaluation Procedure for Construction and General Purpose Industrial Machinery

1.03 NOTED RESTRICTIONS

A. The Design-Builder shall not operate noise or vibration generating construction equipment either at surface or below ground level at the Work Site until the following conditions have been met.

1. Noise and Vibration Control Plan has been approved by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

2. Sound level meters have been furnished to MTA C&D (OR OTHER DESIGNEE OF THE MTA).

3. Installation of noise and vibration control measures per the Noise and Vibration Control Plan have been implemented and can be readily monitored by MTA C&D (OR OTHER DESIGNEE OF THE MTA) for compliance.

B. Should monitoring during the performance of the Work indicate that the Design-Builder’s Noise and Vibration Control measures are not meeting the specified noise and vibration control limits, additional measures shall be provided by the Design-Builder for compliance at no cost to MTA C&D (OR OTHER DESIGNEE OF THE MTA). All delays to the Work resulting from implementation of such additional measures shall be responsibility of the Design-Builder

1.04 QUALITY CONTROL

A. Regulatory Requirements

1. Code of Federal Regulations (CFR)

   i. 29 CFR 1926 - Safety and Health Regulations for Construction (OSHA)

2. New York City Administrative Code (NYAC)

   i. Title 24, Environmental Protection and Utilities, Chapter 2 - Noise Control

3. New York City Department of Buildings Technical Policy and Procedure Notice No. 10/88 - Avoidance of Damage to Historical Structures

4. Rules of the City of New York (RCNY)

   i. Title 15 - Department of Environmental Protection (DEP), Chapter 6 - Interpolation of Allowable Sound Levels for Motor Vehicles

   ii. Title 15 - Department of Environmental Protection (DEP), Chapter 28 - Citywide Construction Noise Mitigation

B. Noise and vibration measurements: Contractor will provide access to the Construction Manager at any time and location to undertake measurements during performance of the Work.

PART 3 EXECUTION

3.01 GENERAL VIBRATION REQUIREMENTS

A. Perform Work within the permissible noise and vibration levels and in accordance with the Noise Mitigation Plan, Work schedule limitations, and procedures provided for in this Section and comply with all applicable Federal, State, Local, County, and City codes, regulations, and standards.

B. Other than those provided herein, be responsible for obtaining permits, variances, equipment certifications, and other documents required.

C. Modify noise and vibration control measures based on the results of the noise and vibration measurements undertaken and any reported nuisance conditions.

D. The sound level meter and the acoustic calibrator shall be calibrated and certified annually by the manufacturer or other independent certified acoustical laboratory. The sound level meter shall be field-calibrated using an acoustic calibrator, according to the manufacturer’s specifications, prior to and after each measurement.

3.02 MEASUREMENT OF VIBRATION LEVELS

A. MTA C&D (OR OTHER DESIGNEE OF THE MTA) may undertake independent monitoring of

noise and vibration.

B. Design-Builder shall undertake noise monitoring to verify compliance with the requirements of this Specification and any applicable regulation.

C. Construction Manager or any of the MTA's Field Engineers and Field Inspectors may issue a verbal Stop Work Order if the noise level limits set herein are exceeded and cannot be mitigated by the Design-Builder. Upon receipt of such verbal Stop Work Order, the Design-Builder shall stop all operations in the field that, in the sole opinion of the person issuing the verbal Stop Work Order, cause the exceedances of the specified noise levels. Any such verbal Stop Work Order shall be confirmed in writing by the Construction Manager within twelve (12) hours after issuance in the field.

3.03 VIBRATION LEVEL LIMITS

A. Vibration Level Limits for construction activities and operation of temporary systems and facilities shall be as follows:

1. Buildings and Above Ground Structures: The maximum peak particle vibration velocity (PPV) level limits, in any direction, for all construction activities at buildings, other than historical buildings, shall not exceed 1.92-inch per second as measured by a portable seismograph placed adjacent to or within the building at the location closest to the vibration source. The maximum permissible PPV shall be reduced if movement or cracking is detected or if the pre-construction survey identifies a building where a lower PPV should be imposed. It shall be assumed that vibration- inducing construction activities (other than blasting) shall have a 90-foot radius when considering the protection of buildings. Monitoring of vibration at such buildings shall be undertaken for the duration of construction activities that will influence the structure.

2. Tunnels, structures, and facilities: The maximum peak particle vibration velocity (PPV) level limits, in any direction, for all construction activities excluding pile driving is a maximum vibration level limit of 1.92-inch per second as measured by the Construction Manager. More restrictive vibration limits may be required by NYCT based on the proximity of certain facilities.

3. Use alternative procedures of construction and selection of proper combination of techniques that generate least overall vibration. Such alternative procedures include the following:

   i. Employ prefabricated structures instead of assembling at the Work Site.

   ii. VMS message signs.

B. Use construction equipment manufactured or modified to dampen noise and vibration emissions.

3.04 NOISE REQUIREMENTS

A. Comply with all the requirements of the New York City Noise Control Code and all

applicable regulations. Conduct all Work in compliance with the regulations.

B. The Design-Builder's attention is specifically called to NYC Administrative Code, Section 24-216(b), Noise Abatement Contract Compliance, which requires:

1. Devices and activities which will be operated, conducted, constructed or manufactured pursuant to this Contract and which are subject to the provisions of the New York City Noise Control Code shall be operated, conducted, constructed or manufactured without causing a violation of the code.

2. Such devices and activities shall incorporate advances in the art of noise control developed 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 Department of Environmental Protection.

C. At the Work Sites, take special precautions and noise abatement measures to reduce public exposure to noise.

D. If equipment becomes out of compliance with applicable regulations, the Design-Builder shall immediately repair it or take the equipment out of service to eliminate the source of noncompliance.

E. Conduct construction activities in such a manner that the noise levels two hundred (200) feet from the source of construction noise or at the nearest affected building, whichever is closer, shall not exceed the levels listed in Table 1 below.

TABLE 1
CONSTRUCTION NOISE LIMITS

Land Uses	Noise Level – L10 (dBA) (whichever is greater)	Lmax Level (dBA, slow)
DAYTIME (7 AM TO 6 PM Weekdays)		
Residences, theaters, churches, schools, hospitals	75 or Background + 5, whichever is higher	Background + 15 for impulsive sound[2] (2 seconds or less)
Commercial Areas	80 or Background + 5, whichever is higher	
Industrial Areas	80 or Background + 5,	

	whichever is higher	
EVENING (6 PM TO 11 PM Weekdays)		
Residences, theaters, churches, schools, hospitals	65 or Background + 5	Background + 15 for impulsive sound[2] (2 seconds or less)
Commercial Areas	80 or Background + 5	
Industrial Areas	80 or Background + 5	
NIGHT-TIME (11 PM TO 7 AM Weekdays)		
Residences, theaters, churches, schools, hospitals	60 or Background + 5	Background + 15 for impulsive sound[2] (2 seconds or less)
Commercial Areas	80 or Background + 5	
Industrial Areas	80 or Background + 5	
WEEKEND (Sat. 7 AM TO 6 PM)		
Residences, theaters, churches, schools, hospitals	65 or Background + 5	Background + 15 for impulsive sound[2] (2 seconds or less)
Commercial Areas	80 or Background + 5	
Industrial Areas	80 or Background + 5	
WEEKEND (Sat. 6 PM through Sunday to 7 AM Monday)		
Residences, theaters, churches, schools, hospitals	55 or Background + 5	Background + 15 for impulsive sound[2] (2 seconds or less)
Commercial Areas	80 or Background + 5	
Industrial Areas	80 or Background + 5	

3.05 NOISE MONITORING

A. General.

1. All measurements shall be performed using the A-weighting network and the "slow" response of the sound level meter.

2. The measurement microphone shall be fitted with an appropriate windscreen, shall be located five (5) feet above the ground, and shall be at least five (5) feet away from the nearest acoustically-reflective surface.

3. Noise monitoring shall not be performed during precipitation or when wind speeds are greater than fifteen (15) mph, unless the microphone is protected in such a manner as to negate the acoustic effects of rain and high winds

B. Monitoring should measure sound levels for public exposure to noise due to construction and deconstruction at the closest point adjacent to the site of the

Project in normal use by public while Work is in progress, but no less than fifty (50) feet away from noise generating activities on the Work Site. Measurements shall include L10 and Lmax. Noise level limits are averaged over 20-minute intervals. Lmax noise level limits are the maximum noise level that occurs over 20-minute intervals. Noise levels shall not exceed 90 dB(A) (L10,20) min dB(A) slow.

C. Where construction activities are within fifty (50) feet of the nearest affected building, take measurement from a point along the building lot-line such that a minimum fifty (50) foot distance is maintained between the sound level meter and the construction activity being monitored.

D. Noise Monitoring Equipment: All noise measurements shall be performed with an instrument that is in compliance with the criteria for a Type 1 (Precision) or Type 2 (General Purpose) Sound Level Meter as defined in the current version of ANSI Standard S1.4. The sound level meter shall be capable of measuring dBA noise levels and operating on the "slow" response setting and displaying Lmax and L10 over twenty (20) minute intervals in the field without the need for post-processing of data.

E. The sound level meter and the acoustic calibrator shall be calibrated and certified annually by the manufacturer or other independent certified acoustical laboratory. The sound level meter shall be field calibrated using an acoustic calibrator, according to the manufacturer's specifications, prior to and after each measurement. Submit copies of the certification to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for information.

F. Submit a current laboratory calibration conformance certificate for all noise measuring equipment prior to performing any noise level monitoring. Submit updated certificates following subsequent yearly calibrations, or upon completion of repairs to the instrument, for the duration of the Contract.

G. The Design-Builder shall conduct background noise measurements prior to construction. Take measurements for a minimum of twenty-four (24) hours for two (2) non-consecutive days from Monday through Saturday and on one (1) Sunday at all locations identified in the Noise Control and Monitoring Plan. These background noise measurements shall be used to establish the 'background + 5dBA' construction noise limits in Table 1 of this Section. The Design-Builder shall notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) of the schedule for conducting background measurements.

H. Construction Noise Monitoring: For a continuous 24-hour period, take noise level measurements at designated noise-sensitive locations during ongoing construction activities and other locations and at times designated by MTA C&D (OR OTHER DESIGNEE OF THE MTA). Monitor construction noise throughout each Work Day at specific construction locations.

I. Compliance noise measurements for the noise limits in Table 1 shall be performed at a sensitive noise receptor, which is the closest to the construction activity with a direct line of site to noise generating activities. These monitors shall record the Lmax and L10 values in 20-minute intervals over 24-hour periods.

J. Upon receipt of a valid noise complaint, the Design-Builder shall promptly perform noise measurements at the complainant's location during activities representative of the offending operation. The complaint response noise measurements shall be immediately submitted to MTA C&D (OR OTHER DESIGNEE OF THE MTA).

K. The Design-Builder shall prepare and submit monthly noise measurement reports to MTA C&D (OR OTHER DESIGNEE OF THE MTA), which shall include, but are not limited to:

1. A sketch and photo of the construction area and receptors. On the sketch, locate and identify all noise sources, path and location of all sensitive receptors. Identify distances between sources and receivers.

2. All activities occurring while performing noise measurements. For example, "augers banging on ground to clean soil from threads" or "heavy traffic passing near the sound level meter." In addition, any noise level exceedance requires an explanation.

3. Monthly field logs, site, noise measurement summary tables, and complaint responses.

4. List of noise reduction measures implemented, those to be implemented, the effectiveness of implemented reduction measures.

5. A schedule of the upcoming week's activities.

L. The Design-Builder shall comply with the Idling Regulations, set forth at New York City Administrative Code, Section 24-163.

3.06 NOISE CONTROL, MONITORING AND MITIGATION PLAN

A. The Design-Builder shall prepare and submit a Noise Control, Monitoring, and Mitigation Plan to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for review and approval. Do not operate noise generating equipment until the Plan has been approved by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

B. At a minimum, the Noise Control, Monitoring, and Mitigation Plan shall include the following information:

1. A scaled drawing of the construction site(s) indicating Contract name and number.

2. Legend of symbols and direction of North.

3. A description of the anticipated construction activities including construction equipment locations.

4. An inventory of construction equipment and associated noise levels (see

Paragraph 3.07, Noise Requirements).

5. Construction noise commitments.

6. Noise Level Calculations. Prepare calculations to predict both L10, 20 min and Lmax lot-line construction noise levels during applicable daytime, evening, and nighttime periods at the nearest residential and commercial buildings. Where necessary, include for the effect of any required mitigation.

7. Noise sensitive locations;

8. Noise monitoring locations including 24-hour noise monitoring stations and other locations and times designated by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

9. Type of noise measurement devices that shall be used.

10. Noise monitoring methods and procedures that shall be used.

11. Data reporting method that shall be used.

12. Description of noise reduction measures. The noise reduction measures shall include, but not be limited to, the noise reduction methods, materials, and equipment cited in Title 15, Rules of the City of New York, Chapter 28.

13. Background noise measurement methodology and results.

14. Complaint response procedures.

C. The Noise Control, Monitoring, and Mitigation Plan shall include a Construction Noise Mitigation section with the following information:

1. Mitigation measures (i.e. noise barriers, covering portable equipment with noise-insulating fabric so that it does not interfere with equipment operation, etc.).

2. A noise mitigation training program for all field-worker supervisory personnel, including subcontractors.

3. Ways to implement these alternate noise mitigation plans as soon as possible but no later than within 24-hours of receipt of a noise complaint.

D. The Design-Builder shall update and resubmit the Noise Control, Monitoring and Mitigation Plan every six (6) months after the initial Plan's approval date. Update and resubmit the Noise Control and Monitoring, and Mitigation Plan upon any major change in Work schedule, construction method, or equipment operation not included in the most recent plan. The Design-Builder shall re-establish background noise levels as required by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

E. The Construction Noise Plan shall be posted in a public area adjacent to a Work Site.

3.07 EQUIPMENT NOISE AND ATTENUATION REQUIREMENTS

A. Ensure that all equipment of the types listed in Table 2 and used at the surface of the Work Sites for a total duration greater than five (5) Days is tested for compliance with the stated noise emission limits.

B. Certify new equipment noise generation levels before placing the equipment into service at the Work Sites.

C. Test Procedures for Construction Equipment.

1. Operate engine-powered equipment at maximum governed rpm under full load conditions during the tests.

2. Take noise measurements at a distance of fifty (50) feet and a height of five (5) feet above ground level, with the equipment operating at maximum governed rpm resolutions per minute under full load conditions for a minimum period of one minute. Reduce measurements made at less than fifty (50) feet because of space limitations at the test site by the values given in Table 3 to estimate the 50-foot sound level.

3. If the noise levels obtained during the tests exceed those specified in Table 2 below, remove such equipment from use until such equipment is modified and retested, or substitute other equipment to meet the noise level requirements.

4. Submit an equipment noise report to MTA C&D (OR OTHER DESIGNEE OF THE MTA) for each item of equipment used on the surface of the construction site of the types listed in Table 2 below certifying compliance with equipment noise requirements.

5. Equipment noise certifications shall remain valid for a period of six (6) months only. Update equipment noise reports at least once every six (6) months and submit the reports for information.

6. If the equipment at the Work Sites does not meet the limits in Table 2 below, or falls out of compliance, take prompt remedial action to comply with the noise limits set forth in this Section.

TABLE 2[1] **CONSTRUCTION EQUIPMENT 50-FOOT NOISE EMISSION LIMITS**		
Equipment Description	Lmax Noise Limit at 50 ft. (dB(A), slow)	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	95	Impact
In situ Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous

[1]See FHWA Highway Construction Noise Handbook (August 2006), Table 7.3 Example of Possible Construction Equipment Noise Emission Criteria Limits, pg. 59.

Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Truck Backup Warning noise	85	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

TABLE 3
ADJUSTMENTS FOR CLOSE-IN EQUIPMENT NOISE MEASUREMENTS

Distance (Feet)	Measurement Values to be Subtracted from Measured Sound Level to Estimate Sound Level at 50 Feet (dB(A))
19-21	8
22-23	7
24-26	6
27-29	5
30-33	4
34-37	3
38-42	2
43-47	1
48-50	0

D. All construction equipment shall have sound deadening/noise suppression devices and shall incorporate the latest noise attenuation features to comply with the requirements of this Contract as listed below.

1. Use electrically operated hoists and compressor plants, unless otherwise permitted by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

2. Impact equipment such as pile drivers, jackhammers, and hoe rams shall be the quietest available and shall be equipped with a muffler.

3. Use quieter truck models equipped with bed liners capable of absorbing noise (thick rubber, spray-on liner, plywood, etc.).

4. Conduct the operation of dumping rock or other materials and carrying it away in trucks so that noise is kept to a minimum. Material dumping shall be from no more than five (5) feet above the receiving surface. Slamming tail gates shall be avoided to the extent possible to prevent unreasonable noise. Pads made of heavy rubber, leather or wood shall be used under tail gates, when practicable.

5. Use line hoppers and storage bins with sound deadening material.

6. Earthmoving and stationary equipment shall be noise attenuated.

7. Use silencers on air intakes of equipment.

8. All equipment shall have operating manufacturer's mufflers or approved equal with no rusted mufflers, or holes while in operation. Use maximum sized intake and exhaust mufflers on internal combustion engines.

9. Gears on machinery shall be designed to keep noise to a minimum.

10. The use of air or gasoline driven saws is prohibited, unless otherwise permitted by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

11. Route construction equipment and vehicles carrying rock, concrete or other materials over streets to cause the least amount of disturbance to residents in the vicinity of the Work.

12. Stagger construction vehicles to minimize noise and vibration nuisance.

13. Operate equipment to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential areas during nighttime hours.

E. The Design-Builder shall install equipment with back-up alarms that have either audible self-adjusting back-up alarms or manual adjustable alarms.

1. All vehicles entering the Work Sites shall comply with 29 CFR Part 1926 for backup alarms, specifically 1926.601(b)(4) and 1926.602(a)(9).

2. Installation and use of alarms shall be consistent with the performance requirements of the current versions of SAE J994, SAE J1446 and OSHA regulations.

3. No back-up alarms shall be permitted during weekdays after 10 PM and before 7 AM, and from Friday 10:00 PM to Monday 7:00 AM. During those hours, flagmen shall be used instead of back-up alarms.

3.08 NOISE ATTENUATION MATERIALS AND METHODS

A. Provide noise control materials (new or used) to attenuate construction noise such as, but not limited to, the following:

1. Noise curtain material shall be ¼ inch thick, 1.5 lbs/sq. ft. heavy vinyl with a noise absorptive quilt attached to one (1) side.

2. Acoustical materials and curtains shall have a sound transmission class (STC) rating of STC 30 or greater, based on sound transmission loss data according to ASTM Test Method E90. The noise absorptive face of the curtains shall have a noise reduction coefficient (NRC) rating of 0.85 or greater, based on sound absorption coefficient data taken according to ASTM Test Method C423.

3. Noise barriers (e.g., portable noise barriers, mats, equipment tents, etc.) shall be constructed to block the noise source from the receptor.

B. Used materials shall be sound and free of damage and defects and shall be of a quality and condition to perform their design function.

C. All equipment and materials specified in this Paragraph will remain the property of Design-Builder or Design-Builder's Subcontractors, vendors, and suppliers, as applicable.

3.09 CONSTRUCTION METHODS AND OPERATIONS

A. Operate equipment to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential areas during the nighttime hours.

B. Configure the Work Site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations and nearby buildings. Particular attention should be given to operations, associated muck removal, conveying, and secondary handling operations.

1. Furnish equipment operated by Design-Builder, vendors, suppliers, and Subcontractors on the Work Site with back-up alarms with either audible self-adjusting back-up alarms or manual adjustable alarms. The self- adjusting alarms shall automatically adjust to a minimum of 5-dBA and a maximum of 10-dBA over the surrounding background noise levels and have an operating range between 77- to 97-dBA. Set the manual adjustable alarms at the low setting, 87-dBA. Installation and use of alarms shall be

consistent with the performance requirements of the current revisions of SAE J994, SAE J1446, and OSHA regulations.

2. In no case shall the above restrictions limit Design-Builder's responsibility for compliance with applicable Federal, State, and Local safety ordinances and regulations and other sections.

3. The equipment and activities that will be operated, conducted, constructed or manufactured pursuant to this Contract must incorporate advances in the art of noise control developed for the kind and level of noise emitted or produced by such equipment and activities, in accordance with the regulations of NYCDEP, as cited in Title 15 of the Rules of the City of New York.

4. Maximize physical separation, as far as practicable, between noise generators and noise receptors.

5. Provide enclosures for stationary items of equipment and barriers around particularly noisy areas on-site.

6. Locate stationary equipment to minimize noise and vibration impact on the community, subject to approval by MTA C&D (OR OTHER DESIGNEE OF THE MTA).

7. Minimize noise-intrusive impacts during most noise sensitive hours.

8. Plan noisier operations during times of highest ambient noise levels.

9. Keep noise levels relatively uniform; avoid excessive and impulse noises.

10. Turn off idling equipment.

11. Phase in start-up and shutdown of site equipment.

12. Select truck routes for muck disposal so that noise from heavy-duty trucks will have minimal impact on sensitive land uses (e.g., residential).

13. Conduct truck loading, unloading and hauling operations so noise and vibration are kept to a minimum.

C. Route construction equipment and vehicles carrying soil, concrete, and other materials over streets and routes that will cause least disturbance to residents in vicinity of Work.

3.10 COMPLAINT RESPONSE REQUIREMENTS

A. The Design-Builder shall post clearly visible signs with a contact phone number for filing noise complaints.

B. The Design-Builder shall immediately notify MTA C&D (OR OTHER DESIGNEE OF THE MTA) when a noise complaint is received.

C. The Design-Builder shall promptly perform noise or vibration measurements at the complainant's location during activities representative of the offending operation. The complaint response measurements shall be immediately submitted to MTA C&D (OR OTHER DESIGNEE OF THE MTA).

D. The Design-Builder shall immediately use mitigation materials and methods to reduce noise levels or to alleviate nuisance conditions.

E. The Design-Builder shall document the results of the mitigation efforts and provide a written report to MTA C&D (OR OTHER DESIGNEE OF THE MTA) which will be made available to the party filing the complaint.

END OF SECTIONa