

*John H. ...*

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 2/4/12*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Crane
- JLG G5-18A Telehandler
- Komatsu FG25T Forklift
- Hyundai 30D Forklift
- Putzmeister Concrete Pump
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (2) Teamster
- (25) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (6) Masons
- (9) Carpenters
- (7) Iron Workers
- (2) Welders
- (1) Surveyors

**TOTAL = 74 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Teamster Steward
- Labor Steward
- Fuel Equipment
- General Clean up
- Top of Box "Bullgang"
- DCM Tandem Crane Pick (930pm-500am) (T&M)

##### Load Out

- Load out Scaffold and Materials with SGS's Crane
- Load out Trash/Scrap with SGS's Crane

**NIGHT SHIFT**

*No Work*

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts)

A handwritten signature in black ink, appearing to be "J. J. Johnson" or similar, written in a cursive style.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 2/5/12*

*WEATHER: Day: Clear 40 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Crane
- JLG G5-18A Telehandler
- Komatsu FG25T Forklift
- Hyundai 30D Forklift
- Putzmeister Concrete Pump
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (2) Teamster
- (25) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (6) Masons
- (9) Carpenters
- (7) Iron Workers
- (2) Welders
- (1) Surveyors

**TOTAL = 74 Persons**

### *WORK PERFORMED:*

*No Work*

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts)

*John F. Kennedy*

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 2/6/12*

*WEATHER: Day: Clear 50 Degrees*

*Night: Clear 30 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Crane
- JLG G5-18A Telehandler
- Komatsu FG25T Forklift
- Hyundai 30D Forklift
- Putzmeister Concrete Pump
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (2) Teamster
- (25) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (6) Masons
- (10) Carpenters
- (8) Iron Workers
- (2) Welders
- (1) Surveyors

**TOTAL = 76 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Load out Trash/Scrap with SGS’s Crane

### Demolition

- Remove Temporary Walls in Area #19-3
- Remove Minipiles in Areas #17-1 thru #19-1, #20-3
- Remove Level 1 Bracing in Area #18-1, #20-1
- Remove Pkg 9X Steel in Cortlandt St Stations

### Sub Grade Work

- Grade and Install Vapor Barrier in Vicinity of Short Minipile in Area #18-4 (T&M)

### Concrete Pour Preparation

- Install Dowels in Vesey St Wall for PAC LW in Area #20-0
- Clean Topping Slabs in Areas #17-1 thru #19-1
- Hang Chutes for Foam Concrete from Bents 175 to 195
- Clean Area for Foam Concrete from Bents 175 to 195
- Fabricate Formwork for PAC LW in Area #20-0

### Post Concrete Pour Work

- Grout Invert Slab in Area #18-1
- Strip Formwork for Invert Slab in Areas #17-1 thru #20-1
- Consolidate and Band EFCO Materials
- Patch around Columns in Areas #17-4 thru #20-4

### Structural Steel

- Install and Weld Caps on Piles in Areas #17-3 thru #19-3

### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

### Subcontractor Support

- Carabie (Mobilize with SGS's Crane, Run Air Line)

## **NIGHT SHIFT**

### Miscellaneous

- Teamster Steward

### Load Out

- Load out Trash/Scrap with SGS's Crane

### Subcontractor Support

- Carabie (Mobilize with SGS's Crane, Run Air Line)

## **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for PAC LW in Area #20-0

Eagle One: N/A

Atlantic: Removing Greenwich St Slurry Wall for PAC LW Openings (*T&M*)

Carabie: Mobilize Equipment and Materials

EJ: Standby (Day, Swing, and Graveyard Shifts)

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# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/1/11*

*WEATHER: Day: Clear 50 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- (2) Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (22) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Demolition

- Chip Columns to Proper Elevation for Invert Beams in Area #17-1
- Remove 9X Bracing within SW36 in Area #17-4

#### Sub Grade Work

- Clean Debris on 235' El. Ledge in AB Zone *(T&M)*

#### Concrete Pour Preparation

- Chip Pockets and Roughen Surfaces for Beams in Areas #17-4 thru #19-4
- Clean Topping Slab in Areas #17-4 thru #19-4
- Erect Scaffold in Areas #17-3 thru #19-3, #17-4 thru #19-4
- Install Formwork for Beams in Areas #17-4 thru #19-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Post Concrete Pour Work

- Remove Platform in Area #19-3
- Patch Ceiling in Area #20-4

#### Structural Steel

- Modify Rebar Support Joists in Area #17-0

#### Safety

- Inspect Stair Towers *(T&M)*
- Fall Protection

#### Survey

- As-built
- Layout

#### Quality Control

- Rebar QC for Invert Slab, Beams, SW 36 & Column

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (EFCO, Bathrooms, Rebar)

#### Load Out

- Switch Containers for Trash/Scrap on top of the 1&9 Box with SGS's Crane
- Drop Container for Trash/Scrap with Halmar's Crane
- Drop Container for Debris on 235' El. Ledge in AB Zone with Halmar's Crane *(T&M)*
- Load out Trash and Scrap Steel with North Crane

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support  
- J&E (Crane, Lights, Etc.)

Quality Control  
- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Beams, SW 36 & Column (3 Shifts of 35, 20, 21 -  
Manpower)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

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# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

DATE: 12/2/11

WEATHER: Day: Clear 50 Degrees

Night: Clear 40 Degrees

### *EQUIPMENT:*

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- (2) Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (22) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Demolition

- Chip Columns to Proper Elevation for Invert Beams in Area #17-1
- Prep Beam for Removal on H&M Wall

#### Concrete Pour Preparation

- Chip Pockets and Roughen Surfaces for Beams in Areas #17-4 thru #19-4
- Clean Topping Slab in Areas #17-4 thru #19-4
- Install Formwork for Beams in Areas #17-4 thru #19-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Cover Openings in Areas #17-1, #18-1

#### Post Concrete Pour Work

- Clean Concrete Blow out in Area #17-4
- Patch Ceiling in Area #20-4

#### Structural Steel

- Modify Rebar Support Joists in Area #17-0

#### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

#### Survey

- As-built
- Layout

#### Quality Control

- Rebar QC for Invert Slab, Beams, SW 36 & Column

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (Rebar)

#### Load Out

- Switch Container for Trash/Scrap on top of the 1&9 Box with SGS's Crane
- Switch Containers for Trash/Scrap with Halmar's Crane

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

### **GRAVEYARD SHIFT**

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunitite: N/A

J&E: Install Rebar for Invert Slab, Beams, SW 36 & Column (3 Shifts of 35, 20, 21 -  
Manpower)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, consisting of a large, stylized initial 'J' followed by a series of horizontal, wavy lines that extend to the right.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/3/11*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- (2) Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (22) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Cleanup

##### Demolition

- Chip Columns to Proper Elevation for Invert Beams in Area #17-1

##### Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

- Cover Openings in Areas #17-1, #18-1

Post Concrete Pour Work

- Load out Shotcrete Rebound from Area #10-3
- Load out EFCO Materials from Area #10-3
- Strip East Extension Formwork in Areas #19-3 thru #17-3

Quality Control

- Rebar QC for Invert Slab, Beams, SW 36 & Column

**SWING SHIFT**

Miscellaneous

- Teamster Steward

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Beams, SW 36 & Column (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be 'J. J. ...', located at the bottom right of the page.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/4/11*

*WEATHER: Day: Clear 55 Degrees*

*Night: Clear 45 Degrees*

### ***EQUIPMENT:***

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- (2) Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### ***LABOR FORCE:***

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (22) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### ***WORK PERFORMED:***

#### **DAY SHIFT**

*No Work*

#### **SWING SHIFT**

*No Work*

#### **GRAVEYARD SHIFT**

*No Work*

**SUBCONTRACTORS**

Superior Gunitite: N/A

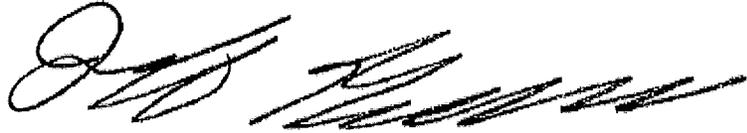
J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, consisting of a large, stylized initial 'J' followed by several horizontal, wavy lines.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/5/11*

*WEATHER: Day: Fog 60 Degrees*

*Night: Fog 45 Degrees*

### *EQUIPMENT:*

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- (2) Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (11) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 64 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Demolition

- Prep Beam for Removal on H&M Wall

### Concrete Pour Preparation

- Chip Pockets and Roughen Surfaces for Beams in Areas #17-4 thru #19-4
- Clean Doorways in PAC LW in Areas #17-4 thru #19-4
- Clean Topping Slab in Areas #17-4 thru #19-4
- Install Formwork for Beams in Areas #17-4 thru #19-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Cover Openings in Areas #17-1, #18-1

### Post Concrete Pour Work

- Clean Concrete Blow out in Area #17-4
- Strip Shoring for East Extension in Areas #17-3 thru #19-3
- Consolidate and Band East Extension Shoring for Load out in Areas #17-3 thru #19-3
- Patch Ceiling in Area #20-4

### Structural Steel

- Shoot Studs on bottom of Blast Plate for Beam Expansion in Areas #17-4 thru #19-4
- Weld Couplers on Longitudinal Beam for Invert Rebar in Area #18-0

### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

### Survey

- As-built
- Layout

### Quality Control

- Rebar QC for Invert Slab, Beams, SW 36 & Column

## **SWING SHIFT**

### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (Rebar, Bathrooms)

### Load Out

- Switch Container for Trash/Scrap on top of the 1&9 Box with SGS's Crane
- Switch Containers for Trash/Scrap with Halmar's Crane
- Load out Trash and Scrap Steel with North Crane

### Subcontractor Support

- J&E (Crane, Lights, Etc.)

### Quality Control

- Rebar QC for Invert Slab

## **GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunitite: N/A

J&E: Install Rebar for Invert Slab, Beams, SW 36 & Column (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be "J. J. [unclear]", written in a cursive style.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/6/11*

*WEATHER: Day: Rain 60 Degrees*

*Night: Rain 55 Degrees*

### *EQUIPMENT:*

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (11) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 64 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”
- Remove Water Line and Electrical Line for Tower #3 Formwork (T&M)

##### Demolition

- Prep Beam for Removal on H&M Wall

- Remove Level 1 Bracing in Area #17-1

#### Concrete Pour Preparation

- Chip Pockets and Roughen Surfaces for Added Beams in Areas #18-4, #19-4 (T&M)
- Chip Pockets and Roughen Surfaces for Beams in Areas #17-4 thru #19-4
- Drill for Beam Dowels in Areas #17-4 thru #19-4
- Clean Doorways in PAC LW in Areas #17-4 thru #19-4
- Clean Topping Slab in Areas #17-4 thru #19-4
- Install Formwork for Beams in Areas #17-4 thru #19-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Post Concrete Pour Work

- Strip Shoring for East Extension in Areas #17-3 thru #19-3
- Consolidate and Band East Extension Shoring for Load out in Areas #17-3 thru #19-3
- Patch Ceiling in Area #20-4

#### Structural Steel

- Weld Couplers on Longitudinal Beam for Invert Rebar in Area #18-0

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Quality Control

- Rebar QC for Invert Slab, Beams, SW 36 & Column

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (EFCO)

#### Load Out

- Switch Containers for Trash/Scrap with Halmar's Crane
- Load out Trash and Scrap Steel with North Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-4 thru #19-4

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

### **GRAVEYARD SHIFT**

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Beams, SW 36 & Column (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be "J. J. [unclear]", written in a cursive style.

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

DATE: 12/7/11

WEATHER: Day: Rain 65 Degrees

Night: Rain 45 Degrees

### *EQUIPMENT:*

- (2) T300 Bobcats
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (6) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (11) Dock Builders
- (2) Masons
- (14) Carpenters
- (1) Surveyors

**TOTAL = 64 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Demolition

- Prep Beam for Removal on H&M Wall
- Remove Level 1 Bracing in Area #17-1

#### Concrete Pour Preparation

- Chip Pockets and Roughen Surfaces for Added Beams in Areas #18-4, #19-4 (T&M)
- Chip Pockets and Roughen Surfaces for Beams in Areas #17-4 thru #19-4
- Drill for Beam Dowels in Areas #17-4 thru #19-4
- Clean Doorways in PAC LW in Areas #17-4 thru #19-4
- Clean Topping Slab in Areas #17-4 thru #19-4
- Install Formwork for Beams in Areas #17-4 thru #19-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Concrete Pour

- Finish the Balance of SW36, Column 17.1A, & Eastern Beams in Areas #17-4 thru #19-4
- Finish Additional Column in Area #18-4 (T&M)

#### Post Concrete Pour Work

- Remove Platform in Area #19-3
- Strip Shoring for East Extension in Areas #17-3 thru #19-3

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Beams

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (EFCO, Rebar)

#### Load Out

- Switch Containers for Trash/Scrap with Halmar's Crane
- Switch Container for Trash/Scrap with SGS's Crane
- Load out Trash and Scrap Steel with North Crane

#### Post Concrete Pour Work

- Remove Scaffold in Area #17-4

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: Shoot Balance of SW36, Column 17.1A, Added Column in Area #18, Eastern Beams in Areas #17-#19

J&E: Install Rebar for Invert Slab, Western Beams (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

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# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

DATE: 12/8/11

WEATHER: Day: Clear 45 Degrees

Night: Clear 35 Degrees

### *EQUIPMENT:*

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (5) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (16) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Demolition

- Prep Beam for Removal on H&M Wall

- Remove Level 1 Steel Gusset Plates in Area #17-1

#### Sub Grade Work

- Place Sub Base Stone South of SW 36 in Area #17-4
- Install Sub Drain Pipe Stone South of SW 36 in Area #17-4

#### Concrete Pour Preparation

- Chip Pockets and Roughen Surfaces for Added Beams in Areas #18-4, #19-4 (T&M)
- Chip Pockets and Roughen Surfaces for Beams in Areas #17-4 thru #19-4
- Drill for Beam Dowels in Areas #17-4 thru #19-4
- Clean Topping Slab in Areas #17-4 thru #19-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Post Concrete Pour Work

- Clean Shotcrete Rebound in Area #17-4
- Remove Scaffold in Areas #17-4 thru #19-4
- Patch Ceiling and Walls in Area #20-4

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Beams

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (Lumber, Concrete Slickline)

#### Load Out

- Switch Containers for Trash/Scrap with Halmar's Crane
- Load out Trash and Scrap Steel with North Crane

#### Post Concrete Pour Work

- Strip Styrofoam in Area #1-3

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Western Beams (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

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# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/9/11*

*WEATHER: Day: Clear 55 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (5) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (16) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Demolition

- Remove Level 1 Steel Gusset Plates in Area #17-1, #18-1

#### Sub Grade Work

- Place Sub Base Stone South of SW 36 in Area #17-4
- Install Vapor Barrier South of SW 36 in Area #17-4

#### Concrete Pour Preparation

- Drill for Topping Slab Dowels in PAC LW in Areas #17-3 thru #19-3 (*T&M*)
- Clean Topping Slab in Areas #17-4 thru #19-4
- Erect Scaffold in Areas #17-3 thru #19-3
- Install Formwork and Expansion Joint Material for Slab on Grade South of SW 36 in Area #17-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Re-shore Specific Piles for Invert Slab in Areas #17-3 thru #19-3

#### Post Concrete Pour Work

- Strip Styrofoam Slab Form in Area #1-3
- Consolidate and Package EFCO Formwork
- Clean up Shotcrete Rebound in Areas #17-4 thru #19-4
- Remove Platform in Area #19-3
- Patch Ceiling in Area #17-3

#### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Beams

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with Halmar's Crane (EFCO)

#### Load Out

- Switch Containers for Trash/Scrap with Halmar's Crane
- Load out Trash and Scrap Steel with North Crane

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Western Beams (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

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# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/10/11*

*WEATHER: Day: Clear 55 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (5) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (16) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward

##### Demolition

- Remove Level 1 Steel Gusset Plates in Area #17-1, #18-1

##### Concrete Pour Preparation

- Drill for Topping Slab Dowels in PAC LW in Areas #17-3 thru #19-3 (T&M)

- Install Formwork and Expansion Joint Material for Slab on Grade South of SW 36 in Area #17-4
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

Quality Control

- Rebar QC for Invert Slab, Western Beams, Slab on Grade

**SWING SHIFT**

Miscellaneous

- Teamster Steward

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Western Beams, Slab on Grade (3 Shifts of 35, 20, 21  
- Manpower)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, consisting of a large, stylized initial 'D' followed by several horizontal, wavy lines.

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/11/11*

*WEATHER: Day: Clear 40 Degrees*

*Night: Clear 30 Degrees*

### *EQUIPMENT:*

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (5) L15 Operators
- (2) Teamster
- (21) Laborers
- (5) Drill Runners
- (12) Dock Builders
- (2) Masons
- (16) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

*No Work*

#### **SWING SHIFT**

*No Work*

#### **GRAVEYARD SHIFT**

*No Work*

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be "J. J. [unclear]", written in a cursive style.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/12/11*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 35 Degrees*

### ***EQUIPMENT:***

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### ***LABOR FORCE:***

- (2) L14 Operators
- (5) L15 Operators
- (2) Teamster
- (20) Laborers
- (5) Drill Runners
- (13) Dock Builders
- (2) Masons
- (16) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### ***WORK PERFORMED:***

#### **DAY SHIFT**

##### **Miscellaneous**

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### **Load Out**

- Load Containers with Deck Mats & Timbers on 235' El. Ledge in AB Zone (*T&M*)

#### Concrete Pour Preparation

- Drill for Topping Slab Dowels in PAC LW in Areas #17-3 thru #19-3 (T&M)
- Drill for Beam Dowels in Area #17-4 thru #19-4
- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Fabricate Beams for Shoring Cantilevered Area of Invert Slab in Area #17-1

#### Concrete Pour

- Operate Concrete Pump
- Pour Slab on Grade South of SW 36 in Area #17-4
- Finish Slab on Grade South of SW 36 in Area #17-4

#### Post Concrete Pour Work

- Strip Formwork for Eastern Beams in Areas #17-4 thru #19-4
- Strip East Extension Formwork in Area #18-4
- Strip Platform in Area #17-3

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Beams, Topping Slabs

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with Halmar's Crane (EFCO)
- Misc. Picks with SGS's Crane (EFCO)

#### Load Out

- Switch Container for Trash/Scrap with SGS's Crane
- Load out Trash and Scrap Steel with North Crane

#### Post Concrete Pour Work

- Cover Slab on Grade with Blankets South of SW 36 in Area #17-4

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Western Beams, Topping Slabs (3 Shifts of 35, 20, 21

- Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

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# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/13/11*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (5) L15 Operators
- (2) Teamster
- (20) Laborers
- (5) Drill Runners
- (13) Dock Builders
- (2) Masons
- (16) Carpenters
- (1) Surveyors

**TOTAL = 66 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanup
- Top of Box “Bullgang”

##### Excavation

- Expose the South End of Footing 17 SW in Area #17-4

#### Concrete Pour Preparation

- Scarify the South End of Footing 17 SW in Area #17-4
- Drill for Topping Slab Dowels in PAC LW in Areas #17-3 thru #19-3 (*T&M*)
- Drill and Install Beam Dowels in Area #17-4 thru #19-4
- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Hoppers and Chutes on the Sides of the Box for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Formwork for Western Beams in Areas #17-4 thru #19-4
- Fabricate Beams for Shoring Cantilevered Area of Invert Slab in Area #17-1

#### Post Concrete Pour Work

- Patch Unused Dowels Holes in Western Beams in Areas #17-4 thru #19-4

#### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Beams, Topping Slabs

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (Heaters, Lumber)

#### Load Out

- Switch Container for Trash/Scrap with Halmar's Crane
- Switch Container for Trash/Scrap with SGS's Crane
- Load out Trash and Scrap Steel with North Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

#### Quality Control

- Rebar QC for Invert Slab

### **GRAVEYARD SHIFT**

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunitite: N/A

J&E: Install Rebar for Invert Slab, Western Beams, Topping Slabs (3 Shifts of 35, 20, 21  
- Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

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# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/14/11*

*WEATHER: Day: Clear 50 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- T300 Bobcats
- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (5) Drill Runners
- (13) Dock Builders
- (2) Masons
- (15) Carpenters
- (1) Surveyors

**TOTAL = 62 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Cleanu
- Top of Box “Bullgang”

##### Load Out

- Load Containers with Deck Mats & Timbers on 235' El. Ledge in AB Zone (T&M)

#### Excavation

- Expose the South End of Footing 17 SW in Area #17-4
- Excavate Material from beneath the Beams at the H&M Wall

#### Concrete Pour Preparation

- Scarify the South End of Footing 17 SW in Area #17-4
- Drill for Topping Slab Dowels in PAC LW in Areas #17-3 thru #19-3 (*T&M*)
- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Hoppers and Chutes on the Sides of the Box for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Formwork for Western Beams in Areas #17-4 thru #19-4

#### Post Concrete Pour Work

- Patch Ceilings in Area #20-4

#### Structural Steel

- Weld Studs for Western Beams in Areas #17-4 thru #19-4
- Fabricate Beams for Shoring Cantilevered Area of Invert Slab in Area #17-1
- Fabricate Beams for the Retrofit of the Level 1 Bracing in Area #16-1 (*T&M*)

#### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Beams, Topping Slabs

### **SWING SHIFT**

#### Miscellaneous

- Teamster Steward
- Misc. Picks with SGS's Crane (Steel for Level 1 Retrofit in Area #17-1) (*T&M*)

#### Load Out

- Switch Container for Trash/Scrap with SGS's Crane
- Load out Trash and Scrap Steel with North Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3

#### Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**GRAVEYARD SHIFT**

Subcontractor Support

- J&E (Crane, Lights, Etc.)

Quality Control

- Rebar QC for Invert Slab

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Western Beams, Topping Slabs (3 Shifts of 35, 20, 21  
- Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be "J. J. [unclear]", written in a cursive style.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/15/11*

*WEATHER: Day: Rain 60 Degrees*

*Night: Rain 45 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (5) Drill Runners
- (13) Dock Builders
- (2) Masons
- (15) Carpenters
- (1) Surveyors

**TOTAL = 62 Persons**

### *WORK PERFORMED:*

#### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

#### Load Out

- Load and Containers with Deck Mats & Timbers on 235’ El. Ledge in AB Zone and Remove with Sorbara Crane thru EIC (T&M)

- Switch Container for Trash/Scrap with SGS's Crane

#### Excavation

- Excavate Material from beneath the Beams at the H&M Wall

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Hoppers and Chutes on the Sides of the Box for the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Formwork for Western Beams in Areas #17-4 thru #19-4
- Install Formwork for Future Wall Beams in Areas #17-4 thru #19-4 (T&M)

#### Concrete Pour

- Finish Western Beams in Areas #17-4 thru #19-4
- Finish Future Wall Beams in Areas #17-4 thru #19-4 (T&M)

#### Structural Steel

- Fabricate Beams for Shoring Cantilevered Area of Invert Slab in Area #17-1
- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (T&M)

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- Layout
- As-built

#### Subcontractor Support

- Atlantic (Erect Scaffold in Areas #17-3 thru #19-3)

#### Quality Control

- Rebar QC for Invert Slab, Beams, Topping Slabs

### **SUBCONTRACTORS**

Superior Gunite: Shoot Western Beams and Future Wall Beams in Areas #17-4 thru #19-4

J&E: Install Rebar for Invert Slab, Western Beams, Topping Slabs (3 Shifts of 35, 20, 21 - Manpower)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*John H. ...*

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/16/11*

*WEATHER: Day: Clear 60 Degrees*

*Night: Clear 40 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (5) Drill Runners
- (13) Dock Builders
- (2) Masons
- (15) Carpenters
- (1) Surveyors

**TOTAL = 62 Persons**

### *WORK PERFORMED:*

#### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Mechanics, General Maintenance
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

#### Load Out

- Load Container with Deck Mats & Timbers on 235' El. Ledge in AB Zone and Remove with Halmar's Crane (T&M)

- Switch Container for Trash/Scrap with SGS's Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Hoppers and Chutes on the Sides of the Box for the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Post Concrete Pour Work

- Remove Scaffold for Future Wall Beams in Areas #17-4 thru #19-4 (T&M)
- Clean up Rebound from Future Wall Beams in Areas #17-4 thru #19-4 (T&M)
- Strip Formwork for Future Wall Beams in Areas #17-4 thru #19-4 (T&M)
- Patch Ceiling in Area #20-4

#### Structural Steel

- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (T&M)

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Topping Slabs

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 20)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A large, stylized handwritten signature in black ink, consisting of several loops and horizontal strokes, positioned at the bottom center of the page.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/17/11*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 30 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (3) Drill Runners
- (13) Dock Builders
- (2) Masons
- (13) Carpenters
- (1) Surveyors

**TOTAL = 58 Persons**

### *WORK PERFORMED:*

#### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”
- Misc. Picks with SGS’s Crane (EFCO)

#### Load Out

- Load Container with Deck Mats & Timbers on 235’ El. Ledge in AB Zone and Remove with SGS’s Crane (*T&M*)

- Switch Container for Trash/Scrap with SGS's Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Hoppers and Chutes on the Sides of the Box for the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Setup Heaters on Top of Box for the Invert Pour in Areas #17-#20
- Setup Pumps on Top of Box for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Structural Steel

- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (*T&M*)

#### Subcontractor Support

- J&E (Clean Up Scrap, Bending Machine)

#### Quality Control

- Rebar QC for Invert Slab, Topping Slabs

### **SUBCONTRACTORS**

Superior Gunite: N/A

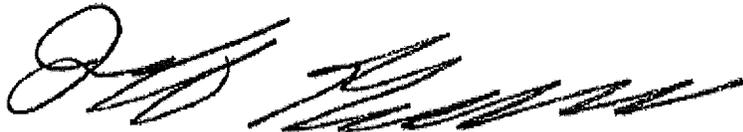
J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 20)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, consisting of a large, stylized initial 'J' followed by a series of horizontal, wavy lines that extend to the right.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/18/11*

*WEATHER: Day: Clear 30 Degrees*

*Night: Clear 20 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (3) Drill Runners
- (13) Dock Builders
- (2) Masons
- (13) Carpenters
- (1) Surveyors

**TOTAL = 58 Persons**

### *WORK PERFORMED:*

*No Work*

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabic: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*[Handwritten signature]*

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

DATE: 12/19/11

WEATHER: Day: Clear 50 Degrees

Night: Clear 30 Degrees

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (2) L15 Operators
- (1) Teamster
- (24) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 71 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Load Containers with Trash and Washout and Remove with Halmar’s Crane
- Switch Container for Trash/Scrap with SGS’s Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Post Concrete Pour Work

- Remove Scaffold for Wall Beams in Areas #17-4 thru #19-4
- Clean up Rebound from Wall Beams in Areas #17-4 thru #19-4
- Patch Ceiling and Walls in Area #20-4

#### Structural Steel

- Place Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4
- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (T&M)

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- As-built PAC LW Interferences (T&M)

#### Subcontractor Support

- Atlantic (Erect Scaffold in Areas #17-3 thru #19-3)

#### Quality Control

- Rebar QC for Invert Slab, Topping Slabs

### **NIGHT SHIFT**

#### Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Delayed due to DCM Radiation Testing (T&M)

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 20)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*John H. ...*

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/20/11*

*WEATHER: Day: Cloudy 50 Degrees*

*Night: Cloudy 40 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (2) L15 Operators
- (1) Teamster
- (24) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 71 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”
- Clean out Maintenance Shanty

##### Load Out

- Load Containers with Trash and Washout and Remove with Halmar’s Crane
- Switch Container for Trash/Scrap with SGS’s Crane

- Unload EFCO Formwork with SGS's Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

#### Post Concrete Pour Work

- Strip Formwork for Beams in Areas #17-4 thru #19-4
- Patch Ceiling and Walls in Area #20-4

#### Structural Steel

- Place Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4
- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (T&M)

#### Safety

- Inspect Stair Towers (T&M)
- Fall Protection

#### Survey

- Layout
- As-built
- As-built PAC LW Interferences (T&M)

#### Quality Control

- Rebar QC for Invert Slab, Topping Slabs

### **NIGHT SHIFT**

#### Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A large, stylized handwritten signature in black ink, appearing to be a cursive name, possibly "John J. [unclear]".

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/21/11*

*WEATHER: Day: Cloudy 60 Degrees*

*Night: Cloudy 40 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (2) L15 Operators
- (1) Teamster
- (24) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 71 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”
- Clean out Maintenance Shanty

##### Load Out

- Load Containers with Trash and Washout and Remove with Halmar’s Crane
- Switch Container for Trash/Scrap with SGS’s Crane

- Unload Lumber with SGS's Crane

Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

Post Concrete Pour Work

- Patch Ceiling and Walls in Area #20-4

Structural Steel

- Install Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4
- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (T&M)

Safety

- Inspect Stair Towers (T&M)
- Fall Protection

Survey

- Layout
- As-built

Quality Control

- Rebar QC for Invert Slab, Topping Slabs

**NIGHT SHIFT**

Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

**SUBCONTRACTORS**

Superior Gunitite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A large, stylized handwritten signature in black ink, consisting of several loops and horizontal strokes, positioned at the bottom center of the page.

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

DATE: 12/22/11

WEATHER: Day: Cloudy 60 Degrees

Night: Cloudy 50 Degrees

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (2) L15 Operators
- (1) Teamster
- (24) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 71 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Load Containers with Material generated by EIC with Halmar’s Crane (T&M)
- Load Containers with Trash and Washout and Remove with Halmar’s Crane
- Switch Container for Trash/Scrap with SGS’s Crane

#### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Drill base of Future Wall for Topping Slab Rebar in Area #17-3
- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4

#### Post Concrete Pour Work

- Strip Beam Formwork in Areas #17-4 thru #19-4
- Patch Ceiling and Walls in Area #20-4

#### Structural Steel

- Install Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4
- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (*T&M*)

#### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

#### Survey

- Layout
- As-built

#### Subcontractor Support

- Atlantic (Erect Scaffold in Areas #17-3 thru #19-3)

#### Quality Control

- Rebar QC for Invert Slab, Topping Slabs

### **NIGHT SHIFT**

#### Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 3)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*John F. Kennedy*

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/23/11*

*WEATHER: Day: Clear 50 Degrees*

*Night: Clear 30 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (2) L14 Operators
- (2) L15 Operators
- (1) Teamster
- (24) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 71 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Switch Container for Trash/Scrap with SGS’s Crane

##### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Chop base of Future Wall for Topping Slab Rebar in Area #17-3
- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4

Post Concrete Pour Work

- Patch Ceiling and Walls in Area #20-4

Structural Steel

- Install Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4
- Install Bracing for the Retrofit of the Level 1 Bracing in Area #16-1 (*T&M*)

Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

Survey

- Layout
- As-built

Quality Control

- Rebar QC for Invert Slab, Topping Slabs

**NIGHT SHIFT**

Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: Core Drilling for Temporary Wall Removal (Man Power – 2)

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A large, stylized handwritten signature in black ink, appearing to be the name of the project manager or contractor, located at the bottom center of the page.

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/24/11*

*WEATHER: Day: Clear 40 Degrees*

*Night: Clear 30 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 67 Persons**

### *WORK PERFORMED:*

*No Work*

### **SUBCONTRACTORS**

Superior Gunitite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*John F. Kennedy*

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/25/11*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 67 Persons**

### *WORK PERFORMED:*

*No Work*

### **SUBCONTRACTORS**

Superior Gunitite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*John F. Kennedy*

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/26/11*

*WEATHER: Day: Clear 45 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- IHI 80VX Mini Excavator
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (3) L15 Operators
- (1) Teamster
- (20) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 67 Persons**

### *WORK PERFORMED:*

*No Work*

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

*John H. ...*

# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/27/11*

*WEATHER: Day: Rain 55 Degrees*

*Night: Rain 35 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (1) Teamster
- (22) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 69 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Switch Container for Trash/Scrap with SGS’s Crane
- Remove Debris from H&M Wall with Sorbara’s East Tower Crane
- Demobilize IHI 80VNX with Sorbara’s West Tower Crane
- Load Containers with Material generated by EIC with Halmar’s Crane (*T&M*)

Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Chop base of Future Wall for Topping Slab Rebar in Area #17-3
- Clean up SGS Debris in Area #18-3 (T&M)
- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4
- Grout Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4

Post Concrete Pour Work

- Consolidate and Package Scaffolding for Load out in Areas #17-#20
- Strip Formwork for Beams in Areas #17-4 thru #19-4
- Remove Scaffold in Areas #17-3 thru #19-3
- Patch Columns in Area #17-1

Safety

- Inspect Stair Towers (T&M)
- Fall Protection

Survey

- Layout
- As-built

Quality Control

- Rebar QC for Invert Slab, Topping Slabs

**NIGHT SHIFT**

Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A large, stylized handwritten signature in black ink, consisting of several loops and horizontal strokes, positioned at the bottom right of the page.



# ***TUTOR PERINI CORPORATION***

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/28/11*

*WEATHER: Day: Clear 50 Degrees*

*Night: Clear 30 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (1) Teamster
- (22) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 69 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Load Containers with Material generated by EIC with Halmar’s Crane (*T&M*)

##### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3

- Hang Tarps for Heating the Invert Pour in Areas #17-#20
- Modify Concrete Slickline for the Invert Pour in Areas #17-#20
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4
- Grout Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4

#### Post Concrete Pour Work

- Clean up Rebound and Washout in Area #17-4
- Consolidate and Package Scaffolding for Load out in Areas #17-#20
- Strip Misc. Formwork in Areas #17 thru #20
- Patch Columns in Area #17-1

#### Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

#### Survey

- Layout
- As-built

#### Quality Control

- Rebar QC for Invert Slab, Topping Slabs

### **NIGHT SHIFT**

#### Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be 'J. J. [unclear]', written in a cursive style.

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

DATE: 12/29/11

WEATHER: Day: Clear 35 Degrees

Night: Clear 25 Degrees

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (1) Teamster
- (22) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 69 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”

##### Load Out

- Switch Container for Trash/Scrap with SGS’s Crane
- Load Containers with Material generated by EIC with Halmar’s Crane (T&M)

##### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4
- Grout Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4

Post Concrete Pour Work

- Clean up Rebound and Washout in Area #17-4
- Consolidate and Package Scaffolding for Load out in Areas #17-#20
- Strip Misc. Formwork in Areas #17 thru #20

Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

Survey

- Layout
- As-built

Quality Control

- Rebar QC for Invert Slab, Topping Slabs

**NIGHT SHIFT**

Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A large, stylized handwritten signature in black ink, consisting of several loops and horizontal strokes, positioned at the bottom center of the page.

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/30/11*

*WEATHER: Day: Clear 50 Degrees*

*Night: Clear 35 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (1) Teamster
- (22) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 69 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Master Mech., Maint. Fm, Teamster Steward
- Labor & Dock Builder Steward
- Fuel Equipment
- General Clean up
- Top of Box “Bullgang”
- Maintain Concrete Pumps

##### Concrete Pour Preparation

- Clean Topping Slab in Areas #17-3 thru #19-3
- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4

- Grout Shoring Towers to Replace Temporary Walls in Areas #17-4 thru #19-4

Post Concrete Pour Work

- Strip Misc. Formwork in Areas #17 thru #20

Structural Steel

- Install Weldable Couplers for Invert Rebar on Longitudinal Beam in Area #18-0

Safety

- Inspect Stair Towers (*T&M*)
- Fall Protection

Survey

- Layout
- As-built

Subcontractor Support

- Trim PAC LW Tie Downs in Area #20-4

Quality Control

- Rebar QC for Invert Slab, Topping Slabs

**NIGHT SHIFT**

Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1

**SUBCONTRACTORS**

Superior Gunite: N/A

J&E: Install Rebar for Invert Slab, Topping Slabs (Manpower - 12)

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be 'J. J. [unclear]', written in a cursive style.

# **TUTOR PERINI CORPORATION**

**Greenwich St Corridor – WTC 224.545**

## **DAILY REPORT**

Prepared by: Steve Nastro

*DATE: 12/31/11*

*WEATHER: Day: Cloudy 55 Degrees*

*Night: Cloudy 45 Degrees*

### *EQUIPMENT:*

- TL230 Series 2 Takeuchi
- Grove RT600E Cranes
- JLG G5-18A Telehandler
- (2) Putzmeister Concrete Pumps
- 400 CFM Compressor
- 1600 CFM Compressor
- 900-1150 CFM Compressor
- Assorted Lifts Boom/Scissor
- Assorted Welding Machines

### *LABOR FORCE:*

- (1) L14 Operators
- (4) L15 Operators
- (1) Teamster
- (22) Laborers
- (3) Drill Runners
- (18) Dock Builders
- (2) Masons
- (17) Carpenters
- (1) Surveyors

**TOTAL = 69 Persons**

### *WORK PERFORMED:*

#### **DAY SHIFT**

##### Miscellaneous

- Labor & Dock Builder Steward

##### Concrete Pour Preparation

- Install Formwork for Invert Slab in Areas #17-1 thru #20-1
- Install Re-shoring for Overloaded Piles in Area #20-4

##### Structural Steel

- Install Weldable Couplers for Invert Rebar on Longitudinal Beam in Area #18-0

#### **SUBCONTRACTORS**

Superior Gunite: N/A

J&E: N/A

Eagle One: N/A

Atlantic: N/A

Carabie: N/A

EJ: Standby (Day, Swing, and Graveyard Shifts) (Man Power – 3)

A handwritten signature in black ink, appearing to be "J. J. [unclear]". The signature is written in a cursive style with a large initial "J" and a long horizontal flourish at the end.



**THE PORT AUTHORITY OF NY & NJ**

August 14, 2009

**VIA FACSIMILE AND UPS NEXT DAY DELIVERY**

Tutor Perini Corporation  
1022 Lower South Street  
Peekskill, NY 10566

**SUBJECT: WORLD TRADE CENTER - GREENWICH STREET CORRIDOR  
CONSTRUCTION – CONTRACT WTC-224.545  
PURCHASE ORDER UWTC-224545**

Gentlemen:

The Port Authority of New York and New Jersey (the “Port Authority”) hereby accepts Tutor Perini Corporation’s (Tutor Perini”) Proposal dated August 11, 2009 to perform the Work of Contract WTC-224.545 for One Hundred Seventy-Seven Million Six Hundred Seventy-Seven Thousand (\$177,677,000.00) Dollars subject, however, to the following conditions:

1. The award of Contract WTC-224.545 is subject to the terms and conditions of the Monitoring Agreement dated June 22, 2009 executed by Tutor Perini. A copy of the Monitoring Agreement is attached hereto as Attachment A.
2. Tutor Perini shall submit to the Port Authority for approval an MBE/WBE Participation Plan. Tutor Perini will not be permitted to perform Work at the location where the Work is to be performed until the MBE/WBE Participation Plan is approved by the Port Authority.
3. This award shall have no force or effect until the satisfaction of the requirements applicable to this award of the Gubernatorial Review Legislation, without the occurrence of a gubernatorial veto, as specified in such legislation (the date on which such requirements are satisfied, without the occurrence of a gubernatorial veto, shall be the effective date of this award). The Port Authority shall deliver prompt written notice to Tutor Perini, as to either (a) any gubernatorial veto of the transaction contemplated by this award or (b) the occurrence of the satisfaction of the Gubernatorial Review Legislation and the effective date of this award. For these purposes, “Gubernatorial Review Legislation” shall mean Chapter 333 of the Laws of New Jersey of 1927, as amended by Chapter 20 of the Laws of New Jersey of 1972 (N.J.S.A. 32:2-6 to 9), and Chapter 700 of the Laws of New York of 1927, as amended by Chapter 215 of the Laws of New York of 1956 and Chapter 602 of the Laws of New York of 1972 (McK. Unconsol. Laws §§ 7151-7154).

One Madison Avenue  
New York, NY 10010



The agreement to perform all of the Work under WTC-224.545 shall consist of the following, stated in order of precedence in case of conflict or inconsistency:

1. This Award Letter.
2. Addenda 1 through 13 of the Proposal (order of precedence will be in reverse addendum number order).
3. The Contract Booklet and Drawings

Contract WTC-224.545, as modified by this Award Letter, shall be the complete and exclusive statement of the agreement between the parties, notwithstanding the existence or occurrence of any other document, discussions, meetings, representations or agreements as of the date of acceptance of this Award Letter by Tutor Perini.

The Port Authority requires you to furnish a Performance and Payment Bond. Copies of the required bond forms are enclosed, which should be executed by Tutor Perini Corporation and its surety and returned within seven (7) days to Teri Flores of the Port Authority, 1 Madison Avenue, 7<sup>th</sup> Floor, New York, NY 10010 along with a copy of the invoice from the bonding company and bond broker, if applicable, for the premium for said bond.

Your attention is directed to the clause of the contract entitled "Time for Completion and Damages for Delay" and to the fact that before you may commence performance of the work you must furnish whichever of the documents in that clause are applicable.

Your attention is further directed to the clause of the contract entitled "Safety Provisions" and to the fact that before you may commence performance of the work Tutor Perini shall appoint an individual as its Safety Director to ensure that the requirements of this clause are met.

Subject to the provisions of the Form of Contract, including those of the clause entitled "Extra Work Orders", the Director shall have the authority to order any item of Extra Work.



**THE PORT AUTHORITY OF NY & NJ**

Forwarded herewith for Tutor Perini's use and compliance are "General Instructions Relating to the Direction and Processing of Correspondence and of Those Other Items Specified to be Submitted to the Port Authority Under the Terms of the Contract".

If the above meets with Tutor Perini's approval, please indicate Tutor Perini's concurrence by countersigning the enclosed duplicate original of this letter and returning it to Ms. Terry Flores, The Port Authority of New York and New Jersey, One Madison Avenue, 7<sup>th</sup> Floor, New York, NY 10010.

**In order to ensure that payments are processed properly, please include the above-referenced Purchase Order No. on all payment invoices and correspondence.**

Very truly yours,

THE PORT AUTHORITY OF NEW YORK  
AND NEW JERSEY

BY *D. B. Tweedy*  
Executive Director *For PAW*

CORPORATE SEAL

ACCEPTED AND AGREED TO:  
TUTOR PERINI CORPORATION.

By: *James M. Lary*  
(Signature of Officer of Tutor Perini Corporation)

*SR. VICE PRESIDENT, TUTOR PERINI CORP. & PRESIDENT, TUTOR PERINI CIVIL GROUP*  
(Type or Print Name of Officer of Tutor Perini Corporation)

*Aug. 17, 2009*  
(Type or Print Date)



**THE PORT AUTHORITY OF NY & NJ**

August 14, 2009

**VIA FACSIMILE AND UPS NEXT DAY DELIVERY**

Tutor Perini Corporation  
1022 Lower South Street  
Peekskill, NY 10566

**SUBJECT: WORLD TRADE CENTER - GREENWICH STREET CORRIDOR  
CONSTRUCTION – CONTRACT WTC-224.545  
PURCHASE ORDER UWTC-224545**

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*One Madison Avenue  
New York, NY 10010*



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Subject to the provisions of the Form of Contract, including those of the clause entitled “Extra Work Orders”, the Director shall have the authority to order any item of Extra Work.



**THE PORT AUTHORITY OF NY & NJ**

Forwarded herewith for Tutor Perini's use and compliance are "General Instructions Relating to the Direction and Processing of Correspondence and of Those Other Items Specified to be Submitted to the Port Authority Under the Terms of the Contract".

If the above meets with Tutor Perini's approval, please indicate Tutor Perini's concurrence by countersigning the enclosed duplicate original of this letter and returning it to Ms. Terry Flores, The Port Authority of New York and New Jersey, One Madison Avenue, 7<sup>th</sup> Floor, New York, NY 10010.

**In order to ensure that payments are processed properly, please include the above-referenced Purchase Order No. on all payment invoices and correspondence.**

Very truly yours,

Approved as to form:

THE PORT AUTHORITY OF NEW YORK  
AND NEW JERSEY

Darrell Buchbinder  
General Counsel

BY *[Signature]* For  
Executive Director *cow*

*FP*  
BY *R. J. Cypelli*  
*Ex Tim Stickel* Attorney  
DATE *8/14/09*

CORPORATE SEAL

ACCEPTED AND AGREED TO:  
TUTOR PERINI CORPORATION.

By: \_\_\_\_\_  
(Signature of Officer of Tutor Perini Corporation)

\_\_\_\_\_  
(Type or Print Name of Officer of Tutor Perini Corporation)

\_\_\_\_\_  
(Type or Print Date)



**THE PORT AUTHORITY OF NY & NJ**

C402R12294253  
PQ

R.C.

DDP

**WORLD TRADE CENTER**

**GREENWICH STREET CORRIDOR CONSTRUCTION**

**CONTRACT WTC-224.545**

**JUNE 2009**

**This proposal is not complete unless bidder's  
Signature appears on page 29**



# THE PORT AUTHORITY OF NY & NJ

## COMMISSIONERS

Anthony R. Coscia, Chairman  
Virginia S. Bauer  
Michael J. Chasanoff  
Stanley E. Grayson  
Fred P. Hochberg  
H. Sidney Holmes III

Henry R. Silverman, Vice-Chairman  
Davids S. Mack  
Raymond M. Pocino  
Anthony J. Sartor  
David S. Steiner

---

## EXECUTIVE STAFF

Christopher O. Ward, Executive Director  
Susan Bass Levin, Deputy Executive Director  
Ernesto L. Butcher, Chief Operating Officer  
Darrell Buchbinder, General Counsel  
David B. Tweedy, Chief of Capital Planning  
A. Paul Blanco, Chief Financial Officer  
Louis J. LaCapra, Chief Administrative Officer  
Francis J. Lombardi, Chief Engineer  
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Karen E. Eastman, Secretary

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Richard M. Larrabee, Director,  
Port Commerce Department

Steve Plate, Director  
World Trade Center Construction

Michael B. Francois, Director  
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Attachment "B" Greenwich Corridor Site Access and Staging Restrictions, drawings GCSA-001 and GCSA-002

Attachment "C" Inventory of Stock

## INFORMATION FOR BIDDERS

### 1. FORM AND SUBMISSION OF PROPOSALS

The Port Authority of New York and New Jersey, hereinafter called "the Authority", invites Proposals in the annexed form. Proposals will be received until 2:30 P.M. on Monday, June 22, 2009 in the office of the Director of Procurement, Attn: Bid Custodian, One Madison Avenue, 7th Floor, New York, NY 10010 at which time they will be opened and publicly read in the Bid Room. Each Proposal must be contained in the envelope furnished by the Authority, which shall be sealed and conspicuously endorsed with the bidder's name and the number of this Contract in the space provided. This Contract booklet shall not be unstapled or taken apart.

The Proposal must be submitted upon the blank form bound herewith and must give all information required. <sup>1</sup> The Proposal must be signed and the acknowledgment taken on the appropriate form following the Proposal.

No effort is made to emphasize any particular provision of the Contract, but bidders must familiarize themselves with every provision and its effect.

### 2. PAPERS ACCOMPANYING PROPOSALS

Each Proposal must be accompanied by the following papers, which, unless otherwise indicated, should be enclosed with the Proposal:

- A. If the bidder be a corporation, a statement of the names and residences of its officers, which should be included on the page following the Proposal.  
  
 If the bidder be a partnership, a statement of the names and residences of its members, indicating which are general and which are special partners, which should be included on the page following the Proposal.  
  
 If the bidder be an individual, a statement of his residence, which should be included on the page following the Proposal.
- B. Each proposer shall provide the following information for its firm or each joint venture:
  - 1.) Certified financial statements, including applicable notes, reflecting the bidder's assets, liabilities, net worth, revenues, expenses, profit or loss and cash flow for the most recent calendar year or the bidder's most recent fiscal year.
  - 2.) Where such certified financial statements are not available, then either reviewed or compiled statements from an independent accountant setting forth the information described in Paragraph 1, above.

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<sup>1</sup> While two or more copies of this booklet may be furnished to each prospective bidder, only one should be submitted. The extra copies are for the bidders use.

- 3.) Where neither certified financial statements nor financial statements from an independent accountant are available, then financial statements containing the information described in Paragraph 1, above, prepared directly by the bidder. However, such financial statements must be accompanied by a signed copy of the bidder's most recent Federal income tax return and a statement in writing, signed by a duly authorized representative of the bidder, that such statements accurately reflect the current financial condition of the bidder.

Where statements submitted pursuant to either Paragraph 1 or 2, above, show the position of the bidder as of a date more than forty-five (45) days prior to the date on which Proposals are opened, the bidder shall also submit a statement in writing signed by a duly authorized representative of the bidder, that the present financial condition of the bidder is at least as good as that shown on the statements submitted.

- 4.) A statement of work which the bidder has on hand, including any work on which a bid has been submitted, containing a description of the work, the dollar value, the location by city and state, the current percentage of completion and the expected date for completion.
- 5.) Fill in below the name and address of the bidder's chief banking representative handling the bidder's account.

Banking Institution: BANK OF AMERICA  
 Address: 100 FEDERAL ST.  
BOSTON, MA 02110  
 Bank Representative: JENN MANTHORNE  
 Telephone Number: (417) 434-4425

- 6.) Fill in below the bidder's Federal Employer Identification Number (i.e., the number assigned to firms by the Federal Government for tax purposes); the bidder's Dun and Bradstreet number, if any; the name of any other credit service to which the bidder has furnished information and the number, if any, assigned by such service to the bidder's account.

Exemption (1)

Federal Employer Identification No.

Exemption (1)

Dun and Bradstreet No.

NA

NA

Other Credit Service

Account No

- C. The Form of Contract bound herewith, with the bidder's Lump Sum inserted in the clause thereof entitled "General Agreement". The amount must be given both in figures and in writing and, in case of discrepancy, the writing shall control. One copy of each addendum, if any, issued during the bidding period shall be initialled and attached to the Proposal, but any Proposal submitted without such addendum initialled and attached will nevertheless be construed as though such addendum had been initialled and attached.
- D. The bidder's analysis of bid filled in on the form furnished herewith. The Contractor will be required to furnish a more detailed analysis of bid at a later date in accordance with the requirements of the Section of Division 1 of the Specifications referring to the Analysis of Bid.

### 3. QUALIFICATION INFORMATION

At any time after the opening of Proposals, the Director may give oral or written notice to one or more bidders to attend a pre-award meeting and to furnish the Authority with information relating to his qualifications to perform the Work, including the following, which information shall be furnished within seven (7) days thereafter:

- A. The bidders MBE/WBE Participation Plan submitted on the form annexed hereto as Schedule C (see the clause hereof entitled "Minority and Women's Business Enterprises Program") and a detailed list of the plant and equipment which the bidder proposes to use, indicating which portions it already possesses.
- B. Detailed information relating to work which the bidder has completed for others, including personal and corporate references, sufficient to the Authority to determine the Contractor's responsibility, experience and capacity to perform the Work. If required by the Director, the foregoing information shall include information to demonstrate to the satisfaction of the Director that the Contractor has within the past five years been a contractor on at least one contract of the same general type, extent and complexity as the Contract on which the Proposal has been submitted, and completed the work skillfully, in a satisfactory manner and on time.
- C. Information to supplement a) data shown in the financial statements and the statement of work on hand required to be submitted with the Proposal; and b) any statement submitted under the clause hereof entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Suspension, Debarment, Disqualification, Prequalification Denial or Termination, etc, Disclosure of Other Required Information", Certification of Participation in a State-Registered Apprenticeship Program or "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent Fee or Other Fee".
- D. Moreover, in the event that the bidder's performance on a past Port Authority or PATH contract or contracts has been rated less than satisfactory, the Director may give oral or written notice to the bidder to furnish information demonstrating to the satisfaction of the Director that, notwithstanding such rating, such performance was, in fact, satisfactory, or that the circumstances which gave rise to such unsatisfactory rating have changed or will not apply to performance of the Contract, and that such performance will be satisfactory.

- E. If the bidder has performed a contract for the States of New York or New Jersey, or any governmental entity within such States and has filed a questionnaire or other document required to be submitted in order for the bidder to qualify to perform the contract, the bidder may be requested by the Director to submit the most recent completed questionnaire or other such document, or if the most recent completed questionnaire or other such document is not available, to submit a written statement indicating the approximate date of the contract and the name of the governmental entity which awarded them the contract.
- F. Any additional information relevant to the bidder's Proposal including information to supplement the bidder's initial analysis of bid.
- G. Detailed information in writing setting forth the affirmative action which the bidder proposes to take to ensure equal employment opportunities as required by clause A of the clause of the Form of Contract entitled "No Discrimination In Employment", and subparagraph (1) of the section entitled "Equal Employment Opportunity" of Chapter VIII of the Form of Contract entitled "Department of Transportation Requirements". This action which for the purpose of convenience is referred to as an "affirmative action program", shall be in addition to the action required under clauses B through G of the "No Discrimination in Employment" clause and subparagraphs (2) through (7) of the section entitled "Equal Employment Opportunity" of Chapter VIII. Solely for the information of the bidder, and without in any way limiting or defining the affirmative action program to be proposed by the bidder, there are available for inspection in the office of the General Manager, Business and Job Opportunity, Office of Regional and Economic Development of the Port Authority of New York and New Jersey, copies of sample affirmative action programs.
- H. The form entitled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tiered Covered Transactions" and the form entitled "Certification Regarding Lobbying Pursuant to 31 U.S.C. 1352" and, if applicable, the form entitled "Disclosure of Lobbying Activities Pursuant to 31 U.S.C. 1352" Copies of these forms, accompanied by instructions for completing each, are set forth following the clause herein entitled, "Integrity Monitor."

In the event that any of the foregoing is requested and is not furnished within seven days thereafter or within such additional time as the Director, in his sole discretion, may allow, the Authority may not be in a position to determine whether the bidder is qualified, whether the bidder understands the requirements of the contract or whether the bid is responsive and may, in its sole discretion, reject the bidder's Proposal.

The giving of such notice to the bidder in connection with any of the foregoing lists, statement or information shall not be construed as an acceptance of his Proposal. However, the Authority reserves the right in its sole and absolute discretion, to accept the Proposal of a bidder despite the fact that said bidder has not submitted any information, list or statement required pursuant to this Section within the above-stated time period.

#### **4. ACCEPTANCE OR REJECTION OF PROPOSAL**

Within sixty (60) days after the opening of the Proposals, the Authority will accept one of the Proposals, if it accepts any. The acceptance of a Proposal will be only by mailing to or delivering at the office designated in the Proposal a notice in writing specifically indicating acceptance signed by an authorized representative on behalf of the Authority who is at present the Authority's Director of Procurement. No other act of the Authority, its Commissioners, officers, agents, or employees shall constitute acceptance of a Proposal. Such notice will state whether or not the Authority elects to require the bidder to furnish a Performance and Payment Bond. Rejection of a Proposal will be only by either (a) a notice in writing specifically stating that the Proposal is rejected, signed by an authorized representative on behalf of the Authority who is at present the Authority's Director of Procurement and mailed to or delivered at the office designated in the Proposal or (b) omission of the Authority to accept a Proposal within sixty (60) days after the opening of Proposals; and no other act of the Authority, its Commissioners, officers, agents or employees shall constitute rejection of a Proposal, including any counter offer or other act of the Authority, its Commissioners, officers, agents or employees.

The Authority reserves the unqualified right, in its sole and absolute discretion, to reject all Proposals or to accept that Proposal if any, which in its judgment will under all the circumstances best serve the public interest and to waive defects in any Proposal.

In the event that a successful bidder defaults upon the Contract by failing to furnish a satisfactory Performance and Payment Bond, if required, and the Authority terminates the Contract, the Authority reserves the option to accept the Proposal of any other bidder within sixty (60) days after the opening of Proposals, in which case such acceptance shall have the same effect as to such other bidder as though he were the originally successful bidder.

#### **5. RETURN OF CERTIFIED CHECKS**

Within ten (10) days after the opening of the Proposals the Authority will return all certified checks deposited by bidders, except those deposited by three bidders to be selected by the Authority, which will be returned within three days after one Proposal is accepted by the Authority; or if Performance and Payment Bonds are required, within three days after satisfactory Performance and Payment Bonds are furnished to the Authority; or if all Proposals are rejected, not later than three days after such rejection. The return of a bidder's check shall not, however, be deemed to be a rejection of his Proposal.

#### **6. DISPOSAL OF CONTRACT DOCUMENTS**

All recipients of Contract documents, including bidders and those who do not bid and their prospective subcontractors and suppliers who may receive all or a part of the Contract documents or copies thereof, shall make every effort to ensure the secure and appropriate disposal of the Contract documents to prevent further disclosure of the information contained in the documents. Secure and appropriate disposal includes methods of document destruction such as shredding or arrangements with refuse handlers that ensure that third persons will not have access to the documents' contents either before, during, or after disposal. Documents may also be returned for disposal purposes to the Contract Desk on the 3rd Floor, 3 Gateway Center, Newark NJ 07102 or the office of the Director of Procurement, One Madison Avenue, 7th Floor, New York NY 10010.

## 7. AVAILABLE DOCUMENTS

Certain documents, specified below, are available for reference and examination by bidders by contacting Philip Avello (212-435-5619) 115 Broadway, New York, New York 10006 during regular business hours. These documents were not prepared for the purpose of providing information for bidders upon the present Contract but they were prepared for other purposes, such as for other contracts or for design purposes for this or other contracts, and they do not form a part of this Contract. The Authority makes no representation or guarantee as to, and shall not be responsible for their accuracy, completeness or pertinence, and, in addition, shall not be responsible for the conclusions to be drawn therefrom. They are made available to the bidders merely for the purpose of providing them with such information as is in the possession of the Authority, whether or not such information may be accurate, complete or pertinent or of any value to the bidders.

Said documents are as follows:

Geotechnical Report

Top of Rock Topographic Layout dated May 22, 2009

Request for Information Documents for Work Packages 4B and 4C

Request for Clarification Documents for Work Package 9X

Submittals for Work Packages 4B, 4C and 9 Geotechnical Report

Submittals for Work Packages 4B, 4C, 6F and 9

NYCT Restoration of Service – 1 and 9 Line Contract C-33261 As-Built Drawings dated 4/11/03

New York City WTC Recovery Tiebacks at Slurry Wall along Greenwich Street As-Built Drawings dated 8/22/02

PA World Trade Center Pedestrian Underpass – Greenwich Street Contract WTC-130.016 dated 3/14/68

PA World Trade Center Foundations Contract WTC 130.001 & 130.002 Drawings dated 7/20/66

NYCT Route No. 4 and 38 – Section No. 1 Drawings dated 3/23/15

Topographical Survey Drawings prepared by Naik-Prasad dated 9/16/04

Port Authority Geotechnical Investigation Soil Boring Data

Temporary WTC PATH Station Contract No. PCP-100.000 #3WT, 6WT and 15WT

NYCT Division of Track Standard Track Drawings 100 LB ARA-B Rail and 115 LB Re Rail

PA WTC "Buttress Slabs within Perimeter Wall" Contract No. WTC-117.001 dated 2/18/69

PA World Trade Center Transportation Hub Contract WTC-284.458 Work Package 20 – Station Construction and Transit Hall

Temporary WTC PATH Station Contract No. PCP-100.000 #1WT (Drawings S2 to S5) and #4WT (Drawings S2 to S11)

Tower One

Tower Two

Tower Three

Tower Four

MTA/NYCT Cortlandt Street 1 Station Broadway – 7<sup>th</sup> Avenue Line (IRT): Issued for Preliminary Engineering dated 4/11/08

Vehicle Security Center – Stage III Submission dated 11/21/07

New York City Transit (NYCT) Structural Design Guidelines DG452, 2004

NYCT Field Design Standards DG453, 1999

Applicable codes and standards in MTA NYCT Planning and Design Guidelines for New and Underground Stations, Section 1.2.3

The following is a list of Plansheets of Confidential & Privileged Drawings and Documents that are included in Attachment D to the Request for Bids for the Greenwich Street Corridor Construction Contract (WTC-224.545)

**AVAILABLE DOCUMENTS**

WORLD TRADE CENTER TRANSPORTATION HUB  
 CONTRACT No. WTC-284.458 WORK PACKAGE #20:  
 STATION CONSTRUCTION AND TRANSIT HALL

G5010	GT2003	S1104	S1206	S4403	S8301
G5011	GT7509	S1105	S4206	S4404	S8303
G5012	S0112	S1106	S4310	S4405	S8304
G5101	S0122	S1203	S4313	S4406	
G5111	S1102	S1204	S4401	S4410	
G5121	S1103	S1205	S4402	S4411	

**8. MINORITY AND WOMEN'S BUSINESS ENTERPRISES PROGRAM (MBE/WBE)**

The Port Authority has a long-standing practice of making its contract opportunities available to as many firms as possible and has taken affirmative steps to encourage Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs) to seek business opportunities with it.

"Minority-owned business" or "MBE" means a business entity which is at least 51 percent owned by one or more members of one or more minority groups, or, in the case of a publicly held corporation, at least 51 percent of the stock of which is owned by one or more members of one or more minority groups, and whose management and daily business operations are controlled by one or more such individuals who are citizens or permanent resident aliens.

"Women-owned business" or "WBE" means a business which is at least 51 percent owned by one or more women, or, in the case of a publicly held corporation, 51 percent of the stock of which is owned by one or more women, and whose management and daily business operations are controlled by one or more women who are citizens or permanent resident aliens.

"Minority group" means any of the following racial or ethnic groups:

- A. Black persons having origins in any of the black African racial groups not of Hispanic origin;
- B. Hispanic persons of Puerto Rican, Mexican, Dominican, Cuban, Central, or South American culture or origin, regardless of race;
- C. Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands;
- D. Native American or Alaskan native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

To ensure meaningful participation of MBEs and WBEs on this project, the Authority has set a combined goal of 17 percent for firms owned and controlled by minorities and firms owned and controlled by women.

In the event that the Contractor subcontracts any portion of the Work, the Contractor shall use and document every good faith effort to meet the above goals for MBE and WBE participation in the Work. Such good faith efforts shall include at least the following:

- A. Attendance at pre-bid meetings, if any, scheduled by the Engineering Department;
- B. Utilization of the Port Authority's Directory of certified MBE/WBEs available on-line (see Notification of M/WBE On-line Directory and Forms in back of Contract booklet) and/or proposing for certification other MBE/WBEs which appear to meet the Port Authority's criteria for MBE/WBE certification and which are technically competent to perform the Work which the bidder plans to subcontract;
- C. Active and affirmative solicitation of bids for subcontracts from MBE/WBEs;
- D. Advertisement in general circulation media, trade association publications and minority-focused media for a reasonable period before bids or proposals are due;
- E. Dividing the work to be subcontracted into smaller portions or encouraging the formation of joint ventures, partnerships or similar arrangements among subcontractors in order to increase the likelihood of achieving the MBE/WBE goals;
- F. Providing a sufficient supply of plans and specifications of prospective work to MBE/WBEs and providing appropriate materials to each in sufficient time to review; and
- G. Utilizing the services of available minority and women's community organizations; contractor's groups; local, State and Federal business assistance/development offices and other organizations that provide assistance to MBE/WBEs.

Subsequent to Contract award, the Contractor shall use and document every good faith effort to comply with its MBE/WBE Participation Plan and to permit its MBE/WBE subcontractors to perform. Participation percentages shall be monitored throughout the performance of this Contract. Such good faith efforts shall include at least the following:

- A. Ensuring that progress payments are made in a timely fashion in accordance with the requirements of this Contract;
- B. Not requiring bonds from and/or providing bonds and insurance for subcontractors where appropriate;
- C. Soliciting specific recommendations on methods for enhancing MBE/WBE participation from Port Authority staff responsible for such participation; and
- D. Nominating subcontractors for participation in business assistance programs sponsored by the Authority or the Regional Alliance of Small Contractors such as the Loaned Executive Assistance Program (L.E.A.P.).

Subsequent to Contract award, the Contractor shall also provide the Engineer, at his request, with a trade breakdown schedule showing when the Contractor's MBE/WBE subcontractors are scheduled to perform. The Contractor shall also submit to the Engineer, on a monthly basis, the Statement of Subcontractor's Payments annexed hereto as Schedule D.

In the event that, prior to Contract award and following review of the MBE/WBE Participation Plan submitted by the bidder pursuant to the clause hereof entitled "Qualification Information", the Director determines that the Contractor has not made a good faith effort to meet the MBE/WBE participation goals set forth above and that the Contractor has not demonstrated that a full or partial waiver of such goals is appropriate, the Director may advise the bidder that it is not responsible and may reject the bidder's Proposal.

If, during the performance of the Contract, the Contractor fails to demonstrate good faith in carrying out its MBE/WBE Participation Plan and in permitting its MBE/WBE subcontractors to perform and the Contractor has not demonstrated that a full or partial waiver of the above referenced MBE/WBE participation goals is appropriate, then, upon receipt of a future proposal or proposals from the Contractor, the Director may advise the Contractor that it is not a responsible bidder and may reject such proposal(s).

Either prior or subsequent to acceptance of the bidder's Proposal, the bidder may request a full or partial waiver of the above described MBE/WBE participation goals by providing a reasonable demonstration to the Director that its good faith efforts will not result in compliance with the goals set forth above because participation by eligible MBE/WBEs could not be obtained at a reasonable price or that such MBE/WBEs were not available or refused to perform as subcontractors. The bidder shall provide such documentation to support its request as the Director may require.

Once approved, the MBE/WBE Participation Plan submitted by the bidder may be modified only with the written approval of the Engineer.

Following approval by the Engineer under the clause entitled "Assignments and Subcontracts" of one or more subcontractors who are either MBEs or WBEs and listed in the MBE/WBE Directory or determined to be "eligible" by the Director in accordance with this numbered clause, the Authority may, at its sole option, provide to said approved M/WBEs, without charge, whatever appropriate consultant services may be available under the L.E.A.P. Program; provided, however, that such consultant services will only be furnished pursuant to a request in writing from the Contractor to the Director, Office of Business & Job Opportunity of the Port Authority of New York and New Jersey, 233 Park Avenue South - 4th Floor, New York, NY 10003.

Such services will be discontinued following a written request from the Contractor to the Director, Office of Business & Job Opportunity of the Port Authority of New York and New Jersey, to discontinue them.

The L.E.A.P. services include advising on scheduling, purchasing, planning and other aspects of construction to firms to mitigate business or management problems which could negatively impact on their performance. These services do not include engineering or legal advice. The determination as to whether or not to follow the advice given lies solely with the M/WBE subcontractor. Prior to being accepted as a participant in the L.E.A.P. Program, the M/WBE subcontractor will be required to release the Authority and the individuals furnishing consultant advice of all liability and responsibility in connection therewith.

The Authority has compiled and made available on-line an MBE/WBE Directory which specifies the firms the Authority has determined to be (1) MBEs/WBEs and (2) experienced in performing work in the trades and contract dollar ranges indicated in the Directory. The Authority makes no representation as to the financial responsibility of such firms or their ability to perform Work required under this Contract. Subject to the following paragraph, only MBEs/WBEs listed in the Directory will count toward the required MBE/WBE participation.

If the Contractor wishes to perform a portion of the Work through a firm not listed in the Directory<sup>2</sup> but which the Contractor believes should be eligible because it is (1) an MBE/WBE, as defined above and (2) technically competent to perform portions of the Work or the Contractor believes it is such a firm, the Contractor shall submit to the General Manager, Small Business Programs, Office of Regional and Economic Development of the Port Authority of New York and New Jersey, a written request for a determination that the proposed firm is eligible. This shall be done by completing and forwarding a) the form labeled "Schedule A" and, if appropriate, "Schedule B" which are annexed hereto and form a part hereof and b) technical references of jobs completed of similar scope and complexity on the form annexed hereto and made a part hereof labeled "MBE/WBE Approval Request" and such other information as may be necessary to permit the Authority to determine whether the firm is in fact an MBE/WBE and technically competent to perform portions of the Work.

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| <p>1. Queens Air Services Development Office<br/>JFK International Airport<br/>Building #141<br/>Federal Circle, First Floor<br/>Jamaica, NY 11430<br/>(718) 244-6852<br/>Fax (718) 244-7371</p> | <p>2. Hispanic American Chamber of Commerce of Essex County<br/>P.O. Box 9146<br/>Newark, NJ 07104<br/>(973) 484-5441<br/>Fax (973) 350-9238</p>                    |
| <p>3. Association of Minority Enterprises of NY, Inc.<br/>135-20 Liberty Avenue<br/>Richmond Hill, NY 11419<br/>(718) 291-1641<br/>Fax (718) 297-2986</p>  | <p>4. Statewide Hispanic Chamber of Commerce of New Jersey<br/>150 Warren Street, Suite 110<br/>Jersey City, NJ 07302<br/>(201) 451-9512<br/>Fax (201) 451-9547</p> |
| <p>5. Newark Opportunity Center<br/>17 Academy Street, Suite 501<br/>Newark, NJ 07102<br/>(973) 622-4537<br/>Fax (973) 622-3914</p>  | <p>6. Jamaica Business Resource Center<br/>90-33 16th Street<br/>Jamaica, NY 11432<br/>(718) 206-2255<br/>Fax (718) 206-3693</p>                                    |

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<sup>2</sup> The following organizations may be able to refer the Contractor to MBEs/WBEs who are technically competent to perform portions of the Work. Any referrals which are not listed in the Directory shall be submitted to the Authority for a determination as to eligibility as provided above.

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| 7.  | Council for Airport Opportunity<br>90-04 161st Street Jamaica,<br>NY 11432<br>(718) 523-7100<br>Fax (718) 526-3472  | 8.  | Urban Business Assistance Corp.<br>New York University Stern School of<br>Business<br>44 West 4th Street, Suite 5-61<br>New York, NY 10012<br>(212) 995-4404<br>Fax (212) 995-4255 |
| 9.  | Greater Jamaica Development Corp.<br>90-04 161st Street<br>Jamaica, NY 11432<br>(718) 291-0282<br>Fax (718) 291-7918  | 10. | NYS Assn. Of Minority Contractors<br>Brooklyn Navy Yard<br>Building 280, 4th Floor, Suite 414<br>Brooklyn, NY 11205<br>(212) 246-8380<br>Fax (718) 246-8376                        |
| 11. | Professional Women in Construction<br>315 E. 56th Street, Suite 202<br>New York, NY 10022<br>(212) 486-7745<br>Fax (212) 486-0228                                   | 12. | NY/NJ Minority Purchasing Council<br>205 East 42nd Street<br>New York, NY 10017<br>(212) 573-2385<br>Fax (212) 522-4004  |
| 13. | Jamaica Chamber of Commerce<br>90-25 161st Street, Room 505<br>Jamaica, NY 11432<br>(718) 657-4800<br>Fax (718) 658-4642  | 14. | Queens Overall Economic<br>Development Office<br>120-55 Queens Boulevard, Suite 309<br>Kew Gardens, NY 11424<br>(718) 263-0546<br>Fax (718) 263-0594                               |
| 15. | York College Small Business<br>Development Center<br>94-50 159th Street<br>York College,<br>Room S 107<br>Jamaica, NY 11451<br>(718) 262-2880<br>Fax (718) 262-2881 | 16. | Small Business Development Center -<br>Rutgers University, University Heights<br>49 Bleeker Street<br>Newark, NJ 07102<br>(973) 353-1927<br>Fax (973) 353-1110                     |

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| <p>17. Small Business Development Center -<br/>Kean University<br/>East Campus, Room 242<br/>Union, NJ 07083<br/>(908) 527-2946<br/>Fax (908) 527-2960</p>   | <p>18. New Jersey Air Services Development<br/>Office<br/>Newark Liberty International Airport<br/>Building #80 - Second Floor<br/>Newark, NJ 07114<br/>(973) 961-4278<br/>Fax (973) 961-4282</p> |
| <p>19. Caribbean-American Chamber of<br/>Commerce<br/>Brooklyn Navy Yard Brooklyn,<br/>NY 11205<br/>(718) 834-4544<br/>Fax (718) 834-9774</p>                | <p>20. Manhattan Hispanic Chamber of<br/>Commerce<br/>14 Wall Street, 20<sup>th</sup> Floor<br/>New York, NY 10005<br/>(212) 683-5955<br/>Fax (212) 683-5999</p>                                  |
| <p>21. Asian Women in Business<br/>358 Fifth Avenue, Suite 504<br/>New York, NY 10001<br/>(212) 868-1368<br/>Fax (212) 868-1373</p>                          | <p>22. Asian American Business Development<br/>Center<br/>80 Wall Street, Suite 418<br/>New York, NY 10005<br/>(212) 966-0100<br/>Fax (212) 966-2786</p>  |
| <p>23. New York State Federation of Hispanic<br/>Chambers of Commerce<br/>2710 Broadway<br/>New York, NY 10025<br/>(212) 222-8300<br/>Fax (212) 222-8412</p> |   |

All such requests shall be in writing addressed to the Director. If any such firm is determined to be eligible it shall only be by a writing over the name of the Director. In the event that such firm is found not to be eligible, the Director will only consider as a substitute for such firm, a firm listed in the Port Authority's MBE/WBE Directory available on-line.

The Contractor shall submit the names of proposed MBEs/WBEs for work on this Contract if their names do not appear in the Port Authority's MBE/WBE Directory available on-line in accordance with the requirements of this clause and all other requirements of this Contract. MBEs/WBEs proposed as lessors of equipment or materialmen shall be deemed "subcontractors" for the purpose of this numbered clause and the clause hereof entitled "Assignments and Subcontracts" but shall not be deemed subcontractors for any other purpose. However only 60% of the amounts paid by the Contractor to such materialmen who are MBEs/WBEs, except in the case of firms who themselves manufacture materials for use under the Contract, shall be allowed in computing the percentages of the Contract Price required to be paid to MBEs/WBEs hereunder.

Nothing herein shall be deemed to supersede or to otherwise modify the clause of the Form of Contract entitled "Assignments and Subcontracts".

#### **9. MANDATORY PRE-BID CONFERENCE AND SITE TOUR**

All qualified bidders shall attend the mandatory Pre-Bid Conference and Site Tour scheduled for 10 AM on Tuesday, June 9, 2009 to be held at 115 Broadway, New York, New York. Each firm may have up to three (3) representatives. Please e-mail Suchetha Premchan at [spremchan@panynj.gov](mailto:spremchan@panynj.gov) to identify the representative(s) that will be attending by 4:00 p.m. Friday June 5.

#### **10. QUESTIONS BY BIDDERS**

Questions by prospective bidders concerning the Contract may be addressed to Suchetha Premchan at (212) 435-3973 or email at [spremchan@panynj.gov](mailto:spremchan@panynj.gov), who however is authorized only to direct the attention of prospective bidders to various portions of the Contract so that they may read and interpret such portions for themselves. Neither Suchetha Premchan nor any other employee or representative of the Authority is authorized to give interpretations of any portion of the Contract or to give information as to the requirements of the Contract in addition to that contained in the Contract. Interpretations of the Contract or additional information as to its requirements, where necessary, shall be communicated to bidders only by written addendum issued over the name of the Director, which addendum shall be considered part of this Contract. Accordingly, nothing contained herein and no representation, statement or promise, oral or in writing, of the Authority, its Commissioners, officers, agents, representatives or employees shall impair or limit the effect of the warranties of the Contractor contained in the clause of the Form of Contract entitled "Contractor's Warranties" or elsewhere in this Contract. The provisions of this clause shall apply to questions addressed by prospective bidders both before and after their receipt of Contract Documents.

#### **11. PORT AUTHORITY SECURITY REQUIREMENTS**

The Port Authority of New York and New Jersey operates facilities and systems at which terrorism or other criminal acts may have a significant impact on life safety and key infrastructures. The Authority reserves the right to impose multiple layers of security requirements on the performance of the Contract Work, including on the Contractor, its staff and subcontractors and their staffs depending upon the level of security required, as determined by the Authority. The Contractor shall, and shall instruct its subcontractors, to cooperate with Authority staff in adopting security requirements. These security requirements may include, but are not limited to, the following.

##### **A. Identity Checks and Background Screening:**

Contractor/subcontractor identity checks and background screening shall include but shall not be limited to: (1) inspection of not less than two forms of valid and current government issued identification (at least one having an official photograph) to verify staff's name and residence; (2) screening federal, state and local criminal justice agency information databases and files; (3) screening of any terrorist identification files; (4) multi-year check of personal, employment and/or credit history; (5) access identification to include some form of biometric security methodology such as fingerprint, facial or iris scanning.

The Contractor may be required to have its staff, and any subcontractor's staff, authorize the Authority or its designee to perform background checks. Such authorization shall be in a form acceptable to the Authority. If the Engineer directs the Contractor to have identity checks and background screening performed by a particular firm designated by the Engineer, the Authority will compensate the Contractor for the cost of such screening in accordance with the clause of this contract entitled "Extra Work".

B. Issuance of Photo Identification Badges:

All Contractor personnel must apply directly for S.W.A.C. (Secure Worker Access Consortium) ID badges prior to the start of work. Badges must be displayed at all times by personnel on site. No personnel will be allowed access to the site without S.W.A.C. Construction ID. Refer to the S.W.A.C website ([www.secureworker.com](http://www.secureworker.com)) for ID/security requirements. Workers who will be on-site for extended periods of time must obtain the required S.W.A.C. ID. The Contractor will pay the fee for S.W.A.C. security checks and badges.

No person will be permitted on or about the construction site without a photo identification badge approved by the Engineer. The Contractor shall provide such badges for employees, subcontractors and materialmen. All employees of the Contractor, subcontractors and materialmen shall wear identification badges in a conspicuous and clearly visible position whenever they are working at the construction site.

If the Authority requires facility-specific identification badges for the Contractor's and subcontractors' staffs, the Authority will supply such identification badges at no cost to the Contractor.

C. Construction Site Access Control:

- 1.) The Authority may provide for construction site access control, inspection and monitoring by Authority retained security guards. However, this provision shall not relieve the Contractor of its responsibility to secure its equipment and work at the construction site at its own expense.
- 2.) At the beginning of each work period the Contractor shall furnish to the security guards, if any, or to the Engineer a memorandum showing for that work period:
  - a. The name and company affiliation of each employee of the Contractor or of a subcontractor who is expected to enter the site and,
  - b. The name of any firm anticipated to be delivering materials or servicing equipment that day and a description of such materials or services.

The Authority may impose, increase, and/or upgrade security requirements for the Contractor, subcontractors and their staffs during the term of this contract to address changing security conditions and/or new governmental regulations.

## 12. PREVAILING RATE OF WAGE CERTIFICATION

The bidders' attention is directed specifically to the clause of the Form of Contract entitled "Prevailing Rate of Wage" and to the fact that the Authority requires a certification in writing from the successful bidder, in such form as may be required pursuant to such clause, that he has paid and caused his subcontractors to pay at least the prevailing rate of wage and supplements required by such clause. This certification is required prior to his receipt of any payment from the Authority hereunder as provided in the clauses of the Form of Contract entitled "Monthly Advances" and "Final Payment" or at any other time.

**13. CERTIFICATION OF NO INVESTIGATION (CRIMINAL OR CIVIL ANTI-TRUST), INDICTMENT, CONVICTION, SUSPENSION, DEBARMENT, DISQUALIFICATION, PREQUALIFICATION DENIAL OR TERMINATION, ETC; DISCLOSURE OF OTHER REQUIRED INFORMATION**

By bidding on this Contract, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the bidder and each parent and/or affiliate of the bidder has not (a) been indicted or convicted in any jurisdiction; (b) been suspended, debarred, found not responsible or otherwise disqualified from entering into contracts with any governmental agency or been denied a government contract for failure to meet prequalification standards; (c) had a contract terminated by any governmental agency for breach of contract or for any cause related directly or indirectly to an indictment or conviction; (d) changed its name and/or Employer Identification Number (taxpayer identification number) following its having been indicted, convicted, suspended, debarred or otherwise disqualified, or had a contract terminated as more fully provided in (a), (b) and (c) above; (e) ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Proposal; (f) been denied a contract by any governmental agency for failure to provide the required security, including bid, payment or performance bonds or any alternative security deemed acceptable by the agency letting the contract; (g) failed to file any required tax returns or failed to pay any applicable federal, state or local taxes; (h) had a lien imposed upon its property based on taxes owed and fines and penalties assessed by any agency of the federal, state or local government; (i) been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency, including an inspector general of a governmental agency or public authority; (j) had any sanctions imposed as a result of a judicial or administrative proceeding with respect to any professional license held or with respect to any violation of a federal, state or local environmental law, rule or regulation; and (k) shared space, staff, or equipment with any business entity.

The foregoing certification as to "(a)" through "(k)" shall be deemed to have been made by the bidder as follows: if the bidder is a corporation, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each director and officer, as well as, to the best of the certifier's knowledge and belief, each stockholder with an ownership interest in excess of 10%; if the bidder is a partnership, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each partner. Moreover, the foregoing certification, if made by a corporate bidder, shall be deemed to have been authorized by the Board of Directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the bidder is uncertain as to whether it can make the foregoing certification, it shall so indicate in a signed statement furnished with its bid, setting forth an explanation for its uncertainty.

Notwithstanding that the certification may be an accurate representation of the bidder's status with respect to the enumerated circumstances provided for in this clause as requiring disclosure at the time that the bid is submitted, the bidder agrees to immediately notify the Authority in writing of any change in circumstances during the period of irrevocability, or any extension thereof.

(a) SEE ATTACHMENT 1  
(b) SEE ATTACHMENT 2  
(c) SEE ATTACHMENT 3  
(i) SEE ATTACHMENT 4

The foregoing certification or signed statement shall be deemed to have been made by the bidder with full knowledge that it would become a part of the records of the Authority and that the Authority will rely on its truth and accuracy in awarding this Contract. In the event that the Authority determines at any time prior or subsequent to the award of the Contract that the bidder has falsely certified as to any material item in the foregoing certification; willfully or fraudulently submitted any signed statement pursuant to this clause which is false in any material respect; or has not completely and accurately represented its status with respect to the circumstances provided for in this clause as requiring disclosure, the Authority may determine that the bidder is not a responsible bidder with respect to its bid on this Contract or with respect to future bids and may, in addition to exercising any other rights or remedies available to it, exercise any of the rights or remedies set forth in the clause of the Form of Contract entitled "Rights and Remedies of Authority". In addition, bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g., New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the bidder.

Under certain circumstances the bidder may be required as a condition of this contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority. Said Monitor shall be charged with, among other things, auditing the actions of the bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

As used in this clause, the following terms shall mean:

Affiliate - An entity in which the parent of the bidder owns more than fifty percent of the voting stock, or an entity in which a group of principal owners which owns more than fifty percent of the bidder also owns more than fifty percent of the voting stock.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, quasi-public agencies, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Employer Identification Number - The tax identification number assigned to firms by the Federal government for tax purposes.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting or investigative agency, including an inspector general of a governmental agency or public authority, and any inquiries concerning civil anti-trust investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for employment, or Federal, state, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the bidder by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than 50% of the voting stock of the bidder.

Space Sharing - Space shall be considered to be shared when any part of the floor space utilized by the submitting business at any of its sites is also utilized on a regular or intermittent basis for any purpose by any other business or not-for-profit organization, and where there is no lease or sublease in effect between the submitting business and any other business or not-for-profit organization that is sharing space with the submitting business.

LEGAL ATTACHMENT

Attachment 1

People of the State of California v. Tutor-Saliba Corporation  
Los Angeles County Superior Court Case No. 2CR02922

In June 2002, a misdemeanor complaint was filed by or through the Office of the City Attorney, Los Angeles, against Tutor-Saliba Corporation ("TSC") alleging that TSC or through its employee or agent, placed or allowed machinery to operate within 6' of a high voltage overhead conductor, Los Angeles Superior Court Case No. 2CR02922. The complaint was the result of an accident on June 11, 2001 that occurred during the performance of construction operations on a Joint Venture project in which TSC was a participant, which resulted in injury to three workers by electrocution. CALOSHA initially issued citations for violation of safety orders related to the accident, however the citations were subsequently reclassified as not accident related. On November 21, 2002, TSC entered a plea of "no contest" to a misdemeanor violation of Labor Code Section 6423 (a) and the matter was resolved and the charges made under the complaint were dismissed. The Court has since, on June 23, 2006, expunged the Labor Code Violation from the records.

**LEGAL ATTACHMENT**  
**Attachment 2**

**Tutor-Saliba-Perini Joint Venture v. Los Angeles Metropolitan Transit Authority, CA Superior Court, (Los Angeles County, 1995), CA Nos.: BC123559 and BC132928.**

During 1995, a joint venture, Tutor-Saliba-Perini, or the Joint Venture, in which Perini Corporation, or Perini, was the 40% minority partner and Tutor-Saliba Corporation, or Tutor-Saliba, of Sylmar, California was the 60% managing partner, filed a complaint in the Superior Court of the State of California for the County of Los Angeles against the Los Angeles County Metropolitan Transportation Authority, or LAMTA, seeking to recover costs for extra work required by LAMTA in connection with the construction of certain tunnel and station projects. In 1999, LAMTA countered with civil claims under the California False Claims Act ("CFCA") against the Joint Venture, Tutor-Saliba and Perini jointly and severally (together, TSP). In September, 2008, Tutor-Saliba merged with Perini.

Claims concerning the construction of LAMTA projects were tried in 2001. During the trial, based on the Joint Venture's alleged failure to comply with the court's discovery orders, the judge issued terminating sanctions that resulted in a substantial judgment against TSP.

TSP appealed and, in January 2005, the State of California Court of Appeal reversed the trial court's entire judgment and found that the trial court judge had abused his discretion and had violated TSP's due process rights, and had imposed impermissibly overbroad terminating sanctions. The Court of Appeal also directed the trial court to dismiss LAMTA's claims that TSP had violated the Unfair Competition Law ("UCL") because LAMTA lacked standing to bring such a claim, and remanded the Joint Venture's claims against LAMTA for extra work required by LAMTA and LAMTA's counterclaim under the CFCA against TSP to the trial court for further proceedings, including a new trial. The new trial is ongoing.

In 2002, subsequent to the original trial court's decision in the LAMTA case, the California Department of General Services (DGS) approved the Tutor-Saliba/Perini, Joint Venture (in which Perini held a minority interest), for pre-qualification to bid on a prison construction project and stated that it had determined, without a hearing and relying primarily upon the results in the original LAMTA case, that the joint venture and its partners were not responsible bidders and that it intended to hold a hearing on that issue if the joint venture was the low bidder for the project.

The joint venture and its partners were fully prepared to establish at hearing that the original LAMTA case was not adequate grounds for DGS's determination and were confident that DGS would reverse its preliminary determination. However, on July 25, 2002, DGS rescinded its preliminary determination of nonresponsibility and the joint venture voluntarily withdrew its prequalification application for the prison construction project.

## LEGAL ATTACHMENT

### Attachment 3

#### Perini Corporation, et al v. Washington Metropolitan Area Transit Authority, et al; C.A. Nos.: 97-7138 consolidated with 97-7139, and 97-7140

On May 11, 1990, contracts with two joint ventures in which Perini Corporation, or Perini, held a 40% interest were terminated by the Washington Metropolitan Area Transit Authority, or WMATA, on two subway construction projects in the District of Columbia. The contracts were awarded to the joint ventures in 1985 and 1986. However, Perini and Mergentime Corporation, or Mergentime, the 60% managing partner, entered into an agreement in 1987 under which Perini withdrew from the joint ventures and Mergentime assumed complete control over the performance of both projects. This agreement did not relieve Perini of its responsibilities to WMATA as a joint venture partner. After Perini withdrew from the joint ventures, Mergentime and WMATA had a dispute regarding progress on the projects. After both construction contracts were terminated, WMATA retained Perini, acting independently, to complete both projects.

The joint ventures brought an action in the United States District Court for the District of Columbia against WMATA, seeking damages for delays, unpaid extra work and wrongful termination and WMATA brought an action against the joint ventures seeking damages for additional costs to complete the projects. After a bench trial, the District Court found the joint ventures liable to WMATA for damages in the amount of approximately \$16.5 million and WMATA liable to the joint ventures for damages in the amount of approximately \$4.3 million.

The joint ventures appealed the judgment to the United States Court of Appeals for the District of Columbia, and on February 16, 1999, the Court of Appeals vacated the District Court's final judgment and ordered the District Court to review its prior findings and hold further hearings in regard to the joint ventures' affirmative claims. In addition, the Court of Appeals held that post-judgment interest on any of the claims would not accrue until final judgment was entered *sometime in the future*.

On February 28, 2001, a successor District Court Judge informed the parties that he could not certify adequate familiarity with the record to complete the remaining proceedings; therefore, he granted the joint ventures' motion for a new trial. A new trial was completed in January 2002. On November 28, 2005, the U.S. District Court for the District of Columbia issued an Opinion and Order resolving the 2002 trial. The District Court found the joint ventures liable to WMATA for \$21.8 million "plus prejudgment interest at the statutory rate."

On February 22, 2006, the Court issued an Opinion and Order resolving the prejudgment interest issue, and awarded WMATA \$19.1 million in prejudgment interest. The Court also clarified certain aspects of its award of compensatory damages to WMATA. As a result, on February 22, 2006, the Court entered a final judgment awarding WMATA \$21.2 million in compensatory damages plus the \$19.1 million in prejudgment interest. The Company paid the final judgment and the case is closed.

Staff Sharing - Staff shall be considered to be shared when any individual provides the services of an employee, whether paid or unpaid, to the bidder and also, on either a regular or irregular basis, provides the services of an employee, paid or unpaid, to one or more other business(es) and/or not-for-profit organization(s), if such services are provided during any part of the same hours the individual is providing services to the bidder or if such services are provided on an alternating or interchangeable basis between the bidder and the other business(es) or not-for-profit organization(s). "The services of an employee" should be understood to include services of any type or level, including managerial or supervisory. This type of sharing may include, but is not limited to, individuals who provide the following services: telephone answering, receptionist, delivery, custodial, and driving.

Equipment Sharing - Equipment shall be considered to be shared whenever the bidder shares the ownership and/or the use of any equipment with any other business or not-for-profit organization. Such equipment may include, but is not limited to, telephones or telephone systems, photocopiers, computers, motor vehicles, and construction equipment. Equipment shall not be considered to be shared under the following two circumstances: when, although the equipment is owned by another business or not-for-profit organization, the bidder has entered into a formal lease for the use of the equipment and exercises exclusive use of the equipment; or when the bidder owns equipment that it has formally leased to another business or not-for-profit organization, and for the duration of such lease the bidder has relinquished all right to the use of such leased equipment.

**14. NON-COLLUSIVE BIDDING AND CODE OF ETHICS CERTIFICATION;  
CERTIFICATION OF NO SOLICITATION BASED ON COMMISSION, PERCENTAGE,  
BROKERAGE, CONTINGENT FEE OR OTHER FEE**

By bidding on this Contract, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that: (a) the prices in its bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (b) the prices quoted in its bid have not been and will not be knowingly disclosed, directly or indirectly, by the bidder prior to the official opening of such bid to any other bidder or to any competitor; (c) no attempt has been made and none will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition; (d) this organization has not made any offers or agreements, or given or agreed to give anything of value (see definition of "anything of value" appearing in the clause of the Form of Contract entitled "No Gifts, Gratuities, Offers of Employment, etc.") or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics and Financial Disclosure dated as of April 11, 1996 (a copy of which is available upon request to the individual named in the clause hereof entitled "Questions by Bidders"), nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code; (e) no person or selling agency, other than a bona fide employee or bona fide established commercial or selling agency maintained by the bidder for the purpose of securing business, has been employed or retained by the bidder to solicit or secure this Contract on the understanding that a commission, percentage, brokerage, contingent or other fee would be paid to such person or selling agency; (f) the bidder has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Contract.

The foregoing certification as to "(a)", "(b)", "(c)", "(d)", "(e)" and "(f)" shall be deemed to have been made by the bidder as follows: if the bidder is a corporation, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each parent, affiliate, director and officer of the bidder, as well as, to the best of the certifier's knowledge and belief, each stockholder of the bidder with an ownership interest in excess of 10%; if the bidder is a partnership, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each partner. Moreover, the foregoing certification, if made by a corporate bidder, shall be deemed to have been authorized by the Board of Directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the bidder is uncertain as to whether it can make the foregoing certification, it shall so indicate in a signed statement furnished with its bid, setting forth in such statement the reasons for its uncertainty. As a result of such disclosure, the Port Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsibility.

Notwithstanding that the bidder may be able to make the foregoing certification at the time the bid is submitted, the bidder shall immediately notify the Authority in writing during the period of irrevocability of bids on this Contract or any extension of such period, of any change of circumstances which might under this clause make it unable to make the foregoing certification or required disclosure. The foregoing certification or signed statement shall be deemed to have been made by the bidder with full knowledge that it would become a part of the records of the Authority and that the Authority will rely on its truth and accuracy in awarding this Contract. In the event that the Authority should determine at any time prior or subsequent to the award of this Contract that the bidder has falsely certified as to any material item in the foregoing certification or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately represented any circumstance with respect to any item in the foregoing certification required to be disclosed, the Authority may determine that the bidder is not a responsible bidder with respect to its bid on this Contract or with respect to future bids on Authority contracts and may, in addition to exercising any other rights or remedies it may have, exercise any of the rights or remedies set forth in the clause of the Form of Contract entitled "Rights and Remedies of the Authority".

In addition, bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g., New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the bidder.

Under certain circumstances the bidder may be required as a condition of this contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority. Said Monitor shall be charged with, among other things, auditing the actions of the bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

#### **15. BIDDER ELIGIBILITY FOR AWARD OF CONTRACTS - DETERMINATIONS BY AN AGENCY OF THE STATE OF NEW YORK OR NEW JERSEY CONCERNING ELIGIBILITY TO RECEIVE PUBLIC CONTRACTS**

Bidders are advised that the Authority has adopted a policy to the effect that in awarding its contracts it will honor any determination by an agency of the State of New York or New Jersey that a bidder is not eligible to bid on or be awarded public contracts because the bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a bidder whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a bid on a Port Authority contract and then to establish that it is eligible to be awarded the contract on which it has bid because (i) the state agency determination relied upon does not apply to the bidder, or (ii) the state agency determination relied upon was made without affording the bidder the notice and hearing to which the bidder was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state agency determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or a violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

## **16. CONSTRUCTION SKILLS 2000 - APPRENTICESHIP PROGRAM**

The Port Authority is a participant in Construction Skills 2000, a cooperative program among New York City schools, unions and public agencies. Construction Skills 2000 creates career opportunities in the construction industry for high school graduates by providing a systematic pathway into union-sponsored, skilled trade apprenticeship programs. The Port Authority encourages contractors and their subcontractors to maximize the use of apprentices under the applicable collective bargaining agreements or as contained in the applicable program approved by the New York State Department of Labor. The Contractor's plan for utilizing apprentices will be discussed at the pre-construction meeting.

Each subcontractor proposed for approval under the Contract whose total amount of subcontracts under this contract is greater than \$1 Million Dollars and each bidder (except as set forth in the certification below) will be required to certify as to their participation in a New York State - registered apprenticeship program.

## **17. CERTIFICATION OF PARTICIPATION IN A STATE-REGISTERED APPRENTICESHIP PROGRAM**

By bidding on this Contract, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the bidder participates in an apprenticeship program registered by the New York State Department of Labor. Participation in such an apprenticeship program shall mean that the bidder either (a) is a signatory to a collective bargaining agreement with a labor organization which sponsors an apprenticeship program registered with the New York State Department of Labor or (b) individually sponsors an apprenticeship program registered by the New York State Department of Labor and, in the case of both (a) and (b) above, such apprenticeship program shall be in the trade(s) in which Work is to be performed. This clause shall not apply to bidders who will perform all Work at the construction site through the use of subcontractors.

The foregoing certification, if made by a corporate bidder, shall be deemed to have been authorized by the Board of Directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the bidder is uncertain as to whether it can make the foregoing certification, it shall so indicate in a signed statement furnished with its bid, setting forth an explanation for its uncertainty.

Notwithstanding that the certification may be an accurate representation of the bidder's status with respect to the enumerated circumstances provided for in this clause as requiring disclosure at the time that the bid is submitted, the bidder agrees to immediately notify the Authority in writing of any change in circumstances during the period of irrevocability, or any extension thereof.

The foregoing certification or signed statement shall be deemed to have been made by the bidder with full knowledge that it would become a part of the records of the Authority and that the Authority will rely on its truth and accuracy in awarding this Contract. In the event that the Authority determines at any time prior or subsequent to the award of the Contract that the bidder has falsely certified as to any material item in the foregoing certification; willfully or fraudulently submitted any signed statement pursuant to this clause which is false in any material respect; or has not completely and accurately represented its status with respect to the circumstances provided for in this clause as requiring disclosure, the Authority may determine that the bidder is not a responsible bidder with respect to its bid on this Contract or with respect to future bids and may, in addition to exercising any other rights or remedies available to it, exercise any of the rights or remedies set forth in the clause of the Form of Contract entitled "Rights and Remedies of Authority". In addition, bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see, e.g., New York Penal Law, Section 175.30 et seq.).

## 18. PROTEST PROCEDURES

- A. The following protest procedure is the sole administrative remedy for protesting procurement decisions.

Any Proposer submitting a proposal in response to a solicitation may protest the award or decision to award a contract by submitting by certified mail such protest setting forth the basis thereof in writing to the Director of Procurement no later than ten calendar days after notice of award or announcement of the decision to award on Procurement's website or actual knowledge by the protester that a decision by Procurement to award to other than the protester has been made whichever occurs first, addressed as follows:

Director of Procurement  
Port Authority of New York and New Jersey  
One Madison Avenue- 7<sup>th</sup> Floor  
New York, NY 10010

The written protest should be received in the Procurement office not later than 5:00 p.m. on the tenth day. If the tenth day falls on a weekend or an official holiday, the ten-day period expires at 5:00 p.m. on the next regular workday.

The protest should contain, at a minimum, the following:

- 1.) Name and address of the protester including telephone and fax numbers and e-mail address;
- 2.) the solicitation title and number;
- 3.) The contract or purchase order title and number, if available;
- 4.) A statement concerning the protester's interest in the award or non-award of the contract and/or purchase order;
- 5.) A detailed statement of the basis for the protest including any supportive documents and information;
- 6.) The relief requested and the reason therefore.

The Director of Procurement should, within 3 business days of receipt of the protest, appoint a Protest Officer who will be a Manager in Procurement.

The Protest Officer should review the protest and supportive documents and issue a written decision within 5 business days of the appointment where feasible. The Protest Officer may take any action or make any requests he or she deems necessary in order to investigate the protest including extending the time to issue a decision in order to obtain all evidence and other pertinent information.

The protestor will be provided a copy of the written decision. This decision will be final unless within three business days of receipt of the written decision the protestor appeals to the Director of Procurement of the Authority of her/his designee. The appeal should be in writing and sent certified mail to the Director of Procurement as follows:

Director of Procurement  
Port Authority of New York and New Jersey  
One Madison Avenue – 7<sup>th</sup> Floor  
New York, NY 10010

No evidence or information may be introduced or relied upon in the appeal that has not been presented to the Protest Officer. The Director of Procurement will review the appeal and supportive documents and the decision of the Protest Officer and issue a written decision within 5 business days of receipt if feasible. The Director may take any action or make any requests he or she deems necessary including extending the time to issue a decision in order to render a decision on the appeal.

The decision of the Director of Procurement or her/his designee shall be conclusive and final.

**B. FTA Funded Contracts**

In the case of contracts funded by the FTA, where the protestor has exhausted all administrative remedies with the Port Authority, the protestor can pursue a protest with the FTA. An appeal to the FTA should be received by the appropriate FTA regional or Headquarters Office within five (5) working days of the date the protestor learned or should have learned of a final adverse decision of the Authority. In addition, for FTA funded contracts, whenever any protest is received, regardless of its credibility, the Procurement Director should give notice to the FTA.

Reviews of protests by FTA will be limited to:

- A. A grantee's failure to have or follow its protest procedures, or its failure to review a complaint or protest; or
- B. Violations of Federal law or regulation.

**19. INTEGRITY MONITOR**

In the event that the Authority hires an Integrity Monitor in connection with the World Trade Center site, the contractor and any subcontractors shall cooperate fully with the Monitor and the Authority, which includes, but is not limited to, providing complete access to all personnel and records in any way related to the Work performed pursuant to this Agreement. Any failure to cooperate may result in the termination of this Agreement.

**CERTIFICATION REGARDING LOBBYING PURSUANT TO 31 U.S.C. 1352**

The undersigned

JAMES M. LANE

(name of authorized officer)

certifies, to the best of my knowledge and belief, that:

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure of Lobbying, Activities" in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by, 31, U.S. C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Note: Pursuant to 31 U.S.C § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801, et seq., apply to this certification and disclosure, if any.

Executed this day 11<sup>th</sup> of AUGUST, 2009

By: James M. Lane Signature of Authorized Official

Official Name and Title of Authorized Official

**STANDARD FORM LLL - DISCLOSURE OF LOBBYING ACTIVITIES PURSUANT TO  
31 U.S.C. 1352**

1. Type of Federal Action:

- a. contract
- b. grant \_\_\_\_\_
- c. cooperative agreement
- d. loan
- e. loan guarantee
- f. loan insurance

2. Status of Federal Action:

- a. bid//offer/application
- b. Initial award
- c. post-award

3. Report Type:

- a. initial filing
  - b. material change
- For Material Change Only:  
Year \_\_\_\_\_ Quarter \_\_\_\_\_  
date of last report \_\_\_\_\_

4. Name and Address of Reporting Entity:

Felix Associates, LLC  
P.O. Box 735  
Mamaroneck, NY 10543

5. If Reporting Entity in No.4 is a Subawardee, Enter Name and Address of Prime:

Congressional District, *if known:*

\_\_\_\_\_

Prime Subawardee

Tier \_\_\_\_\_, *if known:*

\_\_\_\_\_

Congressional District, *if known:*

\_\_\_\_\_

6. Federal Department/Agency:

N/A

7. Federal Program Name/Description:

N/A

CFDA Number, *if applicable:*

\_\_\_\_\_

8. Federal Action Number, *if known:*

\_\_\_\_\_

9. Award Amount, *if known:*

\$ \_\_\_\_\_

10. a. Name and Address of Lobbying Registrant  
(*if individual, last name, first name, MI*)

b. Individuals Performing Services (*including address if different from No.10a*):

(*last name, first name, MI*):

11. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for such failure.

Signature \_\_\_\_\_ Print Name \_\_\_\_\_

Title \_\_\_\_\_ Telephone No. \_\_\_\_\_ Date: \_\_\_\_\_

## INSTRUCTIONS FOR COMPLETION OF DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.  
(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS**

1. The prospective lower tier participant,

\_\_\_\_\_, certifies by submission of this bid or proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. The prospective lower tier participant shall provide immediate written notice to the Authority (and the Contractor, if applicable) if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

Executed this day \_\_\_\_\_ of \_\_\_\_\_, 200

\_\_\_\_\_  
**BY SIGNATURE OF AUTHORIZED OFFICIAL**

\_\_\_\_\_  
**NAME AND TITLE OF AUTHORIZED OFFICIAL**

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS**

1. The prospective lower tier participant,

Tutor Perini Corporation, certifies by submission of this bid or proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. The prospective lower tier participant shall provide immediate written notice to the Authority (and the Contractor, if applicable) if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

Executed this day 11<sup>th</sup> of August, 2009

  
BY SIGNATURE OF AUTHORIZED OFFICIAL

James M. Laing, Sr VP Tutor Perini Corp & President,  
NAME AND TITLE OF AUTHORIZED OFFICIAL Tutor Perini Civil Group

## **INSTRUCTIONS FOR COMPLETION OF CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS**

1. By signing and submitting this Proposal, the prospective lower tier participant is providing the signed certification set out on the previous page.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Authority may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the Authority if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "persons," "lower tier covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549 [49 CFR Part 29]. The Proposer may contact the Procurement Representative for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized in writing by the Authority.
6. The prospective lower tier participant further agrees by submitting this proposal that it will include the "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List issued by U.S. General Service Administration.
8. Nothing contained in the foregoing shall be construed to require establishment of system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under sub-paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to all remedies available to the Federal Government, the Authority may pursue available remedies including suspension and/or debarment.

**PROPOSAL**

To The Port Authority of New York and New Jersey:

The undersigned<sup>3</sup> **TUTOR PERINI CORPORATION  
& CORPORATION ORGANIZED UNDER  
THE LAWS OF THE STATE OF MASSACHUSETTS**

(hereinafter called "the Contractor") hereby offers to perform all the obligations and to assume all the duties and liabilities of the Contractor provided for in the annexed Contract, at the price inserted by the undersigned in the clause of the Form of Contract entitled "General Agreement".

This offer shall be irrevocable for sixty (60) days after the date on which The Port Authority of New York and New Jersey opens this Proposal.

To induce the acceptance of this Proposal, the undersigned hereby makes each and every certification, statement, assurance, representation and warranty made by the Contractor in said Contract. Moreover as a condition to receipt and consideration by the Authority of the Proposal whether or not it is accepted, the undersigned agrees that all information of any nature whatsoever, regardless of the form of the communication, received from the undersigned (including its officers, agents, or employees) by the Authority, its Commissioners, officers, agents or employees, and notwithstanding any statement therein to the contrary, has not been given in confidence and may be used or disclosed by or on behalf of the Authority without liability of any kind except as may arise under letters patent of the undersigned, if any.

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<sup>3</sup> Insert bidder's name at the top of the page. After the bidder's name, insert one of the following phrases:

If a corporation, give state of incorporation, using the phrase, "a corporation organized under the laws of the State of \_\_\_\_\_."

If a partnership, give full names of partners, using also the phrase, "co-partners doing business under the firm name of \_\_\_\_\_."

If an individual using a trade name, give individual name, using also the phrase, "an individual doing business under the trade name of \_\_\_\_\_."

If a joint venture, give the information required above for each participant in the joint venture.

Unless expressly stated otherwise, the Information for Bidders, all papers required by it and submitted in connection herewith at any time, said Form of Contract, and all papers made part of the Contract by the terms of the Form of Contract are made part of this Proposal.

The undersigned hereby designates the following as the bidders office<sup>4</sup>:

1022 LOWER SOUTH ST.  
PEEKSKILL, NY 10566

The telephone number of the bidder is:

914/739-1908

The fax number of the bidder is:

914/739-5101

The E-Mail address of the bidder is:

\_\_\_\_\_

08-11-09P02:53 RCVD

<sup>4</sup>

Insert office address.

**SIGNATURE AND CERTIFICATE OF AUTHORITY<sup>5</sup>**

Dated, 11<sup>th</sup> of AUGUST, 2009

(Signature of individual or name of corporation or partnership)

TUTOR PERINI CORPORATION

(Signature of agent, partner or corporate officer)

By<sup>6,7</sup> SR. VP, TUTOR PERINI CORP.  
& PRESIDENT, TUTOR PERINI CIVIL  
GROUP  
James M. Jany

(Acknowledgment of signature to be taken on proper form on following page(s))

**CERTIFICATE OF AUTHORITY, IF BIDDER IS A CORPORATION**

I, the undersigned, as Secretary of the corporation submitting the foregoing Proposal, hereby certify that under and pursuant to the by-laws and resolutions of said corporation, each officer who has signed said Proposal on behalf of the corporation is fully and completely authorized so to do.

(Corporate Seal)

Michael Berry

<sup>5</sup> If bidder is a joint venture, insert signatures as appropriate for one participant of the joint venture on this page and attach and complete an additional signature sheet in the same form as appears on this page for each other participant as required.

<sup>6</sup> If Proposal is signed by an officer or agent, give title.

<sup>7</sup> **NOTE:** The foregoing signature shall be deemed to have been provided with full knowledge that the foregoing Proposal, the accompanying Contract booklet, as well as any certification, statement, assurance, representation, warranty, schedule or other document submitted by the bidder with the Proposal will become a part of the records of the Authority and that the Authority will rely in awarding the Contract on the truth and accuracy of such Proposal and each such certification, statement, assurance, representation, warranty and schedule made therein by the Contractor. Knowingly submitting a false statement in connection with any of the foregoing may be the basis for prosecution for offering a false instrument for filing (see, e.g., N.Y. Penal Law, Section 175.30 et seq.).

ACKNOWLEDGMENT<sup>8</sup>

ACKNOWLEDGMENT OF BIDDER, IF A CORPORATION

State of NEW YORK

SS:

County of WESTCHESTER

On this 11<sup>th</sup> day of AUGUST, 2009, before me personally came and appeared JAMES M. LING, to me known, who, being by me duly sworn, did depose and say that he resides at \_\_\_\_\_, Exemption (1) \_\_\_\_\_, that he is the SE. VP & PRESIDENT of TOTOLPHELINI CORP. & TOTOLPHELINI CIVIL GROUP the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation; and that he signed his name thereto by like order.

(Notary Seal)

*[Handwritten Signature]*  
(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF A PARTNERSHIP

**CHRISTINE A. BUSEY**  
Notary Public, State of New York  
No. 01BU8172861  
Qualified in Orange County  
Term Expires August 20, 2011

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known and known to me to be one of the members of the firm of \_\_\_\_\_, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF AN INDIVIDUAL

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_ to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

<sup>8</sup> If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Acknowledgment sheet in the same form as appears on this page for each other participant as required

**STATEMENT ACCOMPANYING PROPOSAL<sup>9</sup>**

**Names and Residences of Officers, If Bidder is a Corporation**

Name	Title	Residence <sup>10</sup>
SEE ATTACHED		

**Names and Residences of Partners, If Bidder is a Partnership**

Notary Public, State of New York  
 No. 0180813001  
 Qualified in Grand County  
 Term Expires August 31, 2003

Name	General or Limited Partner	Residence <sup>11</sup>
NA		

**Bidder's Residence, If an Individual<sup>12</sup>**

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<sup>9</sup> If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Statement Accompanying Proposal sheet in the same form as appears on this page for each other participant as required.

<sup>10</sup> Give Street and Number of Residence. Do not give business address.

<sup>11</sup> Give Street and Number of Residence. Do not give business address.

<sup>12</sup> Give Street and Number of Residence. Do not give business address.

**TUTOR PERINI CORPORATION CORPORATE OFFICERS**  
**March 2009**

<b>NAME &amp; TITLE</b>	<b>HOME/OFFICE ADDRESS</b>
Ronald N. Tutor Chairman & CEO	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Robert Band President	(h) (o) 73 Mt. Wayte Ave, Framingham, MA 01701
Kenneth R. Burk Executive Vice President – Chief Financial Officer, Asst. Treasurer, Asst Secretary	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Mark Caspers Executive Vice President	(h) (o) 4886 Frank Sinatra Dr, Las Vegas, NV 89109
James A. Frost Executive Vice President	(h) (o) 15901 Olden Street, Sylmar, CA 91342
William B. Sparks Executive Vice President, Treasurer, Corporate Secretary & Clerk	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Craig W. Shaw President & CEO, Perini Building Company, Inc.	(h) (o) 360 E. Coronado Rd., Phoenix, AZ 85004
James Laing Senior Vice President	(h) (o) Lower S. St, Peekskill, NY 10566
William G. O'Brien Senior Vice President	(h) (o) 73 Mt. Wayte Ave, Framingham, MA 01701
Claude K. Olsen Senior Vice President	(h) (o) 73 Mt. Wayte Ave Framingham, MA 01701
Kevin J. Woods Senior Vice President	(h) (o) 8211 Washington Blvd., Jessup, MD 20794
John D. Barrett Vice President, Tax	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Peter N. Hansen Vice President, Safety	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Steven M. Meilicke Vice President, Corporate Controller	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Kevin W. Cvengros, Asst. Treasurer, Asst. Secretary and Clerk	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Henry Cheung Vice President, Estimating	(h) (o) 1022 Lower South St., Peekskill, NY 10566
Michael A. Busey Assistant Secretary & Clerk	(h) (o) 1022 Lower South St., Peekskill, NY 10566
Lisa M. Melonas Assistant Secretary & Clerk	(h) (o) 15901 Olden Street, Sylmar, CA 91342
Donna E. Tannar Assistant Secretary & Clerk	(h) (o) 73 Mt. Wayte Ave, Framingham, MA 01701

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned<sup>13</sup> Tutor Perini Corporation  
"a corporation organized under the laws of the state of Massachusetts"

as principal(s); and<sup>14</sup> Travelers Casualty and Surety Company of America

as surety are hereby held and firmly bound unto The Port Authority of New York and New Jersey (herein called the "Authority") in the penal sum of Five percent of the Lump Sum, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed this 30th day of July, 20 09

The condition of the above obligation is such that whereas the above named principal(s) has submitted to the Authority a certain Proposal, bound herewith and hereby made a part hereof, to perform the obligations of the Contractor under a contract in writing, known as Contract WTC-224.545, "World Trade Center - Greenwich Street Corridor Construction", now therefore:

- A. If said Proposal shall not be accepted, or
- B. If said Proposal shall be accepted and the Authority does not require the principal(s) to furnish a Performance and Payment Bond, or
- C. If said Proposal shall be accepted and the Authority requires the principal(s) to furnish a Performance and Payment Bond and either the principal(s) furnishes a Performance and Payment Bond satisfactory to the Authority in accordance with the requirements of said Proposal or the Authority does not terminate the Contract as provided therein on account of the failure to furnish such a bond,

Then, this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The surety, for value received, hereby stipulates and agrees that the obligations of said surety and its bond shall be in no way impaired or affected by any extensions of the times within which the Authority may receive or accept such Proposal or within which the principal(s) may furnish a Performance and Payment Bond or by any waiver by the Authority of any of the requirements of said Proposal; and said surety does hereby waive notice of any such extensions or waivers.

IN WITNESS WHEREOF, the principal(s) and surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

<sup>13</sup> Insert bidder's name. If a corporation, give the state of incorporation using the phrase "a corporation organized under the laws of the \_\_\_\_\_".  
 If a partnership, give full names of partners, using also the phrase, "co-partners doing business under the firm name of \_\_\_\_\_".  
 If an individual using a trade name, give individual name, using also the phrase, "an individual doing business under the trade name of \_\_\_\_\_".  
 If a joint venture, give the information required above for each participant in the joint venture.

<sup>14</sup> Insert name of surety.

Tutor Perini Corporation

Principal <sup>15</sup>

By<sup>16</sup> James M. Lang  
Travelers Casualty and Surety Company of America

Surety

By<sup>17</sup> Mark P. Herendeen  
Mark P. Herendeen, Attorney-in-Fact

(Seal)

(Seal)

<sup>15</sup> If bidder is a joint venture, insert signature and information required as appropriate for one participant of the joint venture on this page and attach and complete an additional sheet in the same form as appears on this page for each other participant as required.

<sup>16</sup> If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

<sup>17</sup> If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

ACKNOWLEDGMENT<sup>18</sup>

ACKNOWLEDGMENT OF BIDDER, IF A CORPORATION

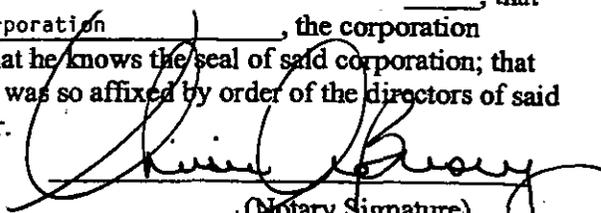
State of NEW YORK

SS:

County of WESTCHESTER

On this 11<sup>th</sup> day of AUGUST, 2009 before me personally came and appeared JAMES N. LIND to me known who being by me duly sworn, did depose and say that he resides at \_\_\_\_\_, Exemption (1) \_\_\_\_\_, that he is the SR. V.P. of Tutor Perini Corporation, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation; and that he signed his name thereto by like order.

(Notary Seal)



(Notary Signature)

CHRISTINE A. BUSEY  
Notary Public, State of New York  
No. 018U6172001  
Qualified in Orange County  
Term Expires August 20, 2011

ACKNOWLEDGMENT OF BIDDER, IF A PARTNERSHIP

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known and known to me to be one of the members of the firm of \_\_\_\_\_, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF AN INDIVIDUAL

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_ to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

AFFIX ACKNOWLEDGMENT AND JUSTIFICATION OF SURETY

<sup>18</sup> If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Acknowledgment sheet in the same form as appears on this page for each other participant as required.

**FORM OF CONTRACT**  
**CHAPTER I**  
**GENERAL PROVISIONS**

**20. DEFINITIONS**

To avoid undue repetition, the following terms whenever they occur in this Form of Contract or any of the other papers forming a part of the Contract shall be construed as follows:

"Contract" shall mean, in addition to this Form of Contract, the Information for Bidders, the Proposal, the Authority's acceptance, the Specifications and the Contract Drawings (including written addenda issued over the name of the Director), all of which are made part hereof as though herein set forth in full. The Contract as so defined shall constitute the complete and exclusive statement of the terms of the agreement between the parties and the Contract may not be explained or supplemented by course of dealing, usage of trade or course of performance.

"World Trade Center Construction (WTCC)" shall mean the Port Authority's World Trade Center Construction Department, which is principally responsible for the design and construction of the World Trade Center Site Transportation Hub.

"WTC/HUB" shall mean the World Trade Center Site Transportation Hub project.

The term "days" or "calendar days" in reference to a period of time shall mean consecutive calendar days, Saturdays, Sundays and holidays, included.

The term "construction site" or words of similar import shall mean the East Bathtub area bordered by Church Street, Greenwich Street, Vesey Street and the NYC Transit No. 1 Subway line and the vicinity thereof at the World Trade Center site.

"Work" shall mean all structures, equipment, plant, labor, materials (including materials and equipment, if any, furnished by the Authority) and other facilities and all other things necessary or proper for or incidental to performing excavation and installation of the permanent underpinning structure beneath the existing subway structure, excavation and bracing of existing minipiles at the Transportation Hub area, excavation for and construction of footings and excavation of rock and related Work at the East Bathtub area bordered by Church Street, Greenwich Street, Vesey Street and the NYC Transit No. 1 Subway line and the vicinity thereof at the World Trade Center site; and "performance of Work" and words of similar import shall mean the furnishing of such facilities and the doing of such things.

"Work required by the Contract Drawings and Specifications in their present form" or words of similar import shall include all Work required by the Specifications in their present form (whether or not shown upon the Contract Drawings), all Work shown upon the Contract Drawings in their present form (whether or not mentioned in the Specifications), and all Work involved in or incidental to the accomplishment of the results intended by the Specifications and Contract Drawings in their present form (whether or not mentioned therein or shown thereon)."

"Equipment" and "plant" shall include construction equipment and plant rented as agent for the Authority.

"Extra Work" shall mean Work required by the Director pursuant to the clause hereof entitled "Extra Work Orders" which is in addition to that required by the Contract Drawings and Specifications in their present form.

"Contract Drawings" shall mean the Contract Drawings designated in the clause of the Specifications entitled "Contract Drawings" and, except as used in the phrase "Contract Drawings in their present form", shall include any future alterations and revisions of said drawings.

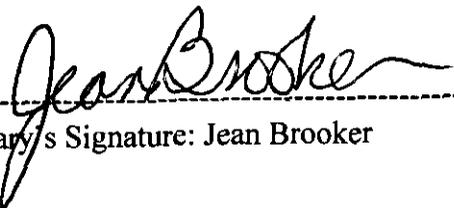
**NOTARY AFFIDAVIT  
For Surety**

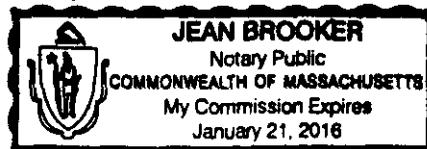
**STATE OF MASSACHUSETTS**

**COUNTY OF SUFFOLK**

On this 30<sup>th</sup> day of July, 2009 before me personally appeared Mark P. Herendeen, as Attorney-in-Fact, representing Travelers Casualty and Surety Company of America personally known to me to be the person who executed the within instrument this 30<sup>th</sup> day of July, 2009.

WITNESS by my hand and official seal:

  
-----  
Notary's Signature: Jean Brooker



**STATE OF NEW YORK  
INSURANCE DEPARTMENT**

**CERTIFICATE OF SOLVENCY UNDER SECTION 1111 OF THE NEW YORK  
INSURANCE LAW**

It is hereby certified that

**Travelers Casualty and Surety Company of America  
of Hartford, Connecticut**

a corporation organized under the laws of the State of Connecticut and duly authorized to transact the business of insurance in this State, is qualified to become surety or guarantor on all bonds, undertakings, recognizances, guaranties and other obligations required or permitted by law; and that the said corporation is possessed of a capital and surplus including gross paid-in and contributed surplus and unassigned funds (surplus) aggregating the sum of \$1,734,976,318. (Capital \$6,000,000.) as is shown by its sworn financial statement for the year ended December 31, 2008, on file in this Department, prior to audit.

The said corporation cannot lawfully expose itself to loss on any one risk or hazard to an amount exceeding 10% of its surplus to policyholders, unless it shall be protected in excess of that amount in the manner provided in Section 4118 of the Insurance Law of this State.



In Witness Whereof, I have here-  
unto set my hand and affixed the  
official seal of this Department  
at the City of Albany, this 27th  
day of May, 2009.

Eric R. Dinallo  
Superintendent of Insurance

By

*Clark J. Williams*

Clark J. Williams  
Special Deputy Superintendent

Exemption (1)

**SURETY DISCLOSURE STATEMENT AND CERTIFICATION**

pursuant to N.J.S.A. 2A:44-143

(for use when surety(ies) have a certificate from U.S. Secretary of the Treasury in accordance with 31 U.S.C. Section 9305)

Travelers Indemnity Company, St. Paul Fire and Marine Insurance Company, Travelers Casualty and Surety Company, United States Fidelity and Guaranty Company, Standard Fire Insurance Company, Travelers Casualty and Surety Company of America, Travelers Casualty Insurance Company of America, Farmington Casualty Company, Seaboard Surety Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Mercury Insurance Company, Fidelity and Guaranty Insurance Company, St. Paul Guardian Insurance Company, surety(ies) on the attached bond, hereby certifies(y) the following:

- 1) The surety(ies) meets (meet) the applicable capital and surplus requirements of R.S.17:17-6 or R.S.17:17-7 as of the surety's most current annual filing with the New Jersey Department of Insurance.
- 2) The capital and surplus, as determined in accordance with the applicable laws of this State, of the surety(ies) participating in the issuance of the attached bond is (are) in the following amounts as of the calendar year ended **December 31, 2007** (most recent calendar year which capital and surplus amounts are available), which amounts have been certified on a Consolidated Certification by ***KPMG LLP*** and are included in the Annual Statement on file with the New Jersey Department of Insurance, 20 West State Street CN-325, Trenton, New Jersey 08625-0325.

<u>Surety Company</u>	<u>Capital</u>	<u>Surplus</u>
Travelers Indemnity Company	\$ 10,770,000	\$8,470,643,647
St. Paul Fire and Marine Insurance Company	\$ 20,000,000	\$6,881,107,266
Travelers Casualty and Surety Company	\$ 25,000,000	\$5,408,584,262
United States Fidelity and Guaranty Company	\$ 35,214,075	\$1,928,503,054
Standard Fire Insurance Company	\$ 5,000,000	\$1,422,079,139
Travelers Casualty and Surety Company of America	\$ 6,000,000	\$1,290,646,286
Travelers Casualty Insurance Company of America	\$ 6,000,000	\$432,447,024
Farmington Casualty Company	\$ 6,000,000	\$272,828,219
Seaboard Surety Company	\$ 5,000,000	\$130,986,358
St. Paul Mercury Insurance Company	\$ 4,230,000	\$59,362,805
Fidelity and Guaranty Insurance Underwriters, Inc.	\$ 5,000,000	\$32,572,442
St. Paul Guardian Insurance Company	\$ 4,200,000	\$25,942,697
Fidelity and Guaranty Insurance Company	\$ 5,000,000	\$19,286,340

- 3) With respect to each surety participating in the issuance of the attached bond that has received from the U.S. Secretary of the Treasury, a certificate of authority pursuant to 31 U.S.C. Section 9305, the underwriting limitation established therein on **July 1, 2008** (most recent calendar year available) is as follows:

<u>Surety Company</u>	<u>Limitation</u>
Travelers Indemnity Company	\$847,064,000
St. Paul Fire and Marine Insurance Company	\$472,026,000
Travelers Casualty and Surety Company	\$348,511,000
United States Fidelity and Guaranty Company	\$192,850,000
Standard Fire Insurance Company	\$142,208,000
Travelers Casualty and Surety Company of America	\$129,065,000
Travelers Casualty Insurance Company of America	\$43,245,000
Farmington Casualty Company	\$27,283,000
Seaboard Surety Company	\$13,099,000
St. Paul Mercury Insurance Company	\$5,936,000
Fidelity and Guaranty Insurance Underwriters, Inc.	\$3,257,000
St. Paul Guardian Insurance Company	\$2,594,000
Fidelity and Guaranty Insurance Company	\$1,929,000

- 4) The amount of the bond to which the statement and certification is attached is \$ 5% of Amount Bid

5) If, by virtue of one or more contracts of reinsurance, the amount of the bond indicated under Item 4 above exceeds the total underwriting limitation of all sureties on the bond as set forth in Item 3 above, then for each such contract of reinsurance:

a) The name and address of each such reinsurer under that contract and the amount of the reinsurer's participation in the contact is as follows:

<u>Reinsurer</u>	<u>Address</u>	<u>Amount</u>
------------------	----------------	---------------

and;

b) Each surety that is party to such contract of reinsurance certifies that each reinsurer listed under Item 5(a) satisfies the credit for reinsurance requirement established under P.L.1993, c.243(C.17:51B-1 *et seq.*) and any applicable regulations in effect as of the date on which the bond to which this statement and certification is attached shall have been filed with the appropriate public agency.

**CERTIFICATE**

I, **Lawrence A. Siuta**, as Attorney-in-Fact for the companies herein listed, DO HEREBY CERTIFY that, to the best of my knowledge, the foregoing statements made by me are true, and ACKNOWLEDGE that, if any of those statements made by me are false, this bond is VOIDABLE.



\_\_\_\_\_  
(Signature of certifying agent/officer)

Lawrence A. Siuta  
(Print name of certifying agent/officer)

Chief Financial Officer, Bond & Financial Products  
(Title of certifying agent/officer)

Date: July 30, 2009



POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
Seaboard Surety Company
St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company
St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 221345

Certificate No. 003083409

KNOW ALL MEN BY THESE PRESENTS: That Seaboard Surety Company is a corporation duly organized under the laws of the State of New York, that St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc. is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Jean Correia, Jean M. Feeney, John J. Gambino, Kevin A. White, Mark P. Herendeen, Michael J. Cusack, Natalie Coney, Susan M. Kedian, Nicole Roy, and Kathleen M. Flanagan

of the City of Boston, State of Massachusetts, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 24th day of June, 2009.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
Seaboard Surety Company
St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company
St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

By: [Signature of George W. Thompson]
George W. Thompson, Senior Vice President

On this the 24th day of June, 2009, before me personally appeared George W. Thompson, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal. My Commission expires the 30th day of June, 2011.



[Signature of Marie C. Tetreault]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kori M. Johanson, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 30th day of July, 20 09

*Kori M. Johanson*  
Kori M. Johanson, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

**ACKNOWLEDGMENT<sup>18</sup>**

**ACKNOWLEDGMENT OF BIDDER, IF A CORPORATION**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known, who, being by me duly sworn, did depose and say that he resides at \_\_\_\_\_, that he is the \_\_\_\_\_ of \_\_\_\_\_, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation; and that he signed his name thereto by like order.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

**ACKNOWLEDGMENT OF BIDDER, IF A PARTNERSHIP**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known and known to me to be one of the members of the firm of \_\_\_\_\_, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

**ACKNOWLEDGMENT OF BIDDER, IF AN INDIVIDUAL**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_ to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

**AFFIX ACKNOWLEDGMENT AND JUSTIFICATION OF SURETY**

<sup>18</sup>

If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Acknowledgment sheet in the same form as appears on this page for each other participant as required.

**FORM OF CONTRACT**  
**CHAPTER I**  
**GENERAL PROVISIONS**

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The term "construction site" or words of similar import shall mean the East Bathtub area bordered by Church Street, Greenwich Street, Vesey Street and the NYC Transit No. 1 Subway line and the vicinity thereof at the World Trade Center site.

"Work" shall mean all structures, equipment, plant, labor, materials (including materials and equipment, if any, furnished by the Authority) and other facilities and all other things necessary or proper for or incidental to performing excavation and installation of the permanent underpinning structure beneath the existing subway structure, excavation and bracing of existing minipiles at the Transportation Hub area, excavation for and construction of footings and excavation of rock and related Work at the East Bathtub area bordered by Church Street, Greenwich Street, Vesey Street and the NYC Transit No. 1 Subway line and the vicinity thereof at the World Trade Center site; and "performance of Work" and words of similar import shall mean the furnishing of such facilities and the doing of such things.

"Work required by the Contract Drawings and Specifications in their present form" or words of similar import shall include all Work required by the Specifications in their present form (whether or not shown upon the Contract Drawings), all Work shown upon the Contract Drawings in their present form (whether or not mentioned in the Specifications), and all Work involved in or incidental to the accomplishment of the results intended by the Specifications and Contract Drawings in their present form (whether or not mentioned therein or shown thereon)."

"Equipment" and "plant" shall include construction equipment and plant rented as agent for the Authority.

"Extra Work" shall mean Work required by the Director pursuant to the clause hereof entitled "Extra Work Orders" which is in addition to that required by the Contract Drawings and Specifications in their present form.

"Contract Drawings" shall mean the Contract Drawings designated in the clause of the Specifications entitled "Contract Drawings" and, except as used in the phrase "Contract Drawings in their present form", shall include any future alterations and revisions of said drawings.

"Shop Drawings" shall mean all drawings, diagrams, illustrations, schedules, including supporting data, which are specifically prepared for this Contract and submitted by the Contractor pursuant to the requirements of the Specifications or the Engineer to illustrate some portion of the Work. The terms "shop drawings", "placing drawings" and "working drawings" are used interchangeably in this Contract.

"Catalog Cuts" shall mean all standard drawings, diagrams, illustrations, brochures, schedules, performance charts and instructions submitted by the Contractor pursuant to the requirements of the Specifications or the Engineer to illustrate some portion of the Work.

"Director of Procurement" shall mean the Director of Procurement of the Authority for the time being, or her successor in duties, acting either personally or through her duly authorized representatives acting within the scope of the particular authority vested in them.

"Director" shall mean the Director, World Trade Center Construction, acting either personally or through his duly authorized representatives acting within the scope of the particular authority vested in them.

"Chief Engineer" shall mean the Chief Engineer of the Authority for the time being, or his successor in duties, acting personally.

"Engineer" shall mean the Engineer of Construction, acting either personally or through his duly authorized representatives acting within the scope of the particular authority vested in him. On behalf of the Director, the Engineer of Construction is responsible for administering the contract.

"Deputy Director of Construction" shall mean the Deputy Director of Construction of the Authority for the time being, or his successor in duties, acting personally.

"Engineer of Construction" shall mean the designated Engineer of Construction for the facility at which the Work is being performed or his successor in duties, acting personally. On behalf of the Director, the Engineer of Construction is responsible for administering the contract.

"Inspector" shall mean any representative of the Engineer designated by him as Inspector and acting within the scope of the particular authority vested in him.

The term "permanent construction" shall include all construction, installation, structures, equipment and materials (including materials and equipment, if any, furnished by the Authority to be constructed, installed or left by the Contractor at or about the construction site (or elsewhere in the possession of the Authority after the completion of the Work (whether or not they are yet delivered or installed), even though they are subsequently to be removed by others. The terms, "permanent installation", "permanent structure", "permanent materials", and words of similar import shall have the same meaning as the term "permanent construction".

"Subcontractor" shall mean anyone who performs Work (other than or in addition to the furnishing of materials, plant or equipment) at or about the construction site, directly or indirectly for or in behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any person who furnished merely his own personal labor or his own personal services or who performs Work which consists only of the operation of construction equipment of which he is the lessor.

"Materialman" shall mean anyone who furnishes materials, plant or equipment to the Contractor or any subcontractor for use at or about the construction site in the performance of Work.

"Materialman" or "subcontractor", however, shall exclude the Contractor or any subsidiary or parent of the Contractor or any person, firm or corporation which has a substantial interest in the Contractor or in which the Contractor or the parent or the subsidiary of the Contractor, or an officer or principal of the Contractor or of the parent or the subsidiary of the Contractor has a substantial interest, provided, however, that for the purpose of the clause hereof entitled "Assignments and Subcontracts" the exclusion in this paragraph shall not apply to anyone but the Contractor himself.

"Workingman" or "workman" shall mean any employee of the Contractor or of a subcontractor who performs personal labor or personal services at the construction site.

"Lump Sum" shall mean the amount stipulated in the clause hereof entitled "General Agreement".

"Notice" shall mean a written notice.

Whenever they refer to the Work or its performance, "directed", "required", "permitted", "ordered", "designated", "prescribed" and words of similar import shall mean directed, required permitted, ordered, designated or prescribed by the Engineer; and "approved", "acceptable", "satisfactory" and words of similar import shall mean approved by or acceptable or satisfactory to the Engineer; and "necessary", "reasonable", "proper", "correct" and words of similar import shall mean necessary, reasonable, proper or correct in the judgment of the Engineer.

Whenever "including", "such as" or words of similar import are used, the specific things thereafter enumerated shall not limit the generality of the things preceding such words.

"DOT" shall mean the United States Department of Transportation.

"DCAA" shall mean the Defense Contracting Audit Agency.

"Government", "Unites States Government", "Federal" or words of like import shall mean the United States of America.

"UMTA" or "FTA" shall mean the United States Department of Transportation, Federal Transit Administration (formerly known as the Urban Mass Transportation Administration).

"FTA" and Government shall be used interchangeably.

**21. GENERAL AGREEMENT**

The Contractor agrees to perform excavation and installation of the permanent underpinning structure beneath the existing subway structure, excavation and bracing of existing minipiles at the Transportation Hub area, excavation for and construction of footings and excavation of rock and related Work at the East Bathtub area bordered by Church Street, Greenwich Street, Vesey Street and the NYC Transit No. 1 Subway line and the vicinity thereof at the World Trade Center site and to furnish all structures, equipment, plant, labor, materials and other facilities and to do all other things necessary or proper therefore or incidental thereto, all in strict accordance with the Contract Drawings and Specifications and any future changes therein; and the Contractor further agrees to assume and perform all other duties and obligations imposed upon him by this Contract. The furnishing of equipment and plant, however, shall be subject to the provisions of the clause hereof entitled "Agency for Rental of Construction Equipment".

The Authority agrees to pay to the Contractor and the Contractor agrees to accept from the Authority, in full consideration for the performance by the Contractor of his duties and obligations under this Contract and the whole thereof, a compensation of:

ONE HUNDRED SEVENTY SEVEN MILLION SIX HUNDRED SEVENTY SEVEN THOUSAND	Dollars
NO	Cents

(\$ 177,677,000.00)<sup>19</sup>

(throughout this Contract called the "Lump Sum"), and such compensation only, subject only to the express provisions of this Contract specifically setting forth actual, defined additions to or deductions from such compensation.

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<sup>19</sup> For sales tax exemptions, see clause entitled "Exemptions from New York State and New York City Sales Taxes".

The enumeration in this Form of Contract and in the Specifications of particular things to be furnished or done at the Contractor's expense, or without cost or expense to the Authority, or without additional compensation to the Contractor shall not be deemed to imply that only things of a nature similar to those enumerated shall be so furnished and done; but the Contractor shall perform all Work as required without other compensation than that specifically provided, whatsoever changes may be made in the Contract Drawings and Specifications, whatsoever Work may be required in addition to that required by the Contract Drawings and Specifications in their present form, and whatsoever obstacles or unforeseen conditions may arise or be encountered.

## **22. AUTHORITY ACCESS TO RECORDS**

The Authority shall have access during normal business hours to all records and documents of the Contractor relating to any amounts for which the Contractor has been compensated, or claims he should be compensated, by the Authority by payment determined on any basis other than by payment of a lump sum or unit price amount agreed upon in writing by the Contractor and the Authority; provided, however, such access shall extend to certified payroll records as described in the clause of the Form of Contract entitled "Prevailing Rate of Wage" regardless of the method by which the Contractor is compensated under this Contract. The Contractor shall obtain for the Authority similar access to similar records and documents of subcontractors. Such access shall be given or obtained both before and within a period of three years after Final Payment to the Contractor; provided, however, that if within the aforesaid three year period the Authority has notified the Contractor in writing of a pending claim by the Authority under or in connection with this Contract to which any of the aforesaid records and documents of the Contractor or of his subcontractors relate either directly or indirectly, then the period of such right of access shall be extended to the expiration of 6 years from the date of Final Payment with respect to the records and documents involved.

No provision in this Contract giving the Authority a right of access to records and documents is intended to impair or affect any right of access to records and documents which the Authority would have in the absence of such provision.

## **23. AGENCY FOR RENTAL OF CONSTRUCTION EQUIPMENT**

### **A. General Provisions**

The Contractor further agrees to act as the agent of the Authority, subject to the provisions of this numbered clause relating to such agency for the rental of all construction equipment necessary or desirable for or incidental to the performance of the Contract (other than construction equipment owned and also used by the Contractor or owned and also used by any subcontractor) and, in the exercise of such agency, to assume all the obligations and duties imposed upon him by this Contract. The Contractor may authorize any subcontractor to act as his subagent for rental of such equipment for use by such subcontractor, subject to all the provisions of this Contract. "Construction equipment" as used in this numbered clause shall include plant.

The Authority will pay the rental charges for said equipment directly to the lessors thereof, but the charges so paid shall be deducted from the compensation payable to the Contractor under the Contract; provided, however, that the Authority will pay such charges, and the Contractor is authorized by the Authority to act as such agent, to the extent only that the charges payable for such rental do not exceed the compensation payable to the Contractor under the Contract; and provided further that the Contractor performs all the obligations relating to said agency imposed upon him by this Contract.

The Authority will provide the Contractor with a statement to be furnished by him and the subcontractors to such lessors which will identify this Contract as the one under which the Contractor is authorized to rent said equipment and which will identify the site to which delivery must be made. The Contractor shall arrange for delivery of said equipment directly to the construction site. Payment of the rental charges therefore shall be made by the Authority on the basis of invoices made out to the Authority in which is contained the place of delivery and on which the Contractor has certified by endorsement that such construction equipment is being or has been used in the performance of the Contract, said invoices to be submitted through the Contractor to the Authority at the time said equipment is put into use at the construction site. In the event said invoices are not submitted promptly, at the time stated above, but are submitted at a time when, by reason of prior advances and payments to the Contractor or for his account, the amounts still payable to the Contractor in connection with the Contract are insufficient to pay said invoices, then the Authority shall not be liable to the lessors for any amounts in excess of said amounts still payable to the Contractor which remain in the possession of the Authority.

Notwithstanding the above agency arrangement, the Authority shall not be liable to lessors of construction equipment for any amounts except rental charges based on time of use of such equipment, and the Contractor's agency is limited accordingly. All obligations incurred by the Contractor or subcontractors for any other expenses, including repairs and damages for breach of the rental agreement, shall be obligations incurred by the Contractor or subcontractors as principal not as agent of the Authority. Moreover, as between the Authority and the Contractor, the Contractor shall be responsible for all amounts due to lessors of construction equipment notwithstanding the above agency arrangement.

The Contractor shall indemnify the Authority and the FTA against any claim of any kind whatsoever made against the Authority or the FTA by a lessor of construction equipment and the Contractor assumes the risk of all claims against him by any lessor of construction equipment, including in both cases, claims in connection with a subcontractor.

The agency provided for under this numbered clause shall not relieve the Contractor of any of his duties and obligations elsewhere provided for under this Contract.

**B. Option Not to Act as Agent**

Notwithstanding the provisions of A above, the Contractor shall have the right to elect not to act as the agent of the Authority for the rental of any particular item or items of said construction equipment, in which event, with regard to any such rentals by the Contractor as principal and not agent, the provisions of A of this numbered clause shall be inapplicable as well as those provisions of the clause of the Form of Contract entitled "Exemption From New York State and New York City Sales Taxes", which relate to rental of construction equipment.

**24. EXEMPTION FROM NEW YORK STATE AND NEW YORK CITY SALES TAXES**

**A. Materials Incorporated in Permanent Construction**

The attention of the Contractor is directed to the following provision of the New York State and New York City Sales and Compensating Use Tax Act:

"#1115. Exemptions from sales and use taxes. (a) Receipts from the following shall be exempt from the tax on retail sales imposed under subdivision (a) of section eleven hundred five and the compensating use tax imposed under section eleven hundred ten:

(15) Tangible personal property sold to a contractor, subcontractor or repairman for use in erecting a structure or building of an organization described in subdivision (a) of section eleven hundred sixteen, or adding to, altering or improving real

property, property or land of such an organization, as the terms real property, property or land are defined in the real property tax law; provided, however, no exemption shall exist under this paragraph unless such tangible personal property is to become an integral component part of such structure, building or real property."

The Authority is an exempt organization of the type described in subdivision (a) of section eleven hundred sixteen.

In view of the foregoing, the Contractor should not include in his price(s) any amounts for New York State and New York City sales and compensating use taxes on such tangible personal property.

If (i) any claim is made against the Contractor by the State of New York or City of New York for such sales or compensating use taxes, or (ii) any claim is made against the Contractor by a materialman or a subcontractor on account of a claim against such materialman or subcontractor by the State of New York or City of New York for such sales or compensating use taxes, then the Authority will reimburse the Contractor in an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that:

- 1.) the Contractor, or the Contractor and any such subcontractor, as the case may be, have complied with such rules and regulations as may have been promulgated relating to the claiming of the exemption from such taxes and have filed all the forms and certificates required by the applicable laws, rules and regulations in connection therewith;
- 2.) and the Authority is afforded the opportunity before any payment of tax is made, to contest said claim in the manner and to the extent that the Authority may choose and to settle or satisfy said claim and such attorney as the Authority may designate is authorized to act for the purpose of contesting, settling and satisfying said claim; and
- 3.) the Contractor, or the Contractor and any such subcontractor, as the case may be, give immediate notice to the Authority of any such claim, cooperate with the Authority and its designated attorney in contesting said claim and furnish promptly to the Authority and said attorney all information and documents necessary or convenient for contesting said claim, said information and documents to be preserved for six years after the date of Final Payment or longer if such a claim is pending or threatened at the end of such six years.

If the Authority elects to contest any such claim, it will bear the expense of such contest.

#### B. Rental of Construction Equipment

The rental by the Contractor or subcontractor of construction equipment not owned by the Contractor or subcontractors for use in the performance of the Contract will also not be subject to New York State or New York City sales or compensating use taxes, provided that:

- 1.) the Contractor's and any subcontractor's use of construction equipment rented from others, and any agreement for such rental, is based upon the agency arrangement provided for in the clause hereof entitled "Agency for Rental of Construction Equipment" and the Contractor and subcontractors have performed all their obligations under said clause;
- 2.) delivery of said equipment is to the construction site;
- 3.) the Contractor or subcontractor has furnished to the lessor the statement from the Authority identifying this Contract as the one under which the Contractor or subcontractor has been authorized to rent said equipment and identifying the construction site to which delivery must be made;

- 4.) the invoice for said equipment is made out to the Authority and prescribes the place of delivery; and
- 5.) the amounts payable for rental of said equipment do not exceed the amount of compensation payable in connection with the Work.

In view of the above, the Contractor should not include in his price(s) any amounts for New York State and New York City sales and compensating use taxes on such rentals of equipment.

If (i) any claim is made against the Contractor by the State or City of New York for sales or compensating use taxes on such rental of construction equipment or (ii) any claim is made against the Contractor by a materialman, lessor or a subcontractor on account of a claim against such materialman, lessor or subcontractor by the State or City of New York for sales or compensating use taxes on rental of said equipment, then the Authority will reimburse the Contractor in an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that the provisos listed above in this numbered clause as A.1 through A.3 and B.1 through B.5 are complied with.

If the Authority elects to contest any such claim, it will bear the expense of such contest.

## **25. PERFORMANCE BOND**

If the Authority shall in its sole discretion so elect at the time of accepting the Contractor's Proposal, the Contractor shall furnish a bond for the faithful performance of all obligations imposed upon him by the Contract and also for the payment of all lawful claims of subcontractors, materialmen and workmen arising out of the performance of the Contract. Such bond shall be in the form bound herewith entitled, "Performance Bond", shall be in a penal sum equal to one hundred per cent (100%) of the Lump Sum and such bond shall be signed by one or more sureties<sup>20</sup> satisfactory to the Authority. The bond may be executed on a separate copy of such form not physically attached to this Contract booklet. In any case, both the form of bond bound herewith and any unattached executed copy thereof shall form a part of this Form of Contract as though herein set forth in full.

At any time after the opening of Proposals, the Authority may give notice to one or more bidders to advise the Authority as to the names of their proposed sureties. Within forty-eight hours thereafter each bidder so notified shall so advise the Authority. The giving of such notice to a bidder shall not be construed as an acceptance of his Proposal, and omission to give such notice shall not be construed as an election by the Authority not to require a bond.

If the Authority elects to require the Contractor to furnish a bond, he shall deliver such bond to the Authority within seven days after receipt by him of the acceptance of his Proposal, and the sureties thereon shall be as proposed by him, provided, that if the Authority has theretofore given notice to him that his proposed sureties or any of them are not satisfactory, the bond shall be executed by other sureties satisfactory to the Authority.

The Authority shall give notice to the Contractor within ten (10) days after receipt of the Performance and Payment Bond as to whether or not such bond is satisfactory.

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<sup>20</sup> Sureties must be corporations (commonly known as "surety companies"), authorized to do business as sureties in the state(s) in which the construction site is located, whose names appear on the current list of the Treasury Department of the United States in effect at the time of submission of the Performance and Payment Bond to the Authority as acceptable as sureties to the Treasury Department. In addition, the aggregate underwriting limitations on any one risk as set forth in the aforementioned list of the Treasury Department of the sureties shall equal or exceed the penal sum of the Performance and Payment Bond.

In the event of a default by the Contractor in his obligation to furnish a satisfactory bond within seven (7) days after he received an acceptance of his Proposal, such default shall entitle the Authority in its discretion to terminate this Contract at any time within forty-five (45) days after the acceptance of the Proposal, without any liability on the part of the Authority. Inasmuch as the damages to the Authority resulting from a termination by it upon the failure of the Contractor to furnish a satisfactory bond will include items whose accurate amount will be difficult or impossible to compute, such damages shall be liquidated in the sum of the following amounts:

- A. The excess, if any, of the Lump Sum in the Proposal finally accepted over that in the Proposal of the Contractor; and
- B. The expense of such new advertisement of the Contract, if any, as may be deemed necessary by the Authority; and
- C. The sum of \$6000 for each day after the receipt by the Contractor of the acceptance of his Proposal that the performance of the Contract is not commenced by reason of the failure of the Contractor to furnish the required bond.

In the recovery of the damages above specified, the Authority may proceed against the sum represented by the certified check deposited with it or against the Bid Bond and take such other action as it may deem best in the public interest.

If the Contractor furnishes a bond in accordance with the requirements of the Authority under this numbered clause, the Authority shall reimburse the Contractor for the net amount actually paid by him to the surety or sureties as the premium on such bond. The Contractor shall deliver to the Engineer receipts from the surety or sureties evidencing such payment and the amount thereof. Within fifteen days after receipt of such evidence satisfactory to the Engineer, the Authority shall pay to the Contractor by check the amount provided in this numbered clause.

If at any time the Authority shall be or become dissatisfied with any surety or sureties then upon any bond furnished in accordance with the requirements of the Authority, or if for any other reason such bond shall cease to be adequate security to the Authority, the Contractor shall, within five days after notice from the Authority so to do, substitute a new bond in such form and sum and signed by such other sureties as may be necessary in the opinion of the Authority to constitute adequate security.

## **26. PAYMENT BOND**

If the Authority shall in its sole discretion so elect at the time of accepting the Contractor's Proposal, the Contractor shall furnish a bond for payment of all lawful claims of subcontractors, materialmen and workmen arising out of the performance of this contract. Such bond shall be in the form bound herewith entitled, "Performance Bond", shall be in a penal sum equal to 100% of the Lump Sum and such bond shall be signed by one or more sureties<sup>21</sup> satisfactory to the Authority. The bond may be executed on a separate copy of such form not physically attached to this Contract booklet. In any case, both the form of bond bound herewith and any unattached executed copy thereof shall form a part of this Form of Contract as though herein set forth in full.

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<sup>21</sup> Sureties must be corporations (commonly known as "surety companies"), authorized to do business as sureties in the state(s) in which the construction site is located, whose names appear on the current list of the Treasury Department of the United States in effect at the time of submission of the Performance and Payment Bond to the Authority as acceptable as sureties to the Treasury Department. In addition, the aggregate underwriting limitations on any one risk as set forth in the aforementioned list of the Treasury Department of the sureties shall equal or exceed the penal sum of the Performance and Payment Bond.

At any time after the opening of Proposals, the Authority may give notice to one or more bidders to advise the Authority as to the names of their proposed sureties. Within forty-eight hours thereafter each bidder so notified shall so advise the Authority. The giving of such notice to a bidder shall not be construed as an acceptance of his Bid, and omission to give such notice shall not be construed as an election by the Authority not to require a bond.

If the Authority elects to require the Contractor to furnish a bond, he shall deliver such bond to the Authority within seven days after receipt by him of the acceptance of his Bid, and the sureties thereon shall be as proposed by him, provided, that if the Authority has theretofore given notice to him that his proposed sureties or any of them are not satisfactory, the bond shall be executed by other sureties satisfactory to the Authority.

The Authority shall give notice to the Contractor within ten (10) days after receipt of the Performance Bond as to whether or not such bond is satisfactory.

In the event of a default by the Contractor in his obligation to furnish a satisfactory bond within seven (7) days after he received an acceptance of his Bid, such default shall entitle the Authority in its discretion to terminate this Contract at any time within forty-five (45) days after the acceptance of the Bid, without any liability on the part of the Authority. Inasmuch as the damages to the Authority resulting from a termination by it upon the failure of the Contractor to furnish a satisfactory bond will include items whose accurate amount will be difficult or impossible to compute, such damages shall be liquidated in the sum of the following amounts:

- A. The excess, if any, of the Lump Sum in the Proposal finally accepted over that in the Bid of the Contractor; and
- B. The expense of such new advertisement of the Contract, if any, as may be deemed necessary by the Authority; and
- C. The sum of \$6,000 for each day after the receipt by the Contractor of the acceptance of his Bid that the performance of the Contract is not commenced by reason of the failure of the Contractor to furnish the required bond.

In the recovery of the damages above specified, the Authority may proceed against the sum represented by the certified check deposited with it or against the Bid Bond and take such other action as it may deem best in the public interest.

If the Contractor furnishes a bond in accordance with the requirements of the Authority under this numbered clause, the Authority shall reimburse the Contractor for the net amount actually paid by him to the surety or sureties as the premium on such bond. The Contractor shall deliver to the Engineer receipts from the surety or sureties evidencing such payment and the amount thereof. Within fifteen days after receipt of such evidence satisfactory to the Engineer, the Authority shall pay to the Contractor by check the amount provided in this numbered clause.

If at any time the Authority shall be or become dissatisfied with any surety or sureties then upon any bond furnished in accordance with the requirements of the Authority, or if for any other reason such bond shall cease to be adequate security to the Authority, the Contractor shall, within five days after notice from the Authority so to do, substitute a new bond in such form and sum and signed by such other sureties as may be necessary in the opinion of the Authority to constitute adequate security.

## CHAPTER II

### ADJUSTMENTS AND PAYMENTS

#### 27. ADJUSTMENTS OF LUMP SUM

If any Work required by the Contract Drawings and Specifications in their present form shall be countermanded or reduced, the Engineer shall have full authority on behalf of both parties to make such adjustment by way of reduction in the Lump Sum as he may in his sole discretion deem equitable and reasonable, and in making such adjustment, no allowance to the Contractor shall be made for anticipated profits.

The Director shall have authority to agree in writing with the Contractor for adjustments by way of reduction in the Lump Sum in lieu of those for which provision is heretofore made in this numbered clause.

#### 28. COMPENSATION FOR EXTRA WORK

The Director shall have authority to agree in writing with the Contractor on behalf of the Authority upon lump sum or other compensation for Extra Work in lieu of the compensation for which provision is hereinafter made in this numbered clause.

If such agreement on compensation is not made, and Extra Work be performed, the Contractor's compensation shall be increased by the following amounts and such amounts only:

- A. In the case of Extra Work performed by the Contractor personally, an amount equal to the direct cost in money of the labor and materials required for such Extra Work, plus a reasonable percentage, as determined by the Engineer of Construction, not to exceed twenty per cent (20%), applied to the Engineer's final estimate of the direct cost in money for labor and materials as required for such Extra Work, plus such rental for equipment (other than small tools) required for such Extra Work as the Engineer of Construction deems reasonable, plus the net increase in premiums for Commercial General Liability Insurance and Comprehensive Automobile Liability Insurance charged on the basis of the compensation for the labor and materials for such Extra Work.
- B. In the case of Extra Work performed by a subcontractor, an amount equal to the direct cost in money of the labor and materials required for such Extra Work, plus a reasonable percentage, as determined by the Engineer of Construction, not to exceed twenty per cent (20%), applied to the Engineer's final estimate of the direct cost in money for labor and materials for such work, plus such rental for equipment (other than small tools) required for such Extra Work as the Engineer of Construction deems reasonable, plus a reasonable percentage, as determined by the Engineer of Construction, not to exceed seven per cent (7%) of the sum of the foregoing cost, percentage of cost, and rental, plus the net increase in premiums for Commercial General Liability Insurance and Comprehensive Automobile Liability Insurance charged on the basis of the compensation for the labor and materials for such Extra Work.

"Labor" means foremen, surveyors, laborers, mechanics and other employees below the rank of superintendent, exclusive of timekeepers, directly employed at the construction site, whether employed by the Contractor or by the subcontractors, subject to the Engineer of Construction's authority to determine what employees of any category are "required for Extra Work" and as to the portion of their time allotted to Extra Work; and "cost of labor" means the wages actually paid to and received by such employees; however, all wages actually paid that are in excess of the prevailing wages in the performance of Extra Work shall be subject, on each occasion, to the initial and continuing approval of the Engineer of Construction in advance of the performance of such Extra Work; plus a proper proportion of (a) vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligation upon the basis of such wages, and (b) taxes actually paid by the employer pursuant to law upon the basis of such wages. "Employees" as used above means only the employees of one employer.

"Materials" means temporary and consumable materials as well as permanent materials; and "cost of materials" means the price (including taxes actually paid by the Contractor pursuant to law upon the basis of such materials) for which such materials are sold for cash by the manufacturers or producers thereof, or by regular dealers therein, whether or not such materials are purchased directly from the manufacturer, producer or dealer (or if the Contractor is the manufacturer or producer thereof, the reasonable cost to the Contractor of the manufacture and production), plus the reasonable cost of delivering such materials to the construction site in the event that the price paid to the manufacturer, producer or dealer does not include delivery and in case of temporary materials, less their salvage value, if any.

"Work day" in reference to an item of equipment means a day other than a Saturday, Sunday or legal holiday except that if the particular item of equipment is actually utilized at the construction site by the Contractor or subcontractors under this or any other Contract with the Authority on a Saturday, Sunday or legal holiday said day shall be deemed a work day.

The rental for equipment, whether owned by the Contractor or subcontractors or rented from others and notwithstanding the actual price of any rental or actual costs associated with such equipment, shall be computed by the Engineer of Construction on the basis of the following:

A

- 1.) Hourly rental for those items of equipment listed in the "Rental Rate Blue Book" (published by Machinery Information Division, K-III Directory Corporation, 1735 Technology Drive, Suite 410, San Jose, California 95131-2398), (hereinafter called "the Blue Book") shall be 100% of the applicable rates as listed in said book, reduced to an hourly basis (see formula below) except that such applicable rates shall be reduced by 50% for all hours of rental payable hereunder in excess of 8 hours each day. The edition of this publication to be used shall be the one in effect on the date of the actual rental of the equipment. The "Estimated Operating Cost per Hour" as set forth for such item of equipment in the Blue Book shall be added to the hourly rental for each hour that such equipment is actually engaged in performing Extra Work. No amount for operating cost will be allowed during periods when such equipment is not actually engaged in performing Extra Work (i.e. standby rental time). None of the provisions of the Blue Book shall be deemed referred to or included in this Contract except as specifically set forth in this Section.
- 2.) If no listing of rental rate and/or hourly operating cost for the item of equipment is in the Blue Book, the Engineer shall determine the reasonable rate of rental and/or hourly operating cost of the particular item of equipment by such other means as he finds appropriate.

- 3.) In the event the Contractor is directed by the Engineer to immediately perform Extra Work within 24 hours of the direction to proceed, the Engineer shall determine the reasonable rate of rental and/or hourly operating cost of the items of equipment necessary to perform such Extra Work by such means as he finds appropriate. However, if the equipment is owned by the Contractor or owned by a subsidiary of the Contractor, the Blue Book rates will apply as set forth in this clause.
- B. When utilizing the rental rates appearing in the Blue Book, the Engineer shall determine the applicable rate and the hourly rental determined therefrom by applying the following criteria:
- 1.) The rate to be applied for an item of equipment used on a particular Extra Work order shall be the monthly rates from the foregoing publication.

The pro rata portion which one hour bears to the applicable rate shall be determined in accordance with the following formula:

Hourly rate based on monthly rental.	1/176 of monthly rental from Blue Book
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- 2.) The rental rate shall be multiplied by the applicable regional adjustment factor shown for such item of equipment in the Blue Book. The adjustment factor shall not apply to the hourly operating cost.
  - 3.) If the Engineer should determine that the nature or size of the equipment used by the Contractor in connection with Extra Work is larger or more elaborate, as the case may be, than the size or nature of the minimum equipment determined by the Engineer to be suitable for the Extra Work, the reasonable rental will not be based upon the equipment used by the Contractor but will be based on the smallest or least elaborate equipment determined by the Engineer to have been suitable for the performance of the Extra Work.
- C. In the case of equipment utilized only for Extra Work: (a) in addition to amounts determined as provided in subparagraphs A and B above, there will be added to the rental as computed above the reasonable cost of transporting such equipment to and from the construction site, including applicable tolls, and (b) notwithstanding the number of hours during which such equipment is utilized, the minimum rental therefore will be for a period of eight hours.

In computing the Contractor's compensation insofar as it is based upon Extra Work, and notwithstanding any provision to the contrary appearing in the Blue Book, no consideration shall be given to any items of cost or expense not expressly set forth above, it being expressly agreed that the costs and percentage additions hereinbefore provided cover items of cost and expense to the Contractor of any type whatsoever, including administration, overhead, taxes (other than those enumerated above), clean-up, consumables including gas and oil, drafting (including printing or other reproduction), coordination, field measurements, maintenance, repairs, insurance, profit to the Contractor and small tools.

Whenever any Extra Work is performed (whether by the Contractor directly or through a subcontractor), the Contractor shall, at the end of each day, submit to the Engineer (a) daily time slips showing the name and number of each workman employed on such Work, the number of hours which he is employed thereon, the character of his duties, and the wages to be paid to him, (b) a memorandum showing the state and federal taxes based on such wages, and vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligation upon the basis of such wages (c) a memorandum showing the amount and character of the materials furnished for such Work, from whom they were purchased and the amount to be paid therefor, and (d) a memorandum of equipment used in the performance of such Work, listing the actual hours of operation for each piece of equipment, together with the rental claimed therefor. Such memoranda and time slips are for the purpose of enabling the Engineer to determine the amounts to be paid by the Authority under this numbered clause; and accordingly, they shall constitute a condition precedent to such payment and the failure of the Contractor or his subcontractors to furnish them with respect to any Work shall constitute a conclusive and binding determination on his part that such Work is not Extra Work and shall constitute a waiver by the Contractor of claims for payment for such Work. The Contractor's compensation for Extra Work shall be subject to audit review by the Authority. The Engineer will notify the Contractor that an audit review will be conducted no later than 90 days from the date of such notification. The Engineer will also provide the Contractor with an estimated duration of the audit. During the audit review, the Contractor shall provide records to substantiate the memorandum and time slips submitted to the Engineer. Failure to provide such Contractor or subcontractor records may result in a reduction or total denial of material, equipment and labor costs for Extra Work. Upon completion of the audit review, the Contractor will be provided with the audit findings of the Authority. If the Contractor disagrees in whole or in part with the audit findings, the Contractor shall notify the Authority of such disagreement in writing within 30 days of receipt of said audit findings or the Authority will deem the audit findings to be final and acceptable to the Contractor. In the event that the Director and the Contractor shall agree in writing upon a lump sum or other compensation for Extra Work in lieu of compensation as provided in the second paragraph of this clause, the daily time slips and memoranda required by this paragraph shall not be required subsequent to the date on which such agreement has been reached.

## **29. COMPENSATION FOR PREMIUM TIME**

Where the Engineer directs that the Contractor perform Work at times other than those elsewhere specified in the Contract, and the Contractor directly or through a subcontractor is obligated by the provisions of its applicable collective bargaining agreement to pay premium time rates for such Work then, the Contractor shall be compensated for the cost differential between regular time rates and premium time rates at an amount equal to the total of the following:

For premium time rates paid by the Contractor to its own forces, an amount equal to the premium time portion of the salaries and wages which the employer is required to pay and actually pays to its employees pursuant to the terms of its applicable collective bargaining agreement for the overtime period or periods described above, plus a proper proportion, if any, computed upon the basis of premium time salaries and wages of (1) taxes actually paid by the employer pursuant to law, (2) vacation allowances, other fringe benefits and union dues and assessments which the employer actually pays pursuant to contractual obligations, and (3) increased premiums paid by the Contractor personally, specifically allocable to the insurance required by this Contract, plus five per cent (5%) of such premium portion.

For premium time rates paid by a subcontractor, an amount equal to the premium time portion of the salaries and wages which the employer is required to pay and actually pays to its employees pursuant to the terms of its applicable collective bargaining agreement for the overtime period or periods described above, plus a proper proportion, if any, computed upon the basis of premium time salaries and wages of (1) taxes actually paid by the employer pursuant to law, (2) vacation allowances, other fringe benefits and union dues and assessments which the employer actually pays pursuant to contractual obligations, and (3) increased premiums paid by a subcontractor, specifically allocable to the insurance required by this Contract, plus five per cent (5%) of such premium portion, plus two per cent (2%) of the foregoing cost.

All additions to the Contractor's compensation provided for in this clause require the prior written approval of the Engineer and are conditioned on the Contractor's verifiable by the Authority payment of such amounts to his subcontractor.

The additions to the Contractor's compensation provided in this clause shall not apply where the Engineer directs the Contractor to perform work at times other than those specified elsewhere in the Contract and also determines that such work is required to mitigate previous delays in the Contractor's performance of Work.

### **30. COMPENSATION FOR EMERGENCY DELAYS**

If the Contractor is specifically directed by the Engineer to suspend his operations as stipulated in the Specifications entitled "Conditions and Precautions" or if the Contractor is specifically directed not to start his operations at a time when operations are permitted to start as stipulated in such Section, and if solely because of such suspension or direction not to start any of the Contractor's or subcontractor's employees or equipment then engaged in or about to start such Work are necessarily kept idle at the construction site, during the hours when they would otherwise be engaged in the performance of the Work, then the Contractor's compensation shall be increased by an amount equal to the salaries and wages in amounts approved by the Engineer which the employer is required to pay and actually pays to such employees for the period or periods of such idleness, plus a proper proportion of (a) taxes actually paid by the employer pursuant to law upon the basis of such salaries and wages, and (b) vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligations upon the basis of such salaries and wages, and in addition thereto such rental as the Engineer deems reasonable for such equipment during the period or periods of such idleness. The rental for idle equipment shall be computed by the Engineer in accordance with the provisions of the clause of the Form of Contract entitled "Idle Salaried Men and Equipment".

In the event that the Contractor deems that any payment should be made pursuant to this numbered clause, he shall give prompt written notice to the Engineer stating the reasons why he believes such payments should be made and shall moreover, furnish to the Engineer at the end of each day, a memorandum showing the name, payroll title, salary rate and employer of each of the workingmen, and description, owner and claimed rental rate for each item of equipment claimed to have been kept idle. Said notice and memorandum are for the purpose of enabling the Engineer to verify the Contractor's claim at the time. Accordingly, notwithstanding any other provisions hereof, the failure of the Contractor to furnish such notice and memorandum shall constitute a conclusive binding determination on his part that he is not entitled to compensation as provided herein and shall constitute a waiver by the Contractor of all claims for such payment, such notice and memorandum being conditions precedent to payment under this numbered clause.

### 31. MONTHLY ADVANCES

On or about the first day of each month, the Director shall (upon receipt from the Contractor of such information as he may require, including a certification in writing, in such form as may be required pursuant to the clause hereunder entitled "Prevailing Rate of Wage", that he has paid and caused his subcontractors to pay at least the prevailing rate of wage and supplements required by such clause) estimate and certify to the Authority the approximate amount of Work performed and compensation earned by the Contractor up to that time showing separately:

- A. The amount of Work (other than Extra Work) performed by the Contractor up to that time and a sum bearing the same proportion to the Lump Sum as the Work performed (other than Extra Work) bears to the Work performed and to be performed (other than Extra Work).
- B. The increases, if any, in the Contractor's compensation for which provision is specifically made elsewhere in this Contract.

As an aid to the Contractor and to facilitate his performance, the Authority shall, within fifteen days after the receipt of each such monthly certificate, advance to the Contractor by check the sums so certified, minus, however, either ten per cent (10%) of the sum certified pursuant to subparagraph A of this numbered clause or five percent (5%) of the Lump Sum, whichever is less, and minus all prior advances and payments to the Contractor or for his account and minus payments by the Authority to lessors of construction equipment.

Within seven days of receipt of any sum attributable to Work performed by a subcontractor or materialman or within such later period as is provided in the subcontract or purchase agreement, the Contractor shall advance to the subcontractor or materialman said sum, less such amount, if any, as the Contractor is authorized to retain under the subcontract or purchase agreement.

Notwithstanding the above, the Authority shall have the right, at its sole discretion, to directly pay the subcontractors and material suppliers who perform Work for or furnish materials to the Contractor in connection with the Work of this Contract.

*Prior to certifying any amount for payment hereunder, the Engineer may require that the Contractor submit a certification accurately and fully setting forth the total amount due and payable to each subcontractor and supplier for Work performed or materials provided by such subcontractor or supplier in connection with the Work of this Contract. Any payment made by the Authority to a subcontractor or supplier pursuant to the provisions of this numbered clause shall be made in reliance upon such certification and all such payments shall be considered as advances to the Contractor of the compensation payable hereunder. No such payment shall relieve the Contractor of any of its obligations hereunder.*

Furthermore, within fifteen (15) days of the Contractor's receipt of the Authority acceptance of the Contractor's Proposal, the Contractor shall submit to the Engineer a listing of all subcontract and material supply agreements entered into by the Contractor for the performance of Work required by this Contract. Such listing shall include the names and addresses of each such subcontractor and supplier and the amounts payable under each such agreement. As and when any modifications are made to such agreements or any additional subcontracts or supply agreements are entered into, the Contractor shall inform the Engineer of such and shall indicate the amounts payable thereunder.

Nothing contained herein shall be deemed to create any additional rights in such subcontractors or suppliers or to alter the rights of the Authority as such are set forth in the clause hereof entitled "Withholding of Payments"

### **32. RELEASE OF MONIES PREVIOUSLY WITHHELD FROM MONTHLY ADVANCES UPON RENDITION OF A CERTIFICATE OF SUBSTANTIAL COMPLETION**

After the rendition of the Certificate of Substantial Completion and with the approval of the Engineer, an amount up to 80% of the total amount of monies withheld from the Contractor's monthly advances in accordance with the preceding clause may be released to the Contractor. If, in the Engineer's judgment, no monies, or less than 80% of the total amount of monies withheld should be released it will be based on, but not limited to, the estimated value of the remaining Work, unresolved claims by subcontractors, the estimate of possible audit adjustments and an assessment of the risks to the Authority in making such a release of monies. This clause does not create a right to such a release of monies or to any specific percentage release, all of which shall remain purely the discretionary decision of the Engineer.

Prior to the release of any amount withheld from the Contractor's monthly advances by the Authority, the Contractor shall submit to the Engineer a certification of all unresolved requests for additional compensation including all items in dispute and potential claims which the Contractor had actual knowledge of or by reasonable inspection and inquiry should have known of, to the date of the certification. Any such items not made known to the Authority by inclusion in the certification of additional compensation requests submitted by the Contractor will be deemed to have been released by the Contractor. Notwithstanding the above provisions, before making any release of monies the Engineer may require the Contractor to submit further information for the Engineer's review and analysis, and shall require the Contractor to execute a separate written release of claims as described above in a form acceptable to the Authority.

Nothing contained herein shall be deemed to alter or diminish the rights of the Authority as such are set forth in the clauses hereof entitled "Withholding of Payments", "Final Payment", "Monthly Advances" or under any other clause of this Contract relating to compensation to the Contractor, any release of monies hereunder being purely at the discretion of the Engineer.

### **33. FINAL PAYMENT**

After the rendition of the Certificate of Final Completion and upon receipt from the Contractor of such information as may be required, the Director shall certify in writing to the Authority and to the Contractor the total compensation earned by the Contractor.

If so required, the Contractor shall thereupon (i) certify to the Authority in writing, in such form as may be required pursuant to the clause hereunder entitled "Prevailing Rate of Wage", that he has paid and caused his subcontractors to pay at least the prevailing rate of wage and supplements required by such clause and (ii) furnish to the Authority a detailed sworn statement of all claims, just and unjust, of subcontractors, materialmen and other third persons then outstanding and which he has reason to believe may thereafter be made on account of the Work.

Within thirty days after issuance of such certificate of total compensation earned (or within thirty days after receipt of the documents provided for in the immediately preceding paragraph, if required), the Authority shall pay to the Contractor by check the amount stated in said certificate, less all other payments and advances whatsoever to or for the account of the Contractor. All prior estimates and payments shall be subject to correction in this payment, which is throughout this Contract called the Final Payment.

The acceptance by the Contractor, or by anyone claiming by or through him, of Final Payment shall be and shall operate as a release to the Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with the Contract and for every act and neglect of the Authority and others relating to or arising out of the Contract, including claims arising out of breach of contract and claims based on claims of third persons, excepting only his claims for reimbursement for certain sales taxes as hereinbefore provided. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations in connection with this Contract or the Performance or Payment Bonds.

The Contractor's agreement as provided in the immediately preceding paragraph above shall be deemed to be based upon the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediately preceding paragraph above shall nevertheless be effective. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority or the Engineer. Such release shall be effective notwithstanding any purported reservation of right by the Contractor to preserve such claim. The acceptance of any check designated as "Final Payment" or bearing any similar designation shall be conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause, notwithstanding any purported reservation of rights.

The Contractor agrees that he shall not be entitled to, and hereby waives any right he might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for any such Final Payment or for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such Final Payment or an amount equivalent thereto or based thereon or any part thereof other than in the same fashion as a voluntary acceptance of a Final Payment subject to all the terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of contract) for an amount not included in said Final Payment. In any case in which interest is allowable on the amount of the Final Payment, such interest shall be at the rate of 6% per annum for the period, if any, in which such interest is due.

#### **34. WITHHOLDING OF PAYMENTS**

If (1) the Contractor fails to perform any of his obligations under this Contract or any other agreement between the Authority and the Contractor (including his obligation to the Authority to pay any claim lawfully made against him by any materialman, subcontractor or workman or other person which arises out of or in connection with the performance of this Contract or any other agreement with the Authority) or (2) any claim (just or unjust) which arises out of or in connection with this Contract or any other agreement between the Authority and the Contractor is made against the Authority or (3) any subcontractor under this Contract or any other agreement between the Authority and the Contractor fails to pay any claims lawfully made against him by any materialman, subcontractor, workman or other third person which arises out of or in connection with this Contract or any other agreement between the Authority and the Contractor or if in the opinion of the Chief Engineer any of the aforesaid contingencies is likely to arise, then the Authority shall have the right, in its discretion, to withhold out of any payment (final or otherwise and even though such payment has already been certified as due) such sums as the Chief Engineer may deem ample to protect it against delay or loss or to assure the payment of just claims of third persons, and to apply such sums in such manner as the Chief Engineer may deem proper to secure such protection or satisfy such claims. All sums so applied shall be deducted from the Contractor's compensation. Omission by the Authority to withhold out of any payment, final or otherwise, a sum for any of the above contingencies, even though such contingency has occurred at the time of such payment, shall not be deemed to indicate that the Authority does not intend to exercise its right with respect to such contingency. Neither the above provisions for rights of the Authority to withhold and apply monies nor any exercise or attempted exercise of, or omission to exercise, such rights by the Authority shall create any obligation of any kind to such materialmen, subcontractors, workmen or other third persons.

Until actual payment to the Contractor, his right to any amount to be paid under this Contract (even though such amount has already been certified as due) shall be subordinate to the rights of the Authority under this numbered clause.

In the event that wages and/or supplements have been paid in an amount less than as required by this Contract, the Authority shall also have the right to withhold from the Contractor out of any payment, final or otherwise, on this, or any other open contract that the Contractor has with the Authority, so much as may be necessary to pay to laborers, mechanics, architects, draftsmen, engineers and technical workers, and others employed on the Work, the difference between the sums such persons should have received as wages and/or supplements and the amounts they actually received, and to pay such sums over to such persons. All such payments shall be deemed to be payments for the Contractor's account. In addition, the Contractor shall be required to pay to the Authority an amount equal to the Authority's cost of any investigation conducted by or on behalf of the Authority, that discovers a failure to pay wages and/or supplements as required by this Contract by the Contractor or its subcontractors, the cost of such investigation to be determined by the Chief Engineer personally. If the Contractor fails or refuses to pay for the cost of any such investigation after demand by the Authority, the Authority may deduct from any amount payable to the Contractor by the Authority, under the Contract or under any other open contract between the Contractor and the Authority, an amount equal to the cost of such investigation.

If, however, the payment of any amount due to the Contractor shall be improperly delayed by the fault of the Authority, the Authority shall pay the Contractor interest thereon at the rate of six percent (6%) per annum for the period of delay, it being agreed that such interest shall be in lieu of and in liquidation of any damages to the Contractor because of such delay.

**CHAPTER III**  
**PROVISIONS RELATING TO TIME**

**35. TIME FOR COMPLETION AND DAMAGES FOR DELAY AND INCENTIVES**

A. The Contractor shall complete the performance of all Work under this Contract as follows:

- I Milestone # 1. Complete excavation to elevation 240 between NYCT bents 50 and 90 to allow for slab construction of Tower 3 facility by 12/31/09.  
Milestone #2. Complete all the minipiles installation and concrete work from the 274 slab to the underside of the 1 Line Box support slab by 1/16/10.  
Milestone #3. Complete all earth and demolition to elevation 240 between NYCT bents 90 and 150 to allow for super column excavation. Complete mass rock excavation of the mechanical area to within 100 feet east of the 1 Line Box structure by 1/22/10.  
Milestone #4. Complete all Transit Hall column foundation excavation and super column foundation excavation as shown in Work Package 4C for turnover to a follow-on contractor by 3/1/10.  
Milestone #5. Complete all the structural work in the north and south areas including the load transfer from within the 1 Box to the new structure by 10/22/10.
- II Complete all remaining Work within 570 calendars days of receipt by him of the acceptance of his Proposal.

The Contractor shall not commence the performance of the Work until the later of the following dates:

- 1.) If a Performance and a Payment Bond are required, the date of receipt by him of notice from the Authority that the Performance and Payment Bond furnished by him is satisfactory;
- 2.) If Chapter V of the "Form of Contract" contains a clause entitled "Insurance Procured by Contractor", the date of receipt by him of notice from the Authority that the insurance procured by him pursuant to said clause is satisfactory, as evidenced by the certificate to be furnished in accordance with said clause.

The time for completion shall not be extended on account of the time required to furnish the documents referred to in subparagraphs A and B above, but the Authority shall give notice to the Contractor within ten days after receipt of the Performance and Payment Bonds or certificate of insurance as to whether or not such bonds or insurance is satisfactory.

The Contractor's obligations for the performance and completion of the Work within the time or times provided for in this Contract are of the essence of this Contract. The Contractor guarantees that he can and will complete the performance of the Work within the time hereinbefore stipulated or within the time as extended in accordance with the clause hereof entitled "Extensions of Time". Inasmuch as the damage and loss to the Authority which will result from delay in completing the performance of the Work within the time herein stipulated will include items of loss whose amount will be incapable or very difficult of accurate estimation, the damages to the Authority for each calendar day by which the Contractor does not complete performance of the Work within the time or times above stipulated or within such time or times as extended in accordance with the clause hereof entitled "Extensions of Time", shall be liquidated in the sum of the following amounts:

- 3.) Thirty Thousand Dollars (\$30,000) for each calendar day by which the Contractor fails to

complete any milestone Work in accordance with subparagraph I above.

- 4.) Six Thousand Dollars (\$6000) for each calendar day by which the Contractor fails to complete the Work in accordance with subparagraph II above.

The liquidated damages under subparagraphs 3.) and 4.) above shall be cumulative.

B. Incentives:

Attaining the milestones set in Section I above is essential to provide follow-on contractors access to commence work. Inasmuch as early completion of these milestones will allow the Authority to accelerate initiation of the work by follow-on contractors, the Authority shall pay the Contractor the financial incentive of Thirty Thousand Dollars (\$30,000) per day per milestone for each calendar day of early completion. The maximum value of the Incentive shall not exceed Five Million Dollars (\$5,000,000).

For the purposes of the Incentives, the milestone dates shall not be modified or extended for any reason whatsoever, including delays that are beyond the control of the Contractor.

### 36. EXTENSIONS OF TIME

The time above provided for completion of any part of the Contract shall be extended (subject, however, to the provisions of this numbered clause) only if in the opinion of the Engineer the Contractor is necessarily delayed in completing such part by such time solely and directly by a cause which meets all the following conditions:

- A. Such cause is beyond the Contractor's control and arises without his fault;
- B. Such cause comes into existence after the opening of Proposals on this Contract and neither was nor could have been anticipated by investigation before such opening.

Variations in temperature and precipitation shall be conclusively deemed to have been anticipated before opening of such Proposals on this Contract except to the extent that the actual monthly average temperature varies from a temperature which is 10 per cent (10%) above or below the monthly normal temperature and except to the extent that the actual number of days of precipitation (of 0.1 inch or more) per month exceeds a number equal to two plus the normal number of days of precipitation per month.

In any case, the variations in temperature and precipitation described in the immediately preceding sentence will be cause for an extension of time only if occurring between the actual time of commencement of the Work at the construction site and the time for completion stipulated in the clause hereof entitled "Time for Completion and Damages for Delay" (or such time as extended as provided for herein). In the case of portions of months the number of days will be pro-rated by the Engineer. Temperature and precipitation shall be as recorded by the U. S. Weather Bureau in its publications, including that entitled "Local Climatological Data with Comparative Data", which is applicable to the area in which the Work is to be performed, and in the case of precipitation, the normal number of days of precipitation (of 0.1 inch or more) per month as abstracted from the aforementioned publications are as follows:

Month	Normal number of days per month on which precipitation exceeds 0.1 inch
January	7
February	7
March	8
April	7
May	6
June	6
July	5
August	7
September	6
October	6
November	7
December	7

In any event, even though a cause of delay meets all the above conditions, an extension shall be granted only to the extent that (i) the performance of the Work is actually and necessarily delayed and (ii) the effect of such cause cannot be anticipated and avoided or mitigated by the exercise of all reasonable precautions, efforts and measures (including planning, scheduling and rescheduling), whether before or after the occurrence of the cause of delay, and an extension shall not be granted for a cause of delay which would not have affected the performance of the Contract were it not for the fault of the Contractor or for other delay for which the Contractor is not entitled to an extension of time.

Any reference herein to the Contractor shall be deemed to include subcontractors and materialmen, whether or not in privity of contract with the Contractor, and employees and others performing any part of the Contract and all the foregoing shall be considered as agents of the Contractor.

The period of any extension of time shall be that necessary to make up the time actually lost, subject to the provisions of this numbered clause, and shall be only for the portion of the Contract actually delayed. The Engineer may defer all or part of his decision on an extension and any extension may be rescinded or shortened if it subsequently is found that the delays can be overcome or reduced by the exercise of reasonable precautions, efforts and measures.

As a condition precedent to an extension of time, the Contractor shall give written notice to the Engineer within 48 hours after the time when he knows or should know of any cause which might under any circumstances result in delay for which he claims or may claim an extension of time (including those causes which the Authority is responsible for or has knowledge of), specifically stating that an extension is or may be claimed, identifying such cause and describing, as fully as practicable at the time, the nature and expected duration of the delay and its effect on the various portions of the Contract. Since the possible necessity for an extension of time may materially alter the scheduling, plans and other actions of the Authority, and since, with sufficient opportunity, the Authority might if it so elects attempt to mitigate the effect of a delay for which an extension of time might be claimed, and since merely oral notice may cause disputes as to the existence or substance thereof, the giving of written notice as above required shall be of the essence of the Contractor's obligations and failure of the Contractor to give written notice as above required shall be a conclusive waiver of an extension of time.

It shall in all cases be presumed that no extension, or further extension, of time is due unless the Contractor shall affirmatively demonstrate to the satisfaction of the Engineer that it is. To this end the Contractor shall maintain adequate records supporting any claim for an extension of time, and in the absence of such records, the foregoing presumption shall be deemed conclusive.

### **37. IDLE SALARIED MEN AND EQUIPMENT**

If any salaried men or equipment of the Contractor or any subcontractor are necessarily kept continuously idle and wholly unoccupied at the construction site for a full day on each of two or more full days on which they would be engaged in the performance of the Work but for causes due solely to acts or omissions of the Authority or the Director occurring after the opening of Proposals on this Contract, and if such idleness is not due to any cause within the control of the Contractor or of any of his subcontractors or materialmen or his or their employees, then the Authority shall pay to the Contractor and the Contractor shall accept (in addition to any sums otherwise payable under this Contract, and in full satisfaction of and in liquidation of all claims for damages because of such act or omission of the Authority or the Director) an amount equal to that which the employer actually pays such salaried employees during such full days of idleness, plus a proper proportion of vacation allowances and union dues and assessments actually paid by the employer pursuant to contractual obligations on the basis of such salaries, and a proper proportion of the taxes actually paid by the employer pursuant to law upon the basis of such salaries and plus such rental for such idle equipment as the Director deems reasonable. The rental for idle equipment shall be computed by the Engineer in accordance with the provisions of the clause of the Form of Contract entitled "Compensation for Extra Work"; provided, however, that the seven per cent (7%) of the rental to be paid in accordance with said clause in the case of equipment utilized by subcontractors shall not be payable in connection with such idle equipment; and provided further that the provisions of subparagraph C of said clause shall not be applicable to such idle equipment.

The Contractor shall give written notice to the Engineer before the end of the second of the above mentioned 2 or more full days (whether or not the Authority is aware of the existence of any circumstances which might constitute a basis for payment under this numbered clause), specifically stating that salaried men or equipment have been kept idle under circumstances which might result in payment under this numbered clause; and he shall furnish with such notice, for all the days that have occurred, and shall in addition furnish at the end of each additional day of the above mentioned 2 or more full days, (a) a memorandum showing the name, payroll title, salary rate and employer of each of the salaried men claimed to have been kept idle at the construction site, and taxes based upon their salaries and the holiday and vacation allowances and union dues and assessments which the employer must actually pay pursuant to contractual obligations based on their salaries, and (b) a memorandum of the equipment claimed to be kept idle, together with the amount claimed as rental therefor. Said notice and memoranda are for the purpose of enabling the Engineer to verify the Contractor's claim at the time, and of enabling him to take such steps as may be necessary to remedy the conditions upon which the claim is based. The furnishing of such notice and memoranda shall be a condition precedent to payment under this numbered clause, so that the day on which notice is given shall be counted as not later than the second of the above mentioned 2 or more full days and no subsequent day shall be counted for which the above memoranda are not furnished at the end of such day.

### **38. DELAYS TO CONTRACTOR**

As between the Contractor and the Authority, the Contractor assumes the risk of all suspensions of or delays in performance of the Contract, regardless of the length thereof, arising from all causes whatsoever, whether or not relating to this Contract, including wrongful acts or omissions of the Authority, its officers, agents, employees and contractors, except only to the extent, if any, that compensation or an extension of time may be due as expressly provided for elsewhere in this Contract for such suspension or delays and except to the extent, if any, that compensation may be agreed to by the Director in writing pursuant to the clause hereof entitled "Compensation for Extra Work" for impact costs incurred by the Contractor in connection with the performance of Extra Work. Subject only to such exceptions, the Contractor shall bear the burden of all costs, expenses and liabilities which he may incur in connection with such suspensions or delays, and all such suspensions, delays, costs, expenses and liabilities of any nature whatsoever, whether or not provided for in this Contract, shall conclusively be deemed to have been within the contemplation of the parties.

Notwithstanding any provisions of this Contract, whether relating to time of performance or otherwise, the Authority makes no representation or guaranty as to when the construction site or any part thereof will be available for the performance of the Contract or as to whether conditions at the construction site will be such as to permit the Contract to be performed thereon without interruption or by any particular sequence or method or as to whether the performance of the Contract can be completed by the time required under this Contract or by any other time.

Wherever in connection with this Contract it is required, expressly or otherwise, that the Authority shall perform any act relating to the Contract, including making available or furnishing any real property, materials, or other things, no guaranty is made by the Authority as to the time of such performance and the delay of the Authority in fulfilling such requirement shall not result in liability of any kind on the part of the Authority except only to the extent, if any, that an extension of time or compensation may be due as expressly provided for elsewhere in this Contract.

### **39. CANCELLATION FOR DELAY**

If the performance of the Contract or any portion of it shall, in the opinion of the Director, be materially delayed, whether or not through the fault of the Contractor, by any cause which affects the Contractor's ability to perform the Contract without affecting to the same degree the Authority's own ability to perform it, either directly or through others, the Authority shall have the right at any time during the existence of such delay to cancel this Contract as to any portion not yet performed, without prejudice to the rights, liabilities and obligations of the parties under this Contract arising out of portions already performed, provided, however, that such right of cancellation shall not exist if the delay be due to any wrongful act or omission of the Authority. In the event of such cancellation, no allowance shall be made for anticipated profits.

## CHAPTER IV

### CONDUCT OF CONTRACT

#### 40. AUTHORITY OF DIRECTOR

Inasmuch as the public interest requires that the project to which this Contract relates shall be performed in the manner which the Authority, acting through the Director, deems best, the Director shall have absolute authority to determine what is or is not necessary or proper for or incidental to the portion thereof specified in the clause hereof entitled "General Agreement" and the Contract Drawings and Specifications shall be deemed merely his present determination on this point. The absolute authority of the Director shall include but not be limited to approval of all compensation due to this Contractor under this Contract including the authorization of Extra Work and schedule modifications.

If at any time it shall be, from the viewpoint of the Authority, impracticable or undesirable in the judgment of the Director, to proceed with or continue the performance of the Contract or any part thereof, whether or not for reasons beyond the control of the Authority, the Director shall have authority to suspend performance of any part or all of the Contract until such time as the Director may deem it practicable or desirable to proceed. Moreover, if at any time it shall be, from the viewpoint of the Authority impracticable or undesirable in the judgment of the Director to proceed with or continue the performance of the Contract or any part thereof whether or not for reasons beyond the control of the Authority, the Director shall have authority to cancel this Contract as to any or all portions not yet performed and as to any materials not yet installed even though delivered. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already performed, but no allowance shall be made for anticipated profits.

#### 41. AUTHORITY OF CHIEF ENGINEER

In the performance of the Contract, the Contractor shall conform to all orders, directions and requirements of the Engineer and shall perform the Contract to the satisfaction of the Engineer at such times and places, by such methods and in such manner and sequence as he may require, and the Contract shall at all stages be subject to his inspection. The Engineer shall determine the amount, quality, acceptability and fitness of all parts of the Work and shall interpret the Contract Drawings and Specifications. The Contractor shall employ no equipment, materials, methods or men to which the Engineer objects, and shall remove no *materials, equipment or other facilities from the construction site without permission. Upon request, the Engineer shall confirm in writing any oral order, direction, requirements or determination.*

In the exercise of this authority, the Engineer, acting on the behalf of the Director, shall have power to alter the Contract Drawings and Specifications; to require the performance of Work not required by them in their present form, even though of a totally different character from that now required; and to vary, increase and diminish the character, quantity and quality of, or to countermand, any Work now or hereafter required. Such variation, increase, diminution or countermanding need not be based on necessity but may be based on convenience.

The Contractor is requested to orally advise the Engineer of questions as they arise. Although such advice will not substitute for the written notice and information for which requirements are set forth elsewhere herein, it is anticipated that it will facilitate prompt decisions on the part of the Engineer and others.

The enumeration herein or in the Specifications of particular instances in which the opinion, judgment, discretion or determination of the Engineer shall control or in which the Contract shall be performed to his satisfaction or subject to his inspection, shall not imply that only the matters of a nature similar to those enumerated shall be so governed and performed, but without exception the entire Contract shall be so governed and so performed.

To resolve all disputes and to prevent litigation the parties to this Contract authorize the Chief Engineer to decide all questions of any nature whatsoever arising out of, under, or in connection with, or in any way related to or on account of, this Contract or any subcontract, purchase or other agreement entered into by the Contractor for the performance of Work required by this Contract, (including claims in the nature of breach of Contract or fraud or misrepresentation before or subsequent to acceptance of the Contractor's Proposal and claims of a type which are barred by the provisions of this Contract) and his decision shall be conclusive, final and binding on the parties. In connection with any subcontract, purchase or other agreement entered into by the Contractor for the performance of Work required by this Contract, the Chief Engineer will resolve disputes only if such dispute has a monetary value greater than ten percent (10%) of the compensation provided for in the subcontract, purchase or other agreement and only after the Contractor and the subcontractor, materialman or other contracting party have made a reasonable attempt to resolve such dispute. The Chief Engineer, in his sole discretion, will determine if "a reasonable attempt to resolve such dispute" has been made. The Chief Engineer's decision may be based on such assistance as he may find desirable. The effect of his decision shall not be impaired or waived by any negotiations or settlement offers in connection with the question decided, whether or not he participated therein himself, or by any prior decision of the Engineer, Director or others, which prior decisions shall be deemed subject to review, or by any termination or cancellation of this Contract.

All such questions shall be submitted in writing by the Contractor to the Chief Engineer for his decision, together with all evidence and other pertinent information in regard to such questions, in order that a fair and impartial decision may be made. In any action against the Authority relating to any such question the Contractor must allege in his complaint and prove such submission, which shall be a condition precedent to any such action. No evidence or information shall be introduced or relied upon in such an action that has not been so presented to the Chief Engineer.

This numbered clause shall be governed by and construed in accordance with the law of the State of New York, without giving effect to its choice of law provisions.

The Contractor shall be required to insert this provision in all his subcontracts, purchase and other agreements for the performance of Work required by this Contract.

## 42. NOTICE REQUIREMENTS

No claim against the Authority shall be made or asserted in any action or proceeding at law or in equity, and the Contractor shall not be entitled to allowance of such claim, unless the Contractor shall have complied with all requirements relating to the giving of written notice of the information with respect to such claim as provided in this numbered clause. The failure of the Contractor to give such written notice and information as to any claim shall be conclusively deemed to be a waiver by the Contractor of such claim, such written notice and information being conditions precedent to such claim. As used herein "claim" shall include any claim arising out of, under, or in connection with, or in any way related to or on account of, this Contract (including claims in the nature of breach of Contract or fraud or misrepresentation before or subsequent to acceptance of the Contractor's Proposal and claims of a type which are barred by the provisions of this Contract) for damages, payment or compensation of any nature or for extension of any time for performance of any part of this Contract.

The requirements as to the giving of written notice and information with respect to claims shall be as follows:

- A. In the case of any claims for Extra Work, extension of time for completion, idle salaried men and equipment, or any other matter for which requirements are set forth elsewhere in this Contract as to notice and information, such requirements shall apply.
- B. In the case of all other types of claim, notice shall have been given to the Engineer, personally, as soon as practicable, and in any case, within 48 hours, after occurrence of the act, omission, or other circumstance upon which the claim is or will be based, stating as fully as practicable at the time all information relating thereto. Such information shall be supplemented with any further information as soon as practicable after it becomes or should become known to the Contractor, including daily records showing all costs which the Contractor may be incurring or all other circumstances which will affect any claim to be made, which records shall be submitted to the Engineer, personally.

The above requirements for notices and information are for the purpose of enabling the Authority to avoid waste of public funds by affording it promptly the opportunity to cancel or revise any order, change its plans, mitigate or remedy the effects of circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expense or circumstances as they occur, and the requirements herein for such notice and information are essential to this Contract and are in addition to any notice required by statute with respect to suits against the Authority.

The above referred to notices and information are required whether or not the Authority is aware of the existence of any circumstances which might constitute a basis for a claim and whether or not the Authority has indicated it will consider a claim.

No act, omission, or statement of any kind shall be regarded as a waiver of any of the provisions of this numbered clause or may be relied upon as such waiver except only either a written statement signed by the Executive Director of the Authority or a resolution of the Commissioners of the Authority expressly stating that a waiver is intended as to any particular provision of this numbered clause, and more particularly no discussion, negotiations, consideration, correspondence, or requests for information with respect to a claim by any Commissioner, officer, employee or agent of the Authority shall be construed as a waiver of any provision of this numbered clause or as authority or apparent authority to effect such a waiver.

Since merely oral notice or information may cause disputes as to the existence or substance thereof, and since notice, even if written, to other than the Authority representative above designated to receive it may not be sufficient to come to the attention of the representative of the Authority with the knowledge and responsibility of dealing with the situation only notice and information complying with the express provisions of this numbered clause shall be deemed to fulfill the Contractor's obligation under this Contract.

### 43. EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this Contract, the Contractor agrees as follows:

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin. Such action shall be taken with reference, but not be limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.
- B. The Contractor shall send to each labor union or representative of workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commission for Human Rights, advising such labor union or representative of the Contractor's agreement under clauses A through H (hereinafter called "non-discrimination clauses"). If the Contractor was directed to do so by the Authority as part of the bid or negotiation of this Contract, the Contractor shall request such labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, sex, color or national origin and that such labor union or representative either will affirmatively cooperate, within the limits of its legal and contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under this Contract, shall be in accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the State Commission for Human Rights of such failure or refusal.
- C. The Contractor shall post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses A and B and such provisions of the State's laws against discrimination as the State Commission for Human Rights shall determine.
- D. The Contractor shall state, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin.
- E. The Contractor shall comply with the provisions of Sections 291-299 of the Executive Law and the Civil Rights Law, shall furnish all information and reports deemed necessary by the State Commission for Human Rights under these non-discrimination clauses and such sections of the Executive Law, and shall permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive Law and Civil Rights Law.

- F. This Contract may be forthwith canceled, terminated or suspended, in whole or in part, by the Authority upon the basis of a finding made by the State Commission for Human Rights that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future contracts made by or on behalf of the State, the Authority or other public authority or agency of the State, until he has satisfied the State Commission for Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such finding shall be made by the State Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to the Contractor by the Commission and an opportunity has been afforded him to be heard publicly before the State Commissioner of Human Rights or his designee. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law.
- G. The Contractor shall include the provisions of clauses A through F in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of New York. The Contractor shall take such action in enforcing such provisions of such subcontract or purchase order as the Authority may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the Authority, the Contractor shall promptly so notify the General Counsel to the Authority, requesting him to intervene and protect the interests of the Authority.
- H. The provisions of this numbered clause which refer to the State Commission for Human Rights, the Attorney General and the Industrial Commissioner are inserted in this Contract for the benefit of such parties, as well as for the benefit of the Authority, and said Commission, Commissioner and the Attorney General shall have a direct right of action against the Contractor to effectuate the intent of this clause.

#### **44. PREVAILING RATE OF WAGE**

The Contractor shall pay or provide (and shall cause all subcontractors to pay or provide) to his or their workmen, laborers and mechanics (who are employed by him or them to work on an hourly or daily basis at any trade or occupation at or about the construction site) at least the prevailing rate of wage and supplements for others engaged in the same trade or occupation at the time and in the locality in which the Work is being performed in accordance with the provisions of the clause entitled "Davis-Bacon and Copeland Anti-Kickback Acts - Contracts Exceeding \$2,000" as determined by the Engineer.

For purposes of this Contract, the Engineer has determined that the prevailing rates of wage and supplements are those established by the Secretary of Labor of the United States pursuant to the Davis-Bacon Act (40 U.S.C.A. 276a) for the locality in which the Work is to be performed. The schedule of wages and supplemental benefits which are currently in effect is attached hereto. However, the applicable rates shall be those which are in effect at the time the work is performed. Although the wage and supplements determination of the Secretary may change during the term of this Contract, and the Contractor shall be bound to pay the revised amounts, no change in lump sum, unit price or combination of lump sum and unit price compensation to the Contractor shall be due based upon a change in the Secretary's determinations of wages or benefits.

The provisions of this numbered clause are inserted in this Contract for the benefit of such workmen, laborers and mechanics as well as for the benefit of the Authority; and if the Contractor or any subcontractor shall pay or provide any such workman, laborer or mechanic less than the rates of wages and supplements above described, such workman, laborer or mechanic shall have a direct right of action against the Contractor or such subcontractor for the difference between the wages and supplements actually paid or provided and those to which he is entitled under this clause. If such workman, laborer or mechanic is employed by any subcontractor whose subcontract does not contain a provision substantially similar to the provisions of this clause (requiring the payment or provision of at least the above minimum, and providing for a cause of action in the event of the subcontractor's failure to pay or provide such wages and supplements) such workman, laborer or mechanic shall have a direct right of action against the Contractor. The Authority shall not be a necessary party to any action brought by any workman, laborer or mechanic to obtain a money judgment against the Contractor or any subcontractor pursuant to this numbered clause.

Nothing herein contained shall be construed to prevent the Contractor or any subcontractor from paying higher rates of wages or providing higher supplements than the minimum hereinbefore prescribed; and nothing herein contained shall be construed to constitute a representation or guarantee that the Contractor or any subcontractor can obtain workmen, laborers and mechanics for the minimum herein before prescribed. All wages actually paid that are in excess of the prevailing wages in the performance of Extra Work shall be subject, on each occasion, to the initial and continuing approval of the Engineer in advance of the performance of such Extra Work.

The Contractor shall post at the Work site, in a place that is prominent, accessible and visible to all employees of the Contractor and its subcontractors during the daily time period that the Contractor and/or subcontractor performs Work at the site, the appropriate prevailing wage and supplement schedules. The Contractor must inform all employees, including those of its subcontractors, that they may obtain a copy of the prevailing wage and supplement schedule from the Contractor.

The Contractor and every subcontractor shall make and maintain weekly payroll records during the course of the Work and for the period set forth in the clause hereof entitled "Authority Access to Records" for all employees employed in the Work. Such records shall contain the name, address and social security number of each such employee, the employee's correct payroll classification, rate of pay and supplements, daily and weekly number of hours worked, deductions made and actual wages and supplements paid. The Contractor shall submit these weekly payroll records to the Authority (on forms furnished by the Authority) of all his payroll records and those of each of his subcontractors as the Authority may require with the Contractor's monthly Payment Application, together with an affidavit by the Contractor and by each subcontractor to the effect that such payroll records are correct and complete, the wage and supplement rates contained therein are not less than those required by the provisions of this Contract, and the classifications set forth for each employee conform with the work performed. Such copies and summaries and the original payroll records shall be available for inspection by the Authority (including its Inspector General), and the Contractor and its subcontractors shall permit such representatives to interview employees during working hours on the job site.

The Engineer may at any time request the Contractor to prepare a daily report on the the Authority form entitled *Contractor Daily Sign-In Sheet*, copies of which can be obtained from the Engineer, The *Contractor Daily Sign-In Sheet* shall be completed as follows:

- 1.) At the beginning of each workday the Contractor shall:
  - a. fill in the top of the *Contractor Daily Sign-In Sheet*, including the location, date, contractor/subcontractor name and contract number;
  - b. ensure that each employee, including those of subcontractors, has printed and signed his or her name and indicated his or her work classifications, the last four digits of his or her social security number, and his or her starting time;
- 2.) At the end of each workday, the Contractor shall:
  - a. ensure that each employee, including those of subcontractors, has signed out and indicated his or her ending time;
  - b. sign the Certification Statement at the bottom of the form to indicate that the information contained in the *Contractor Daily Sign-In Sheet* is true and accurate; and
  - c. submit the original completed form to the Engineer's representative.

In an area of his office at the Site of the Work which is accessible to his employees, the Contractor shall display such printed material as may be provided by the Engineer setting forth information for the employees of the Contractor and his subcontractors concerning the wage and supplemental benefit requirements set forth in this numbered clause. The Contractor shall also cause each of his subcontractors to display such material in a similarly accessible place in any office which the subcontractor maintains at the Site of the Work.

The Contractor's failure to comply with any provision of this numbered clause shall be deemed a substantial breach of this Contract.

#### **45. MINIMUM WAGE RATES**

The minimum wage rates as established by the Secretary of Labor are subject to change at any time before the award of the Contract except that if the change is made within five days after the opening of bids and the award is made within thirty days after bids are opened, or ninety days after the date of wage decisions, whichever is earlier, the change is not effective. Such a change is necessary in order to comply with a decision of the U.S. Department of Labor.

#### **46. EXTRA WORK ORDERS**

No Extra Work shall be performed except pursuant to written orders of the Director expressly and unmistakably indicating his intention to treat the Work described therein as Extra Work; and, exclusive of Extra Work expressly authorized by or pursuant to a resolution of the Commissioners of the Authority or its Committee on Construction, the Director shall have authority to order any item of Extra Work, if the cost thereof to the Authority together with the cost of all other Extra Work previously ordered and not expressly authorized as aforesaid will not in the aggregate be in excess of the sum specified in the letter of acceptance of the Contractor's Proposal as the limit on such authority to order Extra Work; provided, however, that Extra Work in excess of such aggregate amount may be ordered as above provided to the extent expressly authorized in a writing signed by the Executive Director of the Authority delegating authority vested in him pursuant to the By-Laws or a resolution of the Commissioners of the Authority or its Committee on Construction.

In the absence of such an order signed by the Director in the case of Extra Work, if the Engineer shall direct, order or require any Work, whether orally or in writing, which the Contractor deems to be Extra Work, the Contractor shall nevertheless comply therewith, but shall within five days give written notice thereof to the Director and the Engineer, stating why he deems it to be Extra Work, and shall moreover furnish to the Engineer time slips and memoranda as required by the clause hereof entitled "Compensation for Extra Work". Said notice, time slips and memoranda are for the purpose of affording to the Director an opportunity to verify the Contractor's claim at the time and (if he desires so to do) to cancel promptly such order, direction or requirement of the Engineer, of affording to the Engineer an opportunity of keeping an accurate record of the materials, labor and other items involved, and generally of affording to the Authority an opportunity to take such action as it may deem desirable in light of the Contractor's claims. Accordingly, the failure of the Contractor to serve such notice or to furnish such time slips and memoranda shall be deemed to be a conclusive and binding determination on his part that the direction, order or requirement of the Engineer does not involve the performance of Extra Work, and shall be deemed to be a waiver by the Contractor of all claims for additional compensation or damages by reason thereof, such written notice, time slips and memoranda being a condition precedent to such claims.

#### **47. PERFORMANCE OF EXTRA WORK**

The provisions of this Form of Contract relating generally to Work and its performance shall apply without exception to any Extra Work required and to the performance thereof. Moreover, the provisions of the Specifications relating generally to the Work and its performance shall also apply to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

#### **48. TITLE TO MATERIALS**

All materials to become part of the permanent construction shall be and become the property of the Authority upon delivery at the construction site or upon being especially adapted for use in or as a part of the permanent construction, whichever may first occur, subject however to the Contractor's assumption of risk under the clause hereof entitled "Risks Assumed by the Contractor", subparagraph A.

The Contractor shall promptly furnish to the Authority such bills of sale and other instruments as may be required by it, properly executed, acknowledged and delivered, assuring to it title to such materials, free of encumbrances and shall mark or otherwise identify all such materials as the property of the Authority.

## 49. ASSIGNMENTS AND SUBCONTRACTS

Any assignment or other transfer by the Contractor of this Contract or any part hereof or of any of his rights hereunder or of any monies due or to become due hereunder and any delegation of any of his duties hereunder without the express consent in writing of the Authority shall be void and of no effect as to the Authority, provided, however, that the Contractor may subcontract portions of the Work to such persons as the Engineer may, from time to time, expressly approve in writing. For each individual, partnership or corporation proposed by the Contractor as a subcontractor, the Contractor shall submit to the Authority a certification or, if a certification cannot be made, a statement by such person, partnership or corporation to the same effect as the certification or statement required from the Contractor pursuant to the clauses of the "Information For Bidders" entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Suspension, Debarment, Disqualification, Prequalification Denial or Termination, Etc; Disclosure of Other Required Information", "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent Fee or Other Fee" and "Certification of Participation in a State-Registered Apprenticeship Program". The Certification of Participation in a State-Registered Apprenticeship Program shall only be applicable to each subcontractor whose total amount of subcontract under this Contract is greater than \$1 Million Dollars. Notwithstanding the aforementioned, for any subcontract or supply contract greater than \$25,000, the Contractor shall obtain certifications and any necessary disclosure forms from all subcontractors and suppliers as set forth in Chapter VII, Paragraph 62 (Debarment and Suspension) and for any subcontract or supply contract greater than \$100,000, the Contractor shall obtain certifications and any necessary disclosure forms from all subcontractors and suppliers as set forth in Chapter VII, Paragraph 6 (Certification - Lobbying Restrictions - Contracts Exceeding \$100,000) and forward the originals to the Director of Procurement, Procurement Department, Port Authority of New York & New Jersey, One Madison Avenue, 7<sup>th</sup> Floor New York, New York 10010. All further subcontracting by any subcontractor shall also be subject to such approval of the Engineer. Approval of a subcontractor may be conditioned on (among other things) the furnishing, without expense to the Authority, of a surety bond guaranteeing payment by the subcontractor of claims of materialmen, subcontractors, workmen and other third persons arising out of the subcontractor's performance of any part of the Work.

No consent to any assignment or other transfer, and no approval of any subcontractor, shall under any circumstances operate to relieve the Contractor of any of his obligations; no subcontract, no approval of any subcontractor and no act or omission of the Authority or the Engineer shall create any rights in favor of such subcontractor and against the Authority; and as between the Authority and the Contractor, all assignees, subcontractors, and other transferees shall for all purposes be deemed to be agents of the Contractor. Moreover, all subcontracts and all approvals of subcontractors shall be and, regardless of their form, shall be deemed to be conditioned upon performance by the subcontractor in accordance with this Contract; and if any subcontractor shall fail to perform the Contract to the satisfaction of the Engineer, the Engineer shall have the absolute right to rescind his approval forthwith and to require the performance of the Contract by the Contractor personally or through other approved subcontractors.

In the event the Authority enters into agreement with a third party or third parties, for such party or parties to assume management and/or operation of some or all of the World Trade Center, the Authority shall have the right to assign this Contract in whole or in part to such third party or parties following advance written notice to the Contractor.

## **50. CLAIMS OF THIRD PERSONS**

The Contractor undertakes to pay all claims lawfully made against him by subcontractors, materialmen and workmen, and all claims lawfully made against him by other third persons arising out of or in connection with or because of the performance of this Contract and to cause all subcontractors to pay all such claims lawfully made against them.

## **51. CERTIFICATES OF PARTIAL COMPLETION**

If at any time prior to the rendition of the Certificate of Final Completion, any portion of the permanent construction has been satisfactorily completed, and if in the judgment of the Director such portion of the permanent construction is not necessary for the operations of the Contractor but will be immediately useful to and is needed by the Authority for other purposes, the Engineer may render to the Authority and to the Contractor a certificate in writing to that effect (herein called a Certificate of Partial Completion), and thereupon or at any time thereafter the Authority may take over and use the portion of the permanent construction described in such Certificate and exclude the Contractor therefrom.

The rendition of a Certificate of Partial Completion shall not be construed to constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates in the event that he has failed to complete the same in accordance with the terms of this Contract. Moreover, the acceptance of a Certificate of Partial Completion by the Authority shall not operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance and Payment Bonds.

## **52. CERTIFICATE OF SUBSTANTIAL COMPLETION**

Prior to the rendition of the Certificate of Final Completion, the Director may deem the entire Work to be substantially completed when, in the judgment of the Engineer, the permanent construction has been satisfactorily completed to the point where the Work is fit for its intended purpose and use. The Engineer may, if such a determination of substantial completion is made and at such time, render to the Authority and to the Contractor a certificate in writing to that effect (herein called the Certificate of Substantial Completion), and thereupon or at any time thereafter the Authority may take over and use the permanent construction described in such Certificate and exclude the Contractor therefrom. Whether to make a determination of a substantial completion as to any portion of the Work, and whether to render such a Certificate, shall be the discretionary determination of the Engineer based upon an examination and appraisal of the completed Work, and no right to such a determination or certification is established in the Contractor by this provision.

The rendition of such Certificate of Substantial Completion shall not relieve the Contractor of his obligation hereunder to complete the Work of this Contract nor shall it be construed to constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates in the event that he has failed to complete the same in accordance with the terms of this Contract. Moreover, the acceptance of a Certificate of Substantial Completion by the Authority shall not operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance and Payment Bonds.

When the Contractor is of the opinion that the Work is substantially complete as described above, the Contractor may submit to the Engineer a written request that the Engineer inspect the Work so as to determine, in the Engineer's sole opinion, whether substantial completion has been achieved. The Contractor's written request shall list the specific items of Work that are incomplete. Upon such a request, the Engineer will respond within 30 days with a Certificate of Substantial Completion or provide a written explanation of the reasons why the Work is not substantially complete including a list of open items necessary to achieve substantial completion. Nothing contained herein shall be deemed to preclude the Engineer from making a determination of substantial completion in the absence of a request therefor by the Contractor.

### **53. CERTIFICATE OF FINAL COMPLETION**

After the satisfactory completion of all Work whatsoever required and the making of such tests and inspections as may be necessary or desirable, the Director shall render to the Authority and to the Contractor a certificate in writing (herein called the Certificate of Final Completion) certifying that in his opinion all Work under this Contract, including Extra Work, has been completed in accordance with the Contract Drawings and Specifications and the requirements of the Engineer, and certifying the date as of which it was so completed.

The rendition of the Certificate of Final Completion shall not be construed to constitute an extension of the Contractor's time for performance in the event that he has failed to complete the Work in accordance with the terms of this Contract. Moreover, the acceptance of the Certificate of Final Completion by the Authority shall not operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance and Payment Bonds.

### **54. NO GIFTS, GRATUITIES, OFFERS OF EMPLOYMENT, ETC.**

During the term of this Contract, the Contractor shall not offer, give or agree to give anything of value either to an Authority employee, agent, job shopper, consultant, construction manager or other person or firm representing the Authority, or to a member of the immediate family (i.e, a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Authority of duties involving transactions with the Contractor on behalf of the Authority, whether or not such duties are related to this Contract or any other Authority contract or matter. Any such conduct shall be deemed a material breach of this Contract.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Contract or any other Authority contract), etc., which might tend to obligate the Authority employee to the Contractor, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Contract or any other Authority contract.

Where used in this clause, the term "Authority" shall be deemed to include all subsidiaries of the Authority. Currently, those subsidiaries are the Port Authority Trans-Hudson Corporation (PATH), the Newark Legal and Communications Center and the New York and New Jersey Railroad Corporation.

In addition, during the term of this Contract, the Contractor shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated as of April 11, 1996 (a copy of which is available upon request to the Office of the Secretary of the Authority).

The Contractor shall include the provisions of this clause in each subcontract entered into under this Contract.

**CHAPTER V**  
**WARRANTIES MADE AND LIABILITY**  
**ASSUMED BY THE CONTRACTOR**

**55. CONTRACTOR'S WARRANTIES**

The Contractor represents and warrants:

- A. That he is financially solvent, that he is experienced in and competent to perform the type of services contemplated by this Contract, that the facts stated or shown in any papers submitted or referred to in connection with his Proposal are true, and, if the Contractor be a corporation, that it is authorized to perform this Contract;
- B. That he has carefully examined and analyzed the provisions and requirements of this Contract and inspected the construction site, that from his own investigations he has satisfied himself as to the nature of all things needed for the performance of this Contract, the general and local conditions and all other matters which in any way affect this Contract or its performance, and that the time available to him for such examination, analysis, inspection and investigations was adequate;
- C. That the Contract is feasible of performance in accordance with all its provisions and requirements and that he can and will perform it in strict accordance with such provisions and requirements;
- D. That no Commissioner, officer, agent or employee of the Authority is personally interested directly or indirectly in this Contract or the compensation to be paid hereunder; and
- E. That, except only for those representations, statements or promises expressly contained in this Contract, no representation, statement or promise, oral or in writing, of any kind whatsoever by the Authority, its Commissioners, officers, agents, employees or consultants has induced the Contractor to enter into this Contract or has been relied upon by the Contractor, including any with reference to: (1) the meaning, correctness, suitability, or completeness of any provisions or requirements of this Contract; (2) the nature, existence or location of materials, structures, obstructions, utilities or conditions, surface or subsurface, which may be encountered at the construction site; (3) the nature, quantity, quality or size of the materials, equipment, labor and other facilities needed for the performance of this Contract; (4) the general or local conditions which may in any way affect this Contract or its performance; (5) the price of the Contract; or (6) any other matters, whether similar to or different from those referred to in (1) through (5) immediately above, affecting or having any connection with this Contract, the bidding thereon, any discussions thereof, the performance thereof or those employed therein or connected or concerned therewith.

Moreover, the Contractor accepts the conditions at the construction site as they may eventually be found to exist and warrants and represents that he can and will perform the Contract under such conditions and that all materials, equipment, labor and other facilities required because of any unforeseen conditions (physical or otherwise) shall be wholly at his own cost and expense, unless specifically provided for elsewhere in this Contract.

Nothing in the Contract Drawings or Specifications or any other part of the Contract is intended as or shall constitute a representation by the Authority as to the feasibility of performance of this Contract or any part thereof. Moreover, the Authority does not warrant or represent either by issuance of the Contract Drawings and Specifications or by any provision of this Contract as to time for performance or completion or otherwise that the Contract may be performed or completed by the times required herein or by any other times.

The Contractor further represents and warrants that he was given ample opportunity and time and by means of this paragraph was requested by the Authority to review thoroughly all documents forming this Contract prior to opening of Proposals on this Contract in order that he might request inclusion in this Contract of any statement, representation, promise or provision which he desired or on which he wished to place reliance; that he did so review said documents, that either every such statement, representation, promise or provision has been included in this Contract or else, if omitted, that he expressly relinquishes the benefit of any such omitted statement, representation, promise or provision and is willing to perform this Contract without claiming reliance thereon or making any other claim on account of such omission.

The Contractor further recognizes that the provisions of this numbered clause (though not only such provisions) are essential to the Authority's consent to enter into this Contract and that without such provisions, the Authority would not have entered into this Contract.

## **56. RISKS ASSUMED BY THE CONTRACTOR**

The Contractor assumes the following distinct and several risks, whether they arise from acts or omissions (whether negligent or not) of the Contractor, of the Authority, or of third persons, or from any other cause, and whether such risks are within or beyond the control of the Contractor, excepting only risks which arise solely from affirmative acts done by the Authority subsequent to the opening of Proposals on this Contract with actual and willful intent to cause the loss, damage and injuries described in subparagraphs A through D below:

- A. The risk of loss or damage to the permanent construction prior to the rendition of the Certificate of Final Completion (other than loss or damage to the portions of the permanent construction with respect to which Certificates of Partial Completion have been issued), and the Contractor shall forthwith repair, replace and make good any such loss or damage to the permanent construction without cost to the Authority;
- B. The risk of loss, damage to or alterations of the structures to be demolished occurring prior to completion of demolition by the Contractor (such structures being still included, however, in the term "Work"). In the event of such loss, damage or alterations, the Contractor shall nevertheless complete the performance of the Work, including the demolition, without additional cost to the Authority and without compensation for lost salvage value;

- C. The risk of claims, fines or penalties, just or unjust, made by third persons or assessed by courts or governmental agencies or entities against the Contractor or the Authority on account of injuries (including wrongful death), loss, damage or liability of any kind whatsoever arising or alleged to arise out of or in connection with the performance of the Work (whether or not actually caused by or resulting from the performance of the Work) or out of or in connection with the Contractor's operations or presence at or in the vicinity of the construction site or Authority premises, including claims against the Contractor or the Authority for the payment of workers' compensation, whether such claims, fines or penalties are made or assessed and whether such injuries, damage, loss and liability are sustained at any time both before and after the rendition of the Certificate of Final Completion;
- D. The risk of loss or damage to any property of the Contractor, and of claims made against the Contractor or the Authority for loss or damage to any property of subcontractors, materialmen, workmen and others performing the Work, occurring at any time prior to completion of removal of such property from the construction site or Authority premises or the vicinity thereof.

The Contractor shall indemnify the Authority, the MTA and the FTA against all claims described in subparagraphs C and D above and for all expense incurred by it in the defense, settlement or satisfaction thereof, including expenses of attorneys, except where indemnity would be precluded by New York State General Obligations Law, Section 5-322.1 or by other applicable law. If so directed, the Contractor shall defend against any claim described in subparagraphs C and D above, in which event he shall not without obtaining express advance permission from the General Counsel of the Authority raise any defense involving in any way jurisdiction of the tribunal, immunity of the Authority, governmental nature of the Authority or the provisions of any statutes respecting suits against the Authority. Unless a claim is one which the Contractor is not required to indemnify the Authority against as described in the first sentence of this paragraph, such defense shall be at the Contractor's cost.

The provisions of this numbered clause shall also be for the benefit of the Commissioners, officers, agents and employees of the Authority, so that they shall have all the rights which they would have under this numbered clause if they were named at each place above at which the Authority is named, including a direct right of action against the Contractor to enforce the foregoing indemnity, except, however, that the Authority by action of its Board of Commissioners may at any time in its sole discretion and without liability on its part cancel the benefit conferred on any of them by this numbered clause, whether or not the occasion for invoking such benefit has already arisen at the time of such cancellation.

Neither the issuance of a Certificate of Completion nor the making of Final Payment shall release the Contractor from his obligations under this numbered clause. Moreover, neither the enumeration in this numbered clause nor the enumeration elsewhere in this Contract of particular risks assumed by the Contractor or of particular claims for which he is responsible shall be deemed (a) to limit the effect of the provisions of this numbered clause or of any other clause of this Contract relating to such risks or claims, (b) to imply that he assumes or is responsible for risks or claims only of the type enumerated in this numbered clause or in any other clause of this Contract, or (c) to limit the risks which he would assume or the claims for which he would be responsible in the absence of such enumerations.

#### **57. NO THIRD PARTY RIGHTS**

Nothing contained in this Contract is intended for the benefit of third persons, except to the extent that the Contract specifically provides otherwise by use of the words "benefit" or "direct right of action".

## 58. INSURANCE PROCURED BY THE AUTHORITY

In order to reduce the cost of this Contract, the Authority will procure and will maintain in force and pay the premiums on the WTC Transportation Hub Owner Controlled Insurance Program (OCIP) as follows:

### A. Workers' Compensation

A separate standard NYS Workers' Compensation policy will be issued to each Contractor performing Work at the construction site. Coverage will include:

- 1.) Workers' Compensation, including Occupational Disease, and
- 2.) Employers' Liability, subject to the laws of New York State;
- 3.) U.S. Longshore and Harbor Workers' Act, Federal Employers' Liability Act, and Maritime Endorsement, as applicable.

NOTE: Workers' Compensation coverage is not provided for certain types of work performed (e.g., asbestos abatement or electrical work). However, it is the responsibility of the Contractor to comply with NYS Workers' Compensation law by providing their own coverage for their workers. Please contact P.A. Treasury / Risk Management.

### B. Commercial General Liability Insurance

Commercial General Liability Insurance to each Contractor, as follows:

- 1.) \$1,000,000,000 Combined Single Limit (CGL) each one occurrence and aggregate.
- 2.) General Liability and Excess Liability policies include the following coverages and provisions:
  - a. Bodily Injury and Property Damage Liability
  - b. Completed Operations extended for three (3) years from the date of termination of the Insurance Policy or completion of the Contract, whichever comes first. "Completed Operations Liability", means liability for "Bodily Injury" and/or "Property Damage" arising out of the "Insured's" operations or reliance upon a representation or warranty made at any time with respect thereto, but only if the "Bodily Injury" and /or "Property Damage" happens after such operations have been completed or abandoned and happens away from the premises owned by or rented to any "Insured" (other than those premises owned or operated by the named "Insured").
  - c. Personal Injury Liability
  - d. Cross Liability in respect to Bodily Injury claims
  - e. Incidental Malpractice Liability
  - f. Advertising Liability

### C. Builder's Risk Insurance

Builder's Risk Insurance coverages are as follows:

- 1.) \$1,000,000,000 of Hard Costs (subject to a \$50,000,000 annual aggregate for Flood and Earthquake damage and \$250,000,000 per occurrence as respects Windstorm).

- 2.) Coverages include, but are not limited to:
  - a. All property to be used in or incidental to the Contract, including property in the Insured's custody, property in which the insured has an insurable interest, property for which the insured is liable.

And as more fully described in the Lexington Manuscript Completed Value Builders Risk policy form.

D. Contractors Pollution Liability

Contractors Pollution Liability coverage is as follows:

- 1.) Limits - \$100,000,000 each combined with a \$100,000,000 policy aggregate. The deductible is \$10,000 that is the responsibility of the Contractor and subcontractors. The policy has limitations and exclusions.
- 2.) Bodily injury, property damage, or environmental damage caused by pollution conditions resulting from covered operations (the Contract work) only, and must be unexpected and unintended from the standpoint of the Insured.
- 3.) The bodily injury, property damage, or environmental damage must occur during the policy period.

E. Terrorism

- 1.) Limits - \$500,000,000

Coverage – Based upon the Terrorism Risk Insurance Act of 2002 and the Terrorism Risk Insurance Extension Act of 2005.

Coverage includes acts considered “certified” and “non-certified” acts of terrorism.

Determination in any instance as to the appropriateness of the included coverage described in A.1, 2 and 3 above will be made based upon information to be provided by the Contractor relating to the mode of performance of work to be done under the Contract.

The policy described in A above will not provide coverage for any workers' compensation for the Contractor and/or subcontractors who perform any asbestos Work. In such cases, the Contractor or subcontractors shall procure and maintain, at their own expense, the workers' compensation insurance in accordance with the requirements of law in the state(s) where the work will take place, along with employer's liability insurance (in limits of not less than \$1 million per occurrence).

Should the Contractor and/or subcontractors be required to procure the workers' compensation insurance, within ten days after the acceptance of its Proposal the Contractor shall deliver to the General Manager, Risk Management, The Port Authority of NY & NJ, Treasury Department, 225 Park Avenue South, 12<sup>th</sup> Floor, New York, N.Y. 10003 (Attn: The WTC Coordinator), an original certificate, stating the Contract number, from the insurer. A duplicate certificate evidencing the above insurance shall also be delivered to the Engineer. With regard to insurance required to be procured by a subcontractor, the Contractor shall deliver the certificate described above at least ten days before the subcontractor commences Work.

The requirements for insurance procured by the Contractor or subcontractors shall not in any way be construed as a limitation on the nature or extent of the obligations of the Contractor or subcontractors.

The current policies described in A through E of this numbered clause are on file and available for examination by appointment in the office of the General Manager, Risk Management, The Port Authority of NY & NJ, Treasury Department, 225 Park Avenue South, 12<sup>th</sup> Floor, New York, N.Y. 10003. The policies under A and E above are subject to certain coverage exclusions. The Contractor and subcontractors shall comply with all obligations of the insured under or in connection with all of the policies described in A through E above.

The Authority shall have the right at any time and from time to time at its option to procure insurance substituting in whole or in part for any or all of the policies described in A through E above or to require that the Contractor and the subcontractors themselves obtain insurance substituting in whole or part for that above referred to, provided always, however, that the Contractor and the subcontractors shall be afforded coverage as stipulated by the Authority and the Authority shall either pay the premiums on such substitute insurance or reimburse the Contractor and the subcontractors therefor.

Neither the procurement of the above insurance or any substitute insurance nor the extent of the coverage or the limits of liability thereunder shall be construed to be a limitation on the nature or extent of the Contractor's obligations, or to relieve the Contractor of any such obligations, and the procurement of the above insurance is only for the purpose of reducing the cost of the Contract without constituting any representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on the Contractor by law (except the applicable State Workers' Compensation Law) or by this or any other Contract.

Notwithstanding any provision of this clause, however, no subcontractor shall be or have the right to be covered under the policies of insurance above referred to until the subcontractor has been expressly approved in writing by the Engineer, as required under this Contract, and such approval may be withheld, among other reasons, until execution by the subcontractor of agreements affirming its obligations provided in this clause with respect to the above insurance.

The provisions of this numbered clause are not intended to create any rights for the Contractor other than rights, which may be available to the Contractor under said policies themselves, whatever such rights may be. Moreover, the Authority makes no representation or guaranty, either by the provisions of this numbered clause or otherwise, as to the effect of or the coverage under said policies, and no employee or agent of the Authority is authorized to make any such representation or guaranty, either by the provisions of this numbered clause or otherwise, as to the effect of or the coverage under said policies, and no employee or agent of the Authority is authorized to make any such representation or guaranty or to offer any interpretation of or information on said policies.

The Contractor warrants and represents that it has examined and is familiar with the above stated coverages and that in submitting its Proposal it has relied solely on its own interpretation thereof and not on any representations or statements, oral or written, of the Authority, its Commissioners, officers, agents, employees, consultants or contractors.

All negotiations and adjustments with any insurer concerning payment for any loss, the risk of which is borne by the Contractor under this Contract, shall be the responsibility of and shall be conducted by the Contractor unless the applicable policy provides otherwise. The Contractor shall, however, inform the Engineer of the progress of all such negotiations and notify the Engineer sufficiently in advance of all meetings thereon so that the Engineer or designated representatives may attend said negotiations if they so desire.

The Authority shall be entitled to all returned premiums, dividends and credits which may become payable at any time for any reason whatsoever in connection with the aforementioned insurance. The Contractor hereby assigns to the Authority all such returned premiums, dividends and credits and the subcontractors shall be deemed to have assigned to the Authority all such returned premiums, dividends and credits by becoming subcontractors under this Contract. The Contractor shall execute and cause the subcontractors to execute any instrument necessary or convenient to evidence the Authority's right to such returned premiums, dividends and credits.

Notwithstanding any payment by the Authority of any insurance premiums, the Authority shall not be deemed the employer of any employees hired by the Contractor or any subcontractor covered by such insurance nor shall it be liable for any of the obligations of such employer.

The Contractor and the subcontractors shall cooperate to the fullest extent with the Authority in all matters relating to the aforementioned insurance and shall comply with all requirements of all insurance policies procured by the Authority. They shall also at their own expense furnish the Engineer or a duly authorized representative with copies of all payrolls, correspondence, papers, records and other things necessary or convenient for dealing with or defending against any claims and for procuring or administering the aforementioned insurance including furnishing the name of any of their employees, officers, or agents whose presence or testimony is necessary or convenient in any negotiations or proceedings involving such insurance.

#### **59. INSURANCE PROCURED BY CONTRACTOR**

The Contractor, in its own name as insured, shall maintain and pay the premiums on the policy or policies of insurance for coverage(s) as hereinafter described, which shall cover its operations hereunder, shall be effective throughout the effective period of this contract, and shall afford coverage(s) in not less than the amounts set forth below:

- A. Commercial Automobile Liability Insurance covering "any" vehicles on the broadest commercially available form:
  - 1.) Combined single limit for bodily injury and property damage liability – \$5 Million each accident.

The Authority shall be named as an additional insured in the liability policy or policies and evidenced by the certificate(s) of insurance set forth above. The liability policy(ies) and the certificate(s) of insurance shall show coverage for cross-liability/severability of interests as provided under the standard ISO "separation of insureds" condition.

The Contractor shall deliver certified copies of the policy(ies) described above or certificate(s) of insurance evidencing the existence thereof to the Engineer at the location where the work will be performed, within ten (10) days after the acceptance of its Proposal. Such policy(ies) or certificate(s) shall state the contract number and shall contain a valid provision or endorsement that the policy(ies) may not be canceled, terminated, changed or modified without giving thirty (30) days written advance notice thereof to the Authority. Such policy(ies) and certificate(s) of insurance shall contain an additional endorsement providing that "the insurance carrier shall not, without obtaining express advance permission from the General Counsel of the Authority, raise any defense involving in any way the jurisdiction of the tribunal over the person of the Authority, raise any defense involving in any way the jurisdiction of the Authority, its Commissioners, officers, agents or employees, the governmental nature of the Authority or the provisions of any statute respecting suits against the Authority".

Certified copies of all renewal policies or certificates evidencing their existence shall be delivered to the Engineer at the location where the work will be performed at least ten (10) days prior to the expiration date of each expiring policy. If at any time any of the certificates or policies shall be or become unsatisfactory to the Authority as to form or substance, or if the carrier issuing any such certificate or policy shall be or become unsatisfactory to the Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy. Upon request of the General Manager, Risk Management, the Contractor shall furnish the Authority with a certified copy of each policy stated above.

The requirements for insurance procured by the Contractor shall not in any way be construed as a limitation on the nature or extent of the contractual obligations assumed by the Contractor under this contract. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on them by law or by this or any other Contract.

**CHAPTER VI**  
**RIGHTS AND REMEDIES**

**60. RIGHTS AND REMEDIES OF AUTHORITY**

The Authority shall have the following rights in the event the Director shall deem the Contractor guilty of a breach of any term whatsoever of this Contract:

- A. The right to take over and complete the Work or any part thereof as agent for and at the expense of the Contractor, either directly or through other contractors.
- B. The right to cancel this Contract as to any or all of the Work yet to be performed.
- C. The right to specific performance, an injunction or any other appropriate equitable remedy.
- D. The right to money damages.

For the purpose of this Contract, breach shall include but not be limited to the Contractor's failure to procure insurance satisfactory to the Authority within the time limit specified in the Clause hereof entitled "Insurance Procured by Contractor" and the following, whether or not the time has yet arrived for performance of an obligation under this Contract: a statement by the Contractor to any representative of the Authority indicating that he cannot or will not perform any one or more of his obligations under this Contract; any act or omission of the Contractor or any other occurrence which makes it improbable at the time that he will be able to perform any one or more of his obligations under this Contract; any suspension of or failure to proceed with any part of the Work by the Contractor which makes it improbable at the time that he will be able to perform any one or more of his obligations under this Contract; any false certification at any time by the Contractor as to any material item certified pursuant to the clauses of the Information For Bidders entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Suspension, Debarment, Disqualification, Prequalification Denial or Termination, Etc; Disclosure of Other Required Information", "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent Fee or Other Fee", and "Certification of Participation in a State-Registered Apprenticeship Program" any false certification at any time by the Contractor or a subcontractor pursuant to the clause "Prevailing Rate of Wage Certification" set forth in the Information for Bidders, or the willful or fraudulent submission of any signed statement pursuant to such clauses which is false in any material respect; or the Contractor's incomplete or inaccurate representation of its status with respect to the circumstances provided for in such clauses.

The enumeration in this numbered clause or elsewhere in this Contract of specific rights and remedies of the Authority shall not be deemed to limit any other rights or remedies which the Authority would have in the absence of such enumeration; and no exercise by the Authority of any right or remedy shall operate as a waiver of any other of its rights or remedies not inconsistent therewith or to estop it from exercising such other rights or remedies.

**61. RIGHTS AND REMEDIES OF CONTRACTOR**

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract which may be committed by the Authority, the Contractor expressly agrees that no default, act or omission of the Authority shall constitute a material breach of this Contract, entitling him to cancel or rescind it or (unless the Director shall so direct) to suspend or abandon performance.

## **62. PERFORMANCE OF WORK AS AGENT FOR CONTRACTOR**

In the exercise of its right to take over and complete Work as agent for the Contractor, for which provision is made in the clause hereof entitled "Rights and Remedies of Authority", the Authority shall have the right to take possession of and use or permit the use of any and all plant, materials, equipment and other facilities provided by the Contractor for the purpose of the Work and the Contractor shall not remove any of the same from the site of the Work without express permission. Unless expressly directed to discontinue the performance of all Work, the Contractor shall continue to perform the remainder thereof in such manner as in no way will hinder or interfere with the portions taken over by the Authority.

In the certificate of total compensation earned, for which provision is made in the clause hereof entitled "Final Payment", the Director will separately state the amount of Work performed by the Authority as agent for the Contractor, credit to the Authority the cost thereof, and credit to the Contractor the compensation earned thereby; and the difference between them shall be payable by the Contractor to the Authority, or vice versa as the case may be. If such difference is in its favor, the Authority may deduct it from any moneys due the Contractor, and if such moneys be insufficient, the balance thereof shall be payable to it on demand; if in the Contractor's favor, it shall constitute part of the Final Payment.

The exercise by the Authority of its right to take over the Work shall not release the Contractor or his sureties from any of his or their obligations or liabilities under this Contract or the Performance and/or the Payment Bond.

## **63. NO ESTOPPEL OR WAIVER**

The Authority shall not be precluded or estopped by any acceptance, certificate or payment, final or otherwise, issued or made under this Contract or otherwise issued or made by it, the Director, or any officer, agent or employee of the Authority, from showing at any time the true amount and character of Work performed, or from showing that any such acceptance, certificate or payment is incorrect or was improperly issued or made; and the Authority shall not be precluded or estopped, notwithstanding any such acceptance, certificate or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on his part to comply strictly with this Contract, and any moneys which may be paid to him or for his account in excess of those to which he is lawfully entitled.

Neither the acceptance of the Work or any part thereof, nor any payment therefor, nor any order or certificate issued under this Contract or otherwise issued by the Authority, the Director, or any officer, agent or employee of the Authority, nor any permission or direction to continue with the performance of Work, nor any performance by the Authority of any of the Contractor's duties or obligations, nor any aid lent to the Contractor by the Authority in his performance of such duties or obligations, nor any other thing done or omitted to be done by the Authority, its Commissioners, officers, agents or employees shall be deemed to be a waiver of any provision of this Contract or of any rights or remedies to which the Authority may be entitled because of any breach thereof, excepting only a resolution of its Commissioners, providing expressly for such waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the Work, because of any breach hereof, shall be deemed a waiver of any money damages to which the Authority may be entitled because of such breach. Moreover, no waiver by the Authority of any breach of this Contract shall be deemed to be a waiver of any other or any subsequent breach.

## **CHAPTER VII – FEDERAL TRANSIT ADMINISTRATION REQUIREMENTS**

### **64. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION TERMS**

This Agreement is anticipated to be partially funded by the Federal Transit Administration, pursuant to the Agreement entitled, "United States of America Department of Transportation Federal Transit Administration – Master Agreement for Lower Manhattan Recovery Grants", dated October 1, 2006 ("Master Agreement") which is attached hereto as Appendix A and incorporated herein by reference.

All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E as modified by LMRO Third Party Contracting Requirements, dated August 21, 2003, are attached hereto as Appendix B and incorporated herein by reference. Anything to the contrary herein notwithstanding, all FTA-mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Contract. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any Authority requests which would cause the Authority to be in violation of the FTA terms and conditions.

Each and every provision required by the FTA to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein. If any provision of this Contract shall be such as to effect non-compliance with any FTA requirement, such provision shall not be deemed to form part hereof, but the balance of this Contract shall remain in full force and effect.

### **65. FEDERAL CHANGES**

The Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement, as they may be amended or promulgated from time to time during the term of this Contract. Contractor's failure to so comply shall constitute a material breach of this Contract. The most recent Federal laws, regulations, policies, and administrative practices apply to this Contract at any particular time, unless FTA issues a written determination otherwise. All standards or limits within the Master Agreement are minimum requirements, unless modified by the FTA.

### **66. NO FEDERAL GOVERNMENT OBLIGATIONS TO THIRD PARTIES**

The Authority and the Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to the Authority, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal Assistance provided by the FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

## **67. ORGANIZATIONAL CONFLICT OF INTEREST**

- A. This Contract may give rise to a potential for an organizational conflict of interest. An organizational conflict of interest exists when the nature of the work to be performed under the contract may, without some form of restriction on future activities; result in an unfair competitive advantage to the Contractor.
- 1.) The Contractor shall have access to confidential and/or sensitive Authority information in the course of contract performance. Additionally, the Contractor may be provided access to proprietary information obtained from other contracted entities during contract performance. The Contractor agrees to protect all such information from disclosure unless so authorized, in writing, by the Authority and to refrain from using such information for any purpose other than that for which it was furnished.
  - 2.) To the extent that the Contractor either (a) uses confidential and/or sensitive Authority information or proprietary information obtained from other Authority contractors to develop any form of document, report, or plan that is determined by the Authority to be the basis, in whole or in part, of any subsequent solicitation issued by the Authority or (b) develops written specifications that are used in any subsequent solicitation issued by the Authority, the Contractor agrees that it shall not be eligible to compete for such subsequent solicitation(s) as a prime or principal contractor or as part of any teaming arrangement unless the Authority provides, in writing, a specific waiver of this restriction. The duration of any restriction imposed under this subparagraph shall not exceed the length of the initial performance period of any subsequently awarded contract for which the Contractor was ineligible to compete.
- B. The Contractor, by submitting its bid or proposal, agrees to the above stated conditions and terms and further agrees to perform all duties under the contract and, in doing so, not to enter into contractual agreements with Authority prime contractors and first-tier subcontractors in such a way as to create an organizational conflict of interest.
- C. If the Authority determines that the Contractor has violated any term of this numbered clause, the Authority may take any appropriate action available under the law or regulations to obtain redress to include, but not be limited to, requiring the Contractor to terminate any affiliation or contractual arrangement with an Authority prime contractor or first-tier subcontractor at no cost to the Authority; determining the Contractor ineligible to compete for or be awarded any subsequent or "follow-on" contracts that may be based upon the Contractor's actions under this Contract or violations of this numbered clause, or terminating this Contract, in whole or in part.

## **68. CERTIFICATION - DEBARMENT AND SUSPENSION**

This Contract is a covered transaction for purposes of 49 CFR Part 29. As such, the Contractor is required to verify that none of the Contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The Contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the Port Authority of New York and New Jersey. If it is later determined that the proposer knowingly rendered an erroneous certification, in addition to remedies available to the Port Authority of New York and New Jersey, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

- A. FTA requires that each potential Contractor, for major third party contracts, complete a certification entitled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion" for itself and its principals and requires each Subcontractor or Supplier [for Subcontracts and Supplier agreements expected to equal or exceed the Federal procurement small purchase threshold fixed at 10 U.S.C. 253(g) (currently \$25,000)] to complete a certification entitled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tiered Covered Transactions" for itself and its principals. Copies of the required Certification forms and accompanying instructions are set forth following the clause herein entitled "Integrity Monitor".
- B. In the event that the Contractor has certified prior to award that it is not proposed for debarment, debarred, suspended, or voluntarily excluded from covered transactions by any Federal Department or agency and such certification is found to be false, this Contract may be canceled, terminated or suspended by the Authority and the Contractor will be liable for any and all damages incurred by the Authority because of such cancellation, termination or suspension because of such false certification.
- C. The Contractor shall obtain certifications from all known potential Subcontractors and Suppliers [for which payments are expected to equal or exceed the Federal procurement small purchase threshold fixed at 10 U.S.C. 253(g) (currently \$25,000)] and submit such certifications to the address set forth in E below.
- D. Prior to the award of any Subcontracts or Supplier agreements expected to equal or exceed the Federal procurement small purchase threshold fixed at 10 U.S.C. 253(g) (currently \$25,000), regardless of tier, any prospective Subcontractor or Supplier who has not previously submitted a certification for this Contract must execute and submit to the Contractor a certification in the form set forth following the clause herein entitled "Integrity Monitor" which will be deemed a part of the resulting Subcontract and Supplier agreement.
- E. The originals of any Certifications or correspondence relating hereto shall be sent by the Contractor to the Director of Procurement, One Madison Avenue, 7<sup>th</sup> Floor, New York, NY 10010.
- F. The Contractor shall not knowingly enter into any Subcontracts or Supplier agreements with a person that is proposed for debarment, debarred, suspended, declared ineligible or voluntarily excluded from covered transactions.
- G. As required by FTA, the Contractor and its Subcontractors or Suppliers required to file the certification have a continuing duty to disclose, and shall provide immediate written notice to the Authority if, at any time, it learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

**69. CERTIFICATION - LOBBYING RESTRICTIONS - CONTRACTS EXCEEDING \$100,000**

A. Definitions as used in this Clause:

- 1.) "Agency," as defined in 5 U.S.C. 552(f), includes Federal executive departments and agencies as well as independent regulatory commissions and Government corporations, as defined in 31 U.S.C. 9101(1). As used in the Certification set forth following the clause herein entitled "Integrity Monitor" t, it also includes any other public agency.
- 2.) "Covered Federal action" means any of the following Federal actions:
  - a. The awarding of any Federal contract;
  - b. The making of any Federal grant;
  - c. The making of any Federal loan;
  - d. The entering into of any cooperative agreement; and
  - e. The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. As used in the above referenced Certification, it includes the award of the contract with which it is associated.
- 3.) "Indian tribe" and "tribal organization" have the meaning provided in Section 4 of the Indian Self Determination and Education Assistance Act (25 U.S.C. 450B). Alaskan natives are included under the definitions of Indian tribes in that Act.
- 4.) "Influencing or attempting to influence" means making, with the intent to influence, any communication to or appearance before an officer or employees of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.
- 5.) "Local government" means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government. It also includes a bi-state agency.
- 6.) "Officer or employee of an agency" includes the following individuals who are employed by an agency:
  - a. An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment;
  - b. A member of the uniformed services as defined in section 101(3), title 37, United States Code;

- 7.) A special government employee as defined in Section 202, title 18, United States Code;
  - a. An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code Appendix 2; and
  - b. An employee of a bi-state agency.
- 8.) "Person" means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian Organization with respect to expenditures specifically permitted by other Federal law.
- 9.) "Reasonable Compensation" means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.
- 10.) "Reasonable Payment" means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.
- 11.) "Recipient" includes all contractors and subcontractors at any tier in connection with a Federal Contract. The term excludes an Indian Tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
- 12.) "Regularly Employed" means, with respect to an officer or employee of a person requesting or receiving a Federal Contract, an officer or employee who is employed by such person for at least one hundred and thirty (130) working days within one (1) year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than one hundred and thirty (130) working days within one (1) year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for one hundred and thirty (130) working days.
- 13.) "State" means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-state, regional, or interstate entity having governmental duties and powers.

B. Prohibition

- 1.) Section 1352 of title 31, United States Code provides in part that no appropriated funds may be expended by the recipient of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. For the purposes of the Certification included herein following the clause entitled "Integrity Monitor", it includes the award of the associated contract.
- 2.) The prohibition does not apply as follows:
  - a. Agency and legislative liaison by own employees.
    - (i) The prohibition on the use of appropriated funds, in subparagraph B.1.) of this Section, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a Federal contract or the contract associated with the certification if the payment is for agency and legislative liaison activities not directly related to a covered Federal Action.
    - (ii) For purposes of subparagraph B. 2.) a.(i) of this Section, providing any information specifically requested by an agency or Congress is allowable at any time.
    - (iii) For purposes of subparagraph B. 2.) a.(i) of this Section, the following agency and legislative liaison activities are allowable at any time only where they are not related to specific solicitation for any covered Federal action.
      - (a.) Discussing with an agency (including individual demonstrations) the qualities and characteristics of the person's products or services, conditions or terms of sales and service capabilities; and,
      - (b.) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.
    - (iv) For purposes of paragraph B. 2)a.(i) of this Section, the following agency and legislative liaison activities are allowable only where they are prior to formal solicitation of any covered Federal action:
      - (a.) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;
      - (b.) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and
      - (c.) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Public Law 95-507 and other subsequent amendments.
    - (v) Only those activities expressly authorized by subparagraph B. 2)a. of this Section are allowable under subparagraph B. 2)a.

b. Professional and Technical Services by Own Employees.

- (i) The prohibition on the use of appropriated funds, in subparagraph B. of this Section, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a Federal contract or an extension, continuation, renewal, amendment, or modification of a Federal contract or the contract associated with the certification if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that contract or for meeting requirements imposed by or pursuant to law as a condition for receiving that contract.
- (ii) For purposes of subparagraph B. 2.) b. (i) of this Section, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this Section unless they provided advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this Section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this Section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.
- (iii) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation, or reasonably expected to be required by law or regulation, and any other requirements in the actual award documents.
- (iv) Only those services expressly authorized by subparagraph B. 2.) b. this Section are allowable under subparagraph B. 2.) b.

c. Reporting for Own Employees.

No reporting is required with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

d. Professional and Technical Services by Other than Own Employees.

- (i) The prohibition on the use of appropriated funds, in subparagraph B. 1.) of this Section, does not apply in the case of any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action, if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal contract or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal contract.

- (ii) For purposes of subparagraph B. 2.) d. (i) of this Section, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this Section unless they provided advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this Section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this Section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.
- (iii) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation, or reasonably expected to be required by law or regulation, and any other requirements in the actual award documents.
- (iv) Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.
- (v) Only those services expressly authorized by subparagraph B. 2.) d. of this Section are allowable under subparagraph B. 2.) d.

C. Disclosure

- 1.) Each person who requests or receives from the Authority a Contract with Federal assistance shall file with the Authority a certification entitled "Certification Regarding Lobbying Pursuant to 31 U.S.C. 1352," as set forth following the clause herein entitled "Integrity Monitor" that the person has not made, and will not make, any payment prohibited by subparagraph B. of this Clause.

- 2.) Each person who requests or receives from the Authority a Contract with Federal assistance shall file with the Authority a disclosure form entitled "Disclosure of Lobbying Activities Pursuant to 31 U.S.C. 1352" (Standard Form-LLL), as set forth following the clause herein entitled "Integrity Monitor", if such person has made or has agreed to make any payment using non-appropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph B. of this Clause if paid for with appropriated funds.
- 3.) Each person shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph C.2) of this Section. An event that materially affects the accuracy of the information reported includes:
  - a. A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
  - b. A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
  - c. A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
- 4.) Any person who requests or receives from a person referred to in subparagraph C.1) of this Section a subcontract exceeding \$100,000 at any tier under a Federal contract shall file a certification, and a disclosure form, if required, to the next tier above.
- 5.) All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the person referred to in subparagraph C.1) of this Section. That person shall forward all disclosure forms to the Authority.

D. Agreement

- 6.) In accepting any contract resulting from this solicitation, the person submitting the offer agrees not to make any payment prohibited by this Clause.

E. Penalties

- 7.) Any person who makes an expenditure prohibited under subparagraph A of this Clause shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure.
- 8.) Any person who fails to file or amend the disclosure form to be filed or amended if required by the Clause, shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
- 9.) Contractors may rely without liability on the representations made by their Subcontractors in the certification and disclosure form.

F. Cost Allowability

Nothing in this Clause is to be interpreted to make allowable or reasonable any costs which would be unallowable or unreasonable in accordance with Part 31 of the Federal Acquisition Regulation. Conversely, costs made specifically unallowable by the requirements in this Clause will not be made allowable under any of the provisions of Part 31 of the Federal Acquisition Regulation.

## 70. ACCESS TO RECORDS AND REPORTS

The Contractor agrees to provide the Authority, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this Contract for the purposes of making audits, examinations, excerpts and transcriptions. The Contractor also agrees, pursuant to 49 CFR 633.15 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to the Contractor's records and construction sites pertaining to the project.

The Contractor agrees to provide the Authority, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and record of the Contractor which are directly pertinent to this Contract for the purposes of making audits, examinations, excerpts and transcriptions.

The Contractor shall make available records related to the contract to the Authority, the Secretary of Transportation and the Comptroller General or any authorized officer or employee of any of them for the purposes of conducting an audit and inspection.

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to maintain all books, records, accounts and reports required under this Contract for a period of not less than three (3) years after final payment is made by the Authority and all other pending matters are closed, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case the Contractor agrees to maintain same until the Authority, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

This requirement is independent of the Authority's requirements for record retention contained elsewhere in the contract documents.

## 71. CIVIL RIGHTS

- A. Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, and section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- B. Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:
  - 1.) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 *et seq.*, (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are

treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

- 2.) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
- 3.) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

C. The Contractor also agrees to include these requirements in each subcontract related to this project, modified only if necessary to identify the affected parties.

## **72. CARGO PREFERENCE - USE OF UNITED STATES FLAG VESSELS**

If this Contract involves equipment, materials, or commodities which may be transported by ocean vessels, the Contractor herein agrees:

- A. To utilize privately owned United States-flag commercial vessels to ship at least fifty percent (50%) of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this Contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
- B. To furnish within twenty (20) days following the date of loading for shipments originating within the United States or within thirty (30) working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (1) above to the FTA Administrator and grantee (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20230.
- C. To include these requirements in all subcontracts issued pursuant to this Contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

## **73. DAVIS-BACON AND COPELAND ANTI-KICKBACK ACTS – CONTRACTS EXCEEDING \$2000**

The Davis-Bacon and Copeland Acts are codified at 40 USC 3141, *et seq.* and 18 USC 874. The Acts apply to grantee construction contracts and subcontracts that "at least partly are financed by a loan or grant from the Federal Government." 40 USC 3145(a), 29 CFR 5.2(h), 49 CFR 18.36(i)(5). The Acts apply to any construction contract over \$2,000. 40 USC 3142(a), 29 CFR 5.5(a). 'Construction,' for purposes of the Acts, includes "actual construction, alteration and/or repair, including painting and decorating." 29 CFR 5.5(a). The requirements of both Acts are incorporated

into a single clause (*see* 29 CFR 3.11) enumerated at 29 CFR 5.5(a) and reproduced below and are applicable if this Contract is a construction contract (as delineated above) over \$2000.

A. Minimum Wages

- 1.) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which, if applicable, is attached hereto and made a part hereof (the attachment is the most current determination), regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.  
Determinations may change during the term of the Contract, and the wages and fringe benefits required by the most recent determination of the Secretary of Labor are those to be used.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (A)(4) of this Section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (A)(2) of this Section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- 2.)
  - a. The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
    - (i) Except with respect to helpers as defined as 29 CFR 5.2(n)(4), the work to be performed by the classification requested is not performed by a classification in the wage determination;
    - (ii) The classification is utilized in the area by the construction industry;The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

- (iii) With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.
  - b. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
  - c. In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
  - d. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs A (2)(ii) (b) or (c) of this Section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.
- 3.) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- 4.) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- a. The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:
    - (i) The work to be performed by the classification requested is not performed by a classification in the wage determination;
    - (ii) The classification is utilized in the area by the construction industry; and
    - (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

- b. If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- c. In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination with 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- d. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs A (2)(ii)(b) or (c) of this Section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

B. Withholding

The Authority shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the Authority may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

C. Payrolls and Basic Records

- 1.) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social

security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

2.)

- a. The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Authority for transmission to the Federal Transit Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- b. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
  - (i) That the payroll for the payroll period contains the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5 and that such information is correct and complete;
  - (ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
  - (iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- c. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph C(2)(b) of this Section.

- d. The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- 3.) The Contractor or subcontractor shall make the records required under paragraph C(1) of this Section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

D. Apprentices and Trainees

- 1.) Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- 2.) Trainees - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- 3.) Equal employment opportunity - The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

E. Compliance with Copeland Act Requirements

The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

F. Subcontracts

The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

G. Contract Termination: Debarment

A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

H. Compliance with Davis-Bacon and Related Act Requirements

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

I. Disputes Concerning Labor Standards

Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

J. Certification of Eligibility -

- 1.) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- 2.) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- 3.) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**74. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT – CONTRACTS EXCEEDING \$100,000**

The Contract Work Hours and Safety Standards Act applies to grantee contracts and subcontracts under 40 USC 3701(b)(1)(B)(iii) and (b)(2), 29 CFR 5.2(h), 49 CFR 18.36(i)(6) for contracts for construction, and non-construction projects that employ "laborers or mechanics on a public work, where the contract amount is greater than \$100,000.

A. Overtime Requirements

No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

B. Violation; liability for unpaid wages; liquidated damages

In the event of any violation of the clause set forth in paragraph A of this Section the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph A of this Section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without

payment of the overtime wages required by the clause set forth in paragraph A of this Section.

C. Withholding for unpaid wages and liquidated damages

The Authority shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph B of this Section.

D. Subcontracts

The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs A through D of this Section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs A through D of this Section.

**75. SEISMIC SAFETY**

If this is a contract for the construction of new buildings or additions to existing buildings, the Contractor agrees that any new building or addition to an existing building will be constructed in accordance with standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify compliance to the extent required by the regulation. The Contractor also agrees to ensure that all work performed under this Contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance. The completed certification of compliance is to be submitted to the Engineer. The seismic safety standards applicable to this Contract are contained in Section 2312 ICBO Uniform Building Code (UBC), as modified by the Appendix to Title 27, Chapter 1 (Volume 7), of the Administrative Code and Charter of the City of New York at RS 9-6 Earthquake Loads.

**76. ENERGY CONSERVATION**

The Contractor agrees to comply with the mandatory energy efficiency standards and policies within the applicable State energy conservation plans issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. §6321 et seq. The Contractor also agrees to ensure that all work performed under this Contract including work performed by a Subcontractor is in compliance with the requirements of this Section.

**77. CLEAN WATER REQUIREMENTS – CONTRACTS EXCEEDING \$100,000**

- A. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 USC §1251 et seq.
- B. The Contractor agrees to report each violation to the Authority and understands and agrees that the Authority will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

- C. The Contractor also agrees to include the requirements of this Article in all subcontracts exceeding \$100,000 issued pursuant to this Contract.

**78. CLEAN AIR REQUIREMENTS – CONTRACTS EXCEEDING \$100,000**

- A. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 USC §7401 et seq. The Contractor agrees to report each violation to the Authority and understands and agrees that the Authority will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.
- B. The Contractor also agrees to include the requirements of this Clause in all subcontracts exceeding \$100,000 issued pursuant to this Contract.

**79. FLY AMERICA**

The Federal Government will not participate in the costs of international air transportation of any persons involved in or property acquired for this Contract unless that air transportation is provided by U.S.-flag air carriers to the extent service by U.S.-flag air carriers is available, in accordance with the International Air Transportation Fair Competitive Practices Act of 1974, as amended, 49 U.S.C. § 40118, and with U.S. GSA regulations, "Use of United States Flag Air Carriers," 41 C.F.R. §§ 301-10.131 through 301-10.143.

**80. CONTRACTS INVOLVING FEDERAL PRIVACY ACT REQUIREMENTS**

The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

- A. The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.
- B. The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

**81. PREFERENCE FOR RECYCLED PRODUCTS**

The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recover Act (RCRA), as amended (42.U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

**82. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS**

- A. The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 *et seq.* and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to this Project. The Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the contract or project. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.
- B. The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under this Contract, financed in whole or in part with Federal assistance, the Federal Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate. The Contractor agrees to include the above two clauses in each subcontract related to this Contract. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

**83. TRANSIT EMPLOYEE PROTECTIVE REQUIREMENTS**

To the extent that FTA determines that transit operations are involved, the Contractor agrees to carry out the transit operations work on the underlying contract in compliance with terms and conditions determined by the U.S. Secretary of Labor to be fair and equitable to protect the interests of employees employed under this Contract and to meet the employee protective requirements of 49 U.S.C. A 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the letter of certification from the U.S. DOL to FTA applicable to the FTA Recipient's project from which Federal assistance is provided to support work on the underlying contract. The Contractor agrees to carry out that work in compliance with the conditions stated in that U.S. DOL letter. The requirements of this subsection (1), however, do not apply to any contract financed with Federal assistance provided by FTA either for projects for elderly individuals and individuals with disabilities authorized by 49 U.S.C. § 5310(a)(2), or for projects for nonurbanized areas authorized by 49 U.S.C. § 5311. Alternate provisions for those projects are set forth in subsections (b) and (c) of this clause.

**CHAPTER VIII**  
**MISCELLANEOUS**

**84. SUBMISSION TO JURISDICTION**

The Contractor hereby irrevocably submits himself to the jurisdiction of the Courts of the State of New York and to the jurisdiction of the Courts of the State of New Jersey in regard to any controversy arising out of, connected with, or in any way concerning the Proposal or this Contract. The Contractor agrees that service of process on the Contractor in relation to such jurisdiction may be made, at the option of the Authority, either by registered or certified mail addressed to the applicable office as provided for in the clause hereof entitled "Service of Notices on the Contractor", by registered or certified mail addressed to any office actually maintained by the Contractor or by actual personal delivery to the Contractor if the Contractor be an individual, to any partner if the Contractor be a partnership or to an officer, director or managing or general agent if the Contractor be a corporation.

Such service shall be deemed to be sufficient when jurisdiction would not lie because of the lack of basis to serve process in the manner otherwise provided by law. In any case, however, process may be served as stated above whether or not it might otherwise have been served in a different manner.

**85. PROVISIONS OF LAW DEEMED INSERTED**

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

**86. INVALID CLAUSES**

If any provision of this Contract shall be such as to destroy its mutuality or to render it invalid or illegal, then, if it shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

**87. NON-LIABILITY OF THE AUTHORITY REPRESENTATIVES**

Neither the Commissioners of the Authority nor any officer, agent, or employee thereof shall be charged personally by the Contractor with any liability or held liable to him under any term or provision of this Contract, or because of its execution or attempted execution, or because of any breach hereof.

**88. SERVICE OF NOTICES ON THE CONTRACTOR**

Whenever provision is made in this Contract for the giving of any notice to the Contractor, its deposit in any post office or post office box, enclosed in a postpaid wrapper addressed to the Contractor at his office, or its delivery to his office, shall be sufficient service thereof as of the date of such deposit or delivery, except to the extent, if any, otherwise provided in the clause entitled "Submission to Jurisdiction". Until further notice to the Authority the Contractor's office will be that stated in his Proposal. Notices may also be served personally upon the Contractor; or if a corporation, upon any officer, director, or managing or general agent; or if a partnership upon any partner.

## **89. MODIFICATION OF CONTRACT**

No change in or modification, termination or discharge of this Contract, in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or his duly authorized representative, provided, however, that any change in or modification, termination or discharge of this Contract expressly provided for in this Contract shall be effective as so provided.

The authority of any person to order Extra Work or to alter the Contract Drawings and Specifications does not include the power to cancel, modify or waive any provision of the Form of Contract, and no officer or other representative of the Authority shall have the power so to do unless and until hereafter so authorized by or pursuant to a resolution of the Commissioners of the Authority or by or pursuant to a resolution of their appropriate Committee.

## **90. PUBLIC RELEASE OF INFORMATION**

The Contractor and all his subcontractors shall not issue or permit to be issued any press release, advertisement, or literature of any kind, which refers to the Authority or the services performed in connection with this Contract, without first obtaining the written approval of the Director. Such approval may be withheld if for any reason the Director believes that the publication of such information would be harmful to the public interest or is in any way undesirable. This provision shall survive termination or expiration of this Contract.

## **91. INTERACTION WITH THE MEDIA AND PUBLIC**

The Authority reserves the right to review and approve all Authority-related copy prior to publication. The Contractor shall not allow Authority-related copy to be published in the Contractor's advertisements or public relations programs until submitting the Authority-related copy to and receiving prior approval from the Director. The Contractor shall ensure that all published information shall be factual and shall in no way imply that the Authority endorses the Contractor's firm, service, or product.

The Contractor shall not respond to inquiries from the news media, but shall refer all questions to the Director.

The Contractor shall designate a staff person to keep the Director informed of all impacts on the community resulting from construction.

If the Contractor receives a complaint from a citizen or the community, it shall immediately inform the Director and advise what action has been taken to alleviate the situation.

If the Authority plans to conduct a site tour of the construction area, the Director will coordinate the tour with the Contractor.

If the Contractor notifies the community or general public via written notice (e.g., for emergency road closures), six (6) copies of such notices shall be provided to the Director.

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned<sup>22</sup> Contractor and surety company (or companies), as principal and surety (or sureties), respectively,

**Contractor**

**Surety**

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<sup>22</sup> Insert names of the Contractor and surety company (or companies) in the appropriate columns. If space is insufficient add rider.

If the Contractor is a corporation, give the state of incorporation, using also the phrase "a corporation organized under the laws of \_\_\_\_\_".

If the Contractor is a partnership, give full names of partners, using the phrase "co-partners doing business under the firm name of \_\_\_\_\_".

If the Contractor is an individual using a trade name, give individual name, using also the phrase "an individual doing business under the trade name of \_\_\_\_\_".

are hereby held and firmly bound unto The Port Authority of New York and New Jersey (herein called the "Authority") in the penal sum of \_\_\_\_\_ Dollars and \_\_\_\_\_ Cents (\_\_\_\_\_), for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, representatives, executors, administrators, successors and assigns. Each surety, however, if there is more than one, shall be jointly and severally liable for said penal sum.

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 20

The condition of the above obligation is that

WHEREAS, the above named principal has entered into a Contract in writing with the Authority, a copy of which is hereby made a part of this bond as though herein set forth in full and which is designated Contract WTC-224.545 - "World Trade Center -Greenwich Street Corridor Construction", and

WHEREAS, the Authority has required this bond for the faithful performance of all obligations imposed by said Contract;

NOW, if the said principal shall well and faithfully do and perform the things agreed by him to be done and performed according to the terms and true intent and meaning of said Contract, then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that, provided the sureties shall comply with the provisions hereof, the aggregate liability of all sureties for any and all claims hereunder shall in no event exceed the penal amount of this obligation as hereinbefore stated.

This undertaking is for the benefit of the Authority and all subcontractors, materialmen and workmen having lawful claims arising out of the performance of said Contract, and all such subcontractors, materialmen and workmen (as well as the Authority itself) shall have a direct right of action upon this bond; but the rights and equities of such subcontractors, materialmen and workmen shall be subject and subordinate to those of the Authority.

The sureties, for value received, hereby stipulate and agree that the obligations of said sureties and their bond shall be in no way impaired or affected by any extensions of time, modification, omission, addition or change in or to the said Contract or the construction to be performed thereunder, or by any supervision or inspection or omission to supervise or inspect the construction, or by any payment thereunder before the time required therein, or by any waiver of any provision or condition thereof (whether precedent or subsequent), or by any assignment, subletting or other transfer thereof or of any part thereof or of any construction to be performed or any moneys due or to become due thereunder; and said sureties do hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulate and agree that any and all things done and omitted to be done by and in relation to assignees, subcontractors and other transferees shall have the same effect as to said sureties as though done by or in relation to said principal.

The sureties shall give the General Counsel of the Authority the following notices:

- A. Written notice of an intent to pay any claim of a subcontractor, materialman or workman hereunder;
- B. Written notice within five days of the institution of an action by a subcontractor, materialman or workman hereunder.

The sureties shall not pay the claim of any subcontractor, materialman or workman hereunder until the expiration of thirty days after receipt by said General Counsel of notice under either subparagraph A or B above, describing the claim to be paid.

IN WITNESS WHEREOF, the principal and the sureties have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

(Seal)

\_\_\_\_\_  
Principal  
By <sup>23</sup> \_\_\_\_\_

\_\_\_\_\_  
Surety  
By <sup>24</sup> \_\_\_\_\_

APPROVED AS TO ACCEPTABILITY OF SURETIES:

\_\_\_\_\_  
Credit Manager  
\_\_\_\_\_ 20

<sup>23</sup> If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

<sup>24</sup> Add signatures of additional sureties, if any.

**ACKNOWLEDGMENT FOR CONTRACTOR, IF LIMITED LIABILITY COMPANY**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known and known to \_\_\_\_\_ of \_\_\_\_\_, a limited liability company, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

(Seal)

**ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known, and known to me to be one of the members of the firm of \_\_\_\_\_ described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Seal)

\_\_\_\_\_  
(Notary Signature)

**ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known, and known to me to be one of the members of the firm of \_\_\_\_\_ described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Seal)

\_\_\_\_\_  
(Notary Signature)

**ACKNOWLEDGMENT OF SURETY COMPANY**

**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned<sup>25</sup> Contractor and surety company (or companies), as principal and surety (or sureties), respectively,

**Contractor**

**Surety**

<sup>25</sup> Insert names of the Contractor and surety company (or companies) in the appropriate columns. If space is insufficient add rider.

If the Contractor is a corporation, give the state of incorporation, using also the phrase "a corporation organized under the laws of \_\_\_\_\_".

If the Contractor is a partnership, give full names of partners, using the phrase "co-partners doing business under the firm name of \_\_\_\_\_".

If the Contractor is an individual using a trade name, give individual name, using also the phrase "an individual doing business under the trade name of \_\_\_\_\_".

are hereby held and firmly bound unto The Port Authority of New York and New Jersey (herein called the "Authority") in the penal sum of \_\_\_\_\_ Dollars and \_\_\_\_\_ Cents (\_\_\_\_\_), for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, representatives, executors, administrators, successors and assigns. Each surety, however, if there is more than one, shall be jointly and severally liable for said penal sum.

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 20

The condition of the above obligation is that

WHEREAS, the above named principal has entered into a Contract in writing with the Authority, a copy of which is hereby made a part of this bond as though herein set forth in full and which is designated Contract WTC-224.545 - "World Trade Center -Greenwich Street Corridor Construction", and

WHEREAS, the Authority has required this bond for the payment of all lawful claims of subcontractors, materialmen and workmen arising out of the performance of said Contract;

NOW, if all lawful claims of subcontractors, materialmen and workmen arising out of the performance of said Contract are paid, then this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that, provided the sureties shall comply with the provisions hereof, the aggregate liability of all sureties for any and all claims hereunder shall in no event exceed the penal amount of this obligation as hereinbefore stated.

This undertaking is for the benefit of the Authority and all subcontractors, materialmen and workmen having lawful claims arising out of the performance of said Contract, and all such subcontractors, materialmen and workmen (as well as the Authority itself) shall have a direct right of action upon this bond; but the rights and equities of such subcontractors, materialmen and workmen shall be subject and subordinate to those of the Authority.

The sureties, for value received, hereby stipulate and agree that the obligations of said sureties and their bond shall be in no way impaired or affected by any extensions of time, modification, omission, addition or change in or to the said Contract or the construction to be performed thereunder, or by any supervision or inspection or omission to supervise or inspect the construction, or by any payment thereunder before the time required therein, or by any waiver of any provision or condition thereof (whether precedent or subsequent), or by any assignment, subletting or other transfer thereof or of any part thereof or of any construction to be performed or any moneys due or to become due thereunder; and said sureties do hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulate and agree that any and all things done and omitted to be done by and in relation to assignees, subcontractors and other transferees shall have the same effect as to said sureties as though done by or in relation to said principal.

The sureties shall give the General Counsel of the Authority the following notices:

- A. Written notice of an intent to pay any claim of a subcontractor, materialman or workman hereunder;
- B. Written notice within five days of the institution of an action by a subcontractor, materialman or workman hereunder.

The sureties shall not pay the claim of any subcontractor, materialman or workman hereunder until the expiration of thirty days after receipt by said General Counsel of notice under either subparagraph A or B above, describing the claim to be paid.

IN WITNESS WHEREOF, the principal and the sureties have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

(Seal)

\_\_\_\_\_  
Principal  
By<sup>26</sup> \_\_\_\_\_  
\_\_\_\_\_  
Surety  
By<sup>27</sup> \_\_\_\_\_

APPROVED AS TO ACCEPTABILITY OF SURETIES:

\_\_\_\_\_  
Credit Manager  
\_\_\_\_\_, 20

<sup>26</sup> If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

<sup>27</sup> Add signatures of additional sureties, if any.

**ACKNOWLEDGMENT FOR CONTRACTOR, IF LIMITED LIABILITY COMPANY**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known and known to \_\_\_\_\_, a limited liability company, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

\_\_\_\_\_  
(Notary Signature)

(Seal)

**ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known, and known to me to be one of the members of the firm of \_\_\_\_\_ described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Seal)

\_\_\_\_\_  
(Notary Signature)

**ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL**

State of \_\_\_\_\_

SS:

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_, to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Seal)

\_\_\_\_\_  
(Notary Signature)

**AFFIX ACKNOWLEDGMENT AND JUSTIFICATION OF SURETY**

**SPECIFICATIONS**

**DIVISION 1**

**GENERAL PROVISIONS**

**92. CONSTRUCTION REQUIRED BY THE SPECIFICATIONS**

These Specifications relate generally to performing excavation and installation of the permanent underpinning structure beneath the existing subway structure, excavation and bracing of existing minipiles at the Transportation Hub area, excavation for and construction of footings and excavation of rock and related Work at the East Bath tub area bordered by Church Street, Greenwich Street, Vesey Street and the NYC Transit No. 1 Subway line and the vicinity thereof at the World Trade Center site, New York, NY.

These Specifications require the doing of all things necessary or proper for or incidental to the matter referred to in the immediately preceding paragraph, as shown on the Contract Drawings in their present form. In addition, all things shown on the Contract Drawings even though not expressly mentioned in these Specifications, all things mentioned in these Specifications even though not shown on the Contract Drawings, and all things not specified either on the Contract Drawings, or in the Specifications but involved in carrying out their intent and in the complete and proper execution of the matter referred to in the immediately preceding paragraph are required by these Specifications; and the Contractor shall perform the same as though they were specifically delineated, described and mentioned.

In case of a conflict between a requirement of the Contract Drawings and a requirement in Division 1 of the Specifications, the requirement of Division 1 shall control. In case of a conflict between a requirement contained in other Divisions of the Specifications and a requirement of the Contract Drawings, the requirement of the Contract Drawings shall control.

Some Sections of the Specifications make cross references to construction specified in other Sections of the Specifications, including cross references intended to avoid duplication by the bidders in quoting prices and to point out some of the necessity for coordination. Such cross references are not intended to be complete or all inclusive, and the Contractor shall ascertain for himself both the nature and the extent of all construction which may be related to that under each Section of the Specifications whether or not expressly referred to.

Some Sections of the Specifications contain a general description of the construction under such Sections. Such description is merely a very general one and is not intended to outline the construction required by the Specifications and Contract Drawings. Accordingly, such description shall be construed as in aid of and supplemental to, but in no case limiting, impairing or decreasing, the requirements elsewhere set forth with respect to the construction to be performed.

The Contractor's compensation for all construction whatsoever referred to in the Specifications and Contract Drawings in their present form, even though the need for certain items of such construction may be contingent upon future occurrences or determinations or upon other circumstances, shall be deemed to be included in the price(s) quoted by the Contractor in the Form of Contract unless the Specifications or Contract Drawings expressly state that compensation in addition to such price shall be payable for such items of construction. The express statement in some cases to the effect that certain construction shall be without additional cost to the Authority shall not impair the application of this paragraph in other cases.

The distribution of various parts of the construction among the Divisions and Sections of the Specifications or among the Contract Drawings is not intended as a representation of the most effective or logical method of organizing, scheduling, or subcontracting the construction, and the Contractor shall ascertain for himself how to do so unless otherwise expressly prescribed in this Contract.

In all cases the provisions of the second paragraph of this numbered Section shall control.

### **93. AVAILABLE PROPERTY**

Subject to the conditions elsewhere stated herein, those areas to be occupied by the permanent construction will be made available to the Contractor upon the commencement of his first operations at the construction site, together with an area shown cross-hatched on Attachment "B" and designated "Greenwich Corridor Site Access and Staging Restrictions" drawings GCSA-001 dated 5-28-09 and GCSA dated 5-28-09.

Any additional property which the Contractor desires for his operations shall be obtained by him at his own expense.

The Contractor will be permitted to use only so much of the aforesaid areas as is necessary for the performance of the Contract, and he must at all times so conduct his operations as not to encroach upon or block the portions used by others. The Engineer may at any time make joint or exclusive assignments of particular portions thereof, either to the Contractor or to others, and may take over and use for other purposes any portions which, in the opinion of Engineer, are not required for the performance of the Contract.

The Contractor shall on a daily basis clean up all refuse, rubbish, scrap materials, debris and standing water within and adjacent to its construction area to the end that at all times the construction site shall present a neat, orderly and workmanship appearance. At completion of the Work the Contractor shall remove all surplus materials, false work, temporary fences and other temporary structures, including foundations thereof plant of any description and debris of every nature resulting from its operation and shall put the construction site in a neat and orderly condition.

The Contractor shall not occupy and shall not permit Subcontractors to occupy, Port Authority owner property outside the construction site without obtaining the prior written approval of the Engineer.

### **94. DAMAGE TO ADJACENT IMPROVEMENTS**

The Contractor shall protect, and shall ensure that all Subcontractors protect, from damage: utilities, foundations, walls or other parts adjacent, abutting or overhead buildings, structures, surface and subsurface structures at or near the construction site, and shall be responsible for ensuring that any damage to such facilities resulting from failure to comply with the requirements of this Contract of the failure to exercise reasonable care in the performance of the Work is repaired and restored at no additional cost or expense to the Port Authority. If the Contractor fails or refuses to cause any such damage to be promptly repaired, the Port Authority may have the necessary work performed by Authority forces or others and the expense of the Work will be charged to the Contractor. The amount of such expense shall be deducted from any moneys due or becoming due to the Contractor.

## 95. MATERIALS FURNISHED BY THE AUTHORITY

The Authority will furnish the following materials that may be used in the performance of the Work:

- A. Steel cross-bracing procured by the Authority for the construction of work associated with Work Packages 4C and 4B. A detailed inventory of the stock is included as Attachment "C" of this Contract.

The materials are stored in various locations in the New York Metropolitan area. The Contractor is responsible for the transportation of these materials to the World Trade Center site at his expense.

Contractor shall be responsible for all storage cost associated with this material commencing 180 calendar days after receipt by him of the acceptance of his Bid.

All materials or portions thereof in excess of those actually required in the permanent construction shall become the Contractor's property and may be sold for salvage/scrap by the Contractor.

The Authority does not represent this inventory as representing all steel cross-bracing required in this contract, nor does the Authority represent that this inventory is, in all instances, suitable for its intended purpose without modification.

Materials furnished to the Contractor shall be examined by him at the time they are furnished to him, and if there is any shortage, damage or other defect, the Contractor shall at that time bring it specifically in writing to the attention of the Engineer. Any shortage, damage or defect so brought to the Engineer's attention and acknowledged by him will be corrected by the Authority. If no shortage, damage or other defect is so brought to the attention of and acknowledged by the Engineer at the time said materials are furnished to the Contractor, the materials shall thereafter conclusively be deemed to have been satisfactory in all respects, provided that if the Contractor demonstrates to the satisfaction of the Engineer that there was a shortage, damage or defect at the time the materials were furnished to the Contractor and that such fact could not reasonably have been ascertained at that time, then the shortage, damage or defect will be corrected by the Authority.

From the date the foregoing materials are furnished to the Contractor they shall form part of the materials included in the risks assumed by the Contractor as provided in subparagraph A of the clause of the Form of Contract entitled "Risks Assumed by the Contractor".

All materials or portions thereof in excess of those actually required in the permanent construction and which in the opinion of the Engineer may be suitable for use by the Authority shall be returned to the Authority at a location at the construction site designated by the Engineer upon the completion of the Work or when there is no longer any need for this material, whichever may first occur.

The Contractor at his own expense, shall furnish all materials required by the Contract Drawings and Specifications with the exception of those materials expressly provided to be furnished to the Contractor by the Authority in accordance with this numbered Section.

The foregoing materials will be delivered to the construction site tailboard of truck and the Contractor shall unload same and transport to the point of installation.

## **96. OPERATIONS OF OTHERS**

During the time that the Contractor is performing the Contract, other persons will be engaged in other operations, including, but not limited to the following: Port Authority Contracts WTC-214.546 and WTC-284.458GC, WTC-724.978, and World Trade Center Towers One, Two, Three and Four and the Memorial; all of which shall remain uninterrupted.

The Contractor shall so plan and conduct his operations as to work in harmony with others engaged at the construction site and not to delay, endanger or interfere with the operations of others (whether or not specifically mentioned above), all to the best interests of the Authority and the public and as may be directed by the Engineer.

## **97. LABOR ACTIONS**

Whenever any labor strike, slowdown, work stoppage, picketing or other labor action which might interfere with the performance of the Contract, or of other Authority or PATH contracts or the operation of any Authority or PATH facility occurs at the construction site or at any other Authority or PATH facility as a result of the Contractor's (or its subcontractor's) utilization of particular means, methods or manpower to perform the Work required by the Contract, the Contractor shall pursue all remedies which are appropriate and available to him to avoid such interference.

## **98. CONTRACTOR'S MEETINGS**

The Contractor shall conduct job progress and coordination meetings with subcontractors in his field office every two weeks, or as frequently as job conditions require or the Engineer may request. The Engineer shall be notified and, at his option, may attend these meetings. The Contractor shall prepare and distribute minutes to the Engineer and the subcontractors within forty-eight (48) hours of the day following the meetings.

The Contractor shall attend separate job progress and coordination meetings with the Engineer every two weeks, or at times otherwise requested by the Engineer.

## **99. CONTRACT DRAWINGS**

The Contract Drawings which accompany and form a part of these Specifications bear the general title "The Port Authority of NY & NJ - World Trade Center - Greenwich Street Corridor Construction - Contract WTC-224.545" and are separately numbered and entitled as follows:

### **WORLD TRADE CENTER TRANSPORTATION HUB CONTRACT NO. WTC-224.545: GREENWICH STREET CORRIDOR CONSTRUCTION**

G0001Z	Title Sheet
G0002Z	Index
G0003Z	Location Plan and Site Plan

### **WORLD TRADE CENTER TRANSPORTATION HUB WORK PACKAGE #9X-ALT.1: 1-LINE SUBWAY TUNNEL PERMANENT UNDERPINNING ALTERNATE**

G0001	Title Sheet
G2001	Index of Drawings and Site Location Plan
G2005	Specification Notes
A0001	Architectural General Notes
A0002	Architectural Abbreviations, Legend and Drawing Conventions
A8901	Foundation Details

A8902 Foundation Details

WORLD TRADE CENTER TRANSPORTATION HUB WORK PACKAGE #4B:  
EAST SIDE BASEMENT – BASEMENT WALLS AND EXCAVATION

G001	Title Sheet
G002	Index of Drawings
SUG01	General Notes
SUG02	Structural Legend and Abbreviations
SU2.0.1	Plan and Elevation
SU2.0.5	Pile Bracing Plan 1 of 3
SU2.0.6	Pile Bracing Plan 2 of 3
SU2.0.7	Pile Bracing Plan 3 of 3
SU2.0.10	Pile Bracing Plan & Elevation - 1 of 3
SU2.0.11	Pile Bracing Plan & Elevation - 2 of 3
SU2.0.12	Pile Bracing Plan & Elevation - 3 of 3
SU2.0.20	Pile Bracing Sections 1 of 9
SU2.0.21	Pile Bracing Sections 2 of 9
SU2.0.22	Pile Bracing Sections 3 of 9
SU2.0.23	Pile Bracing Sections 4 of 9
SU2.0.24	Pile Bracing Sections 5 of 9
SU2.0.25	Pile Bracing Sections North H&M 6 of 9
SU2.0.26	Pile Bracing Sections South H&M 7 of 9
SU2.0.27	Pile Bracing Sections 8 of 9
SU2.0.28	Pile Bracing Sections 9 of 9
SU2.0.29	Pile Bracing Sections 10 of 10
SU2.0.30	Bracing Details 1 of 2
SU2.0.31	Bracing Details 2 of 2
SU2040	Jacking Assembly Details
SU2.0.41	Tension Bar Connection at Invert Slab
SU2050	Demolition Plan and Details at North H&M Tubes
SU2051	Demolition Plan and Details at South H&M Tubes
SU2052	Demolition Plan and Details at Dey Street Cross Passage
SU2.0.53	Existing Slurry Wall Demolition
SU2.0.54	Existing Slurry Wall Support Details
SU2.0.60	General 1 - Line Excavation and Bracing Sequence North Tunnel 1 of 3
SU2.0.61	General 1 - Line Excavation and Bracing Sequence North Tunnel 2 of 3
SU2.0.62	General 1 - Line Excavation and Bracing Sequence North Tunnel 3 of 3
SU2.0.63	General 1 - Line Excavation and Bracing Sequence Station 1 of 3
SU2.0.64	General 1 - Line Excavation and Bracing Sequence Station 2 of 3
SU2.0.65	General 1 - Line Excavation and Bracing Sequence Station 3 of 3
SU2.0.66	General 1 - Line Excavation and Bracing South Tunnel 1 of 3

- SU2.0.67 General 1 - Line Excavation and Bracing South Tunnel 2 of 3
- SU2.0.68 General 1 - Line Excavation and Bracing South Tunnel 3 of 3

**WORLD TRADE CENTER TRANSPORTATION HUB WORK PACKAGE #4C:  
EAST SIDE BASEMENT – DEMOLITION OF TEMPORARY STATION AND H&M STRUCTURE**

- G01 Title Sheet
- G2 Index of Drawings
- GT501 Rock Excavation Limits
- GT502 Transit Hall Foundation Excavations And Notes
- GT503 Rock Excavation Sections
- GT504 Rock Excavation Details
- S101 General Notes for 1 Line Underpinning Only
- S102 Structural Legend and Abbreviations
- S201 Plan and Elevation
- S301 Demolition of Existing PATH Underpass Structure
- S401 Pile Bracing Plan and Elevation
- S402 PATH Underpass Section
- S701 Bracing Details 1 of 2
- S702 Bracing Details 2 of 2
- S801 General 1 - Line Excavation and Bracing Sequence Path Underpass 1 of 3
- S802 General 1 - Line Excavation and Bracing Sequence Path Underpass 2 of 3
- S803 General 1 - Line Excavation and Bracing Sequence Path Underpass 3 of 3

The following is a list of Plansheets of Confidential & Privileged Drawings and Documents that are included in Attachment D to the Request for Bids for the Greenwich Street Corridor Construction Contract (WTC-224.545)

**CONTRACT DOCUMENTS**

**WORLD TRADE CENTER TRANSPORTATION HUB  
WORK PACKAGE NO. 9X-ALT.1**

**1-LINE SUBWAY TUNNEL PERMANENT UNDERPINNING ALTERNATE**

G0002	A2010	S2042	S2077	S2156	S2190
G2002	A2020	S2050	S2078	S2157	S2202
G2003	A2030	S2051	S2079	S2160	S2220
G2010	A2040	S2060	S2080	S2161	S2221
G2011	S2000	S2061	S2090	S2170	S2230
G2012	S2006	S2062	S2110	S2171	S2231
G2020	S2010	S2063	S2111	S2171-1	S2232
G2021	S2011	S2064	S2112	S2172	S2233
G2022	S2012	S2065	S2113	S2174	S2234
G2030-A	S2020	S2066	S2120	S2175	S2235
G2030	S2021	S2070	S2125	S2176	S2236
G2031	S2022	S2071	S2130	S2177	S2237
G2032	S2030	S2072	S2131	S2178	S2238
G2040	S2031	S2073	S2136	S2179	
G2041	S2032	S2074	S2140	S2180	
G2042	S2040	S2075	S2154	S2181	
A2000	S2041	S2076	S2155	S2182	

**WORLD TRADE CENTER TRANSPORTATION HUB WORK PACKAGE #4B:  
EAST SIDE BASEMENT – BASEMENT WALLS AND EXCAVATION**

G002B	GT704
GT701	GT705
GT702	S01A
GT703	S02A

The Contract Drawings do not show all of the details of the Work and are intended only to illustrate the character and extent of the Work to be performed. Accordingly, they may be supplemented during the performance of the Work by the Engineer or by the Contractor subject to the approval of the Engineer, to the extent necessary to further illustrate the Work.

An indication on the Contract Drawings of the existence, nature or location of any utilities, structures, obstructions, conditions or materials does not constitute a representation as to the conclusions to be drawn therefrom nor a representation that no others exist in addition to those shown, even in the same location; nor does the absence of any indication on said drawings of the existence, nature or location of any utilities, structures, obstructions, conditions or materials constitute a representation that none exist.

After the Contract has been executed, the Contractor will be furnished six (6) copies of the Specifications and Contract Drawings without charge.

## 100. REFERENCE DRAWINGS

The following drawings, called Reference Drawings, were not prepared by the Authority or by others for use in connection with this Contract, but they were prepared for other purposes, such as for other contracts or for design purposes for this or other contracts, and are furnished to the Contractor to give him such information as may be in the possession of the Authority. Said drawings are as follows:

### WORLD TRADE CENTER TRANSPORTATION HUB WORK PACKAGE #4B: EAST SIDE BASEMENT – BASEMENT WALLS AND EXCAVATION

- S2 PLAN AT EL. 332' STREET LEVEL
- S3 PLAN AT EL. 310'
- S5 PLAN AT EL. 289'
- S5A PLAN AT EL. 266'
- S6 FOUNDATION PLAN AT EL. 242'

### WORLD TRADE CENTER TRANSPORTATION HUB UNDERPINNING 1 LINE SUBWAY TUNNEL CONTRACT #PCP-224.480 DATED DECEMBER 15, 2005

- G.2 INDEX OF DRAWINGS AND SPECIFICATIONS
- SUG.0.1 STRUCTURAL LEGEND, ABBREVIATIONS, AND LOCATION PLAN
- SUG.0.2 GENERAL NOTES
- SU2.0.1 PLAN AND ELEVATION
- SU2.0.2 FRAMING PLAN AND ELEVATION 1 OF 3
- SU2.0.3 FRAMING PLAN AND ELEVATION 2 OF 3
- SU2.0.4 FRAMING PLAN AND ELEVATION 3 OF 3
- SU2.0.05 PILE IDENTIFICATION PLAN
- SU2.0.06 PILE TIP ELEVATIONS
- SU2.0.10 PILE LOCATION PLAN 1 OF 3
- SU2.0.11 PILE LOCATION PLAN 2 OF 3
- SU2.0.12 PILE LOCATION PLAN 3 OF 3
- SU2.0.13 TYPICAL UNDERPINNING SECTIONS 1 OF 2
- SU2.0.14 TYPICAL UNDERPINNING SECTIONS 2 OF 2
- SU2.0.15 STEEL SUPPORT SECTION AND DETAILS 1 OF 3
- SU2.0.16 STEEL SUPPORT SECTION AND DETAILS 2 OF 3
- SU2.0.17 STEEL SUPPORT SECTION AND DETAILS 3 OF 3
- SU2.0.18 PILE DETAILS
- SU2.0.19 REPAIR AND MISCELLANEOUS DETAILS
- SU2.0.20 PATH UNDERPASS SECTIONS AND DETAILS
- SU2.0.22 BRIDGING SUPPORT SECTIONS
- SU2.0.23 MISCELLANEOUS BRIDGING DETAILS
- SU2.0.24 EXCAVATION DETAILS
- SU2.0.25 DEY STREET PASSAGEWAY UNDERPINNING GIRDER 1 OF 2
- SU2.0.26 DEY STREET PASSAGEWAY UNDERPINNING GIRDER 2 OF 2

SU2.0.27 PATH UNDERPASS PLANS  
 SU2.0.28 PATH UNDERPASS DETAILS  
 SU2.0.29 PLAN AND SECTION AT SOUTH H&M TUBES  
 SU2.0.30 PLAN AND SECTION AT NORTH H&M TUBES  
 SU2.0.31 SECTIONS AND DETAILS AT H&M TUBES 1 OF 3  
 SU2.0.32 SECTIONS AND DETAILS AT H&M TUBES 2 OF 3  
 SU2.0.33 SECTIONS AND DETAILS AT H&M TUBES 3 OF 3  
 SU2.0.34 INVERT SLAB AT H&M TUBES  
 SU2.0.35 UNDERPINNING EXISTING EDR NEAR FULTON STREET  
 SU2.0.36 UNDERPINNING EXISTING C.I.H. NEAR LIBERTY STREET  
 SU2.0.40 LATERAL BRACING DETAILS  
 SU2.0.45 TEMPORARY ROOF SHIELD 1 OF 2  
 SU2.0.46 TEMPORARY ROOF SHIELD 2 OF 2  
 SU2.0.50 GENERAL CONSTRUCTION SEQUENCE STATION.....  
 SU2.0.51 GENERAL CONSTRUCTION SEQUENCE TUNNEL  
 SU2.0.52 GENERAL CONSTRUCTION SEQUENCE AT H&M TUBES 1 OF 2  
 SU2.0.53 GENERAL CONSTRUCTION SEQUENCE AT H&M TUBES 2 OF 2  
 SU2.0.60 TEMPORARY PLATFORM ABOVE 1 LINE BOX - PLAN AND SECTIONS  
 GT3.0 INSTRUMENTATION PLAN AND NOTES  
 GT3.1 TUNNEL INSTRUMENTATION PLAN NORTH  
 GT3.2 TUNNEL INSTRUMENTATION PLAN SOUTH  
 GT3.3 SLURRY WALL INSTRUMENTATION  
 GT3.4 TUNNEL INSTRUMENTATION SECTIONS  
 GT3.5 TUNNEL INSTRUMENTATION DETAILS  
 CG.0.1 LEGEND, ABBREVIATIONS  
 CG.0.2 SURVEY CONTROL PLAN  
 CG.0.3 SURVEY CONTROL TIES  
 CG.0.4 1 LINE ALIGNMENT PLAN AND PROFILE  
 CG.3.1 TEST PIT TRENCH PLAN VESEY STREET  
 CG.3.2 TEST PIT TRENCH PLAN LIBERTY STREET  
 C1.1.1 EXISTING SITE PLAN - NORTH SECTOR 1  
 C1.1.2 EXISTING SITE PLAN - CENTER SECTOR 2  
 C1.1.3 EXISTING SITE PLAN - SOUTH SECTOR 3  
 C1.4.1 EXISTING TUNNEL UTILITY PLAN SOUTH  
 C1.4.2 EXISTING TUNNEL UTILITY PLAN NORTH  
 C1.4.3 TUNNEL UTILITY SECTIONS SHEET 1 OF 3  
 C1.4.4 TUNNEL UTILITY SECTIONS SHEET 2 OF 3  
 C1.4.5 TUNNEL UTILITY SECTIONS SHEET 3 OF 3  
 C3.1.1 SITE RESTORATION AND WORK AREAS PLAN SECTOR 1  
 C3.1.2 SITE RESTORATION AND WORK AREAS PLAN SECTOR 2

C3.1.3	SITE RESTORATION AND WORK AREAS PLAN SECTOR 3
C3.6.1	SITE RESTORATION DETAILS SHEET 1 OF 2
C3.6.2	SITE RESTORATION DETAILS SHEET 2 OF 2
C5.2.1	UTILITY PROTECTION PLAN VESEY STREET
C5.2.2	UTILITY PROTECTION PLAN LIBERTY STREET
T1.5.1	HAUL ROAD PLAN AND MPT NOTES
T2.5.1	MAINTENANCE AND PROTECTION OF TRAFFIC VESEY STREET
T2.5.2	MAINTENANCE AND PROTECTION OF TRAFFIC LIBERTY STREET
T2.7.1	MAINTENANCE AND PROTECTION OF TRAFFIC DETAILS SHEET 1 OF 3
T2.7.2	MAINTENANCE AND PROTECTION OF TRAFFIC DETAILS SHEET 2 OF 3
T2.7.3	MAINTENANCE AND PROTECTION OF TRAFFIC DETAILS SHEET 3 OF 3
E1.0.1	LEGEND, ABBREVIATIONS, LIST OF MANUFACTURERS, AND GENERAL NOTES
E1.0.2	EXISTING TUNNEL ELECTRICAL PLAN 1 OF 2
E1.0.3	EXISTING TUNNEL ELECTRICAL PLAN 2 OF 2
E1.0.4	ELECTRICAL RELOCATION DETAILS
E1.0.5	TEMPORARY RELOCATION & SUPPORT OF TRACTION CABLES
E1.0.6	PARTIAL SITE PLAN
E2.0.0	LEGEND, ABBREVIATIONS, REFERENCE DRAWINGS AND SPECIFICATIONS, AND SIGNALS-RELATED WORK GENERAL NOTES
E2.0.1	SIGNAL PART PLAN SHEET 1 OF 2
E2.0.2	SIGNAL PART PLAN SHEET 2 OF 2
E2.0.3	SIGNALS RELOCATION DETAILS
E2.0.4	COMMUNICATION PART PLAN SHEET 1 OF 2
E2.0.5	COMMUNICATION PART PLAN SHEET 2 OF 2
E2.0.6	COMMUNICATION RELOCATION DETAILS
FP1.0.1	DRY FIRE STANDPIPE & COMPRESSED AIR PIPING PLAN STA 191+08 TO 187+21
FP1.0.2	DRY FIRE STANDPIPE & COMPRESSED AIR PIPING PLAN STA 187+21 TO 183+47
FP1.0.3	DRY FIRE STANDPIPE & COMPRESSED AIR PIPING PLAN STA 183+47 TO 180+12
FP1.0.4	DRY FIRE STANDPIPE & COMPRESSED AIR PIPING DEMOLITION PLAN STA 191+08 TO 187+21
FP1.0.5	DRY FIRE STANDPIPE & COMPRESSED AIR PIPING PLAN STA 191+08 TO 187+21 DEMOLITION
FP1.0.6	DRY FIRE STANDPIPE & COMPRESSED AIR PIPING DEMOLITION PLAN STA 183+47 TO 180+12
FP2.0.1	SECTIONS AND DETAILS SHEET 1 OF 2
FP2.0.2	PIPE ARRANGEMENT AND DETAILS SHEET 2 OF 2

SK-PK9-SU2.0.10-001 PILE LOCATION PLAN DATED JULY 18, 2008 (BULLETIN #3)  
SK-PK9-SU2.0.10-001.R1 PILE LOCATION PLAN DATED OCTOBER 9, 2008 (BULLETIN #4)

All Work Package 4B, 4C and 9 Submittals and RFI's (Logs are attached as Reference Documents).  
WTC TRANS HUB – Eastside Basement Soil Log Dwgs. Dated 03/27/07 [CD-Rom]  
WP 4B Addendum #1 containing: [CD-Rom]

- soil samples, rock cores, field logs, color photos of rock cores for borings presented.
- laboratory test results including unconfined compressive strengths of rock cores for borings.
- Report entitled, The PA of NY & NJ Eng. Dep. Div. – Div. of Geotechnical Section, PA Soil Classifications System SF-92.

Soil Info WTC [CD-Rom]

THE WORLD TRADE CENTER PROCEDURE FOR THE APPROVAL OF CRANES AND DERRICKS EFFECTIVE APRIL 1, 2009. [CD-Rom]

RECORD PROPERTY MAP OF THE WORLD TRADE CENTER [CD-Rom]

World Trade Center Transportation HUB – Support of Excavation Wall at Tower 3  
G2001 – Index of Drawings dated April 9, 2009  
G2002 – General Notes dated April 9, 2009  
S1001 – Specifications dated April 9, 2009  
S2001 – Support of Excavation General Plan dated April 9, 2009  
S2002 – Support of Excavation Bracing Plan and Elevation dated April 9, 2009  
S2003 – Support of Excavation Typical Section and Details dated April 9, 2009  
S2004 – Support of Excavation Sequence of Construction Middle Tie Rod Option dated April 9, 2009

As-builts for location and demo of SOE walls [CD-Rom]

NEW YORK CITY TRANSIT AUTHORITY  
CONTRACT C-33261 RESTORATION OF SERVICE - 1 AND 9 LINE IN THE BOROUGH OF  
MANHATTAN DATED APRIL 13, 2003

C-1-AB	LOCATION PLAN AND MAJOR WORK ITEMS
C-4-AB	ROOF AND FOUNDATION PLAN STA. 94+71 TO STA. 97+46 (STA. 193+19 TO STA. 190+44)
C-5-AB	ROOF AND FOUNDATION PLAN STA. 97+46 TO STA. 99+91 (STA. 190+44 TO STA. 187+99)
C-6-AB	ROOF AND FOUNDATION PLAN STA. 99+91 TO STA. 102+56 (STA. 187+99 TO STA. 185+34)

C-7-AB FOUNDATION PLAN STA. 99+91 TO STA. 102+56 (STA. 187+99 TO STA. 185+34)  
 C7A-AB SECTIONS  
 C-8-AB ROOF PLAN STA. 102+56 TO STA. 105+00 (STA. 185+34 TO STA. 182+90)  
 C-8A-AB DEY ST. ENCLOSURE PLAN  
 C-8B-AB AMPLIFYING DWG. DETAILS  
 C-9 FOUNDATION PLAN STA. STA. 102+56 TO 105+00 (STA. 185+34 TO  
 STA. 182+90))  
 C-9-AB FOUNDATION PLAN  
 C-9A-AB RECORD AS-BUILT  
 C-9B-AB RECORD AS-BUILT  
 C-9C-AB SECTIONS a AND F AND DETAIL 2  
 C-9D-AB ENLARGED DETAIL PLAN PLATFORM LEVEL  
 C-9E-AB SECTION G & H  
 C-10-AB ROOF PLAN STA. 105+00 TO STA. 106+88 (STA. 182+90 TO STA. 181+02)  
 C-11-AB FOUNDATION PLAN STA. 105+00 TO STA. 106+88 (STA. 182+90 TO  
 STA. 181+02)  
 C-11A-AB PROPOSED STAIRWAY SECTION AT CORTLANDT STREET STATION  
 C-11B-AB PROPOSED SECTIONS AT CORTLANDT STREET STATION  
 C-11C-AB PROPOSED SECTIONS AT CORTLANDT STREET STATION  
 C-11D-AB AMPLIFYING DRAWING NEW ROOF TO EXISTING ROOF CONNECTION  
 C-12-AB ROOF AND FOUNDATION PLAN STA. 106+88 TO STA. 109+88 (STA. 181+02  
 TO STA. 178+07)  
 C-13-AB TYPICAL SECTION BETWEEN LIBERTY ST. AND CORTLANDT ST.  
 C-13A-AB TYPICAL SECTION BETWEEN CAR CLEARANCES - LIBERTY ST. AND  
 CORTLANDT ST.  
 C-14-AB PROPOSED SECTION AT CORTLANDT STREET STATION  
 C-14A-AB PROPOSED SECTION AT CORTLANDT STREET STATION (STA. 187+24 TO  
 STA. 186+29)  
 C-15-AB DEMOLITION WORK: TYP. SECTION AT HUDSON AND MANHATTAN  
 PATH TUBES (SOUTH END)  
 C-16-AB DEMOLITION WORK LONGITUDINAL SECTION AT PATH TUBE  
 C-17-AB NEW WORK: TYPICAL SECTION AT HUDSON MANHATTAN PATH TUBES  
 (SOUTH END)  
 C-18-AB NEW WORK: LONGITUDINAL SECTION AT PATH TUBES (SOUTH END)  
 C-19-AB DEMOLITION WORK: TYPICAL SECTION AT DEY STREET PASSAGEWAY,  
 SHEET 1 OF 2  
 C-20-AB DEMOLITION WORK: TYPICAL SECTION AT DEY STREET PASSAGEWAY,  
 SHEET 2 OF 2  
 C-21-AB NEW WORK, TYPICAL SECTION AT DEY STREET PASSAGEWAY,  
 SHEET 1 OF 2

- C-22-AB NEW WORK, TYPICAL SECTION AT DEY STREET PASSAGEWAY,  
SHEET 2 OF 2
- C-23-AB DEMOLITION WORK: TYP. SECTION AT HUDSON & MANHATTAN  
PATH TUBES (NORTH END)
- C-24-AB NEW WORK: TYPICAL SECTION AT HUDSON MANHATTAN PATH  
TUBES (NORTH END)
- C-25-AB DEMOLITION WORK: LONGITUDINAL SECTION AT HUDSON MANHATTAN  
PATH TUBES (NORTH END)
- C-26-AB NEW WORK: LONGITUDINAL SECTION AT HUDSON MANHATTAN  
PATH TUBES (NORTH END)
- C-27-AB PROPOSED SECTION BETWEEN VESEY ST. AND BARCLAY ST.
- C-28 SECTION SHOWING EXISTING SUBWAY STRUCTURE AND PATH  
ESCALATOR (BELOW)
- C-33-AB CORTLANDT STREET STATION. STATION PLAN

WTC Transportation HUB Package 4B - "AS-B Grade under 1-9 Box as of 5-5-09" dated 5/8/09

PCJV Letter No. W0TC-08100-PRGMT-00025 dated March 13, 2009 RE: Steel Material Procured for WP 4B, 4C, 9X

Minipile as-builts – Master1&9 Piles-FV.dwg (file dated 05/12/09)

Minipile logs – Entire Pile Offset dated 03/09/09

The following is a list of Plansheets of Confidential & Privileged Drawings and Documents that are included in Attachment D to the Request for Bids for the Greenwich Street Corridor Construction Contract (WTC-224.545)

**REFERENCE DRAWINGS**

WORLD TRADE CENTER TRANSPORTATION HUB  
CONTRACT No. WTC-284.458GC WORK PACKAGE #4B:  
EAST SIDE BASEMENT – BASEMENT WALLS AND EXCAVATION

S13

S15

S17

An indication on the Reference Drawings of the existence, nature or location of any utilities, structures, obstructions, conditions or materials does not constitute a representation as to the conclusions to be drawn there from nor a representation that no others exist in addition to those shown, even in the same location; nor does the absence of any indication on said drawings of the existence, nature or location of any utilities, structures, obstructions, conditions or materials constitute a representation that none exist.

**101. SHOP DRAWINGS, CATALOG CUTS AND SAMPLES**

The Contractor shall specifically prepare for this Contract all Shop Drawings which may be required in addition to the Contract Drawings or in addition to any other drawings which the Director may issue in supplementing the Contract Drawings.

The specific requirements elsewhere set forth in the Specifications for furnishing Shop Drawings, Catalog Cuts and samples for any particular portion of the Contract shall not limit the obligation of the Contractor to furnish Shop Drawings, Catalog Cuts and samples for any other portion when so required by the Engineer.

The Contractor shall submit a general "Submittal Schedule" for the Engineer's review and approval listing the planned transmittal date and estimated number in each specification section category of Shop Drawings, Catalog Cuts, pages of calculations and samples within fifteen (15) days after receipt by the Contractor of the acceptance of the Proposal. A more detailed schedule shall be submitted no less than 10 calendar days prior to the actual date of any submittal.

After checking and verifying all field measurements and after complying with applicable procedures specified hereunder, the Contractor shall submit to the Engineer for review and approval, in accordance with the approved schedule of Shop Drawing submissions, or for other action if so indicated by the Engineer, four copies and two reproducibles, unless otherwise requested, of all Shop Drawings which will bear a specific written indication that the Contractor has reviewed the submission for conformance to the requirements of the Contract Drawings and Specifications.

The Port Authority uses Primavera Expedition software to track the status of Submittals provided by the Contractor. In order to facilitate this electronic tracking, the Contractor shall use the transmittal form that is provided at the pre-construction meeting, and shall forward it to the Engineer via a MAPI compliant e-mail system (e.g. Microsoft Outlook, CC mail, Lotus notes, etc.).

The Contractor's transmittals of Submittal data shall fully comply with the numbering and naming conventions and other procedures that will be provided by the Engineer to the Contractor at the pre-construction meeting.

All submissions shall be identified as the Engineer may require. In general, submissions shall specifically reference Contract Drawing numbers or Specification section numbers for which the item pertains. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, conformance to the specified performance and design criteria, materials, test results and similar information to enable the Engineer to review the submittal as required.

The Contractor shall also submit nine copies to the Engineer for review and approval pursuant to the approved submittal schedule, of all Catalog Cuts and samples for conformance to the requirements of the Contract Drawings and Specifications. All Catalog Cuts and samples shall have been reviewed by the Contractor and shall be accompanied by a specific written indication that the Contractor has reviewed the submittal for conformance with the Contract Drawings and Specifications and shall be identified clearly as to material, supplier, manufacturer's procedures and pertinent data such as catalog numbers and the use for which intended.

Before submission of each Shop Drawing, Catalog Cut and sample, the Contractor shall have determined and verified all quantities, dimensions, conformance to the specified performance and design criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed and coordinated each Shop Drawing or Catalog Cut with other Shop Drawings and Catalog Cuts and with other requirements of the Work.

At the time of each submission, the Contractor shall give the Engineer specific written notice of each variation in any Shop Drawing, Catalog Cut and sample from the requirements of the Contract Drawings or Specifications and, in addition, shall cause a specific notation of each such variation to be made on each submittal to the Engineer, for review and approval of each such variation.

The Engineer's review and approval of Shop Drawings, Catalog Cuts or samples shall not relieve the Contractor from responsibility for any variation from the requirements of the Contract Drawings or Specifications unless the Contractor has in writing called the Engineer's attention to each such variation at the time of submission as required hereunder and the Chief Engineer has given written approval of each by an express specific written notation thereof incorporated in or accompanying the Shop Drawing, Catalog Cut or sample approval. Approval of Shop Drawings, Catalog Cuts and samples which are inconsistent with the requirements of the Contract Drawings and Specifications shall not be deemed to waive or change such requirements or to relieve the Contractor of his obligations to perform such requirements unless the Chief Engineer shall expressly and specifically state that he is waiving or changing such requirements, as stated above.

Where a Shop Drawing, Catalog Cut or sample is required no related Work shall be performed prior to the Engineer's review and approval of the submission.

In preparing the Shop Drawings, the Contractor may adopt a sheet of any reasonable size which best suits his needs, but having adopted such size, all sheets thereafter of a similar nature shall be of the same size as that adopted. Each drawing shall have a margin on the top, bottom and right-hand side of one-half inch and on the left hand side a margin of one and one-half inches.

Upon receipt of the submittal, the Engineer will review the Shop Drawing, Catalog Cut or sample for conformance to the design information and materials shown on the Contract Drawings and contained in the Specifications. Approval by the Engineer shall not constitute a complete review or approval of the means, methods, techniques, sequences or procedures of construction, except where a specific means, method, technique, sequence or procedure of construction is specifically delineated in or required by the Contract Drawings or Specifications, and the approval shall not constitute a review and approval in regard to safety precautions or programs incident thereto. The review and approval of a separate item will not in itself indicate approval of the assembly in which the item functions. Any design shown on the Shop Drawings and prepared by the Contractor, his subcontractors, their detailers, or their professional engineers is the complete responsibility of the Contractor.

Within the number of working days hereinafter specified after receipt of the Shop Drawing prints, the Engineer shall approve or not approve the same or require corrections or additions to be made thereon. When a shop drawing is not approved or if additions or corrections are required, the Engineer shall return within this period one of the four copies submitted and the Contractor shall make the revisions, corrections or additions shown thereon to be made. He shall resubmit four prints and one brownline (reproducible) showing the drawing corrected as required. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Engineer on the previous submittal. Each drawing shall be corrected as required until the approval of the Engineer is obtained. After each resubmission, the Engineer shall have the number of working days hereinafter specified in which to approve revisions or corrections.

The number of working days within which the Engineer shall advise the Contractor as to whether the Shop Drawings are approved, not approved, or require corrections or additions to be made thereto shall be as follows, except that 20 working days shall be required for the Engineer to review shop drawings submitted with design calculations.

No. of Dwgs. Submitted Within 5 Consecutive Working Days for Each Discipline(*)	No. of Working Days for Engineer To Review Shop Drawings
Up to 50	7
51 to 75	12
More than 75	15
* Disciplines shall be defined as follows: Structural, Architectural, Civil, Geotechnical, Mechanical, Electrical, Traffic and Environmental.	

Failure of the Contractor to provide 30 calendar days advance notice to the Engineer of any submittal shall result in a five (5) working day extension of the number of working days stated in the chart above. In no event shall an extension of the Engineer's review time provided for in this section relieve the Contractor from its duty to meet all contractual Milestone dates.

As soon as approval has been given to any Shop Drawing or Catalog Cut, the Contractor shall within five days send to the Engineer six prints, except that when the Engineer specifically so directs, nine prints shall be sent. After approval thereof, no change will be permitted thereon unless approved in writing by the Engineer.

Before final payment for the Work is made, the Contractor shall furnish to the Engineer one set of Shop Drawings, which have previously been prepared by the Contractor in accordance with requirements elsewhere specified in these Specifications, all clearly revised, completed and brought up to date showing the permanent construction as actually made. These drawings shall be marked "RECORD DRAWING – NOT FOR REVIEW", dated and signed by the Contractor and be in the form of Mylar reproducibles, from which clear prints can be made. By signature, the Contractor is verifying that the drawing reflects the as-constructed condition.

All drawings, data, calculations and other papers of any type whatsoever, whether in the form of writing, figures or delineations, which are prepared in connection with this Contract and submitted to the Authority shall become the property of the Authority. The Authority shall have the non-exclusive right to use or permit the use of all such drawings, data and other papers and any ideas or methods represented thereby for any purpose and at any time without additional compensation. No such papers shall be deemed to have been given in confidence. Any statement or legend to the contrary in connection with such drawings, data or other papers and in conflict with the provisions of this paragraph shall be void and of no effect.

## 102. SUBSTITUTION

Where a proprietary item or make is specified or mentioned herein or called for or mentioned on the Contract Drawings and the phrases "similar and equal to" or "approved equal" are used in connection therewith, the utilization of any other item or make will be deemed a substitution. Substitution for the proprietary item or make specifically named may be made only in accordance with the Section hereof entitled "Workmanship and Materials" and in accordance with the following.

Whenever materials or equipment are specified or described in the Contract Drawings or Specifications by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of another supplier or manufacturer may be accepted by the Engineer if sufficient information and proof is submitted by the Contractor to permit the Engineer to determine that the material or equipment proposed is equivalent or equal to that named and the Engineer approves the substitution. The procedure for review by the Engineer will include the following. Requests for review of substitute items of material and equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute item of material or equipment, the Contractor shall make a timely written application to the Engineer for approval thereof, certifying that the proposed substitution will perform at least the identical functions and achieve at least the identical results called for by the specified product and otherwise be equal to the specified product with regard to, but not limited to, durability, maintenance, strength, energy costs and record of proven performance. The application shall state that the evaluation and approval of the proposed substitution shall not delay the Contractor's completion of the Work as required by the Contract, whether or not approval of the substitution will require a change in the construction and, in no event will the Contractor be granted an extension of time for completion of any portion of the Work for reasons related directly or indirectly to the evaluation of the proposed substitution or to the proposed substitution itself. Any variations of the proposed substitution from that specified shall be identified in the application, and maintenance, repair and replacement services for the substitution shall be indicated. The Engineer may require the Contractor to furnish at the Contractor's expense additional laboratory test data concerning the proposed substitution.

Such submission to the Engineer shall be made only by including the requested substitution in the list of materials required to be submitted to the Engineer in accordance with the Section hereof entitled "Inspections and Rejections" within fifteen (15) calendar days after the receipt of the acceptance of the Contractor's Proposal. After the approval of said list, no substitutions will be permitted, except that a brand or make named in the Specifications may be submitted for approval in lieu of a brand or make on said list. Any such submission shall not imply, or impose on the Engineer, any obligation whatsoever to discuss, disclose or justify the reasons for his opinion, approval, acceptance or rejection.

The Engineer shall be the sole judge of as to whether a proposed substitution will be approved, and no substitution shall be ordered or utilized without the Engineer's prior written approval. The Engineer may require Contractor to furnish at Contractor's expense a special performance guarantee or other assurance with respect to any approved substitution. Furthermore, the approval of any substitute proprietary item or make shall not in any way entitle the Contractor to additional compensation therefor.

Notwithstanding such approval, however, the Contractor assumes the risk that such approved substitute item or make is not equal to that shown or specified and if at any time the substitution shall appear not to be so equal he shall replace the substitution with that originally shown on the Contract Drawings or called for in the Specifications at his own cost and reimburse the Authority for any loss occurring on account of the substitution failing to be equal, notwithstanding that it had been previously approved for use by the Engineer.

The construction called for by the Contract Drawings and Specifications may be adapted for a particular proprietary item or make of material or equipment. Therefore, if any construction not required by the Contract Drawings or Specifications in their present form is necessary or desirable because of the use of substitute item or make of material or equipment (even though such other item or make is approved by the Engineer), such construction shall be furnished or performed by the Contractor at his expense and subject to the approval of the Engineer.

### 103. WORKMANSHIP AND MATERIALS

Workmanship and materials shall in every respect be free from defects of any kind and shall be in accordance with the best modern practice and whenever the Contract Drawings, Specifications or directions of the Engineer admit of a doubt as to what is permissible or fail to note the quality of any construction the interpretation which calls for the best quality is to be followed. Workmanship shall conform to applicable Specifications, manufacturer's instructions and recommendations for installation of products for the applications shown on the Contract Drawings, all of which shall be subject to the provisions of the Section of Division 1 GENERAL PROVISIONS entitled "Inspections and Rejections".

All items provided in this contract that use dates in the recording, storing or processing of information shall use such dates correctly at all times including using such dates correctly in the recording, storing or processing of information after January 1, 2000 (Year 2000 Compliant).

Materials and Equipment incorporated into the Work shall be new except as may be otherwise herein specifically required, and shall comply with make, size, type and quality specified, or as specifically approved in writing by the Chief Engineer in accordance with the Section of Division 1 GENERAL PROVISIONS entitled "Substitution".

Reference to standards of any society, institution, association, or governmental authority in the Specifications or on the Contract Drawings, whether specific or by implication, shall mean for such standards which are part of the building code in effect for Work of this Contract the edition date published in such code; and such references which are not part of the building code, shall mean the latest edition date in effect at the time of opening of Proposals upon the present Contract unless specifically stated otherwise.

If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment to be employed by the Contractor in performing the Work. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the approved instructions of the applicable supplier except as otherwise provided in the Contract Drawings or Specifications.

In case of a discrepancy between a description or requirement in the Contract Drawings and Specifications for any material or equipment and a catalog number or other designation for the same material or equipment (even though stated to be acceptable), the description or requirements shall control.

In various paragraphs of these Specifications, references may be made to certain standard or tentative specifications or requirements of various organizations. Unless otherwise stated, these references are to be construed as referring to the specifications and requirements in effect on the date set for opening bids upon the present Contract.

All inventions, ideas, designs and methods contained in the Specifications and Contract Drawings in which the Authority has or may acquire patent, copyright or other property rights are hereby expressly reserved for the exclusive use of the Authority. The Specifications and Contract Drawings contain confidential information which is disclosed only to enable this Contract to be performed. Said Specifications and Drawings must not be used for any purpose detrimental to the interest of the Authority and must not be produced or copied in whole or in part or used for furnishing information to others without the written consent of the Authority, provided, however, that the Contractor may, when the performance of the Contract so requires, furnish said information to others for the purpose of engaging or informing subcontractors and materialmen.

If, in accordance with this Contract, the Contractor furnishes research, development or consultative services in connection with the performance of the Contract and if in the course of such research, development or consultation patentable subject matter is produced by the Contractor, its officers, agents, employees, subcontractors or materialmen, the Authority shall have, without cost or expense to it, an irrevocable, non-exclusive, royalty-free license to make, have made, and use, either itself or by anyone on its behalf, such subject matter in connection with any activity now or hereafter engaged in or permitted by the Authority. Promptly upon request by the Authority, the Contractor shall furnish or obtain from the appropriate person a form of license satisfactory to the Authority, but as between the Contractor and the Authority the license herein provided for shall nevertheless arise for the benefit of the Authority immediately upon the production of said subject matter and shall not await formal exemplification in a written license agreement as provided for above. Such license may be transferred by the Authority to its successors, immediate or otherwise, in the operation or ownership of any real or personal property now or hereafter owned or operated by the Authority, but such license shall not be otherwise transferable. The FTA shall have the same rights as the Authority under this paragraph.

The right to use all material, software, firmware, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction required in connection with this Contract and to which a patent, copyright or other intellectual property right applies or may apply shall be obtained by the Contractor without separate or additional compensation whether the same is patented, copyrighted or otherwise protected as an intellectual property right before, during or after the performance of the Contract. The Contractor shall indemnify the Authority and the FTA against and save it harmless from all loss and expense incurred in the defense, settlement or satisfaction of any claims in the nature of patent, copyright or other intellectual property right infringement arising out of or in connection with the Authority use, in accordance with the preceding two paragraphs of this numbered clause, of such subject matter or material, software, firmware, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction to which a patent, copyright or other intellectual property right applies or may apply. If requested by the Authority and if notified promptly in writing of any such claim, the Contractor shall conduct all negotiations with respect to and defend such claim without expense to the Authority. If the Authority be enjoined from using any of the facilities which form the subject matter of this Contract and as to which the Contractor is to indemnify the Authority against patent, copyright or other intellectual property right claims, the Authority may, at its option and without thereby limiting any other right it may have hereunder or at law or in equity, require the Contractor to supply, temporarily or permanently, facilities not subject to such injunction and not infringing any patent, copyright or other intellectual property right or to remove all such facilities and refund the cost thereof to the Authority or to take such steps as may be necessary to ensure compliance by the Authority with such injunction, all to the satisfaction of the Authority and all without cost or expense to the Authority. The FTA shall have the same rights as the Authority under this paragraph.

#### 104. INSPECTIONS AND REJECTIONS

All Work and all construction, processes of manufacture and methods of construction involved in or related to the performance of the Work shall be at all times and places subject to the inspection of the Engineer, acting personally or through his Inspectors, and the enumeration in these Specifications of particular portions of such Work, construction, processes of manufacture or methods of construction which will or may be inspected by the Engineer or such Inspectors shall not be deemed to imply that only such Work, construction, processes of manufacture and methods of construction will or may be so inspected. The Engineer shall be the judge of the quality and suitability of the Work, construction, processes of manufacture and methods of construction for the purposes for which they are used or to be used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall be removed immediately from the site. The fact that the Inspectors have approved the materials and workmanship shall not relieve the Contractor from his obligation to supply other material and workmanship when so ordered by the Engineer.

The Contractor, at his own expense, shall furnish such facilities and give such assistance for inspection as the Engineer may direct. In the case of materials required by the Specifications to be inspected in the factory or plant, and in the case of any other items which the Engineer may designate, the Contractor shall secure for the Engineer and his Inspectors free access to all parts of such factories or plants and shall furnish to the Engineer three copies of purchase orders, two copies of mill shipping statements and four copies of shipping statements. Moreover, in the case of such materials to be factory or plant inspected, the Contractor shall give at least ten days' notice to the Engineer of his intention to commence the manufacture or preparation of such materials.

Other than the materials and equipment specifically required to be inspected at the manufacturer's factory or plant, all materials will be inspected at the construction site and any portions thereof which are rejected by the Engineer shall be immediately removed from the construction site by the Contractor and shall be replaced with new materials by the Contractor at his own expense.

In the case of materials to be inspected at the construction site, the Contractor shall submit a list of all such materials in triplicate to the Engineer for his approval prior to ordering same. The list shall be submitted within fifteen calendar days after receipt of the notice of acceptance and shall contain the following information:

- A. Classification of submittal in accordance with the following:
  - Class I - A submittal for record of an expressly specified item.
  - Class II - A submittal of an item which conforms to an express generic specification or a submittal which is deemed by the Contractor to be identical to an expressly specified item.
  - Class III - A submittal which is deemed by the Contractor to be functionally equivalent but not identical to a specified item.
- B. In the case of Class II and Class III, the Contractor shall supply adequate information to the Engineer to enable the Engineer to compare the specified item and the proposed substitution. Information shall include, but need not be limited to, technical specifications, Catalog Cuts, drawings, references to existing installations and test data, or any other data required by the Engineer.
- C. In the case of fabricated materials for which Shop Drawings are to be prepared, a brief description of the material and the statement "see Shop Drawings".

- D. In the case of materials or equipment listed in manufacturer's catalogs, the list shall contain the vendor's name, the manufacturer's name, brand name, style designation, catalog number and, where the Specifications require catalog cuts, the statement "see catalog cut".
- E. In the case of materials or equipment for which Shop Drawings are not to be prepared, and which are not listed in any catalog, the list shall contain a complete description of the material or equipment, which shall be in sufficient detail to describe completely the materials or equipment and quality therefor.

The Engineer shall advise the Contractor whether said list is approved or requires corrections or additions within the number of working days indicated in the chart below:

Type of Submittal	No. of Working Days for Engineer to Approve/Disapprove Items
Class I Material submittals	7
Portland Cement mix designs that require confirmation of the 28-day properties	35
Changes in asphalt mix designs that need to be confirmed with a batch mix at the plant	35
Class II Material submittals	10
Class III Material submittals	15

Failure of the Contractor to provide 30 calendar days advance notice to the Engineer of any submittal shall result in a five (5) working day extension of the number of days stated in the chart above. In no event shall an extension of the Engineer's review time provided for in this section relieve the Contractor from its duty to meet all contractual Milestone dates.

Within ten working days after receipt of said list, the Engineer shall notify the Contractor of which items are approved and which disapproved. Within two working days thereafter, the Contractor shall resubmit a new list covering those items which were disapproved. After each such re-submission the Engineer shall have a similar period of ten days in which to approve or disapprove.

Should materials or equipment be delivered to the construction site without having been placed on the aforementioned list and approved, it shall be immediately removed from the construction site by the Contractor at his own expense.

### 105. MANUFACTURERS' CERTIFICATION

Where materials and equipment are required by these Specifications to conform to certain standard or tentative specifications or requirements of any organizations, including American Society for Testing and Materials, American National Standards Institute, Association Rules for Grading Lumber, Federal Specifications, National Electrical Manufacturers Association, American Association of State Highway and Transportation Officials, American Water Works Association and the International Municipal Signal Association, the Contractor shall furnish to the Engineer the manufacturer's written certification that each of the materials or equipment conforms to the foregoing standard or tentative specifications. The certification shall be delivered to the Engineer prior to installation of the materials to which it refers. Such certifications shall not be binding or conclusive on the Authority and may be rejected at any time by the Engineer if incorrect, improper or otherwise unsatisfactory in his opinion.

#### **106. NO RELEASE OF CONTRACTOR**

Any provision of this Contract for testing, inspection or approval, and any actual testing, inspection or approval, of any materials, workmanship, plant, equipment, drawings, program, methods of procedure, or of any other thing done or furnished or proposed by the Contractor to be done or furnished in connection with the Contract is for the benefit of the Authority not the Contractor. Any approval of such things shall be construed merely to mean that at that time the Engineer knows of no good reason for objecting thereto. No such provision for testing or inspection, no omission of testing or inspection, and no such approval shall release the Contractor from his full responsibility for the accurate and complete performance of the Contract in accordance with the Contract Drawings and Specifications or from any duty, obligation or liability imposed upon him by the Contract or from responsibility for injuries to persons or damage to property.

#### **107. ERRORS AND DISCREPANCIES**

If, in the performance of the Contract, the Contractor discovers any errors or omissions in the Contract Drawings or Specifications, or in the marks, lines and elevations furnished by the Authority in the construction undertaken and executed by him, he shall immediately notify the Engineer and the Engineer shall promptly verify the same.

If with the knowledge of such error or omission and prior to the correction thereof, the Contractor proceeds with any construction affected thereby, he shall do so at his own risk and the construction so done shall not be considered as construction done under and in performance of this Contract unless and until approved and accepted.

#### **108. ACCIDENTS AND FIRST AID PROVISIONS**

The Contractor shall promptly report in writing to the Engineer and to the Authority Manager, Claims Administration all accidents whatsoever arising out of or in connection with the performance of the Contract, whether on or adjacent to the construction site, which result in death, injuries or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damage is caused, the accident shall be reported immediately by telephone to both of the said representatives of the Authority.

The Contractor shall provide at the construction site such equipment and medical facilities as are necessary to supply first aid service, in case of accident, to any who may be injured in the progress of the Contract. He shall have standing arrangements for the removal and hospital treatment of any person who may be injured while engaged in the performance of the Contract.

If any claim is made by any third person against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the fact in writing to the aforementioned representatives of the Authority, giving full details of the claim.

#### **109. SAFETY PROVISIONS**

In the performance of the Contract, the Contractor shall exercise every precaution to prevent injury to workers and the public or damage to property.

He shall, at his own expense, provide temporary structures, place such watchmen, design and erect such barricades, fences and railings, give such warnings, display such lights, signals and signs, exercise such precaution against fire, adopt and enforce such rules and regulations, and take such other precautions as may be necessary, desirable or proper, or as may be directed.

The temporary structures, other than those shown on the Contract Drawings, will be permitted only after the approval from the Engineer is requested and obtained in writing. Temporary structures shall be equipped with all OSHA facilities-washroom, potable water, eating area, first aid kit, eye wash and means of communications. All pertinent telephone numbers must be posted at site.

The Contractor shall employ for Work of the Contract a competent person conforming to the requirements of the Code of Federal Regulations 29 CFR 1926.32(f) who shall be designated by the Contractor as authorized to perform the duties required by 29 CFR 1926 et seq. as applicable for Work of this Contract.

Obtain and submit to the Engineer one copy of material safety data sheet (MSDS) conforming to the requirements of 29 CFR 1910.1200(g) for each hazardous chemical utilized for permanent and consumable materials employed for Work of this Contract. The Contractor is responsible for full compliance with OSHA Hazard Communication Standard and New York State Right to Know Law.

The Contractor shall, in its performance of the Work, comply with all Federal, state and Local environmental statues and regulations, including but not limited to, the requirements of the Air Pollution Prevention and Control Act (42 U.S.C 7401 et seq.), Section 318 of the Water Pollution Prevention and Control Act (33 U.S.C. 1251 et seq.), and the New York State Environmental Conservation Law, and with all regulations and guidelines issued there under.

Any hazardous waste shall be disposed of in accordance with applicable law and implementing regulations.

A minimum of two (2) days prior to any excavating, the Contractor must notify the Engineer. The Contractor shall notify the NYC One Call Center to allow member agencies to mark locations of underground utilities prior to any excavating and confirm such notification with the Engineer.

In the case of emergency involving danger to life, person, or property, the Engineer may order continuous work with an increased force for such time, as he may deem necessary to eliminate the emergency.

The Contractor is responsible to guard, maintain and protect the wires, cables, ducts, manholes, posts and poles, signals, fire hydrants and alarm boxes of the NYC Fire Department and not cause the interruption of the Fire Department Fire Alarm Telegraph Service. In case any such wires, cables, ducts, manholes, posts and poles, signals, fire hydrants and alarm boxes shall be disturbed, it shall be restored to its original condition.

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss, including but not limited to:

- 1.) All employees performing the Work, the public, and other persons and entities who may be affected thereby;
- 2.) All the Work, materials and equipment to be incorporated therein, whether in storage on or off the site; and
- 3.) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

The Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the Contractor has removed all workers, material and equipment from the construction site, or the issuance of the Certificate of Final Completion, whichever shall occur last.

Until fire protection needs are supplied by permanent facilities under this Contract, install and maintain temporary fire protection facilities. Comply with requirements of National Fire Protection Association NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alteration and Demolition Operations".

The Contractor shall employ only such workers as are physically fit and are free from contagious or communicable diseases.

He shall use only machinery and equipment adapted to operate with the least possible noise, and shall so conduct his operations that annoyance to occupants of nearby property and the general public will be reduced to a minimum.

The bringing of intoxicating substances onto the construction site and the use or consumption of intoxicating substances at the construction site are prohibited. It shall be the responsibility of the Contractor to insure that all employees of the Contractor and of all subcontractors, materialmen and any other persons under contract to or under the control of the Contractor shall comply with the provisions of this paragraph.

The Contractor shall daily clean up all refuse, rubbish, scrap materials and debris caused by his operations, to the end that at all times the construction site shall present a neat, orderly and workmanlike appearance. Before the Certificate of Final Completion of Work will be issued, the Contractor shall remove all surplus materials, false work, temporary fences and other temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations and shall put the construction site in a neat, orderly condition.

In the event the Contractor encounters at the construction site, material reasonably believed to be asbestos, polychlorinated biphenyl (PCB) or any other hazardous material, the Contractor shall immediately stop Work in the area affected and report the condition in writing to the Engineer. Work in the affected area shall not thereafter be resumed by the Contractor except upon the issuance of a written order to that effect from the Engineer.

15 days prior to the commencement of Work, the Contractor shall submit to the Engineer, for his review and approval, the Contractor's Safety Program which shall comply with all applicable federal, state, municipal and local and departmental laws and shall include, among other things, the designation by the Contractor of a qualified individual to administer such Safety Program.

This safety program shall address the safety requirements for performing work at or about the WTC site as defined in the Authority's WTC Site Safety Program entitled "WTC Transportation Hub Site Safety Program", which is attached hereto as an Appendix.

#### **110. SAFETY REQUIREMENTS FOR PERFORMING WORK ON TRANSIT PROPERTY**

The safety requirements set forth in the provisions of the clause entitled "Safety Provisions" are also applicable to the Work performed on Transit property under this Contract. In addition, the following Transit-specific requirements are applicable to Work performed on Transit property.

- A. The Contractor's Safety Program shall include an Emergency Preparedness and Response Plan addressing the identification of and potential for environmental accidents and emergencies associated with site-specific construction activities, and addressing the appropriate security, control, response, drill, training and notification measures to be implemented.
- B. The Contractor's Safety Program shall include descriptions of safety hazards at the work site, proposed measures to minimize/eliminate the safety hazards, project-specific safety procedures, and site security measures.
- C. The Contractor's Safety Program shall include a provision for maintenance of safety records and their retention for at least two years beyond Final Completion of the Work.
- D. Regarding requirements for reporting of injuries, accidents and any associated claims, the Contractor shall provide copies of all required documentation to the Engineer, for injuries and accidents on Transit property.
- E. Regarding requirements for submittal of material safety data sheets (MSDS), the Contractor shall provide copies of all required documentation to the Engineer prior to hazardous chemicals/materials being brought onto Transit property.

The Contractor is advised that additional Transit requirements apply to work on or adjacent to Transit subway tracks. Should the need for work on or adjacent to tracks arise, the Contractor shall request and obtain the additional requirements from the Engineer and include them in the Contractor's Safety Program.

## **111. DAILY PROGRESS, EQUIPMENT AND LABOR REPORTS**

The Contractor shall furnish to the Engineer at the end of each day Work is performed at the construction site, a memorandum showing for that day (a) the construction performed, (b) the type of equipment used identifying each piece of equipment as owned by the Contractor or rented from others; (c) a statement of any unusual happening that occurred, and (d) the names and number of workers in each trade classification that were employed. Such memorandum shall not be deemed to be a substitute for the notices, time slips, memoranda or other data required under the clauses of the Form of Contract relating to compensation for Extra Work.

## **112. LAWS AND ORDINANCES**

In order to effectuate the policy of the Authority, the Contractor shall comply with all provisions of federal, state, municipal, local and departmental laws, ordinances, rules, regulations and orders which would affect the Contract and the performance thereof and those engaged therein if said Contract were being performed for a private corporation, except where stricter requirements are contained in the Specifications or Contract Drawings, in which event the latter requirements shall apply. However, the Contractor shall not apply for any permits, licenses or variances in the name of or on behalf of the Authority, but shall do so in his own name where required by law, regulation or order or by the immediately preceding sentence. Nor shall the Contractor apply for any variance in his own name without first obtaining the approval of the Authority.

The Port Authority has applied/will apply for the following permit in connection with this Contract in its own name:

- A. The City of New York-Department of Environmental Protection - PATH Tunnel E & World Trade Center Discharge Permit-File Case # C-3192

The Contractor shall comply with all provisions of the said permit which is attached hereto and made a part hereof as Appendix 1 Permit.

## **113. IDENTIFICATION**

No person will be permitted on or about the construction site without a pass, permit or identification badge approved by the Engineer. The Contractor shall provide such passes, permits or identification badges for his employees, subcontractors and materialmen whenever necessary. Identification badges shall be worn in a conspicuous and clearly visible position by all employees of the Contractor whenever they are working at the construction site.

## **114. SIGNS**

No advertisement or sign, other than the name and address of the Contractor, will be permitted on any fences, temporary structures or elsewhere on the construction site and such advertisement will be permitted only upon the condition that it is first approved by the Engineer. In any event, the advertisement shall not exceed six feet by eight feet in overall dimensions.

## **115. CONTRACTOR'S FIELD OFFICE AND REPRESENTATIVE**

Contractor shall maintain a field office near the construction site. There are no provisions for space to place or locate office trailers and/or shanties on site.

During the performance of any Work at the construction site, the Contractor shall have a representative thereat who shall be authorized by the Contractor to receive and put into effect promptly all orders, directions and instructions from the Engineer. The Contractor's representative shall be provided, at all times, with a conformed copy of this Contract and a set of the Contract Drawings.

Orders and directions may be given orally by the Engineer and shall be received and promptly obeyed by the Contractor or his representative or any superintendent, foreman or other employee of the Contractor who may have charge of the particular part of the Work in relation to which the orders or directions are given. A confirmation in writing of such orders or directions will be given by the Engineer when so requested by the Contractor.

#### **116. SURVEYS**

The Engineer will establish a bench mark and a base line at or adjacent to the location of the Contractor's operations. The Contractor shall perform all surveys which may be required for the performance of the Contract. He shall carefully preserve any base line and bench mark which may be established by the Engineer.

The Contractor shall, in addition, furnish to the Engineer, without additional compensation therefor, any or all information and data regarding points, lines, grades, elevations and other survey information established by the Contractor during the performance of the Contract.

Surveys and measurements of quantities for purposes of computing Contractor's compensation shall be made by the Contractor as directed by and in the presence of, or jointly with, the Engineer, at the Engineer's option. Computations of quantities for payment shall be made by the Contractor and shall be subject to the approval of the Engineer.

#### **117. TEMPORARY STRUCTURES**

Unless otherwise provided in this Contract, the Contractor shall determine the need for and shall design, furnish and construct all barricades, fences, staging, falsework, formwork, shoring, scaffolding and other temporary structures required in the performance of the Contract, whether or not of the type enumerated in the Specifications or on the Contract Drawings, including those which would be required by law or regulation if this Contract were being performed for a private corporation. All such temporary structures shall be of adequate strength for the purposes for which they are constructed and shall be provided with graphics, warning signs and warning lights as required to inform personnel and the public of the hazards being protected against, and the Contractor shall maintain them in satisfactory condition. The design and drawings for such structures are to be prepared by the Contractor, and when requested by the Engineer they shall be submitted for his review before being used. Neither such approval, however, nor any requirements of the Engineer, the Specifications or the Contract Drawings shall relieve the Contractor of his responsibility for the design, construction and use of the temporary structures or from any obligations and risks imposed on him under this Contract, and any such approval or requirements shall be deemed merely to relate to minimum standards and not to indicate that the temporary structures are adequate or that they meet the Contractor's obligations under this Contract.

Temporary structures shall be painted with an approved dark color paint and shall be repainted whenever necessary during the period that the Contract is being performed. Upon completion of all Work under this Contract, the temporary structures shall be removed from the construction site.

#### **118. PERMIT AND REQUIREMENTS FOR WELDING**

Prior to the commencement of any cutting or welding operations at the construction site, the Contractor shall notify the Engineer and obtain an Authority cutting and welding permit. The Authority will issue this permit without payment of a fee, and application forms may be obtained from any Resident Engineer of the Authority, at his office at the facility. Unless otherwise approved by the Engineer, all cutting and welding operations shall be performed in accordance with the conditions which form a part of said permit. The permit application must be filled out and submitted in duplicate to the Engineer at least forty-eight hours prior to commencing welding or cutting operations at the construction site.

## **119. FINAL INSPECTION**

When, in the opinion of the Contractor, the construction is completed and ready for final inspection, he shall so notify the Engineer in writing and the Engineer will give said construction (including any portions with respect to which Certificates of Partial Completion have been issued) a minute and thorough inspection. Before any Certificate of Final Completion will be issued, any defects or omissions noted on this inspection must be corrected by the Contractor.

## **120. WARRANTIES**

The Specifications may provide for certain warranties of portions of the permanent construction. These warranties are intended for the greater assurance of the Authority and not as a substitute for rights which the Authority might otherwise have. Although such warranties shall be enforceable as provided, neither any requirement of this Contract with respect to warranties by the Contractor nor any guarantee or warranty given to the Contractor or the Authority by any manufacturer shall be deemed to be a limitation upon any rights which the Authority would have, either expressed or implied, in the absence of such guarantees or warranties.

## **121. UTILITY RECORD DRAWINGS**

Prepare, on mylar sheets 22" x 34" or other size approved by the Engineer, drawings showing the exact locations and elevations of underground utility construction including manholes, catch basins, inlets, pipe lines and structures for carrying gases (including air) and fluids including water, storm drainage, sewage, oil, chemicals, electrical duct runs, cables and conduits, for new construction or extension of existing utilities installed underground under this Contract.

Submit to the Engineer, for verification and approval, tabulation of the data to be used in the preparation of the utility record drawings. Do not build-in, backfill or fill over or around or in any way cover underground structures, piping, conduit, cable or duct banks until such submitted data has been verified and approved by the Engineer.

Indicate the exact locations, including changes of direction and curves, by the use of offset distances from nearby permanent structures and, in addition, by the use of coordinates which shall be based on the system of coordinates used at the construction site, the origin of which is shown on the Contract Drawings. Base elevations on the datum used at the construction site as is shown on the Contract Drawings.

Submit prints of these drawings to the Engineer for verification, check of the accuracy, and for approval. Make indicated corrections and additions to the drawings, until the approval of the Engineer has been obtained. After these drawings have been approved by the Engineer, each of the original corrected mylar sheets shall be marked "RECORD DRAWING – NOT FOR REVIEW", dated and signed by the Contractor and turned over to the Engineer before issuance of the Certificate of Final Completion, and such original drawings shall become the property of the Authority. By signature, the Contractor is verifying that the drawing reflects the as-constructed condition.

## **122. TEMPORARY UTILITY SERVICES**

Operate and maintain temporary services and facilities in a safe and efficient manner. Modify as required throughout progress of the Contract, and remove from Authority property when no longer required, or replaced by the use of completed permanent facilities as approved by the Engineer.

Heat is not available at the construction site. Provide temporary heat as required to maintain environmental conditions to facilitate progress of the Work and to protect materials and finishes from damage due to temperature and humidity. Temporary heating units shall be vented self-contained units with individual space thermostatic control, shall be UL tested and approved for the fuel being consumed, shall be installed in accordance with ANSI A10.10 "Safety Requirements for Temporary and Portable Space Heating Devices and Equipment Used in the Construction Industry", and shall be approved by the Engineer. Use of gasoline burning space heaters, open flame, or salamander type heating units is prohibited. The Contractor shall pay costs of installation, maintenance, operation, removal and for fuel consumed.

Electricity is available at the construction site for the Contractor's use, subject to such conditions and precautions upon its use as may be imposed by the Engineer. The Authority will pay the cost of power used. Provide connections to existing facilities and size to provide service required for small tools and lighting. Install circuit and branch wiring with ground-fault protection, with area distribution boxes for plug-in connection of construction-type power cords. The Contractor shall pay all costs of installation, maintenance, operation and removal of temporary service connections.

Water for construction purposes is available at the construction site, subject to such conditions and precautions upon its use as may be imposed by the Engineer. The Authority will pay the cost for water used. Provide connections to existing facilities, and extend with branch piping, taps and hoses as required. Protect piping and fittings against freezing. The Contractor shall pay all costs of installation, maintenance, operation and removal for temporary service connections.

### **123. TEMPORARY SANITARY FACILITIES**

Make arrangements for securing and pay all costs for temporary toilets, wash facilities and drinking water including toilet tissue, paper towels, paper cups and similar disposable materials for use by the Contractor, subcontractors, materialmen or other persons over whom the Contractor has control. Comply with regulations and health codes, which would be applicable if the Authority were a private corporation, for the type, number, location, operation and maintenance of fixtures and facilities. Install facilities where directed by the Engineer, and remove from Authority property when no longer required. Contractor is prohibited from using PATH Transit toilets and wash facilities. Potable water is not available on the construction site for the Contractors use.

### **124. PROGRESS SCHEDULE**

#### **A. Schedule Requirements**

- 1.) The Contractor shall, at its own expense, prepare, maintain and update detailed electronic progress schedules for the Engineer's review and approval. All submittals required herein shall be in the form and content stipulated in this Section. Each progress schedule shall bear the signature of the Contractor's authorized representative. The progress schedules/graphics required by this Contract shall be produced using Primavera Project Manager (P6), Version 6.2.

- 2.) Progress schedules shall be sufficiently detailed to accurately depict all the Work (including any design, key submittals, procurement and construction activities performed by the Contractor) and shall graphically represent the logical sequence and duration of activities, all in accordance with the requirements of the Contract. The information provided in progress schedules shall also include, but not be limited to, the interdependencies between the Contractors' Activities and all other Activities required for the successful completion of the Contract, e.g., those to be performed by utility companies or by other contractors or agencies. All Milestone dates specified in the Contract shall be represented in the schedule by Milestone activities that are logically interrelated to the work that must be accomplished in order to achieve the Milestone.
- 3.) Contractor shall coordinate with Port Authority staff as directed by the Engineer in developing a Work Breakdown Structure that can be standardized and integrated into the Program Integrated Master Schedule. Contractor shall include INTERPROJECT and INTRAPROJECT MILESTONES as directed by the Engineer to facilitate the logical linking of schedules.
- 4.) The Progress Schedule must identify the cost to perform work utilizing summary activities for each major component of the work and construction discipline. The sum of the costs assigned to all summary activities must equal the Contract Value. Once the cost loaded Progress Schedule is approved by the Engineer, it will constitute the Schedule of Values from which monthly progress payments will be made.
- 5.) The submittal of Progress Schedules under this section shall not be deemed to be a substitute for the reporting requirements of the Section of Division 1 entitled "Daily Progress, Equipment and Labor Reports."

## **B. Schedule Terminology**

Schedule terminology used in this Contract shall have the meaning described below:

- 1.) **Activity:** A discrete item of Work with a Duration that can be clearly defined; a synonym for task. Unless otherwise permitted in writing by the Engineer, an activity's duration shall be not more than 20 calendar days
- 2.) **Activity Codes:** Activity Codes allow each activity in a project to be grouped into specific classifications such as area, responsibility, phase, system, or location. The codes consist of specific values and descriptive titles that are entered into the data dictionary of the scheduling software. Activities are assigned specific Activity Codes as appropriate.
- 3.) **Alternative Solutions:** An analysis of the various options for dealing with encountered or anticipated Contract problems. An alternative solution is developed to assist in determining the best method(s) of preventing or correcting any impediments to the progress of the Work. Alternative Solutions analysis shall indicate impacts on scheduling and resources.
- 4.) **Analysis Report:** A report that displays the impacts of all variances reported in the Current Progress Schedule. The Analysis Report focuses attention on the impacts of variances between planned and actual performance, so as to support an assessment of such impacts. The Analysis Report shall include Alternative Solutions.
- 5.) **Bar Chart:** A schedule display designed to complement the Network Diagram. The Bar Chart is a traditional Gantt chart, to which the Early Start Dates, Early Finish Dates, Late Start Dates, Late Finish Dates, and Critical Path have been added.

- 6.) **Calendar:** A calendar defines when work on an activity can occur (i.e. Mon – Fri for a standard work week). Activities shall be assigned to a Calendar that represents the planned work days and hours of work.
- 7.) **Constraint:** A constraint is a restriction imposed on the start or finish of an activity or project. An example of the use of constraints is the imposition of a “finish no later than” constraint<sup>28</sup> on the project completion Milestone that is equal to the Contract Completion date. This constraint facilitates the identification of activities that control or do not support the completion date. Constraints shall be limited to start and finish constraints on Milestone activities that represent critical Contract dates, unless otherwise approved by the Engineer in writing.
- 8.) **Critical Path:** The longest path through the network in estimated total elapsed time from the start of the first Activity through the completion of the last Activity. The Critical Path consists of a series of Activities which must be completed on their scheduled completion dates in order for the Contract to be completed on schedule.
- 9.) **Current Progress Schedule:** The most recent progress schedule which has been approved by the Engineer. The Baseline Schedule shall be referred to as "Revision 0". Each time a different Current Progress Schedule is accepted by the Engineer, the revision number must be increased by 1, and the old schedule must be electronically archived, so as to permit an audit trail.
- 10.) **Duration:** The estimated and/or actual length of time required to fully perform a specific Activity. The Duration is expressed in work days. Activity duration shall be based on the labor, equipment and materials required to perform each activity given the available hours of work. No construction activity shall have a duration over 20 (twenty) working days.
- 11.) **Early Finish Date:** The date upon which an Activity can be completed if it is begun on the Early Start Date.
- 12.) **Early Start Date:** The earliest date upon which an Activity can begin.
- 13.) **WBS Summary:** A WBS Summary activity summarizing the early and late dates of a set of activities is used for reporting durations of groups of important activities. An activity shall be designated as a WBS Summary by selecting WBS Summary as the activity type in the Primavera activity details form.
- 14.) **Lag:** The interval between the completion of a Predecessor Activity and the start of a Successor Activity. For example, ten days of positive Lag will cause the Successor Activity to begin ten days after the Predecessor Activity has been completed. Negative Lag will cause the Activities to overlap. The amount of Lag between each Activity shall be clearly represented on the Network Diagram.
- 15.) **Late Finish Date:** The latest date by which an Activity must be completed if the succeeding Activity is to be started on schedule.
- 16.) **Late Start Date:** The latest date by which an Activity must be started to allow completion by the Late Finish Date.

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A late finish or “finish no later than” constraint limits the latest time an activity can complete

- 17.) **Milestone:** A significant point in the performance of the Work. A milestone has no Duration, and represents the start of a portion of the Work or the completion of a portion of the Work. A milestone may also represent either the beginning or the completion of a task or action being performed by entities other than the Contractor (e.g., obtaining a permit, notification to proceed with certain Work, etc.).
- 18.) **Negative Float:** The amount of time that the planned completion date of an Activity is later than its required (Late Finish) date. An Activity with Negative Float must be completed ahead of schedule if the Work is to be completed on time. Negative Float usually indicates the need for corrective and/or preventive action to complete the Work on schedule.
- 19.) **Network Diagram:** A logic diagram prepared according to the Precedence Diagram Method, which displays each Activity required for the performance of the Contract in the sequence in which it is to be performed with appropriate logic ties between activities displayed.
- 20.) **Baseline Schedule:** The detailed progress schedule first approved by the Engineer as provided for in the Contract.
- 21.) **Precedence Diagram Method (PDM):** A particular type of graphic representation of all Activities and Constraints. The Activities are represented by nodes; the Constraints are represented by lines between nodes. A sample PDM Network Diagram appears in this Section.
- 22.) **Predecessor Activity:** An Activity which is a prerequisite to commencement of another Activity.
- 23.) **Preliminary Progress Schedule:** A detailed progress schedule for Work to be performed within one hundred days after the acceptance of the Contractor's Proposal.
- 24.) **Relationship:** a logic tie between two activities representing restrictions on the start or completion of the subsequent activity. Relationships may cause either positive or negative lag. The four basic types of relationships are finish to start, start to start, finish to finish, and start to finish.
- 25.) **Successor Activity:** An Activity which cannot be started or completed without the prior completion or partial completion of a Predecessor Activity.
- 26.) **Total Float:** The amount of time by which an Activity or series of Activities may be delayed without affecting the date of completion of the Work
- 27.) **Free Float** – the amount of time that an activity's early start can be delayed without delaying the early start of a successor activity. The Contractor acknowledges and agrees that if an activity with Free Float is delayed for any reason, the Contractor will not thereby be entitled to an extension of time.

## **C. Schedule Submittal, Review & Approval Process**

### **1.) Baseline Schedule**

- a. Within twenty (20) calendar days of the acceptance of the Contractor's Proposal, the Contractor shall submit a proposed Baseline Schedule containing the Contractor's projected plan and schedule to complete all Work required by the Contract within the time(s) for completion required by the Contract. A schedule showing time(s) for completion other than those required by the Contract will not be accepted. Schedules containing more than 2 (two) "open end" activities (an activity which has no successor or predecessor relationship to other activities) will not be accepted.
- b. The Engineer will review the proposed Baseline Schedule and return it to the Contractor with comments, or accept it as the official Baseline Schedule, within five (7) calendar days. The Contractor shall participate in any meetings called to resolve issues with the schedule.
- c. If it is not accepted, the Contractor shall revise the Baseline Schedule in accordance with the Engineer's comments and resubmit three printed reports and one diskette for the Engineer's approval, within ten (7) calendar days of the receipt by the Contractor of the Engineer's comments. Until such time as the Engineer accepts it, the Contractor shall resubmit his proposed Baseline Schedule as requested by the Engineer within the same time frame and in the same format as required by this paragraph for the initial resubmission.
- d. After the approval of any progress schedule required by this Section no changes shall be made therein without the written approval of the Engineer. No other act or omission on the part of the Engineer shall be deemed to constitute such approval. The Contractor shall not be entitled to any damages by reason of the failure of the Engineer to give timely approval or comments on any progress schedule submitted hereunder.

### **2.) Progress Schedule Updates**

- a. The Contractor shall submit to the Engineer not less frequently than once a month, on the 7<sup>th</sup> calendar day of the month (or first business day thereafter if the 7<sup>th</sup> calendar day falls on a weekend), an update of the Current Progress Schedule. Schedule updates shall status the actual performance and progress of the Work and depict any changes.
- b. Within seven (7) calendar days after receipt by the Engineer of a updated progress schedule, the Contractor shall meet with the Engineer for the purpose of reviewing and obtaining the Engineer's approval of it.
- c. The Engineer may require the Contractor to furnish a revised update which shall include any other information he may request to assist him in evaluating the Contractor's progress, including but not limited to manpower loading charts and equipment schedules; "what-if" analysis performed in a copy of the current progress schedule, etc.
- d. In the event that the Engineer requests the Contractor to revise the updated schedule submitted, and/or to submit such additional information, the Contractor shall make the requested revisions and/or submit the updated schedule to the Engineer for approval along with the additional information requested within seven (7) calendar days of the Engineer's request.

## **D. Schedule Reporting Requirements**

- 1.) The preliminary schedule submittal shall include one computer diskette and three copies of the following output reports:
  - a. A time-scale logic diagram in PDM format containing all activities displaying Activity ID, Activity Description, Calendar, original and remaining durations, percent complete, Early and Late Dates, and Total Float, and sorted by:
    - (i) Early Start, Early Finish, Total Float
    - (ii) Total Float, Early Start (Critical path report)
    - (iii) Late Start, Late Finish (if required by the Engineer)
  - b. A tabular Predecessor and Successor standard report showing the relationships between all activities in the schedule and sorted by ES, TF (if required by the Engineer)
  - c. Any other information which may be requested by the Engineer to assist him in the evaluation
- 2.) The baseline schedule submittal shall include one computer diskette and six copies of the following output reports:
  - a. A Schedule narrative that generally describes the Contractor's approach to meeting the project goals, lists the Critical Path Activities and compares Early and Late Dates with Contract Times and Milestone Dates. The basis for any constrained dates shall be explained.
  - b. A one-page time scaled Summary Schedule consisting of 20-40 WBS Summary activities or summary bars that show the entire project broken down into major portions of work, as agreed to by the Contractor and Engineer.
  - c. A time-scale logic diagram in PDM format containing all activities displaying Activity ID, Activity Description, Calendar, original and remaining durations, percent complete, Early and Late Dates, and Total Float, and sorted by:
    - (i) Early Start, Early Finish, Total Float
    - (ii) Total Float, Early Start (Critical path report)
    - (iii) Late Start, Late Finish (if required by the Engineer)
  - d. A tabular Predecessor and Successor standard report showing the relationships between all activities in the schedule and sorted by ES, TF (if required by the Engineer).
  - e. Supporting data showing all activities with their associated cost, budgets or estimates
  - f. Any other information that may be requested by the Engineer to assist him in evaluation of the Contractor's progress. Such information may include, but not be limited to, the following:
    - (i) Cost Loading
    - (ii) Manpower loading charts
    - (iii) Equipment schedules
  - g. The Contractor shall electronically archive all accepted schedules.

- 3.) In addition to the reports required for the Baseline Schedule submittal, all Progress Schedule Update Reports shall include the following:
- a. A narrative comparing the current Dates to the respective Milestone Dates, describing the physical progress during the current report period, explaining plans for continuing the work during the next report period and describing and explaining changes in crewing and construction equipment. The narrative shall also explain changes in Activity durations, logic ties and Activity Values and the reason why the change was made.
  - b. Whenever there is any delay or negative float prediction in the schedule, the Contractor shall submit an alternative solutions report that describes the delay, explains when it started and finished or is expected to finish and the basis for those dates, lists the affected schedule activities by activity ID, and discuss who the contractor feels is responsible. Any revisions to durations or the logical sequence of Activities made to reflect these delays must be explained. The report shall propose appropriate schedule recovery such as multiple shifts or overtime to mitigate any potential delay to the overall project completion date, or request an extension of time, as appropriate.
  - c. A revised Network Diagram sorted by Early Start and Early Finish indicating actual start and finish dates and the remaining duration and percent complete of activities in progress. The critical path of the project shall be clearly shown.
  - d. An Analysis Report indicating Activities and/or Milestones which are behind schedule by at least 30 calendar days (commonly evidenced by Negative Float).
  - e. A report that compares the Current Progress Schedule update with the Baseline and prior month's accepted schedule update and lists all changes made to the schedule.

**E. General Schedule Provisions**

- 1.) Should the Contractor fail to comply with any provision of this Section, The Engineer shall have the right in its discretion to withhold out of any payment (final or otherwise and even though such payment has already been certified as due) such sums as it deems necessary or desirable, all as more fully provided in the clause of the Form of Contract entitled "Withholding of Payments".
- 2.) Neither the acceptance, review or approval of any progress schedule or other data submitted by the Contractor pursuant to this Section, nor any other action on the part of the Engineer under this Section shall in any way be deemed as a representation by the Engineer that the Contractor can or will be permitted to follow a particular schedule or sequence of operations or that by following any such schedule or sequence he can or will complete the Work by the time(s) required by the Contract or by any other time(s). Nor shall the approval of any progress schedule or other such data relieve the Contractor of his obligation to complete the Contract by the time(s) required in the Contract, even though the schedule may be inconsistent with such completion.
- 3.) Any approval under this Section shall be construed merely to mean that the Engineer knew of no good reason at that time to object thereto. No acceptance, review or approval or any other action under this Section shall limit, affect or impair the Contractor's obligation to perform all Work by time(s) required by the Contract and in accordance with all other provisions of the Contract.

- 4.) The performance of the Work by the time(s) required in the Contract, after taking into account extensions to which the Contractor may be entitled under the clause "Extensions of Time", may require the use by the Contractor of overtime labor, additional shifts or additional plant and equipment and/or other measures at no additional cost to the Owner. The Contractor shall anticipate, avoid and mitigate the effects of all delays.
- 5.) The Engineer shall have the right at any time when in his judgment the Work is not proceeding in accordance with the approved progress schedule or at any time when it is likely that the Work might not be completed by the time(s) required in the Form of Contract even though the Contractor is proceeding in accordance with the approved progress schedule, to order the Contractor without additional compensation, to employ additional shifts to increase the number of men employed, to use additional plant or equipment, or to take such other steps as may be necessary or required to assure the completion within the time(s) shown in the accepted schedule.
- 6.) No action on the part of the Contractor pursuant to this Section shall be construed as a request by him for an extension of the time(s) for completion required by the Contract. A request for an extension of time shall be deemed made only if it complies with the requirements of the clause of the Form of Contract entitled "Extensions of Time". No extension of the time(s) for completion shall be inferred because of any action, omission to act, or statement on behalf of the Engineer pursuant to this Section. Extension of time, if any, shall be granted only pursuant to the clause of the Form of Contract entitled "Extensions of Time".
- 7.) The Contractor acknowledges and agrees that he is not entitled to an extension of time for impacts that do not extend the contractual end date of the project.
- 8.) Schedule float time disclosed or implied is not for exclusive use or benefit of the owner or contractor but is available to all parties as needed to meet contract milestones and the contract completion dates.
- 9.) Techniques such as preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates that tend to sequester float shall be cause for rejection of the Detailed Project Schedule and any revisions or updates

#### **MANDATORY ACTIVITY CODES**

- 1.) Responsibility (Owner, Contractor)
- 2.) Area (building, floor or area)
- 3.) Trade/CSI code (concrete, steel, etc as required)
- 4.) Elevation (EL 240, 254, 274, 285 etc)
- 5.) Phase of Work, if applicable
- 6.) Change Order work, if applicable
- 7.) Other, as required by the Engineer

## **125. ANALYSIS OF BID**

Within fifteen calendar days after acceptance of the Proposal, the Contractor shall prepare a detailed analysis of bid on forms furnished by the Authority with all of the spaces filled in without exception, and containing such information as the Engineer may require for each of the items enumerated in such form.

## **126. CONDUCT OF WORK PLAN (COWP)**

- A. The Contractor shall prepare and submit a written Conduct of Work Plan (COWP) for review by the Engineer within 10 calendar days after receipt by the contractor of the acceptance of the proposal. The COWP addresses construction staging and planning; field office needs; parking requirements during performance of the Work; storage of construction equipment; use of public roadways and Authority property; coordination of the Work with PATH and New York City Transit (NYCT) operations; utility disruptions; protection of PATH and adjacent properties; diesel emissions, fugitive dust and noise monitoring and mitigation; hazardous material handling and remediation; storm water drainage management; temporary facilities and structures; traffic management; vibration monitoring and control; emergency procedures and notification site; access and logistics; public protection and worker safety; site and document security; and maintenance and protection of Work site.

## **127. SITE ACCESS AND STAGING RESTRICTIONS**

- A. General
- 1.) The Contractor shall progress the work in an orderly manner in accordance with the conditions of the Contract and applicable codes.
  - 2.) The Contractor shall isolate the work areas in a safe manner in accordance with the limits set forth in the Contract to maintain PATH, MTA-NYCT, and other WTC site contractor activities and pedestrian and vehicle traffic flows.
  - 3.) The Contractor shall submit detailed construction execution plans showing and describing actual sequences of the various activities and the means and methods by which the work is to be performed. The submittals shall be sufficiently detailed and comprehensive and shall include as a minimum barricades, temporary supports and shoring, shielding, equipment locations, and sphere of action, pedestrian and vehicle flows, construction personnel, materials and equipment delivery and routing, and interface with other temporary and permanent construction in the area. The Engineer's review and approval of these submittals shall merely be to verify that the requirements set forth in the Contract drawings associated with the Work can be satisfied and shall not release the Contractor from any of his obligations under this Contract.
  - 4.) Street and lane closures and any work related to delivery, movement and handing of materials and equipment on the streets, roads and public ways around the site shall conform to requirements specified in the Contract.
  - 5.) Contractor shall also stage its work to accommodate other contractors performing work at the WTC site. Portions of the construction site shall remain accessible to other contractors.

- 6.) Contractor will not have fully access to the work area adjacent to Church Street until on or about September 15<sup>th</sup>, 2009. Existing structures in this area will be demolished by others.
  - 7.) Demolition shall proceed in a systematic and orderly manner to support the reconstruction. Existing structures in this area will be demolished by others. Storage of materials and equipment demolished will not be allowed on site. Debris must be removed on a continuous basis. The contractor shall submit a demolition plan for the Engineer's review and approval.
- B. See "Greenwich Corridor Site Access and Staging Restrictions" drawings GCSA-001 dated 5-28-09 and GCSA-002 dated 5-28-09.

## 128. ENVIRONMENTAL PERFORMANCE COMMITMENTS (EPCS)

### A. Air Quality: Diesel Emission Mitigation

The Contractor shall minimize all air-borne pollutants generated by diesel-powered equipment and vehicles at all times during the performance of Work under this Contract. All Non-Road diesel-powered equipment (e.g., backhoes, bull dozers, cranes, excavation machines, loaders, etc.), including stationary equipment (e.g., generators, compressors, etc.), shall incorporate diesel emission reduction strategies that include the use of ultra low sulfur diesel fuel. For equipment with a rated horsepower of 50 (50HP) or greater, best available technology for emission controls shall be applied. In addition, all such equipment and engines shall comply with all Federal, State and Local regulations applicable to exhaust emission controls and safety.

#### 1.) Ultra Low Sulfur Diesel (ULSD) Fuel

All diesel-powered Non-Road equipment to be used in the performance of Work under this Contract shall use Ultra Low Sulfur Diesel (ULSD) fuel that is certified to contain an average sulfur content of no more than 15 parts per million (ppm) as determined over a six month period. In the event that the Contractor can clearly demonstrate that ULSD fuel with an average sulfur content of not more than 15 ppm is not available, a written waiver may be granted by the Engineer until such time that the ULSD fuel has become available, or an approved equal is determined by the Engineer to satisfy the intent of this Section. The Engineer shall collect monthly samples of the ULSD fuel used during the period directly from the fuel tanks of the Non-Road diesel-powered equipment used on the construction site. The Testing Standards shall include, but are not limited to: ASTM D6920 – 03 "Total Sulfur in Naphthas, Distillates, Reformulated Gasolines, Diesels, Biodiesels, and Motor Fuels by Oxidative Combustion and Electrochemical Detection" or ASTM D6428-99 "Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection."

The ULSD fuel shall be obtained from any distributor capable of meeting the requirements of this Section. All ULSD fuel shall be dispensed directly on the construction site from either a dedicated on-site fuel storage facility or segregated truck delivery. In the case of on-site storage, all such facilities shall comply with all applicable jurisdictional Codes pertaining to the storage and dispensing of fuel. The details of which must be submitted and approved by the Engineer prior to implementation.

A listing of ULSD fuel suppliers is included on the following Web page.

ULSD fuel Suppliers:

[http://www.epa.gov/otaq/retrofit/cont\\_fuels.htm](http://www.epa.gov/otaq/retrofit/cont_fuels.htm)

a. Diesel Emissions Control Technologies

All Non-Road diesel-powered equipment with a rated horsepower of 50 HP or greater shall be retrofitted with Emissions Control Devices (devices) utilizing the best available technology. The retrofit devices shall consist of Diesel Particulate Filters (DPFs) or other measures with equivalent particulate matter (PM) removal efficiency wherever the implementation of such a device is feasible. In cases where DPFs are not feasible for safety considerations, mechanical reasons, or where the technology would not function properly, the Contractor shall submit a request for a waiver to the Engineer for review and approval prior to the use of such equipment. If the Engineer grants a waiver, Diesel Oxidation Catalysts (DOCs) shall be used. Only in the following cases will the use of diesel engines greater than 50 HP without tailpipe reduction measures be permitted by the Engineer.

- Where for technical reasons neither DPFs or DOCs can be used effectively, and the operation cannot be performed by another engine or other means;
- To immediately remedy safety and health hazards;
- In response to emergencies.

Such reductions are to be targeted primarily toward the reduction of PM and secondarily on the reduction of nitrogen oxides (NOX), and shall in no event result in an increase in the emissions of either pollutant. The devices shall be contained in the U.S. Environmental Protection Agency (EPA) Verified Retrofit Technology List, the list of California Air Resources Board (CARB) Verifications, Europe's Verified Technology List (VERT), or as otherwise approved by the Engineer to provide the maximal level of pollutant reductions intended under this Section. For more information, refer to the following websites:

U.S. Environmental Protection Agency Verified Technology List:

<http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>

California Air Resources Board Verified Technology List:

<http://www.arb.ca.gov/diesel/verdev/level3/level3.htm>

Europe' Verified Technology List:

<http://www.akpf.org/pub/vertfilterliste.pdf>

Vendors of such technologies include: Cleaire, DCL International, Engelhard, Johnson-Matthey, Fleetguard Emission Solutions, Donaldson, Engine Control Systems, or other approved equal.

b. Diesel Construction Equipment Age Requirements

In order to facilitate the application of verified emission control devices as well as provide lower baseline emissions, all equipment used for the performance of Work under this Contract must use post-1995 fuel injection engines which meet Tier II engine emissions standards, as defined in 40 CFR Section 89.112. Exceptions will be made only for specific engines that are not yet commercially available as Tier II, and where the task cannot be reasonably accomplished using alternative engines or means which do comply with these demands. In such cases, the Contractor shall submit a request for a waiver to the Engineer for review and approval prior to the use of such equipment.

c. Contractor Diesel Emissions Mitigation Plan for Non-Road and On-Road Engines/Equipment

- (i) A Diesel Emission Mitigation Plan (the "DEM Plan") shall be prepared by the Contractor and submitted to the Engineer for review and approval prior to the use of any diesel-powered engines, including all Non-Road equipment and On-Road vehicles (i.e., diesel-powered trucks). The DEM Plan shall identify all diesel-powered equipment and vehicles to be utilized in the performance of Work under this Contract, whether owned by, operated by or on the behalf of the Contractor, including that rented by the Authority as the rental agency of the Contractor. No Work shall proceed under this Contract until a DEM Plan is submitted and approved by the Engineer. Once approved, no changes in or deviations from the DEM Plan will be permitted unless approved by the Engineer. The DEM Plan shall address the control of emissions from all diesel-powered equipment and vehicles including equipment and vehicles not retrofitted with devices. The contents of this plan shall specifically address the following requirements:
  - (ii) Work Zone Creation  
The Contractor shall establish On-Road vehicle (i.e., diesel-powered trucks) staging zones for the off-loading and loading of materials to and from the construction site. Such zones shall be located to minimize the impact of pollutants from diesel engines and vehicles on sensitive receptors and the general public. In addition, the Contractor shall ensure that all diesel-powered engines and vehicles are located away from the fresh air intakes of sensitive receptors as determined by the Engineer.
  - (iii) Diesel Engine Idling Policy  
The idling time of Non-Road and On-Road Vehicles shall be limited to three (3) consecutive minutes as determined by the Engineer except as follows:

- (a.) When an On-Road Vehicle is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;
- (b.) When it is necessary to operate heating, cooling or auxiliary equipment installed on the vehicle when such equipment is necessary to accomplish its intended use;
- (c.) To bring the vehicle to the manufacturer's recommended operating temperature. In this event, the temperature requirements must be indicated in the DEM Plan as an exception;
- (d.) When the outdoor ambient temperature is below twenty (20) degrees Fahrenheit;
- (e.) When the vehicle is being actively worked on for repairs or maintenance.

d. Electrification

The Contractor shall develop and implement a plan to distribute temporary electrical power throughout the construction site. The plan shall identify all diesel-powered equipment intended to be used for the performance of construction, and indicate the availability of alternate electrically powered versions. In cases where electrically powered versions are available, only the electrically powered version shall be used. At a minimum, all stationary equipment (e.g., air compressors, grout plants, mixers, pumps, welding machines, etc.) required for the performance of work that can be practically replaced with an electrically powered version shall be powered electrically in lieu of diesel engines.

2.) Submittals

The submittals required under this Section are as follows:

- a. Inventory List: Non-Road Diesel Equipment and Engines, and Verified Emission Control Devices

No Work shall commence utilizing diesel-powered Non-Road equipment rated at 50 HP or greater until the Contractor submits a comprehensive and complete inventory list inclusive of all such equipment and vehicles including the specifics of each as detailed in the following subparagraph, and same is approved by the Engineer:

In the event that the Contractor clearly demonstrates to the Engineer that no emission control device is available for a particular engine or vehicle, or the retrofit of such a device may endanger the operator or those working nearby, the Engineer may grant a waiver to permit the use of such an engine or vehicle. Nonetheless, the equipment or vehicle must be included on the inventory list, and the Contractor must continue to demonstrate a reasonable effort to determine the availability of a substitute of equivalent performance.

The inventory list shall be provided in an electronic format (e.g., Microsoft Word, Access or Excel), and shall include the following:

- (i) The owner whether the Contractor, subcontractor, or rental firm. The firm name, address, telephone number and contact person familiar with the operation and maintenance of the equipment and the emission control technologies;
- (ii) The number, type, make, year of manufacture, manufacturer and serial number;
- (iii) The engine type, make, horsepower rating, year of manufacture, and serial number;
- (iv) The approximate fuel consumption rate per shift;
- (v) The anticipated function, duration of use, and days and hours of operation;
- (vi) Retrofit type, make, model, manufacturer, installation date, EPA, VERT or CARB verification number or supporting documentation related to emission control devices.

b. On-Going Equipment Updates and ULSD Fuel Deliveries:

The Contractor shall submit a weekly update to the Engineer of the inventory list of all diesel-powered Non-Road equipment. This update shall include the baseline inventory list, and a compilation of all ULSD fuel deliveries during the week, including delivery tickets.

c. Ultra Low Sulfur Diesel Fueling Plan

The Contractor shall submit his fueling plan, identifying the proposed ULSD fuel supplier, independent test results of sulfur content of the proposed supplier's fuel as determined by the Testing Standards referenced in the preceding Section entitled "Ultra Low Sulfur Diesel (ULSD) Fuel", and a description of segregated truck delivery or on-site fuel distribution plans.

**B. AIR QUALITY: DUST CONTROL**

The Contractor shall control fugitive dust at all times including non-working days, weekends and holidays. The requirements for controlling fugitive dust emissions within the construction site during the performance of Work under this Contract, such as earth moving and demolition activities, shall include the following:

The spraying of a (non-hazardous, biodegradable) dust suppressing agent;

The physical containment of fugitive dust particles through the use of tarps or other wind protection devices;

The adjustment for meteorological conditions, as appropriate;

Wheel washing of all Non-Road and On-Road vehicles leaving the site including the containment and treatment of wash water;

The wetting and covering of all trucks loads containing materials delivered to or removed from the site that may generate fugitive dust;

The routine wetting and cleaning of streets and access roads within the construction site.

1.) Submittals:

The Contractor shall comply with all Federal, State and Local regulations applicable to the control and mitigation of fugitive dust dispersion. The Contractor shall submit a Dust Control Plan ("DC Plan") to the Engineer for review and approval to address the specific measures contained in this Section. A copy of this DC Plan shall also be provided to each subcontractor who shall be obliged to comply in the provisions of his subcontract with the Contractor. The DC Plan shall include contact information for responsible individual(s) from the Contractor with 24 hour, 7 days per week availability, and who have been vested with the authority to implement all controls and mitigation measures identified in the DC Plan. The DC Plan must detail all dust control procedures for all such controls and measures as approved by the Engineer, and be job specific to address all anticipated Work activities that may generate fugitive dust dispersions (e.g., demolition, saw-cutting, pavement milling, haul roads, etc.).

**B. NOISE ABATEMENT**

The Contractor shall control and mitigate noise during all hours of construction. All construction activities shall be controlled to comply with the following noise levels.

**Table 1:** Noise Limitation Thresholds For Sensitive Receptor Sites – Resultant noise at sensitive receptor sites shall not exceed to the following levels:

TIME	8-hour Leq (dBA) Limit
Weekdays, 7AM to 6 PM	80
All Other Times	70

The Contractor shall use equipment that ensures that the noise generated during all construction activities does not exceed the threshold levels indicated in Table 1. In addition, the following specific noise mitigation measures indicated in Table 2 shall be implemented during the use of impact wrenches, pavement breakers and pneumatic grout drills, to ensure that the noise threshold limits of Table 1 are not exceeded:

**Table 2:** Noise Criteria For Specific Equipment

Equipment	Noise Mitigation Measure
Impact wrenches	Use impact wrenches with a noise emission level of 82 dBA at 50 feet
Pavement breakers	Install mufflers on pavement breaker cylinders
Pneumatic grout drills	Place drills inside acoustic enclosures

Other than the specific equipment and mitigation measures listed in Table 2, and in the event that the Engineer determines that the Contractor has exceeded the noise thresholds specified in Table 1, the Engineer may direct the Contractor to implement, at his own cost, abatement measures deemed appropriate by the Engineer and/or as specified and approved in the Contractor's Noise Control And Abatement Plan (the "NCA" Plan):

Where practicable, the Contractor shall schedule all construction activities to avoid and minimize any adverse acoustic noise that could impact sensitive receptors as determined by the Engineer. Acoustical sensitive receptors presently include 90 West Street, the Millennium Hotel on Church Street, Embassy Suites on Vesey Street, Multi Family Residential Structure on the corner of Park Place and West Broadway, 114 Liberty Street and the World Financial Center. Sensitive receptors may be added as deemed appropriate by the Engineer.

1.) Contractor Noise Control And Abatement Plan

- a. The Contractor shall comply with all appropriate Federal, State and Local regulations applicable to noise control and mitigation. The Contractor shall develop and submit to the Engineer for review and approval an NCA Plan that describes his intended mitigation procedures and methods to control and mitigate noise generated during the performance of Work under this Contract. The NCA Plan shall specifically address the following:
- b. Means and methods for the implementation of all control and mitigation measures including all calculations and supporting documentation;
- c. Design drawings of noise abatement enclosures and barriers, signed and sealed by a Licensed Professional Engineer in the State of New York;
- d. Description of physical noise mitigation materials, including the name of manufacturer and its specifications. All such materials shall be fire resistant;
- e. Catalog cuts and technical data sheets of construction equipment to be employed during Work of this Contract;
- f. Baseline background noise measurements taken prior to the start of construction;
- g. Construction noise assessment. The method for predicting the construction noise impact shall be the FHWA prediction method, or similar.

2.) Construction Noise Monitoring

To ensure compliance with this Section, the Contractor shall identify and submit to the Engineer for review and approval the qualifications of an acoustical firm to provide assistance in the development and implementation of the NCA Plan. The acoustical firm shall also provide noise monitoring services on the Site. The qualifications of the firm shall be as follows:

- a. The firm shall have within the preceding five years provided noise measurement, monitoring and analysis consulting services on at least three projects of similar size and complexity that included specific noise control and abatement initiatives, preferably in the City Of New York;
- b. The entity designing the noise mitigation measures and performing the noise assessment shall be a member in good standing with the National Council of Acoustical Consultants;
- c. *The firm shall have a Noise Control Engineer (NCE) on staff or under Contract either certified by the Institute of Noise Control Engineers (INCE), or have earned a baccalaureate or higher degree from an accredited college or university in engineering, physics, acoustics or architecture which devoted courses to the principles of acoustics. The NCE shall be fully familiar with the means, methods, materials, equipment and designs associated to noise control and abatement;*
- d. Each employee of the firm who will actually perform measurements or monitoring in the field shall be a Noise Control Officer (NCO). The NCO shall have been trained in the review and mitigation of community noise issues, and the standard methods for noise measurement and monitoring, including the use of all associated equipment and data collection. Training shall have been from a certified NCE certified by the Institute of Noise Control Engineers (INCE) or by other NCO(s) with a minimum of three (3) years experience. The NCO shall possess a working knowledge of all applicable standards.

Upon the approval by the Engineer of an acoustical firm, the Contractor shall immediately procure the services of the firm to perform baseline background noise measurements at the site and near the sensitive receptors identified above. The background noise monitoring shall be performed to determine the "noise signature" or "noise level trend" for the site and the immediate vicinity.

A complete construction noise assessment for the project shall be conducted. The method for predicting the construction noise impact shall be the FHWA prediction method, or similar approved by the Engineer. The NCA shall be submitted to the Engineer for review a minimum of one month prior to the commencement of work unless otherwise directed by the Engineer.

The Contractor shall measure the noise levels and submit a written report to verify compliance with the allowable noise thresholds on a weekly basis, or as otherwise deemed necessary by the Engineer, throughout the duration of construction activities to ensure compliance. Readings shall be taken on a continuous basis during any construction activity, including but not limited to, the delivery of materials and movement of construction equipment. The Authority may monitor noise levels at known sensitive receptors or other locations as deemed appropriate by the Engineer to verify compliance. When noise level measurements exceed the allowable thresholds, the Contractor shall cease all construction activities, and immediately implement the mitigation procedures indicated in the approved NCA Plan. If applicable procedures are not included in the NCA Plan, revised procedures are to be developed and implemented. Such revised work procedures are to be incorporated in the NCA Plan as a revision, and submitted to the Engineer for review and approval. In the event of a conflict between the Contractor's noise level measurements and those taken by the Authority, the of Authority's noise level measurements shall prevail.

3.) Submittals:

- a. A NCA Plan shall be submitted for the review and approval by the Engineer prior to the commencement of any construction work. The submittal shall include all revisions, and a copy of the approved NCA Plan revisions shall be provided to each subcontractor prior to the commencement of his work. The subcontractor shall be specifically obliged to comply with the requirements of the approved NCA Plan in the provisions of his subcontract.
- b. The name and qualifications of the acoustical firm, the name and qualifications of the firms NCE's and NCO's.
- c. A weekly report summarizing the noise measurement readings taken at the site. All events that exceed the limits indicated in Tables 1 or 2 shall be clearly indicated and the corrective action taken to address the cause.

C. VIBRATION ABATEMENT

The Contractor shall control and mitigate vibration during all hours of construction. The Contractor shall develop and implement specific construction vibration mitigation measures to protect historic properties from increased vibration levels associated with construction activities at the site (see Section 5 Historic Resource Protection). In conjunction with the protection of historic properties, overall construction vibration abatement and monitoring shall be addressed as follows:

1.) Contractor Vibration Control And Abatement Plan

The Contractor shall comply with all appropriate Federal, State and Local regulations applicable to vibration control and mitigation. The Contractor shall develop and submit to the Engineer for review and approval a Vibration Control And Abatement Plan (the "VCA Plan") that describes his intended mitigation procedures and methods to control and mitigate vibration during the performance of Work under this Contract. The VCA Plan shall specifically address the following:

- a. Means and methods for the implementation of all control and mitigation measures including all calculations and supporting documentation;
- b. Baseline background vibration measurements taken prior to the start of construction;
- c. Construction vibration assessment. The method for predicting the construction vibration levels to be approved by the Engineer.

2.) Construction Vibration Monitoring:

Port Authority shall be responsible for vibration monitoring.

When vibration level measurements exceed the allowable threshold, the Contractor shall immediately cease all construction activities, notify the Engineer and implement the mitigation procedures described in the approved VCA Plan. If applicable procedures are not included in the VCA Plan, revised procedures are to be developed and implemented only with the approval of the Engineer. Such revised work procedures are to be incorporated in the VCA Plan as a revision, and resubmitted to the Engineer for review and approval. In the event of a conflict between the Contractor's vibration level measurements and those taken by the Authority, the Authority's measurements shall prevail.

3.) Submittals:

A VCA Plan shall be submitted for the review and approval by the Engineer prior to the commencement of any construction work. The submittal shall include all revisions, and a copy of the approved VCA Plan and all revisions shall be provided to each subcontractor prior to the commencement of the subcontractor's work. The subcontractor shall be specifically obliged by the Contractor to comply with the requirements of the approved VCA Plan in the provisions of its subcontract.

D. HISTORIC RESOURCE PROTECTION

1.) Protection of Historic Resources from Construction Vibration

The Contractor shall develop and implement specific mitigation measures (as discussed in Section 4 Vibration Abatement) to protect the following Historic properties from increased vibration levels associated with construction activities at the site. Such measures shall reduce vibration to a level below the threshold criterion of 0.12 in/sec (approximately 95 VdB):

2.) 90 West Street

3.) Beard Building, 125 Cedar Street

4.) 114-118 Liberty Street

5.) St Paul's Chapel and Graveyard

6.) Former East Street Savings Bank, 26 Cortlandt Street

E. Monitoring Program

a. Periodic Monitoring:

Prior to construction, the Contractor shall meet with the Engineer to establish a program to periodically inspect and examine all protection measures in place to verify compliance with the above noted threshold criterion. The Contractor shall develop and submit a written monitoring program for the review and approval of the Engineer. The program shall include an Emergency Remediation Plan (the "ERP") identifying the emergency contacts and outlining the procedures to be followed should an unforeseen condition or unanticipated damage arise that compromises or places at risk any historic elements on the WTC Site. Once approved the Engineer, the Contractor shall set aside the materials, products and equipment in a safe and accessible location on the WTC site to ensure an immediate response to any such occurrence.

b. Routine Monitoring

During the progress of construction, the Engineer will routinely review (inspect) all protection measures in place to verify compliance with the above noted threshold criterion. Upon the completion of the Engineer's review, a meeting will be conducted with the Contractor to discuss and document the following:

- (i) The progress achieved since the previous inspection;
- (ii) An assessment of the performance of the protection measures in place, and a determination of the adjustments or modifications;
- (iii) A review of the upcoming scheduled work activities, a determination of the required protection measures, and a verification that the existing protective measures are adequate for such activities. If necessary, there will be a determination of supplemental measures to be implemented for compliance.

c. Emergency Remediation

Should any condition arise or damage occur during construction that compromises the integrity of the in-place protection measures, or adversely affects any historic elements on the WTC Site, the Contractor shall stop all work in the affected area immediately, notify the Engineer and implement the relevant measures outlined in the approved ERP. At a minimum, the notification to the Engineer shall include a description of the following:

- (i) The situation that arose;
- (ii) Its cause, if known;
- (iii) Response measures implemented;
- (iv) Recommendations for further intervention, if any.

At the time of notification, the Engineer, will determine whether or not the Contractor may resume work in the affected area. If not, the Contractor shall repair and/or furnish and install all supplemental remediation and mitigation measures deemed appropriate by the Engineer. All repair work shall be done in such a manner as to minimize the adverse impact to the affected historic elements. The Contractor shall not remove any damaged, marred or otherwise unsalvageable historic elements from the WTC Site unless otherwise approved by the Engineer.

F. Archaeological Resources

Consistent with the Stipulations of the executed Memorandum of Agreement (MOA) pursuant to Section 106 of the National Historic Preservation Act, the area within the WTC site bounded by West Street, Liberty Street, Washington Street and Cedar Street as well as the roadbeds of Liberty, Washington and Cedar Streets, have been determined to be sensitive historic archaeological resources.

Unless specifically required by Contract, under no conditions shall the Contractor perform any construction activities that may cause a subsurface disturbance at or in the vicinity of the above areas without the approval of the Engineer.

G. Discoveries Of Archaeological Resources And Effects On Historical Resources

*In the event that archaeological deposits or features are encountered during the performance of construction activities, the Contractor shall stop all work immediately, flag or fence off the archaeological discovery location, provide site security and immediately notify the Engineer. The Contractor shall not recommence Work until so directed by the Engineer.*

H. Construction Protection Plan

The Contractor shall develop and submit to the Engineer for review and approval a comprehensive Construction Protection Plan (CPP) to address the implementation, enforcement and monitoring of the Environmental Performance Commitments (EPCs) as outlined in the previous Sections 1 through 7 of this Specification for Air Quality: Diesel Emission Mitigation and Dust Control, Noise and Vibration Abatement, Historic Resource Protection, Archaeological Resources and Discoveries. The CPP shall be submitted to the Engineer for review and approval within thirty (30) calendar days of acceptance by the Authority of the Contractor's proposal. No Work shall commence until the CPP is approved by the Engineer. The CPP will be organized to address each EPC Section, and shall include the following plans:

- 1.) Diesel Emission Mitigation (DEM) Plan (as per Section 1);
- 2.) Dust Control (DC) Plan (as per Section 2);
- 3.) Noise Control and Abatement (NCA) Plan (as per Section 3);
- 4.) Vibration Control And Abatement (VCA) Plan (as per Section 4); Emergency Remediation (ERP) Plan (as per Section 5);
- 5.) Maintenance and Protection of Traffic (MPT) Plan - A plan for the management of traffic and truck/vehicle delivery routes to and from the site for each major construction phase. Included in the MPT plan are to be specific measures to minimize impacts to the intersection of Route 9A and Liberty Street for the maintenance of an acceptable Level of Service (LOS "B"). The plan shall also include the mapping of all existing businesses in the area to determine conflicts between construction activities and access for customers and deliveries, and specific measures to minimize such impacts including but not limited to the furnishing and installation of temporary signage to enhance way finding.
- 6.) Health & Safety Plan (the "HASP") - A plan shall be developed and implemented in accordance with the requirements of the current document entitled "The World Trade Center – Site Safety Program – Health And Safety Requirements";
- 7.) Contaminated Materials Plan – A plan shall be developed and implemented for the sampling and testing program for the excavation of materials within scoped work area to validate that the excavation is clean prior to removal from the site. The document shall be the Sites' Remedial Action Work Plan (RAWP) to address testing processes and procedures and mitigation plans. The RAWP shall be submitted to the Engineer prior to the excavation of any materials within scoped work area. The Contractor shall submit a RAWP to test and assess the materials for polycyclic aromatic hydrocarbons (PHA) and metals. If the sampled material has levels below threshold levels defined by NYSDEC, the excavated material can be removed. If threshold levels are exceeded, the Contractor will implement the remedial action plan in place;
- 8.) Soil Management Plan – A plan to address the means and methods to be used in the handling, staging, disposal, transportation and decontamination of equipment and personnel in accordance with all jurisdictional codes and rules and regulations.

- 9.) Common Fuel Storage Coordination Plan - This plan shall require the Contractor to coordinate its ULSD fuel storage system on site with other agencies on the WTC Site. This may require the development of agreements to operate and maintain a common fueling station on site with agency roles and responsibilities defined. The plan shall consider the minimum number of fueling sites to keep construction activities moving and will be temporarily designed in accordance with State and City permit requirements for on site open fuel storage. The Contractor shall submit a location plan; installation plan and operations plan for the ULSD refueling station on site.
- 10.) Ground Water Invasion Plan – A Groundwater (GW) Invasion Plan to minimize or prevent GW intrusion into the site through the slurry (basement) walls.
- 11.) Storm Water/Ground Water Management Plan – A storm water and ground management plans with other agencies on the WTC Site. The plan shall consider coordinated or co located temporary and permanent systems as required to realize the necessary State and New York City permits for the project. Coordination, monitoring and maintenance will require coordination with other agencies that include, but are not limited to Silverstein Properties, Lower Manhattan Development Corporation, Metropolitan Transportation Authority, New York State Department of Transportation, & New York City.
- 12.) Material Recycling Plan – The Contractor Shall recycle materials to the maximum extent practicable and shall maintain a refuse plan to maintain the construction site in an orderly manner. The Contractor shall submit a plan to address recycling and refuse control to the Engineer for review and approval within 15 days of notice to proceed. The Contractor shall develop a monthly reporting system to identify adherence to the approved plan.
- 13.) Sustainability Construction Plan – The Contractor shall support the environmental objectives of the Authority, and consider the following items during construction:
  - a. Sustainability/green guidelines;
  - b. Environmental reporting to funding agencies;
  - c. Section 106 reporting to funding agencies;
  - d. Environmental justice reporting;
  - e. Protection of the WTC Site from flooding.

I. Available Documents

The following documents are available for reference in regard to the above stated requirements:

- 1.) Permanent WTC PATH Terminal – Final Environmental Impact Statement, dated May 2005; WTC Vehicular Security Center and Tour Bus Parking Facility Environmental Assessment and Section 4(f) Evaluation, dated November 2006;

- 2.) Memorandum Of Agreement Among The Federal Transit Administration, The New York State Historic Preservation Office, Advisory Council On Historic Preservation And The Port Authority Of New York And New Jersey Regarding The World Trade Center Vehicular Security Center and Tour Bus Parking Facility In New York City, executed April 20, 2006;
- 3.) Finding of No Significant Impact, WTC Vehicular Security Center and Tour Bus Parking Facility, dated January 26, 2007;
- 4.) Downtown Restoration Program – The World Trade Center And Transportation Hub- Site Safety Program – Health And Safety Requirements dated October 2005.

J. Noncompliance

The Contractor will be issued a written Notice of Non-Compliance by the Engineer in the event that, emissions reductions, dust suppression, noise abatement, vibration abatement or cultural and historic resources protection measures fail to comply with the requirements of this Section. All notices of non-compliance shall be remedied within twenty-four (24) hours of the Contractor's receipt of notice from the Engineer. The failure of the Contractor to perform corrective action within this period shall constitute grounds for the Engineer to invoke the provisions of the Form of Contract entitled "Withholding of Payments."

## 129. CONTRACTOR'S QUALITY PROGRAM REQUIREMENTS

A. General

The Contractor shall submit a description of its Quality Assurance/Quality Control (QA/QC) Plan addressing the QA/QC organization; how the Plan extends to its subcontractors and others in the supply chain; resources and procedures that the Contractor will use for evaluating construction activities, products and related activities, which shall conform to the Authority's WTC Project Quality Assurance Plan and the FTA QA/QC System requirements (FTA-IT-90-5001-02.1), attached as an Appendix hereto.

B. Scope.

This section defines the responsibilities of the Contractor in the management of quality in the construction of the Project to achieve an end product conforming to the level of quality required by the Contract Documents.

C. Contractor's Quality Program.

The Contractor shall establish, implement and maintain an effective Contractor Quality Control Program (CQCP) to manage, control, document and assure that the work complies with the requirements of the Contract Documents. The quality assurance/quality control program shall describe all of the means, methods, plans, procedures, processes and the organization proposed by the Contractor to assure that the level of quality specified in the Contract Documents for all materials, equipment, and workmanship incorporated in the temporary or permanent construction is appropriately satisfied whether constructed, fabricated or manufactured onsite or offsite by the Contractor or his subcontractors, suppliers and vendors, the quality assurance/quality control program shall also address the training and certification of personnel tasked with the implementation and maintenance of the program in the techniques necessary to ensure quality, including but not limited to, testing and inspection.

At a minimum, the quality assurance/quality control program developed and submitted to the Engineer for review and approval must satisfy the requirements of the "Quality Assurance & Quality Control Guidelines" of the Federal Transit Administration / U.S. Department of Transportation (FTA-IT-90-5001-02.1), dated February 2002.

D. Submittal of Quality Program

- 1.) Within 15 days after the acceptance of the Contractor's Proposal, the Contractor shall furnish for the approval of the Engineer, the QA/QC Program. The QA/QC Program shall be signed by a principal of the firm and his designated Quality Control Manager ("QCM"). If the Contractor fails to submit an acceptable QA/QC Program within the prescribed time, the Engineer may not allow the work to continue unless an acceptable interim plan which addresses all of the requirements of the QA/QC Program is provided. The interim plan will only be acceptable for 30 days.
- 2.) Failure to comply with either of these submittal requirements within the prescribed times may result in the Authority issuance of an order to the Contractor to stop all work on this Project.

E. Changes To The CQP.

The Contractor shall notify the Engineer in writing of any proposed change to the CQP. All proposed changes are subject to the approval of the Engineer. The Contractor shall review the approved CQP on a quarterly basis for continued adequacy to meet the requirements of the Contract Documents and shall incorporate changes to overcome the deficiencies in the program that affect quality. Use shall be made of feedback data generated by the Contractor, subcontractors, suppliers and the Engineer.

F. Elements Of Contractor's Quality Program.

The CQP shall include the following elements: (Required FTA Elements Added)

ELEMENT	PARAGRAPH SPECIFICATIONS
Management Organization, Staffing and Responsibilities	G.
Documented Quality Management System	H.
Submittal Management, Document Control and Document Changes	I.
Receiving, Handling, Storage and Control of Materials and Equipment	J.
Subcontractor and Supplier Control – Purchasing	K.
Inspection and Testing Plan	L.
Control of Construction Processes	M.
Control of Measuring and Testing Equipment	N.
Control of Nonconforming Conditions	O.
Documentation by Quality Records	P.
Contractor Internal Audit	Q.
Training	R.
Statistical Analysis	S.
Design Process Control	T.

G. Management Organization, Staffing And Responsibilities.

The CQP shall describe the Contractor's project organization (including major subcontractors and suppliers) and include an organization chart showing names, titles and lines of authority, and the interrelationship of those involved in managing and directing the Project. The qualifications, duties, responsibilities and functions of the Construction Management Team shall be provided.

The Contractor shall be fully responsible for effectively managing all aspects of the CQP and shall present the management strategy for approval at the pre-award qualification hearing, as part of the validation of qualifications for this Project. This strategy shall identify the organization, staffing and responsibilities as a minimum. The person designated to be responsible for overall Quality Management may be the Project Manager or the Corporate Quality Officer.

Both shall participate in developing the CQP for this project and shall sign it prior to submittal.

Adequate staff and resources shall be provided to perform all quality control activities to assure contract compliance whether the work is performed by the Contractor's own forces or by subcontractors. The personnel comprising this staff shall be fully qualified by experience and technical training to perform their assigned responsibilities. The Engineer may direct the Contractor to provide additional staff and resources to the Project Manager or Corporate Quality Officer if, in the sole opinion of the Engineer, there are significant deficiencies in implementing the CQP requirements.

The size and composition of the Contractor's quality organization may vary as the project progresses, however, at all times it must be compatible with the level of effort and capability required by the Contract Documents.

The Project Manager or Corporate Quality Officer shall maintain a legible, handwritten daily diary or activity log indicating all major activities related to the management of quality on this Project that were personally performed by him, and each entry in the diary or log shall be signed and dated by him.

The Project Manager or Corporate Quality Officer shall prepare and submit a 6-week look-ahead schedule forecasting her/his quality activities associated with the Contract's progression.

The Project Manager or Corporate Quality Officer's office shall be based near the work-site. The Project Manager or Corporate Quality Officer shall report to the work-site on daily basis.

If the Contractor's QC Program is not being performed to the satisfaction of the Engineer, the Engineer may direct the Contractor to assign one or more full-time additional Quality Project Manager(s) dedicated solely to this project at no additional cost or expense to the Engineer, as required to successfully implement the approved CQP.

The Quality Manager (QM) shall be a full time person assigned exclusively to this Project Final Completion. The Quality Manager's sole function shall be to manage all quality matters for the Project and have the authority to act in all quality matters for the Contractor. The QM shall not be subordinate to the Contractor's personnel that directly perform, supervise or progress the work. The QM shall have direct access to the upper management of the Contractor. The QM shall possess at least five (5) years of Quality related experience. . The resume of the QM shall include a description of the duties, responsibilities and the QA/QC record of assignments for the preceding five-year period which establishes the candidate's experience as a Quality Manager. The QM's qualifications shall be submitted to the Engineer for approval. The QM shall review and revise the CQP for this Project and shall sign it prior to resubmittal.

#### H. Documented Quality Management System

The Contractor shall establish and maintain a documented quality management system to ensure project quality objectives are satisfied. The quality management system requirements shall extend to the any suppliers and contractors, as appropriate.

Written procedures and instructions shall be developed for activities affecting quality in design, purchasing, manufacturing and construction, as applicable to the work performed. Procedures and instructions shall also be developed for control of inspection, testing, nondestructive examination, control of nonconformances, corrective action, maintenance of quality records, quality audits and training.

The procedures shall contain a statement of purpose and scope and referenced to Codes, standards or specifications. In developing the procedures, consideration shall be given to identifying and acquiring any inspection equipment, skills or special processes needed to ensure quality performance. Inspection and testing techniques should be kept up-to-date. The procedures and instructions should contain formats for the quality records needed to ensure that the procedures and instructions are followed and documentation requirements are understood.

I. Submittal Management, a Document Control and Document Changes.

The CQP shall provide for establishing and maintaining a submittal management system which schedules, manages and tracks all submittals required by the Contract Documents including those of subcontractors and suppliers. The submittal schedule shall indicate all submittals due far enough in advance of the scheduled dates for installation to allow for the time required for reviews, for securing necessary approvals, for possible revisions and resubmittals and for placing orders and securing delivery. The submittal schedule shall be updated as required and submitted. Before the planned start of work on a system, a listing of all submittals planned for the system and its subsystems shall be submitted. Submittals for a portion of a system will not be accepted for review until the complete list of submittals for the system has been submitted. The Contractor shall review submittals prepared by its subcontractors and suppliers for compliance with the Contract Documents, before submitting it to the Engineer.

Shop drawings shall be prepared by the Contractor, subcontractors or suppliers and shall be reviewed by the Contractor to verify all materials and field measurements and checked and coordinated to assure that the information contained on the shop drawings, product data and samples conforms with the requirements of the Contract Documents as required. No portion of the work requiring these shop drawings shall be commenced until this review and coordination has been performed by the Contractor. These shop drawings and any other documentation which demonstrates the Contractor's compliance with the Contract Documents shall be kept at the Contractor's office and be available for inspection and audit of the Engineer. Where the Engineer requires certain shop drawings and other documents required by the specifications be made available to him but which do not require his approval they will be listed in the specifications and noted that they are for information only.

The CQP shall also provide for establishing and maintaining a document control system for control of project documents and data such as drawings, specifications, calculations, calibration records, inspection procedures, test procedures, test results, special work instructions, operational procedures and QA Program and related procedures. The document control system shall provide assurance that the work is performed to the latest approved drawings and specifications and that these documents are made available at each work location, prior to the start of the work, to all users who require them. Obsolete documents shall be promptly eliminated from each work location. Any superseded documents retained for the record shall be clearly identified as such.

All changes to documents shall be processed in writing and records maintained of changes as they are made. The Project Drawing List shall identify the revision number and the revised date for each drawing that is revised.

J. Receiving, Handling, Storage And Control Of Materials And Equipment.

The CQP shall contain provisions for verification that material and equipment meet specified quality and contractual requirements and that they are properly received and handled to ensure that the quality is not degraded. The Contractor shall establish and maintain documented procedures that ensure that all materials and equipment are positively identifiable and traceable to a specified origin point.

Purchased items entering the construction site/warehouse shall be inspected/tested, including their supporting documentation, for verification that subcontractors and suppliers have met the appropriate quality requirements of the Contract Documents. Purchased items shall bear a suitable control device as evidence of subject inspection/test. An identifier containing the inspection/test date, name of inspector, and inspection/test status (Pass/Fail) shall be attached to each inspected/tested item.

Nonconforming purchased items shall immediately be tagged, removed and segregated to a controlled area.

Certificates of compliance and/or conformance shall be submitted for materials and equipment.

The Contractor shall provide written requirements to assure that the desired quality of an item is not compromised or degraded as a consequence of inappropriate handling, lifting and rigging methods.

The Contractor shall provide written requirements for the cleaning, preservation and storage of materials and equipment. Proper records shall be maintained of all required maintenance activities during storage.

Purchased material and equipment shall be clearly marked so that it can easily be identified without excessive handling or opening of crates and boxes.

The materials storage area(s) shall be arranged for ease of retrieval and to prevent damage, deterioration or loss. In general, materials received first shall be used first.

Positive material identification (PMI) shall be implemented so that each item has a unique identifier (PMI serial number) to distinguish apparently identical items made in separate fabrication processes and confirm that the material of construction is indeed the grade of material specified. PMI numbers must appear on all inspection and construction records.

K. SubContractor And Supplier Control. - Purchasing

The QC program shall assure that items and services are procured from subcontractors and suppliers capable of meeting all requirements of the Contract Documents. The Contractor shall review his agreements with subcontractors and suppliers to insure inclusion of all applicable quality requirements. All subcontractors and suppliers shall comply with the Contractor's Quality Control Program or their own program. If the subcontractors and suppliers elect to submit their own quality control programs, it must be approved as meeting the requirements of this section by the Prime Contractor's Quality Personnel. The Contractor shall review the subcontractor's/supplier's agreements to ensure the inclusion of applicable quality requirements.

Source inspection shall be performed at the subcontractors'/suppliers' plants. Those quality characteristics, which cannot or will not be verified during subsequent processing, shall be subject to source inspection. Source inspection may not be necessary when the quality of the item can be fully and adequately verified by review of inspection and test reports, inspection on receipt or other means.

The Contractor shall perform external audits of his suppliers and subcontractors to assess compliance with the requirements of the approved QA/QC Program and Contract Documents. Factors such as the work schedule, volume, complexity, relative importance, past experience, dollar amount, etc. shall be taken into account for the selection of the suppliers and subcontractors for such audits and determining the scope, frequency and schedule of these audits. The scope frequency and schedule of these audits shall be as approved by the Engineer. The Contractor shall submit an audit schedule to the Engineer within 15 days after award. The Contractor shall make appropriate changes to the audit schedule when warranted due to changed conditions or when directed by the Engineer. The Contractor shall submit the revised schedule to the Engineer within 30 days of the change. The Engineer must be notified in writing 6-weeks days in advance of the date, time and location of each audit. The Engineer may witness any or all such audits. The audit results shall be documented and used to correct deficiencies and prevent their recurrence. Copies of the audits shall be made available to the Engineer, as required.

L. Inspection And Testing Plan.

The Contractor's CQP shall include an inspection and testing plan subject to approval by the Authority to verify that items conform to the requirements of the Contract Documents. The Contractor's plan shall contain a list of tests, which the Contractor is to perform. The list shall give the test name, specification paragraph containing the test requirements and identify if the Contractor, subcontractor or supplier is responsible for each type of test. During the life of the contract, the Contractor shall update the plan to reflect changes in inspection and testing procedures. The Contractor's inspection and testing procedures shall be approved by the Engineer prior to any such inspection or test and shall include test requirements, acceptance criteria and test conditions. Procedures should, as a minimum:

- 1.) identify the characteristics to be inspected, examined, and tested at each activity point;

- 2.) specify inspection and test procedures and acceptance criteria to be used;
  - a. include inspection checklists;
  - b. identify hold points as described below.

The detailed inspection or test procedures shall, as applicable, include items such as who is responsible for what, how, when, and where for all steps to be performed; what materials, equipment, and documentation are to be used; and how it is controlled. The procedures must be included in the CQP.

The Contractor shall use competent inspection personnel and shall not depend exclusively upon inspections performed by persons performing or directly supervising the work being inspected. Inspection personnel shall not report directly to the immediate foreman or supervisors responsible for constructing or installing the work being inspected. Inspection personnel shall be given the necessary authority and independence to perform their roles effectively.

Personnel performing inspections and tests shall possess a demonstrated competence in the specific area of interest and have an adequate understanding of the requirements. Written guidelines shall be established to assure that suitable education, experience and technical qualifications are maintained for such personnel.

The Contractor shall establish a listing of hold points as part of the inspection and testing plan for the approval of the Authority. Hold points are pre-determined inspection points for work in progress, which may become inaccessible as the work progresses, where the Contractor shall "hold" until the Authority verifies that the inspection and testing has been performed. In-process inspection activities shall be planned and performed to ensure the quality of the finished work. Any non-conforming conditions shall be tagged, documented, physically segregated to prevent inadvertent use and corrected before continuing.

The Contractor shall demonstrate the acceptability of the construction activities with objective evidence through suitable inspections and testing records. Inspection and testing records shall be prepared, reviewed, safely stored and maintained by the Contractor.

The Contractor shall distinguish between inspected and uninspected items by using suitable control devices. Inspection and test status identification of structures, systems or components should be maintained and controlled from initial receipt through installation to operation of the constructed work.

M. Control Of Construction Processes.

- 1.) The Contractor shall assure that the work complies with the Contract Documents. Controls shall be adequate to cover all construction operations, including both onsite and offsite fabrication, shall be integrated with the provisions of the clause entitled "Progress Schedule" and shall provide written records indicating that the results obtained for the various phases described below are documented and maintained. The controls shall include at least three phases of control for all definable features of work as follows:  
PREPARATORY PHASE - This phase occurs prior to beginning any work on any definable feature of work.

A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements.

It shall include the following:

- a. review of the contract requirements;
  - b. check to assure that all materials and/or equipment have been tested, submitted and approved;
- 2.) a check to assure that provisions have been made to provide required control inspection and testing;  
examination of the work areas to ascertain that all preliminary work has been completed;

a physical examination of materials, equipment and sample work to assure that they conform to approved shop drawings or submitted data and that all materials and/or equipment are on hand.

INITIAL PHASE - This phase must be accomplished at the beginning of a definable feature of work and shall include the following:

- a. check of preliminary work (first item inspection) to
  - verify full compliance
  - establish acceptable levels of workmanship
  - resolve all discrepancies

#### IN-PROCESS PHASE

- b. Daily checks shall be performed to assure continuing compliance with contract requirements and shall include the following:
  - control testing until the completion of the particular feature of work;
  - suitable maintenance of equipment used in construction to ensure continuing process capability.
- c. The Contractor shall ensure that the work is performed in accordance with codes and standards that would apply if the Authority were a private corporation and with specifications and other special contractual requirements using qualified personnel and/or equipment. The procedure shall identify equipment to be used as well as any special requirements to be observed.

#### N. Control Of Measuring And Testing Equipment.

- 1.) The CQP shall describe the methods for ensuring that equipment used for measuring and testing is in calibration or condition to provide accurate test or inspection results. At intervals established to ensure continued validity, measuring devices shall be verified or calibrated against certified standards that are traceable to national standards or naturally occurring physical constants.

- 2.) The Contractor shall use methods to assure proper handling, storage, care and control of measuring and testing equipment in order to maintain the required accuracy of such equipment. Material and testing equipment that are consistently found to be out-of-calibration or have been subjected to possible damage shall be identified as nonconforming and be removed from service, repaired or replaced. The CQP shall also contain a contingency plan in the event inaccurate measurement may have occurred as evidenced by measuring and testing equipment found to be out of calibration at specified interval.
  - 3.) The Contractor shall also assure that all measuring and testing equipment selected for measurements, tests, or calibration is of the proper range, type, and is controlled, adjusted, and maintained at specified intervals identified in the CQP or prior to use to assure conformance to the established requirements or predetermined accuracy. The equipment shall have some indication attesting to the current calibration status and show date (or other basis) on which inspection or recalibration is next required and by whom last calibrated.
  - 4.) The Contractor's measuring and testing equipment shall be made available for use by the Authority. The Contractor shall make personnel available for operation of the equipment if requested by the Authority.
- O. Preventive Action and Control Of Nonconforming Conditions.
- 1.) The CQP shall contain provisions for implementing preventive and corrective actions and identifying, recording, controlling and correcting nonconforming items, including provisions for the reinspection and retesting of repaired and reworked items to the original requirements. Any "Use-As-Is" determinations shall require approval by an Engineer who represents the Authority. It is the Contractor's responsibility to promptly identify, tag and segregate items detrimental to quality to prevent inadvertent use.
  - 2.) The Contractor shall investigate the cause of the nonconformance and take appropriate corrective actions to prevent recurrence. The identification, determination, justification for planned actions and actions taken shall be documented on a nonconformance report. At a minimum, dispositions for nonconformances shall include 'Rework', 'Repair', 'Use-As-Is', 'Scrap' or 'Reject'. 'Reworked' and 'repaired' items shall be re-inspected using a documented procedure to ensure the item meets requirements. All 'Repair' and 'Use-As-Is' dispositions shall be reviewed and approved by an Engineer representing the Authority prior to any corrective action. Personnel performing evaluations to determine conformance shall have demonstrated competence in the specific area of interest, have an adequate understanding of the requirements and have access to pertinent background information.
  - 4.) A procedure to describe the process for corrective actions to address issues identified during audits or other activities shall be included in the CQP. The procedure must include the analysis of any process/actions to help identify the cause of the condition, identify the corrective actions needed and specific actions needed to prevent recurrence. Actions to ensure that corrective actions are taken and are effective must also be described.
- P. Documentation OF Quality Records.

- 1.) The CQP shall contain provisions for identification of types of quality records to be maintained, their retrievability and retention periods and shall include a sample or blank copy of all quality records and checklists to be utilized on this Project. The Contractor shall maintain quality records as evidence that all of its activities and those of its subcontractors and suppliers comply with the requirements of the CQP. Additionally, the Contractor shall maintain records as evidence that:
  - The item meets the requirements of the Contract Documents;
  - Personnel, procedures and equipment for special construction processes are qualified;
  - Selection and surveillance of subcontractors and suppliers are performed;
  - Corrective action and action taken to prevent recurrence is being taken for nonconforming conditions.
- 2.) Additional Types of Records to be Maintained:
  - a. Contractor Internal and External Audit records which:
    - Provide a schedule of Contractor and subcontractor/supplier audits
    - Document quality programs, plans and procedures audited
    - Identify items and services for which audit was performed
    - Reveal results obtained
    - Demonstrate analyses of audit data for use in corrective action
  - b. Inspection and Test records which:
    - Include completed inspection checklists signed by the QCM
    - Include nonconformance reports and logs
    - Identify inspector or data recorder
    - Identify date of inspection or test
    - Reference drawing number and specification reference
    - Define applicable requirements
    - Identify specific inspections or tests performed and results
  - c. Daily Reports

Under the provisions of the Contract, the Contractor shall prepare reports on a daily basis for the Work Site. This report shall also include a brief description of any inspections of the work performed. If an inspection or test was performed a copy of the inspection or test record must accompany the report. The report with the attachment must be forwarded to the Engineer's office by the end of the next business day. The report must be filed for each site including days in which no work was performed. The report must be signed and dated by the QCM or the Contractor's designated representative.

- d. Inspection and test records shall be maintained for both conforming and nonconforming work. Unless otherwise required by the Authority the Contractor shall retain all quality records for a minimum period of three years after substantial completion and make them available to the Authority upon request.

Q. Contractor Internal Audit.

The Contractor shall perform internal audits of his own Quality Management System to assess compliance with the requirements of the approved QC Program and the Contract Documents. The scope of such audits shall be commensurate with factors such as the work schedule, volume, complexity, relative importance of work activities, etc. The audits shall be performed on a quarterly basis and shall begin within 6 months of the acceptance of the Proposal. An audit schedule shall be submitted to the Authority within 45 days after the acceptance of the Proposal. The Contractor shall change the schedule when warranted due to changed conditions or when directed by the Authority. The Contractor shall submit the revised schedule to the Engineer within 30 days of the change. The Engineer must be notified in writing 10 days in advance of the date, time and location of each audit. The Engineer may witness any or all such audits. The audit results shall be documented and used to correct deficiencies and prevent their recurrence.

R. Training.

- 1.) The Contractor shall provide all required training. Such training shall occur within 30 days after acceptance of the Proposal.
- 2.) The Contractor shall notify the Authority at least one week in advance of the date, time and location of the above training. The Authority shall have the option of attending the training. Records shall be kept of the above training documenting the date, time, duration, location, attendees, trainer's name and qualifications, and the items discussed. Copies of these records shall be forwarded to the Authority not later than one week after such training occurs.
- 3.) This requirement for training is in addition to other training requirements contained in this Contract.

S. Statistical Analysis.

- 1.) The Contractor shall identify, where appropriate, the need for statistical techniques to verify the acceptability of construction process capabilities and work characteristics. These include, but are not limited to: control charts, sampling plans and trend analyses of nonconformances.
- 2.) The Contractor may employ, subject to approval of the Authority, sampling inspection in accordance with applicable nationally recognized standards or other statistically valid plans.

T. Design Process Control.

- 1.) Procedures shall be established, documented, implemented and maintained to control the preparation, review and approval of design work required by this Contract. Design work includes, but is not limited to, the preparation of Shop Drawings, Record Drawings ("As-Built" drawings), working drawings, design details and engineering analyses/calculations as well as software development.
- 2.) Persons performing design work shall be identified, their responsibilities defined, their qualifications stated and a description of the resources assigned for their use shall be given within the procedures.
- 3.) The procedures shall include methods to identify and document input requirements relating to the scope of design work so as to reflect applicable statutory, regulatory and contract requirements as well as industrial codes or Authority standards, if any.
- 4.) The procedures shall state how design work outputs shall be documented, verified against the design input requirements and validated as part of the approval process.
- 5.) The procedures shall contain a formal program of in-process design work review(s) that shall identify: the stages of design at which work review(s) shall occur, the representatives of all concerned functions that shall participate in the review(s) and the documentation of the review(s) results.
- 6.) The procedures shall include methods to identify, document and review any and all changes, revisions or modifications to the original design work prior to resubmittal for approval.

### 130. MAINTENANCE OF TRAFFIC AND WORK AREA PROTECTION

#### A. Definitions

As used in this numbered Section, and this Section only, the terms used herein shall have the following meaning:

- 1.) The terms "Traffic Lane", "Lane", "Active Roadway", "Street", and "Roadway" shall mean, in addition to the normally traveled pavement areas, other areas including but not limited to ramp terminal gore areas, roadway shoulders, and all other areas that may foreseeably be occupied by moving vehicles.
- 2.) "Nighttime Hours" shall mean the local time period between 1/2 hour after sunset to 1/2 hour before sunrise.
- 3.) "Work Area" shall mean the area immediately surrounding the Work in progress, typically where workers are afoot, and/or the space within a Roadway where Work on the Roadway is being done by the Contractor.

#### B. General Requirements

Conform to requirements of this numbered Section, the Contract Drawings and the following:

- 1.) Portions of the latest editions, including all amendments thereto, of the Federal Highway Administration (FHWA): "Manual on Uniform Traffic Control Devices" (MUTCD) Part VI as hereinafter specified and applicable portions of the companion "Traffic Control Devices Handbook" (TCDH); "Standard Highway Signs"; "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects"; and, the "Standard Color Tolerance Charts".
- 2.) American Association of State Highway and Transportation Officials (AASHTO): "Roadside Design Guide", Chapter 9: Safety Appurtenances for Work Zones; and "Standard Specifications for Highway Bridges", as hereinafter specified.
- 3.) The requirements of the Americans with Disabilities Act (ADA) laws in all respects as specified in the "ADA Accessibility Guidelines for Buildings and Facilities" (ADAAG).
- 4.) American Traffic Safety Service Associations (ATSSA): "Guidelines for the Use of Portable Changeable Message Signs".
- 5.) Maintenance of traffic and Work area protection features included herein and as shown on Contract Drawings.
- 6.) In the event of a technical conflict between a requirement in the publications referenced herein and the Contract documents, the requirements of the Contract documents shall control, unless otherwise directed by the Engineer.

#### C. Contractor-Furnished Materials and Equipment

- 1.) Provide and maintain in good working order all materials, equipment, temporary construction signs and facilities required for proper maintenance of traffic and Work Area protection, as specified herein. All said equipment/devices shall remain the property of the Contractor unless otherwise shown on the Contract Drawings.
  - 2.) All items provided under paragraph C.1 shall be new or undamaged previously used materials in serviceable condition conforming to requirements specified herein.
- D. General Work Area Protection
- 1.) Prior to commencement of each day's Work:
    - a. Ensure that construction material and equipment not removed from areas of Work during non-working periods are protected in such a manner that they shall not constitute a traffic hazard.
    - b. Do not park any vehicles other than construction vehicles required for construction operations within the demarcated protected areas of Work.
  - 2.) Throughout progress of Work of this numbered Section:
    - a. Maintain visual and physical accessibility to fire hydrants. Provide 24 hour advance notice to the Engineer in the event of hydrant obstruction.
    - b. Conduct Work area protection operations so that Traffic Lane ingress and egress to intersecting Roadways, adjacent structures or property, and bus and taxi stops, if any, can be maintained. Obtain the approval of the Engineer and provide 24 hours advance notice to the Engineer in the event that Work area protection operations obstruct access to work areas.
  - 3.) Use temporary Vehicle-strong barriers at all times when materials and/or equipment are left in the Work Area without the presence of workers, unless otherwise shown on the Contract Drawings or when otherwise directed by the Engineer.
  - 4.) Vehicles used by the Contractor during performance of Work shall be considered as equipment vehicles and when not protected by a Vehicle-strong barrier, said vehicle shall be protected by a back-up truck, unless otherwise shown on the Contact Drawings.
- E. Notwithstanding provisions herein requiring or permitting the Authority to approve or disapprove of any traffic control or delineation and guiding device provided by the Contractor, the Contractor shall be responsible for the suitability and performance of all such traffic control devices such that inconvenience to the traveling public is held to an absolute minimum.

## 131. CONDITIONS AND PRECAUTIONS

### A. Construction Site Conditions:

- 1.) Notwithstanding restrictions specified elsewhere herein, during the time the Contractor is performing the Work, it may at times be necessary, because of emergency conditions, to suspend the Contractor's operations or to postpone the time at which a work area becomes available for performance of Work. Should the Contractor be specifically directed to suspend operations in a work area specified herein to be available for operations of the Contractor, or should such work area not be available by the times specified elsewhere in the Contract, and if solely because of such suspension of operations or late availability of the work area, the Contractor is necessarily kept idle at the construction site, the Contractor will be compensated as stipulated in the provisions of the Contract concerning compensation for emergency delays.
- 2.) At least 7 days but not more than 10 days prior to performing excavation, call 1-800-272-4480 and provide the information required for excavation(s) in New York and call 1-800-272-1000 and provide the information required for excavation(s) in New Jersey.
- 3.) No vehicles of the Contractor, employees of the Contractor, subcontractors, materialmen or others over whom the Contractor has control will be permitted to park in or on Authority property, except for construction vehicles which will be permitted to park at the area of Work during the times when the Work is being performed.  

All vehicles, including construction vehicles and company vehicles will be required to pay the appropriate tolls for each passage or crossing of Authority facilities, or parking at Authority lots.
- 4.) Securely fasten material or construction which must be left in place between working periods in a manner approved by the Engineer so as not to be a hazard.
- 5.) Take all precautions necessary for protection of persons, traffic and property during dust or fragment generating operations, concrete mixing or placing, or other operations which may stain, soil or damage property or injure persons. Provide and erect waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less, or other protective enclosures as approved by the Engineer.
- 6.) No smoking is permitted on the construction site.
- 7.) Do not burn or bury debris of any type on Authority property, or wash waste materials down sewers or into waterways.
- 8.) Provide sound suppression devices on gasoline and diesel powered construction equipment and pneumatic tools as required to maintain noise exposures below the limits specified in the Code of Federal Regulations (CFR) 29 CFR 1926 Occupational Safety and Health Regulations for Construction (OSHA). Maintain such sound suppression devices in proper operating condition throughout the time of their use, and adjust and repair as required to maintain noise within exposure levels stipulated in 29 CFR 1926.52, Table D-2.

- B. No requirement of or omission to require any precautions under this Contract shall be deemed to limit or impair any responsibility or obligation assumed by the Contractor under or in connection with this Contract and the Contractor shall at all times maintain adequate protection to safeguard the public and all persons engaged in the Work and shall take such precautions as will accomplish such end, without undue interference with the public or the operations of the Authority.
- B. Security Plan--The Contractor shall implement and maintain a security plan for the work site in accordance with the requirements in the Authority's WTC Site Security Plan. The Security Plan includes the standards and requirements for, but not limited to, fencing, guards, access control, lock and key controls, and other security requirements, which support overall WTC Site security, the separation of public and non-public areas, and site safety. The Authority will monitor conformance to the plan and may require modifications to the plan throughout the construction period.
- C. Traffic Management Plan--The Contractor shall implement and maintain a traffic management plan while performing work at the WTC site in accordance with the requirements in the Authority's Traffic Management Plan. The Traffic Management Plan will include the standards and requirements for primary and secondary access points, direction of traffic flow, and procedures for access for the Contractor, subcontractors, construction and company vehicles, deliveries, materials being transported, and pedestrian access through the Work site. The Authority will monitor conformance to the plan and may require modifications to the plan throughout the construction period.
- D. WTC Site Rules & Regulations--The Contractor, its subcontractors, and all employees supporting the construction activity are required to comply with the Rules and Regulations of the WTC Site, and any updates as required by the Authority. A copy of the WTC Site Rules and Regulations will be provided to each employee upon his or her eligibility to receive a WTC Site Identification Badge and/or Vehicle Pass. Any person not complying with the WTC Site Rules and Regulations shall have their access privileges to the WTC Site and any WTC Site Identification Badge and/or Vehicle Pass revoked.

**132. HOURS OF WORK AND CONSTRUCTION STAGING**

- A. Hours of Work
  - 1.) The Contractor will be permitted to perform the Work of this Contract without restrictions as to Work hours.
  - 2.) The Contractor shall submit to the Engineer, at least one week in advance, his scheduled hours of Work for each week.
  - 3.) Do not perform Work at the construction site on a Federal legal holiday or a holiday of the state(s) in which Work is being performed, unless otherwise permitted by the Engineer.
- B. Construction Staging

- 1.) The Contractor shall perform the pouring of the invert supporting slab and removal of temporary structural steel within the Cortlandt Street Station Work in accordance with General Orders "G.O.'s" for the NYCT #1 subway line at the Cortlandt Street Station. The NYCT #1 subway line will be shut down for a six-week period commencing on or about July 17, 2010. Additionally 6 weekend G.O.'s will be scheduled during the period between September through November 2010.

Pouring of the invert supporting slab and removal of temporary structural steel within the Cortlandt Street Station shall not be performed on active track.

### **133. RECYCLING OF CONSTRUCTION DEBRIS MATERIAL**

The Contractor shall remove from Authority property all construction debris, demolition debris and other debris material generated from the performance of the Work of this Contract unless the material is deemed acceptable by the Engineer for on-site re-use or recycling in accordance with the technical requirements of this Contract and remains at the Work site. The Contractor shall transport to recycling facilities or re-use and recycle on-site for this Contract, as applicable, no less than 75% by weight of the following types of designated debris material, to the extent arising from the Work of this Contract:

- Asphalt Concrete
- Portland Cement Concrete
- Steel
- Excess Unrestricted Soil

During the process of removal of all such designated debris material from Authority property, the Contractor shall submit to the Engineer on a monthly basis a Designated Debris Material Assessment Summary indicating the actual types and quantities by weight of the designated debris material removed for this Contract up to that point in time. In addition, the Designated Debris Material Assessment Summary shall also include types and quantities by weight of designated debris material actually re-used or recycled on-site in this Contract or, if shown on the Contract Drawings, are stockpiled for future use by the Authority. The Designated Debris Material Assessment Summary shall be accompanied by written verification from recycling and landfill destinations identifying the originating Work site, quantity of material delivered and type of debris material for all designated debris material removed from the Work site.

Within 15 days of the acceptance of his Proposal, the Contractor shall submit to the Engineer for review the Contractor's Designated Debris Material Assessment Plan indicating the anticipated types and anticipated quantities by weight and the intended destinations for all such designated debris material to be removed from the Work site. The Designated Debris Material Assessment Plan shall also indicate anticipated types and anticipated quantities by weight of all such designated debris material to remain at the Work site for re-use or recycling in this Contract as applicable.

All removals shall be completed promptly upon the completion of construction under this Contract.

#### 134. DIFFERING SUBSURFACE CONDITIONS

If during the performance of Work, the Contractor becomes aware of any unanticipated subsurface conditions or has cause to suspect the presence of such condition, then the Contractor shall immediately notify the Engineer, or designee thereof verbally, to be followed immediately by written notification. The Contractor shall specify the nature, location, and impact on the Work of such conditions. The Contractor shall immediately stop Work in and secure the area against injury to persons or damage to property pending further instructions from the Engineer.

The Contractor shall then conduct all necessary investigations and testing of the subsurface conditions as directed by the Engineer to identify the character and extent of the unanticipated subsurface conditions and/or to satisfy applicable Federal, State and local laws, codes and ordinances and regulations and shall notify the Engineer accordingly. The investigation program shall be submitted to the Engineer for review and approval.

In the event the Contractor discovers such subsurface conditions during the performance of the Work and (i) special handling of such condition is necessary and required for the performance of the Work as determined by the Engineer; (ii) such special handling cannot be avoided or mitigated by the exercise of reasonable measures by the Contractor; and (iii) the Contractor actually incurs increased costs caused by such condition that could not have been reasonably anticipated from the Contract Drawings, Reference Drawings and Specifications and inspection of the construction site; then in such event, as approved by the Engineer, the Contractor shall, notwithstanding any provision in this Contract to the contrary, be compensated for such costs for special handling, including the necessary investigations and testing of subsurface conditions, in accordance with the provisions of the clause entitled "Compensation for Extra Work".

**SECTION 01352**  
**SUSTAINABLE DESIGN REQUIREMENTS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. The Authority requires the Contractor to implement practices and procedures to meet the Contract's Sustainable Design Requirements. These requirements include:
1. Meeting the requirements of the Sustainable Design Guidelines for WTC Redevelopment Projects, dated 25 March 2005, plus errata issued 7 August 2006.
  2. Meeting the requirements of Executive Order 111 (EO 111) of the State of New York, including the requirement for the Work of this Contract to be designed and constructed to meet the criteria for a LEED (Leadership in Energy and Environmental Design) for New Construction (NC), version 2.1 rating of certified, silver, gold or platinum, as set forth by the U.S. Green Building Council.
- B. Specific sustainable design strategies incorporated into the Work include, but are not limited to:
1. Implement the Construction Environment Plan
  2. Implement the Construction Storm Water Runoff and Pollution Prevention Plan
  3. Divert construction waste from landfills
  4. Implement the Construction Indoor Air Quality Management Plan
  5. Use of materials with recycled-content
  6. Implement the Pest Control Management Plan
  7. Use of locally-manufactured materials
  8. Use of low-emitting materials
  9. Use of certified wood products
  10. Use of high albedo materials in roof and non-roof applications
  11. Implement Sustainable Design Guidelines (SDG) Commissioning Requirements and comply with the SDG Commissioning Plan
  12. Document material flow during construction as indicated in the Materials Management Plan.
- C. The Contractor shall ensure that the requirements related to the sustainable design strategies, as defined in this section and elsewhere in the Contract Documents, are implemented. Substitutions, or other changes to the Work proposed by the Contractor shall not be allowed if such changes compromise the stated Sustainable Design and Performance Requirements. Contractor submittals, shall be submitted in accordance with general Division 1 requirements.

- D. A number of Sustainable Design Requirements needed to ensure the Work of this Contract is able to meet the Authority's requirements are dependent on specific material and/or equipment selections, and may not be specifically identified as Sustainable Design Requirements. Compliance with these requirements shall be used as one criterion to evaluate substitution requests.
- E. Additional Sustainable Design Requirements are dependent on the inherent nature of the design and/or other aspects of the Work that are not directly expressed but are inferable as part of the Work of the Contract (i.e., site selection and development density).

#### 1.02 DESIGN AND PERFORMANCE REQUIREMENTS

- A. Materials used for Work on this Contract shall comply with the requirements contained in Part 2 of this Section.
- B. The Contractor shall provide Sustainable Design Submittals (as part of every product, material, assembly or equipment submittal) in the manner required in this Section and elsewhere in the Contract Documents.
- C. The Contractor shall implement and comply with the Sustainable Design Management Plans as required in Part 3 of this Section.

#### 1.03 RELATED SECTIONS

- A. Where necessary, Divisions 1 through 16 Sections make reference to additional Sustainable Design and Submittal Requirements specific to the Work of each of those Sections.

#### 1.04 REFERENCES

- A. Internet web addresses are provided for information only. Web addresses are subject to change. The Authority makes no guarantee that the links listed are up-to-date or will remain valid throughout the duration of the Work.
- B. Bay Area Air Quality Management District (BAAQMD), State of California (for sealants) [www.baaqmd.gov](http://www.baaqmd.gov)
- C. Carpet And Rug Institute (CRI) Green Label Certification, <http://www.carpet-rug.org/index.cfm>
- D. Federal Trade Commission's "Guide for the Use of Environmental Marketing Claims," 16 CFR 260.7 (e), Washington: USFTC, 1992 <http://www.ftc.gov/bcp/online/pubs/buspubs/epaclaims.htm>.

- E. Forest Stewardship Council (FSC) for Certified Wood, FSC Principles and Criteria, <http://www.fscus.org>
- F. GreenGuard Environmental Institute (for systems furniture and seating), <http://www.greenguard.org/DEsktopDEfault.aspx?tabindenx=3&tabid=16#officefurniture>
- G. Green Seal Environmental Standards, including for Paints (GS-11) and Anti-Corrosive Paints (GC-03), and Coatings, <http://www.greenseal.org/certification/environmental.cfm>
- H. South Coast Air Quality Management District (SCAQMD), State of California Rule 1168 (for adhesives, sealants, and sealant primers), Rule 1113 (for architectural coatings), [www.aqmd.gov](http://www.aqmd.gov)
- I. State of New York, Executive Order 111 of the State of New York, "Green and Clean" State Buildings and Vehicles. <http://www.nyserda.org/programs/exorder111.asp>
- J. State of New York, New York State Green Building Tax Credit <http://www.dec.ny.gov/regs/4475.html>
- K. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Prepared by Croxton Collaborative Architects, P.C. for the LMDC, PANYNJ, and NYSERDA, March 25, 2005. Reference Manual Available through the LMDC website at: [http://www.renewnyc.com/plan\\_des\\_dev/design\\_guidelines\\_manual.asp](http://www.renewnyc.com/plan_des_dev/design_guidelines_manual.asp)
- L. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Errata Sheet, 27 August, 2006.
- M. United States Environmental Protection Agency, <http://www.epa.gov>
- N. United States Environmental Protection Agency / United States Department of Energy (EPA/DOE) Energy Star Program, <http://www.energystar.gov>
- O. United States Environmental Protection Agency Toxicity Characteristic Leaching Procedure (TCLP) testing process, <http://www.epa.gov/SW-846/pdfs/1311.pdf>
- P. United States Green Building Council, LEED-NC, version 2.1: The Leadership in Energy & Environmental Design rating system developed by the United States Green Building Council (USGBC). LEED for New Construction (NC). Second Edition, May 2003. <http://www.usgbc.org>

## 1.05 QUALITY ASSURANCE

- A. The Contractor's Program Quality Plan (PQP) shall include all Sustainable Design Requirements, including plans and procedures required by the Contract Documents, Executive Order 111 of the State of New York and Sustainable Design Guidelines for WTC Redevelopment Projects including the WTC Transportation Hub Project.
- B. The Contractor's submittal management system, that schedules, manages, and tracks all submittals, shall include the requirements of the Sustainable Design Submittals.
- C. The Contractor's construction execution plan shall be developed to include and coordinate the requirements of all Sustainable Design Management Plans in accordance with 3.01 of this Section.

## 1.06 SUSTAINABLE DESIGN SUBMITTAL REQUIREMENTS

- A. All submittals shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 – GENERAL PROVISIONS.
- B. Sustainable Design Submittals are required for all installed materials included under Specification Divisions 2 through 14. For Specification Divisions 15 and 16, Sustainable Design Submittals are only required for the following material types:
  - 1. Field-applied adhesives, sealants, paints and coatings.
  - 2. Low mercury/low lead lamps, as determined by the US Environmental Protection Agency's Toxicity Characteristic Leaching Procedure (TCLP) testing process.
  - 3. Refrigerants.
  - 4. Insulation materials.
  - 5. Wood products.
- C. *Applicability:* Applicable Sustainable Design Submittals are listed as part of the Submittals of each Specification Section or Specification Notes on the Contract Drawings. The detailed requirements for the Sustainable Design Submittals are defined herein.
- D. *Detailed Requirements:* Items 1 through 11 below define the information and documents to be submitted for each type of Sustainable Design Submittal. Where published product literature is provided, clearly encircle or flag the relevant sustainable design information.
  - 1. Sustainable Design Materials Certification Form (SDMCF): Information to be supplied for this form (see Attachment A of this Section) shall include all of the following items, as identified in each specification section and as applicable:
    - a. Cost breakdowns for the materials included in the Contractor's scope of work. Cost reporting shall include the total cost for the Contractor's work, plus itemized material costs (excluding the Contractor's labor, equipment, overhead and profit).

- b. The percentages (by weight) of post-consumer and/or post-industrial recycled content in the supplied product(s).
  - c. Identification (Yes/No) of materials manufactured within 500 miles of the Work site.
  - d. Identification (Yes/No) of raw materials harvested or extracted within 500 miles of the Work site.
  - e. Identification (Yes/No) of FSC-certified wood products.
  - f. Volatile Organic Compound (VOC) content of all field-applied adhesives, sealants, paints, and coatings, listed in grams/liter or lbs./gallon. (See requirements for Low Emitting Materials in this Section).
2. **SDMCF Back-Up Documentation:** These documents shall be used to validate the information provided on the SDMCF (except cost data). For each material listed on the SDMCF, provide documentation to certify the material's sustainable design attributes, as applicable.
- a. **Recycled content:** Submit published product literature or letter of certification on the manufacturer's letterhead certifying the amounts of post-consumer and/or post-industrial content, by weight.
  - b. **Regional manufacturing (within 500 miles):** Submit published product literature or letter of certification on the manufacturer's letterhead indicating the city/state where the manufacturing plant is located and the distance in miles from the Work site.
  - c. **Regional raw materials (within 500 miles):**
    - 1) Submit published product literature or letter of certification on the manufacturer's letterhead indicating the city/state from which each of the raw materials in the product were extracted, harvested or recovered, and the distance in miles from the Work site.
    - 2) If only some of the raw materials for a particular product or assembly originate within 500 miles of the Work site, submit the percentage (by weight) that these materials comprise in the complete product.
  - d. **Certified Wood:**
    - 1) Submit vendor invoices for each wood product that has been harvested in accordance with the "FSC Principles and Criteria" for well-managed forests developed by the Forest Stewardship Council (FSC). Invoices shall include chain-of-custody (COC) certificate numbers and itemized costs for all certified products.
    - 2) For assemblies, submit the percentage (by cost and by weight) of the assembly that is FSC-certified wood.
  - e. **VOC content:** Submit Material Safety Data Sheets (MSDS), and/or Technical Data Sheets certifying the Volatile Organic Compound (VOC) content of the adhesive, sealant, paint, or coating products. VOC content is to be reported in grams/liter or lbs./gallon. If the MSDS does not show the product's VOC content, this information must be provided through other published product literature from the manufacturer, or stated in a letter of certification from the product manufacturer on the manufacturer's letterhead.
3. **Product Cut Sheets:** Submit product cut sheets with the Contractor's stamp, confirming that the submitted products are the products installed for the Work of this Contract.
4. **Carpet and Rug Institute (CRI) Green Label Certification:** For carpets and carpet tiles submit published product literature or letter from the manufacturer (on the manufacturer's

letterhead) verifying that the products comply with the "Green Label Plus" IAQ testing program of the Carpet and Rug Institute of Dalton, GA. For carpet cushions, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products comply with the "Green Label" IAQ testing program of the Carpet and Rug Institute of Dalton, GA. Alternately, provide the CRI's Green Label Plus certificate number for each carpet product used in the project. The numbers are available on the CRI website per item 1.04.C

5. Carpet Component Identification: For all synthetic carpets, submit documentation from the manufacturer (on the manufacturer's letterhead) of the specific carpet component identification code that is printed on, or attached to, the carpet supplied for the Work of this Contract. The code must identify the carpet face fiber, and may identify its primary backing, secondary backing, adhesive, adhesive filler, and dyes.
6. Certification of Composite Wood or Agrifiber Resins: For all composite wood, engineered wood and agrifiber products, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that that the products do not contain added urea-formaldehyde.
7. Certification of Composite Wood or Agrifiber Laminating Adhesives: For all laminating adhesives used with composite wood, engineered wood and agrifiber products (e.g., adhesives used to laminate wood veneers to an engineered wood substrate), submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the adhesive products applied on site do not contain urea-formaldehyde.
8. Adhesives, sealants, paints and coatings compliance: Submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the following product types comply with the VOC limits and chemical component restrictions:
  - a. Topcoat paints: refer to Green Seal standard GS-11 (1st edition, May 1993)
  - b. Anti-corrosive and Anti-rust paints: refer to Green Seal standard GC-03 (2nd Edition, January 1997)
  - c. Aerosol Adhesives: refer to Green Seal standard GS-36 "For adhesives, adhesives applied onto substrates, and aerosol adhesives". (1st edition, October 2000).
  - d. Adhesives and sealants: refer to South Coast Air Quality Management District (SCAQMD) Rule 1168.
  - e. Coatings and high performance paints not covered by Green Seal: refer to South Coast Air Quality Management District (SCAQMD) Rule 1113.
9. Energy Star Label Certification: For applicable appliances, office equipment, electronics, and commercial food service equipment, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products are rated under the US EPA/DOE Energy Star program.
10. Low Mercury Fluorescent Lamps: For all fluorescent lamps installed in the Project, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the lamps contain less than 10 milligrams of mercury, and can be disposed of as non-hazardous waste, as defined by the US EPA.
11. GreenGuard Certification: For systems furniture and seating, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products are certified by the GreenGuard Environmental Institute.

- E. Sustainable Design Submittal Packages: Submittals shall be prepared by a LEED Accredited Professional (LEED AP) and shall be included with every product, material, assembly or equipment submittal sent to the Engineer for approval. All submittals shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 – GENERAL PROVISIONS. Incomplete or inaccurate Sustainable Design Submittals may be used as the basis for rejecting the submitted products or assemblies. A copy of the LEED AP certificate(s) shall be submitted to the Engineer prior to the first submittal to confirm the LEED AP qualification of the individual(s) responsible for preparing the submittals.
- F. All values from the approved Sustainable Design Material Certification Forms and submittals shall be tabulated per Specification Division once per month and submitted to the Engineer with a progress schedule.

**PART 2 - PRODUCTS**

**2.01 LOW EMITTING MATERIALS**

**A. Adhesives and Sealants**

- 1. All adhesives and sealants used for interior Work shall comply with the requirements of the following standards:
  - a. Adhesives (VOC Limits & Chemical Restrictions): Rule 1168 – “Adhesive and Sealant Applications,” amended January 7, 2005): South Coast Air Quality Management District (SCAQMD), State of California, <http://aqmd.gov/rules/reg/reg11/r1168.pdf> Sealants (VOC Limits & Chemical Restrictions):
    - 1) Regulation 8 (Organic Compounds), Rule 51 (Adhesive and Sealant Products), amended 17 July 2002: Bay Area Air Quality Management District (BAAQMD), State of California, <http://www.baaqmd.gov/dst/regulations/rg0851.pdf>
    - 2) Rule 1168 – “Adhesive and Sealant Applications,” amended January 7, 2005): South Coast Air Quality Management District (SCAQMD), State of California, <http://aqmd.gov/rules/reg/reg11/r1168.pdf>
- 2. VOC Limits for Interior Adhesives (SCAQMD, Rule 1168):
  - a. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.
    - 1) General: Unless otherwise specified below, the VOC content of all adhesives, adhesive bonding primers, or adhesive primers shall not be in excess of 250 grams per liter.
    - 2) For specified building construction related applications, the allowable VOC content is as follows:

APPLICATION	VOC LIMIT (g/L)
<b>Architectural Applications</b>	
Indoor carpet adhesive	50
Carpet pad adhesive	50

Outdoor carpet adhesive	150
Wood flooring adhesive	100
Rubber floor adhesive	60
Subfloor adhesive	50
Ceramic tile adhesive	65
VCT and asphalt tile adhesive	50
Drywall and panel adhesive	50
Cove base adhesive	50
Multipurpose construction adhesive	70
Structural glazing adhesive	100
Single ply roof membrane adhesives	250
<b>Specialty Applications</b>	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact Adhesive	80
Special Purpose Contact Adhesive	250
Adhesive Primer for Traffic Marking Tape	150
Structural Wood Member Adhesive	140
Sheet Applied Rubber Lining Operations	850
Top and Trim Adhesive	250
<b>Substrate Specific Applications</b>	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

3. VOC Limits for Interior Sealants (SCAQMD, Rule 1168 and BAAQMD Reg 8, Rule 51):
- a. The VOC limits defined by SCAQMD and BAAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.

APPLICATION	VOC LIMIT (g/L)
<b>Sealants</b>	
Architectural	250
Roadway	250
Single Ply Roof Material Installation/Repair	450
Non-membrane Roof Installation/Repair	300
Marine Deck	760
Other	420
<b>Sealant Primers</b>	
Architectural- Nonporous	250
Architectural- Porous	775
Modified Bituminous (SCAQMD)	500
Marine Deck (SCAQMD)	760
Other	750

- b. The following chemicals are prohibited from adhesives and sealants (SCAQMD, Rule 1168):
- 1) Chloroform
  - 2) Ethylene dichloride
  - 3) Methylene chloride
  - 4) Perchloroethylene
  - 5) Trichloroethylene

B. Interior Paints and Coatings

1. All paints, primers, and coatings used for interior Work shall comply with the requirements of the following standards:
  - a. Green Seal Environmental Standard for Paints (GS-11 for opaque topcoats, GC-03 for anti-corrosive paints), Green Seal, <http://www.greenseal.org/certification/environmental.cfm>
  - b. Rule 1113 – “Architectural Coatings,” amended 6/9/06: South Coast Air Quality Management District (SCAQMD), State of California, <http://www.aqmd.gov/rules/reg/reg11/r1113.pdf>
2. Paints and Primers (Non-Specialized and Anti-Corrosive): Paints and primers used in non-specialized interior applications (e.g., for wallboard, plaster, wood, metal doors and frames), and as anti-corrosive paints, shall meet the VOC and chemical component limitations of the Green Seal Standards GS-11 and GC-03 respectively. Product-specific environmental requirements are as follows.

3. Volatile Organic Compounds: The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by US Environmental Protection Agency (EPA) Reference Test Method 24.

a. Interior Coatings:

Non-flat	150 g/L
Flat	50 g/L

- 1) Calculation of VOC shall exclude water and tinting color added at the point of sale.

b. Anti-Corrosive:

Gloss	250 g/L
Semi-gloss	250 g/L
Flat	250 g/L

c. Chemical Component Limits:

- 1) Chemical Component Limitations - Aromatic Compounds: The product must contain no more than 1.0 percent by weight of the sum total of aromatic compounds. Testing for the concentration of these compounds shall be performed if they are determined to be present in the product during a materials audit.
  - 2) Chemical Component Limitations - Other Chemicals: The manufacturer shall demonstrate that the following chemical compounds are not used as ingredients in the manufacture of the product.
    - a) Halomethanes: methylene chloride
    - b) Chlorinated ethanes: 1,1,1-trichloroethane
    - c) Aromatic solvents: benzene, toluene (methylbenzene), ethylbenzene
    - d) Chlorinated ethylenes: vinyl chloride
    - e) Polynuclear aromatics: naphthalene
    - f) Chlorobenzenes: 1,2-dichlorobenzene
    - g) Phthalate esters: di (2-ethylhexyl) phthalate, butyl benzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, dimethyl phthalate
    - h) Miscellaneous semi-volatile organics: isophorone
    - i) Metals and their compounds: antimony, cadmium, hexavalent chromium, lead, mercury
    - j) Preservatives (antifouling agents): formaldehyde
    - k) Ketones: methyl ethyl ketone, methyl isobutyl ketone
    - l) Miscellaneous volatile organics: acrolein, acrylonitrile
4. Paints and other Architectural Coatings (Specialized Applications): Paints and other architectural coatings used in specialized interior applications (as defined below) shall meet the VOC limitations defined in Rule 1113, "Architectural Coatings" of SCAQMD, of the State of California. The VOC limits defined by SCAQMD, based on 6/9/06 amendments, are as follows. VOC limits are defined in grams per liter, less water and less exempt compounds.

COMPOUND	VOC LIMIT (g/L)
Bond Breakers	350
Clear Wood Finishes	275
- Varnish	275
- Sanding Sealers	275
- Lacquer	275
Clear Brushing Lacquer	275
Concrete-Curing Compounds	100
Dry-Fog Coatings	150
Fire-Proofing Exterior Coatings	350
Fire-Retardant Coatings	
- Clear	650
- Pigmented	350
Flats	50
Floor Coatings	50
Graphic Arts (Sign) Coatings	500
Industrial Maintenance (IM) Coatings	100
- High Temperature IM Coatings	420
- Zinc-Rich IM Primers	100
Japans/Faux Finishing Coatings	350
Low-solids Coatings	120
Magnesite Cement Coatings	450
Mastic Coatings	300
Metallic Pigmented Coatings	500
Multi-Color Coatings	250
Pigmented Lacquer	275
Pre-Treatment Wash Primers	420
Primers, Sealers, and Undercoaters	100
Quick-Dry Enamels	50
Quick-Dry Primers, Sealers, and Undercoaters	100
Recycled Coatings	250
Roof Coatings	50
Roof Coatings, Aluminum	100
Roof Primers, Bituminous	350
Rust Preventative Coatings	100
Shellac	
- Clear	730
- Pigmented	550
Specialty Primers	100
Stains	100
Stains, Interior	250
Swimming Pool Coatings	
- Repair	340
- Other	340
Traffic Coatings	100
Waterproofing Sealers	100
Waterproofing Concrete/Masonry	
- Sealers	100

Wood Preservatives	
- Below-Ground	350
- Other	350
Other Coating Types (not included in above)	250

- C. **Carpeting:** Carpeting and carpet tiles shall meet or surpass all criteria of the "Green Label Plus" Indoor Air Quality Test Program, and carpet cushion shall meet or surpass all criteria of the "Green Label" Indoor Air Quality Test Program, both established by the Carpet and Rug Institute (CRI). For carpet adhesives refer to 2.01 of this Section.
- D. **Urea-formaldehyde Free Composite Wood:** All composite wood, engineered wood, or agrifiber products used for interior applications (e.g., plywood, particleboard, medium density fiberboard) shall contain no added urea-formaldehyde resins. Acceptable resins and binders include, but are not limited to, phenol formaldehyde and methyl diisocyanate (MDI).

## 2.02 RECYCLED CONTENT

- A. The Work of this Contract includes a performance goal of using building materials with recycled content such that post-consumer recycled content plus one-half of post-industrial recycled content constitutes a minimum of 10 percent of the cost of materials used for the Work (SDG MEQ-4 and LEED credit MRc4).
1. The cost of post consumer recycled content plus one-half of post-industrial recycled content of an item shall be determined by dividing the weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by the total weight of the item and multiplying by the cost of the item.
  2. Mechanical and electrical components shall not be included in recycled content calculations.
  3. Recycled content of materials shall be defined according to the Federal Trade Commission's "Guide for the Use of Environmental Marketing Claims," 16 CFR 260.7 (e), Washington: USFTC, 1992.

## 2.03 REGIONAL MATERIALS

- A. The Work of this Contract includes a performance goal of using at minimum 20 percent of building materials (by cost) that are manufactured within 500 miles of the jobsite (SDG MEQ-5 and LEED credit MRc5.1).
- B. The Work of this Contract includes a performance goal of using at minimum 10 percent of total building materials (by cost), that are both manufactured AND extracted/harvested within 500 miles of the jobsite (LEED credit MRc5.2).

## 2.04 FSC-CERTIFIED WOOD MATERIALS

- A. The Work of this Contract includes a performance goal of using at minimum 50 percent of wood building materials (by cost, and whether permanently-installed or temporary) that are FSC chain-of-custody (COC) certified in accordance with the "FSC Principles and Criteria" for well-managed forests developed by the Forest Stewardship Council (FSC). (SDG MEQ-6 and LEED credit MRc7).

## PART 3 - EXECUTION

### 3.01 SUSTAINABLE DESIGN MANAGEMENT PLANS

- A. The Contractor shall implement and comply with the following written Plans in compliance with the requirements of the WTC Sustainable Design Guidelines (SDG) and LEED-NC criteria.
1. Construction Environment Plan
    - a. The Construction Environment Plan (CEP) shall be followed in accordance with the requirements of Guideline SEQ-5-P of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.
    - b. Vehicular emission reduction requirements, as described in Guidelines UEQ-8 of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects, shall be followed as part of the CEP.
    - c. The CEP shall be coordinated with the Contractor's Traffic Management Plan and the Environmental Performance Commitments (EPCs) as required by Division 1 – Chapter 1 GENERAL PROVISIONS of this Contract.
    - d. The Authority will provide the Plan.
  2. Construction Storm Water Runoff and Pollution Prevention Plan
    - a. The Construction Storm Water Runoff and Pollution Prevention Plan shall be followed in accordance with the requirements of Guideline SEQ-6-P of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.
    - b. Attachment B of this Section provides the typical content of this Plan for reference only. The Authority will provide the Plan.
  3. Construction Waste Management Plan
    - a. The Construction Waste Management Plan shall be followed in accordance with the requirements of Guideline MEQ-2-P of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.
    - b. Attachment C of this Section provides the typical content of this Plan for reference only. The Authority will provide the Plan.

4. Construction Indoor Air Quality (IAQ) Management Plan
  - a. The Construction Indoor Air Quality (IAQ) Management Plan shall be followed in accordance with the requirements of Guideline IEQ-5-P of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.
  - b. Attachment D of this Section provides the typical content of this Plan for reference only. The Authority will provide the Plan.
  
- B. The Contractor shall implement where required, the following plans required for the Work of this Contract:
  1. Sustainable Design Guidelines (SDG) Commissioning Plan: The Contractor shall coordinate with the Engineer, or other relevant party as directed by the Engineer that has responsibility for developing the SDG Commissioning Plan, to implement all construction-related activities, including, but not limited to the tasks required in the Construction and Acceptance Phases, in accordance with Guideline EEQ-2 of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.
  2. Integrated Pest Control Management Plan: The Contractor shall coordinate with the Engineer, or other relevant party as directed by the Engineer that has responsibility for authoring the Integrated Pest Control Management Plan, to develop and implement the construction-related requirements of this Plan in accordance with the requirements of Guideline IEQ-9 of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.
  3. Materials Management Plan: The Contractor shall coordinate with the Engineer to implement the construction phase of the Materials Management Plan, including the documentation of material flow during construction, in accordance with Guideline MEQ-1 of the Sustainable Design Guidelines Reference Manual for WTC Redevelopment Projects.

### 3.02 SUSTAINABLE DESIGN GUIDELINES COMMISSIONING REQUIREMENTS

- A. Sustainable Design Guidelines Commissioning Requirements is part of the Work of this Contract and shall be undertaken in accordance with the requirements of Attachment F.
- B. In case of a discrepancy between the requirements of Attachment F and the Contract Documents, the more stringent requirements shall be followed.

**END OF SECTION**

# Section 01352- Attachment A: SUSTAINABLE DESIGN MATERIALS CERTIFICATION FORM (SDMCF)

CONTRACTOR: \_\_\_\_\_

SPEC SECTION(S): \_\_\_\_\_

CONTACT NAME: \_\_\_\_\_

TEL. NO: \_\_\_\_\_

SUBMITTAL NO: \_\_\_\_\_

WORK PACKAGE NUMBER AND TITLE: \_\_\_\_\_

Product	Vendor or Manufacturer	Total Installed COST	Material COST (excluding labor, equipment, overhead and profit)	Percentage Recycled Content (by weight)		Percent (by weight) Manufactured w/in 500 miles? <sup>3</sup>	Percent (by weight) Raw Materials extracted w/in 500 miles? <sup>4</sup>	For wood products Percent (by weight) FSC certified? <sup>5</sup>	VOC Content (for adhesives, sealants, & arch. coatings) <sup>6</sup>
				% post consumer <sup>1</sup>	% post industrial <sup>2</sup>				
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

**NOTES / DEFINITIONS:**

1. *Post-Consumer Recycled Content:* Portion of material or product which derives from discarded consumer waste that has been recovered for use as a raw material (e.g., plastic bottles, newspaper)
2. *Post-Industrial Recycled Content:* Portion of material or product which derives from recovered industrial and mfg. materials that are diverted from municipal solid waste for use in a *different* mfg. process, prior to use by a consumer (e.g., fly-ash in concrete or synthetic gypsum board, both of which are by-products of coal-burning power plants). Spills and scraps from the original mfg. process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product do not qualify.
3. *Manufactured:* Final assembly of components into the building product that is furnished and installed by trades (e.g., if the hardware comes from Dallas, TX, the lumber from Keene, NH, and the joist is assembled in Kent, WA; then the location of final assembly is Kent, WA).
4. *Raw Materials:* Virgin or recovered resources from which the product's components are made (i.e., before processing or manufacturing).
5. *FSC Certified:* Wood-based products which are certified by the Forest Stewardship Council and carry a Chain-of-Custody certificate number from the vendor or manufacturer.
6. *VOC Content:* The quantity of volatile organic compounds contained in products such as adhesives, sealants and architectural coatings. VOC content is to be reported in grams/liter or lbs/gallon.

**CONTRACTOR CERTIFICATION:**

I, 101 \_\_\_\_\_ a duly authorized representative of \_\_\_\_\_ hereby certify that the information contained herein accurately represents the listed "green building" characteristics of the materials to be provided by our company as components of the building construction. Furthermore, I understand that any change in such "green building" material characteristics during the purchasing and/or installation period will require prior written approval from the Construction Manager and Owner.

SIGNATURE OF AUTHORIZED REPRESENTATIVE: \_\_\_\_\_

DATE: \_\_\_\_\_

p. \_\_\_\_\_ of \_\_\_\_\_

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**SECTION 01352 – ATTACHMENT B**  
**CONSTRUCTION STORM WATER RUNOFF AND POLLUTION PREVENTION PLAN**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This Section describes the requirements for the development of a Construction Storm Water Runoff and Pollution Prevention Plan (“the Plan”). The Contractor shall develop the Plan. The Plan shall be implemented throughout the duration of the Work of this Contract under the direction of the Contractor, and shall be documented as outlined in the “Submittals” of this Attachment. The Plan shall be included as part of the Contract’s Sustainable Design Requirements.
- B. General Requirements:
1. Work of this Section shall conform to the requirements of the General Conditions of the Contract, Division 1 and the Sustainable Design Guidelines for WTC Redevelopment Projects (Guidelines SEQ-6).
- C. Definitions (for Attachment B only):
1. Controls: Measures employed to minimize erosion and sedimentation.
  2. Erosion: A natural process involving water, wind or ice that results in the loosening and removal of soil and rock. In “man-made erosion,” human activities, such as site disturbance, accelerate the natural process.
  3. On-site pollution: Sources of site pollution include, but are not limited to, oil dripping from vehicles, improperly disposed of material scraps and delivery wrapping, concrete washwater, wind blown dust and debris resulting from construction activities, unsecured stock-piled sand and soil and other powdered materials, and lunch trash from workers on the site.
  4. Construction Storm Water Runoff and Pollution Prevention Plan: An overall sedimentation and erosion control program, covering all construction and demolition related activities on site, with the goals of minimizing on-site soil erosion, sedimentation of surrounding storm drains and water bodies, and migration of dirt and dust from the site. The Plan, including its requirements and content, shall be synonymous with a “Sediment and Erosion Plan”, as prescribed by LEED.
  5. Sedimentation: A natural process involving water, wind or ice that results in the deposit of soil and rock. Sedimentation of storm drains limits the passage of water through the drain, potentially causing backflow and street flooding.

## 1.02 DESIGN AND PERFORMANCE REQUIREMENTS

- A. Construction Storm Water Runoff and Pollution Prevention Plan Requirements
1. The Authority has established that the Work of this Contract shall implement measures to minimize soil erosion, sedimentation of surrounding storm drains, pollution of stormwater runoff leaving the site, and the migration of dust and dirt from the site to surrounding streets and buildings.
  2. The Contractor shall be responsible for the development, implementation, coordination and oversight of the Construction Storm Water Runoff and Pollution Prevention Plan in accordance with SDG Guideline SEQ-6. The Plan shall be submitted to the Engineer for approval. The Plan shall contain at a minimum the following:
    - a. An evaluation of the site and initial plan development including the following:
      - 1) Collection of site information
        - a) Measure the Site Area.
        - b) Determine the Drainage Areas.
        - c) Existing Runoff Water Quality- Include this information only if it has already been analyzed, if information is available from an adjacent site or if information is available from the state or local government.
        - d) Location of Surface Waters- Include location of rivers and bays adjacent to the site.
        - e) Name of Receiving Water- Name the body (or bodies) of water that is receiving the runoff water and indicated whether it goes through the municipal water system or discharges directly.
      - 2) Development of Site Plan Design
      - 3) Calculate the Runoff Coefficient- the total rainfall that will appear as runoff expressed as a fraction. Calculate for each material covering the site.
      - 4) Preparation of the Pollution Prevention Site Map- Indicate the location of surface waters, slopes after grading, disturbed areas and drainage patterns/discharge points.
    - b. An analysis of the construction activities during each phase of the Work, relative to the objectives of the Construction Storm Water Runoff and Pollution Prevention Plan. The Contractor shall identify possible causes of erosion, sedimentation, site pollution, and dirt and dust migration from the site. Likely causes include, but are not limited to, the following:
      - 1) Excavation and transportation of soil from site
      - 2) Dewatering
      - 3) Concrete mixing, placement, and rinsing
      - 4) Transportation of materials entering and exiting the site
      - 5) Improper disposal of waste generated by construction activities, including packaging from products and materials
      - 6) Wind erosion of stock-piled sand, soils and other powdered materials
    - c. An analysis of New York City and State requirements related to dewatering, erosion and sedimentation to which all trade contractors must comply.
    - d. An analysis of the possible use of collected stormwater for dewatering, vehicle washing, dust suppression, and other related construction activities.

- e. The list of control measures which will be installed on site by designated trade contractors to address each cause of erosion, sedimentation, site pollution, and dirt and dust migration identified, and all applicable State and City requirements. Likely control measures include, but are not limited to, the following:
- 1) Installation of a construction fence with wind screen around site.
  - 2) During demolition, breaking up of existing ground floor slabs (except those slabs identified as historic and archeological resources in accordance with Division 1, Chapter 1 – General Provisions, Section 115) to allow drainage into soil below, and wetting of demolition debris to minimize dust generation.
  - 3) During excavation, soil retaining measures and continuous sheeting to stabilize areas of earth excavation around the perimeter of the site.
  - 4) Removal of demolition materials and excavated soil from site on a timely basis and in covered trucks.
  - 5) Controlled watering of the site on an as-needed basis throughout construction to suppress dust.
  - 6) Collection of sediment from pumped ground water by sediment trap or filtration tank.
  - 7) Control and containment of all runoff resulting from rainwater on the site, by curbs and other barriers, such that no runoff leaves the site without having passed through the sediment trap or filtration tank.
  - 8) Protection of storm drains and catch basins from sedimentation with filter fabric, gravel and mesh filters, and straw bale stops firmly anchored in the path of any runoff streams within the street.
  - 9) Cleaning of concrete from transit mix trucks and finishing tools with minimal water in delineated washout area(s). Excess concrete shall be collected in a box and removed from the site by the trade contractor as necessary. Excess water from concrete washout shall not leave the site.
  - 10) Rinsing of trucks, as needed, in delineated truck rinsing area(s) before they leave the site. Sediment shall be prevented from entering the storm sewer by protection of the storm sewer or capturing rinse water in filtration tank(s). The establishment of a truck rinsing area for use by multiple trades shall be coordinated by the Construction Manager.
  - 11) General housekeeping measures including protection of materials stored on site from moisture, construction dust, wind, and damage. The Engineer shall designate storage locations on site to protect materials and prevent contamination of surrounding sites.
  - 12) Proper disposal of all product and material packaging, in accordance with the requirements of this Section.
  - 13) Proper disposal of Construction Site Waste.
  - 14) Compliance with Applicable State or local waste disposal.
  - 15) Compliance with Applicable State or local sanitary sewer or septic system regulations.
  - 16) Control Offsite Vehicle Tracking.
  - 17) Control of Allowable Non-Storm Water Discharges.
- f. A list of procedures, and when they will be employed relative to the sequence of construction activities, for installing, inspecting, and maintaining controls.
- g. Inspection and maintenance of controls- Inspect every 7 days or within 24 hours of a rainfall event of more than ½”.

3. The Contractor shall oversee, coordinate, document, and enforce the installation of all control measures and maintenance activities on site. The Contractor shall develop a "Sequence of Major Construction Activities" document which identifies and coordinates the control measures to be used throughout each major construction activity. The document will be reviewed with each subcontractor prior to the start-up of their work and at regular site meetings.
4. The Contractor shall assemble (from all subcontractors) all drawings, permits, or other documentation related to the control measures implemented, and shall photograph applicable control measures at regular intervals throughout the construction process for documentation purposes. The Contractor shall also keep a log of all ongoing activities. (See 1.07 SUBMITTALS of this attachment)
5. *The Contractor shall coordinate with all subcontractors and materialmen regarding their responsibilities under the Plan, including installation, maintenance, and documentation of control measures and submission of any applicable permits. In addition, the Contractor shall instruct personnel, materialmen, subcontractors, and other individuals working within their scope of work to ensure compliance with the Plan requirements. The Contractor shall be responsible for the compliance of all vehicles entering and leaving the site, including the vehicles of all subcontractors and materialmen. The Contractor shall be held responsible for necessary corrective actions, at the direction of the Engineer, for all subcontractors and materialmen who do not comply with the requirements of the Plan.*
6. The Contractor shall comply with the requirements of the Plan and shall be held responsible for all necessary corrective actions, at the direction of the Engineer, at no additional cost to the Authority.

### 1.03 RELATED SECTIONS

- A. Not used.

### 1.04 REFERENCES

- A. Internet web addresses are provided for information only. Web addresses are subject to change. The Authority makes no guarantee that the links listed are up-to-date or will remain valid throughout the duration of the Work.
- B. State of New York: New York State Guidelines for Urban Erosion and Sediment Control <http://www.dec.state.ny.us/website/dow/toolbox/bluebook/bluebook.html>
- C. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Prepared by Croxton Collaborative Architects, P.C. for the LMDC, PANYNJ, and NYSERDA, 25 March 2005. Reference Manual available from: [http://www.renewnyc.com/plan\\_des\\_dev/design\\_guidelines\\_manual.asp](http://www.renewnyc.com/plan_des_dev/design_guidelines_manual.asp)
- D. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Errata Sheet, 27 August, 2006.

- E. United States Environmental Protection Agency (EPA), Chapter 3, "Sediment and Erosion Control" of Environmental Protection Agency (EPA) document No. 832-R-92-005, Storm Water Management for Construction Activities, September 1992.  
[www.epa.gov/npdes/pubs/chap03\\_conguide.pdf](http://www.epa.gov/npdes/pubs/chap03_conguide.pdf)

#### 1.05 QUALITY ASSURANCE

- A. In accordance with this Section.

#### 1.06 SUSTAINABLE DESIGN REQUIREMENTS

- A. In accordance with this Section.

#### 1.07 SUBMITTALS

- A. All submittals shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 – GENERAL PROVISIONS. The Contractor shall submit to the Authority the following documentation, as verification of Construction Storm Water Runoff and Pollution Prevention Plan implementation:
1. A copy of the LEED Accredited Professional certificate(s) shall be submitted to the Engineer prior to the first submittal to confirm the LEED Accredited Professional qualification of the individual(s) responsible for preparing the submittals.
  2. A copy of the draft and final versions of the Project Construction Storm Water Runoff and Pollution Prevention Plan, as defined in this Attachment and meeting the requirements of SDG SEQ-6-P.
  3. Site drawing, indicating the location where control measures will be installed or established.
  4. Drawings, permits or other documentation related to the control measures implemented, including construction details for individual control measures.
  5. Monthly Construction Storm Water Runoff and Pollution Prevention Management Reports, containing the following information:
    - a. Project Title, Port Authority Contract Number and Work Package Number, name of company completing report, and dates of period covered by the report.
    - b. Photographs that document the implementation of the Construction Storm Water Runoff and Pollution Prevention Plan throughout the course of the construction and demolition. Photographs shall include integral date stamping, and shall be submitted with brief descriptions, or be referenced to project meeting minutes or similar project documents.
    - c. Meeting minutes, checklists, worksheets, notifications of deficiencies and resolution logs, etc. related to erosion and sedimentation control.
    - d. Documentation and log of ongoing activities.

**PART 2 - PRODUCTS (Not used)**

**PART 3 - EXECUTION**

**3.01 PLAN IMPLEMENTATION AND COORDINATION**

- A. The Contractor shall be responsible for implementation of the Construction Storm Water Runoff and Pollution Prevention Plan, and for the coordination of the Plan with affected trades. The Contractor shall designate one LEED Accredited Professional as the Construction Storm Water Runoff and Pollution Prevention Representative, who will be responsible for communicating the progress of the Plan to the Authority on a regular basis, and for assembling the required Sustainable Design documentation. The Contractor shall include provisions in the Construction Storm Water Runoff and Pollution Prevention Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.
  
- B. The Contractor shall ensure that all subcontractors are responsible for the implementation of specific control measures, as specified in the Construction Storm Water Runoff and Pollution Prevention Plan. Subcontractors shall coordinate their responsibilities through the Contractor's designated Construction Storm Water Runoff and Pollution Prevention Representative.

**END OF ATTACHMENT B**

**SECTION 01352 – ATTACHMENT C**  
**CONSTRUCTION WASTE MANAGEMENT PLAN**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This Section describes the requirements for the development of a Construction Waste Management Plan (“the Plan”). The Contractor shall develop the Plan. The Plan shall be implemented throughout the duration of the Work of this Contract under the direction of the Contractor, and shall be documented as outlined in the “Submittals” Section of this Attachment. The Plan shall be included as part of this Contract’s Sustainable Design Requirements.
- B. General Requirements:
1. Work of this Section shall conform to the requirements of the General Conditions of the Contract, Division 1 and the Sustainable Design Guidelines for WTC Redevelopment Projects (Guideline MEQ-2).
- C. Definitions (for Attachment C only):
1. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk or the like.
  2. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash debris and rubble resulting from construction, remodeling repair and demolition operations.
  3. Diversion from Landfill: To remove, or have removed, from the Site for recycling, reuse or salvage, material that might otherwise be sent to a landfill. Diversion from landfill does not include using the material as alternative daily cover at a landfill site, nor does it include burning, incinerating or thermally destroying waste.
  4. Plan: The combined elements of the Contractors Waste Management Plan, including subcontractors and materialmen, when combined with the overall program of waste removal and recycling of material from the Site, which has been integrated into a single Construction Waste Management Plan.
  5. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product.
  6. Recycle (recycling): To sort, separate, process, treat or reconstitute solid waste and other discarded materials for the purpose of redirecting such materials into the manufacture of useful products. Recycling does not include salvage, burning, incinerating or thermally destroying waste.
  7. Return: To give back reusable items or unused products to materialmen or manufacturers.

8. Reuse: To reuse or install previously used building materials or products, with only minor refinishing or refurbishment, in either their original context or as decorative elements and memorabilia.
9. Salvage: To remove a waste material from the Site for resale or reuse.
10. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable and reusable material.
11. Construction Waste Management Plan: A project-related plan for the collection, transportation and disposal of waste generated at the Site. The purpose of the Plan is to ultimately reduce the amount of material becoming landfill. These individual subcontractor and materialmen plans will together form the basis for a single, integrated Project Construction Waste Management Plan, as prepared by the Contractor.

## 1.02 DESIGN AND PERFORMANCE REQUIREMENTS

### A. Construction Waste Management Plan Requirements:

1. The Authority has established that the Work of this Contract shall implement measures to minimize the generation of waste and that processes will be employed to ensure that as little waste as possible is produced. Of the waste generated, as much of the waste materials as economically feasible shall be reused, salvaged or recycled. Waste disposals in landfills shall be minimized.
2. The Contractor shall implement, coordinate, and provide oversight of the Construction Waste Management Plan in accordance with SDG Guideline MEQ-2 (both required and optional components). The Plan shall be submitted to the Engineer for approval. The Plan shall contain at a minimum the following:
  - a. Identify a minimum 75 percent of total demolition and construction waste (by weight) resulting from the Work of this Contract to be diverted from landfills. The Contractor shall include, but not be limited to:
    - 1) Land clearing debris, rock and dirt;
    - 2) Concrete;
    - 3) Bricks;
    - 4) Concrete masonry units (CMU);
    - 5) Asphalt;
    - 6) Metals (e.g. banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, brass, bronze);
    - 7) Cardboard, packaging;
    - 8) Reuse items indicated on the Drawings and/or elsewhere in the Specification;
    - 9) Clean dimensional wood;
    - 10) Asphalt shingles or roofing;
    - 11) Drywall;
    - 12) Carpet and pad;
    - 13) Ceiling tiles;
    - 14) Glass.

- b. Recycle fluorescent lamps, HID lamps and mercury-containing thermostats removed from the Site.
  - c. Identify methods to divert biodegradable waste (source separation should be required).
  - d. Include off-site opportunities to recycle and reuse removed material in the Plan. Due to the nature and location of the Site, recycling on-site shall not be allowed. Proper on-site protection, handling procedures, and methods of hauling/transport of waste shall be outlined in the Plan.
  - e. Provide an itemized list of on-site and off-site reuse potentials for demolition and construction wastes in the Plan.
  - f. Estimate the total proposed Site waste to be generated, including material types and quantities.
  - g. Propose alternatives to landfilling: A list of each material proposed to be salvaged, reused, or recycled during the course of the Work of this Contract, the proposed destination for each material, and the projected amount by weight.
  - h. Specify materials handling procedures. A description of the means by which waste materials identified in item (h) above will be protected from contamination, hauled to off-site recycling facilities and/or transfer stations, 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.
  - i. Estimate comparative cost if materials had been landfilled instead of recycled: include tipping fees avoided, revenues from material recycling, transportation and handling costs, etc.
  - j. List all documentation to be provided in Monthly Management Reports.
  - k. Identify how Monthly Reports will be presented to the Authority.
3. The Contractor shall keep a log of all ongoing activities. (See 1.07 SUBMITTALS of this Attachment)
  4. The Contractor shall coordinate with all subcontractors regarding their responsibilities under the Plan. In addition, the Contractor shall instruct personnel, materialmen, subcontractors, and other individuals working within their scope of work to ensure compliance with the Plan requirements. The Contractor shall be responsible for all subcontractors and materialmen who do not comply with the requirements of the Plan. The Contractor shall be responsible for all corrective actions required for any non-compliance, as directed by the Engineer, at no additional cost to the Authority.
  5. The Contractor shall comply with the requirements of the Plan and shall be held responsible for necessary corrective actions at the direction of the Engineer at no additional cost to the Authority.

### 1.03 RELATED SECTIONS

- A. Not used.

## 1.04 REFERENCES

- A. Internet web addresses are provided for information only. Web addresses are subject to change. The Authority makes no guarantee that the links listed are up-to-date or will remain valid throughout the duration of the Work.
- B. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Prepared by Croxton Collaborative Architects, P.C. for the LMDC, PANYNJ, and NYSERDA, 25 March 2005. Reference Manual available at:  
[http://www.renewnyc.com/plan\\_des\\_dev/design\\_guidelines\\_manual.asp](http://www.renewnyc.com/plan_des_dev/design_guidelines_manual.asp)
- C. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Errata Sheet, 27 August, 2006.
- D. The Authority encourages its contractors to seek information from websites and experts in salvaging or recycling in order to minimize disposal costs. There are numerous opportunities to sell or donate salvaged materials and accrue tax benefits (which would accrue to the Contractor). Also, there are outlets that will pick up, and in some cases buy, recyclable materials. Information resources are as follows:
1. New York Wa\$teMatch: [www.wastematch.org](http://www.wastematch.org)
  2. New York City Department of Design and Construction's (DDC) Office of Sustainable Design: <http://www.nyc.gov/html/ddc/html/ddcgreen/home.html>
    - a. Manual on Construction and Demolition Waste Reduction and Recycling
    - b. List of local recycling processors (provided for information only, other haulers and markets are acceptable).
    - c. Sample Waste Management Plan
    - d. Internet resources.
  3. United States Green Building Council: [www.usgbc.org](http://www.usgbc.org)
  4. United States Environmental Protection Agency:  
<http://www.epa.gov/epaoswer/non-hw/debris-new/index.htm>

## 1.05 QUALITY ASSURANCE

- A. In accordance with this Section.

## 1.06 SUSTAINABLE DESIGN REQUIREMENTS

- A. In accordance with this Section.

## 1.07 SUBMITTALS

- A. All submittals shall be in accordance with the requirements of "Shop Drawings, catalog Cuts and Samples" of Division 1 – GENERAL PROVISIONS. Submit to the Engineer the following documentation, as verification of Construction Waste Management Plan implementation:
1. A copy of the LEED Accredited Professional certificate(s) shall be submitted to the Engineer prior to the first submittal to confirm the LEED Accredited Professional qualification of the individual(s) responsible for preparing the submittals.
  2. A copy of the draft and final versions of the Construction Waste Management Plan, as defined herein and meeting the requirements of SDG MEQ-2-P.
  3. Monthly Waste Management Reports containing the following information:
    - a. Project Title, Port Authority Contract Number and Work Package Number, name of company completing report, and dates of period covered by the report.
    - b. Report on the disposal of site waste, including:
      - 1) Recycled materials. For each material, provide the following:
        - a) Amount (in tons);
        - b) Dates removed from the Site;
        - c) Receiving Party.
      - 2) Reused or salvaged materials. For each material, provide the following:
        - a) Amount (in tons);
        - b) Description of intended or actual use.
      - 3) Landfilled materials. Provide the following:
        - a) Amount (in tons);
        - b) Dates removed from the Site;
        - c) Identity of the transfer station or landfill.
    - c. Include legible copies of on-site logs, weight tickets and receipts. Receipts shall be from recycling and/or disposal site operators who can legally accept the materials for the purpose of reuse, recycling or disposal. If mixed construction and demolition waste is sorted off-site, provide tickets detailing the waste recycled and/or landfilled, or a letter from the processor stating the percentage of mixed construction and demolition waste recycled for the Work of this Contract.
  4. Final Report:
    - a. As a condition for issuance of Certificate of Final Completion, submit:
      - 1) Based on monthly Progress Reports submit a Final Report at the end of construction that summarizes demolition and construction material totals, diversion totals. Contractor shall save such original documents (as above) for three years from the date of issuance of Certificate of Final Completion.
      - 2) Submit overall figure of cost or net savings realized from all alternative strategies to landfilling the waste.

**PART 2 - PRODUCTS (not used)**

**PART 3 - EXECUTION**

**3.01 PLAN IMPLEMENTATION AND COORDINATION**

- A. The Contractor shall be responsible for implementation of the Construction Waste Management Plan, and for the coordination of the Plan with all affected trades. The Contractor shall designate one LEED Accredited Professional as the Construction Waste Management Representative, who will be responsible for communicating the progress of the Plan to the Authority on a regular basis, and for assembling the required Sustainable Design documentation. The Contractor shall include provisions in the Construction Waste Management Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.
  
- B. The Contractor shall ensure that all subcontractors be responsible for the implementation of specific control measures, as specified in the Construction Waste Management Plan. The Contractor shall coordinate all subcontractor responsibilities.

**END OF ATTACHMENT C**

**SECTION 01352 – ATTACHMENT D**  
**CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT PLAN**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. This Section describes the requirements for the development of a Construction Indoor Air Quality (IAQ) Management Plan ("the Plan"). The Contractor shall develop the Plan. The Plan shall be implemented throughout the duration of the Work of this Contract under the direction of the Contractor, and shall be documented as outlined in the "Submittals" Section of this Attachment. The Plan is included as part of this Contract's Sustainable Design Requirements.
- B. General Requirements:
1. Work of this Section shall conform to the requirements of the General Conditions of the Contract, Division 1 and the Sustainable Design Guidelines for WTC Redevelopment Projects (Guideline IEQ-5).
- C. Definitions (for Attachment D only):
1. Type 1 Materials: Materials and finishes that act as sources of VOC or particulate contamination. Type 1 materials can include "wet" products, such as paints, sealants, adhesives, caulks, sealers and fireproofing materials as well as "dry" products such flooring coverings with plasticizers, and engineered wood with formaldehyde.
  2. Type 2 Materials: Materials and finishes which are woven, fibrous, or porous in nature, and tend to absorb chemicals or particulates released by Type 1 materials. Examples include textiles, carpeting, insulation, acoustical ceiling tiles and gypsum board. Type 2 materials can become "sinks" for deleterious substances which may be released much later, or collectors of contaminants that may promote subsequent bacterial growth.
  3. VOC: Volatile Organic Compound (VOC) content of the adhesive, sealant, paint, or coating products. VOC content is to be reported in grams/liter or lbs./gallon.

1.02 DESIGN AND PERFORMANCE REQUIREMENTS

- A. Construction Indoor Air Quality (IAQ) Management Plan Requirements:
1. The Authority has established that the Work of this Contract shall implement measures to prevent indoor air quality problems resulting from the construction process and to sustain the comfort and well-being of construction workers and building occupants.
  2. The Contractor shall be responsible for the development, implementation, coordination and oversight of the Construction IAQ Management Plan in

accordance with SDG Guideline IEQ-5 (both required and optional components). The Plan shall be submitted to the Engineer for approval. The Plan shall contain at a minimum the following:

- a. Construction activities shall be planned to meet or exceed the standards included in Chapter 3 of the Sheet Metal and Air Conditioning National Contractors' Association (SMACNA) "IAQ Guidelines for Occupied Buildings under Construction," First Edition, 1995. This chapter outlines IAQ measures in five major categories, as listed herein. The Construction IAQ Management Plan shall be organized in accordance with the SMACNA format, and shall address measures to be implemented by the Contractor and all sub-contractors in each of the five categories (including subsections shown below). Items that do not relate to the Work of this Contract should be listed as "Not Applicable".

<p><b>HVAC Protection:</b></p> <ul style="list-style-type: none"> <li>• Return Side</li> <li>• Central Filtration</li> <li>• Supply Side</li> <li>• Duct Cleaning</li> </ul>
<p><b>Source Control: Product Substitution:</b></p> <ul style="list-style-type: none"> <li>• Modifying Equipment Operation</li> <li>• Changing Work Practices</li> <li>• Local Exhaust</li> <li>• Air Cleaning</li> <li>• Cover or Seal</li> </ul>
<p><b>Pathway Interruption:</b></p> <ul style="list-style-type: none"> <li>• Depressurize the Work Area</li> <li>• Pressurize Occupied Space</li> <li>• Erect Barriers to Contain Construction Areas</li> <li>• Relocate Pollutant Sources</li> <li>• Temporarily Seal the Building</li> </ul>
<p><b>Housekeeping:</b></p> <ul style="list-style-type: none"> <li>• Routine Jobsite Cleaning</li> <li>• Protection of Stored Materials</li> <li>• Protection of Materials During and After Installation</li> </ul>
<p><b>Scheduling:</b></p> <ul style="list-style-type: none"> <li>• Airing-out of New Materials</li> <li>• Sequencing of Finish Applications</li> <li>• Proper Curing of Concrete before Covering</li> <li>• Installation during Unoccupied Periods</li> </ul>

- b. Protection of Materials from Moisture Damage: As part of the 'Housekeeping' section of the Construction IAQ Management Plan, measures to prevent stored or installed absorptive materials (Type 2) from moisture damage shall be described. This Section shall also describe measures to be taken if moisture damage does occur to absorptive materials during the course of construction.
- c. Installation and Replacement of Filtration Media: Under the 'HVAC Protection' section of the Construction IAQ Management Plan, a description of the filtration media in ventilation equipment shall be provided. The description shall include replacement criteria for filtration

media during construction, and confirmation of filtration media replacement for equipment, immediately prior to occupancy. Filtration media shall meet the requirements of Item 2.01 (Filtration Media) of this Section.

- d. Sequence of Finish Applications for Materials: Absorptive materials (referred to herein as "Type 2" products) shall be installed after the installation of materials or finishes which have high short-term emissions of VOC's, formaldehyde, particulates, or other air-borne compounds (referred to herein as Type 1 Products). Absorptive materials include, but are not limited to: carpets; acoustical ceiling panels; fabric wall coverings; insulation (exposed to the air stream); upholstered furnishings; and other woven, fibrous or porous materials. Materials with high short-term emissions include, but are not limited to: adhesives, sealants and glazing compounds (specifically those with petrochemical vehicles or carriers); paints, wood preservatives and finishes; control and/or expansion joint fillers; hard finishes requiring adhesive installation; gypsum board (with associated finish processes and products); and composite or engineered wood products with formaldehyde binders. The Contractor shall develop a sequencing schedule that identifies how the sequencing will occur for the project. The schedule shall be submitted to the Engineer in accordance with the Submittal Requirements specified herein.
- e. Ventilation during installation of materials and finishes: 100 percent outside air shall be provided during the installation of materials and finishes, beginning after the building or applicable portion of Work is substantially enclosed. If building HVAC systems are used to supply the ventilation air, filtration media shall be installed per the requirements of Item 2.01 (Filtration Media) of this Section.
- f. Flush-out / Air Purging: Flush out must be conducted on every floor (or applicable portion of Work) immediately prior to initial occupancy, based on the following parameters:
  - 1) Air-flow rate: Minimum air-flow shall be provided as follows, for the duration of the flush-out period:
    - a) When outside air temperatures are between 55 and 85 degrees F., and the relative humidity between 30 and 60 percent, 100 percent outside air is provided at a minimum of 50 percent of the full airflow rate of the fan during typical operating conditions.
    - b) When outside air temperatures and relative humidity are outside the ranges specified in the paragraph directly above, 100 percent outside air is provided at a minimum of 25 percent of the full airflow rate of the fan during typical operating conditions.
  - 2) Duration: The minimum duration of the flush-out period shall be the greater of the following:
    - a) Time required for delivery of a total air volume of 14,000 cu. ft. per sq. ft. of floor area
    - b) Seven consecutive days
  - 3) Thermal Conditions: Internal temperature must be maintained at a minimum of 60 degrees Fahrenheit and relative humidity of no higher than 60 percent.

- 4) The ventilation system must be capable of replacing 100 percent of the air on any floor, on a minimum of two floors at a time, or as applicable to the portion of the Work, as required by the New York State Green Building Tax Credit.
  - 5) Scheduling: It is the Contractor's responsibility to coordinate the scheduling and sequencing of the building flush-out with the Engineer. Scheduling and sequencing shall be addressed and incorporated into the Construction Manager's Construction IAQ Management Plan.
    - a) Building flush-out must be conducted immediately prior to issuance of a Certificate of Partial Completion.
    - b) Regardless of the duration as determined above, the flush-out must be scheduled so that it concludes a minimum of two weeks after issuance of a Certificate of Partial Completion, as required by LEED-NC, v2.1.
- g. Indoor Air Quality (IAQ) Testing
- 1) IAQ Testing shall be performed in accordance with the requirements of the New York State Green Building Tax Credit (GBTC), section 638.7(d) "Indoor Air Quality", sub-section (1) "Indoor Air Quality Testing".
    - a) Testing shall be conducted no later than 30 days after issuance of Certificate of Partial Completion, and subsequently on an annual basis for five years. The testing entity shall be hired directly by the Authority.
    - b) The Contractor shall be responsible for coordination of all IAQ testing and flush-outs required by the New York State Green Building Tax Credit during the duration of this Contract.
    - c) See Attachment E for requirements of the New York State Green Building Tax Credit (GBTC), section 638.7(d) "Indoor Air Quality", sub-section (1) "Indoor Air Quality Testing"
  - h. The Contractor shall confirm that all air filters, casings, coils, fans, and ducts are clean before testing-adjusting-balancing (TAB) and air quality testing. Permanent air supply ducts must be inspected and/or cleaned to comply with the minimum requirements of "General Specifications for the Cleaning of HVAC Systems" published by the National Air Duct Cleaning Association.
3. The Contractor shall oversee, coordinate, document, and enforce the installation of all control measures and maintenance activities on site. The Contractor shall develop a "Sequence of Major Construction Activities" document which identifies and coordinates the control measures to be used throughout each major construction activity. The document will be reviewed with all subcontractors prior to the start-up of their work.
  4. The Contractor shall assemble (from all subcontractors) all drawings, or other documentation related to the control measures implemented, and shall photograph and date applicable control measures at regular intervals throughout the construction process for documentation purposes. The Contractor shall also

keep a log of all ongoing maintenance activities. (See 1.07 SUBMITTALS of this Attachment)

5. The Contractor shall ensure that all subcontractors coordinate with the Contractor regarding their responsibilities under the Plan, including installation, maintenance, and documentation of control measures. In addition, the Contractor shall instruct all personnel, materialmen, subcontractors, and other individuals working within their scope of work to ensure compliance with the Plan requirements. The Contractor shall be held responsible for all Contractor's personnel, materialmen and subcontractors who do not comply with the requirements of the Plan. In the event of any non-compliance with the Plan, the Contractor shall make all corrective actions, as directed by the Engineer, at no additional cost to the Authority.
6. The Contractor shall comply with the requirements of the Plan and shall be held responsible for necessary corrective actions at the direction of the Engineer at no additional cost to the Authority.

#### 1.03 RELATED SECTIONS

- A. Not used.

#### 1.04 REFERENCES

- A. Internet web addresses are provided for information only. Web addresses are subject to change. The Authority makes no guarantee that the links listed are up-to-date or will remain valid throughout the duration of the Work.
- B. ANSI/ASHRAE 52.2-1999, "Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size", [www.ashrae.org](http://www.ashrae.org)
- C. Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), "IAQ Guidelines for Occupied Buildings under Construction", First Edition, November 1995, [www.smacna.org](http://www.smacna.org)
- D. State of New York, New York State Green Building Tax Credit (GBTC), section 638.7(d) "Indoor Air Quality", sub-section (1) "Indoor Air Quality Testing", <http://www.dec.state.ny.us/website/ppu/grnbldg/index.html>
- E. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Prepared by Croxton Collaborative Architects, P.C. for the LMDC, PANYNJ, and NYSERDA, 25 March 2005. Reference Manual available at: [http://www.renewnyc.com/plan\\_des\\_dev/design\\_guidelines\\_manual.asp](http://www.renewnyc.com/plan_des_dev/design_guidelines_manual.asp)
- F. Sustainable Design Guidelines for WTC Redevelopment Projects (SDG): Errata Sheet, 27 August, 2006.

## 1.05 QUALITY ASSURANCE

- A. In accordance with this Section.

## 1.06 SUSTAINABLE DESIGN REQUIREMENTS

- A. In accordance with this Section.

## 1.07 SUBMITTALS

- A. All submittals shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 – GENERAL PROVISIONS. Submit to the Engineer the following documentation, as verification of Construction IAQ Management Plan implementation:
1. A copy of the LEED Accredited Professional certificate(s) shall be submitted to the Engineer prior to the first submittal to confirm the LEED Accredited Professional qualification of the individual(s) responsible for preparing the submittals.
  2. A copy of the draft and final versions of the Construction IAQ Management Plan, as defined above and meeting the requirements of SDG IEQ-5-P.
  3. A construction schedule outlining the start-up date and expected duration of all Construction IAQ Management Plan control measures.
  4. Monthly IAQ Management Report, containing the following information:
    - a. Project Title, Port Authority Contract Number and Work Package Number, name of company completing report, and dates of period covered by the report.
    - b. Photographs that document the implementation of the Construction IAQ Management Plan throughout the course of the Work. Examples include photographs of ductwork sealing and protection, temporary ventilation measures, and conditions of on-site materials storage (to prevent moisture damage and VOC absorption of porous (Type 2) materials). Photographs shall include integral date stamping, and shall be submitted with brief descriptions, or be referenced to project meeting minutes or similar project documents.
    - c. Meeting minutes, checklists, worksheets, notifications of deficiencies and resolution logs, etc. related to IAQ.
    - d. Documentation and log of duct inspection and cleaning where necessary.
  5. Catalog Cut Sheets for all filtration media used during construction and installed immediately prior to occupancy, with MERV values highlighted. Cut sheets shall be submitted with the Contractor's stamp, as confirmation that the submitted products are the products installed.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

**A. FILTRATION MEDIA**

1. If air handlers are used during construction, filtration media must be used at each return grill or return duct opening and have a Minimum Efficiency Reporting Value (MERV) of at least 8, as determined by ASHRAE 52.2-1999.
2. All filtration media shall be replaced immediately prior to occupancy and must have a Minimum Efficiency Reporting Value (MERV) of 13, as determined by ASHRAE 52.2-1999.

**PART 3 - EXECUTION**

**3.01 PLAN IMPLEMENTATION AND COORDINATION**

- A. The Contractor shall be responsible for implementation of the Construction IAQ Management Plan, and for the coordination of the Plan with all affected trades. The Contractor shall designate one LEED Accredited Professional as the Construction IAQ Representative, who will be responsible for communicating the progress of the Plan to the Authority on a regular basis, and for assembling the required Sustainable Design documentation. The Contractor shall include provisions in the Construction IAQ Management Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.
- B. The Contractor shall ensure that all subcontractors be responsible for the implementation of specific control measures, as specified in the Construction IAQ Management Plan. The Contractor shall coordinate all subcontractor responsibilities.

**END OF ATTACHMENT D**

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**SECTION 01352 – ATTACHMENT E****NEW YORK STATE GREEN BUILDING TAX CREDIT REQUIREMENTS: SECTION 638.7(D)  
“INDOOR AIR QUALITY”, SUB-SECTION (1) “INDOOR AIR QUALITY TESTING**

The content of this Attachment has been provided for information only. The requirements of the NYS Green Building Tax Credit are subject to change. The Authority makes no guarantee that the content is up-to-date or will remain valid throughout the duration of the Work.

(d) Indoor air quality. For indoor air quality with respect to levels for carbon dioxide, carbon monoxide, formaldehyde, particulate matter, radon and total volatile organic compounds.

(1) Indoor air quality testing.

(i) This applies to base building and tenant space as follows:

(a) Base building. Indoor air quality testing must be performed with respect to the whole building no later than 30 days after occupancy and annually each taxable year until the taxpayer no longer has any tax credit to claim. The taxpayer must show that, with respect to a base building, during a taxable year during which any part of the building is occupied, the indoor air quality met the standards established in this Part for carbon dioxide, carbon monoxide, formaldehyde, particulate matter, radon and total volatile organic compounds.

(b) Tenant space. Indoor air quality testing must be performed with respect to the tenant space no later than 30 days after occupancy and annually each taxable year until the taxpayer no longer has any tax credit to claim. The taxpayer must show that, with respect to the tenant space, during a taxable year during which any part of the tenant space is occupied, the indoor air quality met the standards established in this Part for carbon dioxide, carbon monoxide, formaldehyde, particulate matter, radon and total volatile organic compounds.

(ii) Standards. The IAQ testing protocol must cite the indoor air quality standards for the green building credit presented in Table 7.3 in this section.

Table 7.3 Indoor Air Quality Standards for the Green Building Credit<sup>1</sup>

	Test Duration (minutes)	Criteria	Basis	Source of Standard
Carbon Dioxide	up to 48 hours continuous, 10 minutes for mobile	700 parts per million above background (outside air)	surrogate for odors.	ASHRAE 62-1999
Carbon Monoxide	up to 24 hours for continuous, 10 minutes for mobile	Indoor levels not to exceed background (outside air). Background (outside air) and outside air at air intakes not to exceed 9 ppm, 8-hour average 35 ppm, 1-hour average	primary standard set to protect public health, including the health of sensitive populations such as asthmatics, children and the elderly.	Environmental Protection Agency (EPA) - National Ambient Air Quality Standards/ NYS -Air Quality Standards/ ASHRAE 62-1999
Formaldehyde	8 hours continuous	50 parts per billion	normative data for typical Office Buildings.	EPA's Building Assessment Survey and Evaluation (BASE) study. California Air Resources Board Indoor Air Quality Guideline, No.1, "Formaldehyde in the Home" residential Action Level
Particulates	8 hours continuous	150 micrograms per cubic meter, 24-hour average (PM <sub>10</sub> )	protection against coarse particles associated with aggravation of respiratory conditions such as asthma	EPA - National Ambient Air Quality Standards (ASHRAE 62-1999)
Radon	48 hours minimum	4 picocuries per liter	protection against increased incidence of lung cancer.	EPA - Radon Reduction Techniques for Detached Houses, Technical Guidance (ASHRAE 62-1999)
Total volatile organic compounds	8 hours continuous	200 micrograms per cubic meter above background (outside air)	"comfort range" based mucous membrane irritation studies.	EPA Research Triangle Park research and administrative facility baseline testing, 2001. Molhave, 1990, referenced in European Collaborative Action Report No.11, Guidelines for Ventilation Requirements in Buildings

Alternative Approach to TVOCs: volatile organic compounds (VOC) scan, 10 - 15 compounds	8 hours continuous	Each VOC is less than or equal to the median (50th percentile) of concentrations measured in EPA BASE study of Office Buildings throughout the U.S.	normative data for typical Office Buildings	EPA's Building Assessment Survey and Evaluation (BASE) study.
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<sup>1</sup>See section 638.10 of this Part.

(iii) Prerequisites. The required IAQ testing must be performed by a qualified professional retained by the taxpayer. The ventilation system must be operated at the design condition of minimum outside air as specified for normal occupancy for 24 hours before and during IAQ testing. The qualified professional may elect to account for seasonal variations in meeting the prerequisite requirements by sampling on a quarterly basis where appropriate.

(a) Prior to performing the required annual IAQ testing, the following four prerequisite conditions must be met.

(1) The commissioning of the ventilation systems must be complete (with the exception of seasonally deferred testing), as documented in the commissioning report; any deficiencies related to the ventilation system must be completely corrected; and those corrections must be documented in the commissioning report.

(2) Except for residential buildings, a one week purge with air handlers operating at 100 percent outside air must be complete, on every floor prior to occupancy, according to paragraph (g)(1) of this section.

(3) The HVAC system must operate in the design condition of minimum outside air as specified in the design documents for normal occupancy.

(4) Construction or rehabilitation of at least 50 percent of the rentable square footage or occupiable space of the building which is projected to be occupied in the taxable year for which the tax credit is being claimed must be completed and the space used in accordance with its intended purpose. The architect or engineer of record must confirm completion of the space in compliance with design documents, including furniture, fixtures and equipment, and must confirm that use of the space is consistent with the intended occupancy of the space, prior to IAQ testing. The testing must be conducted within 30 days of the time when this percentage of building occupancy has been achieved.

(b) Prior to performing the required annual IAQ testing in multifamily residential buildings, the following two additional prerequisite conditions must be met:

(1) Ranges, ovens and unvented gas fireplaces must be coupled with fan-powered exterior exhaust.

(2) In residential buildings with combustion sources, UL-listed carbon monoxide detectors which meet Underwriters Laboratories (UL) UL Standard 2034, Single and Multiple Station Carbon Monoxide (CO) Detectors, effective June 2, 1999, must be installed (see section 638.10 of this Part).

(i) These detectors must also meet the reliability requirements of ASTM D22.05.

(ii) The number, type, selection and placement of all CO detectors or alarms must meet National Fire Protection Association (NFPA) 720, Recommended Practice for the Installation of Household Carbon Monoxide (CO) Warning Equipment, 1998 edition (see section 638.10 of this Part). Locations must include mechanical equipment rooms, attached parking garages, and adjacent occupied units.

(iv) IAQ testing protocol.

(a) Test strategy. The qualified professional must prepare an IAQ testing protocol based on a strategy which includes establishing an appropriate schedule for testing and identifying representative sampling locations in the building. The protocol must be based on: (1) a review of relevant background information on the whole building or tenant space, as applicable, and its HVAC system, including central air handling and distribution system, perimeter zone units, unitary systems, evaporative cooling systems, outdoor air intake control, and/or natural ventilation system, and (2) a site walk-through.

Preparation of the IAQ testing protocol must include:

(1) following the procedures in subclause (2) of this clause, review the following document:

(i) updated as-built floor plans and HVAC drawings to identify the HVAC equipment serving each floor and/or major area;

(ii) the operations and maintenance records for the ventilation system; and

(iii) commissioning report, operations and maintenance manual, systems and energy management manual, and other relevant studies where available.

(2) The review required by subclause (1) of this clause must be conducted, at a minimum, with respect to:

- (i) the design intent for the mechanical plant;
- (ii) location of air intakes and exhausts and pressure differentials between rooms that may account for influx of contaminants;
- (iii) design for supplied outdoor air, flow and distribution of air;
- (iv) position of dampers;
- (v) local exhaust ventilation;
- (vi) air-cleaning equipment;
- (vii) HVAC operating times;
- (viii) regular operational checks;
- (ix) equipment cleaning and disinfecting schedules; and
- (x) observed and corrected deficiencies.

(3) Interview owner, and where applicable tenant representatives for each occupied space, to ascertain whether there are indoor air quality complaints. Where such complaints exist, identify their nature and the building areas associated with them.

(4) Examine the records of indoor air quality complaints as required by section 638.9(c)(5) of this Part. Determine any patterns, their magnitude, distribution and duration.

(5) Review ventilation system operation with building engineer or designated IAQ manager. Perform a site walk-through inspection covering all relevant areas, including at a minimum:

- (i) inside and outside contamination sources;
- (ii) HVAC systems; and
- (iii) occupied floors.

(6) Inspect for signs of water damage or microbial contamination and test for improper air pressure relationships. The qualified professional must immediately notify building management of deficiencies observed during the site walk-through.

(7) Inspect and review design and operational parameters of the HVAC system, including at a minimum the following:

- (i) source and amount of outside air delivered per occupant;
- (ii) adjustable or local HVAC controls;
- (iii) type of humidifier/dehumidifier and how controlled;
- (iv) outdoor air damper settings; and
- (v) operational control sequences.

(8) Evaluate recent of rehabilitation or maintenance that can be a source of contaminants. The following must be evaluated where applicable:

- (i) painting;
- (ii) carpet installation;
- (iii) air conditioning repairs;
- (iv) carpet cleaning;
- (v) disinfecting of HVAC system;
- (vi) pesticide application; and
- (vii) use of acid drain cleaners.

(9) Identify indoor contaminant sources. The following sources must be included in this inventory where applicable:

- (i) office equipment;
- (ii) cleaning compounds and disinfectants;
- (iii) tobacco smoke;
- (iv) adhesives, paints, and glues;
- (v) off-gassing of construction material and building fabric;
- (vi) contaminants generated by construction or rehabilitation;
- (vii) appliances; and

(viii) air fresheners.

(10) Identify outdoor contaminant sources. The following must be included in this inventory where applicable:

- (i) vehicle exhaust;
- (ii) roofing materials;
- (iii) cooling towers;
- (iv) dust or other contaminants from construction activity;
- (v) industrial plant exhaust or building exhaust;
- (vi) gasoline vapors;
- (vii) pollen;
- (viii) biological contaminants; and
- (ix) atmospheric pollutants.

(11) Identify areas with different occupancies or different potentials for IAQ problems. The following must be included in this inventory where applicable:

- (i) high occupancy density areas, such as assembly rooms, cafeterias, physical fitness rooms;
- (ii) special use areas such as elevators, restrooms, conference rooms, storage areas, janitor closets, copier rooms, hallways, graphic arts facilities, kitchens, loading docks, parking garages;
- (iii) private offices, partitioned office spaces, open office spaces;
- (iv) areas with different types of interior finishes on walls, partitions, ceilings and floors; and
- (v) areas with different types of furnishings.

(b) Sampling locations. The qualified professional must identify representative sampling locations.

(1) If the testing is being conducted for a base building (whether a "green base building credit component" or a "green whole-building credit component," as those terms are defined

in section 19 of the Tax Law, is being sought), the sampling locations must represent conditions not only in the common areas of the building, but also must represent conditions in the whole building. The building owner must notify the tenants, in advance and in writing, of the IAQ testing.

(2) If the testing is being conducted for tenant space, the testing program need only cover the tenant space.

(3) Each sampling location must cover:

(i) 20,000 square feet or less in size; or

(ii) areas in one ventilation zone.

*The qualified professional is to determine whether subclause (1) or (2) of this clause is applicable and must use the more stringent requirement.*

(4) Ambient air must be tested, in addition to supply and return air.

(5) When IAQ testing is performed for radon, measurements must be made only in occupied spaces, not in supply or return or outdoor air when IAQ testing is performed. Radon must be measured in the occupiable space on the lowest floor, particularly in those areas used regularly by building maintenance staff, such as workrooms, storage areas or mechanical rooms.

(6) Carbon monoxide testing must be conducted in the following locations:

(i) Areas containing combustion sources. Where applicable, testing must be conducted in attached parking garages; mechanical rooms with fossil fuel used to actuate boilers, furnaces, DHW heaters, chillers, desiccant dehumidifiers, heat pumps or other equipment; occupied spaces with fossil fuel- or wood-fired stoves, fireplaces, vented or unvented heaters and appliances.

(ii) Occupied spaces that share a wall, floor or ceiling slab with areas referenced in item (i) of this subclause, including custodial rooms. Carbon monoxide testing must be coordinated with equipment tuneup and maintenance schedules required by the IAQ management plan for operations and maintenance by paragraph (c)(3) of this section.

(c) Sampling and analytical methods. The following methods and types of instrumentation, or those which provide equivalent data quality as determined by the qualified professional, must be used (see section 638.10 of this Part):

(1) Carbon dioxide: Real time nondispersive infrared (NDIR) analyzers with output logged over time, or equivalent, with averaging times as specified in the EPA's A Standardized EPA Protocol for Characterizing Indoor Air Quality in Large Office Buildings (1994). The measurement protocol in Method IP-3A, of EPA's Compendium of Methods for the Determination of Air Pollutants in Indoor Air, Report EPA-600/4-90/010; NTIS-PB90-200288, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, NC (April 1990) must be used.

(2) Carbon monoxide: Real time, portable analyzers with electrochemical sensors, battery-operated, with output logged over time, or equivalent, with averaging times as specified in EPA's A Standardized EPA Protocol for Characterizing Indoor Air Quality in Large Office Buildings (1994). CO testing equipment must provide accurate readings below 10 ppm (with a range to 200 ppm). The measurement protocol in Method IP-3A of EPA's Compendium of Methods for the Determination of Air Pollutants in Indoor Air, Report EPA-600/4-90/010; NTIS-PB90-200288, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, NC (April 1990) must be used.

(3) Particulate matter: At minimum, particle-size selective sampler with impactor and nozzle allowing for collection of PM<sub>10</sub> particulate matter. The measurement protocol in Method IP-10A of EPA's Compendium of Methods for the Determination of Air Pollutants in Indoor Air, Report EPA-600/4-90/010; NTIS-PB90-200288, Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, NC (April 1990) must be used.

(4) Radon: At minimum, meet New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) Certification Manual Item 194.5 (4/15/94) using one of the following methods: Electret, alpha-track detector, charcoal canister, continuous radon monitors, or continuous working level monitors. The laboratory analyzing radon samples must have current NYSDOH ELAP certification for radon analysis. The sampling and analytical methods as specified in Indoor Radon and Radon Decay Product Measurement Device Protocols, USEPA, Office of Radiation Programs, EPA 402-R-92-004, July 1992 must be used. [www.epa.gov/iaq/radon/pubs/devprot1.html](http://www.epa.gov/iaq/radon/pubs/devprot1.html)

(5) Total Volatile Organic Compounds: Collection on solid sorbent with analysis by thermal desorption and gas chromatography/mass spectrometry (GC/MS), using EPA Methods TO-14A and TO-17, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air - Second edition, EPA Center for Environmental Research Information, EPA/625/R-96/010b (January 1999). [www.epa.gov/ttn/amtic/airtox.html](http://www.epa.gov/ttn/amtic/airtox.html)

(6) Formaldehyde: Collection must be on 2,4-dinitrophenylhydrazine (DNPH)- coated silica gel cartridges. The DNPH-aldehyde derivatives on the cartridges must be eluted with acetonitrile, then analyzed by high performance liquid chromatography (HPLC) with ultraviolet (UV) detection, using EPA Method TO-11A, Determination of formaldehyde in Ambient Air Using Adsorbent Cartridge Followed by High Performance Liquid Chromatography (Active Sampling Methodology), Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air - Second edition, EPA Center for Environmental Research Information, EPA/625/R-96/010b (January 1999). [www.epa.gov/ttn/amtic/airtox.html](http://www.epa.gov/ttn/amtic/airtox.html)

(d) Sampling frequency and duration.

(1) At minimum, testing must be conducted no later than 30 days after occupancy and on an annual basis for each of the years for which the tax credit is being claimed.

(2) Radon measurements need not be repeated after the initial test if readings of less than 4 picocuries/liter are recorded. See Table 7.3 of this section.

(3) The sampling duration and timing for contaminants other than radon must be consistent with the methods specified in this Part. Carbon dioxide readings must include periods when concentrations are expected to peak. In settings with stable occupancies, carbon dioxide readings may be repeated in late morning and late afternoon when carbon dioxide levels in the building are closest to equilibrium, to give the best indication of effective air exchange rates.

(e) Quality assurance/quality control.

(1) The IAQ testing protocol must meet the measurement methods, monitoring regime, sample and data management requirements of (see section 638.10 of this Part):

(i) EPA's A Standardized EPA Protocol for Characterizing Indoor Air Quality in Large Office Buildings (1994), June 1994; and

(ii) EPA's Quality Assurance Overview Document for the U.S. Environmental Protection Agency's Office of Research and Development and Office of Air and Radiation Large Building Studies (1994), prepared by EPA Atmospheric Research and Exposure Assessment Laboratory, Research Triangle Park, NC and EPA Office of Radiation and Indoor Air, November 1994.

(v) IAQ Testing Report

(a) Report contents. Following IAQ testing the qualified professional must provide to the owner or tenant, as applicable, a report which includes:

- (1) the address and location of the building or tenant space;
- (2) operator and firm identification;
- (3) signed approval sheet by qualified professional;
- (4) general description of the building, HVAC system, and conditions recorded during the initial data-gathering phase, consisting of the document review, interviews and site walk-through;
- (5) confirmation that building systems were operating in the manner specified in the IAQ testing protocol when IAQ testing was performed;
- (6) description of sampling and analytical methods;
- (7) field observations of how the building systems were operating; air exchange rates; inside and outside temperature and relative humidity records; wind speed and direction; weather conditions; occupant density; and occupant activities; particularly those which may affect the results;
- (8) sufficient documentation of sampling procedures and locations so that test conditions could be replicated and results objectively evaluated;
- (9) instrument model numbers, serial numbers, equipment calibration records, in accordance with manufacturers' instructions and method requirements;
- (10) date, start times and stop times of testing;
- (11) for data logged results, hourly averages for each location at each time period, based on 3-minute readings;

(12) chain-of-custody records;

(13) data interpretation; which addresses the method of sampling and analytical errors; and

(14) laboratory reports with results, minimum detection limits for each analyte and a reference to the specific analytical method used.

(b) Acceptability of results:

(1) Test results must be representative of building conditions in the base building and/or tenant space for the year for which the green building credit is being sought and must comply with the standards presented in Table 7.3 of this paragraph. If the testing is conducted only once, the test data from that period must be used in the determination. If multiple tests are conducted, the entire database must be included in the comparison and determination.

(2) Compliance with the standards set forth in this Part must be determined as follows:

(i) Data from each ventilation zone must comply with the standards presented in Table 7.3 of this section. If more than one location has been tested in one ventilation zone, the results obtained from that ventilation zone are averaged prior to the comparison. The qualified professional must certify that test results from each ventilation zone in the space for which the green building credit is being sought comply with the standards set forth in this paragraph.

(ii) For test results obtained for carbon dioxide and carbon monoxide, the data must be in the form of data logged results, with data points representing averages within the time periods specified in the IAQ testing protocol. Data will be considered to be in compliance with the standards presented in Table 7.3 of this section if the measured indoor values are less than or equal to those values, with an allowance that any accumulated period of no more than five minutes may exceed those values.

(iii) For test results obtained for particulates, radon, total volatile organic compounds, volatile organic compound scan and formaldehyde, the data must be in the form of integrated results, averaged over the time period specified in the IAQ testing protocols contained in subparagraph (2)(iii) of this subdivision. Data will be considered to be in compliance with the standards presented in Table 7.3 of this section if the values are less than or equal to those values.

(iv) For each taxable year during which any part of the space is occupied space at any time, and for which a taxpayer claims a green building credit, if testing is conducted and there are

exceedences in any part of the space for which the green building credit is being claimed, that entire space will not qualify for the green building credit unless:

(A) additional testing is performed and results demonstrate that during the taxable year for which the credit is being claimed the air quality meets the IAQ standards set forth in Table 7.3 of this section. Data from the additional testing must be presented in the IAQ Testing Report which explains the reasons, if identified, any exceedances and documents how the situation was remedied.

**END OF ATTACHMENT E**

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**SECTION 01352 – ATTACHMENT F**  
**SUSTAINABLE DESIGN GUIDELINES COMMISSIONING REQUIREMENTS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. The Work of this Contract requires commissioning pertaining to the Sustainable Design Guidelines (SDG) for World Trade Center Redevelopment Projects (SDG Commissioning/SDG Cx).
- B. This process includes the construction, acceptance and the warranty period with actual verification of performance. The SDG Commissioning process shall encompass and coordinate the traditionally separate functions of system documentation, equipment startup, control system calibration, testing and balancing, performance testing and training.
- C. SDG Commissioning is intended to achieved the following specific objectives:
  - 1. Verify that applicable equipment and systems are installed according to the manufacturer's recommended procedures, adhere to the technical specifications, and that they receive adequate operation checkout.
  - 2. Verify and document proper and efficient performance of equipment and systems.
  - 3. Verify that O&M documentation submitted by the Contractor to the Engineer is complete and complies with the requirements of the Contract Documents.
  - 4. Verify that the Authority's operating personnel are adequately trained.
  - 5. Maintain a log of all equipment/component warranties and verify that the Contractor turns over these warranties to the Engineer. Any extended warranties required due to staged construction shall be logged and time duration noted.
- D. The SDG Commissioning process shall not take away from or reduce the responsibility of the Contractor to provide a finished and fully functioning product. The Contractor shall provide the necessary resources to perform the Start-up, Prefunctional Checks and Functional Tests to the satisfaction of the Engineer. Tests will be witnessed and documented by the Engineer.

**1.02 DESIGN AND PERFORMANCE REQUIREMENTS**

- A. The Authority shall retain the services of a Commissioning Authority (CxA) who will direct and coordinate the SDG Commissioning activities on behalf of the Authority.
- B. Scheduling: The Contractor shall establish protocols to integrate SDG Commissioning activities into the Contract schedule.

C. General responsibilities of the Contractor are as follows:

1. Facilitate the SDG Commissioning work and ensure that SDG Commissioning activities are being maintained in the schedule.
2. Assist in clarifying the operation and control of commissioned equipment in areas where the Specifications, Contract Drawings or equipment documentation is not sufficient for writing detailed testing procedures.
3. Review test procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the tests.
4. Ensure that the requirements for submittal documentation, O&M documentation, performance of SDG Commissioning tasks, and training are included for all applicable work performed by subcontractors and materialmen.
5. Ensure that all SDG Commissioning responsibilities are executed according to the Contract Documents and the schedule.
6. Attend SDG Commissioning Scope Meetings and other meetings scheduled by the Engineer to facilitate the SDG Commissioning process.
7. Coordinate the training of Authority Personnel as designated by the Engineer.
8. Prepare O&M manuals according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.

D. The following is a list of the systems that will undergo SDG Commissioning.

1. HVAC
  - a. Building Automation and Temperature Control System
  - b. All building heating, ventilating, and air conditioning (HVAC) systems equipment, components, and associated controls that affect energy usage
  - c. All indoor air quality systems that affect the operation of the HVAC ventilation systems of the base building
  - d. Refrigerant systems and associated controls, including refrigerant leak detection systems
  - e. Air-cooled Chillers, unitary and split-air conditioners, and domestic hot water and service hot water heaters
  - f. Fans, Pumps, and Heat exchangers
  - g. Controls connecting to the central plant and for HVAC, including, Building Automation Temperature Control Systems that affects energy use
  - h. Ducts and associated dampers
  - i. Bypass and drain valves
  - j. Duct insulation and pipe insulation
  - k. Duct system protection during construction, as it relates to damage, cleanliness and Indoor Air Quality (IAQ)
  - l. Air quality monitoring systems as they relate to ventilation systems

- m. Other systems or equipment used for HVAC that affect energy use or indoor air quality
  - n. Vent structures are free of cracks, blockages and leaks (flues and chimney structures)
  - o. Testing, Adjusting and Balancing (TAB) work
  - p. Fuel Oil System as related to the Emergency Generators
2. Electrical
- a. Scheduled or occupancy sensor lighting controls
  - b. Lighting and daylight harvesting controls
  - c. Emergency power generators and automatic transfer switches
3. Plumbing
- a. Domestic and process water pumping and mixing systems
  - b. Storm water collection systems, water treatment systems and grey water systems
  - c. Plumbing, including inline and suction/ discharge type water pumps
  - d. Domestic hot water heaters
4. Vertical Transportation – Elevator/ Escalator Systems
- a. Traction Elevators
    - 1) Programmable Logical Controller (PLC)
      - a) Soft-start capability
      - b) Diagnostics capability
    - 2) Variable Voltage Variable Frequency (VVVF) drive system
      - a) High Efficiency motor
  - b. Hydraulic Elevators
    - 1) PLC controller
      - a) Soft-start capability
      - b) Diagnostics capability
    - 2) High efficiency motor
    - 3) In-ground oil cylinder protection
      - a) Cathodic protection
    - 4) Oil cooling system
  - c. Heavy Duty Escalators
    - 1) PLC controller

- a) Soft-start capability
- b) Diagnostics capability
- 2) Variable speed operation
- 3) Totally Enclosed Fan Cooled (TEFC) motor-high efficiency
- 4) Step, motor and handrail drive systems
  - a) Lubricationless drive chains
- 5) Light-Emitting Diode (LED) skirt lighting system

5. Architectural Building Envelope

- a. Insulation
- b. Moving roof Skylight
- c. Specialty Glazing – Exterior Glazing at Oculus

1.03 RELATED SECTIONS

- A. Not used.

1.04 REFERENCES

- A. Not applicable.

1.05 SUSTAINABLE DESIGN REQUIREMENTS

- A. In accordance with this Section.

1.06 QUALITY ASSURANCE

- A. In accordance with this Section.

1.07 SUBMITTALS

- A. All submittals shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Submittals" of Division 1 – GENERAL PROVISIONS.
- B. At a minimum, the submittal documentation shall include:
  - 1. Manufacturer and model number
  - 2. Manufacturer's printed installation and detailed start-up procedures
  - 3. Full sequences of operation

4. O&M data
  5. Performance data
  6. Performance test procedures
  7. Control drawings
  8. Installation and checkout materials
  9. Actual field checkout sheet forms
- C. The Engineer will review and approve submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the SDG Commissioning process, to the functional performance of the equipment and adequacy for finalizing functional test procedures. This review is intended primarily to aid in the development of functional testing procedures and only secondarily to verify compliance with equipment specifications. The Contractor will be notified by the Engineer of items missing or areas that are not in conformance with Contract Documents and which require resubmission.
- D. SDG Commissioning Records for O&M manuals in accordance with this Section.
- E. Contractor Training Plan

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. All manufacturer specialty tools required to test, service and access the equipment as part of the SDG Commissioning shall be furnished by the Contractor and transferred to the Authority's operating personnel upon completion of SDG Commissioning. The Contractor shall document the transfer of such special equipment, tools and instruments.
- B. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified. If not otherwise noted, the following minimum requirements apply.
1. Temperature sensors and digital thermometers shall have a certified calibration within the past year to an accuracy of 0.5 degrees F and a resolution of plus or minus 0.1 degrees F.
  2. Pressure sensors shall have an accuracy of plus or minus 2.0 percent of the value range being measured (not full range of meter) and have been calibrated within the last year.
- C. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

## PART 3 - EXECUTION

### 3.01 START-UP AND PREFUNCTIONAL CHECKLIST EXECUTION

- A. The following procedures apply to all equipment to undergo SDG Commissioning.
1. Start Up: The requirements outlined in the SDG Commissioning Plan: Prefunctional Checklists shall be in addition to the manufacturer's normal start up procedure and documentation.
  2. Execution of Prefunctional Checklists
    - a. A minimum of 30 days prior to start-up, the Contractor shall schedule startup and checkout with the Engineer. The performance of the prefunctional checks (and completion of the prefunctional check lists); start-up and checkout shall be executed by the Contractor and witnessed by the Engineer. Sign-off by the Engineer will be required to verify that the equipment has passed start-up and prefunctional requirements.
    - b. The Engineer shall witness the execution of all prefunctional tests, unless there are multiple units in which case a sampling strategy may be used as approved by the Engineer. In no case will the number of units witnessed be less than 20 percent of the total number of identical or very similar units.
    - c. For lower-level components of equipment (e.g. VAV boxes, sensors, controllers), the Engineer shall observe a sampling of the prefunctional and start-up procedures.
    - d. The Contractor shall execute start-up and provide the Engineer with signed and dated copies of the completed start-up and prefunctional test documents and checklists.
    - e. Only Contractor personnel that have direct knowledge and actually witnessed that a line item task on the prefunctional checklist was actually performed shall initial or check that item off.

### 3.02 PHASED COMMISSIONING

- A. The Work of this Contract will require start-up and initial checkout to be executed in phases. This phasing shall be planned and scheduled in coordination with the Engineer. In addition, due to the potential need to start-up and operate some equipment/ systems under partial loading and/or in a partial operational mode, incremental check-out and start-up of individual units or pieces of equipment of a system may be required.

### 3.03 FUNCTIONAL PERFORMANCE TESTING

- A. Functional testing will be performed by the Contractor to bring the individual pieces of equipment from a state of substantial completion to full dynamic operation.

- B. Functional testing will be scheduled upon approval by the Engineer of all prerequisite items as outlined on testing forms.
- C. Functional testing shall be conducted after prefunctional testing and start-up has been satisfactorily completed. The Building Automation and Temperature Control system must undergo start-up and prefunctional testing before it is used for testing and balancing or to verify performance of other components or systems. The air balancing and water balancing shall be completed and debugged before functional testing of air-related or water-related equipment or systems. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems is checked.
- D. Functional performance testing and verification shall be achieved by manual testing by the Contractor and monitoring the performance and analyzing the results using Building Automation and Temperature Control systems trend log capabilities or by a standalone data logging equipment provided by the Contractor. The Contractor shall be responsible to provide all resources and materials as needed to execute testing.
- E. The cost for the Contractor for retesting a prefunctional or functional test that has not been completed to the satisfaction of the Engineer shall be at no additional cost to the Authority.

#### 3.04 OPERATION AND MAINTENANCE MANUALS

- A. In addition to the Standard O&M manual, SDG Commissioning shall require the following additional information for submittal and approval by the Engineer.
  - 1. The Contractor shall be responsible to compile, organize and index the following SDG Commissioning data by equipment into labeled, indexed and tabbed, three-ring binders and deliver it to the Engineer as well as to include copies in the O&M manual submission. The format of the manuals shall be:
    - a. Overview: System 1 (chilled water system, HVAC unit/zone system, steam/heating system, etc).
    - b. Description: Design narrative and criteria, sequences, approvals for System 1 (as a whole).
    - c. Start-up test: Start-up plan and report, approvals, corrections, prefunctional checklists for each piece of equipment and/or component in System 1 (Colored separator sheets should be used to separate this information for each piece of equipment and/or component).
    - d. Functional test: Functional tests (completed), trending and analysis, approvals and corrections, training plan, record and approvals, functional test forms and a recommended Recommissioning schedule for System 1 (as a whole).
    - e. Overview: System 2...repeat as per System 1.

## 3.05 TRAINING OF AUTHORITY PERSONNEL

- A. The specific training requirements are specified in the equipment related Specification Sections.
- B. The Contractor shall submit a written training plan a minimum of 20 working days before the planned training to the Engineer for review and approval. The plan will cover the following elements:
  - 1. Equipment (included in training)
  - 2. Intended audience
  - 3. Location of training
  - 4. Objectives
  - 5. Methods (Classroom lecture, video, site walk-through, actual operational demonstrations, printed handouts, etc)
  - 6. Subjects to be covered
  - 7. Planned duration
  - 8. Instructor
- C. Provide designated Authority personnel with comprehensive training in the understanding of the systems and the operation and maintenance of each component.
- D. Training shall start with classroom sessions, if necessary, followed by hands on training on each piece of equipment which shall illustrate the various modes of operation, including startup, shutdown, power failure, etc.
- E. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system will be repaired or adjusted as necessary and the demonstration repeated.
- F. The Contractor shall make all arrangements for the appropriate trade or manufacturer's representative to provide the instruction on each component. Practical building operating expertise as well as in-depth knowledge of all modes of operation of the specific piece of equipment is required. More than one party may be required to execute the training.
- G. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual for those components and illustrate whenever possible the use of the O&M manuals for reference.
- H. Hands-on training shall include start-up, operation in all modes possible, including manual, shut-down and any emergency procedures and maintenance of all pieces of equipment.
- I. The Contractor shall fully explain and demonstrate the operation, function and overrides for each component.

- J. Training shall occur after functional testing is complete and before the testing by the Authority for public use unless otherwise approved by the Engineer.
- K. The Contractor shall schedule and conduct a second training class a minimum 30 working days after the system has been in operation to discuss troubleshooting issues, lessons learned and system modification.

### 3.06 ACCEPTANCE

- A. Acceptance criteria shall be outlined in the Prefunctional Checklists and Functional Test Procedures. Any deficiencies recorded during testing shall be corrected by the Contractor and approved by the Engineer. All Submittals, tests and plans, shall be submitted to the Engineer and reviewed for completeness. Training shall be reviewed and witnessed and must be to the satisfaction of the Engineer.

### 3.07 WARRANTY PERIOD

- A. During the warranty period, any seasonal and deferred testing such as tests delayed until weather conditions are closer to the system's design criteria shall be completed as part of the Work of this Contract.
- B. Coordinate with equipment manufacturers to determine specific requirements to maintain the validity of the warranty.
- C. Execute seasonal or deferred functional performance testing to be witnessed by the Engineer.
- D. Correct deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal testing.

**END OF ATTACHMENT F**

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**SECTION 02050**  
**DEMOLITION AND DISPOSAL**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. This Section specifies the requirements for demolition and disposal of structures.
- B. Retained Items: Prior to demolition, carefully remove, store, and protect materials and equipment, if any, shown on the Contract Drawings as "Retain - Deliver to Authority".
- C. For Work in the City of New York prior to demolition, employ a certified exterminator and treat entire structure for rodent and insect control in accordance with governing health regulations, as if the Work were being performed for a private corporation.

1.02 DESIGN AND PERFORMANCE REQUIREMENTS

- A. The Contractor assumes the risk of any loss due to theft, destruction or disappearance of, or damage to, the structures or portions thereof to be demolished, whether occurring before or after the submission of Proposals on this Contract, arising from any cause whatsoever excepting only affirmative, intentional acts of the Authority.
- B. The Authority assumes no responsibility for guarding the structures to be demolished either before or after the Contractor is given access thereto, and does not guarantee that their condition will remain the same after the submission of Proposals as before. The Authority does not imply by this Section that the structures to be demolished are complete structures.
- C. Storage or sale of items of salvageable value to the Contractor is prohibited on the construction site.
- D. Demolition using explosive, incendiary, or wrecking ball methods is prohibited.
- E. Provide water and wet down the structure(s) being demolished, as well as the sites adjacent to the structures being demolished, to limit the raising of dust and dirt to the lowest practical level. Provide water truck, water line or hydrant connection, and hoses for this purpose.
- F. The structures to be demolished shall not be used for any purpose including, but not limited to, storage, lay down, work preparation areas, and office space demolition.
- G. Do not traverse pavement with tracked vehicles or other equipment which may damage pavement.

#### H. Condition of Adjacent Construction

1. Prior to starting demolition, make an inspection accompanied by the Engineer to determine physical condition of adjacent existing structure(s) or construction that is to remain.
2. During the inspection the Engineer and the Contractor shall mutually agree on existing damage to adjacent existing structures or construction that is to remain, if any, and the Contractor shall subsequently prepare a written inspection report with description of such mutually agreed upon existing damage. Photographic documentation of existing damage shall be taken by the Contractor. Photographic documentation shall be keyed to written descriptions. Submit inspection report and photographic documentation to the Engineer.

#### I. Utility Services

1. Do not disrupt service to fire hydrants without the written approval of the Engineer. If, with written approval of the Engineer, water service to any area is disrupted, make provisions to ensure adequate fire protection for such area.
2. At all times during the Work of this Section, maintain accessibility from street to fire hydrants, traffic signals, power or light poles, mailboxes, and similar utility and public service items adjacent to the construction site.
3. Do not interrupt utilities serving occupied or used areas, except when authorized by the Engineer. Provide temporary services during such interruptions as approved by the Engineer.
4. Arrange in advance of demolition, Work for disconnection or rerouting of utility line(s). Identify such capped, plugged, sealed or rerouted lines on a record drawing. Submit such drawing in accordance with this Section.

### 1.03 RELATED SECTIONS

- A. Section 01352 – Sustainable Design Requirements

### 1.04 REFERENCES

- A. None.

### 1.05 SUSTAINABLE DESIGN REQUIREMENTS

- A. Sustainable Design General Requirements

1. The Authority requires the Contractor to implement practices and procedures to meet the Project's sustainable design requirements. The Contractor shall ensure that the requirements related to these goals, as defined in Specification Section 01352 and in this Section, are implemented to the fullest extent. Substitutions or other changes to the Work proposed by the Contractor shall not be allowed if such changes compromise the stated Sustainable Design Performance Criteria.

## 1.06 QUALITY ASSURANCE

- A. Comply with all safety standards.

## 1.07 SUBMITTALS

- A. General: Submittals listed in this article shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 - GENERAL PROVISIONS.
- B. Submit the following to the Engineer prior to start of demolition work:
  - 1. Certificates of severance of utility services from the respective utilities;
  - 2. For Work in the City of New York, certification that the structure has been effectively treated for rodent and insect control;
  - 3. Description of proposed methods and operations of demolition, for review and approval by the Engineer;
  - 4. Description of sequence of demolition and disposal Work, for review and approval by the Engineer;
  - 5. Written inspection report with photographic documentation described in this Section.
  - 6. Description of the proposed method of filtering sediment from runoff, for review and approval by the Engineer.
  - 7. Copies of permits.
- C. Submit a record drawing indicating horizontal and vertical locations of disconnected, rerouted or capped utilities. Reference all such items to visible permanent surface features.
- D. For imported fill material, submit one 25- pound, representative sample of such material to the Engineer of Materials, Engineering Materials Laboratory, Port Authority Technical Center, 241 Erie Street, Jersey City, NJ 07310-1397, proposed for use under this Section, subject to the following:
  - 1. Submit sample in clean sturdy container or bag, which shall not permit loss of any material, no less than three weeks prior to delivery of imported fill material to the construction site.
  - 2. Clearly label sample with Contract number, title and location, material supplier's name and location, and identification of fill material.
  - 3. Do not deliver imported fill material to the construction site until the Engineer has checked and approved the sample of such material.
- E. Sustainable Design Submittal Requirements
  - 1. The Contractor shall provide documentation of demolition activities in compliance with the requirements of the project's Construction Waste Management Plan. Plan requirements are detailed in Section 01352.

**1.08 DEFINITIONS**

- A. Remove – Detach items from existing construction and legally dispose of them off-site; unless indicated to be removed and salvaged, or removed and reinstalled.
- B. Remove and Salvage – Detach items from existing construction and deliver them to Authority at a specified location.
- C. Remove and Reinstall – Detach items from existing construction, prepare them for reuse, and reinstall them where indicated on the Contract Drawings.
- D. Existing to Remain – Existing items of construction that are not to be removed and that are not otherwise indicated on the Contract Drawings to be removed, removed and salvaged, or removed and reinstalled.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Imported fill soil materials to be delivered to the construction site by the Contractor, approved in accordance with this Section, shall be as follows:
  - 1. For basements, voids and sub-base, soil materials shall consist of stone, gravel, and sand, free from debris, trash, roots, and other organic matter, with no particle size exceeding 2 inches in maximum dimension; and
- B. Rubble Fill - Rubble fill shall be concrete, brick, or other masonry materials resulting from demolition. Break fill material into pieces not exceeding 4 inches in their greatest dimension, with no flat or elongated pieces, with all protruding reinforcing cut or burned off, and with a sufficient percentage of smaller pieces to minimize voids. A flat piece is one that has a ratio of width to thickness greater than five; an elongated piece is one that has a ratio of length to width greater than five.

**PART 3 - EXECUTION****3.01 PREPARATION**

- A. Protection
  - 1. Erect and maintain temporary window or opening covers, covered passageways, barricades or fences as required, ensuring the safe passage of persons around area of demolition.
  - 2. Erect and maintain enclosed dust chutes as required for the disposal of materials, rubbish, and debris.

3. Erect and maintain dustproof partitions as required to prevent spread of dust, fumes or smoke to occupied or used areas or structures.
4. Provide temporary interior and exterior shoring, bracing and/or support as required to ensure that movement or settlement of structures to be demolished is safely controlled and collapse is prevented. Ensure that movement, settlement, and/or damage to existing facilities does not occur.
5. Protection measures shall comply with the requirements of the project's Construction Environment Plan and Erosion and Sedimentation Control Plan.
6. Maximum noise levels shall comply with Building Code.

B. Pollution Controls

1. Use water sprinkling, enclosed chutes, and/or temporary enclosures to limit dust and dirt rising and scattering in the air. Conform to requirements of this Section.
2. Filter sediment from runoff before it enters drainage systems or waterways using methods in accordance with this Section.
3. Do not use water when it may create hazardous or objectionable conditions such as ice or flooding.
4. Pollution Control measures shall comply with the requirements of the project's Construction Environment Plan and Erosion and Sedimentation Control Plan.

C. Authority-Retained Items

1. Remove and handle carefully to avoid damage.
2. Prepare as shown on the Contract Drawings.
3. Load and deliver to a construction site location designated by the Authority, unless otherwise shown on the Contract Drawings.

3.02 DEMOLITION

- A. Conduct demolition operations and disposal of debris to ensure minimum interference with the use of, or access to, adjacent buildings or construction site areas. Do not unnecessarily obstruct sidewalks or street.
- B. Proceed with demolition in a systematic manner. Complete upper demolition before disturbing lower supporting members.
- C. Do not store any materials, rubbish, dirt, debris or waste of any sort resulting from the demolition operations on the floor of partially demolished structures, or adjacent construction site areas.
- D. Demolish concrete and masonry in small sections.
- E. Lower heavy framing members using equipment suited for the work.

- F. Where shown on the Contract Drawings, break and remove on grade and basement slabs.
- G. Disposal of Demolished Materials
  1. Unless otherwise shown on the Contract Drawings, legally dispose of debris, rubbish, and other materials resulting from demolition operations away from Authority property at an appropriate site.
  2. Remove demolished materials from Authority property on a daily basis. The stockpiling of demolished materials on Authority property will not be permitted.
  3. Do not burn, bury, or otherwise dispose of debris, rubbish or other materials on Authority property resulting from demolition operations.
- H. Contractor's Salvaged Materials - Except for items shown on the Contract Drawings as "Retained - Deliver to Authority," other removed and salvaged materials not shown for reuse or as retained shall become the Contractor's property. Such materials shall be removed from Authority property at no additional cost to the Authority.

### 3.03 ADJUSTMENTS

- A. Unless otherwise shown on the Contract Drawings, provide fill for below-grade areas and voids resulting from the Work of this Section as follows:
  1. Fill to be placed one foot or more below grade or paving subgrade; or 1 foot or more away from foundation walls, edges of footings, or underground utility lines.
  2. Fill to be placed in the remaining one-foot void shall be approved imported fill soil material conforming to requirements of this Section.
- B. Place approved rubble fill material in horizontal layers not exceeding one foot in loose depth, with top layer consisting of the smallest size rubble available. Compact each layer of rubble fill with at least four passes of a ten-ton roller, of a type approved by the Engineer.
- C. Place approved imported soil fill in horizontal layers not exceeding 6 inches in loose depth. Compact each layer at optimum moisture content of fill material to a density equal to original adjacent ground, unless otherwise directed by the Engineer.
- D. After placement and compaction of fill, grade surface to meet adjacent contours and to provide surface drainage.
- E. Where and as shown on the Contract Drawings, provide for subsurface drainage through slabs on which fill is placed.

### 3.04 REPAIR

- A. Promptly repair damage caused to adjacent facilities by demolition and removal operations to the satisfaction of the Engineer and at no cost to the Authority.

**END OF SECTION**

**SECTION 02051**  
**PARTIAL REMOVALS AT BUILDING EXTERIORS**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. This Section specifies the requirements for the selective removal and subsequent offsite disposal of portions of the existing building as shown on the Contract Drawings, and as required to accommodate new construction.

1.02 DESIGN AND PERFORMANCE REQUIREMENTS

- A. The Authority assumes no responsibility for guarding the removal areas either before or after the Contractor is given access thereto, and does not guarantee that their condition will remain the same after the submission of Proposals as before.
- B. Storage or sale of items of salvageable value to the Contractor is prohibited on the construction site.
- C. Removal using explosive, incendiary or wrecking ball methods is prohibited.
- D. Provide water and wet down the removal areas, as well as the sites adjacent to the portions of structures being removed, to limit the raising of dust and dirt to the lowest practical level. Provide water truck, water line or hydrant connection, and hoses for this purpose.
- E. Do not traverse pavement with tracked vehicles or other equipment which may damage pavement.
- F. Condition of Adjacent Construction
1. Prior to starting removal work, make an inspection accompanied by the Engineer to determine physical condition of adjacent existing structure(s) or construction that is to remain.
  2. During the inspection the Engineer and the Contractor shall mutually agree on existing damage to adjacent existing structures or construction that is to remain, if any, and the Contractor shall subsequently prepare a written inspection report with description of such mutually agreed upon existing damage. Photographic documentation of existing damage shall be taken by the Contractor. Photographic documentation shall be keyed to written descriptions. Submit inspection report and photographic documentation to the Engineer.
- G. Utility Services

1. At all times during the Work of this Section, maintain accessibility from street to fire hydrants, traffic signals, power or light poles, mailboxes, and similar utility and public service items adjacent to the construction site.

H. Flame Cutting: Do not use cutting torches for removal until Work area is cleared of flammable materials. At concealed spaces, such as interior of ducts and pipe spaces, verify condition of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.

### 1.03 RELATED SECTIONS

- A. Section 01352 – Sustainable Design Requirements

### 1.04 REFERENCES

- A. None.

### 1.05 SUSTAINABLE DESIGN REQUIREMENTS

- A. Sustainable Design General Requirements

1. The Authority requires the Contractor to implement practices and procedures to meet the Project's sustainable design requirements. The Contractor shall ensure that the requirements related to these goals, as defined in Specification Section 01352 and the articles below, are implemented to the fullest extent. Substitutions, or other changes to the Work proposed by the Contractor, shall not be allowed if such changes compromise the stated Sustainable Design Performance Criteria.

### 1.06 QUALITY ASSURANCE

- A. Comply with all safety standards.

### 1.07 SUBMITTALS

- A. General: Submittals listed in this article shall be in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 - GENERAL PROVISIONS.
- B. Submit the following to the Engineer prior to start of removal Work:
  1. Description of proposed methods and operations of removal, for review and approval by the Engineer;
  2. Description of sequence of removal and disposal of Work, for review and approval by the Engineer.

3. Written inspection report with photographic documentation described in this Section.

C. Sustainable Design Submittal Requirements

1. The Contractor shall provide documentation of demolition activities in compliance with the requirements of the project's Construction Waste Management Plan. Plan requirements are detailed in Section 01352.

**PART 2 - PRODUCTS**

2.01 Not Used

**PART 3 - EXECUTION**

3.01 PREPARATION

A. Protection

1. Erect and maintain temporary covers, covered passageways, barricades or fences as required ensuring the safe passage of persons around area of removals.
2. Provide temporary interior and exterior shoring, bracing and/or support as required to ensure that movement or settlement of portions of structures to be removed is safely controlled and collapse is prevented. Ensure that movement, settlement, and/or damage to existing facilities does not occur.
3. Protection measures shall comply with the requirements of the project's Construction Environment Plan and Erosion and Sedimentation Control Plan.
4. Maximum noise levels shall comply with Building Code.

B. Pollution Controls

1. Use water sprinkling, enclosed chutes and/or temporary enclosures to limit dust and dirt rising and scattering in the air. Conform to requirements of this Section.
2. Do not use water when it may create hazardous or objectionable conditions such as ice or flooding.
3. Pollution Control measures shall comply with the requirements of the project's Construction Environment Plan and Erosion and Sedimentation Control Plan.

3.02 REMOVALS

- A. Conduct selective removals Work and disposal of debris to ensure minimum interference with sidewalks or street.

- B. Remove all glass in windows, doors, skylights and fixtures before proceeding with other required removal Work.
- C. Proceed with removals in a systematic manner, from top of structure to ground. Complete upper removals before disturbing lower supporting members.
- D. Do not store any materials, rubbish, dirt, debris or waste of any sort resulting from removal Work on the floor of areas to remain or adjacent construction site areas.
- E. Disposal of Removed Materials
  - 1. Unless otherwise shown on the Contract Drawings, legally dispose of debris, rubbish, and other materials resulting from removal operations away from Authority property.
  - 2. Removed materials shall be taken off Authority property on a daily basis. The stockpiling of removed materials on Authority property will not be permitted.
  - 3. On Authority property, do not burn, bury or otherwise dispose of debris, rubbish or other materials resulting from removal operations.
- F. Contractor's Salvaged Materials
  - 1. Removed materials not shown for reuse shall become the Contractor's property. Such materials shall be removed from Authority property at no additional cost to the Authority.

3.03 REPAIR

- A. Promptly repair, to the satisfaction of the Engineer and at no cost to the Authority, damage caused to adjacent construction by removal operations.

**END OF SECTION**

**SECTION 02073  
CUTTING, PATCHING AND REMOVAL**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This Section specifies requirements for cutting, patching and removal of existing construction.

**1.02 DESIGN AND PERFORMANCE REQUIREMENTS**

- A. Follow limits as established on Contract Drawings.

**1.03 RELATED SECTIONS**

- A. Section 01352 – Sustainable Design Requirements

**1.04 REFERENCES**

- A. None

**1.05 SUSTAINABLE DESIGN REQUIREMENTS**

- A. Sustainable Design General Requirements
  - 1. The Authority requires the Contractor to implement practices and procedures to meet the Project's sustainable design requirements. The Contractor shall ensure that the requirements related to these goals, as defined in Specification Section 01352 and in this Section are implemented to the fullest extent. Substitutions, or other changes to the Work proposed by the Contractor, shall not be allowed if such changes compromise the stated Sustainable Design Performance Criteria.

**1.06 QUALITY ASSURANCE**

- A. Cutting, patching and removal shall be performed by workers skilled in the specific trades involved.
- B. Job Conditions

1. Remove and dispose of all portions of the existing construction and appurtenant structures shown on the Contract Drawings to be removed and not be relocated or salvaged.
2. All other materials unless otherwise directed by the Engineer, shall be legally disposed of away from the Authority property.
3. Prior to start of work, make an inspection accompanied by the Engineer to determine physical condition of adjacent construction that is to remain.
4. Protect all existing and new construction including utilities, finishes and equipment from water, damage, weakening or other disturbance.

#### 1.07 SUBMITTALS

- A. Submit manufacturer's literature or materials to be used for patching.
- B. Submit plans, methods, equipment and procedures as applicable for cutting, patching and removal.
- C. Sustainable Design Submittal Requirements
  1. The Contractor shall submit the Sustainable Design certification items listed herein. Sustainable Design submittals shall include the following:
    - a. A completed Sustainable Design Materials Certification Form (SDMCF), appended to Section 01352. Information to be supplied for this form shall include:
      - 1) Cost breakdowns for the materials included in the Contractor's work. Cost breakdowns shall include total cost plus itemized material costs.
  2. The Sustainable Design submittal information shall be assembled into one package per Section or trade, and sent to the Engineer.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. All materials required for patching shall be new. Patching materials shall match in every respect adjacent portions of the existing construction.

### PART 3 - EXECUTION

#### 3.01 CUTTING, PATCHING AND REMOVAL

- A. Perform all cutting, patching and removal as shown on the Contract Drawings. Work shall be performed in accordance with the approved methods using approved materials.

- B. Do not cut or remove more than is necessary to accommodate the new construction or alteration.
- C. Maintain the integrity of all construction at all times.
- D. Protect finished surfaces at all times and repair or replace, if damaged, to match existing construction to the satisfaction of the Engineer.
- E. Do not allow removed materials and debris to accumulate at the site; remove them daily. All areas adjacent to, and leading to and from the site, shall be kept free of removed materials and debris.

**END OF SECTION**

**DIVISION 2****SECTION 02075****PARTIAL REMOVALS****PART 1. GENERAL****1.01 SUMMARY**

This Section requires the selective removal and subsequent offsite disposal of portions of the existing building as shown on the Contract Drawings and as required to accommodate new construction.

**1.02 DESIGN AND PERFORMANCE REQUIREMENTS**

- A. The Authority assumes no responsibility for guarding the removal areas either before or after the Contractor is given access thereto, and does not guarantee that their condition will remain the same after the submission of Proposals as before.
- B. Storage or sale of items of salvageable value to the Contractor is prohibited on the construction site.
- C. Removal using explosive, incendiary or wrecking ball methods is prohibited.
- D. Provide water and wet down the removal areas, as well as the sites adjacent to the portions of structure(s) being removed, to limit raising dust and dirt to lowest practical level. Provide water truck, water line or hydrant connection, and hoses for this purpose.
- E. Do not traverse pavement with tracked vehicles or other equipment which may damage pavement.
- F. Do not use heaters without prior approval of the Engineer. Installation of temporary heaters, if used, shall conform to American National Standards Institute (ANSI) A10.10 "Safety Requirements for Temporary and Portable Space Heating Devices and Equipment Used in the Construction Industry".
- G. Condition of Adjacent Construction
  - 1. Prior to starting removal work, make an inspection accompanied by the Engineer to determine physical condition of adjacent existing structure(s) or construction that is to remain.
  - 2. During such inspection the Engineer and the Contractor shall mutually agree on existing damage to adjacent existing structure(s) or construction that is to remain, if any, and the Contractor shall subsequently prepare and submit to the Engineer a written description of such mutually agreed upon existing damage, including photographic documentation when requested by the Engineer.

## H. Utility Services

1. Do not disrupt service to fire hydrants in any way without the prior written approval of the Engineer. If, with written approval of the Engineer, water service to any area is disrupted, make provisions to ensure adequate fire protection for such area.
  2. At all times during the Work of this Section, maintain accessibility from street to all fire hydrants, traffic signals, power or light poles, mailboxes, and similar utility and public service items adjacent to the construction site.
  3. Do not interrupt utilities serving occupied or used areas, except when authorized by the Engineer. Provide temporary services during such interruptions as approved by the Engineer.
  4. Arrange with the Engineer in advance of removal Work for disconnection or rerouting of utility line(s). Identify such capped, plugged, sealed or rerouted lines on a record drawing. Submit such drawing in accordance with 1.03 B.
- I. Occupancy: The Authority will occupy portions of the building immediately adjacent to areas of selective removals. Conduct selective removal Work in manner that will minimize need for disruption of the Authority's normal operations. Provide minimum of 72 hours advance notice to the Authority of removal activities that will affect the Authority's normal operations.
- J. Flame Cutting: Do not use cutting torches for removal until Work area is cleared of flammable materials. At concealed spaces, such as interior of ducts and pipe spaces, verify condition of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.

## 1.03 SUBMITTALS

For Submittal Requirements, see Appendix "A".

## PART 2. PRODUCTS

### 2.01 MATERIALS

#### A. Imported Fill

Soil materials to be delivered to the construction site by the Contractor, approved in accordance with 1.03C, shall be as follows:

For basements, voids and subbase, soil materials shall consist of stone, gravel, and sand, free from debris, trash, roots and other organic matter, with no particle size exceeding 2 inches in maximum dimension.

#### B. Rubble Fill

Rubble fill shall be concrete, brick or other masonry materials resulting from removals. Break fill material into pieces not exceeding 4 inches in their greatest dimension, with no flat or elongated pieces, with all protruding reinforcing cut or burned off, and with a sufficient percentage of smaller pieces to minimize voids. A flat piece is one having a ratio of width to thickness greater than five; an elongated piece is one having a ratio of length to width greater than five.

### **PART 3. EXECUTION**

#### **3.01 PREPARATION**

##### **A. Protection**

1. Erect and maintain temporary window or opening covers, covered passageways, barricades or fences as required to ensure safe passage of persons around area of removals.
2. Erect and maintain enclosed dust chutes as required for the disposal of materials, rubbish, and debris.
3. Erect and maintain dustproof partitions as required to prevent spread of dust, fumes or smoke to occupied portions of the building and adjacent buildings. Where selective removals occurs immediately adjacent to occupied portions of the building, construct dust-proof partitions of minimum 4-inch studs, 1/2-inch fire-retardant plywood on both sides.
4. Provide weatherproof closures for exterior openings and for roof areas with exposed, unprotected edges resulting from removals Work.
5. Provide temporary interior and exterior shoring, bracing and/or support as required to ensure that movement or settlement of portions of structures to be removed is safely controlled and collapse is prevented. Ensure that movement, settlement, and/or damage to existing facilities does not occur.
6. Provide bypass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to the Engineer if shutdown of service is necessary during changeover.

##### **B. Pollution Controls**

1. Use water sprinkling, enclosed chutes and/or temporary enclosures to limit dust and dirt rising and scattering in the air. Conform to requirements of 1.02 D.
2. Filter sediment from runoff before it enters drainage systems or waterways using methods approved by the Engineer following submittal in accordance with 1.03 A.4.
3. Do not use water when it may create hazardous or objectionable conditions such as ice or flooding.

### 3.02 REMOVALS

- A. Conduct selective removals Work and disposal of debris to ensure minimum interference with the use of, or access to, adjacent occupied areas, adjacent buildings, or construction site areas. Do not unnecessarily obstruct sidewalks or street.
- B. Remove all glass in windows, doors, skylights and fixtures before proceeding with other required removal Work.
- C. Proceed with removals in a systematic manner, from top of structure to ground. Complete upper removals before disturbing lower supporting members.
- D. Do not store any materials, rubbish, dirt, debris or waste of any sort resulting from removal Work on the floor of areas to remain or adjacent construction site areas.
- E. Remove concrete and masonry in small sections. Lower heavy framing members carefully.
- F. Where shown on the Contract Drawings, break and remove on grade and basement slabs.
- G. Disposal of Removed Materials
  - 1. Unless otherwise shown on the Contract Drawings, dispose of debris, rubbish, and other materials resulting from removal operations away from Authority property.
  - 2. On Authority property, do not burn, bury or otherwise dispose of debris, rubbish or other materials resulting from removal operations.
- H. Contractor's Salvaged Materials

Removed and salvaged materials not shown for reuse or as retained shall become the Contractor's property. Such materials shall be removed from Authority property at no additional cost to the Authority.

### 3.03 ADJUSTMENTS

- A. Unless otherwise shown on the Contract Drawings, provide fill for below-grade areas and voids resulting from the Work of this Section as follows:
  - 1. Fill to be placed one foot or more below grade or paving subgrade, or one foot or more away from foundation walls, edges of footings, or underground utility lines, may at the Contractor's option, be imported soil material or rubble fill as specified in 2.01.
  - 2. Fill to be placed in the remaining one-foot voids shall be approved imported soil material conforming to requirements of 2.01 A.1.
- B. Place approved rubble fill material in horizontal layers not exceeding one foot in loose depth, with top layer consisting of the smallest size rubble available. Compact each layer of rubble fill with at least four passes of a ten-ton roller, of a type approved by the Engineer.

- C. Place approved imported soil materials in horizontal layers not exceeding 6 inches in loose depth. Compact each layer at optimum moisture content of fill material to a density equal to original adjacent ground, unless otherwise directed by the Engineer.
- D. After placement and compaction of fill, grade surface to meet adjacent contours and to provide surface drainage.

#### 3.04 REPAIR

Promptly repair, to the satisfaction of the Engineer and at no cost to the Authority, damage caused to adjacent construction by removal operations.

END OF SECTION

## SECTION 02075

### PARTIAL REMOVALS

#### APPENDIX "A"

#### SUBMITTALS

- A. Submit the following to the Engineer prior to start of removal Work:
1. Description of proposed methods and operations of removal, for review and approval by the Engineer;
  2. Description of sequence of removal and disposal Work, for review and approval by the Engineer;
  3. Written inspection report described in 1.02 G.2; and
  4. Description of proposed method of filtering sediment from runoff, for review and approval by the Engineer.
- B. Submit in accordance with the requirements of "Shop Drawings, Catalog Cuts, and Samples", of Division 1 - GENERAL PROVISIONS, a record drawing indicating horizontal and vertical locations of disconnected, rerouted or capped utilities. Reference all such items to visible permanent surface features.
- C. For imported fill material, submit to the Engineer of Materials, Engineering Materials Laboratory, Port Authority Technical Center, 241 Erie Street, Jersey City, NJ 07310-1397, one 25- pound, representative sample of such material proposed for use under this Section, subject to the following:
1. Not less than three weeks prior to delivery of imported fill material to the construction site, submit sample in clean sturdy container or bag which shall not permit loss of any material.
  2. Clearly label sample with Contract number, title and location, material supplier's name and location and identification of fill material.
  3. Do not deliver imported fill material to the construction site until the Engineer has checked and approved the sample of such material.

END OF APPENDIX "A"

DIVISION 2

SECTION 02094

WORKER AND ENVIRONMENTAL PROTECTION FOR LEAD-BASED PAINT REMOVAL

PART 1 - GENERAL

1.01 SUMMARY

A. This Section specifies requirements for:

1. The installation and use of containment systems for the removal of paint coatings containing lead and other toxic metals in accordance with the Society for Protective Coatings (SSPC) guidelines listed on the attached table 1.
2. Worker and Environmental Compliance Plans for the protection of Contractor workers, the public, and the environment from exposure to harmful levels of lead that may be present in the paint being removed.
3. Ensuring that all waste is collected, handled, stored, transported, and disposed off in accordance with applicable regulations.

1.02 REFERENCES

The following is a listing of the publications referenced in this Section.

A. Code of Federal Regulations (CFR)

- |    |                 |   |
|----|-----------------|---|
| 1. | 29 CFR 1910.120 | Hazardous Waste Operations and<br>Emergency Response            |
| 2. | 29 CFR 1910.134 | Respiratory Protection  |
| 3. | 29 CFR 1926     | Occupational Safety and Health<br>Regulations for Construction  |
| 4. | 29 CFR 1926.51  | Sanitation  |
| 5. | 29 CFR 1926.62  | Lead  |
| 6. | 40 CFR 50       | National Primary and Secondary Ambient<br>Air Quality Standards |
| 7. | 40 CFR 261-264  | Hazardous Waste Standards                                       |
| 8. | 40 CFR 265.13   | General Waste Analysis  |

9. 40 CFR 268 Land Disposal Restrictions
  10. 49 CFR 171-179 Transportation Regulations
- B. New York Code of Rules and Regulations (NYCRR)
1. Title 6, Chapter III, 364-373 Hazardous Waste Management Regulations
- C. Society for Protective Coatings (SSPC)
1. SSPC Guide 6 Guide for Containing Debris Generated During Paint Removal Operations
  2. SSPC Guide 7 Guide for Disposal of Lead-Contaminated Surface Preparation Debris

#### REGULATORY REQUIREMENTS

- D. Comply with the requirements of this section as though the Authority were a private corporation. Comply with the requirements of all applicable Federal, State, and City laws, codes, and regulations, including, but not limited to the regulations of the:
1. United States Environmental Protection Agency (USEPA);
  2. Occupational Safety and Health Administration (OSHA);
  3. New York State Department of Environmental Conservation (NYSDEC);
  4. New York State Department of Health (NYSDOH); and
  5. New York State Department of Labor (NYSDOL).
- E. Comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or City regulation is more restrictive than the requirements of this Section, follow the more restrictive requirements.

### 1.03 QUALIFICATIONS AND EXPERIENCE

- A. Laboratory Qualifications/Occupational Physician
1. Verify that the analytical laboratories performing metals analysis on air, water, soil and solid waste, are accredited by The American Industrial Hygiene Association (AIHA), and has successfully participated (previous 12 months at a minimum) in the AIHA ELPAT program and PAT program.
  2. Verify that the laboratory conducting the worker blood analyses is approved by OSHA, and NYSDOH, as applicable.
  3. Verify the certifications of the Occupational Physician.

B. Competent Person/Supervisor. Employ one who:

1. Has a minimum of two years industrial painting field experience, with a minimum of ninety days field supervisory or management experience in paint removal projects;
2. Has proof of completion of 29 CFR 1926.62 Lead in Construction training.
3. Has proof of 29 CFR 1910.120 (initial or refresher) HAZWOP Supervisor training within the last 12 months;
4. For work in New York, has proof of completion of Society for Protective Coatings (SSPC) Competent Person for Deleading of Industrial Structures (SSPC C-3) course or equivalent. Certification must be maintained throughout the duration of the Contract.

C. Workers. Confirm that:

1. All workers have proof of completion of 29 CFR 1926.62 Lead in Construction training.

1.04 SUBMITTALS

See Appendix A.

PART 2 - PRODUCTS

2.01 PERSONAL PROTECTIVE MATERIALS AND MONITORING EQUIPMENT

A. Monitoring and Testing Equipment

1. Supply the instrumentation needed for monitoring worker and area exposures.
2. Supply all equipment needed for the operation of all instrumentation and monitors (e.g., generators, batteries, power cords, fuel, etc.).

B. Personal Protective Equipment and Hygiene Facilities

1. Provide all personal protective equipment (PPE) needed for Contractor's workers and for up to four Engineering representatives at each shift.
2. Repair or replace PPE as required to assure that it continues to provide its intended purpose.

C. Containment Materials

1. Supply all equipment and materials needed to contain debris in accordance with the provisions of this Section. This may include ground

covers, rigging, scaffolding, planking, containment materials, dust collection and ventilation equipment and HEPA vacuums.

### PART 3 - EXECUTION

#### 3.01 WORKER PROTECTION CRITERIA FOR LEAD

- A. Competent Person - confirm that daily inspections of the work area will be made by a competent person.
- B. Written Compliance Program (WCP) – Prepare a WCP in accordance with 29 CFR 1926.62 (e)(2)(i). Maintain a copy of the WCP at the construction site for review by all employees and interested parties.
- C. Engineering and Work Practice Controls – Implement engineering and work practice controls, including administrative controls, to reduce and maintain employee exposure to lead below the PEL.
- D. Exposure Monitoring/Initial Assessment – Collect representative personal air samples in accordance with 29 CFR 1926.62 (d)(1)(iii). Protect workers during initial exposure assessment in accordance with 29 CFR 1926.62 (d)(2)(i). If historical data will be used in accordance with 29 CFR 1926.62 (d)(3)(iii), provide prior to start of work for evaluation by the Engineer.
- E. Respiratory Protection- Implement a Respiratory Protection Program in accordance with 29 CFR 1910.134. Proper selection, use, maintenance and inspection of respirators is required. Provide medical clearance and fit tests for respirator users.
- F. Protective Clothing and Equipment - Provide clean protective clothing and equipment in accordance with 29 CFR 1926.62 (g) and ensure they are used by all employees whose exposures exceed the PEL. Provide closed containers for items to be cleaned, such as work shoes and facemasks. If the clothing is disposable, label the containers as clothing contaminated with lead, if applicable. Apply hazardous waste labels as appropriate after testing.
- G. Housekeeping – In accordance with 29 CFR 1926.62 (h), clean accumulations of dust or debris containing lead daily and conduct all cleaning with HEPA (High Efficiency Particulate Air)-filtered vacuums. Containerize the debris for proper disposal. Bags and containers should be appropriately labeled as lead-containing waste.
- H. Personal Hygiene Facilities and Equipment/Decontamination Zone – In accordance with 29 CFR 1926.62 (i), provide clean change areas, showers, lavatory, eating facilities, and hand washing facilities as necessary for workers who may be exposed to lead at or above the OSHA PEL.
- I. Medical Surveillance and Medical Removal Protection – In accordance with 29 CFR 1926.62 (j) and (k), perform initial and periodic blood sampling and analysis for lead and zinc protoporphyrin (ZPP) when an employee is exposed to

lead at or above the OSHA Action Level of 30 ug/m<sup>3</sup>. Provide the Engineer with blood analysis results.

- J. Employee Training and Information - In accordance with 29 CFR 1926.62 (l), provide initial and annual refresher site specific training for all employees who may be exposed to lead at or above the OSHA Action Level.
- K. Signs and Restricted Zones - In accordance with 29 CFR 1926.62 (m), establish restricted zones around areas or activities that might generate airborne emissions of lead in excess of the OSHA Action Level and post caution signs around each restricted zone.
- L. Record keeping - In accordance with 29 CFR 1926.62 (n), retain all records related to training, medical examinations, blood analysis, exposure monitoring, respirator fit testing, inspections by a competent person, and other related documentation.
- M. Visible Assessments - Conduct daily assessments of visible emissions and releases to the air, soil, water, and sediment, as applicable. Undertake all necessary corrective action to control emissions.

### 3.02 AMBIENT AIR MONITORING FOR LEAD

- A. High Volume Ambient Air Monitoring
  - 1. The Engineer will undertake high volume ambient air monitoring during paint removal and clean-up activities to confirm that emissions do not exceed the EPA National Primary and Secondary Ambient Air Quality Standards (NAAQS), or specific New York or New Jersey regulations.
  - 2. Total suspended particulate (TSP-lead) will be analyzed in accordance with 40 CFR 50 Appendix G.
  - 3. The number and location of monitors will be determined by the Engineer, taking into consideration proximity to homes, businesses, and the general surroundings. Monitor siting and operation will be performed in accordance with the guidance provided in Methods A1 and A2 of SSPC publication 95-06, Project Design.
  - 4. The Contractor will be advised if such monitoring will be performed and will be provided with verbal background and ongoing results. Written results will be provided if requested by the Contractor.
  - 5. Take the following corrective action when air monitoring results exceed the following:
    - a. If the emissions of 1 day of monitoring exceed 4.5 µg/m<sup>3</sup> (8 hour period), assess all field data for that day and take appropriate corrective action to control emissions.

- b. If the emissions of 2 consecutive days of monitoring exceed  $4.5 \mu\text{g}/\text{m}^3$  (8 hour period), suspend dust producing operations (e.g., paint removal and/or clean-up) and implement appropriate corrective action to control emissions.
  - c. If the emissions on any one day exceed  $13.5 \mu\text{g}/\text{m}^3$  (8 hour period), suspend dust producing operations (e.g., paint removal and/or clean-up) and implement appropriate corrective action to control emissions.
6. Regardless of the ambient air monitoring results, ensure at all times that no visible emissions occur

3.03 ON-SITE MANAGEMENT, TRANSPORTATION, AND DISPOSAL OF PAINT DEBRIS, WASTEWATER, AND ANY OTHER WASTE GENERATED FROM THE WORK.

A. General

1. Contractor is responsible for the collection, handling, storage, transportation and disposal of all hazardous wastes generated from this Work. The Authority will provide the EPA identification number for lead waste disposal for permitting purposes.
2. The Contractor is responsible for the collection, handling, transportation, and disposal of all solvent wastes generated from this Work. The Contractor must acquire their own EPA identification number for the disposal of solvent wastes.
3. The Contractor is responsible for the collection, handling, transportation, and disposal of all non-hazardous municipal/construction waste and waste water generated from this Work.
4. Recover all waste products generated during the paint removal Work, including but not limited to rags, tape, disposable coveralls, filters, and sediments.
5. Store waste only at location designated by the Engineer. Transport the waste to the designated storage area at the end of each working day, at a minimum.
6. Hazardous waste generation reports and fees/taxes imposed by the States shall be handled and paid for by the Contractor.

B. Items provided by the Contractor

1. Hazardous Waste - Provide DOT-approved containers of the appropriate size and type for the hazardous waste generated, including but not limited to, paint chips, protective clothing, and the interior lining of the

containment. Use containers that are resistant to rust and corrosion, (painted if constructed of steel), that have tight fitting lids or covers, and which are water resistant and leak proof.

2. Municipal/Construction Waste - Provide all containers for non-hazardous municipal/construction waste. Use containers that are free of loose debris when brought to the construction site.
3. Spent Solvents - Provide all DOT-approved containers for spent solvents. Do not mix spent solvents with paint debris, water or other lead contaminated waste.

C. Waste Sampling, Testing, And Classification

1. Sampling: Collect and have analyzed, representative samples of each waste stream generated by the Work. Collect the samples under the observation of the Engineer.
2. Testing
  - a) Solid Waste: Direct the laboratory to test the solid waste in accordance with 40 CFR 261, Appendix II, Method 1311, Toxicity Characteristic Leaching Procedure (TCLP), to determine if it is hazardous. (Equal to or greater than 5 mg/L)
  - b) Waste water - test the waste water for Total metals (As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Zn), hexavalent chromium, pH, suspended solids, oil and grease, BOD, temperature, total cyanide, TPH, and other analytical parameters required for disposal characterization or by the disposal facility.
3. Laboratory Report
  - a) Include the following minimum information in each report : Identity of the RCRA listed waste streams and identity of the waste stream(s) analyzed, the number of samples collected and tested, dates of sampling and testing, laboratory test procedures utilized, the names and signatures of the individuals collecting the samples and analyzing the laboratory tests, interpretation of the test results, and final determination.
  - b) Include copies of the chain-of-custody forms in the documentation of hazardous waste and non-hazardous waste streams.

D. Waste Handling, Packaging, And Storage

1. Comply with 40 CFR 262 for the on-site handling, packaging, and storage of all waste generated by the Work.

2. All paint debris shall be vacuumed and collected in DOT-approved 55-gallon drums at the end of each Work period. Paint debris shall include paint chips and dust and shall not include any other construction debris, trash or chemical solvents. All disposable protective clothing and interior lining of the containment system shall be collected in DOT-approved drums at the end of each Work period.
3. At the Work areas, store waste in locations designated by the Engineer. Do not place hazardous waste on unprotected grounds (e.g. cover the ground with impervious tarping). Locate in a secure area with signs around the perimeter, and shield adequately to prevent dispersion of the waste by wind or water.
4. Properly transport all non-hazardous waste municipal/construction waste from the Work areas to the designated storage area. Verify that the waste is completely covered during transportation.
5. Maintain all drums in good operating condition with all lids and closing mechanisms intact and operational to prevent escape of debris by winds, spilling of contents, or access by unauthorized personnel.
6. Store non-hazardous waste separately from hazardous waste. Do not mix hazardous waste with non-hazardous waste. Do not mix different types of hazardous waste unless specifically approved by the Engineer.
7. Verify that all waste is transported to the appropriate recycling or disposal facility within 60 days after waste is first placed into the container.
8. Train all personnel in the proper handling of hazardous waste at the Work site in accordance with 29 CFR 1910.120, including the procedures to follow in the event of a release or spill, required notifications, and methods of clean-up. Maintain all training records on-site.

E. Labeling of Containers

1. Immediately label all containers of waste and paint debris to identify the contents. Label containers of paint debris as "LEAD PAINT WASTE, CONTAINS LEAD". Include the Contract Number and locations. Provide similar labels on containers of other waste, wastewater and debris.
2. After the TCLP test results are received, or after determination of hazardous waste status based on RCRA list at 40 CFR 261, Subpart D, immediately apply hazardous waste labels, if the waste tests hazardous. Label each container of hazardous waste in accordance with 40 CFR 262, and 49 CFR 171-179.

F. Waste Transportation and Disposal (with the Exception of Waste Water)

1. Hazardous Waste

- a) Prepare the hazardous waste manifest for each shipment and provide to the Engineer for review and signature.
- b) Arrange for the transportation of all hazardous waste by a licensed transporter in accordance with 40 CFR 263, 49 CFR 171-179, and 6 NYCRR 364.
- c) Hazardous Paint Waste (TCLP results which indicate that lead concentrations are equal to or greater than 5 mg/L) shall be treated and stabilized to TCLP levels below 0.75 mg/L prior to disposal.
- d) Provide a certification for each manifested shipment that the waste was accepted by the recycling or disposal facility, and properly treated and disposed. Comply with all of the manifesting, certification, and reporting requirements for hazardous waste in accordance with 40 CFR 262, 40 CFR 268, and 6 NYCRR 372, including certificates of final disposal for each shipment.

2. Non-Hazardous, Municipal, and Construction Waste

- a) Properly transport, and dispose of all non-hazardous, municipal and construction waste.
- b) Verify that waste is completely covered during transport.
- c) If lead or hazardous substances were detected during the laboratory testing, notify the disposal facility that such metals or materials are present in the waste.
- d) For non-hazardous lead waste with TCLP results which indicate lead concentrations between 1 mg/L and 5 mg/L, the waste shall be treated and stabilized to TCLP levels below 0.75 mg/L prior to disposal.
- e) Comply with additional City and local regulations as applicable.

G. Waste Water Handling And Disposal

- 1. Provide containers for the collection and retention of all waste water including but not limited to the water used for steam cleaning, hygiene purposes, decontamination and cleanup activities. Filter visible paint chips and particulate from the waste water prior to placing it into the containers. Make disposal arrangement with the local publicly owned treatment works (POTW), sanitation company, or other appropriate permitted facility.

- H. Cleaning of Haul Routes - Clean waste transportation haul routes upon completion of operation at end of each hauling.

END OF SECTION

DIVISION 2

SECTION 02094

WORKER AND ENVIRONMENTAL PROTECTION FOR LEAD-BASED PAINT REMOVAL

APPENDIX A

SUBMITTALS

- 1.0 GENERAL - Provide all submittals of this Appendix in accordance with the requirements of "Shop Drawings, Catalog Cuts, and Samples" of Division 1, General Provisions.
- 2.0 PRE-CONSTRUCTION
  - A. Provide a site-specific WCP. Include the methods and procedures that will be followed for complying with this Section and 29 CFR 1926.62 for Lead.
    1. Scope of Work – provide site specific information such as method of lead removal, lead work location(s), duration of lead work, crew size, login procedures, key personnel, competent person(s), containment classifications and the location of the WCP during the project.
    2. Qualifications and Experience - provide written qualifications, experience, training, and certification information for the contractor and subcontractors, laboratories, physician, competent person/supervisor and workers, as stated in 1.03 of this Section.
    3. Engineering and Work Practice Controls – provide a written program describing method of lead removal, air monitoring, containment/collection systems, equipment, and safety. Include catalog cuts for all equipment.
    4. Exposure Assessments – provide a written program for site exposure assessments. Include details of personal air monitoring and note specific lead disturbance tasks. Identify personnel performing air sampling. Provide certifications of laboratory conducting air-sampling analysis. If historical data is to be used, provide to Engineer for evaluation.
    5. Respiratory Protection - provide a written program in compliance with 29 CFR 1926.103. Address the selection, use, maintenance and inspection of respirators, and qualifications for respirator users. Include copies of fit test records for all crew and catalog cuts of respirators. Include letter from physician stating workers are fit to wear respirators.
    6. Protective Clothing and Equipment - provide a written program for selection, use, replacement and disposal of protective clothing and equipment. Include catalog cuts for all PPE.

7. Housekeeping – provide a written program describing cleaning frequency, cleaning with HEPA vacuums, cleaning with biodegradable lead detergents, containerizing, storing and disposing of lead dust and paint chips.
  8. Personal Hygiene Facilities and Equipment/Decontamination Zone – provide a written program describing decontamination procedures, hand wash, showers, break areas and change areas. Include catalog cuts for decon unit and hand wash station.
  9. Medical Surveillance and Medical Removal Protection – provide a written program describing frequency and type of blood testing, medical removal, and physical examinations. Provide certifications for laboratory conducting blood work, certifications of occupational physician, and copies of blood lead and ZPP testing for workers and competent person(s).
  10. Employee Training and Information – provide a written program describing training requirements and frequency. Provide evidence of training for all workers.
  11. Signs and Restricted Zones – provide a written program for establishing restricted zones and use of Lead Work signs.
  12. Record keeping – provide a written program describing record keeping procedures.
  13. Visible Assessments – provide a written program for assessments of visible emissions.
  14. Chemical Safety and Handling – provide a written program for the safe use and storage of chemicals on-site. Provide MSDS for chemicals to be brought on-site.
- B. Waste Handling Plan – Provide a written program that addresses the proper handling and disposal of all waste as described in 3.03 of this Section.
1. Transporter Qualifications, Experience, and Permits: Provide the names, addresses, qualifications, and contact persons for the proposed transporter(s) of hazardous waste, non-hazardous waste, and waste water. Provide evidence that each transporter has current registration approved by NYSDEC, and/ or DOT, as applicable.
  2. Disposal Facility Qualifications, Experience, and Permits: Provide the name, address, telephone number and contact person for each waste disposal facility proposed for use in the Contract. Provide evidence that each disposal facility has current registrations and permits for the operation of such facilities, or written approval from the state (and by the USEPA or other local agency, if applicable) in which it operates.
- C. Contingency Plan and Emergency Procedures

1. Submit a Contingency Plan and Emergency Procedures to respond to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the construction site.
  - a) Describe arrangements agreed to by local police departments, fire departments, hospitals and state and local emergency response teams.
  - b) List names, addresses, and phone numbers of all persons qualified to act as emergency coordinators. Include a list of all emergency equipment at the construction site (fire extinguishers, spill control equipment, communications and alarm systems and decontamination equipment).
  - c) Include an evacuation plan for workers. Describe signals to be used to begin evacuation.
2. Submit evidence that a copy of the plan has been submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

### 3.0 CONSTRUCTION PHASE

- A. Provide a complete analytical package of TCLP test results of waste samples within 4 weeks after sample collection.
- B. Provide a complete analytical package of waste water test results of waste sample collection within 4 weeks after sample collection.
- C. Waste Manifests - Submit to the Engineer one copy of
  1. Executed and signed manifests for each load of waste material transported from the construction site. Provide the manifest within one day of shipment.
  2. Executed waste manifest form signed by a responsible party of the disposal facility. Provide the form within one day of receipt. If the copy is not received within 35 days from the date of shipment, contact the Engineer, and assist as directed, in efforts to locate the shipment, and in the completion of the EPA Exception Reports (if the signed manifest is not received within 45 days of the date of shipment).
  3. Certificate of final disposal for each manifest or certificate of recycling for recycled material. Provide the certification within one day of receipt.
- D. Bills of Lading - Provide bills of lading for the disposal of all non-hazardous municipal/construction waste within one week of the date of shipment.

- E. Waste water - Provide written documentation of the receipt of disposal of all waste water within one week of the date of shipment.
- F. Clean-up - Prior to issuance of Certificate of Final Completion, provide the Engineer with a letter report presenting the results of the inspections conducted to verify the final cleanliness of the construction site, surrounding property, waterways, equipment, buildings, and structures.

END OF APPENDIX A

DIVISION 2

SECTION 02094

WORKER AND ENVIRONMENTAL PROTECTION FOR LEAD-BASED PAINT REMOVAL

TABLE 1

<b>Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals<sup>1</sup></b>									
<u>Containment Removal Method</u>	<u>Containment SSPC Class<sup>2</sup></u>	<u>Containment Material Flexibility</u>	<u>Containment Material Permeability<sup>3</sup></u>	<u>Support Structure</u>	<u>Material Joints</u>	<u>Containment Entryway</u>	<u>Ventilation System Required</u>	<u>Negative Pressure Required</u>	<u>Exhaust Filtration Required</u>
Hand Tool Cleaning <sup>4</sup>	3P	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/ Vacuum <sup>4</sup>	3P	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/o Vacuum <sup>5</sup>	2P	Rigid or Flexible	Permeable or Impermeable	Rigid or Flexible	Fully or Partially Sealed	Overlapping or Open Seam	Natural <sup>5</sup>	No	No <sup>5</sup>
Chemical Stripping <sup>6</sup>	3C	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed	Open Seam	Natural	No	No <sup>6</sup>
Wet Methods <sup>7</sup>	2W-3W	Rigid or Flexible	Permeable or Impermeable	Rigid, Flexible, or Minimal	Partially Sealed	Overlapping or Open Seam	Natural <sup>7</sup>	No	No <sup>7</sup>
Abrasive Blast Cleaning <sup>8</sup>	1A	Rigid or Flexible	Impermeable	Rigid or Flexible	Fully Sealed	Airlock or Resealable	Mechanical	Yes	Yes

<sup>1</sup>This table provides general design criteria only. It does not guarantee that specific controls over emissions will occur because unique site conditions must be considered in the design. Other combinations of materials may provide controls over emissions equivalent to or greater than those combinations shown above.

<sup>2</sup>The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers must be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.

<sup>3</sup>Permeability addresses both air and water as appropriate. In the case of water or chemical removal methods, the containment materials must be resistant to both chemicals and water. Ground covers should always be impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up.

<sup>4</sup>Ground covers and/or free hanging tarpaulins may provide suitable controls over emissions without the need to completely enclose the work area.

<sup>5</sup>Ventilation is not required provided the emissions are controlled as specified in this Section, and provided worker exposures are properly controlled. If unacceptable worker exposures to lead or other toxic metals occurs, incorporate a ventilation system into the containment.

<sup>6</sup>Ground covers must always be impermeable and of sufficient strength to withstand the weight and impact of the debris and the equipment used for cleaning. If debris escape through the seams, then additional sealing of the seams and joints is required. All containment materials and materials used for sealing must be resistant to both chemicals and water. If unacceptable worker exposures to lead or other toxic metals occurs, incorporate a ventilation system.

<sup>7</sup>This method applies to pressure washing, high pressure water jetting with and without abrasive, and wet abrasive blast cleaning. Although both permeable and impermeable containment materials are included, ground covers and the lower portions of the containment must be water impermeable with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. Ventilation is not required provided the emissions are controlled as specified in this Section, and provided worker exposures are properly controlled. If unacceptable worker exposures to lead or other toxic metals occurs, incorporate a ventilation system into the containment.

<sup>8</sup>Ground covers must be of sufficient strength to withstand the impact and weight of the abrasive and the equipment used for cleaning. Ground covers must also extend beyond the containment boundary to capture escaping debris. If vacuum blasting is employed, ground covers and/or free hanging tarpaulins may provide suitable controls over emissions without the need to completely enclose the work area.

**SECTION 02145**  
**DEWATERING**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. This Section specifies requirements for dewatering construction excavations.

1.02 DESIGN AND PERFORMANCE REQUIREMENTS

A. Job Conditions

1. The Contractor shall take all steps necessary to familiarize himself with and obtain a thorough knowledge of the characteristics of the existing soils, groundwater and site conditions adjacent to and beneath the Work area prior to designing and selecting a dewatering system.
2. The Contractor shall be responsible for verification of location of existing underground structures and utilities.
3. Dewatering system shall not interfere with existing structures, utilities or with the construction.

B. Dewatering System

1. The dewatering system shall be capable of lowering and controlling the ground water level and hydrostatic pressure to permit the excavation and other Work to be performed in the dry, to preclude disturbance to soil at or below foundation subgrade and to prevent uplift of the construction due to hydrostatic pressure.
2. Maintain adequate control so that: the stability of excavated and construction slopes is not adversely affected by storm water or runoff; erosion is controlled; and flooding of excavations or damage to structures does not occur. The control of all ice and snow shall be considered as part of the dewatering requirements.
3. Where excavations extend below the water table, lower the water table and hydrostatic head to a minimum of two feet below the elevation of the required subgrade and maintain this condition during construction.
4. To monitor effectiveness of dewatering system install instrumentation as detailed on Contract Drawings and in conformance with the Section 02228.

1.03 RELATED SECTIONS

- A. Section 01352 -- Sustainable Design Requirements
- B. Section 02228 -- Instrumentation For Settlement And Ground Water Observations

## C. Section 02073 - Cutting, Patching And Removal

## 1.04 REFERENCES

- A. Not Applicable

## 1.05 SUSTAINABLE DESIGN REQUIREMENTS

## A. Sustainable Design General Requirements

1. The Authority requires the Contractor to implement practices and procedures to meet the Project's sustainable design requirements. The Contractor shall ensure that the requirements related to these goals, as defined in Specification Section 01352 and the articles below, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor, shall not be allowed if such changes compromise the stated Sustainable Design Performance Criteria.

## 1.06 QUALITY ASSURANCE

- A. Entities performing the Work of this Section shall have been engaged in such Work for at least the last five years, shall have satisfactorily completed at least three dewatering projects involving complexities similar to those required under this Contract and shall have available adequate equipment, facilities and qualified personnel to design, install and maintain the dewatering system required under this Section.

## 1.07 SUBMITTALS

- A. Submit summary of qualifications and experience on projects of similar complexity to demonstrate conformance to the requirements of this Section.
1. Submit details of method proposed for installing the permanent construction in areas where dewatering is required.
  2. Submit design calculations for the extent of ground water lowering and pumping discharge. Methods of calculation shall be subject to approval by the Engineer.
  3. Submit shop drawings in accordance with the requirements of "Shop Drawings, Catalog Cuts, and Samples" of Division 1 - GENERAL PROVISIONS, showing the layout of all appurtenances for the dewatering system including pump sizes(s), sumps, filters, wellpoint size and spacing, header pipe size, discharge pipe size, silt box size and construction, discharge locations and any other equipment required by the Work. The drawings shall be drawn to a scale of 1 inch equals 20 feet.
  4. Submit daily reports recording discharge flow rate from the dewatering system.
  5. All changes to the Contractor's approved dewatering systems shall be subject to the approval of the Engineer.

**PART 2 - PRODUCTS**

2.01 NOT APPLICABLE

**PART 3 - EXECUTION**

## 3.01 INSTALLATION

- A. Installation of dewatering system shall not commence until approval of the design and equipment has been received in writing from the Engineer. Approval by the Engineer shall not relieve the Contractor from responsibility for the adequacy of the design to achieve the performance requirements, as specified in this Section.
- B. The Engineer will establish average piezometric levels from the measurements of groundwater levels in piezometers installed by the Contractor as specified in Section 02228, prior to the dewatering operations. The piezometer readings observed during construction shall be referenced to the pertinent preconstruction groundwater level to determine the extent of ground water lowering.
- C. Intercept and divert storm water runoff, surface water, and groundwater away from excavation and piezometer installations through the use of dikes, curb walls, ditches, pipes, sumps or other means.
- D. Dewatering operations shall be designed to prevent loss of fines through the well points and pumping system.
- E. Elements of the system shall be located so as to allow for a continuous dewatering operation without interfering with the permanent construction. Where portions of the dewatering system are located in the areas of permanent construction, the Contractor shall submit details of the method he proposes for installing the permanent construction in these locations for the approval of the Engineer.

## 3.02 OPERATIONS

- A. Prior to commencing dewatering operations, install and obtain initial readings on all instrumentation specified in Section 02228. Do not commence pumping until installation records and initial readings have been received and approved by the Engineer.
- B. The dewatering system shall be activated sufficiently in advance of excavation, so that the water level is maintained below the surface of the excavation during all stages of construction.
- C. Unless otherwise approved by the Engineer, the dewatering system shall be operated on a twenty-four hour per day basis, seven days per week, and standby pumping facilities shall

be provided to maintain the continued effectiveness of the system. Dewatering operations shall not be discontinued without the prior written approval of the Engineer.

- D. Maintain the water level a minimum of two feet below the subgrade, unless otherwise permitted by the Engineer. Maintain the water level at said elevation until no danger to any structure under construction can occur because of buildup of excessive hydrostatic pressure.
- E. If approved by the Engineer, the extent of dewatering may be reduced for structures designed to withstand uplift pressure, provided the water level at any stage of the construction does not result in uplift pressures in excess of 80 percent of the downward pressure produced by the weight of the structure and backfill (if any) in place.
- F. If ground water is encountered within the excavation at higher elevations than are observed in the piezometers, it shall be lowered to meet the requirements of this Section.
- G. If, in the opinion of the Engineer, the water levels are not being lowered or maintained as required by this Section, install additional or alternate dewatering equipment as necessary, at no additional cost to the Authority.
- H. Put standby equipment in immediate operation in the event that any part of the system becomes inadequate or fails.
- I. Dewatering operations will comply with the requirements of the project's Erosion and Sedimentation Control Plan.

### 3.03 WATER DISPOSAL

- A. Dispose of water removed from excavations in a manner to avoid endangering public health, property, and portions of Work under construction or completed. Dispose of water in a manner to avoid inconvenience to others engaged in Work about the construction site. Provide sumps, silt boxes and other flow control devices as required.
- B. Unless otherwise shown on the Contract Drawings, all pumping equipment shall discharge into existing drainage facilities as approved by the Engineer.
- C. Water Disposal operations will comply with the requirements of the project's Erosion and Sedimentation Control Plan.

### 3.04 REPAIR AND CLEAN-UP

- A. After dewatering is completed, after completion of the permanent construction, or as approved by the Engineer, dismantle and remove all equipment.

- B. Promptly repair and/or replace all damaged or destroyed facilities to the satisfaction of the Engineer.
- C. All patching shall be performed in accordance with the requirements of Section 02073

**END OF SECTION**

## DIVISION 2

### SECTION 02151

### JACKING AND TEMPORARY SHORING ASSEMBLY

#### PART 1. GENERAL

##### 1.01 SECTION INCLUDES

- A. The work shall consist of raising, supporting and lowering each support point as indicated on the load transfer drawings in order transfer the load of the of the existing 1/9 subway box to the temporary shoring system during construction, and finally to the permanent structure. This shall include, but not limited to, hydraulic jacks, temporary support hanger rod assembly, steel framing, piles, shoring posts, and underpinning attachments.

##### 1.02 STANDARDS AND REGULATIONS

AASHTO Guide Specification for Bridge Temporary Work (where applicable)

##### 1.03 DESIGN/PERFORMANCE REQUIREMENTS

The temporary support work shall be constructed to substantially conform to the load transfer drawings. The materials used in the temporary support construction shall be of the quality necessary to sustain the stresses required by the temporary work design.

##### 1.04 RESTRICTIONS AND QUALITY CONTROL

- A. The professional engineer, designer of jacking operations, defined as the Contractor's engineer, shall be present at the site at all times when jacking operations, adjustments, or load transfer operations are in progress. The Contractor's engineer shall inspect the jacking and shoring operation and report in writing on a daily basis the progress of the operation and the status of the remaining work. A copy of the daily report shall be furnished to the Engineer on a weekly basis and shall be available at the site of the work at all times. Should an unplanned event occur, the Contractor's engineer shall submit immediately to the Engineer for approval, the procedure or proposed operation to correct or remedy the occurrence.
- B. The Contractor shall perform an initial survey as part of the displacement monitoring system to record the location of the existing structure prior to the commencement of any work. Two copies of the survey shall be signed and submitted to the Engineer.
- C. Vandal-resistant displacement monitoring equipment shall be provided and maintained. Vertical and horizontal displacements of the temporary supports and the existing structure shall be monitored continuously during jacking operations and shall be accurately measured and recorded at least weekly during removal work. At a minimum, elevations shall be taken prior to the start of jacking operations and immediately after jacking is complete. The existing structure shall also be monitored at the mid-span of the 1/9 box. Control points at each location shall be located near the center and at both edges of the 1/9 subway box structure. The records of vertical and horizontal displacement shall be signed by a registered Engineer in the State of NY and available to the Engineer at the jobsite during normal working hours, and a copy of the record shall be delivered to the Engineer at the completion of each work day.

- D. A force equal to the dead load shall be applied to the structure by the temporary support system and held until all initial compression and settlement of the system is completed before further work at the location being supported is begun.
- E. Jacking operations shall be carefully controlled and monitored to ensure that the jacking loads are applied simultaneously to prevent distortion and excessive stresses that would cause instability in the structure.
- F. Train traffic shall not be permitted on the temporarily supported portion of the 1/9 subway tracks until the load is transferred by means other than hydraulic, such as shims or hanger rod adjustment.

#### 1.05 SUBMITTALS

- A. Product description of the jacking systems, manufacturer, and performance shall be per the design requirements.
- B. Means and Methods for the Review and Approval of the Engineer -The Contractor shall submit to the Engineer working drawings and design calculations for the temporary supports. Such drawings and design calculations shall be signed by an engineer who is registered in the State of New York. Approval by the Engineer of the temporary support working drawings or temporary support inspection performed by the Engineer will in no way relieve the Contractor of full responsibility for the temporary supports.

### PART 2. PRODUCTS

#### 2.01 MATERIALS

- A. Unless otherwise specified on the plans, the choice of lifting equipment shall be at the contractor's option, subject to the following: the jacks shall have the rated capacity clearly displayed on the jack. Each jack or groups of jacks shall be equipped with either a pressure gauge or a load cell for determining the jacking force. Pressure gauges shall have an accurately reading dial at least 150 mm in diameter. Each jack shall be calibrated within 6 months prior to use and after each repair. Each jack and its gauge shall be calibrated as a unit with the cylinder extension in the approximate position, so that it will be at final jacking force, and shall be accompanied by a certified calibration chart. Load cells shall be calibrated and provided with an indicator by which the jacking force is determined.
- B. Temporary shoring posts or piles shall be designed and adequately braced as necessary to withstand all imposed loads during construction. Wind and seismic loads shall be included. The design calculations shall show the stresses and deflections of the supporting members.
- C. When hanger rod assembly is used, it shall be designed so as to provide adequate connections to the existing structure as well as the overhead supporting structure.

### PART 3. EXECUTION

#### 3.01 PREPARATION

- A. Furnish products as indicated.

### 3.02 INSTALLATION

- A. The jacking and temporary support work shall be constructed to substantially conform to the load transfer drawings. The materials used in the temporary work construction shall be of the quality necessary to sustain the stresses required by the load transfer and temporary work design. The manufactured assemblies, such as jacking equipment, shall be certified by the manufacturer. Prior to proceeding with the jacking, an engineer for the Contractor who is registered as a Civil Engineer in the State of New York shall inspect the temporary supports, including jacking and displacement monitoring systems, for conformity with the working drawings. The Contractor's engineer shall certify in writing that the temporary supports, including jacking and displacement monitoring systems, conform to the working drawings, and that the material and workmanship are satisfactory for the purpose intended. A copy of this certification shall be furnished to the Engineer and shall be available at the site of the work at all times.

#### END OF SECTION SECTION 02151

#### JACKING AND TEMPORARY SHORING ASSEMBLY

#### APPENDIX "A"

#### SUBMITTALS

The following items shall be submitted to the Engineer for approval except as otherwise noted.

##### A. Shop Drawings

- 1 As per Division 1, "Shop Drawings, Catalog Cuts and Samples."
- 2 Connection Design and Detailing, prior to submitting job standards.
- 3 Job standards prior to submitting detailed shop drawings.
- 4 Prior to the commencement of fabrication, approval of shop drawings for all jacking and temporary shoring.
- 5 Erection drawings.

##### B. Catalog Cuts, Material Certification, Welder Qualifications, Welding Procedure Specifications, and Test Results

- 1 As per Division 1, "Shop Drawings, Catalog Cuts and Samples."
- 2 Catalog cuts and manufacturer's literature.
- 3 Inspection and test results from field tests within five calendar days of inspections and tests.

##### C. Quality Control Documents

1. Copy of the fabrication shop's Quality Control Program. The program, at a minimum, shall include the following:
  - A. Organizational chart indicating specific names and titles of personnel clearly identifying the reporting structure of personnel and the qualifications of the individuals responsible for implementing the program;
  - B. Material traceability, indicating the procedure used to identify each individual piece mark and its components that can be traced to a specific heat number on mill test reports; and
  - C. A procedure for handling nonconformance issues, including a sample worksheet for recording nonconformance issues. Include the name and title of the person responsible for final acceptance.

2. Notification, in writing, 15 days prior to commencing field welding operations.

D. Design Computations

- 1 Calculations for connection design and detailing shall accompany submittal A.2. in this appendix.
- 2 Computations for job standards shall accompany submittal A.3. in this appendix.

END OF APPENDIX "A"

## DIVISION 2

### SECTION 02164

#### PRESTRESSED SOIL AND ROCK ANCHORS

#### PART 1. GENERAL

##### 1.01 SUMMARY

This Section specifies requirements for pre-stressed soil or rock anchors. These requirements establish minimum standards and material requirements for the performance of the work. The Contractor is responsible for the design, furnishing, fabrication, installation, stressing and testing of the anchors.

##### 1.02 REFERENCES

The following is a listing of the publications referenced in this Section:

	<u>American Society for Testing and Materials (ASTM)</u>
ASTM A 36	Structural Steel
ASTM A 416	Seven-Wire Stress-Relieved Strand
ASTM A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 722	Uncoated High-Strength Steel Bar for Prestressing Concrete
ASTM A 775	Epoxy-Coated Reinforcing Steel Bars
ASTM C 150	Portland Cement
ASTM D 4101	Polypropylene
ASTM D 3350	Polyethylene

##### 1.03 DESIGN AND PERFORMANCE REQUIREMENTS

###### A. Quality Assurance

All work in this Section shall be supervised by a technical specialist with at least 5 years of continuous experience in the design, installation, and testing of prestressed soil and rock anchors.

###### B. Job Conditions

1. The Contractor is responsible for determining the anchor bond length(s) required to produce anchors which will comply with the acceptance criteria specified in 3.02 B.
2. Do not install anchors until the Engineer has approved all materials, equipment, installation and test procedures.
3. Protect existing structures, including overhead and buried utility lines, to the satisfaction of the Engineer.

C. Orientation and Tolerances

1. Anchors shall not deviate more than the lateral tolerances shown on the Contract Drawings.
2. The alignment of anchors shall not deviate from the required orientation by more than two percent.

1.04 SUBMITTALS

For Submittal Requirements, see Appendix "A".

**PART 2. PRODUCTS**

2.01 MATERIALS

A. Pre-stressed anchors shall be as shown on the Contract Drawings and shall conform to the following standards.

1. Strand anchors shall consist of seven-wire strand, Grade 270, stress relieved or low relaxation steel, ASTM A-416.
2. Threadbar anchors shall consist of threaded bar, Grade 150, cold stretched and stress relieved, ASTM A-722.
3. Bar anchors shall consist of high strength rebar, Grade 60, ASTM 615.

B. Grout

Grout shall be a non-shrink neat cement mix, or an approved alternate. Neat cement grout shall have a water cement ratio of 0.4 and a minimum 28 day compressive strength of 6,000 psi. Cement for grout shall consist of Portland Cement conforming to ASTM C 150 (Types I, II or III).

C. Where shown on the Contract Drawings, prestressed anchors shall be protected against corrosion using materials conforming to the following standards and specifications or approved alternates.

1. Corrosion inhibiting grease shall consist of Visconorust 3166 as manufactured by Viscosity Oil Company or approved equal.
2. Sheathing for unbonded length of anchors shall consist of seamless polypropylene tubing having minimum wall thickness of 60 mils, plus or minus 10 mils, and conforming to ASTM D 4101, cell classification PP210B55542-11.
3. Encapsulation of anchor bond length shall consist of grout filled, corrugated high density polyethylene (HDPE) tubing having a minimum wall thickness of 30 mils and conforming to ASTM, D 3350, cell classification 334413.
4. Coat fusion bonded epoxy elements in accordance with ASTM A 775, except that film thickness shall be 15 mils.

D. Steel elements, such as plates, trumpets, stiffeners, etc., shall consist of steel conforming to ASTM A 36.