THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
TWO MONTGOMERY STREET - 1st FLOOR
JERSEY CITY, NJ 07302

May 22, 2025

ADDENDUM NO. 2

TO PROSPECTIVE BIDDERS ON CONTRACT **LGA-124.671** – LAGUARDIA AIRPORT – LAGUARDIA GROUND ACCESS TERMINAL C BUS LOOP

The following changes are hereby made in the Contract documents for the subject Contract.

This communication should be physically annexed (electronically) behind the last page of the Contract booklet and initialled by each bidder before submitting his Bid.

In case any bidder fails to conform to these instructions, his Bid will nevertheless be construed as though this communication had been so physically annexed and initialled.

CHANGES IN THE CONTRACT BOOKLET (VOLUME 1 OF 2)

Page 1	-	Delete the entire page and substitute therefor new page 1 which is attached hereto and made a part hereof.
Page 9	-	Delete the entire page and substitute therefor new page 9 which is attached hereto and made a part hereof.
Page 112	-	Delete the entire page and substitute therefor new page 112 which is attached hereto and made a part hereof.
Page 115	-	Delete the entire page and substitute therefor new page 115 which is attached hereto and made a part hereof.
Pages 117 through 119	-	Delete these pages in their entireties and substitute therefor new pages 117 through 119 which are attached hereto and made a part hereof.
Pages 124 and 125	-	Delete these pages in their entireties and substitute therefor new pages 124 and 125 which are attached hereto and made a part hereof.
Pages 1062 through 1067	-	Delete these pages in their entirety and substitute therefor new Specification Section 316333 DRILLED MINIPILES on pages 1062-1067B (8 pages) which are attached hereto and made a part hereof.

ADDED CONTRACT DRAWINGS (VOLUME 1 OF 2)

Copies of new drawings ML1104 and ITS9003 dated 05/19/2025 are forwarded herewith electronically (via email or download) and are to be included in the set of Contract Drawings.

DELETED CONTRACT DRAWINGS (VOLUME 1 OF 2)

Drawings ML1010, T9307, T9309, T9310, T9313, A1016, A1036, A9291, A9292, A9293 and A9294 have been deleted as of 05/19/2025. Destroy the drawings of these numbers now in your possession without substitution therefor.

DELETED CONTRACT DRAWINGS (VOLUME 2 OF 2 - CONFIDENTIAL)

Drawing ES2005 has been deleted as of 05/19/2025. Destroy the drawings of this number in accordance with the Port Authority *Information Security Handbook*, now in your possession without substitution therefor.

REVISED CONTRACT DRAWINGS (VOLUME 1 OF 2)

Drawings IX0001, IX0002, IX0003, IX0004, G0003, G0004, V0100, V0104, V0105, CS1001, CS1002, CS1003, CS1004, CS1005, CS1006, CS1007, C0101, C0102, C0103, C0104, C0105, C0106, C0107, C0201, C0202, C0203, C0204, C0205, C0206, C0207, C0301, C0302, C0303, C0304, C0305, C0306, C0307, C1001, C1002, C1003, C1004, C1005, C1006, C1007, C1009, C1010, C1011, C1012, C1101, C1102, C1103, C1104, C1201, C1202, C1206, C1302, C1303, C1304, C1306, C1308, C1309, C1310, C1311, C1312, C1401, C1402, C1403, C1404, C1405, C1406, C1407, C1501, C1502, C1503, C1504, C1505, C1506, C1507, C2101, C2102, C2103, C2104, C2105, C2106, C2107, C2108, C2109, C2110, C2111, C2112, C2113, C2114, C2115, C2116, C2117, C2201, C2202, C2203, C2204, C2205, C2206, C2207, C2208, C2209, C2301, C2302, C2303, C2304, C2305, C2306, C2307, C2308, C2401, C2402, C2403, C2404, C2405, C2406, C2407, C2408, C2601, C2701, C2702, C2703, C2704, C2705, C2706, C2707, C9002, C9004, C9005, C9006, C9010, C9011, C9013, C9014, C9015, C9019, C9105, C9106, GT0001, GT0101, GT0102, GT0201, GT0202, S0001, S0002, S1001, S1002, S1003, S1004, S1005, S1006, S1007, S1008, S1009, S1010, S1011, S1012, S1013, S1014, S1015, S1016, S3001, S3002, S3004, S3005, S3006, S3007, S9001, S9002, S9003, S9004, S9005, S9006, S9007, S9008, S9101, S9102, S9103, S9104, S9201, S9405, ML0101, ML0102, ML0201, ML0202, ML0203, ML1001, ML1002, ML1003, ML1004, ML1005, ML1006, ML1007, ML1008, ML1009, ML1101, ML1102, ML1103, ML5001, ML9007, T0101, T0102, T0103, T0104, T0105, T0106, T0107, T0303, T0304, T1001, T1002, T1003, T1004, T1005, T1006, T1007, T2001, T2002, T2003, T2004, T2005, T2006, T2007, T3101, T3102, T3103, T3104, T3201, T3202, T9008, T9009, T9010, T9011, T9101, T9102, T9308, T9311, T9312, T9314, SG1001, SG1002, SG1003, SG1004, A0004, A0006, A1000, A1005, A1010, A1011, A1012, A1013, A1014, A1015, A1017, A1018, A1021, A1022, A1023, A1024, A1025, A1026, A1031, A1032, A1033, A1034, A1035, A1037, A1040, A1041, A1042, A1043, A1044, A1045, A2002, A2005, A2006, A3001, A3002, A3003, A3006, A9003, A9004, A9006, A9007, A9010, A9011, A9013, A9014, A9015, A9016, E1001, E1002, E1003, E1004, E5002, E9001, E9002, M0010, M1001, M1002, M1003, P1001, P1010, P1013, P5001, FP1010, MT0001, MT0301, MT1017, MT1018,

MT1019, MT9004, MT9006, LS0001, LS0002, LS0401, LS0405, LS0406, LS0407, LS0701, LS0705, LS0706, LS0707, ITS0001, ITS0101, ITS0102, ITS0103, ITS0104, ITS0105, ITS0106, ITS0107, ITS9001 and ITS9002 have been revised as of 05/19/2025. Copies of these drawings are forwarded herewith electronically (via email or download). Destroy the drawings of these numbers now in your possession and substitute therefor the revised drawings.

REVISED CONTRACT DRAWINGS (VOLUME 2 OF 2 - CONFIDENTIAL)

Drawings IX0001, IX0002, IX0003, IX0004, S9301, ES0002, ES1001, ES1002, ES1003, ES1004, ES1005, ES2001, ES2002, ES2003, ES2004, ES3001, ES3002, ES3003, ES3005, ES6001, ES5001, ES5101 and ES9003 have been revised as of 05/19/2025. Copies of these drawings are forwarded herewith electronically (via email or download). Destroy the drawings of these numbers in accordance with the Port Authority *Information Security Handbook*, now in your possession and substitute therefor the revised drawings.

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

M. Rizwan Baig, P.E.
Chief Engineer/Director

INITIALLED BY THE BIDDER:

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INFORMATION FOR BIDDERS

1. FORM AND SUBMISSION OF BIDS

The Port Authority of New York and New Jersey, hereinafter called the "Port Authority" or "Authority", invites bids (Bids) in the annexed form. Bids will be received until 2:30 PM on Tuesday, June 10, 2025 via digital submission of Bids, using the Bonfire platform, at the link provided below.

Bidders must register and create a free Bonfire account at the provided link in order to log in and download Bid documents and associated information, and in order to upload Bid submissions. Registration on the Bonfire platform requires a registration that is separate and distinct from all other Port Authority software platforms.

Bid submissions must be uploaded, submitted and finalized prior to the Closing Time of 2:30 PM EST. Bidders are strongly urged to allow sufficient time of at least one (1) day prior to Bids Due Date (Close Date) to begin the uploading process and finalizing the Bid submission. Bidders will receive an email confirmation receipt with a unique confirmation number once a Bid submission is finalized.

The Authority will accept only those Bids in electronic format for which the submission or submission modification is completed at the time of the Bids Due Date.

The electronic copy of the Contract booklet furnished to each prospective bidder in portable document format (PDF) for the bidder's use shall be filled out and submitted in its entirety to the Authority by the date and time that Bids are due. Bid submissions will be accepted by upload only, at:

https://panynj.bonfirehub.com/portal/?tab=login

and must be uploaded and received by the Authority by 2:30 PM EST in order to be considered. Hand deliveries and mailed deliveries (e.g., UPS, USPS) will not be accepted.

Bidders will be permitted to submit modifications to Bids or withdraw previously submitted Bids electronically up to, but not after, the time of the Bid Due Date. The Authority may request an original, signed paper submission at any time following the Bid Due Date. If requested, such original, signed paper submission must be identical to the electronic submission. In the event of a discrepancy, the electronic submission shall control.

Bid results will be posted to the Port Authority of New York and New Jersey's website as soon as they are available, at the following link:

https://www.panynj.gov/port-authority/en/business-opportunities/preliminary-bid-results.html

Bid submissions must include all required information, as required by the clause hereof entitled "Papers Accompanying Bids".

The Bid must be submitted upon the blank form bound herewith and must give all information required. The Bid must be signed and the acknowledgment taken on the appropriate form following the Bid.

This Contract may be executed in any number of counterparts, and each such counterpart hereof shall be deemed an original instrument, but all such counterparts together shall constitute but one Contract. This Contract may be signed by a party, either by hand, or with an electronic signature affixed digitally and in each case, this Contract may be personally delivered or sent by email or other electronic means after execution. Any such means of execution and transmittal shall have the same binding and legal effect.

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

"Minority Business Enterprise" 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 and such ownership is real, substantial and continuing.

"Women-owned Business Enterprise" 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 and such ownership is real, substantial and continuing.

"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 descent of either Native American or Latin American 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.

"Service-Disabled Veteran-Owned Business" or "SDVOB" means a business entity which is at least 51 percent owned by one or more Service-Disabled Veterans, or, in the case of a publicly held corporation, at least 51 percent of the stock of which is owned by one or more Service-Disabled Veterans, and whose management and daily business operations are controlled by one or more such individuals with a verifiable service connected disability.

"Service-Disabled Veteran" as defined by 38 U.S. Code, Section 101:

A. "Veteran" means a person who served in the active military, naval, or air service, and who was discharged or released therefrom under conditions other than dishonorable;

B. "Service-connected" means, with respect to disability or death, that such disability was incurred or aggravated, or that the death resulted from a disability incurred or aggravated, in line of duty in the active military, naval or air service.

To ensure meaningful participation of MBEs, WBEs and SDVOBs on this Contract, the Authority has set good faith Contract goals of 20 percent of the sum of the amounts in A. and B. of the clause entitled "Contractor's Compensation" for firms owned and controlled by minorities, 10 percent of the sum of the amounts in A. and B. of the clause entitled "Contractor's Compensation" for firms owned and controlled by women, and 3 percent of the sum of the amounts in A. and B. of the clause entitled "Contractor's Compensation", commensurate with SDVOB availability, for firms owned and controlled by service-disabled veterans. In the event that this Contract is awarded to an Authority certified MBE, WBE or SDVOB, such firm, as the prime contractor, is also held to this requirement with respect to subcontracting opportunities.

S9103	STEEL DETAILS -3-	Structural
S9104	STEEL DETAILS -4-	Structural
S9105	STEEL DETAILS -5-	Structural
S9201	MISC. DETAILS - STAIR DETAILS -1-	Structural
S9202	MISC. DETAILS - CLEARANCE STRUCTURE	Structural
S9203	MISC. DETAILS	Structural
S9401	CCTV MOUNTING DETAILS -1-	Structural
S9402	CCTV MOUNTING DETAILS -2-	Structural
S9403	ACCESS HATCH STRUCTURE DETAILS -1-	Structural
S9404	ACCESS HATCH STRUCTURE DETAILS -2-	Structural
S9405	TAXI DISPATCH BOOTH AND DMS SIGN FOUNDATION DETAILS	Structural
ML0101	LIGHTING GENERAL NOTES, LEGEND, AND ABBREVIATIONS	Electrical
ML0102	LIGHTING DESIGN CRITERIA TABLES, AND FIXTURE SCHEDULES	Electrical
ML0201	ROADWAY LIGHTING REMOVAL PLAN -1-	Electrical
ML0202	ROADWAY LIGHTING REMOVAL PLAN -2-	Electrical
ML0203	ROADWAY LIGHTING REMOVAL PLAN -3-	Electrical
ML1001	ROADWAY LIGHTING PROPOSED PLAN -1-	Electrical
ML1002	ROADWAY LIGHTING PROPOSED PLAN -2-	Electrical
ML1003	ROADWAY LIGHTING PROPOSED PLAN -3-	Electrical
ML1004	ROADWAY LIGHTING PROPOSED PLAN -4-	Electrical
ML1005	ROADWAY LIGHTING PROPOSED PLAN -5-	Electrical
ML1006	ROADWAY LIGHTING PROPOSED PLAN -6-	Electrical
ML1007	LEVEL 1.0 LIGHTING PLAN (BUS BAYS)	Electrical
ML1008	LEVEL 1.0 LIGHTING PLAN (CONNECTOR)	Electrical
ML1009	LEVEL 1.0 LIGHTING PLAN (PEDESTRIAN PATH - 1)	Electrical
ML1101	ROADWAY LOW VOLTAGE PLAN -1-	Electrical
ML1102	ROADWAY LOW VOLTAGE PLAN -2-	Electrical
ML1103	ROADWAY LOW VOLTAGE PLAN -3-	Electrical
ML1104	ROADWAY LOW VOLTAGE PLAN -4-	Electrical
ML5001	ROADWAY LIGHTING WIRING DIAGRAM	Electrical
ML9001	LIGHTING DETAILS -1-	Electrical
ML9002	LIGHTING DETAILS -2-	Electrical

T9302	WAYFINDING SIGN FACE ELEVATIONS -2-	Traffic
T9303	WAYFINDING SIGN FACE ELEVATIONS -3-	Traffic
T9304	WAYFINDING SIGN FACE ELEVATIONS -4-	Traffic
T9305	WAYFINDING SIGN FACE ELEVATIONS -5-	Traffic
T9306	WAYFINDING SIGN FACE ELEVATIONS -6-	Traffic
T9308	WAYFINDING SIGN FACE ELEVATIONS -8-	Traffic
T9311	WAYFINDING SIGN FACE ELEVATIONS -11-	Traffic
T9312	WAYFINDING SIGN FACE ELEVATIONS -12-	Traffic
T9314	WAYFINDING DETAILS -1-	Traffic
T9315	WAYFINDING DETAILS -2-	Traffic
SG0001	TRAFFIC SIGNAL LEGEND AND GENERAL NOTES	Traffic
SG0002	TRAFFIC SIGNAL ABBREVIATIONS	Traffic
SG1001	TRAFFIC SIGNAL PLAN -1-	Traffic
SG1002	TRAFFIC SIGNAL ELECTRICAL PLAN -1-	Traffic
SG1003	TRAFFIC SIGNAL PLAN -2-	Traffic
SG1004	TRAFFIC SIGNAL ELECTRICAL PLAN -2-	Traffic
SG9001	TRAFFIC SIGNAL DETAILS -1- TYPICAL ALUMINUM TRAFFIC SIGNAL INSTALLATION	Traffic
SG9002	TRAFFIC SIGNAL DETAILS -2- ALUMINUM TRAFFIC SIGNAL POLE FOUNDATION (SFT, SPF, SFK)	Traffic
SG9003	TRAFFIC SIGNAL DETAILS -3- TYPE "S-A" STEEL TRAFFIC SIGNAL POLE, ARM AND BASE -1-	Traffic
SG9004	TRAFFIC SIGNAL DETAILS -4- TYPE "S-A" STEEL TRAFFIC SIGNAL POLE, ARM AND BASE -2-	Traffic
SG9005	TRAFFIC SIGNAL DETAILS -5- TYPE "STF-A" STEEL TRAFFIC SIGNAL POLE FOUNDATION	Traffic
SG9006	TRAFFIC SIGNAL DETAILS -6- TYPE "T" AND "K" POLES ELEVATION, SHOE BASE, CABLE OUTLET, AND CAP	Traffic
SG9007	TRAFFIC SIGNAL DETAILS -7- ALUMINUM "T" POLE TRANSFORMER BASE	Traffic
SG9008	TRAFFIC SIGNAL DETAILS -8- ALUMINUM "K" POLE TRANSFORMER BASE	Traffic
SG9009	TRAFFIC SIGNAL DETAILS -9- "T" POLE TRUSS TYPE MAST	Traffic

A1000	SITE PLAN - EAST PARKING GARAGE LEVEL 1.0 - ALTERATION	Architectural
A1001	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - ALTERATION -1-	Architectural
A1002	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - ALTERATION -2-	Architectural
A1003	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - ALTERATION -3-	Architectural
A1004	REFLECTED CEILING PLAN - EAST PARKING GARAGE LEVEL 1.0 - ALTERATION -3-	Architectural
A1005	FLOOR PLAN - EAST PARKING GARAGE LEVEL 2.0 - ALTERATION	Architectural
A1006	ELEVATION - EXISTING GARAGE TOWER LEVEL 1.0 - ALTERATION	Architectural
A1010	SITE PLAN - EAST PARKING GARAGE LEVEL 1.0	Architectural
A1011	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -1-	Architectural
A1012	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -2-	Architectural
A1013	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - JUNCTION CANOPY	Architectural
A1014	FLOOR PLAN - SERPENTINE CANOPY -1-	Architectural
A1015	FLOOR PLAN - SERPENTINE CANOPY -2-	Architectural
A1017	FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - GARAGE CANOPY	Architectural
A1018	FLOOR PLAN - EAST PARKING GARAGE LEVEL 2.0 - ELECTRICAL & COMMUNICATION CLOSETS	Architectural
A1021	ROOF PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -1-	Architectural
A1022	ROOF PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -2-	Architectural
A1023	ROOF PLAN - EAST PARKING GARAGE LEVEL 1.0 - JUNCTION CANOPY	Architectural
A1024	ROOF PLAN - SERPENTINE CANOPY -1-	Architectural
A1025	ROOF PLAN - SERPENTINE CANOPY -2-	Architectural
A1026	ROOF PLAN - EAST PARKING GARAGE LEVEL 1.0 - GARAGE CANOPY	Architectural
A1031	REFLECTED CEILING PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -1-	Architectural

A1032	REFLECTED CEILING PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -2-	Architectural
A1033	REFLECTED CEILING PLAN - EAST PARKING GARAGE LEVEL 1.0 - JUNCTION CANOPY	Architectural
A1034	REFLECTED CEILING PLAN - SERPENTINE CANOPY -1-	Architectural
A1035	REFLECTED CEILING PLAN - SERPENTINE CANOPY -2-	Architectural
A1037	REFLECTED CEILING PLAN - EAST PARKING GARAGE LEVEL 1.0 - GARAGE CANOPY	Architectural
A1040	FINISH & ACCESSORY SCHEDULE	Architectural
A1041	FINISH FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -1-	Architectural
A1042	FINSH FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - BUS CANOPY -2-	Architectural
A1043	FINISH FLOOR PLAN - EAST PARKING GARAGE LEVEL 1.0 - JUNCTION CANOPY	Architectural
A1044	FINISH FLOOR PLAN - SERPENTINE CANOPY -1-	Architectural
A1045	FINISH FLOOR PLAN - SERPENTINE CANOPY -2-	Architectural
A2001	ARCHITECTURAL ELEVATIONS - EAST -1-	Architectural
A2002	ARCHITECTURAL ELEVATIONS - EAST -2-	Architectural
A2003	ARCHITECTURAL ELEVATIONS - SOUTH SEGMENT -1-	Architectural
A2004	ARCHITECTURAL ELEVATIONS - SOUTH SEGMENT -2-	Architectural
A2005	ARCHITECTURAL ELEVATIONS - SOUTH SEGMENT -3-	Architectural
A2006	ARCHITECTURAL ELEVATIONS - SOUTH SEGMENT -4-	Architectural
A2007	ARCHITECTURAL ELEVATIONS - WEST -1-	Architectural
A3001	ARCHITECTURAL SECTIONS -1-	Architectural
A3002	ARCHITECTURAL SECTIONS -2-	Architectural
A3003	ARCHITECTURAL SECTIONS -3-	Architectural
A3004	BUS CANOPY SECTIONS -1-	Architectural
A3005	BUS CANOPY SECTIONS -2-	Architectural
A3006	JUNCTION CANOPY SECTION	Architectural
A9001	WALL TYPES & DETAILS	Architectural
A9002	DOOR TYPES & SCHEDULES	Architectural
A9003	CEILING AND MOUNTING DETAILS	Architectural
A9004	STAIR DETAILS	Architectural
A9005	GUARDRAIL DETAILS -1-	Architectural

A9006	GUARDRAIL DETAILS -2-	Architectural
A9007	SCREEN WALL DETAILS	Architectural
A9008	BUS CANOPY TYPICAL BAY CONDUIT PLAN	Architectural
A9009	ROOF DETAILS - BUS CANOPY -1-	Architectural
A9010	ROOF DETAILS - SERPENTINE CANOPY	Architectural
A9011	ROOF DETAILS - JUNCTION CANOPY -1-	Architectural
A9012	ROOF DETAILS - JUNCTION CANOPY -2-	Architectural
A9013	ROOF DETAILS - CROSSWALK CANOPY -1-	Architectural
A9014	ROOF DETAILS - CROSSWALK CANOPY -2-	Architectural
A9015	ROOF DETAILS - MISCELLANEOUS	Architectural
A9016	TAXI STAND PLANS	Architectural
E0001	ELECTRICAL GENERAL NOTES, LEGEND AND ABBREVIATIONS	Electrical
E0002	LIST OF MANUFACTURERS	Electrical
E1001	LEVEL 1.0 POWER PLAN (BUS BAYS)	Electrical
E1002	LEVEL 1.0 POWER PLAN (CONNECTOR)	Electrical
E1003	LEVEL 1.0 POWER PLAN (PEDESTRIAN PATH - 1)	Electrical
E1004	LEVEL 1.0 POWER PLAN (PEDESTRIAN PATH - 2)	Electrical
E1005	LEVEL 2.0 POWER PLAN	Electrical
E5001	ELECTRICAL ONE-LINE DIAGRAM	Electrical
E5002	ELECTRICAL PANEL SCHEDULE	Electrical
E9001	ELECTRICAL DETAILS -1-	Electrical
E9002	ELECTRICAL DETAILS -2-	Electrical
M0001	MECHANICAL GENERAL NOTES, ABBREVIATIONS AND LEGEND	Mechanical - HVAC
M0010	MECHANICAL SITE PLAN - EPG LEVEL 1.0	Mechanical - HVAC
M1001	MECHANICAL FLOOR PLAN - EPG LEVEL 1.0 - BUS CANOPY -1-	Mechanical - HVAC
M1002	MECHANICAL FLOOR PLAN - EPG LEVEL 1.0 - BUS CANOPY -2-	Mechanical - HVAC
M1003	MECHANICAL FLOOR PLAN - EPG LEVEL 1.0 - JUNCTION	Mechanical -

		Intelligent Transportation Systems
ITS0106	ITS CONSTRUCTION PLAN -6-	Traffic - Intelligent Transportation Systems
ITS0107	ITS CONSTRUCTION PLAN -7-	Traffic - Intelligent Transportation Systems
ITS9001	ITS DETAILS - 1	Traffic - Intelligent Transportation Systems
ITS9002	ITS DETAILS - 2	Traffic - Intelligent Transportation Systems
ITS9003	ITS DETAILS - 3	Traffic – Intelligent Transportation Systems

VOLUME 2 OF 2 (CONFIDENTIAL)

TS0001		
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ES0002	SURVEILLANCE AND ACCESS CONTROL LEGEND AND ABBREVIATIONS	Electrical - Electronics
ES0003	PUBLIC ADDRESS AND BUS COUNT DOWN DISPLAYS GENERAL NOTES, LEGEND AND ABBREVIATIONS	Electrical - Electronics
ES1001	SURVEILLANCE FLOOR PLAN LEVEL 1.0 BUS CANOPY -1-	Electrical - Electronics
ES1002	SURVEILLANCE FLOOR PLAN LEVEL 1.0 BUS CANOPY -2-	Electrical - Electronics
ES1003	SURVEILLANCE AND ACCESS CONTROL FLOOR PLAN LEVEL 1.0 JUNCTION CANOPY	Electrical - Electronics
ES1004	SURVEILLANCE FLOOR PLAN PEDESTRIAN PATH CANOPY -1-	Electrical - Electronics
ES1005	SURVEILLANCE FLOOR PLAN PEDESTRIAN PATH CANOPY -2-	Electrical - Electronics
ES1006	SURVEILLANCE AND ACCESS CONTROL LEVEL 2.0 GARAGE	Electrical - Electronics

ES2001	PUBLIC ADDRESS FLOOR PLAN LEVEL 1.0 BUS CANOPY -1-	Electrical - Electronics
ES2002	PUBLIC ADDRESS FLOOR PLAN LEVEL 1.0 BUS CANOPY -2-	Electrical - Electronics
ES2003	PUBLIC ADDRESS FLOOR PLAN LEVEL 1.0 JUNCTION CANOPY	Electrical - Electronics
ES2004	PUBLIC ADDRESS FLOOR PLAN - PEDESTRIAN PATH CANOPY -1-	Electrical - Electronics
ES3001	DYNAMIC BUS COUNT DOWN DISPLAYS FLOOR PLAN LEVEL 1.0 BUS CANOPY -1-	Electrical - Electronics
ES3002	DYNAMIC BUS COUNT DOWN DISPLAYS FLOOR PLAN LEVEL 1.0 BUS CANOPY -2-	Electrical - Electronics
ES3003	BUS INFORMATION DYNAMIC KIOSK FLOOR PLAN LEVEL 1.0 JUNCTION CANOPY	Electrical - Electronics
ES3005	BUS INFORMATION DYNAMIC KIOSK FLOOR PLAN - PEDESTRIAN PATH CANOPY -2-	Electrical - Electronics
ES5101	PUBLIC ADDRESS ONE LINE DIAGRAM	Electrical - Electronics
ES6001	SURVEILLANCE AND ACCESS CONTROL SCHEDULES	Electrical - Electronics
ES9001	SURVEILLANCE DETAILS	Electrical - Electronics
ES9002	SURVEILLANCE AND COMMS DETAILS	Electrical - Electronics
ES9003	ACCESS CONTROL DETAILS	Electrical - Electronics
ES9004	DEVICE MOUNTING DETAILS	Electrical - Electronics
ES9101	PUBLIC ADDRESS DETAILS	Electrical - Electronics

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 one electronic copy of the Specifications and Contract Drawings.

DIVISION 31

SECTION 316333

DRILLED MINIPILES

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for small diameter, cast-in-place, drilled piles. The terms ‘micropile’ and “minipile” are synonymous.

1.02 REFERENCES

A. The following is a listing of the publications referenced in this Section:

	American Concrete Institute (ACI)
ACI 315	Details and Detailing of Concrete Reinforcement
	American Society for Testing and Materials (ASTM)
ASTM A 252	Welded and Seamless Steel Pipe Piles
ASTM A 615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement
	American Welding Society (AWS)
AWS D1.1	Structural Welding Code, Steel.
AWS D 1.4	Structural Welding Code – Reinforcing Steel.
AWS D 1.5	Bridge Welding Code

1.03 DESIGN AND PERFORMANCE REQUIREMENTS

A. Job Conditions

1. The location, diameter, design capacity, minimum pile tip penetration and pile cutoff elevation are shown on the Contract Drawings. The Contractor is responsible for determining the pile length(s) required to produce piles which will comply with the acceptance criteria shown on the Contract Drawings.
2. The requirements for pile load test(s) are shown on the Contract Drawings and specified in the Section of these Specifications entitled "Pile Load Test - Static Axial Compressive" and “Pile Load Test - Lateral Loads”.
3. Protect existing structures, including overhead and buried utility lines, to the satisfaction of the Engineer.
4. Unless stricter requirements are shown on the Contract Drawings, all excavation spoil from each day's operation shall be transported daily to a disposal area. The work area shall be cleaned, following each day's operations. Do not dispose of slurry, concrete and excess grout in storm drains.

B. Alignment and Tolerances

1. Unless otherwise shown on the Contract Drawings, after installation, the alignment of the pile axis measured at the top of the pile shall not deviate from that shown on the Contract Drawings by more than two percent.

2. Piles at cut-off elevation shall not deviate laterally from required location by more than the tolerance shown on the Contract Drawings.

C. Quality Assurance

1. The entity selected to install minipiles shall have at least five years experience in this field and successfully completed five projects requiring the installation of minipiles.

2. Operations related to the installation of drilled minipiles shall be performed only in the presence of the Engineer.

1.04 SUBMITTALS

See Appendix "A" for submittal requirements.

PART 2. PRODUCTS

2.01 MATERIALS

A. Grout

Cement grout mixes for tremie placement shall conform to the Section of these Specifications entitled "PORTLAND CEMENT CONCRETE" with a minimum f'c = 5000 psi. Cement grout mixes shall be submitted to Engineer for approval.

B. Reinforcing Bars (Steel Core)

ASTM A 615, Grade 75 deformed bars as specified in the Section of these Specifications entitled "CONCRETE REINFORCEMENT" unless otherwise shown on the Contract Drawings. Diameter shall be as shown on the Contract Drawings.

C. Steel Casing

ASTM A 252, Grade 3, with a minimum wall thickness of 1/2 inch. Diameter shall be as shown on the Contract Drawings.

PART 3. EXECUTION

3.01 PREPARATION

A. Piles shall be installed in such a manner as to ensure that no damage is sustained either to adjacent structures or to previously formed piles.

B. Make provisions to control the flow of water and keep the premises clean and free of water and removed material during the installation of the piles.

C. Prior to drilling, locate existing underground utilities in the areas of work. Provide adequate means of support and protection for utilities during drilling, concreting (and/or grouting) and backfilling operations.

D. The Contractor shall be responsible for damage to existing structures and utilities.

3.02 INSTALLATION

A. Equipment

1. Install piles with the equipment as described on the Contract Drawings.

2. The steel casing shall be watertight and of the flush-joint type.
3. The maximum diameter of the cutting shoe, if used, shall not exceed the outer diameter of the casing by more than 1/4 inch.
4. Grout shall be mixed in an approved high-speed mixer capable of producing high quality collodial grout.
5. The pump shall be equipped with a pressure gauge to monitor grout pressures. The pressure gauge shall be capable of measuring pressures of at least 150 psi or twice the actual grout pressures used by the Contractor, whichever is greater. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The grout must be kept in constant agitation prior to pumping.

B. Welding and Splicing

1. Except as specified herein, weld reinforcing bars (steel core) in accordance with requirements of AWS D 1.4.
2. Only use welders qualified by tests prescribed in AWS D1.1 or D1.5, as applicable.
3. Splice the mating ends of the steel core sections using welded splices or mechanical connections in accordance with the requirements of ACI 318.
4. A full welded splice shall have bars butted and welded to develop in tension at least 125 percent of specified yield strength of the bar.
5. Threadbar reinforcing bars shall be spliced using approved threaded couplers and jam nuts installed in accordance with the manufacturer's instructions.
6. A full mechanical connection shall develop in tension or compression as required, at least 125 percent of specified yield strength of the bar.

C. Installation

1. Install piles from existing grade.
2. Perform work in such a manner as to prevent loss of ground beyond the specified diameter. Employ the use of a double casing for the full length of the pile.
3. Install each pile to the penetration indicated by results of load test.
4. Pile installation operations shall be performed only in the presence of the Engineer.
5. The Engineer will make on-site inspection of the grout placement. Samples will be taken by the Engineer during placement.
6. The water level inside the steel casing shall be maintained above the ground water level at all times.
7. After drilling to the required depth using the double casing method, flush and clean hole and extract inner casing.
8. Place core steel in pile prior to grouting. In all cases, extend the steel core centrally aligned with spacers to the bottom of the pile.
9. Place grout with a tremie pipe and pump grout from the bottom of the pile upward in one continuous operation. Pull the casing on five (5) feet increments while pumping grout and maintaining minimum fifty (50) psi grout pressure (pressure not to exceed one hundred (100) psi at any point). The final (permanent) casing length and bond zone length are specified in the Contract Drawings. Installation requirements shown on Contract Drawings must be followed. The grout pressure shall be equal to that used to install the load test pile.
10. No pile shall be installed within 15 feet of grouted piles until the grout for the previously installed pile has cured for at least 24 hours.

D. Corrections of Deficiencies

1. The Contractor shall notify the Engineer immediately, in writing, of the failure of a pile to meet any requirement of this Section. Such written notification shall include all information required for the evaluation of remedial measures, including all information required for redesign.

2. If a pile fails to comply with the location or inclination requirements of 1.03 B, the Engineer will calculate the load capacity requirements of that pile or, if in a pile group, each pile in that pile group, based on the actual, "as-built" locations and inclinations. If the calculation indicates that the loading on that pile or, if in a pile group, on any pile in that pile group, exceeds 110% of the design load, then the Contractor shall perform such remedial work as the Engineer in his sole discretion may approve, including but not limited to furnishing and installing additional piles at locations approved by the Engineer and modifying concrete or reinforcement steel.

3. In the case of a pile with some deficiency that affects load capacity, the Engineer will calculate the load capacity requirements of that pile, based on its actual, "as built" location and inclination. If the calculation indicates that the loading on the pile exceeds some reduced allowable loading less than the design load, including a zero loading, as determined in the sole judgment of the Engineer, then the Contractor shall perform such remedial work as the Engineer in his sole discretion may approve, including but not limited to furnishing and installing additional piles at locations approved by the Engineer and modifying concrete or reinforcement steel.

4. If a pile fails to comply with the requirements of this Section and the Engineer determines that modification to concrete or reinforcement steel, or the installation of additional piles is necessary, the Authority will perform all required redesign and detailing. In such event, the Authority will use its best efforts to complete redesign within the time set forth on the Contract Drawings.

5. The Contractor, at his option and at any time that he determines that a pile will not satisfy the requirements of this Section for a reason other than encountering an underground obstruction, may, subject to the provisions of 3.02 D.1, abandon such pile and replace it with a new pile or piles rather than await direction or approval from the Engineer. However, the Contractor, in exercising this option, assumes the risk that such replacement pile or piles have been installed at the proper design location and alignment so as to carry satisfactorily the design load as determined by subsequent analysis performed by the Engineer. Such abandonment shall be for the Contractor's convenience and subject to all applicable provisions of the Contract.

6. Abandoned piles shall be cut off one foot below the elevation of the bottom of the pile cap as shown on the Contract Drawings.

7. Changed Pile Locations

   If concrete and reinforcing require modification due to changed pile locations, the Authority will provide redesign and detailing.

   a. In the event that such changed pile locations are due to encountering during driving an underground obstruction, the Contractor shall perform the concrete and reinforcing Work in accordance with such modified design and details and the Contractor will be compensated for any additional concrete and reinforcing work in accordance with Schedule of Unit Prices for Classified Work, if the Engineer determines the Prices therein are applicable, or if the Engineer determines said Prices are not applicable, then in accordance with the clause "Compensation of Extra Work".

b. The Contractor shall perform such Work in accordance with such modified design and details at no additional cost to the Authority in the event that the changed pile locations are not due to encountering during driving an underground obstruction.

3.03 FIELD TESTS

A. Inspection

1. Cooperate with the Engineer and furnish services as may be required for inspection and obtaining data.
2. The Engineer will keep a record of each pile installed. Such report shall include the following data:
   a. Date of installation
   b. Pile Number
   c. Type and size of pile
   d. Type and size of drill rig
   e. Ground surface elevation
   f. Depth of drilling
   g. Tip elevation
   h. Cut-off elevation
   i. Total length of pile
   j. Outside diameter and wall thickness of outer and inner casings
   k. The time pile installation started, interrupted, resumed and completed
   l. Grout mix
   m. Time flushing started and completed
   n. Slope of pile
   o. Obstructions encountered
   p. Description of any unusual circumstances affecting the installation of the particular pile
   q. Size, length and position of reinforcing steel
   r. Pressure applied to grout during withdrawal of casing
   s. Time start and finish pulling casing
   t. Volume of grout required to form pile
   u. Theoretical volume of grout required to form pile
   v. Elevation of bottom of permanent casing

B. Verification Program - Net Cost

The Engineer may direct that structural integrity tests be performed on selected constructed minipiles by a specialty consulting firm, designated on the Contract Drawings. One geophone shall be clamped to base of rebar in each of the minipiles selected by the Engineer for testing. All material required to be installed in minipiles and all work associated with performing tests, taking of readings and reporting of findings to the Engineer will be reimbursed at the "Net Cost" for such work. "Net Cost" shall be computed in the same manner as is compensation for extra work, including any percentage addition to cost, as net forth in the clause of the contract providing compensation for extra work. Compensation for said net cost shall not be charged against the total amount of compensation authorized for extra work.

END OF SECTION

SECTION 316333

DRILLED MINIPILES

APPENDIX "A"

SUBMITTALS

Submit the following in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of the GENERAL PROVISIONS:

Shop Drawings

316333A01 Shop drawings for steel core details, including procedure for splicing steel core and details of alignment spacers, and method of placement of reinforcement for pile to pile cap connection in pile.
Certified mill test reports properly marked, for the reinforcing steel and steel pipe to the Engineer for review. The ultimate strength, yield stress, elongation and material composition shall be submitted.

Construction and Installation Procedures

316333G01 The proposed method of installation of all piles, including a detailed description of drilling equipment, and procedures for cleaning out; This shall include a schedule of major equipment resources. Indicate methods and equipment that will be used to containerize waste, including but not limited to soil cuttings, spoils, and drilling fluid, generated as part of the minipiles installation. The construction procedures shall be submitted for Engineer of Record review and approval prior to the start of any work. The working drawings shall include minipile installation details giving the following:

1. Minipile number, location and installation sequence.
2. Minipile design load.
3. Type, size, and grade of reinforcing steel.
4. Casing length, casing thickness, and steel grade.
5. Minimum total bond length.
6. Grout volumes and maximum pressures.
7. Minimum compressive strength of grout.
8. Minipile cut-off elevation.

316333G02 Proposed grout mix and method of placement as specified in the Section of these specifications entitled "PORTLAND CEMENT CONCRETE".

316333G03 The proposed sequence for installing all piles.

316333G04 Proposed method to measure volume of grout placed to form pile.

Qualifications

316333K01 Verification of welder qualifications.

316333K02 List of referenced projects demonstrating past experience in similar piling work to the Engineer no later than 30 calendar days after the Notice to Proceed. The list shall include the name and location of the project, the owner's name and address, the names and telephone numbers of a representative of the designer, and the client for whom the work was performed and who can attest to successful completion of the work. Include a project summary for each referenced project. The project summary shall contain the start and completion dates of the project, subsurface conditions, total number of piles installed, details of piles, installation techniques and any other information relevant to demonstrate Contractor's experience in similar piling work.

Record Documents

316333M01 As-built drawings showing the exact location of all piles installed and identifying abandoned piles. Actual pile tip elevations and pile cutoff elevations shall be shown on the as-built drawing.

316333M02 Installation Records: The following records shall be prepared for each minipile installed, within two (2) working days after each pile installation is completed. The records shall include the following minimum information:

1. Pile drilling date, time, duration and observations (e.g., flush return, relevant site observations).
2. Pile measured dimensions.
3. Length of rock socket and soil bond zone.
4. Details of used equipment.
5. Weather conditions.
6. Information on soil and rock encountered, including description of strata, water, etc.
7. Final location of pile (northing and easting coordinates) surveyed by a New York State Licensed Surveyor. This information may be furnished within one (1) week of pile installation completion. Final pile cut-off constitutes pile installation completion for determining the final location of pile (northing and easting coordinates).
8. Final elevation of minipile including top and bottom of bond length.
9. Cut-off elevation.
10. Design loads.
11. Description of unusual installation behavior, or conditions.
12. Any deviation from the intended parameters.
13. Grout plant number and operator.
14. Grout flow rate.
15. Grout target pressure and grout pressure attained, where applicable.
16. Calculated expected grout volume (estimated prior to piles' installation)
17. Measured grout quantities pumped.
18. Cement type, admixtures used, W/C ratio, grout specific gravity, and grout density.
19. Pile materials and dimensions.

20. Minipile test records, analysis, and details.

21. As-built drawings showing the location of the piles, their depth and inclination, and details of their composition shall be submitted within fifteen (15) days after installation of all production piles.

END OF APPENDIX "A"