THE PORT AUTHORITY OF NY & NJ

PROCUREMENT DEPARTMENT
4 WORLD TRADE CENTER (4 WTC)
150 GREENWICH STREET, 21ST FLOOR
NEW YORK, NY 10007

April 19, 2024

ADDENDUM #5

TO PROSPECTIVE BIDDER(S) ON **BID # MCP-254.254 (RFx 7*453) – (FTA) – Port Authority Bus Terminal – Midtown Bus Terminal Replacement Program – Dyer Deck-Overs**

The following changes/modifications are hereby made to the solicitation documents:

I. BIDDER'S QUESTIONS AND ANSWERS

The attached information is made available in response to questions submitted by prospective Bidder(s). It should not be deemed to answer all questions that have been submitted by Bidder(s) to the Port Authority. It addresses only those questions which the Port Authority has deemed to require additional information and/or clarification. The fact that information has not been supplied with respect to a question asked by a Bidder(s) does not mean or imply, nor should it be deemed to mean or imply, any meaning, construction, or implication with respect to the terms of the Bid Solicitation Document.

Any changes in response to Bidder's Questions are to be considered hereby made in the Bid Solicitation Document.

Question #45	Contract Drawing DD-C0851 and DD-C-0852, shows the overall dimensions and elevations of the underground Detention Basin 1 and Detention Basin 2. These drawings show that the bottom of the Detention Basin bottom footing slab is at the same elevation as the "Weir Chamber" bottom footing slab. The structural drawings for Detention Basin 1 and Detention Basin 2 show the "Weir Chamber" cross section details on Section 3 on DD-S3102 and Section 3 on DD-S3105. This cross section appears to dimensionally show that the Weir Chamber overall depth is deeper than the Detention Basin. This appears to conflict with elevations shown in the Drainage Tables and in the Storm Management Details shown on DD-C0822 and DD-C0851 and DD-C0852. Please clarify the correct dimensions for the "Weir Chambers".
Answer #45	Refer to revised drawings DD-S3102 and DD-S3105 provided in this addendum. Note two dimensions are changed, all other dimensions remain as is. The bottom of the weir chamber matches the bottom tank.
Question #46	Please provide specifications for the bearings. Please clarify any testing requirements for the bearings.
Answer #46	Refer to SECTION 058250 DISC-DESIGN BEARINGS provided with this addendum.
Question #47	Please provide specifications for the bearings. Please clarify any testing requirements for the bearings.

Answer #47	Refer to SECTION 058250 DISC-DESIGN BEARINGS provided with this addendum.
Question #48	The Drainage System is depicted on Contract Drawings DD-C0801 through DD-C0836. These drawings reference the Scuppers, Downspouts, Pipes, and Pipe Supports, to be used for the drainage system at the proposed deck over structure. The drainage system calls out for the use of "Fiberglass Piping". After review of the Contract documents, it appears that there is no specific Specification for the "Fiberglass Piping" and the related Scuppers, Downspouts, Pipes, and Pipe Supports to be used. Please clarify and provide the Specifications for this system.
Answer #48	Refer to Specification 334170 Bridge Drainage System covering items related to scuppers, downspouts, pipes, and pipe supports including fiberglass piping.
Question #49	Contract Drawings DD-C0811 & DD-C0812 show piping with the designation "ND-V" (i.e., ND-V-A, ND-V-B, ND-V-C, etc.). The Drainage Tables & Drainage Profiles do not show this designated piping. Please clarify what is the piping "ND-V" and provide Specifications for such piping, Drainage Tables for such piping and Drainage Profiles for such piping and any other pertinent information that is required for bidding purposes.
Answer #49	Piping with designation "ND-V" is the piping required to drain the ventilator boxes. Note will be added to plans: "Piping with designation "ND-V" is the piping required to drain the ventilator boxes, provided paths are diagrammatic. Contractor is to coordinate with ventilator manufacturer to determine final layout of the piping. Layout is to be coordinated with the final selected ventilator. Contractor shall submit pipe routing and shop drawings for approval. Drainage elements and associated supports for ventilator boxes shall comply with specification 334170 Bridge Drainage System or an alternative proposed by the manufacturer and approved by the Engineer"
Question #50	Reference the Drainage Profiles on Contract Drawings DD-C-0815 through DD-C0818 and the Drainage Tables on contract Drawings DD-C-0821 through DD-C0823. After review of the profiles and the tables it appears in several areas the "Rim Elevation" called out in the tables are not reflected in the profiles (i.e., Detention Basin 1 Rim Elevation shown in the Drainage Tables is EL 34.75, however the profile drawings for Detention Basin 1 appear to show that the RIM Elevation should be at +/- EL 37.00). Such discrepancies between the drainage Tables and the Profiles are prevalent. Please review the RIM Elevations shown in the Drainage Tables and the Apparent RIM Elevations shown in the Drainage Profiles and clarify and make any corrections that are required.
Answer #50	Rim Elevations shown in the drainage tables and the drainage profile were reviewed and all but the Detention Basins match between the two. The detention basins in the profiles are only visual representations of the location of the buried portion of the basins and should not have a Rim associated with them. Refer to DD-S3101 through DD-S3106 for the structural design of the basin. Refer to DD-C0822 Table "Structure Table – Basin Access" for the rim elevations of the basin access manholes. Please see the sketch "20240408_MTBTR_DD_RFI 50 Sketch" for further clarification.

Answer #51	Please confirm the shaft type for Shaft N-1. On the shaft/column schedule it is listed as an A-1, but on DD-S2601 it appears to be a Type B as it is shown with the steel pile in the center.
Answer #51	Type B is Correct. Schedule in DD-S3301A is revised for column mark N-1 to have "COLUMN AND DRILLED SHAFT TYPE" indicated as Type B in this addendum.
Question #52	The contractor may elect to upsize the drilled shaft diameter due to the extremely tight tolerance requirements for the placement and connections for the Type B reinforcement. (E.G. upsize by 6" to 12"). Please confirm this is acceptable.
Answer #52	No Type B drilled shaft upsizing will be permitted along gridline 0. In other locations, drilled shaft upsizing will be permitted at the contractor's discretion, as long as no additional impacts to underground utilities, and steel tube casing C2 remains the same diameter as indicated in Contract Documents.
Question #53	Column and Production Drilled Shaft Schedule on Contract Drawing DD-S3301A depicts that the "Column and Drilled Shaft Type" at N-1 is a Type A1. Contract Drawing DD-S2101 shows that the "Column and Drilled Shaft Type" for N-1 appears to be a Type B. Please clarify and advise.
Answer #53	Refer to response to RFI Question #51.
Question #54	Contract Drawings DD-C0851 and DD-C0852 show the overall height of the Weir Wall height to be 5.5 ft. Contract Drawings DD-S3102 and DD-S3105 show that the Weir Wall height to be 4.5 ft. Please clarify and advise.
Answer #54	Weir Wall height in Contract Drawings DD-C0851 and DD-C0852 are correct. DD-S3102 and DD-S3105 is revised to show Weir Wall height to be 5.5 ft in this addendum.
Question #55	Contract Drawings DD-S2502, Section S1 & S2 show that at the Grade Beams the Bearings should be a "Disk Bearing" with a 3" Sole Plate, 4" Masonry Plate and 3" Grout Pad. The Contract Drawings are not clear on what type of "Disk Bearing" is required at the Grade Beams.
Answer #55	All disc bearing information is shown on DD-S3027.
Question #56	After speaking with several bearing manufacturers, including the manufacturer that is named in the contract documents, we have been informed that they cannot provide a quote for the bearings, since they cannot get access to the "Confidential & Privilege" documents. Please let us know how the bearing design documents can be accessed by these manufacturers without going through the security protocols to receive "Confidential & Privilege" documents.
Answer #56	Refer to new specification SECTION 058250 DISC-DESIGN BEARINGS and "Disc Bearing Design Criteria Memo" provided with this addendum.
Question #57	Contract Drawing DD-S3027, shows the Fixed Disk Bearing Details & Schedule.

	The tables do not show what the Horizontal capacity of the Bearing. Please advise.
Answer #57	The required horizontal capacities of the bearings are noted as "V_{EW}" and "V_{NS}" in the schedule in DD-3027.
Question #58	After review of Contract documents, it appears that there is no specifications provided for the bearings to be installed for the project. Please advise.
Answer #58	Refer to SECTION 058250 DISC-DESIGN BEARINGS provided with this addendum.
Question #59	Reference Plate Girder Shear Connection Schedule on Drawing DD-S3007. Supported plate girder PG-5-1 to supporting plate girder PG-C-3 references Detail D1/S3008. D1/S3008 shows horizontal stiffener plates, but the table do not. Which is correct? This would also affect the size of the shear plate and bolt quantity. Same question applies to D7/S3011.
Answer #59	Details shown in Drawing DD-3008 are typical connections where specific sizing is defined in the schedule in DD-3007. The schedule is correct with exception of two items that are updated in this addendum: PG-5-1 will be revised as it extends between grid lines D and G. The row information for PG-3.1-1 in the schedule in DD-S3007 will be updated to match detail D7 in DD-S3011.
Question #60	Reference North Framing Plan on Drawing DD-S2601 and Plate Girder Schedule on Drawing DD-S3006. Plate Girder PG-5-1 is shown to span from Grid Line D to Grid Line G. The Plate Girder Shear Connection Schedule on Drawing DD-S3007 shows a connection between PG-5-1 and PG-C-3. Does PG-5-1 extend to Grid Line C?
Answer #60	Schedule in DD-S3007 will be revised for PG-5-1 in this addendum. PG-5-1 extent extends between grid line D and G.
Question #61	Reference Plate Girder Splice Schedule on Drawing DD-S3021. Please provide splice information for the connection between PG-20-1 to PG-20-2.
Answer #61	One row is missing from the splice schedule in DD-3012. That information is updated in this addendum with the contents listed below: SPLICE LOCATION BETWEEN PLATE GIRDERS: PG-20-1, PG-20-2 SHEAR CONNECTION: • PLATE SIZE (IN x IN x IN): 1-1/4 x 30-1/4 x 65 • WEB PLATE CONNECTOR: SINGLE • NO. BOLT ROWS (ONE SIDE): 13 • NO. BOLT COLUMNS (ONE SIDE): 3 • TOTAL NO. OF BOLTS (ONE SIDE): (39) 1-1/4" A325 SC BOLTS MOMENT CONNECTION: • EXTERIOR SPLICE PLATE SIZE (IN x IN x IN): 1-1/4 x 24 x 60-1/4 • INTERIOR SPLICE PLATE SIZE (IN x IN x IN): 1-1/4 x 10-15/16 x 60-1/4 • NO. BOLT PARALLEL TO PG (ONE SIDE): 6 • NO. BOLT TRANSVERSE TO PG (ONE SIDE): 4 • TOTAL NO. SPLICE BOLTS (ONE SIDE): (24) 1-1/4" A325 SC BOLTS

Question #62	Reference the maintenance of traffic notes that are found on MT0101 sheet 366. Note 12 sates the following, "TEMPORARY PAVEMENT MARKINGS IN ACCORDANCE WITH SPECIFICATION SECTION 321725 SHALL BE APPLIED ON ALL UNFINISHED AND FINISHED ROADWAYS UNTIL THE PERMANENT PAVEMENT MARKINGS ARE INSTALLED." Section 321725 is missing from the contract book specifications. Please clarify.
Answer #62	Section 321725 TRAFFIC PAINT PAVEMENT MARKINGS - STANDARD PAINT is provided with this addendum.
Question #63	On Drawing DD-S2510, Dyer Plaza North Wall Elevation, can you please provide rebar information for the thickening of the existing wall? Sections S3 & S4 on the same drawing show the rebar, including drill & epoxy, but there are no callouts to bar size and spacing.
Answer #63	Sections S3 and S4 will be revised in this addendum with the following callout for the bar size and spacing in DD-S2510: "#5 DOWELS @ 6" O.C. VERTICALLY, 12" O.C. HORIZONTALLY. EMBED DOWELS 8" MIN., 12" MAX INTO EXISTING CONCRETE WITH HILTI HIT-RE 100 OR APPROVED EQUAL".
Question #64	On Drawing DD-E1403 Tunnel Luminaire Schedule you are showing 171 Type N Light Fixtures – however I am only counting 151 – please advise?
Answer #64	There are 144 Type N fixtures. Please see Sketch "20240818_MTBTR_DD_RFI-64_Sketch" for clarifications to sheets DD-E1403, DD-E1404 and DD-E1405. Please also reference the updated sheet DD-E1501 submitted as part of this addendum for clarification.
Question #65	On drawing DD-E0100 – please indicate the size of the pipe and wire for the Con-Ed Service, also please locate this service on the utility drawings to quantify.
Answer #65	Revised drawing issued with this addendum.
Question #66	We request that the PANYNJ inform the stated sole source providers of this project and grant them access to the documents in order for them to supply pricing.
Answer #66	Allowance for this work is covered under Revised Bid Analysis provided with this addendum.
Question #67	We are also requesting a 3-4 week extension to give the providers time to review the project and give us an accurate price.
Answer #67	No change to the May 7th bid due date.

Question #68	Contract Drawing DD-S2519 shows the Typical Rock Anchor Detail. The Drawing calls for the use of "Williams MCP II-PTI 1-3/4" Dia. Class 1 Anchor". The Detail on Section D appears to have a "Williams MCP III-PTI 1-3/4" Dia. Class 1 Anchor" drawn. Please clarify if the Rock Anchor System is to be a "Williams MCP II-PTI 1-3/4" Dia. Class 1 Anchor" or "Williams MCP III-PTI 1-3/4" Dia. Class 1 Anchor".
Answer #68	As shown on DD-S2519, rock anchors shall be "Williams MCP II-PTI 1-¾" Dia. Class I Williams Form Rock Anchors", or approved equal, with a screw-on fiber reinforced nylon cap, or approved equal.
Question #69	Drawing number DD-S3201 points out a Full Height Stiffener Plate in both details, however does not have a Schedule similar to Dwg DD-S3007 where it listed all of the Plate Stiffeners for the sheer connections. Please include a Schedule for this item, or point out all other areas where it is not clear if a Full height Stiffener is present.
Answer #69	The schedule in DD-S3007 is revised in this addendum to include the shear connections shown in sections S1 and S2 in DD-S3201.
Question #70	The contract states that Convergent, HSQ and Securitas are the three sole source providers for certain Electrical Systems, Equipment and Integration for this project. We have reached out to all three providers, and neither Convergent nor HSQ are aware of this project. We have yet to hear back from Securitas. We request that the PANYNJ inform the stated sole source providers of this project and grant them access to the documents in order for them to supply pricing.
Answer #70	Allowance for this work is covered under Revised Bid Analysis provided with this addendum.
Question #71	We are also requesting a 3-4 week extension to give the providers time to review the project and give us an accurate price.
Answer #71	No change to the May 7th bid due date.
Question #72	After review of the Contract documents regarding the Drilled Shafts that are depicted on Contract Drawings, DD-S3301, S3301A, S3301B, S3302, S3302A, S3302B, S3303, S3303A, S3303B & GT0315, please clarify the following: a. What is the meaning/definition of the "Reference Elevation"? b. For bidding purposes, please confirm that the Rocket Socket depth is to be taken below the "Reference Elevation", regardless of what elevation rock is at. c. For bidding purposes, please confirm that the top of rock elevation to be used shall be the top of "Class 1B Rock Elevation" or "Reference Elevation", whichever is lower. d. For bidding purposes, please confirm that the Rock Seal shall be 2'-0" below the top of "Class 1B Rock Elevation" or "Reference Elevation", whichever is lower.
Answer #72	For column and drilled shafts schedules: a. The reference elevation is an elevation from which to measure rock socket depth as shown on schedules on DD-S3301 through DD-S3301B. b. Yes. "Rock Socket Depth Below Reference Elevation" as shown on schedules on DD-S3301 through DD-S3301B, shall be taken below the reference elevation

	shown in the schedules unless NYCBC Class 1B rock is not reached before the reference elevation. c. Top of NYCBC Class 1B rock, for bidding purposes, shall be taken to be the "Estimated Elevation of Top of Class 1B Rock or Better" as shown on the schedules DD-S3301 through DD-S3301B. d. Rock Seal shall be 2'-0" below top of "Class 1 B Rock Elevation" per note 3 on DD-S3301 and DD-S3301A, and Note 2 on DD-S3301B.
Question #73	Column and Production Drilled Shaft Schedule on Contract Drawing DD-S3301A, shows that Column Mark "N-1" is a Column and Drilled Shaft Type A1 with no Bearing Plate Size Group. Please confirm that Column Mark "N-1" has no Bearing Plate Size Group. If Bearing Plate Size Group is required, please provide detail and information for such.
Answer #73	Refer to response to RFI Question #51. The bearing plate size is revised to Type B in this addendum.
Question #74	Reference is made to Contract Chapter III 39. Time for Completion and Liquidated Damages. The current contract duration is 28 months for Substantial Completion and 30 months for Final Completion. After our initial review the contract documents, we feel that the current contract durations are overly aggressive and unachievable. We believe that given the complex staging, material procurement, work date and work hour restrictions, we feel that this contract is a minimum 42 month duration for Substantial Completion. Please review the current contract durations and advise.
Answer #74	No change to contract duration.
Question #75	The construction includes lifting of multiple heavy structural steel elements which requires the use of high capacity Cranes. These cranes require several hours to position and set up with counterweights and then remove counterweights and demobilize, leaving very little time to accomplish any steel erection. Can the Authority add extra road closure time and/or extended time closures to Contract to facilitate a more efficient steel erection operation?
Answer #75	No change to road closure hours.
Question #76	We have been working diligently to try to identify subcontractors and suppliers/fabricators for this project. As I am sure you know the structural steel in particular is a very important part of the project and critical to the schedule and the project's success. There are a limited number of steel fabricators who can handle the magnitude and complexity of this work. We are trying to get a number of them to get the appropriate security clearance to review the documents but it is taking time to get this done. We are therefore respectfully requesting a 2-week extension to the bid date.
Answer #76	No change to the May 7th bid due date.

II. CHANGES TO THE CONTRACT BOOK FOR CONTRACT # MCP-254.254

ADDED CONTRACT SPECIFICATIONS

The Contract Specifications listed below are attached hereto and are to be included in the Contract Documents hereof: SECTION 058250, SECTION 321725, and SECTION 334170.

REVISED CONTRACT DRAWINGS (VOLUME 1 OF 2)

Drawings DD-IX0001, DD-IX0002, DD-IX0003, DD-G0004, DD-EG1001, DD-C0201, DD-C0501, DD-C0502, DD-C0503, DD-C0511, DD-C0531, DD-C0533, DD-C0602, DD-C0711, DD-C0811, DD-C0812, DD-C0816, DD-C0817, DD-C0818, DD-C0821, DD-C0822, DD-C0823, DD-C0832, DD-C0851, DD-C0852, DD-C1001, DD-C1011, DD-C1022, DD-E0100, DD-E1206, DD-E1209, DD-E1501, DD-S1201, DD-S1307, DD-T0204, DD-T0250, DD-T0311, DD-T0313, and DD-M0201.

Copies of these drawings are forwarded herewith. Destroy the drawings of this number now in your possession and substitute therefor the revised drawings dated 04/18/2024.

REVISED CONTRACT DRAWINGS (VOLUME 2 OF 2 CONFIDENTIAL PRIVILEGED)

Drawings DD-IX0010, DD-S0005, DD-S0021, DD-S2101, DD-S2501, DD-S2502, DD-S2508, DD-S2509, DD-S2510, DD-S2519, DD-S2601, DD-S2603, DD-S2701, DD-S2703, DD-S2705, DD-S2801, DD-S3006, DD-S3007, DD-S3011, DD-S3012, DD-S3013, DD-S3018, DD-S3021, DD-S3023, DD-S3027, DD-S3029, DD-S3032, DD-S3102, DD-S3105, DD-S3111, DD-S3112, DD-S3113, DD-S3114, DD-S3114B, DD-S3201, DD-S3202, DD-S3203, DD-S3204, DD-S3205, DD-S3206, and DD-S3301A.

Copies of these drawings are forwarded herewith. Destroy the drawings of this number now in your possession and substitute therefor the revised drawings dated 04/18/2024.

ADDED CONTRACT DRAWINGS (VOLUME 1 OF 2)

Copies of new Drawings DD-C1021A, DD-C1023A, DD-C1023B, DD-C1031, and DD-C1040 dated 04/18/2024 are forwarded herewith and are to be included in the set of Drawings.

ADDED CONTRACT DRAWINGS (VOLUME 2 OF 2 CONFIDENTIAL PRIVILEGED)

Copies of new Drawings DD-S3114C and DD-S3114D dated 04/18/2024 are forwarded herewith and are to be included in the set of Drawings.

III. CHANGES TO THE PANYNJ DETAILED ANALYSIS OF BID

Delete “Port Authority of New York and New Jersey Detailed Analysis of Bid” in its entirety and substitute with the page provided with this Addendum.

This communication shall be initialed by you and annexed to your response to the above- referenced Bid upon submission.

In case any Respondent fails to conform to these instructions, its submission will nevertheless be construed as though this communication had been so physically annexed and initialed.

QUESTIONS CONCERNING THIS ADDENDUM MAY BE ADDRESSED TO ELZA RENAZILE, WHO CAN BE REACHED AT (212) 435-4657 or at erenazile@panynj.gov.

JOANN SPIRITO
DEPUTY DIRECTOR
THE PORT AUTHORITY OF NY & NJ
PROCUREMENT

RESPONDENT'S FIRM NAME: _____

INITIALED: _____

DATE: _____

DIVISION 05

SECTION 058250

DISC-DESIGN BEARINGS

PART 1. GENERAL

1.01 SUMMARY

A. This Section specifies requirements for furnishing, placing, and setting disc-design bearings at the locations indicated on the Contract Drawings. Disc-design bearings shall consist of a polyether urethane structural element (disc) confined by upper and lower steel bearing plates. The bearings shall be equipped with a shear restriction mechanism to prevent movement of the disc. Disc-design structural bearings shall be supplied as fixed bearings; guided expansion bearings; and non-guided expansion bearings as designated by the Contract Documents.

B. Fixed bearings shall allow rotation but no longitudinal or transverse movement in the bearing plane.

C. Guided Expansion Bearings shall allow rotation and longitudinal movement in the bearing plane; transverse movement shall be restricted. To allow longitudinal movement, the upper steel bearing plate shall be faced with polytetrafluoroethylene (PTFE) sheet and support a sliding steel top bearing plate. To restrict transverse movement, either a guide bar or keyway system shall be used. If required, the guide bar or keyway systems and their mating steel surfaces shall be faced with strips of PTFE.

D. Non-guided Expansion Bearings shall allow rotation, longitudinal, and transverse movement in the bearing plane. To allow longitudinal and transverse movement, the upper steel bearing plate shall be faced with polytetrafluoroethylene (PTFE) sheet and support a sliding steel top bearing plate.

1.02 REFERENCES

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

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO	AASHTO LRFD Bridge Construction Specifications

ASTM International (ASTM)

ASTM A 36	Specification for Carbon Structural Steel.
ASTM A 240	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A 354	Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
ASTM A 449	Specification for Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use.

ASTM A 563	Specification for Carbon and Alloy Steel Nuts.
ASTM A 572	Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
ASTM A 574	Standard Specification for Alloy Steel Socket-Head Cap Screws
ASTM A 1008	Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
ASTM A 1011	Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, high-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
ASTM D 395	Standard Test Methods for Rubber Property – Compression Set
ASTM D 412	Standard Test methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
ASTM D 638	Standard Test Method for Tensile Properties of Plastics
ASTM D 792	Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM D 2240	Standard Test Method for Rubber Property – Durometer Hardness
ASTM F 436	Specification for Hardened Steel Washers Inch and Metric Dimensions.
ASTM F 835	Standard Test Methods for Flexible Cellular Materials Made from Olefin polymers
ASTM F 1554	Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
ASTM F 3125	Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions.
NYS SCM	New York State Steel Construction Manual
	Research Council on Structural Connections (RCSC)
RCSC	Specification for Structural Joints Using High-Strength Bolts.

1.03 DESIGN AND PERFORMANCE REQUIREMENTS

A. General

1. Materials and fabrication of bearing assemblies shall conform to Section 18 of the AASHTO LRFD Bridge Construction Specifications
2. The fabrication shop shall be, at a minimum, a Certified Bridge Fabricator – Simple (SBR) in accordance with the AISC Governing Requirements for Certification Programs. A list of certified fabrication shops for each Category can be found on the following website: www.aisc.org/certification.

B. Connection Design and Detailing

1. Complete details shall be shown on the shop drawings. The design of connections for any portion of the structures not shown on the Contract Drawings or specified in the Specifications will be provided by the Engineer.

2. Design and detailing for any connections not shown on the Contract Drawings and/or different than those shown on the Contract Drawings shall be prepared by the Contractor and submitted to the Engineer for review and approval.
3. All connection design and detailing prepared by the Contractor shall be performed under the supervision of a Professional Engineer licensed in the state of New York. The calculations and shop drawings shall also bear the signature and seal of a Professional Engineer licensed in the state of New York.

C. Shop Drawings

1. The Contractor shall submit detailed shop drawings, drawn by the Manufacturer only, in conformance with the applicable requirements of the New York State Steel Construction Manual, for approval prior to the start of fabrication.

   In addition to the above requirements, the Manufacturer shall note the following on the shop drawings.

   - The total quantity of each kind of disc-design bearing required, i.e., fixed, guided expansion, or non-guided expansion, grouped first according to type (load range) and then by actual design capacity.
   - The thickness and plan area of the polyether urethane structural elements required.
   - The design coefficient of friction.
   - The type of PTFE sheet (filled or unfilled) and, if applicable, the type and amount (by weight) of Filler.
   - The type(s) of steel(s) to be used.
   - If applicable, any welding process used in the bearing manufacture that does not conform to the approved processes of New York State Steel Construction Manual shall be clearly described and detailed. The description shall specifically delineate the qualifications and requirements of the Quality Control Inspector (QCI) to ensure quality welding.
   - The location of the fabrication plant
   - The Manufacturer’s name and name of the manufacturer’s representative who will be responsible for coordinating production, inspection, sampling and testing with the Engineer.

   The Contractor shall also provide written notification thirty (30) days prior to the start of bearing fabrication. This notification shall include all the information as identified above.

   When the bearing details are identical to the plans, the Contractor shall be responsible for supplying shop drawings prepared by the Manufacturer. The Manufacturer shall certify that the bearings depicted on the drawings are in conformance with the contract documents. The Contractor shall submit one copy of the certified drawings to the Engineer. The Manufacturer shall note the following on all shop drawings:

   - The Contract number, and the type, size, and quantity of bearings being produced.
   - The design loading for each type and size bearing. If bearings of the same type and size are designed for differing load conditions the maximum design loading shall be noted.

- The Manufacturer's name, the location of the fabrication plant and the name and phone number of the Manufacturer's representative who will coordinate production, inspection, and sampling and testing with the Engineer.
- The specification reference and grade of steel used.
- All welding procedures to be used in the manufacture of the bearings.

D. Erection Drawings

1. Erection drawings shall incorporate bearing information. The erection drawings shall include, at a minimum, plans showing exact locations of bearing plates, and/or anchor bolts and other embedded items.

1.04 QUALIFICATIONS

A. The entities performing the fabrication of bearings of this Section shall have a minimum of three years of experience in bearing fabrication involving complexities similar to those required under this Contract and shall employ labor and supervisory personnel experienced in this type of Work.

B. Welding Consultant

1. For all AWS D1.5 welding, including fracture critical welding, the Contractor shall ensure the fabricator employs a welding consultant responsible for the review or writing of all shop and site welding procedures (See Appendix "A" under "Quality Assurance-Quality Control" Item 7). The welding consultant shall possess as a minimum a Bachelor of Science Degree in Engineering and demonstrate a minimum of 10 years of experience in the welding of heavy steel sections: bridge and fracture critical members. Submit resume for review and approval.

C. Welders: All welders shall be properly certified using AWS procedures and the following:

1. The Contractor shall provide the Engineer with certifications for each welder. The certification for each welder shall be signed by the company representative authorizing the qualification test and shall state the name and title of the person conducting the certifying examination. The date of the examination shall be within a six-month period prior to performing the Work of this Section unless a valid continuity log is provided.

D. Procedure Qualification

Perform Procedure Qualification for all non-prequalified welding operations as required by AWS D1.1 or D1.5 codes, as applicable.

1.05 SUBMITTALS

See Appendix "A" for submittal requirements.

PART 2. PRODUCTS

2.01 MANUFACTURERS AND SOURCES OF SUPPLY

A. Subject to compliance with requirements furnish and install disc-design bearings from one of the following manufacturers, or approved equal:

1. R. J. Watson Inc., Alden, NY
2. D.S. Brown Company, North Baltimore, OH
3. Con-Serve Inc., Brunswick, OH

4. Kinedyne Corporation, Buffalo, NY

2.02 MATERIALS

All materials shall be new and unused, with no reclaimed material incorporated in the finished bearing. Materials shall meet the following requirements:

A. Steel

1. In accordance with Division 05 Section on Steel.

B. High Strength Bolts/Anchor Studs

1. High strength bolts, nuts and washers shall be of the types shown on the Contract Drawings. Joints using high strength bolts shall conform to the provisions of RCSC's Specification for Structural Joints Using High-Strength Bolts.

2. When bolt requirements cannot be met by conformance to ASTM F 3125 bolts because of requirements for lengths exceeding 12 diameters or diameters exceeding 1-1/2 inch, bolts or threaded rods conforming to ASTM A 354 Grade BC, A 354 Grade BD, or to ASTM A 449 are permitted to be used in accordance with AISC specifications.

C. Anchor Rods and Anchor Bolts

Anchor rods and anchor bolts shall conform to the ASTM type shown on the Contract Drawings. Anchor bolts shall be the regular hexagon-bolt type. Anchor rods shall have regular hexagonal nuts.

D. Grout

In accordance with Division 03 Section on grouting (non-metallic).

E. Paint

In accordance with Contract Drawings.

F. Polyether Urethane Structural Element

1. The polyether urethane structural element used in the construction of the disc-design bearings shall be molded from a polyether urethane compound.

2. Material Requirements: The physical properties of the polyether urethane shall conform to the requirements of the following table:

Physical Requirements of Polyether Urethane Structural Element			
Physical Property	**ASTM Test Method**	**Requirements**	
		Min.	**Max.**
Hardness, Type D Durometer	D2240	57	67
Tensile Stress, psi. Note 1. At 100% elongation At 300% elongation. Note 3	D412	 2000 3750	-
Tensile Strength, psi. Note 1.	D412	5000	-
Ultimate Elongation, %. Note 1.	D412	220	-
Compression set, %. Notes 1 and 2.	D395	-	40

Note 1: 10% deviation from specified values is permissible.
Note 2: 22 hours at 158°F
Note 3: Only required if 300% is attained.

G. Polytetrafluoroethylene Sheet and Strip

1. Polytetrafluoroethylene (PTFE) sheet and strip shall be manufactured from pure virgin (not processed) unfilled TFE resin; or from TFE resin uniformly blended with either 15% glass fiber or 25% carbon (maximum filler, percent by weight).
2. Material Requirements: Finished PTFE sheet and strip shall be resistant to all acids, alkalis and petroleum products, stable at temperatures from -360°F to +500°F, non-flammable, non-absorbing of water, and shall conform to the physical requirements of the following table:

Physical Requirements of PTFE Sheet and Strip				
Physical Property	ASTM Test Method	Minimum Requirements		
		Unfilled	Filled 15% Glass	Filled 25% Carbon
Ultimate Tensile Strength, psi	D638M	2800	2000	1300
Ultimate Elongation, %	D638M	200	150	75
Specific Gravity	D792	2.13	2.18	2.05

2.03 FABRICATION

A. General: Steel components of bearings shall be fabricated in accordance with the applicable requirements of the NYS Steel Construction Manual (SCM) and Specification Section 051200. In addition, component parts of individual bearings shall meet fabrication details as shown in the contract drawings.

B. Non-contact plate edges of bearings scheduled to be painted shall be shop machines to a minimum radius of 1/8".

C. Do not commence fabrication without approvals for the following:

1. Shop drawings.
2. Quality Control Plan
3. Welding procedure specifications.
4. Procedure qualification records, if applicable.
5. Welder qualifications.
6. Mill test reports.
7. Metal pre-heating and post-heating requirements.
8. Quality Control personnel, including AWS CWIs, ICC Certified Bolting Inspectors, and nondestructive testing personnel certified in accordance with this Section.

D. The finish of the mold used to produce the bearing elements shall conform to good machine shop practice. Every bearing shall have the Contract Number, lot number, and individual bearing number indelibly marked with ink on a side that will be visible after erection.

The PTFE Sheet shall be bonded to its grit blasted steel substrate using an epoxy resin adhesive under controlled factory conditions in accordance with the instructions of the adhesive manufacturer. Alternatively, the PTFE sheet may be recessed into its steel substrate for one-half its thickness. The bearing manufacturer shall have the option of bonding recessed PTFE sheet.

All steel surfaces exposed to the atmosphere shall be shop painted as specified on Contract Drawings. Paint color is to be approved by the Engineer. Prior to painting, the exposed steel surfaces shall be cleaned in accordance with the recommendation of the coating's manufacturer. Surface preparation and the application of the paint system shall be shop applied by the bearing supplier as per the paint manufacturer.

Metal surfaces to be welded shall be given a coat of clear lacquer, or other protective coating approved by the Engineer, if exposure is to exceed three months prior to welding. The coating shall be removed at the time of welding. No painting will be done to these surfaces prior to the completion of welding.

Bearing Tolerances: Except as noted, all bearing surfaces of steel plates shall be finished or machined flat within 0.010 inch, Out-of-flatness greater than 0.010 inch on any plate shall be cause for rejection. The bottom surfaces of lower bearing plates (masonry plates) designed to rest on bearing pads shall not exceed an out-of-flatness value of 1/16 inch. Oxygen cut surfaces shall not exceed a surface roughness value of 1 mil, as defined by ANSI B46.1. Repair, when necessary, shall conform to the requirements of the New York Steel Construction Manual. Where the Steel Construction Manual requires DCES approval, delete the term DCES and replace it with "the Engineer".

The steel base pot of all bearings shall be either integrally machined or continuously welded to its bottom steel masonry plate. Unless otherwise approved by the Engineer, all welding shall conform to, and all welders shall be qualified in accordance with the requirements of the New York State Steel Construction Manual. Where the Steel Construction Manual requires DCES approval, delete the term DCES and replace it with "the Engineer".

Gross bearing dimensions shall have a tolerance of -0, +1/8"

2.04 SHOP PAINTING

A. Machine finished surfaces in contact, including pins, pin holes, surfaces in sockets at the top of rocker bearings, and bronze or copper plates in sliding contact shall receive one coat of automotive grease as soon as machining is complete. None of these surfaces shall be painted.

B. Polytetrafluoroethylene surfaces shall not be painted or otherwise coated.

C. Metal to metal surfaces to be field welded shall be given a coat of clear lacquer or other protective coating approved by the Engineer if exposure is to exceed three months prior to welding. The coating shall be removed at the time of welding. Painting, if required, will be done only after the completion of welding. Surfaces to be painted shall be painted in accordance with the Contract Drawings. Paint color is to be as approved by the Engineer.

D. All other metal surfaces shall be cleaned to meet SSPC-SP10, "Near-White Metal Blast Cleaning" and painted in accordance with the Contract Drawings. Paint color is to be as approved by the Engineer.

2.05 PERFORMANCE CHARACTERISTICS

A. Compression Stain: The compression stress is based on the net area of a rotational element using the total overall diameter. The compression strain is measured as a percentage of the original thickness of the rotational element. A load equal to 150% of the bearing's design capacity shall first be applied to seat the bearing components. The 150% load shall then be gradually reduced, over a time period of 30 to 90 seconds, to a pre-load equal to 3% of the bearing's design capacity. Each compression strain shall be recorded relative to the initial 3% pre-load deflection, one minute after the desired stress level has been reached, on deflectometers, at four locations 90^{o} apart on the perimeter of the bearing.

The test results will be evaluated as follows:

- The bearing will be visually examined both during and after the test. Any resultant visual defects (such as extruded elastomer, damaged sealed, or cracked steel) shell be cause for rejection.
- Non-uniform compression deflections at a desired stress level shall be cause for rejection.
- The compression strain of each bearing shall conform to the following requirements:

Compression Stress (psi)	**Compression Strain, Max. %**
1000	5.0
2000	8.5
3000	11.0
4000	13.2
5000	16.0

B. Sliding Coefficient of Friction. For all guided and non-guided expansion disc-design bearings, the coefficients of friction shall be measured at the bearing's design capacity, on the fifth and fiftieth cycles, at a sliding speed of 1 inch per minute. The sliding coefficient of friction shall be calculated as the horizontal load required to maintain continuous sliding of one bearing, divided by the bearing's design capacity vertical load. The vertical load shall have been applied continuously for a minimum of 12 hours prior to testing.

The test results will be evaluated as follows:

- The measured sliding coefficients of friction shall not exceed 75% of the maximum design coefficient of friction. The maximum design coefficient of friction shall not exceed:
  - 0.04 unfilled PTFE
  - 0.08 filled PTFE

- The bearing will be visually examined both during and after the test. Any resultant visual defects (such as bond failure, physical destruction, cold flow of PTFE, or damaged components) shall be cause for rejection.

C. Rotation: For all disc-design bearings, the polyether urethane element shall be capable of maintaining its initial uniform contact with the streel bearing plates throughout a rotation range of 0.02 radians under a compressive load equal to 150% of the design capacity of the bearing.

The test results will be evaluated as follows:

- The bearing will be visually examined both during and after the test. Any resultant visual defects shall be cause for rejection.
- Continuous and uniform contact between the polyether urethane element and bearing plates, and between the sliding steel top and upper bearing plates shall be maintained for the duration of the test. Any observed lift-off shall be cause of rejection.

2.06 SAMPLING AND TESTING

A. The Contactor shall furnish the required number of samples to perform testing in accordance with the following table:

Disc Bearing Sampling and Testing Requirements		
Test	**Performed By**	**Samples Required**
Rotation	Manufacturer	One production bearing per lot. Note 1.
Coefficient of Friction	Manufacturer	One production bearing per lot. Note 1.
Compression Strain	Manufacturer	Three production bearings per lot. Note 1.
Physical properties Polyether Urethane Rotational Element (Except compression set)	Manufacturer	One 10x15 inch sheet of polyether urethane material (thickness of 1/16 – 1/8 inch) per lot. Note 2.
Compression Set of Polyether Urethane Rotation Element	Manufacturer	One 4x4 inch sheet of polyether urethane material, molded or cut to the thickness requirements of ASTM D395, Method B. Note 3.
Physical Properties of PTFE Sheet	Manufacturer	One 10x15 inch sheet of polyether urethane material per lot. Note 4.

Note 1: Sample production bearings of such size that cannot be tested by the manufacturer at 150% design capacity for rotation shall be tested at actual design capacity. Bearings which are tested at actual design capacity will be tested at that capacity because it is not possible, or not practical in the Engineer's opinion to test them at a higher capacity. Therefore, bearings tested at 150% design capacity which are rejected, will not be retested below 150% design capacity for the purpose of rendering such bearings acceptable. Sample production bearings that cannot be tested by the manufacturer at their actual design capacity for rotation and/or friction shall be tested by an outside laboratory approved by the Engineer. The Manufacturer shall assume the cost of this testing and submit the certified test results to the Contractor.

Note 2: All submitted sample sheets of polyether urethane material shall be certified by the bearing manufacturer as having been taken from the same batch of polyether urethane material as was used in the production bearings.

Note 3: The manufacturer shall have the option of supplying four (4) die cut specimens in accordance with ASTM D395, Method B. All submitted specimens of polyether urethane material shall be certified by the bearing manufacturer as having been taken from the same batch of polyether urethane material as was used in the actual production bearings.

Note 4: Single sheets of PTFE Material from which the bearing has been fabricated may be submitted to the Engineer for consideration of multiple lot acceptance, provided that the thickness of the material does not vary from lot to lot. All submitted sample sheets shall be certified by the bearing manufacturer as having been taken from the same batch of PTFE material as was used in the actual production bearings.

B. Lot Size: Sampling, testing, and acceptance consideration will be made on a lot basis. A lot shall be defined as those bearings presented for inspection at a specific time or date. A lot shall be further defined as the smallest number of bearings as determined by the following criteria:

- A lot shall not exceed a single contract or project quantity
- A lot shall not exceed 25 bearings
- A lot shall consist of those bearings that can be manufactured with polyether urethane rotation elements from one batch of polyether urethane material. The mass of one batch shall not exceed 450 lbs.
- A lot shall consist of those bearings of the same type, regardless of load capacity. Bearing types shall be fixed type bearings or expansion type bearings. Guided and non-guided expansion bearings will be considered as a single type.

C. Schedule: The manufacturer shall complete the required testing and determine compliance with this specification before submitting the lot(s) for inspection, sampling and acceptance consideration. A minimum of thirty (30) days shall be allowed for the inspection, sampling, and testing of production bearings and component materials.

D. Sampling Method: The manufacturer shall select, at random, the required sample bearing(s) from the completed lots of bearings for testing by the manufacturer.

The Engineer shall select, at random, the required sample bearing(s) from completed lots of bearings, and samples of the polyether urethane and the PTFE materials for testing by the manufacturer. All samples shall be taken in accordance with the Engineer's written instructions.

E. Finish and Accessories: All exterior surfaces of sampled production bearings shall be smooth and free from irregularities or protrusions that might interfere with testing procedures.

Bearings with tapered sole plates which are selected for testing by the Engineer shall be delivered to the test site accompanied by a single unattached matching beveled plate. This plate shall be made of the same material and be the same size and thickness as the tapered plate. Additionally, the single beveled plate shall be so constructed that when placed in contact with the tapered sole plate the two shall form a single body, rectangular in shape and uniform in thickness.

F. The manufacturer shall select, at random, the required sample bearing(s) from the completed lots of bearings for testing by the manufacturer.

2.07 BASIS OF ACCEPTANCE

A. Basis of Acceptance: Acceptance of Bearings will be based on the manufacturer's name appearing in Section 2.01. Bearings will be considered for acceptance in project lot quantities, or portions thereof, at the manufacturing site in accordance with the procedural directives of the Engineer.

PART 3. EXECUTION

3.01 CONCRETE BEARING SURFACE ELEVATIONS

A. General: The elevation of the concrete bearing surface for all types of bearings, including multi-rotational disc-design bearings, shall be as derived from the Contract Drawings. Elevations may require adjustment to accommodate dimensions of actual bearings furnished. It is the responsibility of the Contractor to coordinate any changes in the bearings which will affect elevations.

3.02 CONCRETE BEARING SURFACE PREPERATION

A. No bearing shall be placed upon a concrete bearing surface which is deformed, irregular, or poorly finished. The entire bearing surface area shall be floated and troweled.

3.03 SETTING ANCHOR STUDS

A. Anchor studs shall be set as shown on the plans unless changes are permitted by the Engineer. If anchor studs are cast in substructure concrete, templates, or other suitable means, shall be used to keep the studs vertical at the required embedment and in the correct horizontal position during concrete placement. If the Contractor elects to drill the finished, cured concrete in order to set the anchor studs, the reinforcing steel shall be positioned prior to casting the concrete so that it will not be damaged during drilling. If anchor studs are drilled and grouted, material and construction details shall be in conformance Specification Section 036115 and requirements on Contract Drawings.

3.04 BEARING INSTALLATION AND ALIGNMENT

A. The centerline of sole plates or other fixed portions of bearing assemblies attached to the structural steel shall not be offset from the centerline of bearing stiffeners or bracing connection plates by more than one-half the thickness of the flange at that location, or the thickness of the bearing stiffener or connection plate, whichever is the lesser distance.

B. Fixed Disc Bearings: No additional requirements apply.

C. Expansion Disc Bearings: These may vary from perfect alignment, therefore expansion bearings shall be set in accordance with the following:

1. The sliding plate shall be centered on the masonry plate under full dead load and at an ambient temperature of 68 degrees F.

2. The maximum variation from perfect alignment between the centerline of the fixed and movable portions of the bearing device, taking into account the effects of temperature and load at the time of measurement, shall not exceed plus or minus 1 inch longitudinally unless otherwise indicated on the plans. This variation shall be measured as the horizontal distance between the centerline of the sliding plate and the centerline of the masonry plate.

3. No bearing adjustments shall be made until the completed structural slab has been in place for at least seven curing days. Any adjustments needed to meet the above requirements may require jacking the superstructure. All adjustments shall be accomplished according to a written procedure submitted by the Contractor for the Engineer's approval. All adjustments shall be made at no additional cost.

3.05 WELDING

A. Unless indicated on Contract Drawings as bolted, bearings shall be welded permanently to the structural steel only after all necessary adjustments have been made. All welding shall be done in accordance with the requirements of Specification Section 051200. The Contractor shall submit a Welding Procedure Specification to the Engineer. No welding shall be performed until the manufacturer receives an approved Welding Procedure Specification. Welding inspections must be performed in accordance with Specification Section 051200.

B. The General requirements immediately above shall apply except that during field welding operations the temperature of the steel adjacent to the rotational element shall not exceed 200 degrees F. Temperature shall be controlled by welding procedures and monitored using temperature indicating crayons, or other devices. Procedures, crayons, and other devices shall be acceptable to the Engineer. If the temperature limit is exceeded, the Engineer shall be immediately notified. The Engineer will provide the proper repair procedure, which may include complete replacement of the bearing. All repair work shall be done at no additional cost.

3.06 GROUTING ANCHOR BOLT HOLES.

A. All slotted anchor bolt holes in masonry plates shall be filled with concrete grouting material to the top edge of the hole. All excess grout material shall be cleaned from the bearing surfaces in a manner satisfactory to the Engineer. Slotted anchor bolt holes in fixed bearings may be filled any time subsequent to girder placement. Slotted holes in expansion bearings shall be filled only after all necessary bearing adjustments have been made.

3.07 FINAL VERIFICATION

A. Prior to final acceptance of the bridge, the Engineer will verify that all necessary adjustments have been made; that all steel bearings, or external load plates, are permanently welded or attached with cap screws to the superstructure steel as shown on the contract plans; that all slotted holes are completely filled with grout; that all anchor studs are firmly tightened; and that all other work required to make the bearings completely functional has been completed.

3.08 STORAGE

A. When in storage the bearings will be kept banded, wrapped and secured in a condition suitable for shipment.

END OF SECTION

SECTION 058250

BEARINGS

APPENDIX "A"

SUBMITTALS

Submit the following in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 01 - GENERAL PROVISIONS:

A. Shop Drawings and Erection Drawings

1. Connection Design and Detailing in accordance with 1.03 A. prior to submitting shop drawings.
2. Prior to the commencement of fabrication, shop drawings in accordance with 1.03 B.
3. Erection drawings in accordance with 1.03 C.

B. Qualifications and Plans

1. Prior to the commencement of fabrication, submit the Quality Control Plan, Welding Procedure Specifications, Procedure qualifications records, welder qualifications, metal pre-heating and post-heating requirements, and quality control personnel certifications in accordance with 2.03C

C. Product Data

1. Prior to commencing with fabrication of bearings, submit Manufacturer information per 2.01 and Material specifications per 2.02.

D. Samples for Testing

1. The manufacturer shall furnish the required number of samples for testing by the Engineer per 2.06.

E. Manufacturer Test Reports

1. The manufacturer shall furnish the test results for Manufacturer testing required per 2.06.
2. Mill test reports per 2.03C

F. Sustainability Submittals

1. Sustainability submittals in accordance with Division 01.

END OF APPENDIX "A"

MEMO

To: Port Authority of New York and New Jersey **Date:** April 12th, 2024

cc: WSP (Timothy Burke, PE; Michael Barbagallo, PE).

From: Najib Abboud Ph.D., P.E. (Thorton Tomasetti)

Subject: Disc Bearing Design Criteria

Disc Bearing Design Criteria

This memorandum lists Disc Bearing loading and design criteria for the Dyer Deckovers project. This information should be used in conjunction with Specification Section 058250. Quantities must be derived from DD-S2601 and DD-S2602 for bearings on grade beams, and schedules DD-S3301 and DD-S3301A for bearings on columns.

The bearing on top of column K-3.5 will be updated to "Type B", and schedule on DD-S3023 will be revised to match bearing groups indicated on DD-S3027 and below in future addendum.

Disc Bearings at top of columns within Dyer Plaza:

Disc bearings indicated on contract drawings at top of columns within Dyer Plaza shall be designed to the following loading and criteria:

COLUMN BEARING GROUP DESIGN REQUIREMENTS														
DYER PLAZA - NW QUADRANT														
BEARING GROUP:		A & D (4'-0" BEARING PLATE SIZE)			BEARING GROUP:		B (5'-0" BEARING PLATE SIZE)			BEARING GROUP:		C (6'-0" BEARING PLATE SIZE)		
DESIGN LIMIT STATE	VERT. DOWN	P_{MAX}	850	KIPS	DESIGN LIMIT STATE	VERT. DOWN	P_{MAX}	1700	KIPS	DESIGN LIMIT STATE	VERT. DOWN	P_{MAX}	4900	KIPS
		P_{MIN}	750	KIPS			P_{MIN}	1350	KIPS			P_{MIN}	4400	KIPS
	VERT. UP (SEISMIC)	P_{MAX}	250	KIPS		VERT. UP (SEISMIC)	P_{MAX}	0	KIPS		VERT. UP (SEISMIC)	P_{MAX}	0	KIPS
		P_{MIN}	0	KIPS			P_{MIN}	0	KIPS			P_{MIN}	0	KIPS
	V_{EW}		60	KIPS		V_{EW}		110	KIPS		V_{EW}		90	KIPS
	V_{NS}		120	KIPS		V_{NS}		160	KIPS		V_{NS}		90	KIPS
SERVICE LIMIT STATE	VERT. DOWN	P_{MAX}	650	KIPS	SERVICE LIMIT STATE	VERT. DOWN	P_{MAX}	1350	KIPS	SERVICE LIMIT STATE	VERT. DOWN	P_{MAX}	3850	KIPS
		P_{MIN}	500	KIPS			P_{MIN}	950	KIPS			P_{MIN}	3000	KIPS
	VERT. UP (SEISMIC)	P_{MAX}	215	KIPS		VERT. UP (SEISMIC)	P_{MAX}	0	KIPS		VERT. UP (SEISMIC)	P_{MAX}	0	KIPS
		P_{MIN}	0	KIPS			P_{MIN}	0	KIPS			P_{MIN}	0	KIPS
	V_{EW}		60	KIPS		V_{EW}		110	KIPS		V_{EW}		90	KIPS
	V_{NS}		120	KIPS		V_{NS}		160	KIPS		V_{NS}		90	KIPS
EXTREME/ ABNORMAL LIMIT STATE	VERT. UP	P_{MAX}	300	KIPS	EXTREME/ ABNORMAL LIMIT STATE	VERT. UP	P_{MAX}	300	KIPS	EXTREME/ ABNORMAL LIMIT STATE	VERT. UP	P_{MAX}	300	KIPS
TRANSLATION	SERVICE LIMIT STATE	U_X	0.0015 - 0.1777	IN	TRANSLATION	SERVICE LIMIT STATE	U_X	0.0018 - 0.2209	IN	TRANSLATION	SERVICE LIMIT STATE	U_X	0.0025 - 0.2056	IN
		U_Y	0.0087 - 0.5519	IN			U_Y	0.0064 - 0.5560	IN			U_Y	0.0236 - 0.5231	IN
		U_Z	0.0106 - 0.0530	IN			U_Z	0.0426 - 0.0977	IN			U_Z	0.1221 - 0.2930	IN
ROTATION	SERVICE LIMIT STATE	R_X	+/- 0.00835	RAD.	ROTATION	SERVICE LIMIT STATE	R_X	+/- 0.00611	RAD.	ROTATION	SERVICE LIMIT STATE	R_X	+/- 0.00822	RAD.
		R_Y	+/- 0.02107	RAD.			R_Y	+/- 0.01757	RAD.			R_Y	+/- 0.01189	RAD.
		R_Z	+/- 0.00036	RAD.			R_Z	+/- 0.00046	RAD.			R_Z	+/- 0.00039	RAD.

Sole plate, bearing plate, and masonry plate dimensioning shall be as follows:

MEMO

COLUMN BEARING CONNECTION SCHEDULE							
GROUP	SPT (IN) *	SPL (IN) *	SPW (IN) *	UBPT (IN) **	UBPD (IN) **	MPT (IN) ***	MPD (IN) ***
A	2.00	96.00	30.00	1.75	15.50	2.50	48.00
B	2.00	96.00	30.00	1.75	21.50	2.50	60.00
C	2.50	96.00	60.00	2.50	36.00	2.50	72.00
D	2.00	72.00	30.00	1.75	15.50	2.50	48.00

NOTE:

1. * SPT DENOTES THICKNESS OF SOLE PLATE. SPL AND SPW DENOTE DIMENSION OF SOLE PLATE PARALLEL AND PERPENDICULAR TO PLATE GIRDER, RESPECTIVELY.
2. ** UBPT DENOTES THICKNESS OF UPPER BEARING PLATE. UBPD DENOTES DIAMETER OF THE PLATE.
3. *** MPT DENOTES THICKNESS OF MASONRY PLATE. MPD DENOTES DIAMETER OF THE PLATE.

Disc Bearings on grade beams adjacent to Lincoln Tunnel Expressway and Upper Dyer Avenue:

Disc bearings indicated on contract drawings at grade beams supporting steel members over the Lincoln Tunnel Expressway and Upper Dyer Avenue shall be designed to the following loading and criteria:

PLATE GIRDERS END BEARING GROUP DESIGN REQUIREMENTS														
LTE NORTH - NE QUADRANT					LTE SOUTH - SE QUADRANT					DYER AVENUE - SW QUADRANT				
BEARING GROUP:		E (4'-0" BEARING PLATE SIZE)			BEARING GROUP:		F (4'-0" BEARING PLATE SIZE)			BEARING GROUP:		G (4'-0" BEARING PLATE SIZE)		
DESIGN LIMIT STATE	VERT. DOWN	P_{MAX}	650	KIPS	DESIGN LIMIT STATE	VERT. DOWN	P_{MAX}	1700	KIPS	DESIGN LIMIT STATE	VERT. DOWN	P_{MAX}	1300	KIPS
		P_{MIN}	750	KIPS			P_{MIN}	1350	KIPS			P_{MIN}	750	KIPS
	VERT. UP (SEISMIC)	P_{MAX}	250	KIPS		VERT. UP (SEISMIC)	P_{MAX}	0	KIPS		VERT. UP (SEISMIC)	P_{MAX}	250	KIPS
		P_{MIN}	0	KIPS			P_{MIN}	0	KIPS			P_{MIN}	0	KIPS
	V_{EW}		250	KIPS		V_{EW}		270	KIPS		V_{EW}		230	KIPS
	V_{NS}		160	KIPS		V_{NS}		115	KIPS		V_{NS}		200	KIPS
SERVICE LIMIT STATE	VERT. DOWN	P_{MAX}	650	KIPS	SERVICE LIMIT STATE	VERT. DOWN	P_{MAX}	1350	KIPS	SERVICE LIMIT STATE	VERT. DOWN	P_{MAX}	650	KIPS
		P_{MIN}	500	KIPS			P_{MIN}	480	KIPS			P_{MIN}	130	KIPS
	VERT. UP (SEISMIC)	P_{MAX}	215	KIPS		VERT. UP (SEISMIC)	P_{MAX}	0	KIPS		VERT. UP (SEISMIC)	P_{MAX}	215	KIPS
		P_{MIN}	0	KIPS			P_{MIN}	0	KIPS			P_{MIN}	0	KIPS
	V_{EW}		250	KIPS		V_{EW}		270	KIPS		V_{EW}		230	KIPS
	V_{NS}		160	KIPS		V_{NS}		115	KIPS		V_{NS}		200	KIPS
EXTREME/ ABNORMAL LIMIT STATE	VERT. UP	P_{MAX}	300	KIPS	EXTREME/ ABNORMAL LIMIT STATE	VERT. UP	P_{MAX}	300	KIPS	EXTREME/ ABNORMAL LIMIT STATE	VERT. UP	P_{MAX}	300	KIPS
TRANSLATION	SERVICE LIMIT STATE	U_X	0.0015 - 0.1777	IN	TRANSLATION	SERVICE LIMIT STATE	U_X	0.0018 - 0.2209	IN	TRANSLATION	SERVICE LIMIT STATE	U_X	0.0015 - 0.1777	IN
		U_Y	0.0087 - 0.5519	IN			U_Y	0.0084 - 0.5560	IN			U_Y	0.0087 - 0.5519	IN
		U_Z	0.0106 - 0.0530	IN			U_Z	0.0428 - 0.0977	IN			U_Z	0.0106 - 0.0530	IN
ROTATION	SERVICE LIMIT STATE	R_X	+/- 0.00835	RAD.	ROTATION	SERVICE LIMIT STATE	R_X	+/- 0.00611	RAD.	ROTATION	SERVICE LIMIT STATE	R_X	+/- 0.00835	RAD.
		R_Y	+/- 0.02107	RAD.			R_Y	+/- 0.01757	RAD.			R_Y	+/- 0.02107	RAD.
		R_Z	+/- 0.00036	RAD.			R_Z	+/- 0.00046	RAD.			R_Z	+/- 0.00036	RAD.

Sole plate, bearing plate, and masonry plate dimensioning shall be as follows:

PLATE GIRDER BEARING CONNECTION SCHEDULE							
GROUP	SPT (IN) *	SPL (IN) *	SPW (IN) *	UBPT (IN) **	UBPD (IN) **	MPT (IN) ***	MPD (IN) ***
E	3.00	36.00	36.00	2.50	16.50	4.00	48.00
F	3.00	36.00	36.00	2.50	22.00	4.00	48.00
G	3.00	36.00	36.00	2.50	16.50	4.00	48.00

NOTE:

1. * SPT DENOTES THICKNESS OF SOLE PLATE. SPL AND SPW DENOTE DIMENSION OF SOLE PLATE PARALLEL AND PERPENDICULAR TO PLATE GIRDER, RESPECTIVELY.
2. ** UBPT DENOTES THICKNESS OF UPPER BEARING PLATE. UBPD DENOTES DIAMETER OF THE PLATE.
3. *** MPT DENOTES THICKNESS OF MASONRY PLATE. MPD DENOTES DIAMETER OF THE PLATE.

DIVISION 32

SECTION 321725

TRAFFIC PAINT PAVEMENT MARKINGS - STANDARD PAINT

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for traffic paint pavement markings - standard paint.

1.02 REFERENCES

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

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M 247	Specification for Glass Beads Used in Pavement Markings.

ASTM International (ASTM)

ASTM C 1648	Standard Guide for Choosing a Method for Determining the Index of Refraction and Dispersion of Glass.
ASTM D 522	Test Methods for Mandrel Bend Test of Attached Organic Coatings.
ASTM D 562	Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.
ASTM D 711	Test Method for No-Pick-Up Time of Traffic Paint.
ASTM D 868	Practice for Determination of Degree of Bleeding of Traffic Paint.
ASTM D 1155	Test Method for Roundness of Glass Spheres.
ASTM D 1214	Test Method for Sieve Analysis of Glass Spheres.
ASTM D 2369	Test Method for Volatile Content of Coatings.
ASTM D 2805	Test Method for Hiding Power of Paints by Reflectometry.
ASTM D 3723	Test Method for Pigment Content of Water-Emulsion Paints by Low-Temperature Ashing.
ASTM D 4060	Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
ASTM E 1347	Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry.

Federal Highway Administration (FHWA)

MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways.

SAE International

AMS-STD-595	Colors Used in Government Procurement.

U.S. General Service Administration – Federal Standards

TT-P-1952	Paint, Traffic, and Airfield Marking, Waterborne.

1.03 ENVIRONMENTAL REQUIREMENTS

Weather Limitations: Perform the Work of this Section when the surface is dry, when the atmospheric temperature is above 50 degrees F (or is 45 degrees F and rising) and when the relative humidity does not exceed 85 percent. Do not apply paint if rain is expected within four hours after application and when the weather conditions are foggy or winds gusts exceed 20 miles per hour.

1.04 QUALITY ASSURANCE

The quality and workmanship of the completed marking installation shall conform to the requirements specified in 3.02.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver paint to the construction site in original sealed containers clearly marked with the date of manufacture, expiration date, name of manufacturer and volatile organic compound (VOC) content. Include material safety data sheets (MSDS) for each paint material.

B. Reflective glass spheres for drop-on application shall be shipped in moisture resistant bags each containing approximately 50 pounds of reflective glass spheres. Each bag shall be marked with the name and address of the manufacturer, the name and weight of the material, date of manufacture and batch number.

C. Store the reflective glass spheres in accordance with manufacturer's written requirements until ready to use.

D. The reflective glass spheres shall not absorb moisture during storage and shall remain free from clusters.

E. Store materials in accordance with the manufacturer's written recommendations. Where stored material has exceeded manufacturer's recommended shelf life, replace at no additional cost to the Authority.

1.06 WARRANTY

A. Manufacturer’s Warranty: Furnish pavement marking manufacturer's written warranty covering deterioration of the pavement marking material, where the pavement marking manufacturer agrees to repair or replace the pavement marking materials that show evidence of deterioration within the specified warranty period. The warranty period shall be one year from the date of the issuance of the Certificate of Final Completion. This warranty shall be in addition to and not a limitation of other rights the Authority may have.

1. Examples of deterioration include, but are not limited to, peeling, chipping, flaking, delamination, color fading and showing signs of wear.

1.07 SUBMITTALS

See Appendix "A" for submittal requirements.

PART 2. PRODUCTS

2.01 MATERIALS

A. Paint

Paint shall be a waterborne formulation manufactured for use as a pavement marking material in accordance with the following requirements:

1. Directional Reflectance: The directional reflectance of white paint (without glass spheres) shall be 84 percent minimum and yellow paint (without glass spheres) shall be 54 percent minimum when tested in accordance with ASTM E 1347.
2. Flexibility: The paint shall show no cracking, chipping or flaking when tested in accordance with ASTM D 522, Method B, when bent 180 degrees.
3. Bleeding: The paint shall have a minimum bleed ratio of 0.95 when tested in accordance with ASTM D 868.
4. Viscosity: The consistency of the paint shall be a minimum of 75 Krebs units and a maximum of 95 Krebs units at 77 degrees F, when tested in accordance with ASTM D 562.
5. Dry Contrast Ratio: The minimum contrast ratio shall be 0.95 for white and 0.92 for yellow in accordance with ASTM D 2805.
6. Field Drying Time
   a. When applied at a wet film thickness of 15 mils (plus or minus 1 mil) with Type I glass spheres dropped on at a rate of six pounds per gallon of paint, the paint shall dry to no pickup in less than three minutes when tested by driving over with a car.
   b. The dry testing requirement shall be considered satisfied when a car crossing over the marking shows no visual deposition of the paint to the pavement surface when viewed from a distance of 50 feet.
7. Lab No Pickup Drying Time: Drying time when tested in accordance with ASTM D 711 shall be a maximum of 3 minutes.
8. Abrasion Resistance: Maximum weight loss of the paint film shall be 49 milligrams when tested in accordance with ASTM D 4060.
9. Shelf Life: Paint shall have a minimum usable shelf life of 12 months.
10. Paint shall contain less than 0.06 percent lead and shall be chromium free when tested in accordance with TT-P-1952.
11. Color shall be in accordance with AMS-STD-595.
    a. The dried paint color shall be, color numbers 37886 (white) and 33538 (yellow).
12. Non-Volatile Vehicle: Minimum non-volatile vehicle of 43 percent when tested in accordance with ASTM D 3723.
13. Pigment: 58 percent to 62 percent by weight when tested in accordance with ASTM D 3723.
14. Total Solids: Minimum solids content of 76 percent when tested in accordance with ASTM D 3723.
15. VOC Content: Shall not exceed 150 g/L when tested in accordance with ASTM D 2369.

B. Reflective Glass Spheres (Mix Component and Drop-On)

1. Reflective glass spheres for use in the thermoplastic composition and for drop-on shall be in accordance with AASHTO M 247, Type 1.

a. The glass spheres shall be colorless, clean, transparent, free from milkiness and excessive air bubbles, and without surface scarring and scratching. A minimum of 70 percent of the glass spheres shall be true spheres when tested in accordance with ASTM D 1155.

b. The refractive index of the spheres shall be a minimum of 1.50 as determined by the liquid immersion method at 77 degrees F in accordance with ASTM C 1648.

c. The glass spheres shall have the following gradation when tested in accordance with ASTM D 1214.

U.S. Standard Sieve	Mass Percent Passing
No. 20	100
No. 30	75-95
No. 50	15-35
No. 100	0-5

d. Glass spheres for drop-on shall be treated with a moisture-proof coating and shall meet the flow requirements in accordance with AASHTO M 247 Section 4.4. Glass spheres shall flow freely from dispensing equipment and remain free from clusters.

e. Silica Content: 60 percent minimum.

PART 3. EXECUTION

3.01 PREPARATION

A. General

1. Do not use materials that have exceeded the manufacturers' recommended shelf life.
2. Submit a schedule of operations to the Engineer for approval 48 hours in advance of commencing pavement marking Work.
3. When pavement markings are applied under traffic conditions, perform work area closures in accordance with the GENERAL PROVISIONS Section entitled "Maintenance of Traffic and Work Area Protection".
4. Conduct removal of existing marking, surface cleaning and preparation Work in such a manner as to minimize airborne dust and other debris.
5. Do not wash waste and residue resulting from the removal, surface cleaning and preparation operations into catch basins or storm drainage system.

B. Removal of Existing Pavement Markings

1. Where shown on the Contract Drawings, remove existing pavement markings. The extent of existing pavement marking removal shall be as shown on the Contract Drawings.
2. Prior to the start of existing marking removal Work, demonstrate the method of removal to the satisfaction of the Engineer. Any method that leaves gouges, ridges or grooves in the pavement will not be permitted.

3. Removal of existing pavement marking by grinding, scraping or sandblasting shall be performed in such a manner that the finished pavement surface is not damaged and left in a pattern that will mislead or misdirect the motorist.

4. Immediately collect and dispose of waste materials resulting from the removal of existing pavement markings. Use a high efficiency particulate air (HEPA) filter equipped vacuum attachment operated concurrently with the removal Work to collect waste materials.

5. Obliterating markings by painting over them will not be permitted.

C. Surface Cleaning and Preparation of Pavement

1. Surface cleaning and preparation shall be confined to the area of pavement marking material application shown on the Contract Drawings. The area of surface cleaning and preparation for lines shall be at a minimum, the width of the pavement marking. The area of surface cleaning and preparation for letters and symbols shall be large enough to accommodate the marking application area.

2. Immediately prior to application of the marking material, all pavement surfaces shall be dry and free from dirt, grease, oil, laitance and other foreign material that would reduce the bond between the marking material and the pavement. Clean the area to be painted by sweeping and mechanical or compressed air blowing as required to remove all dirt and loose materials. Areas which cannot be satisfactorily cleaned in accordance with requirements of this Section by brooming and mechanical or compressed air blowing, shall be scrubbed with a water solution of trisodium phosphate (10 percent Na3PO4 by weight). After scrubbing, rinse off the solution with water and dry the surface.

3. Where concrete pavements are shown on the Contract Drawings installed under this Contract, cleaning operations shall not begin until after the placement of concrete and the 28-day cure time has elapsed, unless otherwise approved by the Engineer. Concrete pavements shall be cleaned by either sandblasting or water blasting. When water blasting is performed, pavement markings shall be applied a minimum of 24 hours after the blasting has been completed. The extent of the areas where blasting has been performed shall be cleaned and the concrete surface prepared such that:

   a. There is no visible evidence of curing compound on the peaks of the textured concrete surface.

   b. There are no heavy puddled deposits of curing compound in the valleys of the textured concrete surface.

   c. All remaining curing compound is intact and all loose and flaking material is removed.

   d. The peaks of the textured pavement surface are rounded in profile and free of sharp edges and irregularities.

3.02 APPLICATION

A. Application Equipment

1. Equipment used to perform the Work of this Section shall be subject to approval by the Engineer prior to the start of application. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine and auxiliary hand-painting equipment.

2. The mechanical marking machine shall be an atomizing spray-type marking machine suitable for application of traffic paint, at the application thickness in accordance with 3.02 B.3. The machine shall be capable of producing an even and uniform film thickness at the required coverage and capable of applying markings of uniform cross sections with clear-cut edges without running or spattering within the limits for straightness in accordance with requirements of this Section. The machine shall have a gauge for measuring the quantity of paint used, graduated in gallons.
3. The equipment shall be truck mounted and capable of spraying an 18-inch wide line in one pass.
4. Mobile truck mounted applicators shall be capable of travelling at a uniform, predetermined speed over variable road grades to produce a uniform application of marking material, following straight lines and a maximum of 500-feet radius curves in a true arc. The equipment shall be capable of air-blasting the pavement, applying the marking and immediately dropping the glass spheres in a single pass at speeds up to eight miles per hour.
5. Walk-behind cart applicators shall be capable of producing a uniform marking material application at walking speeds, following straight lines and a maximum of 500-feet radius turns, symbols and legends. Use mobile equipment to air-blast the areas immediately prior to hand cart application. The walk-behind cart shall be capable of applying the binder material and immediately dropping the glass spheres in a single pass at walking speeds.

B. Pavement Markings
1. Apply markings at the locations and in accordance with the dimensions, patterns and spacing shown on the Contract Drawings.
2. Paint shall be applied in strict accordance with the manufacturer's written recommendations. Heating the paint above 150 degrees F shall not be permitted.
3. Mix paint in strict accordance with the manufacturer's written instructions and apply to the pavement with a mechanical marker as follows:
   a. Apply standard paint to a wet film thickness of 15 mils.
   b. Where temporary markings are shown on the Contract Drawings, apply the paint to a thickness of 7.5 mils. The addition of thinner will not be permitted.
4. Glass spheres shall be applied as follows:
   a. Uniformly apply at the rate of six pounds of spheres per gallon of paint applied.
   b. Do not apply glass spheres on black paint.
5. The paint shall not bleed excessively, curl or discolor when applied to bituminous surfaces.
6. Perform painting of pavement markings in the direction of traffic. Do not apply pavement markings against the direction of traffic flow.

7. Apply the paint in such a way to achieve straight edges. The edges of the markings shall not vary from a straight line by more than 1/2 inch in 50 feet, and marking dimensions and spacings shall be within the following tolerances:

Dimension and Spacing	Tolerance
36 inches or less	±1/2 inch
Greater than 36 inches to 6 feet	±1 inch
Greater than 6 feet to 60 feet	±2 inches
Greater than 60 feet	±3 inches

8. Distribute the glass spheres on the surface of the marked areas immediately after application of the paint. Use a dispenser designed for attachment to the marking machine for dispensing glass spheres.
9. Where high contrast markings are shown on the Contract Drawings, the total width of the contrast marking shall be six inches wider than the standard width shown on the Contract Drawings. The additional six-inch width shall be black paint with three inches on each side of the white or yellow film.

3.03 ADJUSTING AND CLEANING

A. Remove all tracking marks, spilled paint and paint applied in unauthorized areas, to the satisfaction of the Engineer and at no additional cost to the Authority.

B. Where pavement markings are not in accordance with the requirements of this Section, remove and replace pavement markings to the satisfaction of the Engineer and at no additional cost to the Authority.

END OF SECTION

SECTION 321725

TRAFFIC PAINT PAVEMENT MARKINGS - STANDARD PAINT

APPENDIX "A"

SUBMITTALS

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

A. Product Data

1. Detailed catalog cuts and manufacturer's specifications for paint materials demonstrating conformance with the requirements of this Section.
2. Catalog cuts and manufacturer's specifications for all equipment in accordance with 3.02 A.

B. Samples

1. One-quart sample of standard paint sealed and marked indicating the color and date the sample was taken.

C. Manufacturer Test Reports

1. Manufacturers' test data demonstrating conformance with the requirements of this Section.

D. Construction and Installation Procedures

1. Schedule of operations in accordance with 3.01 A.

E. Manuals, Warranties/Guarantees

1. Proposed manufacturer's warranty.

F. Closeout Submittals

1. Manufacturer's warranty.

END OF APPENDIX "

DIVISION 33

SECTION 334170

BRIDGE DRAINAGE SYSTEM

PART 1. GENERAL

1.01 SUMMARY

A. This work shall consist of furnishing and placing scuppers and downspout systems for bridge drainage as shown on the plans and in accordance with the specifications.

1.02 REFERENCES

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

American Society for Testing and Materials (ASTM)

ASTM A36/A36M	Standard Specification for Carbon Structural Steel
ASTM A47/A47M	Standard Specification for Ferritic Malleable Iron Castings
ASTM A48/A48M	Standard Specification for Gray Iron Castings
ASTM A108	Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
ASTM A242/A242M	Standard Specification for High-Strength Low-Alloy Structural Steel
ASTM A307	Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength
ASTM A377	Standard Index of Specifications for Ductile-Iron Pressure Pipe
ASTM A500/A500M	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM A572/A572M	Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A575	Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades
ASTM C582	Standard Specification for Contact-Molded Reinforced Thermosetting Plastic (RTP) Laminates for Corrosion-Resistant Equipment
ASTM D2996	Standard Specification for Filament-Wound “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

1.03 SUBMITTALS

A. See Appendix "A" for submittal requirements.

PART 2. PRODUCTS

2.01 MATERIALS

Cast Iron Scuppers	ASTM A48M, Class 30
Fabricated Steel Scuppers (Except Gratings)	
Plates or Bars	ASTM A36[1]
Tubes	ASTM A500, Grade B[1]
Headed Concrete Anchor Studs	ASTM A108, Grade 1015 or 1020
Grating Plates and Bars	ASTM A36, A242,or A572[1]
Bolts and Cap Screws	ASTM A307 Grade A
Ductile Iron Downspout Pipe and Pipe Fittings	ASTM A377 (ANSI 21.51)[4]

Fiberglass Downspout Pipe	ASTM D2996
Fiberglass Pipe Drainage Fittings	ASTM D3840
Pipe Couplings[5] (Ductile Iron or Malleable Iron)	ASTM A536 or A47/A47M Grade 32510
Hoppers[6]	ASTM A36
Pipe Brackets and Supports	ASTM A575, Grade 1015 and 1020
Nuts and Bolts[6]	ASTM A307

NOTES:

1. The Contractor will be required to furnish the Engineer of Record two (2) certified copies of the records of the chemical analysis of the steel.
2. Bars shall be 5/8 inch diameter. Plates shall be 2 x 1/4 inch.
3. Bolts shall be Slotted Button Head Machine Bolts.
4. All pipe shall be groove cut around the full pipe circumference at both ends. The grooves shall be radius cut in accordance with AWWA C606. The grooves shall be such that a keyed housing clamp coupling shall fit into them. The grooves shall be such that a keyed housing clamp coupling shall fit into them. Unless otherwise approved, all pipe bends (elbows) shall be of the long radius type.
5. All couplings shall be gasketed, double keyed, housing clamps designed to lock and seal the joint between two grooved pipes, or fittings, when the housing clamp is bolted and tightened in place. The gasket shall be a molded or extruded compound of Butyl or EDPM, suitable for water service.
6. Galvanized in accordance with the requirements of ASTM A123. Nuts and bolts shall be galvanized in accordance with ASTM A153 or, as approved by the Engineer, mechanically galvanized.

PART 3. EXECUTION

3.01 FABRICATION

A. **Shop Drawings.** Shop drawings are required for scuppers or downspout systems.

B. Welding

1. ***Fabricated Steel Scuppers, Gratings.*** Welding shall conform to the provisions of section 051200 Structural Steel. Weld inspection shall be done in accordance with the requirements of section 051200 Structural Steel but radiographic testing will not be required. All groove welds shall be complete joint penetration groove welds unless otherwise approved by the Engineer.

C. Galvanizing

1. ***Scuppers.*** Galvanizing shall conform to the requirements of ASTM A123. Galvanizing shall be done after all welding and fabrication is completed.

2. ***Bolts, Fully Threaded Rods and Nuts.*** All bolts and rods shall have a ANSI B1.13M Class 6H thread. All galvanized nuts shall have a standard oversize tap to allow for the galvanizing on the bolts, rods and nuts.

D. **Gratings.** Gratings for scuppers shall have a full and even bearing on the underlying surface.

E. **Basis of Acceptance.** Scuppers and downspouts shall be accepted at the work site by the Engineer upon certification of the manufacturer that the materials used and fabrication procedure employed conform to the requirements of this specification. The Engineer may reject any scupper or downspout system which, in his opinion, exhibits poor quality or workmanship.

F. **Fiberglass Pipe for Bridge Storm Drainage**

1. Fabricate fiberglass pipe conforming to ASTM D2996, RTRP-12EA1-2122 and fiberglass pipe fittings conforming to ASTM D3840. Saddle type fittings are not permitted. All fiberglass pipe, fittings, and adhesives shall use UV stabilized pigmented resin throughout the wall. The color shall be concrete gray or designated color with UV stabilized resin. Painted gel-coat or exterior coating shall not be used. Adhesives shall be in accordance with the pipe manufacturer and adhesive manufacturer's recommendations.

3.02 ERECTION OF DOWNSPOUT SYSTEMS

A. General

1. ***Pipe Installation.*** The pipe shall be laid true to line and grade as shown on the plans or as directed by the Engineer, with joints close and even, so that a true and even surface of invert will be made over the joints throughout its entire length. Horizontal pipe shall be installed so that the minimum slope shall not be less than 1:50 unless shown in the Contract Drawings or approved by the Engineer. Pipe shall be placed in accordance with the requirements of this specification unless special methods are called for on the plans or in the itemized proposal.

2. ***Field Testing.*** Prior to the acceptance of the structure, the downspout system should be flushed out and tested to insure that it is flowing at full capacity. Any obstruction in the downspout system preventing the free flow of drainage or its operation at full capacity shall be removed to the complete satisfaction of the Engineer.

B. Ductile Iron Downspouts

1. ***Pipe Supports.*** Supports for horizontal piping shall be spaced 5 feet maximum. Supports for vertical piping shall be spaced 6 feet maximum.

2. ***Pipe Joints.*** All joints in pipe, except when encased in concrete, shall be made with groove type couplings. Pipes encased in concrete shall have joints formed in accordance with the pipe manufacturer's recommendations.

3. ***Painting.*** All metal embedded in concrete shall not be painted. All other metallic portions of the downspout system shall be painted in the field in accordance with the requirements of the contract documents. Color shall be as shown on the plans.

C. Fiberglass Pipe and Fittings

1. Ensure that pipe supports are located at spacings that do not exceed the pipe manufacturer's recommendations. Avoid supports that have point contact or narrow supporting areas. Standard sling, clamp, and clevis hangers and shoe supports designed for use with steel pipe may be used. Ensure that the minimum strap width of all pipe hangers meets the pipe manufacturer's recommendations. Ensure that straps have a minimum of 120 degrees of contact with the pipe. On pipe supported on surface with less than 120 degrees of contact use a split fiberglass pipe protective sleeve bonded in place with adhesive.
2. At pipe and fitting locations provided to facilitate future removal for maintenance cleanout or flushing, ensure that all connections are made with a threaded, gasketed coupler or a bolted gasketed flange system. Use only female – male threaded plugs for cleanouts.
3. At least 30 days before beginning the work, submit working drawings, shop drawings, and catalog cuts for the bridge drainage system, for certification. Include all lengths of pipe, pipe slopes, standard and custom angle bends, couplings, supports and necessary ancillary items. Include all shop and field connections for drainage assemblies and the location and type of all pipe guides, hangers, saddles, risers and clamps. Include a detailed procedure that identifies the equipment and methods proposed to erect the drainage elements.
4. Provide protective sleeves and anchor sleeves at supports as necessary. The pipe manufacturer shall determine all sleeve requirements and shall identify the sleeves on the working drawings.
5. Install drainage assemblies to suit field conditions. Customize conveyance pipe assemblies to maximize the angle of the pipe from horizontal. Repair of fiberglass drainage elements shall be performed in accordance with manufacturer's recommendations.
6. Provide additional pipe, hangers, clamps, risers, and structural supports, beyond those shown on the plans, as needed to establish proper fit or support the pipes according to manufacturer requirements. In the event that the shop drawings are prepared by someone other than the fiberglass manufacturer, a representative of the fiberglass manufacturer shall review the shop drawings for compliance with manufacturer standards prior to submission for approval.

END OF SECTION

SECTION 334170

BRIDGE DRAINAGE SYSTEM

APPENDIX "A"

SUBMITTALS

Submit the following in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 01 - GENERAL PROVISIONS:

A. Shop Drawings for scuppers and downspout systems.

B. Test Results

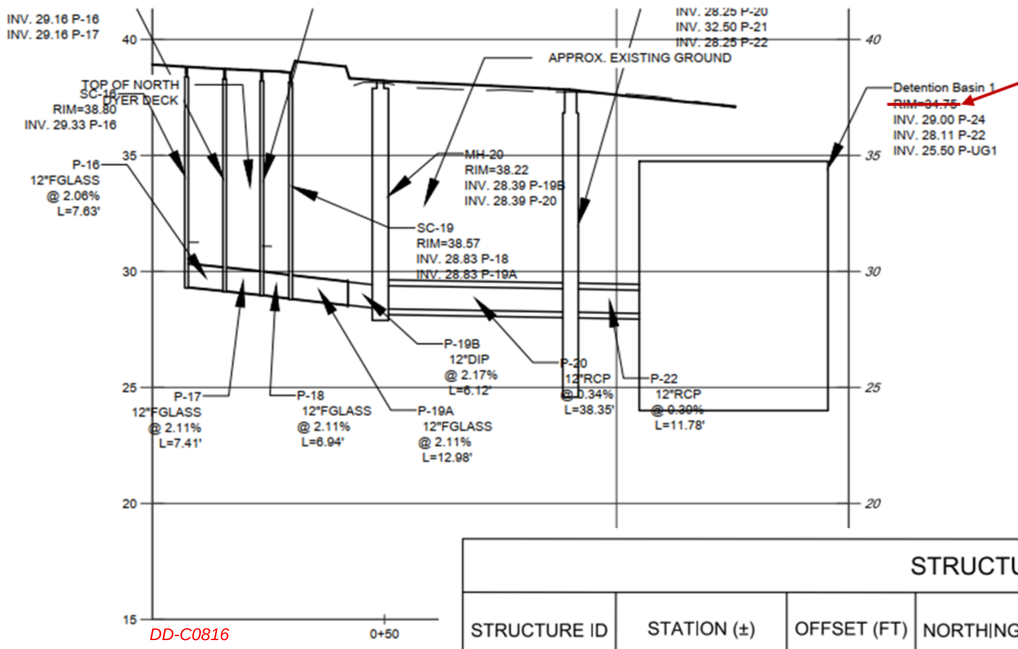
1. A certified copy of test results of chemical analyses and physical (mechanical) tests required shall be furnished for all steel scupper plates, bars, or tubes as well as grating plates and bars. These test data shall be given to the Engineer for submittal to the Authority with the final inspection report. In addition, furnish to the Engineer two (2) certified copies of the records of the chemical analyses of the steel. When steel is furnished under an item which does not require shop inspection, these data shall be submitted to the Engineer.

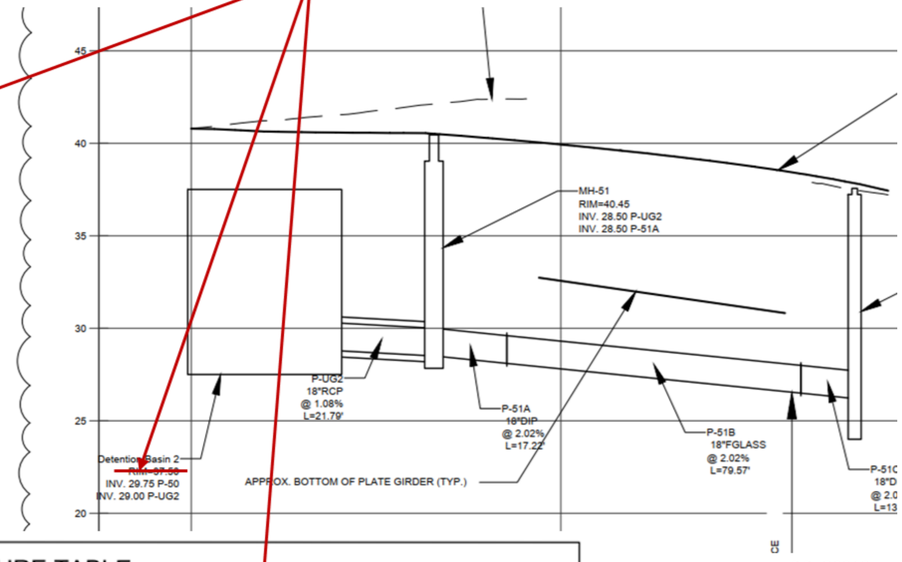
C. Sustainability Submittals

1. Sustainability submittals in accordance with Division 01.

END OF APPENDIX "A"

RIM elevations to be removed





STRUCTURE TABLE

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	BOTTOM OF STRUCTURE ELEVATION	STRUCTURE TYPE
CB-21	Proposed UL ALG 10+62.09	-106.68 LT	214971.4898	985650.9690	37.51	30.00	PA-Catch Basin-Type II
CB-22	Proposed UL ALG 10+84.04	-124.94 LT	214943.4450	985656.3093	37.83	25.25	PA-Catch Basin-Type II
Detention Basin 1	Proposed UL ALG 10+52.36	-140.99 LT	214963.3800	985685.6988	~~34.75~~	24.50	Underground Detention Basin
Detention Basin 2	Proposed UL ALG 11+96.07	-43.40 LT	214884.9199	985530.7148	~~37.56~~	28.00	Underground Detention Basin
MH-20	Proposed UL ALG 11+16.49	-151.18 LT	214902.3378	985663.5541	38.22	28.39	PA-Manhole-Type II
MH-24	Proposed UL ALG 10+41.40	-113.94 LT	214986.0717	985667.3420	36.96	30.20	PA-Manhole-Type II
MH-51	Proposed UL ALG 11+53.68	-24.52 LT	214931.1571	985534.7282	40.45	28.50	PA-Manhole-Type II
MH-52	Proposed UL ALG 10+51.65	-75.04 LT	214995.9427	985628.3461	37.56	24.50	PA-Manhole-Type II
MH-53	Proposed UL ALG 10+36.69	-40.34 LT	215025.8450	985605.2344	38.46	23.75	PA-Manhole-Type II

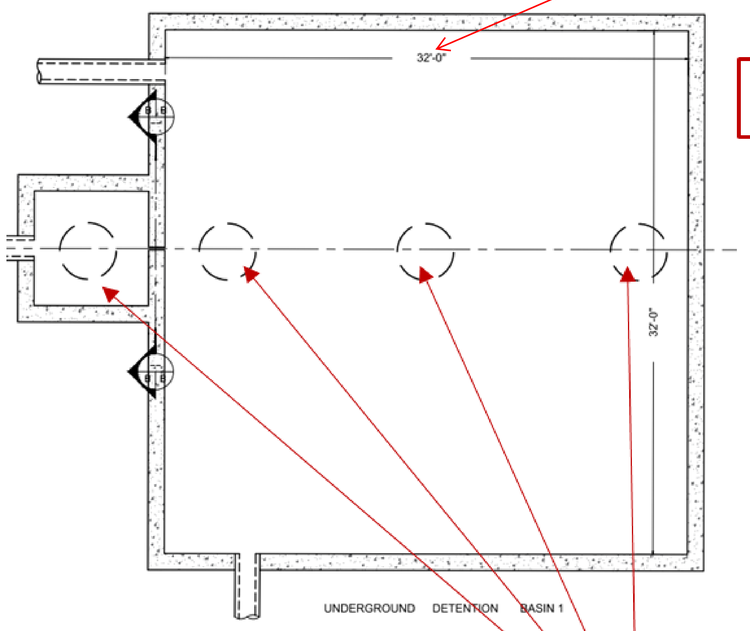
DD-C0822

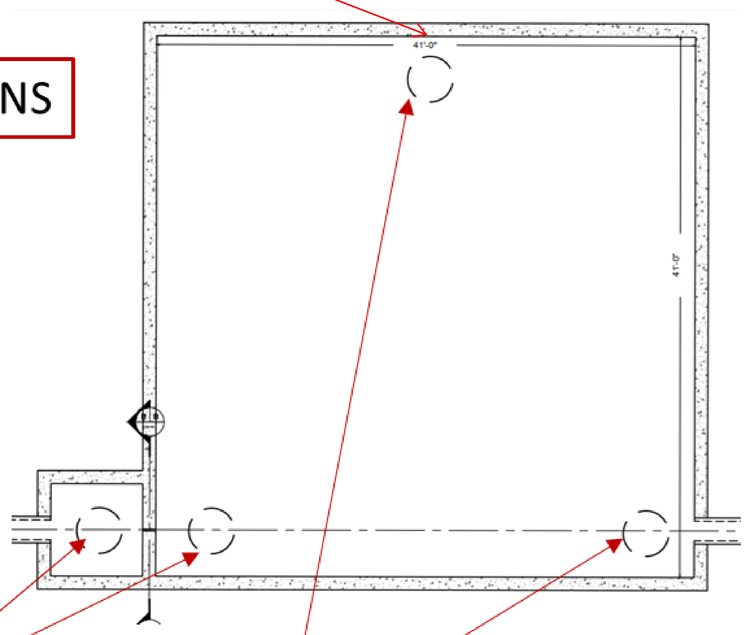
SKETCH IN REFERENCE TO **DD-C0816/DD-C0818/ DD-C0822**

20240408_MTBTR_DD _ RFI_50_Sketch

SEE NOTE

PLAN VIEW OF BASINS



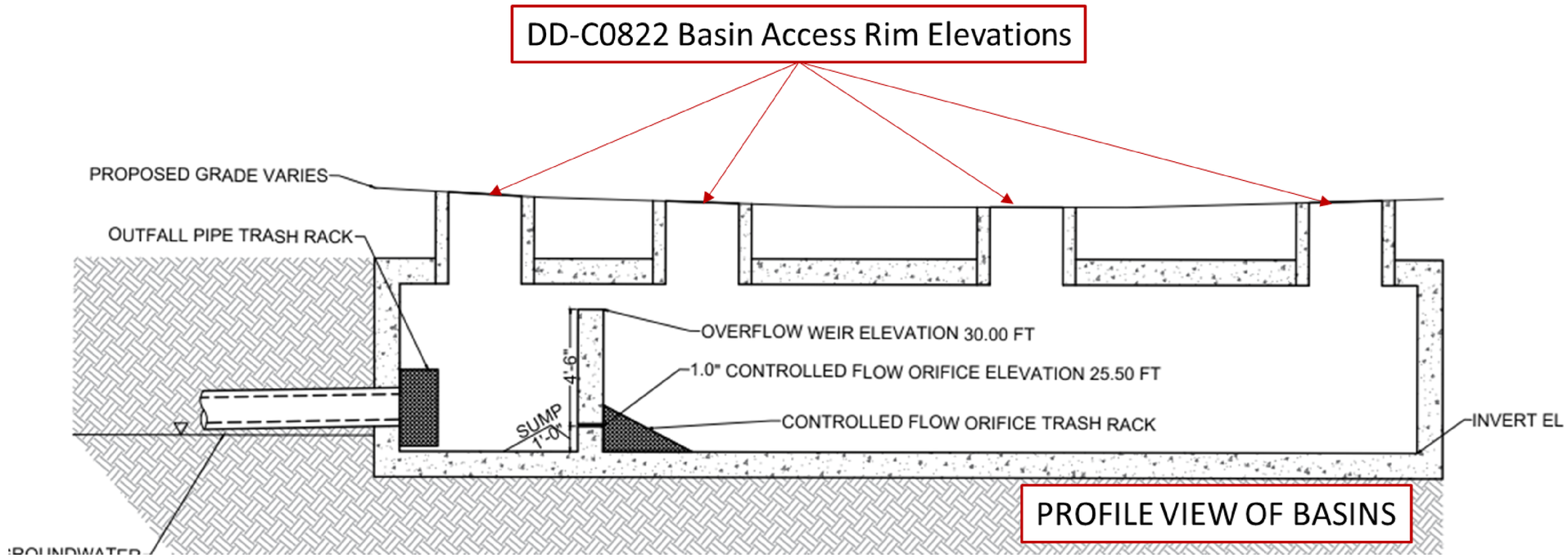


DD-C0822 Basin Access Rim Elevations

NOTE: SEE REVISED DRAWINGS DD-C0851 AND DD-C0852 FOR UPDATED DIMENSIONS ON DETENTION BASINS

SKETCH IN REFERENCE TO **DD-C0851/DD-C0852**

20240408_MTBTR_DD _ RFI 50_Sketch



SKETCH IN REFERENCE TO **DD-C0851**

20240408_MTBTR_DD _ RFI 50_Sketch

SHEET 1 OF 3

TUNNEL LUMINAIRE SCHEDULE						Ramp D	Ramp DN	Ramp A	Ramp B	Ramp E	Ramp H	Ramp J	Ramp K	Ramp L	Ramp L-M	Ramp M	Ramp M-N	Ramp N	Ramp P
SYM	TYPE	DESCRIPTION	INITIAL LUMENS	DISTRIBUTION	CORRELATED COLOR TEMPERATURE	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY	QUANITITY
	A	LED LUMINAIRE - 495 WATTS - CEILING MOUNT	58,445	TYPE II	4000K	0	4	2	0	0	11	12	0	0	0	0	0	0	0
	C	LED LUMINAIRE - 125 WATTS - CEILING MOUNT	15,063	TYPE II	4000K	14	6	1	0	0	10	18	10	10 ~~12~~	7	13	0	10	2
	D	LED LUMINAIRE - 495 WATTS - CEILING MOUNT	57,614	TYPE IV	4000K	36	25	23	0	0	13	12	20	20 ~~22~~	4	10	10	9	10
	N	LED LUMINAIRE - 125 WATTS - CEILING MOUNT	15,063	TYPE II	4000K	25 ~~46~~	23	7	11	10	6	8	9	13 ~~15~~	9	11	3	7	2
	W	LED LUMINAIRE - 495 WATTS - WALL MOUNT	55,922	TYPE IV	4000K	19	3	0	0	0	0	0	0	0	0	0	0	0	0
	Y	LED LUMINAIRE - 495 WATTS - WALL MOUNT	55,922	TYPE IV	4000K	9	0	0	0	0	0	0	0	0	0	0	0	0	0

R~~1-W100-AB101~~AMP H
TUNNEL LUMINAIRE QUANTITIES

LOCATION	LENGTH OF ZONE	STATION FROM	STATION TO	LUMINAIRE TYPE	LUMINAIRE QTY
THRESHOLD ZONE 1	88	12+73	13+61	A	3
				C	6
				D	9
				N	3
THRESHOLD ZONE 2	29	13+61	13+90	A	2
				C	
				D	4
				N	1
TRANSITION ZONE 1	67	13+90	14+57	A	5
				C	5
				D	
				N	2

SKETCH IN REFERENCE TO DD-E1403, DD-E1404, DD-E1405

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RAMP L TUNNEL LUMINAIRE QUANTITIES					
ZONE	LENGTH ZONE (FT)	STA. BEGIN	STA. END	TYPE	QTY
THRESHOLD ZONE 1	88	12+84	13+72	C	
				D	10
				N	3
THRESHOLD ZONE 2	29	13+72	14+01	C	
				D	6
				N	1
TRANSITION ~~TRANSITOIN~~ ZONE 1	84	14+01	14+85	C	3 ~~6~~
				D	4 ~~8~~
				N	2 ~~4~~
TRANSITION ZONE 2	103	14+85	15+88	C	7
				D	
				N	3
INTERIOR ZONE	138	15+88	17+26	C	
				D	
				N	4

SKETCH IN REFERENCE TO DD-E1403, DD-E1404, DD-E1405

20240418_MTBTR-DD-RFI 64 SKETCH

Ramp A							
LUMINAIRE NUMBER	LUMINAIRE TYPE	CONTROL GROUP NORTHBOUND	WATTAGE	INITIAL NOMINAL LUMENS	PANEL	ELECTRICAL CIRCUIT	MAC ADDRESS
A-001	N	4	125	15,063		ELP 7	
A-002	D	3	495	57,614		LP 51	
A-003	D	3	495	57,614		LP 53	
A-004	D	3	495	57,614		LP 55	
A-005	D	3	495	57,614		LP 51	
A-006	N	4	125	15,063		ELP 9	
A-007	D	3	495	57,614		LP 53	
A-008	D	3	495	57,614		LP 55	
A-009	D	3	495	57,614		LP 51	
A-010	D	3	495	57,614		LP 53	
A-011	D	3	495	57,614		LP 55	
A-012	N	4	125	15,063		ELP 7	
A-013	D	3	495	57,614		LP 51	
A-014	D	3	495	57,614		LP 53	
A-015	D	3	495	57,614		LP 55	
A-016	D	3	495	57,614		LP 51	
A-017	D	3	495	57,614		LP 53	
A-018	N	4	125	15,063		ELP 9	
A-019	D	3	495	57,614		LP 55	
A-020	D	3	495	57,614		LP 51	
A-021	D	3	495	57,614		LP 53	
A-022	D	3	495	57,614		LP 55	
A-023	D	3	495	57,614		LP 51	
A-024	N	4	125	15,063		ELP 7	
A-025	D	3	495	57,614		LP 53	
A-026	~~N~~ A	~~4~~ 1	~~125~~ 495	~~15,063~~ 58,445		~~ELP 9~~ LP 55	
A-027	D	3	495	57,614		LP 55	
A-028	N	4	125	15,063		ELP 7	
A-029	D	3	495	57,614		LP 51	
A-030	A	1	495	58,445		LP 53	
A-031	D	3	495	57,614		LP 55	
A-032	N	4	125	15,063		ELP 9	
A-033	C	2	125	15,063		LP 51	

SKETCH IN REFERENCE TO DD-E1403, DD-E1404, DD-E1405

20240418_MTBTR-DD-RFI 64 SKETCH

SHEET NO.	DWG. NO.	REV NO.	DRAWING TITLE
			GENERAL
1	DD-TS0001		COVER PAGE
2	DD-IX0001	3	INDEX OF DRAWINGS - 1
3	DD-IX0002	3	INDEX OF DRAWINGS - 2
3A	DD-IX0003	3	INDEX OF DRAWINGS - 3
4	DD-G0004	1	GENERAL NOTES
5	DD-G0005		PROJECT LOCATION PLAN
			ARCHITECTURAL
6	DD-G0000	1	NOT USED
7	DD-G0002	1	ARCHITECTURAL ABBREVIATIONS & SYMBOLS
8	DD-G0003	2	MATERIAL AND ASSEMBLY SCHEDULE & DESCRIPTIONS
9	DD-EG1001	3	EGRESS/LIFESAFETY PLAN - LOWER DECK
10	DD- A1001	1	UPPER DECK OVERALL PLAN
11	DD- A1002	1	LOWER DECK OVERALL PLAN
12	DD- A1101	1	FLOOR PLANS
13	DD-A2001	1	SECTIONS & ELEVATIONS I
13A	DD-A2002	1	SECTIONS & ELEVATIONS II
14	DD-A6001	1	EXTERIOR DETAILS
15A	DD-A6002	1	EXTERIOR DETAILS
15	DD-A6003	1	DOOR SCHEDULE
			CIVIL
16	DD-C0001	1	CIVIL NOTES
17	DD-C0002		CIVIL LEGEND
18	DD-C0003		CIVIL ABBREVIATIONS
19	DD-C0004	1	KEY PLANS
20	DD-C0005	1	PROJECT LIMIT PLAN LOWER LEVEL
21	DD-C0006	2	PROJECT LIMIT PLAN UPPER LEVEL
22	DD-C0007		AREA AVAILABLE FOR CONTRACTOR USE PLAN LOWER LEVEL
23	DD-C0008		AREA AVAILABLE FOR CONTRACTOR USE PLAN UPPER LEVEL
24	DD-C0101		TYPICAL SECTIONS - NORTH DECK
25	DD-C0102		TYPICAL SECTIONS - SOUTH DECK
26	DD-C0201	1	REMOVALS PLAN LOWER LEVEL - SHEET 1
27	DD-C0202		REMOVALS PLAN LOWER LEVEL - SHEET 2
28	DD-C0203		REMOVALS PLAN LOWER LEVEL - SHEET 3
29	DD-C0204		REMOVALS PLAN LOWER LEVEL -SHEET 4
30	DD-C0205		REMOVALS PLAN POINT TABLE
31	DD-C0211	2	REMOVALS PLAN UPPER LEVEL - SHEET 1
32	DD-C0212		REMOVALS PLAN UPPER LEVEL - SHEET 2
33	DD-C0311	1	ALIGNMENT PLAN LOWER LEVEL -SHEET 1
34	DD-C0312		ALIGNMENT PLAN LOWER LEVEL -SHEET 2
35	DD-C0313		ALIGNMENT PLAN LOWER LEVEL -SHEET 3
36	DD-C0314		ALIGNMENT PLAN LOWER LEVEL -SHEET 4
37	DD-C0321	1	ALIGNMENT PLAN UPPER LEVEL - SHEET 1
38	DD-C0322		ALIGNMENT PLAN UPPER LEVEL - SHEET 2
39	DD-C0331		ALIGNMENT TABLE - LOWER LEVEL
40	DD-C0332		ALIGNMENT TABLE - UPPER LEVEL
41	DD-C0401		PROFILES - SHEET 1
42	DD-C0402		PROFILES - SHEET 2
43	DD-C0403		PROFILES - SHEET 3
44	DD-C0404		PROFILES - SHEET 4
45	DD-C0501	2	PAVING PLAN LOWER LEVEL- SHEET 1
46	DD-C0502	1	PAVING PLAN LOWER LEVEL- SHEET 2
47	DD-C0503	1	PAVING PLAN LOWER LEVEL- SHEET 3
48	DD-C0504		PAVING PLAN LOWER LEVEL- SHEET 4
49	DD-C0505		PAVING PLAN POINT TABLE
50	DD-C0511	3	PAVING PLAN UPPER LEVEL- SHEET 1
51	DD-C0512	1	PAVING PLAN UPPER LEVEL- SHEET 2
52	DD-C0521	1	CURB LOCATION PLAN LOWER LEVEL-SHEET 1
53	DD-C0522		CURB LOCATION PLAN LOWER LEVEL-SHEET 2
54	DD-C0523		CURB LOCATION PLAN LOWER LEVEL-SHEET 3
55	DD-C0524		CURB LOCATION PLAN LOWER LEVEL-SHEET 4
56	DD-C0525		CURB LOCATION TABLES
57	DD-C0531	2	CURB LOCATION PLAN UPPER LEVEL-SHEET 1
58	DD-C0532		CURB LOCATION PLAN UPPER LEVEL-SHEET 2
59	DD-C0533	1	CURB LOCATION TABLE UPPER LEVEL
60	DD-C0601		CIVIL DETAILS - SHEET 1
61	DD-C0602	2	CIVIL DETAILS - SHEET 2
62	DD-C0603		CIVIL DETAILS - SHEET 3
63	DD-C0604		CIVIL DETAILS - SHEET 4
63A	DD-C0605	1	CIVIL DETAILS - SHEET 5
64	DD-C0701	1	GRADING PLAN LOWER LEVEL - SHEET 1
65	DD-C0702		GRADING PLAN LOWER LEVEL - SHEET 2
66	DD-C0703		GRADING PLAN LOWER LEVEL - SHEET 3
67	DD-C0704		GRADING PLAN LOWER LEVEL - SHEET 4
68	DD-C0711	3	GRADING PLAN UPPER LEVEL - SHEET 1
69	DD-C0712		GRADING PLAN UPPER LEVEL - SHEET 2
70	DD-C0801	1	DRAINAGE PLAN LOWER LEVEL - SHEET 1
71	DD-C0802		DRAINAGE PLAN LOWER LEVEL - SHEET 2
72	DD-C0803		DRAINAGE PLAN LOWER LEVEL - SHEET 3
73	DD-C0804		DRAINAGE PLAN LOWER LEVEL - SHEET 4
74	DD-C0811	2	DRAINAGE PLAN UPPER LEVEL - SHEET 1

SHEET NO.	DWG. NO.	REV NO.	DRAWING TITLE
75	DD-C0812	2	DRAINAGE PLAN UPPER LEVEL - SHEET 2
76	DD-C0815	1	DRAINAGE PROFILES-SHEET 1
77	DD-C0816	2	DRAINAGE PROFILES-SHEET 2
78	DD-C0817	2	DRAINAGE PROFILES-SHEET 3
79	DD-C0818	2	DRAINAGE PROFILES-SHEET 4
80	DD-C0821	1	DRAINAGE TABLES LOWER LEVEL SHEET 1
81	DD-C0822	2	DRAINAGE TABLES UPPER LEVEL SHEET 1
82	DD-C0823	2	DRAINAGE TABLES UPPER LEVEL SHEET 2
83	DD-C0831		DRAINAGE DETAILS-SHEET 1
84	DD-C0832	1	DRAINAGE DETAILS-SHEET 2
85	DD-C0833	1	DRAINAGE DETAILS-SHEET 3
86	DD-C0834	1	DRAINAGE DETAILS-SHEET 4
87	DD-C0835	1	DRAINAGE DETAILS-SHEET 5
88	DD-C0836	1	DRAINAGE DETAILS-SHEET 6
89	DD-C0841	1	STORMWATER MANAGEMENT PLAN UPPER LEVEL-SHEET 1
90	DD-C0842	1	STORMWATER MANAGEMENT PLAN UPPER LEVEL-SHEET 2
91	DD-C0851	2	STORMWATER MANAGEMENT DETAILS-SHEET 1
92	DD-C0852	2	STORMWATER MANAGEMENT DETAILS-SHEET 2
93	DD-C1001	2	UTILITY PLAN - SHEET 1
94	DD-C1002		UTILITY PLAN - SHEET 2
95	DD-C1003		UTILITY PLAN - SHEET 3
96	DD-C1004		UTILITY PLAN - SHEET 4
97	DD-C1005		TEST PIT LOCATION TABLE - SHEET 5
98	DD-C1011	2	UTILITY PLAN UPPER LEVEL-SHEET 1
99	DD-C1012		UTILITY PLAN UPPER LEVEL-SHEET 2
100	DD-C1021		UTILITY DETAILS-SHEET 1
100A	DD-C1021A	1	UTILITY DETAILS-SHEET 1A
101	DD-C1022	1	UTILITY DETAILS-SHEET 2
102	DD-C1023		UTILITY DETAILS-SHEET 3
102A	DD-C1023A	1	UTILITY DETAILS-SHEET 3A
102B	DD-C1023B	1	UTILITY DETAILS-SHEET 3B
103	DD-C1024	1	UTILITY DETAILS-SHEET 4
104	DD-C1025	1	UTILITY DETAILS-SHEET 5
105	DD-C1026	2	EMERGENCY GENERATOR SITE DETAIL
105A	DD-C1031	1	ELECTRICAL PROFILE
105B	DD-C1040	1	UTILITY DETAILS
			ENVIRONMENTAL
106	DD-N0001		ENVIRONMENTAL NOTES AND LEGEND
107	DD-N0002		ASBESTOS ABATEMENT PLAN
108	DD-N0003		LEAD-BASED PAINT REMOVAL PLAN
109	DD-N0101		SOIL EROSION AND SEDIMENT CONTROL PLAN LOWER LEVEL - SHEET 1
110	DD-N0102		SOIL EROSION AND SEDIMENT CONTROL PLAN LOWER LEVEL - SHEET 2
111	DD-N0103		SOIL EROSION AND SEDIMENT CONTROL PLAN LOWER LEVEL - SHEET 3
112	DD-N0104		SOIL EROSION AND SEDIMENT CONTROL PLAN LOWER LEVEL - SHEET 4
113	DD-N0111	1	SOIL EROSION AND SEDIMENT CONTROL PLAN UPPER LEVEL - SHEET 1
114	DD-N0112	1	SOIL EROSION AND SEDIMENT CONTROL PLAN UPPER LEVEL - SHEET 2
115	DD-N0121		SOIL EROSION AND SEDIMENT CONTROL DETAILS-SHEET 1
116	DD-E0001	1	LEGEND
117	DD-E0002	2	ABBREVIATIONS AND LIST OF MANUFACTURERS
118	DD-E0003	2	GENERAL NOTES
119	DD-E0100	3	PROPOSED ONE LINE DIAGRAM WITH GENSET
119A	DD-E0101	2	TYPICAL MOTOR CONTROL DIAGRAM FOR BI-DIRECTIONAL FANS
119B	DD-E0102	1	TYPICAL MOTOR CONTROL DIAGRAM FOR UNI-DIRECTIONAL FANS
120	DD-E1101		ROADWAY LIGHTING REMOVAL PLAN SHEET 1 OF 4
121	DD-E1102		ROADWAY LIGHTING REMOVAL PLAN SHEET 2 OF 4
122	DD-E1103		ROADWAY LIGHTING REMOVAL PLAN SHEET 3 OF 4
123	DD-E1104		ROADWAY LIGHTING REMOVAL PLAN SHEET 4 OF 4
124	DD-E1201		UNDERDECK LIGHTING CONSTRUCTION PLAN SHEET 1 OF 4
125	DD-E1202	1	UNDERDECK LIGHTING CONSTRUCTION PLAN SHEET 2 OF 4
126	DD-E1203		UNDERDECK LIGHTING CONSTRUCTION PLAN SHEET 3 OF 4
127	DD-E1204		UNDERDECK LIGHTING CONSTRUCTION PLAN SHEET 4 OF 4
128	DD-E1205	1	ROADWAY POWER CONSTRUCTION PLAN SHEET 1 OF 4
129	DD-E1206	3	ROADWAY POWER CONSTRUCTION PLAN SHEET 2 OF 4
130	DD-E1207		ROADWAY POWER CONSTRUCTION PLAN SHEET 3 OF 4
131	DD-E1208		ROADWAY POWER CONSTRUCTION PLAN SHEET 4 OF 4
132	DD-E1209	3	ENLARGEMENT PLAN
133	DD-E1210		UNDERDECK LUMINANCE METER LOCATION PLAN SHEET 1 OF 2
134	DD-E1211		UNDERDECK LUMINANCE METER LOCATION PLAN SHEET 2 OF 2
135	DD-E1212		TLACS EM INDIVIDUAL CONTROL DIAGRAM
136	DD-E1401		PROPOSED LIGHTING DETAILS
137	DD-E1402		PROPOSED LIGHTING CONTROL
138	DD-E1403	1	LUMINAIRE SCHEDULE AND QUANTITIES SHEET 1 OF 2
139	DD-E1404		LUMINAIRE SCHEDULE AND QUANTITIES SHEET 2 OF 2
140	DD-E1405	1	LUMINAIRE TABULATION SHEET 1 OF 4
141	DD-E1406		LUMINAIRE TABULATION SHEET 2 OF 4
142	DD-E1407		LUMINAIRE TABULATION SHEET 3 OF 4
143	DD-E1408		LUMINAIRE TABULATION SHEET 4 OF 4
144	DD-E1409		PROPOSED LUMINAIRE SCHEMATIC AND SPACING SHEET 1 OF 4
145	DD-E1410		PROPOSED LUMINAIRE SCHEMATIC AND SPACING SHEET 2 OF 4

SHEET NO.	DWG. NO.	REV NO.	DRAWING TITLE	
146	DD-E1411	1	PROPOSED LUMINAIRE SCHEMATIC AND SPACING SHEET 3 OF 4	
147	DD-E1412		PROPOSED LUMINAIRE SCHEMATIC AND SPACING SHEET 4 OF 4	
148	DD-E1501	2	PANEL SCHEDULES	
149	DD-E1502	1	TYPICAL INSTALLATION DETAILS SHEET 1 OF 2	
149A	DD-E1503	2	TYPICAL INSTALLATION DETAILS SHEET 2 OF 2	
149B	DD-E1504	1	TYPICAL GROUNDING DETAILS	
			ELECTRONICS	
150	DD-ES0001	1	ELECTRONICS GENERAL NOTES, LEGEND AND ABBREVIATIONS	*
151	DD-ES0002	1	ELECTRONICS EQUIPMENT MANUFACTURER	*
152	DD-ES0101	2	ELECTRONICS ONE LINE DIAGRAM	*
153	DD-ES0102	2	ACCESS CONTROL ONE LINE DIAGRAM	*
154	DD-ES0103		DYER DECK DISTRIBUTED ANTENNA SYSTEM BLOCK DIAGRAM	*
155	DD-ES0104	1	SCADA ONE-LINE DIAGRAM - SHEET 1	*
156	DD-ES0105	1	SCADA ONE-LINE DIAGRAM - SHEET 2	*
156A	DD-ES0106	2	ELECTRONICS JET FAN IO LIST SHEET 1 OF 2	*
156B	DD-ES0107	2	ELECTRONICS JET FAN IO LIST SHEET 2 OF 2	*
157	DD-ES0201		DYER PLAZA DECK OVER LAYOUT (REMOVAL) - SHEET 1 OF 4	*
158	DD-ES0202		DYER PLAZA DECK OVER LAYOUT (REMOVAL) - SHEET 2 OF 4	*
159	DD-ES0203		DYER PLAZA DECK OVER LAYOUT (REMOVAL) - SHEET 3 OF 4	*
160	DD-ES0204		DYER PLAZA DECK OVER LAYOUT (REMOVAL) - SHEET 4 OF 4	*
161	DD-ES0205		DYER PLAZA DECK OVER LAYOUT (REMOVAL) UPPER LEVEL - SHEET 1	*
161A	DD-ES0206		DYER PLAZA DECK OVER LAYOUT (REMOVAL) UPPER LEVEL - SHEET 2	*
162	DD-ES0301	1	DYER PLAZA DECK OVER LAYOUT PLAN - SHEET 1 OF 4	*
163	DD-ES0302	1	DYER PLAZA DECK OVER LAYOUT PLAN - SHEET 2 OF 4	*
164	DD-ES0303		DYER PLAZA DECK OVER LAYOUT PLAN - SHEET 3 OF 4	*
165	DD-ES0304		DYER PLAZA DECK OVER LAYOUT PLAN - SHEET 4 OF 4	*
165A	DD-ES0305	1	DYER PLAZA DECK OVER LAYOUT PLAN - UPPER LEVEL	*
166	DD-ES0401	1	39TH ST UNDERPASS & COVERED AREAS RADIO ANTENNAS LAYOUT	*
167	DD-ES0501		ELECTRONICS TYPICAL DETAILS - SHEET 1 OF 2	*
168	DD-ES0502		ELECTRONICS TYPICAL DETAILS - SHEET 2 OF 2	*
169	DD-ES0503		ELECTRONICS RADIO SYSTEM DETAILS	*
170	DD-ES0504		TYPICAL INSTALLATION DETAILS	*
171	DD-ES0505	1	DOOR ACCESS CONTROL DETAILS - SHEET 1	*
172	DD-ES0506	1	DOOR ACCESS CONTROL DETAILS - SHEET 2	*
173	DD-ES0507	1	JET FAN SCADA CABINET	*
173A	DD-ES0508	1	JET FAN ELECTRONICS CABINET	*
174	DD-ES0601	1	VIDEO SURVEILLANCE SCHEDULE	*
175	DD-ES0602	2	SECURITY SYSTEM CABLE/CONDUIT SCHEDULE	*
176	DD-ES0603		RADIO PARTS LIST	*
177	DD-ES0604	1	ELECTRONICS PART LIST	*
178	DD-ES0701		DYER DECK RADIO SITE PLANS	*
179	DD-ES0702	1	CAMERA FIELD OF VIEW	*
			GEOTECHNICAL	
180	DD-GT0001		GEOTECHNICAL NOTES	
181	DD-GT0101		BORING LOCATION PLAN	
182	DD-GT0201		SUBSURFACE PROFILE - SHEET 1 OF 2	
183	DD-GT0202		SUBSURFACE PROFILE - SHEET 2 OF 2	
184	DD-GT0301		INSTRUMENTATION AND MONITORING NOTES	
185	DD-GT0302		INSTRUMENTATION LOCATION PLAN	
186	DD-GT0311		TYPICAL INSTRUMENTATION DETAILS - SHEET 1 OF 2	
187	DD-GT0312		TYPICAL INSTRUMENTATION DETAILS - SHEET 2 OF 2	
188	DD-GT0315		DRILLED SHAFT LOAD TESTS NOTES AND DETAILS	
			STRUCTURAL	
189	DD-S0001		STRUCTURAL NOTES I	*
190	DD-S0002	1	STRUCTURAL NOTES II	*
191	DD-S0003		STRUCTURAL NOTES III	*
192	DD-S0004		STRUCTURAL NOTES IV	*
193	DD-S0005	1	STRUCTURAL NOTES V	*
194	DD-S0006		REBAR SPLICING	*
195	DD-S0010		LOADING SCHEDULE	*
196	DD-S0021	1	DYER DECK NORTH DIMENSIONAL PLAN	*
197	DD-S0022		DYER DECK SOUTH DIMENSIONAL PLAN	*
198	DD-S0101		REPAIR PLAN OF EXISTING RETAINING WALLS	*
199	DD-S0111		REPAIR ELEVATION I	*
200	DD-S0112		REPAIR ELEVATION II	*
201	DD-S0113		REPAIR ELEVATION III	*
202	DD-S0114		REPAIR ELEVATION IV	*
203	DD-S0121		REPAIR DETAILS I	*
204	DD-S0122		REPAIR DETAILS II	*
205	DD-S0123		REPAIR DETAILS III	*
206	DD-S1101		REMOVAL PLAN	
207	DD-S1201	1	RETAINING WALL REMOVAL ELEVATION I	
208	DD-S1202		RETAINING WALL REMOVAL ELEVATION II	
209	DD-S1203		RETAINING WALL REMOVAL ELEVATION III	
210	DD-S1204		RETAINING WALL REMOVAL ELEVATION IV	
211	DD-S1301		REMOVAL DETAILS I OF X	
212	DD-S1302		REMOVAL DETAILS II OF X	
213	DD-S1303		REMOVAL DETAILS III OF X	
214	DD-S1304		REMOVAL DETAILS IV OF X	
215	DD-S1305		REMOVAL DETAILS V OF X	

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STATE OF NEW YORK
MICHAEL ROSS BARBAGALLO
No. 074593-1
LICENSED PROFESSIONAL ENGINEER

MICHAEL ROSS BARBAGALLO
NY Professional Engineering # 074593-1

No.	Date	Revision	Approved
3	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	M.B.
2	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	M.B.
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	M.B.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

GENERAL

Title

DYER DECK-OVERS

INDEX OF DRAWINGS - 1

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Designed by	M. CAPONE
Drawn by	M.CAPONE
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-IX0001
PID#	18982000

SHEET NO.	DWG. NO.	REV NO.	DRAWING TITLE	
216	DD-S1306		REMOVAL DETAILS VI OF X	
217	DD-S1307	1	REMOVAL DETAILS VII OF X	
218	DD-S1308		REMOVAL DETAILS VIII OF X	
219	DD-S1309		REMOVAL DETAILS IX OF X	
220	DD-S1310		REMOVAL DETAILS X	
221	DD-S2101	2	DYER DECK NORTH FOUNDATION PLAN	*
222	DD-S2102	1	DYER DECK SOUTH FOUNDATION PLAN	*
223	DD-S2501	1	FOUNDATION DETAILS I OF XVII	*
224	DD-S2502	2	FOUNDATION DETAILS II OF XVII	*
225	DD-S2503	1	FOUNDATION DETAILS III OF XVII	*
226	DD-S2504	1	FOUNDATION DETAILS IV OF XVII	*
227	DD-S2505		FOUNDATION DETAILS V OF XVII	*
228	DD-S2506		FOUNDATION DETAILS VI OF XVII	*
229	DD-S2507		FOUNDATION DETAILS VII OF XVII	*
230	DD-S2508	1	FOUNDATION DETAILS VIII OF XVII	*
231	DD-S2509	1	FOUNDATION DETAILS IX OF XVII	*
232	DD-S2510	1	FOUNDATION DETAILS X OF XVII	*
233	DD-S2511	1	FOUNDATION DETAILS XI OF XVII	*
234	DD-S2512		FOUNDATION DETAILS XII OF XVII	*
235	DD-S2513		FOUNDATION DETAILS XIII OF XVII	*
236	DD-S2514	1	FOUNDATION DETAILS XIV OF XVII	*
237	DD-S2515	1	FOUNDATION DETAILS XV OF XVII	*
238	DD-S2516	1	FOUNDATION DETAILS XVI OF XVII	*
239	DD-S2517		FOUNDATION DETAILS XVII OF XVII	*
240	DD-S2518		38TH STREET WALL DETAILS I OF II	*
241	DD-S2519	2	38TH STREET WALL DETAILS II OF II	*
242	DD-S2601	2	DYER DECK NORTH FRAMING PLAN	*
243	DD-S2602	1	DYER DECK SOUTH FRAMING PLAN	*
244	DD-S2603	2	PARTIAL PLAN I OF IX	*
245	DD-S2604	1	PARTIAL PLAN II OF IX	*
246	DD-S2605		PARTIAL PLAN III OF IX	*
247	DD-S2606	1	PARTIAL PLAN IV OF IX	*
248	DD-S2607	1	PARTIAL PLAN V OF IX	*
249	DD-S2608	1	PARTIAL PLAN VI OF IX	*
250	DD-S2609		PARTIAL PLAN VII OF IX	*
251	DD-S2610		PARTIAL PLAN VIII OF IX	*
252	DD-S2611		PARTIAL PLAN IX OF IX	*
253	DD-S2701	2	DYER DECK NORTH DECK LAYOUT PLAN	*
254	DD-S2702	1	DYER DECK SOUTH DECK LAYOUT PLAN	*
255	DD-S2703	2	DYER DECK NORTH EXPANSION JOINT PLAN	*
256	DD-S2704	1	DYER DECK SOUTH EXPANSION JOINT PLAN	*
257	DD-S2705	2	DYER DECK NORTH CONSTRUCTION AND CONTRACTION JOINT PLAN	*
258	DD-S2706		DYER DECK SOUTH CONSTRUCTION AND CONTRACTION JOINT PLAN	*
259	DD-S2801	2	DYER DECK NORTH DECK REINF LAYOUT PLAN	*
260	DD-S2802	1	DYER DECK SOUTH DECK REINF LAYOUT PLAN	*
261	DD-S2903		FIRE PROTECTION SUPPORT PLAN	*
262	DD-S3001		RECTANGULAR PRECAST PLANK DETAILS	*
263	DD-S3002		TRAPEZOIDAL PRECAST PLANK DETAILS I OF II	*
264	DD-S3003		TRAPEZOIDAL PRECAST PLANK DETAILS II OF II	*
265	DD-S3004		TYPICAL PRECAST PLANK DETAILS	*
266	DD-S3005		CURB SECTION AND DETAIL AT DYER PLAZA EXIT NEAR 39TH	*
267	DD-S3006	1	PLATE GIRDER SCHEDULE	*
268	DD-S3007	1	STEEL SHEAR CONNECTION SCHEDULE	*
269	DD-S3008		STEEL SHEAR CONNECTION DETAILS I OF IX	*
270	DD-S3009		STEEL SHEAR CONNECTION DETAILS II OF IX	*
271	DD-S3010		STEEL SHEAR CONNECTION DETAILS III OF IX	*
272	DD-S3011	1	STEEL SHEAR CONNECTION DETAILS IV OF IX	*
273	DD-S3012	1	STEEL SHEAR CONNECTION DETAILS V OF IX	*
274	DD-S3013	1	STEEL SHEAR CONNECTION DETAILS VI OF IX	*
275	DD-S3014		STEEL SHEAR CONNECTION DETAILS VII OF IX	*
276	DD-S3015		STEEL SHEAR CONNECTION DETAILS VIII OF IX	*
277	DD-S3016		STEEL SHEAR CONNECTION DETAILS IX OF IX	*
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279	DD-S3018	1	PLATE GIRDER MOMENT CONNECTION DETAILS I OF III	*
280	DD-S3019		PLATE GIRDER MOMENT CONNECTION DETAILS II OF III	*
281	DD-S3020		PLATE GIRDER MOMENT CONNECTION DETAILS III OF III	*
282	DD-S3021	1	SPLICE SCHEDULE	*
283	DD-S3022		SPLICE CONNECTION DETAILS	*
284	DD-S3023	1	PLATE GIRDER BRACING CONNECTION DETAILS & PG BEARING	*
			ON GRADE BEAM SCHEDULE	
285	DD-S3024		VENTILATION SUPPORT DETAILS	*
286	DD-S3025		VENTILATION FRAMING DETAILS I OF II	*
287	DD-S3026		VENTILATION FRAMING DETAILS II OF II	*
288	DD-S3027	1	FIXED DISK BEARING DETAILS & SCHEDULE	*
289	DD-S3028		FIXED DISK BEARING CONNECTION DETAILS & SECTIONS	*
290	DD-S3029	1	EXPANSION JOINT DETAILS	*
291	DD-S3030		BRACED FRAMING CONNECTION DETAILS I OF V	*
292	DD-S3031		BRACED FRAMING CONNECTION DETAILS II OF V	*
293	DD-S3032	1	BRACED FRAMING CONNECTION DETAILS III OF V	*
294	DD-S3033		BRACED FRAMING CONNECTION DETAILS IV OF V	*
295	DD-S3034		BRACED FRAMING CONNECTION DETAILS V OF V	*
296	DD-S3035		SIGNAGE SUPPORT ELEVATIONS	*
297	DD-S3036		SIGNAGE SUPPORT SECTIONS & DETAILS	*
298	DD-S3037		SIGNAGE SUPPORT DETAILS 2	*
299	DD-S3038		LUCS SUPPORT DETAILS I OF II	*
300	DD-S3039		LUCS SUPPORT DETAILS II OF II	*
301	DD-S3040		DRAINAGE DETAILS I OF II	*
302	DD-S3041		DRAINAGE DETAILS II OF II	*
303	DD-S3043		FIRE PROTECTION SUPPORT DETAILS	*
304	DD-S3044		FENCING DETAILS	*
305	DD-S3045	1	FENCING DETAILS	*
306	DD-S3101		BASIN 1 DETAILS I OF III	*
307	DD-S3102	1	BASIN 1 DETAILS II OF III	*
308	DD-S3103		BASIN 1 DETAILS III OF III	*
309	DD-S3104		BASIN 2 DETAILS I OF III	*
310	DD-S3105	1	BASIN 2 DETAILS II OF III	*
311	DD-S3106		BASIN 2 DETAILS III OF III	*
312	DD-S3107	1	VENTILATION SHAFT DETAILS I OF VI	*
313	DD-S3108	1	VENTILATION SHAFT DETAILS II OF VI	*
313A	DD-S3108A	1	VENTILATION SHAFT DETAILS III OF VI	*
313B	DD-S3108B	1	VENTILATION SHAFT DETAILS IV OF VI	*
314	DD-S3109	1	VENTILATION SHAFT DETAILS V OF VI	*
315	DD-S3110	1	VENTILATION SHAFT DETAILS VI OF VI	*
316	DD-S3111	2	DYER AVE PARTITION DETAILS I OF II	*
317	DD-S3112	2	DYER AVE PARTITION DETAILS II OF II	*
318	DD-S3113	2	ELECTRICAL ROOM DETAILS I OF IV	*
319	DD-S3114	2	ELECTRICAL ROOM DETAILS II OF IV	*
319A	DD-S3114B	2	ELECTRICAL ROOM DETAILS III OF IV	*
319B	DD-S3114C	1	ELECTRICAL ROOM DETAILS IV OF IV	*
319C	DD-S3114D	1	CONDUIT BANK DETAILS	*
320	DD-S3201	1	SECTIONS I OF VII	*
321	DD-S3202	2	SECTIONS II OF VII	*
322	DD-S3203	2	SECTIONS III OF VII	*
323	DD-S3204	1	SECTIONS IV OF VII	*
324	DD-S3205	1	SECTIONS V OF VII	*
325	DD-S3206	1	SECTIONS VI OF VII	*
326	DD-S3207		SECTIONS VII OF VII	*
327	DD-S3301		COLUMN AND PRODUCTION DRILLED SHAFT SCHEDULE I OF III	*
327A	DD-S3301A	2	COLUMN AND PRODUCTION DRILLED SHAFT SCHEDULE II OF III	*
327B	DD-S3301B		COLUMN AND PRODUCTION DRILLED SHAFT SCHEDULE III OF III	*
328	DD-S3302		COLUMN AND PRODUCTION DRILLED SHAFT DETAILS I OF III	*
328A	DD-S3302A		COLUMN AND PRODUCTION DRILLED SHAFT DETAILS II OF III	*
328B	DD-S3302B		COLUMN AND PRODUCTION DRILLED SHAFT DETAILS III OF III	*
329	DD-S3303		DEMONSTRATION DRILLED SHAFT SCHEDULE	*
329A	DD-S3303A		DEMONSTRATION DRILLED SHAFT DETAILS I OF II	*
329B	DD-S3303B		DEMONSTRATION DRILLED SHAFT DETAILS II OF II	*
			LIGHTING SUPPORT	
329A1	DD-S4001	1	LIGHTING SUPPORT NOTES	
329B1	DD-S4101	1	OVERHEAD LIGHT SUPPORTS SHEET 1 OF 4	
329C	DD-S4102	1	OVERHEAD LIGHT SUPPORTS SHEET 2 OF 4	
329D	DD-S4103	1	OVERHEAD LIGHT SUPPORTS SHEET 3 OF 4	
329E	DD-S4104	1	OVERHEAD LIGHT SUPPORTS SHEET 4 OF 4	
329F	DD-S4105	1	BOAT WALL LIGHTING SUPPORT	
329G	DD-S4106	1	EXISTING BRIDGE LIGHTING SUPPORT	
329H	DD-S4107	1	LIGHTING SUPPORT AT EXISTING LIGHTING NICHES	
329I	DD-S4108	1	MISC. LIGHTING SUPPORT DETAILS	
			TRAFFIC	
330	DD-T0201		TRAFFIC LEGEND	
331	DD-T0202		PAVEMENT MARKING AND SIGN MOUNTING GENERAL NOTES	
332	DD-T0203		SIGN MOUNTING GENERAL NOTES	
333	DD-T0204	1	PAVEMENT MARKING PLAN-SHEET 1	
334	DD-T0205		PAVEMENT MARKING PLAN-SHEET 2	
335	DD-T0206		PAVEMENT MARKING PLAN-SHEET 3	
336	DD-T0207		PAVEMENT MARKING PLAN-SHEET 4	
336A	DD-T0211	1	PAVEMENT MARKING PLAN-UPPER LEVEL - SHEET 1	
336B	DD-T0212	1	PAVEMENT MARKING PLAN-UPPER LEVEL - SHEET 2	
337	DD-T0250	1	VEHICULAR GUIDE SIGN LOCATION PLAN - SHEET 1	
338	DD-T0251		VEHICULAR GUIDE SIGN LOCATION PLAN - SHEET 2	
339	DD-T0252		VEHICULAR GUIDE SIGN LOCATION PLAN - SHEET 3	
340	DD-T0253		VEHICULAR GUIDE SIGN LOCATION PLAN - SHEET 4	
341	DD-T0254		VEHICULAR GUIDE SIGN SECTIONS - SHEET 1	
342	DD-T0255		VEHICULAR GUIDE SIGN SECTIONS - SHEET 2	
343	DD-T0256		SIGN LAYOUT - SHEET 1	
344	DD-T0257		SIGN LAYOUT - SHEET 2	
345	DD-T0258		SIGN LAYOUT - SHEET 3	
346	DD-T0259		SIGN LAYOUT - SHEET 4	
347	DD-T0301	1	ROADSIDE PROTECTION PLAN-SHEET 1	
348	DD-T0302		ROADSIDE PROTECTION PLAN-SHEET 2	
349	DD-T0303		ROADSIDE PROTECTION PLAN-SHEET 3	
350	DD-T0304		ROADSIDE PROTECTION PLAN-SHEET 4	
351	DD-T0305	2	ROADSIDE PROTECTION BARRIER LOCATION TABLES	
352	DD-T0311	3	ROADSIDE PROTECTION PLAN UPPER LEVEL-SHEET 1	
353	DD-T0312	2	ROADSIDE PROTECTION PLAN UPPER LEVEL-SHEET 2	
354	DD-T0313	3	ROADSIDE PROTECTION BARRIER UPPER LEVEL LOCATION TABLES	
355	DD-T0401	2	TRAFFIC DEVICE DETAILS - SHEET 1	
356	DD-T0402	2	TRAFFIC DEVICE DETAILS - SHEET 2	
357	DD-T0403	2	TRAFFIC DEVICE DETAILS - SHEET 3	
358	DD-T0404		TRAFFIC DEVICE DETAILS - SHEET 4	
359	DD-T0405		TRAFFIC DEVICE DETAILS - SHEET 5	
360	DD-T0406		TRAFFIC DEVICE DETAILS - SHEET 6	
361	DD-T0407		TRAFFIC DEVICE DETAILS - SHEET 7	
362	DD-T0408		TRAFFIC DEVICE DETAILS - SHEET 8	
363	DD-T0409		TRAFFIC DEVICE DETAILS - SHEET 9	
364	DD-T0410		TRAFFIC DEVICE DETAILS - SHEET 10	
365	DD-T0411	1	PAVEMENT MARKING DETAILS - SHEET 1	
			MAINTENANCE OF TRAFFIC	
366	DD-MT0101		MAINTENANCE OF TRAFFIC GENERAL NOTES LEGEND	
367	DD-MT0102		MAINTENANCE OF TRAFFIC HOURS OF MOT – WORK SCHEDULE	
368	DD-MT0103		MAINTENANCE OF TRAFFIC MOT WORK SCHEDULE MATRIX	
369	DD-MT0104		MAINTENANCE OF TRAFFIC STAGING AREA 2 W 37TH AND W 38TH ST	
370	DD-MT0105		MAINTENANCE OF TRAFFIC WALL/PARAPET REMOVAL W 37TH ST TO W 39TH ST	
371	DD-MT0106		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY EAST WALL (RAMP A SHOULDER)	
			SHEET 1 OF 2	
372	DD-MT0107		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY EAST WALL (RAMP A SHOULDER)	
			SHEET 2 OF 2	
373	DD-MT0108		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP H	
374	DD-MT0109		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP J	
375	DD-MT0110		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP J	
376	DD-MT0111		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP K	
377	DD-MT0112		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP N NORTH	
378	DD-MT0113		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP L	
379	DD-MT0114		MAINTENANCE OF TRAFFIC UPPER DYER AVE WEST SHOULDER CLOSURE	
380	DD-MT0115		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP M LANE CLOSURE	
381	DD-MT0116		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP M SOUTH - 38TH ST	
382	DD-MT0117		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY CENTER ISLAND AT 39TH ST	
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383	DD-MT0118		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY CENTER ISLAND AT 39TH ST	
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384	DD-MT0119		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY CENTER ISLAND AT 37TH ST	
			UNDERPASS SHEET 1 OF 2	
385	DD-MT0120		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY CENTER ISLAND AT 37TH ST	
			UNDERPASS SHEET 2 OF 2	
386	DD-MT0121		MAINTENANCE OF TRAFFIC UPPER DYER AVE EAST SHOULDER CLOSURE	
387	DD-MT0122		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY WEST WALL RAMP B SHOULDER	
			CLOSURE SHEET 1 OF 2	
388	DD-MT0123		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY WEST WALL RAMP B SHOULDER	
			CLOSURE SHEET 2 OF 2	
389	DD-MT0124		MAINTENANCE OF TRAFFIC UPPER DYER AVE OVERNIGHT CLOSURE SHEET 1 OF 2	
390	DD-MT0125		MAINTENANCE OF TRAFFIC UPPER DYER AVE OVERNIGHT CLOSURE SHEET 2 OF 2	
391	DD-MT0126		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY OVERNIGHT CLOSURE SHEET 1 OF 4	
392	DD-MT0127		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY OVERNIGHT CLOSURE SHEET 2 OF 4	
393	DD-MT0128		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY OVERNIGHT CLOSURE SHEET 3 OF 4	
394	DD-MT0129		MAINTENANCE OF TRAFFIC LINCOLN TUNNEL EXPY OVERNIGHT CLOSURE SHEET 4 OF 4	
395	DD-MT0130		MAINTENANCE OF TRAFFIC DYER PLAZA RAMP N NORTH	
396	DD-MT0131		MAINTENANCE OF TRAFFIC DYER PLAZA WORK AREA DP101 SHEET 1 OF 8	
397	DD-MT0132		MAINTENANCE OF TRAFFIC DYER PLAZA SOUTH TUBE CLOSURE WORK AREA DP102	
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398	DD-MT0133		MAINTENANCE OF TRAFFIC DYER PLAZA SOUTH TUBE CLOSURE WORK AREA DP103	
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399	DD-MT0134		MAINTENANCE OF TRAFFIC DYER PLAZA CENTER TUBE CLOSURE WORK AREA DP104	
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400	DD-MT0135		MAINTENANCE OF TRAFFIC DYER PLAZA CENTER TUBE CLOSURE WORK AREA DP105	
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401	DD-MT0136		MAINTENANCE OF TRAFFIC DYER PLAZA CENTER TUBE CLOSURE WORK AREA DP106	
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402	DD-MT0137		MAINTENANCE OF TRAFFIC DYER PLAZA RAMPS J/K/M CLOSURE WORK AREA DP107	
			SHEET 7 OF 8	

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No. 074593-1
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NY Professional Engineering # 074593-1

No.	Date	Revision	Approved
3	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	M.B.
2	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	M.B.
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	M.B.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

GENERAL

Title

DYER DECK-OVERS

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Designed by	M. CAPONE
Drawn by	M.CAPONE
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-IX0002
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SHEET NO.	DWG. NO.	REV NO.	DRAWING TITLE	
403	DD-MT0138		MAINTENANCE OF TRAFFIC DYER PLAZA SOUTH TUBE & RAMP J CLOSURE WORK AREA	
			DP108 SHEET 8 OF 8	
404	DD-MT0139		MAINTENANCE OF TRAFFIC SECTIONS SHEET 1 OF 2	
405	DD-MT0140		MAINTENANCE OF TRAFFIC SECTIONS SHEET 2 OF 2	
406	DD-MT0141		MAINTENANCE OF TRAFFIC SIGN TEXT DATA SHEET 1 OF 2	
407	DD-MT0142		MAINTENANCE OF TRAFFIC SIGN TEXT DATA SHEET 2 OF 2	
408	DD-MT0301		MAINTANENCE OF TRAFFIC DETAILS - SHEET 1 OF 7	
409	DD-MT0302		MAINTANENCE OF TRAFFIC DETAILS - SHEET 2 OF 7	
410	DD-MT0303		MAINTANENCE OF TRAFFIC DETAILS - SHEET 3 OF 7	
411	DD-MT0304		MAINTANENCE OF TRAFFIC DETAILS - SHEET 4 OF 7	
412	DD-MT0305		MAINTANENCE OF TRAFFIC DETAILS - SHEET 5 OF 7	
413	DD-MT0306		MAINTANENCE OF TRAFFIC DETAILS - SHEET 6 OF 7	
414	DD-MT0307		MAINTANENCE OF TRAFFIC DETAILS - SHEET 7 OF 7	
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416	DD-ITS002		ITS EQUIPMENT MANUFACTURER	
417	DD-ITS0101	1	DYER PLAZA DECK OVER LAYOUT PLAN SHEET 1 OF 4	
418	DD-ITS0102		DYER PLAZA DECK OVER LAYOUT PLAN SHEET 2 OF 4	
419	DD-ITS0103		DYER PLAZA DECK OVER LAYOUT PLAN SHEET 3 OF 4	
420	DD-ITS0104		DYER PLAZA DECK OVER LAYOUT PLAN SHEET 4 OF 4	
421	DD-ITS0201	2	ITS ONE-LINE DIAGRAM SHEET 1	
422	DD-ITS0202	1	ITS ONE-LINE DIAGRAM SHEET 2	
423	DD-ITS0203	1	LUCS CONFIGURATION DETAILS	
424	DD-ITS0204		ITS SITE ELEVATION - SHEET 1 OF 4	
425	DD-ITS0205		ITS SITE ELEVATION - SHEET 2 OF 4	
426	DD-ITS0206	1	NOT USED	
427	DD-ITS0207		ITS SITE ELEVATION - SHEET 4 OF 4	
			FIRE PROTECTION	
428	DD-FP0001		FIRE PROTECTION GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS	
429	DD-FP0002		FIRE PROTECTION NOTES	
430	DD-FP0003		FIRE PROTECTION KEY PLAN	
431	DD-FP0101		ROADWAY LEVEL FIRE PROTECTION PLAN - SHEET 1	
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433	DD-FP0103		ROADWAY LEVEL FIRE PROTECTION PLAN - SHEET 3	
434	DD-FP0104		ROADWAY LEVEL FIRE PROTECTION PLAN - SHEET 4	
435	DD-FP0111		DECK LEVEL FIRE PROTECTION PLAN - SHEET 1	
436	DD-FP0112		DECK LEVEL FIRE PROTECTION PLAN - SHEET 2	
437	DD-FP0121		39TH STREET METER ROOM FIRE PROTECTION PLAN	
438	DD-FP0201	1	ELECTRICAL ROOMS ENLARGED FIRE PROTECTION PLAN	
439	DD-FP0401		FIRE PROTECTION DETAILS - SHEET 1	
440	DD-FP0402		FIRE PROTECTION DETAILS - SHEET 2	
441	DD-FP0403		FIRE PROTECTION DETAILS - SHEET 3	
442	DD-FP0404		FIRE PROTECTION DETAILS - SHEET 4	
443	DD-FP0405		FIRE PROTECTION DETAILS - SHEET 5	
444	DD-FP0601		FIRE STANDPIPE RISER DIAGRAM	
445	DD-FP0701	1	FIRE PROTECTION EQUIPMENT SCHEDULES	
			MECHANICAL	
446	DD-M0201	2	ELECTRICAL ROOMS ENLARGED MECHANICAL PLAN	
446A	DD-M0202	2	TUNNEL VENTILATION JET FAN SHAFT PLAN, SECTION AND SCHEDULE	

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AIR LAND RAIL SEA
WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK
MICHAEL ROSS BARBAGALLO
No. 074593-1
LICENSED PROFESSIONAL ENGINEER

MICHAEL ROSS BARBAGALLO
NY Professional Engineering # 074593-1

No.	Date	Revision	Approved
3	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	M.B.
2	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	M.B.
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	M.B.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

GENERAL

Title

DYER DECK-OVERS

INDEX OF DRAWINGS - 3

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent. 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: 2 Montgomery Street - 1st Floor, Jersey City, NJ 07302 or the office of the Chief Procurement Officer, 4 World Trade Center, 21st Floor, New York, NY 10007.
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Designed by	M. CAPONE
Drawn by	M.CAPONE
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-IX0003
PID#	18982000

GENERAL NOTES

1. CODES & STANDARDS

THE FOLLOWING PUBLICATIONS, AS MODIFIED IN THESE GENERAL NOTES, GOVERN THE DESIGN AND CONSTRUCTION OF THE BRIDGE AND THE FACILITY.

1.01 CONSTRUCTION
- A. CONTRACT SPECIFICATIONS
- B. NYSDOT STANDARD SPECIFICATIONS, 2008 (US CUSTOMARY)
- C. CITY OF NEW YORK BUILDING CODE, 2022
- D. OSHA
- E. AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, 2010
- F. 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, US DEPARTMENT OF JUSTICE.

1.02 STRUCTURAL
- A. AASHTO LRFD - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (CUSTOMARY U.S. UNITS, 6TH EDITION, 2012)
- B. NYSDOT LRFD BLUE PAGES - NYSDOT LRFD BRIDGE DESIGN SPECIFICATIONS (CUSTOMARY U.S. UNITS 2010)
- C. NJDOT STIPULATIONS LRFD - NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES (5TH ED. 2009), SECTION 3: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH NJDOT STIPULATIONS
- D. AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS, LATEST EDITION WITH CURRENT INTERIMS, 5TH EDITION, 2009.
- E. AASHTO GUIDE SPECIFICATION FOR FRACTURE CRITICAL NON-REDUNDANT STEEL BRIDGE MEMBERS, LATEST EDITION WITH CURRENT INTERIMS.
- F. AUTHORITY: ENGINEERING DEPARTMENT DESIGN GUIDELINES, STRUCTURAL: 03/26/2010

1.03 GEOTECHNICAL
- A. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (SEE ABOVE)
- B. AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN, 2ND EDITION, 2011
- C. AUTHORITY STANDARD SPECIFICATIONS
- D. NYSDOT LRFD BRIDGE DESIGN SPECIFICATIONS
- E. INTERNATIONAL BUILDING CODE, 2009 EDITION
- F. ASTM STANDARDS
- G. AUTHORITY BORING INSPECTION MANUAL

1.04 CIVIL
- A. AASHTO: A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS; 2018
- B. NYSDOT: HIGHWAY DESIGN MANUAL; LATEST EDITION
- C. AUTHORITY: ENGINEERING DEPARTMENT – CIVIL DESIGN GUIDELINES; SEPTEMBER 2018

1.05 ELECTRICAL
- A. AUTHORITY ELECTRICAL STANDARD DETAILS
- B. AUTHORITY ELECTRICAL SPECIFICATIONS DIVISION 26
- C. CITY OF NEW YORK ELECTRICAL CODE
- D. CITY OF NEW YORK BUILDING CODE (NYCBC)
- E. NATIONAL ELECTRIC SAFETY CODE (NESC)
- F. NATIONAL ELECTRIC CODE (NEC)
- G. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
- H. CONSOLIDATED EDISON CO. (CON ED.) REQUIREMENTS
- I. PUBLIC SERVICE ELECTRIC AND GAS (PSE&G) REQUIREMENTS
- J. NY ADMINISTRATIVE CODES
- K. UNDERWRITERS LABORATORIES, INC. (UL)
- L. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- M. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- N. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

1.06 MECHANICAL
- A. INTERNATIONAL BUILDING CODE, 2012
- B. INTERNATIONAL MECHANICAL CODE, 2012
- C. CITY OF NEW YORK MECHANICAL CODE, 2010
- D. CITY OF NEW YORK ENERGY CONSERVATION CODE, 2010
- E. CITY OF NEW YORK BUILDING CODE, 2008

1.07 ELECTRONICS
- A. NTCIP STANDARDS
- B. AUTHORITY ELECTRICAL STANDARD DETAILS
- C. AUTHORITY ELECTRICAL SPECIFICATION DIVISION 26 AND 27
- D. IEEE 802 STANDARDS AND PROTOCOLS
- E. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- F. OPTICAL FIBER CABLE COMPONENTS STANDARD, TIA/EIA
- G. NATIONAL ELECTRIC SAFETY CODE (NESC)
- H. NATIONAL ELECTRIC CODE (NEC)
- I. UNDERWRITERS LABORATORIES INC. (UL)
- J. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- K. ASTM INTERNATIONAL (ASTM)
- L. INTERNATIONAL STANDARDS ORGANIZATION / INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC/ISO)
- M. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)

1.08 TRAFFIC
- A. AASHTO “ROADSIDE DESIGN GUIDE”, 4TH EDITION 2011
- B. FHWA “MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES” (MUTCD), 2009 EDITION
- C. HIGHWAY CAPACITY MANUAL (HCM 2010)

1.09 SUSTAINABLE DESIGN
- A. AUTHORITY SUSTAINABLE INFRASTRUCTURE GUIDELINES
- B. AUTHORITY SUSTAINABLE BUILDING GUIDELINES

2. UNITS

ALL STRUCTURES AND OTHER WORKS DESIGNED AND DETAILED USING THE US CUSTOMARY ENGLISH UNITS OF INCHES, FEET, POUNDS, KIPS, TONS, DEGREES FAHRENHEIT, ETC.

3. DATUM

3.01 VERTICAL DATUM: THE DATUM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

3.02 HORIZONTAL DATUM: THE DATUM IS BASED ON THE NAD83 NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND.

4. GENERAL DESIGN AND LOCATION FEATURES

4.01 BARRIERS.
- A. ROADWAY BARRIERS: RATED FOR TL-3 LOADING

5. GENERAL

5.01 PRIOR TO START OF WORK AT THE CONSTRUCTION SITE, SUBMIT AND OBTAIN THE ENGINEER'S APPROVAL OF:
- A. WORK SCHEDULE TO AVOID INTERFERENCE BETWEEN WORK CREWS AND TO AVOID DAMAGING AREAS ALREADY REPAIRED OR MODIFIED.
- B. CONSTRUCTION PROCEDURES AND TYPES OF EQUIPMENT. DO NOT EXCEED STRESSES PRODUCED BY THE AASHTO HL-93 TRUCK LOADING IN THE EXISTING STRUCTURES BY CONSTRUCTION EQUIPMENT.

5.02 THE WORD "REPLACE", WHERE IT APPEARS ON THE CONTRACT DRAWINGS, MEANS:
REMOVE AND DISPOSE OF THE EXISTING ITEM, AND FURNISH AND INSTALL THE SPECIFIED ITEM IN ITS PLACE.

5.03 INCLUDE THE FOLLOWING INFORMATION ON ALL SHOP DRAWINGS, DESIGN DRAWINGS, SKETCHES AND CALCULATIONS SUBMITTED TO THE ENGINEER:
- A. CONTRACT TITLE, CONTRACT NUMBER. DATE. NAMES OF CONTRACTOR AND SUBCONTRACTORS AND SIGNATURES.
- B. DRAWING OR PAGE NUMBER, AS APPLICABLE.
- C. THE FOLLOWING NOTE: "THIS SUBMITTAL IS RELATED TO WORK SHOWN ON CONTRACT DRAWING NUMBER(S) (LIST APPLICABLE NUMBERS) AND/OR SPECIFICATION SECTION NUMBER(S) (LIST APPLICABLE NUMBERS).
- D. CERTIFICATION THAT DIMENSIONS HAVE BEEN FIELD VERIFIED. DO NOT USE DRAWINGS RELATED TO THE ORIGINAL CONSTRUCTION, REPAIR CONTRACTS AND CONDITION SURVEYS IN LIEU OF FIELD SURVEY MEASUREMENTS.

5.04 DESIGN, DETAILING, FABRICATION AND EXECUTION OF ALL CONSTRUCTION, INCLUDING TEMPORARY STRUCTURES, SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS AND OF CURRENT ISSUES OF THE FOLLOWING PUBLICATIONS:
- A. AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 3RD EDITION, 2010, WITH LATEST INTERIM.
- B. AISC MANUAL OF STEEL CONSTRUCTION, 9TH EDITION (ASD).
- C. AWS BRIDGE WELDING CODE AWS D1.5, LATEST EDITION.
- D. VAMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10).
- E. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY AND HEALTH STANDARDS - 29 CFR 1926.

5.05 ALL CALCULATIONS SUBMITTED TO THE ENGINEER SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

5.06 FOR LEGEND AND ABBREVIATIONS, SEE DISCIPLINE SPECIFIC DRAWINGS.

5.07 PRIOR TO START OF WORK AT EACH WORK AREA, THE CONTRACTOR SHALL ENCLOSE THE AREA BY ALL MEANS TO PREVENT PUBLIC VEHICLES FROM ENTERING THE WORK AREA AND TO PREVENT CONSTRUCTION WORKERS FROM ENTERING ACTIVE TRAFFIC LANES. NO WELDING OR BOLTING TO THE EXISTING BARRIER CURBS, RAILINGS. SIDEWALK OR HANDRAILS WILL BE PERMITTED.

5.08 DURING ANY REMOVAL OPERATIONS, THE CONTRACTOR SHALL NOT DROP DEBRIS AND OTHER MATERIAL ONTO ANY AREA BY PROVIDING NETS, SCREENS, OR OTHER PROTECTIVE DEVICES TO CATCH THE DEBRIS AND OTHER MATERIAL. SHOULD THE ENGINEER DETERMINE THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

5.09 THE CONTRACTOR SHALL MAINTAIN THE VERTICAL CLEARANCE OVER LANES OF ALL ACTIVE ROADWAYS, UNLESS OTHERWISE NOTED.

5.10 VERIFY ALL INDICATED CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING OF MATERIAL, OR PERFORMING ANY WORK AT THE CONSTRUCTION SITE. NOTIFY THE ENGINEER OF ANY CONDITIONS OR DIMENSIONS THAT VARY FROM INFORMATION SHOWN ON THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS OR THAT WOULD PREVENT OR HAMPER THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- A. CONTRACTOR SHALL REVIEW AS-BUILT PLANS FROM REFERENCE DRAWINGS IN CONTRACTS MHT-6 AND LT-160.019. CONTRACTOR SHALL NOTE FOOTING LOCATIONS, ADJACENT TUNNELS AND OTHER UNDERGROUND FEATURES, INCLUDING PUMP ROOMS AND OTHER UTILITY ROOMS IN VICINITY OF THE PROJECT WORK. CONTRACTOR SHALL PERFORM SURVEY OF ANY ACCESSIBLE UNDERGROUND PUMP ROOMS OR UTILITY ROOMS PRIOR TO START OF DRILLED SHAFT WORK

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5.11 THIS PROJECT ASSUMES FULL COMPLETION OF AET CASHLESS TOLLING PROJECT. PROPOSED DESIGN LINEWORK FROM PROJECT SHOWN IN DASHED LINES THROUGHOUT CIVIL SET. LINEWORK NOT SURVEYED. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.

5.12 FOR ADDITIONAL NOTES, SEE DRAWINGS FOR SPECIFIC WORK DISCIPLINES.

5.13 THERE SHALL BE NO EXCAVATION BELOW THE TOP OF FOOTING FOR EXISTING WALLS EXCEPT AS SHOWN IN DRAWINGS OR WITH PRIOR APPROVAL OF THE ENGINEER.

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5.14 ALL ELEVATIONS REFERENCED TO THE PANYNJ DATUM IN THE REFERENCE DOCUMENTS CAN BE CONVERTED TO NAVD88 DATUM BY SUBTRACTING 298.457'.

6. CONSTRUCTION LOADING AND DESIGN CRITERIA

6.01 GENERAL
- A. CONSTRUCTION LOAD IS DEFINED AS ANY TEMPORARY LOAD IMPOSED BY THE CONTRACTOR ON THE EXISTING BRIDGE STRUCTURE AND ITS COMPONENT MEMBERS FOR THE PERFORMANCE OF THE CONTRACT AND INCLUDES, BUT IS NOT LIMITED TO CONSTRUCTION LIVE LOAD AS DESCRIBED BELOW, PLATFORMS, PROTECTIVE SHIELDING, AND ACCUMULATED DEBRIS.
  1) CONSTRUCTION LOAD SHALL ALSO INCLUDE WIND LOADING, ANY SNOW, ICE, AND PRECIPITATION THAT ACCUMULATE ON THE ENCLOSURE (CONTAINMENT) AND TEMPORARY STRUCTURES. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO ELIMINATE PONDING OF WATER OR ACCUMULATION OF SNOW OR ICE ON THE ENCLOSURE (CONTAINMENT) AND WORK PLATFORMS. WORK PLATFORMS, SHIELDING, AND OTHER ITEMS THAT MAY ACCUMULATE WATER, SNOW, OR ICE WITH THE CONTAINMENT LOWERED, CONTRACTOR SHALL REMOVE SNOW AND ICE FROM TEMPORARY STRUCTURES DURING THE DURATION OF THE CONTRACT, TO PREVENT THE ROADWAY OR AREAS UNDERNEATH THE TEMPORARY STRUCTURES FROM DEVELOPING SLIPPERY OR UNSAFE CONDITIONS FROM MELTING OR FALLING SNOW AND ICE.
  2) TEMPORARY WORK PLATFORMS, CONTAINMENTS, SCAFFOLDING, AND PROTECTIVE SHIELDING SHALL BE BRACED TO PREVENT SWAYING AND SHALL ACCOUNT FOR FORCES FROM WIND, BRIDGE MOVEMENTS, AND BRIDGE VIBRATIONS. APPROPRIATE IMPACT LOADS DUE TO WIND GENERATED VIBRATIONS AND WIND GENERATED SUDDEN MOVEMENTS OF THE TEMPORARY STRUCTURES SHALL BE INCLUDED IN THE DESIGNS AND DETAILS.
- B. TEMPORARY WORK PLATFORMS, CONTAINMENTS, SCAFFOLDING, AND PROTECTIVE SHIELDING SHALL BE DESIGNED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF THE REFERENCES NOTED IN GENERAL NOTE 5.04 OR ANY OTHER RECOGNIZED CODE OR REFERENCE APPROVED BY THE ENGINEER.
  1) THE MINIMUM DESIGN LOAD SHALL BE 50 POUNDS PER SQUARE FOOT PLUS THE WEIGHT OF THE EQUIPMENT, DEBRIS, PERSONNEL, AND OTHER LOADS TO BE CARRIED.
  2) DECKING SHALL ALSO WITHSTAND AN IMPACT OF A 100 POUND LOAD DROPPED ONTO IT FROM A HEIGHT OF 6 FEET, THE DECKING SHALL BE TESTED FOR SAID LOADING IN THE PRESENCE OF THE ENGINEER PRIOR TO INSTALLATION.
  3) ALL LOADINGS PROPOSED BY THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- C. TEMPORARY PROTECTIVE SHIELDING/PLATFORMS SHALL BE DESIGNED AS REDUNDANT SYSTEMS WITH MULTIPLE LOAD PATHS SO THAT FAILURE OF ANY MEMBER DOES NOT RESULT IN STRESSES EXCEEDING YIELD STRESS IN ANY OTHER MEMBER OR CONNECTION.
- D. DESIGN ALL SAFETY CABLES FOR ULTIMATE LOADING IN CONFORMANCE WITH OSHA REQUIREMENTS. DESIGN ALL COMPONENTS OF WORK PLATFORMS AND PROTECTIVE SHIELDING (OTHER THAN CABLES) TO SUPPORT AN ULTIMATE LOAD OF AT LEAST 4 TIMES THE MAXIMUM DEAD LOAD PLUS LIVE LOAD WITHOUT FAILURE.
- E. TEMPORARY BARRIERS SHALL CONFORM TO PANYNJ STANDARDS.

7. FIELD ORDERED WORK ITEMS

7.01 GENERAL

COMPLETE ITEMS REQUESTED BY QAD FIELD INSPECTION STAFF THAT WERE NOT IDENTIFIED IN THE ORIGINAL CONTRACT DRAWINGS.

WHEN AND AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PERFORM THE FOLLOWING WORK AND WILL BE COMPENSATED AT THE FIELD ORDERED WORK COST THEREOF, AS DEFINED BELOW:
- A. CONSTRUCTION STAGING & SCHEDULE CHANGES TO ACCOMMODATE FACILITY AND OPERATIONAL REQUIREMENTS;
- B. PERFORM ADDITIONAL TEST PITS;
- C. TRANSPORTATION AND DISPOSAL OF EXCESS, UNSUITABLE OR CONTAMINATED MATERIAL OFF AUTHORITY'S PROPERTY;
- D. .TRANSPORTATION AND DISPOSAL OFF AUTHORITY'S PROPERTY OR TREATMENT, TESTING AND DISCHARGE ON-SITE OF CONTAMINATED EFFLUENT FROM DEWATERING OPERATIONS;
- E. ABATEMENT OF INCIDENTAL ASBESTOS AND LEAD CONTAINING MATERIALS NOT SHOWN OR SPECIFIED ON THE CONTRACT DOCUMENT;
- F. FURNISH AND INSTALL MAINTENANCE OF TRAFFIC AND WORK AREA PROTECTION DEVICES NOT SHOWN ON THE CONTRACT DOCUMENT;
- G. SALVAGE AND DELIVER TO THE ENGINEER ADDITIONAL ITEMS NOT SHOWN ON THE CONTRACT DOCUMENT;
- H. FURNISH AND INSTALL ADDITIONAL CLEAN BACKFILL MATERIAL NOT SHOWN ON THE CONTRACT DOCUMENT;
- I. PERFORM NON-DESTRUCTIVE TESTING AND GROUND-PENETRATION RADAR TESTING;
- J. REPAIR EXISTING FIRE PROTECTION SYSTEMS INCLUDING SPRINKLERS, FIRE STANDPIPES AND HYDRANTS;
- K. REPAIR, REPLACE OR RELOCATION OF UNDERGROUND UTILITIES INCLUDING HANDHOLES, DUCT BANK, PIPE/CONDUITS, AND LIGHT POLES NOT SHOWN ON THE CONTRACT DOCUMENT;
- L. CLEANING OF EXISTING STRUCTURES, FLOOR DRAINS AND STORM DRAINS INCLUDING CATCH BASINS AND DRAINAGE PIPES TO REMAIN AND NOT SHOWN ON THE CONTRACT DOCUMENT OR AS DIRECTED BY THE ENGINEER;
- M. REMOVAL OF ADDITIONAL EXISTING UNDERGROUND STORAGE TANKS AND/OR OIL WATER SEPARATORS NOT SHOWN ON THE CONTRACT DOCUMENT, INCLUDING CONNECTED PIPING;
- N. FURNISH AND INSTALL ASPHALT AND CONCRETE PAVEMENT NOT SHOWN ON THE CONTRACT DOCUMENTS;
- O. ADJUST TO FINISHED GRADE STRUCTURES/EQUIPMENT NOT SHOWN ON THE CONTRACT DRAWINGS;
- P. PATCH OR REPAIR PORTLAND CEMENT CONCRETE CRACKS OR SPALLS NOT SHOWN ON THE CONTRACT DOCUMENT;
- Q. DELINEATION WITH ADDITIONAL SOIL SAMPLES, TESTING AND STOCKPILING OF SOIL THAT CANNOT BE REUSED OFF-SITE AS SPECIFIED IN SOIL MANAGEMENT AND DISPOSAL;
- R. ADDITIONAL TRANSPORTATION AND DISPOSAL COST IN EXCESS OF THE COST TO TRANSPORT AND DISPOSE OF SOIL THAT MEETS THE CRITERIA IN SOIL MANAGEMENT.

"FIELD ORDERED WORK" SHALL BE COMPUTED IN THE SAME MANNER AS IS COMPENSATION FOR EXTRA WORK, INCLUDING ANY PERCENTAGE ADDITION TO COST, AS SET FORTH IN THE CLAUSE OF THE FORM OF CONTRACT ENTITLED, "COMPENSATION FOR EXTRA WORK". PERFORMANCE OF SUCH FIELD ORDERED WORK SHALL BE AS DIRECTED BY THE ENGINEER AND SHALL BE SUBJECT TO ALL PROVISIONS OF THE CONTRACT RELATING TO PERFORMANCE OF EXTRA WORK. COMPENSATION FOR SAID FIELD ORDERED WORK SHALL NOT BE CHARGED AGAINST THE TOTAL AMOUNT OF COMPENSATION AUTHORIZED FOR EXTRA WORK.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA
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STATE OF NEW YORK · VICTOR CHUNG · 106180 · LICENSED PROFESSIONAL ENGINEER

MICHAEL ROSS BARBAGALLO
NY Professional Engineering # 074593-1

No.	Date	Revision	Approved
1	04/18/24	ADDENDUM NO. 5 ELECTRICAL SERVICE - SHEET REVISED	T.B.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

GENERAL

Title

DYER DECK-OVERS

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Designed by	K. Phu
Drawn by	K. Phu
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-G0004
PID#	18982000

OCCUPANT LOAD SCHEDULE

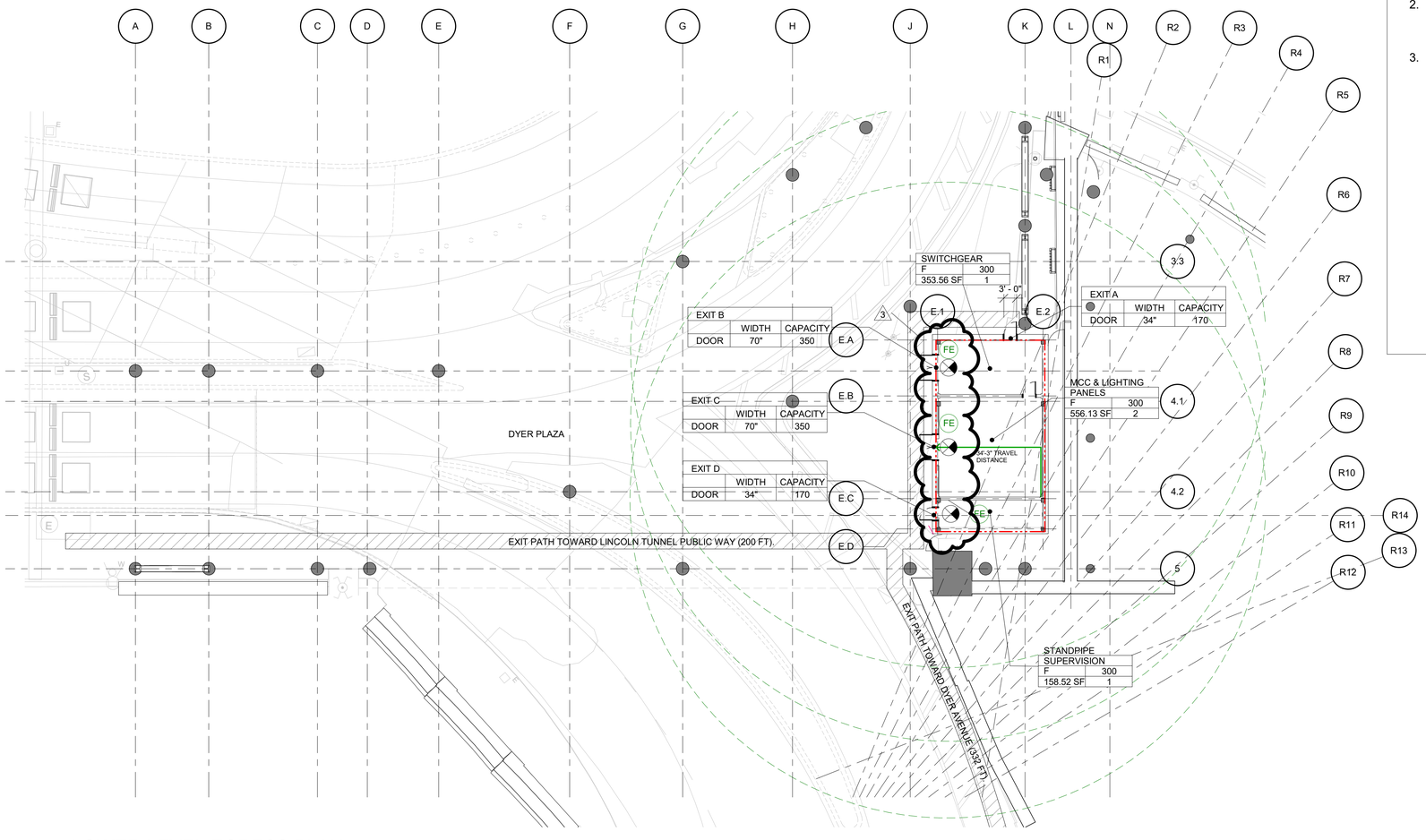
OCCUPANT LOAD - SERVICE BUILDING				
NAME	AREA	OCCUPANT GROUP	OCCUPANT LOAD FACTOR	OCCUPANT LOAD
MCC & LIGHTING PANELS	556 SF	F	300 SF	2
SWITCHGEAR	354 SF	F	300 SF	2
STANDPIPE SUPERVISION	159 SF	F	300 SF	1
TOTAL				5

EGRESS LEGEND

- PATH OF TRAVEL
- 3 HOUR RATED ENCLOSURE
- EXIT SIGN
- FE — FIRE EXTINGUISHER

GENERAL NOTES:

1. PER SECTION 7.16 OF NFPA 502 AS MODIFIED BY APPENDIX B OF THE NEW YORK CITY FIRE CODE THE EGRESS PATHWAY PORTION OF EMERGENCY EXITS MUST HAVE A MINIMUM CLEAR WIDTH OF 3.7 FEET.
2. PER NFPA 502, LOCATED AT EACH TUNNEL PORTAL ARE TRAFFIC CONTROL SIGNALS TO STOP THE FLOW OF TRAFFIC ENTERING TUNNELS DURING EMERGENCY SITUATIONS.
3. FIRE EXTINGUISHERS SHALL BE MULTIPURPOSE DRY CHEMICAL IN RED ENAMELED STEEL CONTAINER, UL RATED, 3A:40B:C, 6 POUNDS MAXIMUM WEIGHT.
   - A. MANUFACTURERS
     - a. SHIELD FIRE PROTECTION, KINGS MOUNTAIN NC.
     - b. KIDDE, MEBANE, NC.
     - c. FIRE-END & CROKER CORPORATION, ELMSFORD, NY.
   - B. SUBMITTALS
     - a. PRODUCT DATA FOR EACH TYPE OF PRODUCT. INCLUDE RATING AND CLASSIFICATION, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR THE FIRE EXTINGUISHER AND THE CABINET.
     - b. SHOP DRAWINGS: FOR FIRE PROTECTION CABINETS, INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS AND ATTACHMENTS TO OTHER WORK.



P 1 - LOWER LEVEL EGRESS PLAN

1/16" = 1'-0"

PORT AUTHORITY NY NJ

REGISTERED ARCHITECT LLOYD A. SIGAL 023169-1 STATE OF NEW YORK

No.	Date	Revision	Approved
3	04/18/24	Addendum No. 5 Electrical Service - Sheet Revised	
2	03/28/24	Addendum No. 3 VFD Modifications - Sheet Revised	
1	03/15/24	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

ENGINEERING DEPARTMENT

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

Title

DYER DECK-OVERS

DD-EGRESS/LIFESAFETY PLAN - LOWER DECK

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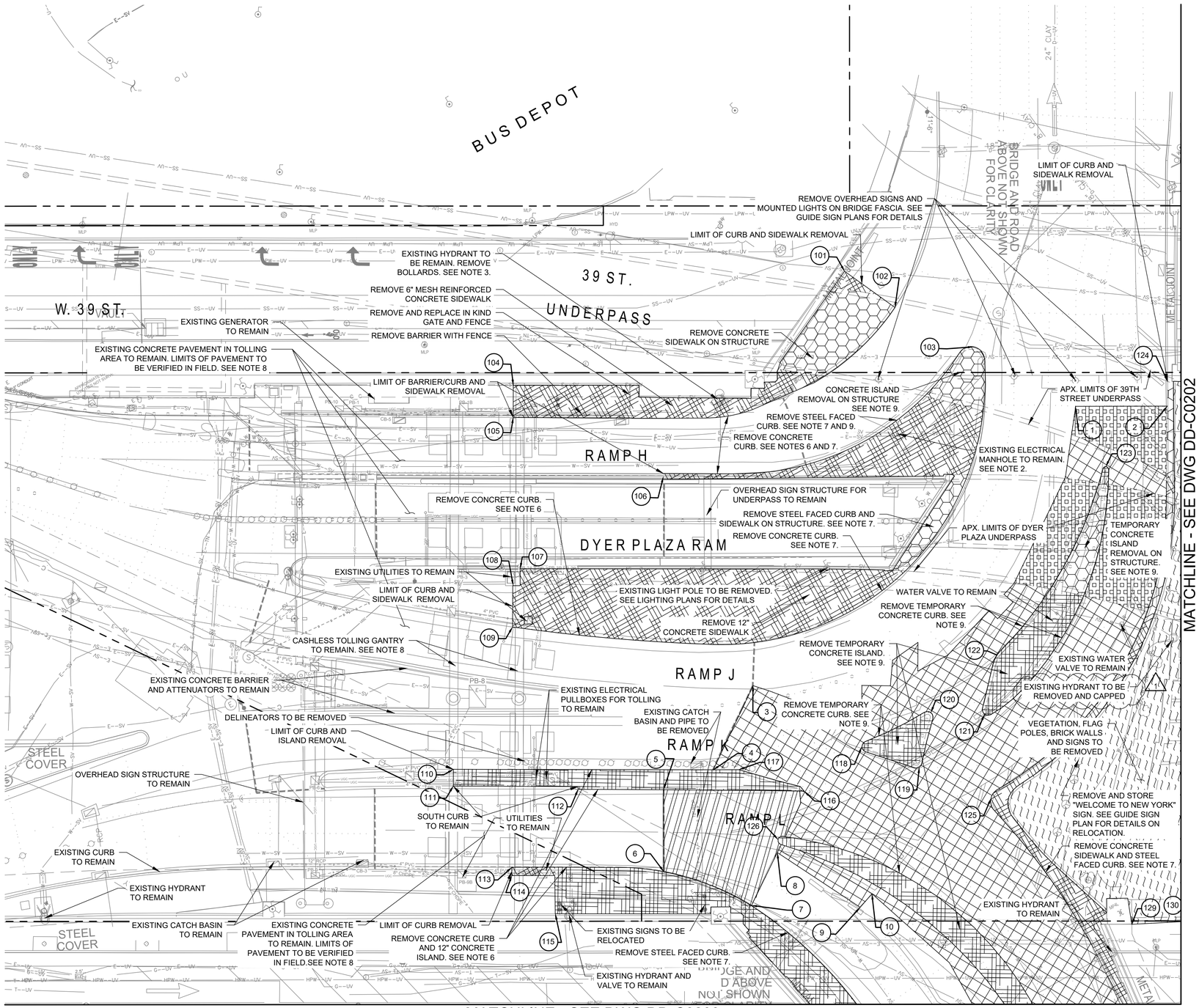
Designed by	-
Drawn by	JW
Checked by	GM
Date	03/28/24
Contract Number	MCP-254.254
Drawing Number	DD-EG1001
	PID # 18982000

N



0 20 40
SCALE IN FEET

REMOVAL NOTES (APPLICABLE FOR SHEET DD-C0201-DD-C0204)

1. FOR ALL UTILITY REMOVALS AND RELOCATIONS, REFER TO APPROPRIATE UTILITY AND DRAINAGE DRAWINGS.
2. MODIFY EXISTING UTILITIES VERTICALLY. ADJUST RIM ELEVATION TO FINISHED GRADE. SEE GRADING PLAN FOR DETAILS.
3. MODIFY EXISTING HYDRANT VERTICALLY TO ALLOW FOR ACCESS OVER BARRIER. BASED UPON FIELD CONDITIONS OF HYDRANT, CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR VERTICAL MODIFICATION TO E.O.R.
4. SEE DRAINAGE PLANS FOR MODIFICATIONS TO EXISTING DRAINAGE ON LOWER LEVEL ROADWAYS.
5. REMOVAL PLANS SHALL BE COORDINATED WITH REMOVALS THAT ARE NEEDED FOR CONSTRUCTION SEQUENCING
6. FOR CURB REMOVAL WITHIN OVERHEAD TOLLING AREA, REMOVE CURBING WITHOUT DISRUPTING CONCRETE PADS. SEE DETAIL ON DD-C0601 FOR CURB REMOVAL WITHOUT IMPACTING EXISTING PAVEMENT.
7. FOR CURB REMOVAL OUTSIDE OF OVERHEAD TOLLING AREA, REMOVE CURB WITH MINIMAL IMPACT TO EXISTING CONCRETE PAVEMENT SLABS THAT ARE TO REMAIN. IF DAMAGE OCCURS TO THE SLABS OR THE EXISTING LONGITUDINAL JOINT ALONG PROPOSED PAVEMENT, REPAIR PORTION OF SLAB AS PER DETAIL ON DWG. DD-C0601.
8. REMOVALS SHALL NOT INTERFERE WITH CASHLESS TOLLING OPERATIONS OR EQUIPMENT. CONTRACTOR TO PROTECT EQUIPMENT INCLUDING PAVEMENT LOOPS IN CONCRETE PADS AT ALL TIMES.
9. REMOVALS SHOWN ARE BASED UPON ASSUMED COMPLETION OF WORK ORDER No. 22 (AET CASHLESS TOLLING PROJECT). CERTAIN CURB LIMITS, ISLANDS, AND SIDEWALKS SHOWN ARE NOT SURVEYED. SEE WORK ORDER No. 22 FOR DETAILS ON TEMPORARY AND PERMANENT SIDEWALKS, ISLANDS, AND CURBS.
10. FOUNDATIONS AND TUNNEL WALL THICKNESSES SHOWN ARE BASED ON RECORD DOCUMENTS PROVIDED BY THE PORT AUTHORITY. ADDITIONAL FIELD VERIFICATION REQUIRED.

LEGEND:

- REMOVE FULL DEPTH PAVEMENT
- REMOVE AND REPLACE CONCRETE PAVEMENT
- REMOVE CONCRETE PAVEMENT ON STRUCTURE
- CONCRETE SIDEWALK/ISLAND REMOVAL
- CONCRETE SIDEWALK/ISLAND REMOVAL ON STRUCTURE
- VEGETATION AREA REMOVAL

Sheet 26 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/19/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

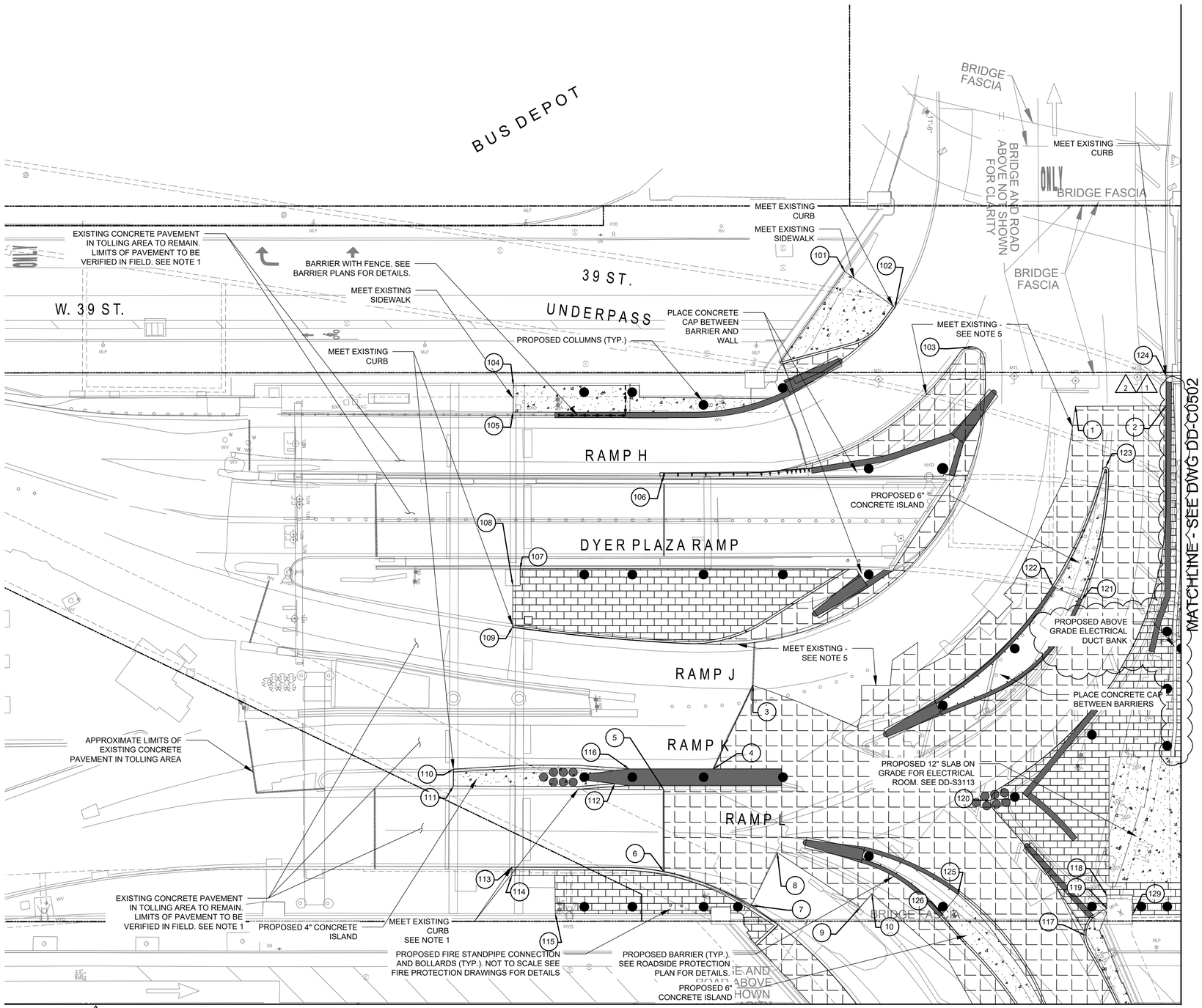
Title

DYER DECK-OVERS

REMOVALS PLAN
LOWER LEVEL
SHEET 1

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent. 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: 2 Montgomery Street - 1st Floor, Jersey City, NJ 07302 or the office of the Chief Procurement Officer, 4 World Trade Center, 21st Floor, New York, NY 10007.
It is a violation of law for any person to alter a document in any way, unless acting under the direction of a licensed professional engineer or registered architect. If this document bearing the seal of an engineer/architect is altered, the altering engineer/architect shall affix to the document their seal and the notation "altered by" followed by their signature and the date of such alteration, and a specific description of the alteration.

Designed by	M. O'HARA
Drawn by	M. O'HARA
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0201
PID#	18982000



PAVING NOTES (APPLICABLE FOR SHEET DD-C0501 - DDC0504)

1. PROPOSED PAVING SHALL NOT INTERFERE WITH CASHLESS TOLLING OPERATIONS OR EQUIPMENT. CONTRACTOR TO PROTECT EQUIPMENT INCLUDING PAVEMENT LOOPS IN CONCRETE PADS AT ALL TIMES.
2. PAVING HATCHES SHOWN ARE BASED UPON ASSUMED COMPLETION OF WORK ORDER No. 22 (AET CASHLESS TOLLING PROJECT). CERTAIN CURB LIMITS, ISLANDS, AND SIDEWALKS SHOWN ARE NOT SURVEYED. SEE WORK ORDER No. 25 FOR DETAILS ON TEMPORARY AND PERMANENT SIDEWALKS, ISLANDS, AND CURBS.
3. SEE DD-C0601 FOR PAVEMENT TYPE DETAILS.
4. SEE CURB PLAN FOR DETAILS ON PROPOSED CURB TYPES AND LOCATIONS.
5. IN AREAS WHERE PROPOSED CONCRETE PAVEMENT IS TO MEET EXISTING CONCRETE PAVEMENT, THE ENGINEER SHALL INSPECT THE EXISTING PAVEMENT EDGE TO ASSESS THE CONDITION OF THE PAVEMENT AND DETERMINE IF REPAIRS ARE REQUIRED TO ADEQUATELY FORM THE LONGITUDINAL JOINT BETWEEN EXISTING AND PROPOSED CONCRETE PAVEMENT SLABS.
6. IN AREAS WHERE PROPOSED CONCRETE PAVEMENT IS TO MEET EXISTING CONCRETE PAVEMENT, ELEVATIONS SHALL MATCH THE EXISTING. CONTRACTOR TO FIELD VERIFY ELEVATIONS.
7. EXTENTS OF PAVEMENT ARE APPROXIMATE TO THE NEAREST EDGE OF EXISTING CONCRETE SLAB. CONTRACTOR TO VERIFY IN FIELD.

LEGEND:

- PAVEMENT TYPE 1
- 6" CONCRETE SIDEWALK/ ISLAND
- 12" DISABLED VEHICLE PULL OVER AREA

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NY Professional Engineering # 093233

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

PAVING PLAN LOWER LEVEL SHEET 1

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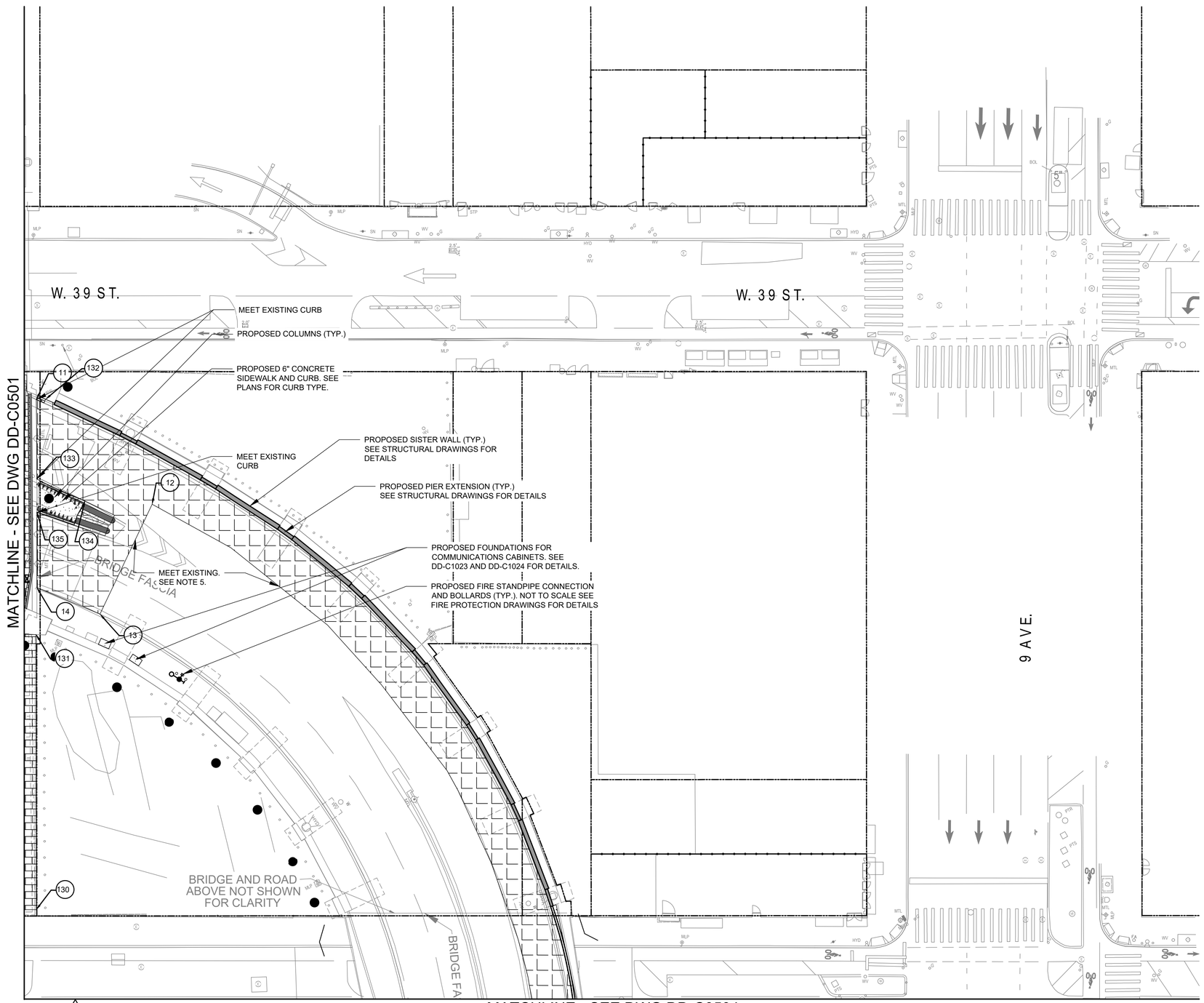
Designed by	K. PHU
Drawn by	K. PHU
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0501
PID#	18982000



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PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

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KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

PAVING PLAN LOWER LEVEL SHEET 2

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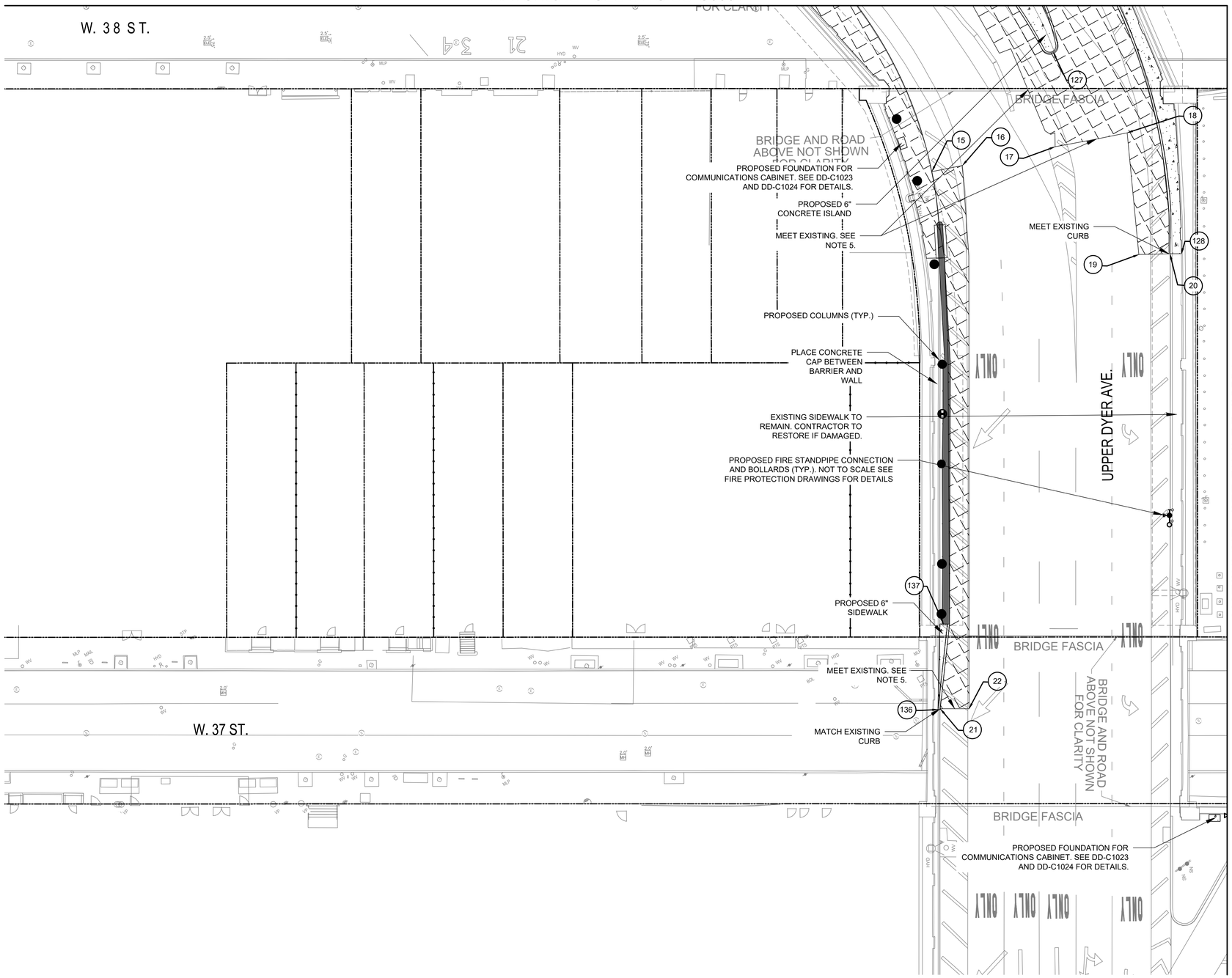
Designed by	K. PHU
Drawn by	K. PHU
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0502
PID#	18982000



0 20 40
SCALE IN FEET

1

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KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

PAVING PLAN LOWER LEVEL SHEET 3

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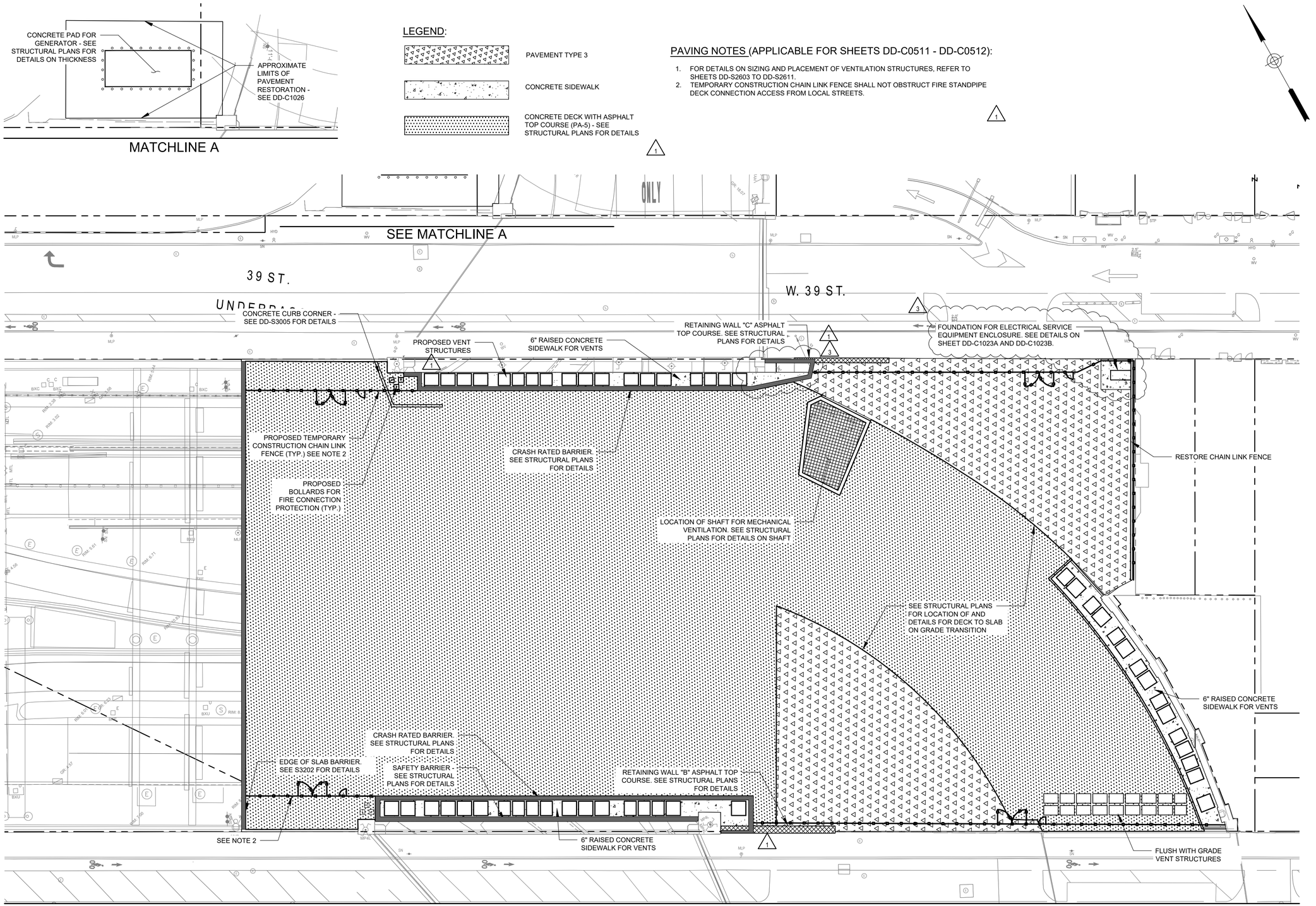
Designed by	K. PHU
Drawn by	K. PHU
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0503
PID#	18982000



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AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
3	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
2	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

PAVING PLAN UPPER LEVEL SHEET 1

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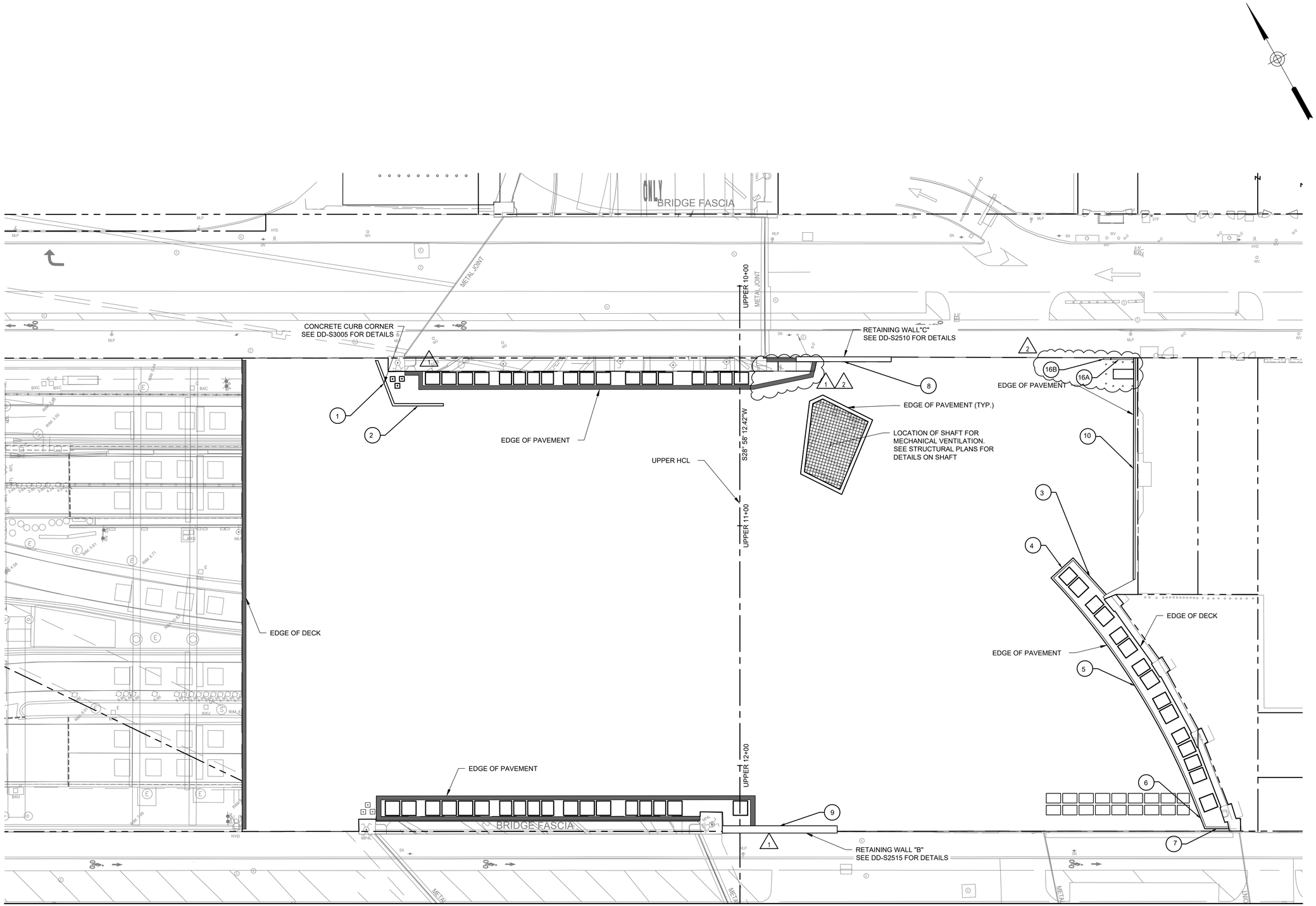
Designed by	K. PHU
Drawn by	K. PHU
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0511
PID#	18982000



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ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

CURB LOCATION PLAN UPPER LEVEL SHEET 1

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Designed by	K. PHU
Drawn by	K. PHU
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0531
PID#	18982000

CURB TABLE - UPPER ALIGNMENT - SHEET DD-C0531				
CURB NO.	START STATION/OFFSET	END STATION/OFFSET	RADIUS	CURB TYPE
1	STA. UPPER 10+31.01 OFF. 151.94	STA. UPPER 13+50.00 OFF. 144.74	N/A	CURB CORNER
2	STA. UPPER 10+50.00 OFF. 144.74	STA. UPPER 13+50.00 OFF. 123.59	N/A	CURB CORNER
3	STA. UPPER 11+28.69 OFF. -152.76	STA. UPPER 11+14.84 OFF. -140.23	N/A	6" STEEL FACED CURB
4	STA. UPPER 11+13.46 OFF. -138.99	STA. UPPER 11+21.81 OFF. -129.76	N/A	6" STEEL FACED CURB
5	STA. UPPER 11+23.16 OFF. -131.03	STA. UPPER 12+17.77 OFF. -190.43	300'	6" STEEL FACED CURB
6	STA. UPPER 12+17.77 OFF. -190.43	STA. UPPER 12+26.48 OFF. -193.83	N/A	6" STEEL FACED CURB
7	STA. UPPER 12+26.48 OFF. -193.83	STA. UPPER 12+26.47 OFF. -203.93	N/A	6" STEEL FACED CURB
8	STA. UPPER 10+30.50 OFF. -23.53	STA. UPPER 10+30.60 OFF. -63.13	N/A	RETAINING WALL
9	STA. UPPER 12+26.70 OFF. 7.28	STA. UPPER 12+26.70 OFF. -40.55	N/A	RETAINING WALL
10	STA. UPPER 10+30.05 OFF. -164.25	STA. UPPER 11+22.38 OFF. -163.91	N/A	6" STEEL FACED CURB
16A	STA. UPPER 10+30.05 OFF. -164.25	STA. UPPER 10+30.02 OFF. -154.75	N/A	6" STEEL FACED CURB
16B	STA. UPPER 10+30.02 OFF. -154.75	STA. UPPER 10+30.02 OFF. -151.75	N/A	END OF CURB TRANSITION

1

CURB TABLE - UPPER ALIGNMENT - SHEET DD-C0532				
CURB NO.	START STATION/OFFSET	END STATION/OFFSET	RADIUS	CURB TYPE
11	STA. UPPER 12+88.94 OFF. -213.54	STA. UPPER 12+88.98 OFF. -202.80	N/A	6" STEEL FACED CURB
12	STA. UPPER 12+88.98 OFF. -202.80	STA. UPPER 14+13.17 OFF. -192.57	750'	6" STEEL FACED CURB
13	STA. UPPER 13+13.17 OFF. -192.57	STA. UPPER 14+69.44 OFF. -183.16	N/A	6" STEEL FACED CURB
14	STA. UPPER 14+69.44 OFF. -183.16	STA. UPPER 14+83.95 OFF. -183.17	N/A	6" STEEL FACED CURB
15	STA. UPPER 14+83.95 OFF. -183.17	STA. UPPER 14+83.95 OFF. -191.75	N/A	6" STEEL FACED CURB

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK
KEVIN PHU
093233
LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/19/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

CURB LOCATION TABLE
UPPER LEVEL

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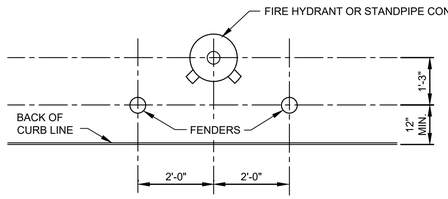
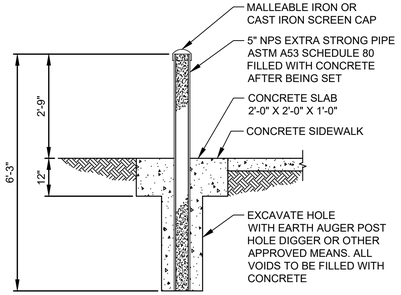
Designed by	K. PHU
Drawn by	K. PHU
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0533
PID#	18982000



PLAN



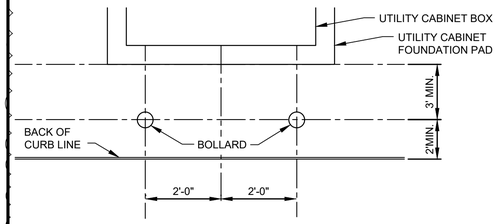
ELEVATION

STANDARD HYDRANT/STANDPIPE BOLLARD

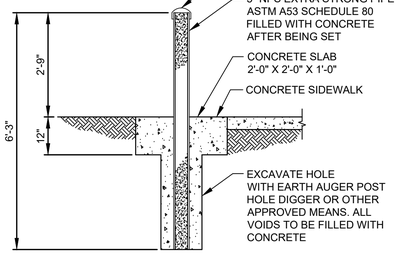
N.T.S.

NOTE:

ALL PARTS OF HYDRANT FENDER SHALL BE CLEANED IN ACCORDANCE WITH THE PAINT MANUFACTURER'S PRINTED INSTRUCTIONS AND COATED ON THE OUTSIDE WITH ONE COAT OF ZINC RICH EPOXY POLYAMIDE PRIMER AND ONE COAT OF ALUMINUM COLORED LOW GLOSS EPOXY ENAMEL ABOVE THE GROUND.



PLAN



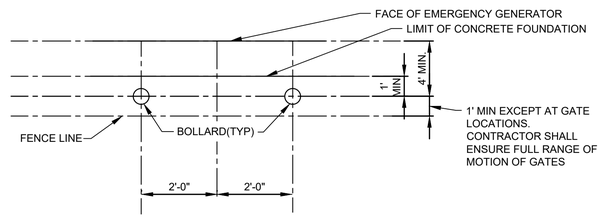
ELEVATION

STANDARD UTILITY CABINET BOLLARD

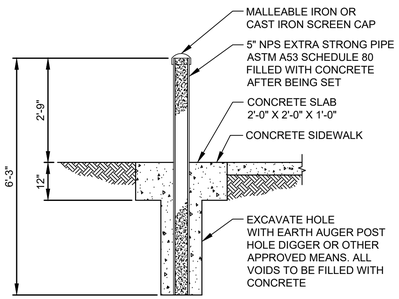
N.T.S.

NOTE:

1. ALL PARTS OF BOLLARD SHALL BE CLEANED IN ACCORDANCE WITH THE PAINT MANUFACTURER'S PRINTED INSTRUCTIONS AND COATED ON THE OUTSIDE WITH ONE COAT OF ZINC RICH EPOXY POLYAMIDE PRIMER AND ONE COAT OF ALUMINUM COLORED LOW GLOSS EPOXY ENAMEL ABOVE THE GROUND.
2. CONTRACTOR TO ENSURE PLACEMENT OF BOLLARDS SHALL NOT INTERFERE WITH THE OPENING OF CABINET DOORS.



PLAN



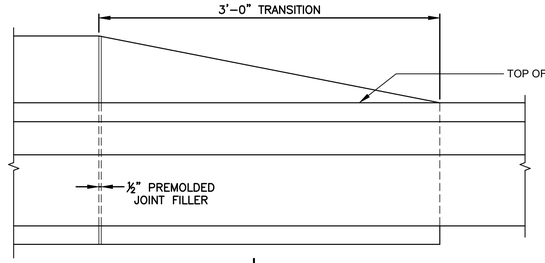
ELEVATION

STANDARD EMERGENCY GENERATOR BOLLARD

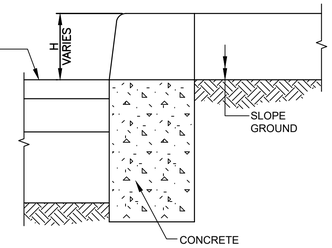
N.T.S.

NOTE:

ALL PARTS OF BOLLARD SHALL BE CLEANED IN ACCORDANCE WITH THE PAINT MANUFACTURER'S PRINTED INSTRUCTIONS AND COATED ON THE OUTSIDE WITH ONE COAT OF ZINC RICH EPOXY POLYAMIDE PRIMER AND ONE COAT OF ALUMINUM COLORED LOW GLOSS EPOXY ENAMEL ABOVE THE GROUND.



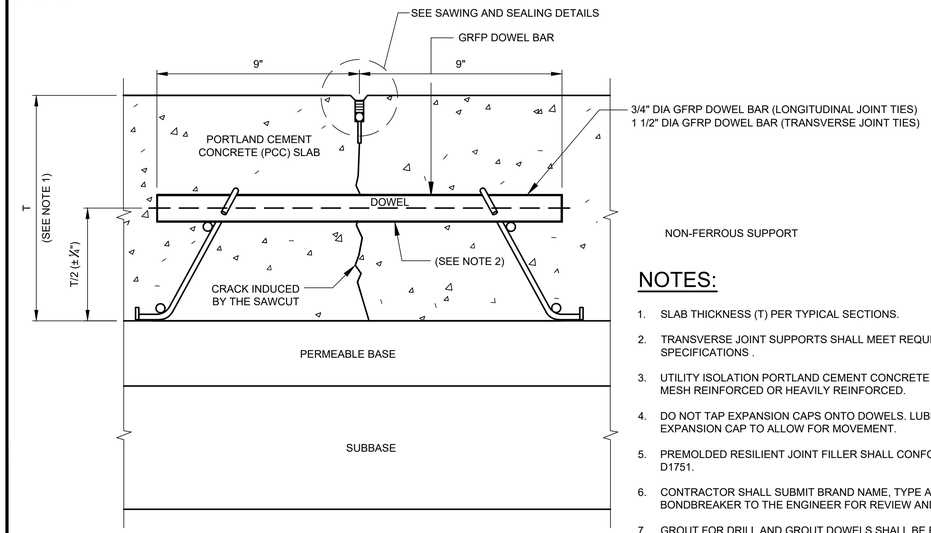
ELEVATION



SECTION

END OF CURB TREATMENT

N.T.S.

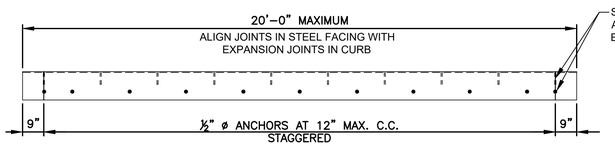


CONTRACTION JOINT

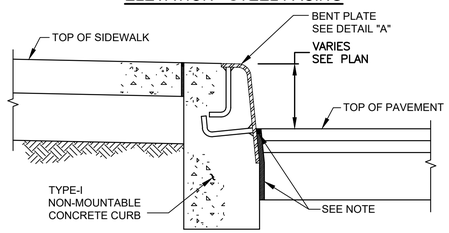
N.T.S.

NOTES:

1. SLAB THICKNESS (T) PER TYPICAL SECTIONS.
2. TRANSVERSE JOINT SUPPORTS SHALL MEET REQUIREMENTS OF CONTRACT SPECIFICATIONS .
3. UTILITY ISOLATION PORTLAND CEMENT CONCRETE (PCC) PAVEMENT IS EITHER WIRE MESH REINFORCED OR HEAVILY REINFORCED.
4. DO NOT TAP EXPANSION CAPS ONTO DOWELS. LUBRICATE END OF BAR INSIDE EXPANSION CAP TO ALLOW FOR MOVEMENT.
5. PREMOLDED RESILIENT JOINT FILLER SHALL CONFORM TO REQUIREMENTS OF ASTM D1751.
6. CONTRACTOR SHALL SUBMIT BRAND NAME, TYPE AND PROPERTIES OF BONDBREAKER TO THE ENGINEER FOR REVIEW AND APPROVAL.
7. GROUT FOR DRILL AND GROUT DOWELS SHALL BE FROM THE NYSDOT MATERIAL LIST, SECTION 701-07. DIAMETER OF DRILLED HOLE SHALL BE AS REQUIRED BY THE GROUT MANUFACTURER.



ELEVATION - STEEL FACING



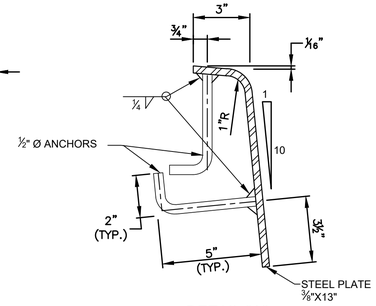
ROADWAY, CURB AND SIDEWALK

STEEL FACED CURB-TYPE SF

060.004 SFCURB

NOTE:

PROVIDE ½" x ½" JOINT SEALANT AND ½" PREMOLDED JOINT FILLER WHEN CONCRETE CURB IS PLACED AGAINST RIGID PAVEMENT



DETAIL "A"

NOTES:

1. ½" Ø X 5" LONG HEADED ANCHOR STUDS (GRANULAR OR SOLID FLUX FILLED) MAY BE SUBSTITUTED FOR ANCHORS SHOWN.
2. STEEL PLATE SHALL MEET ASTM A-36.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA
WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

CIVIL DETAILS SHEET 2

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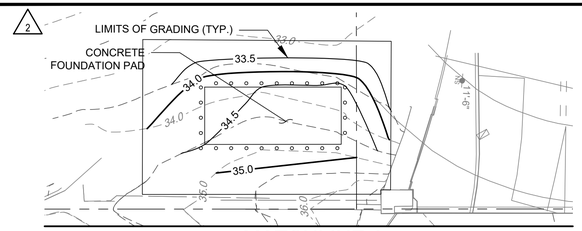
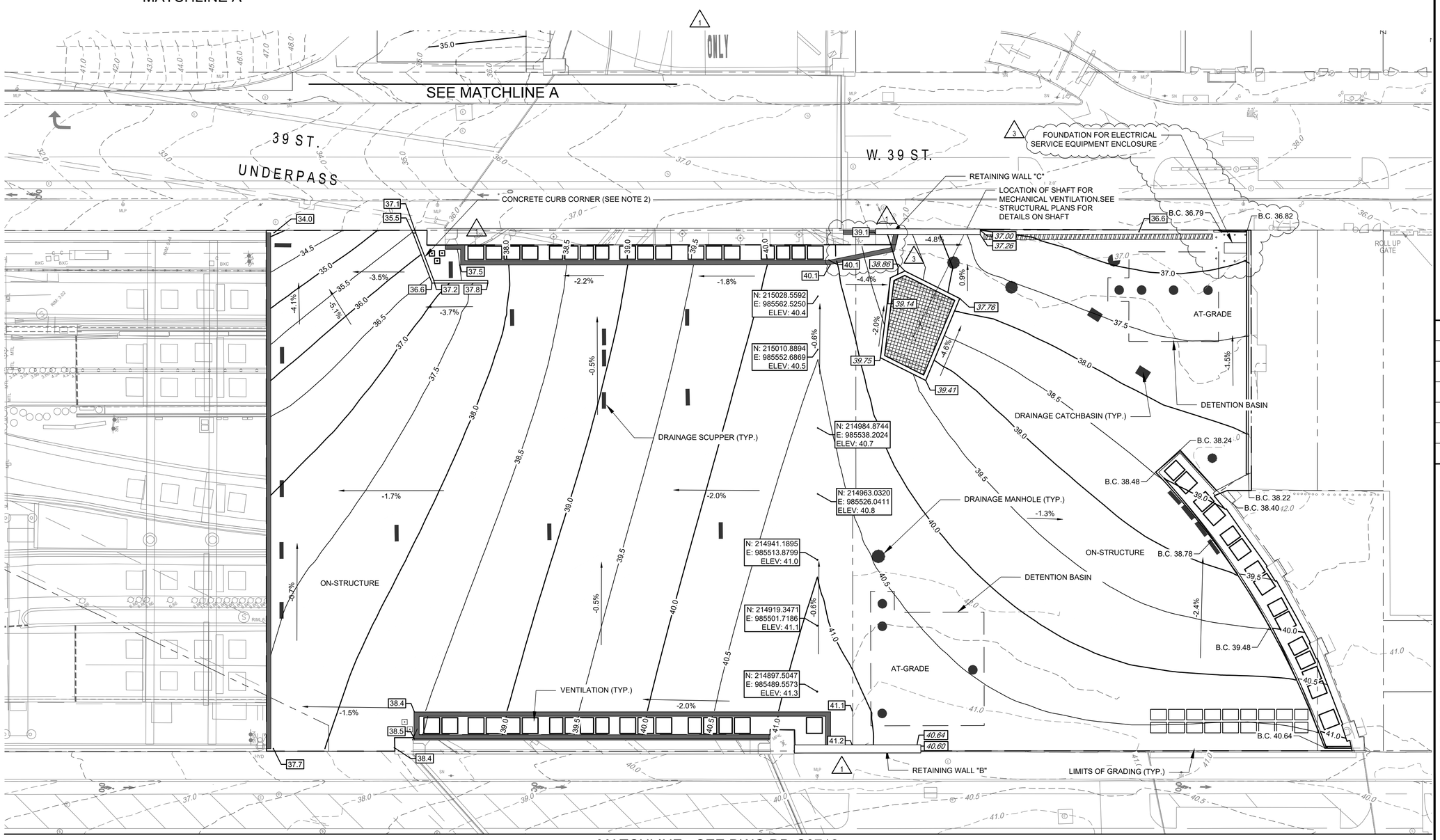
Designed by	M. O'HARA
Drawn by	M. O'Hara
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0602
PID#	18982000





0 20 40
SCALE IN FEET

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
3	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
2	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

GRADING PLAN UPPER LEVEL SHEET 1

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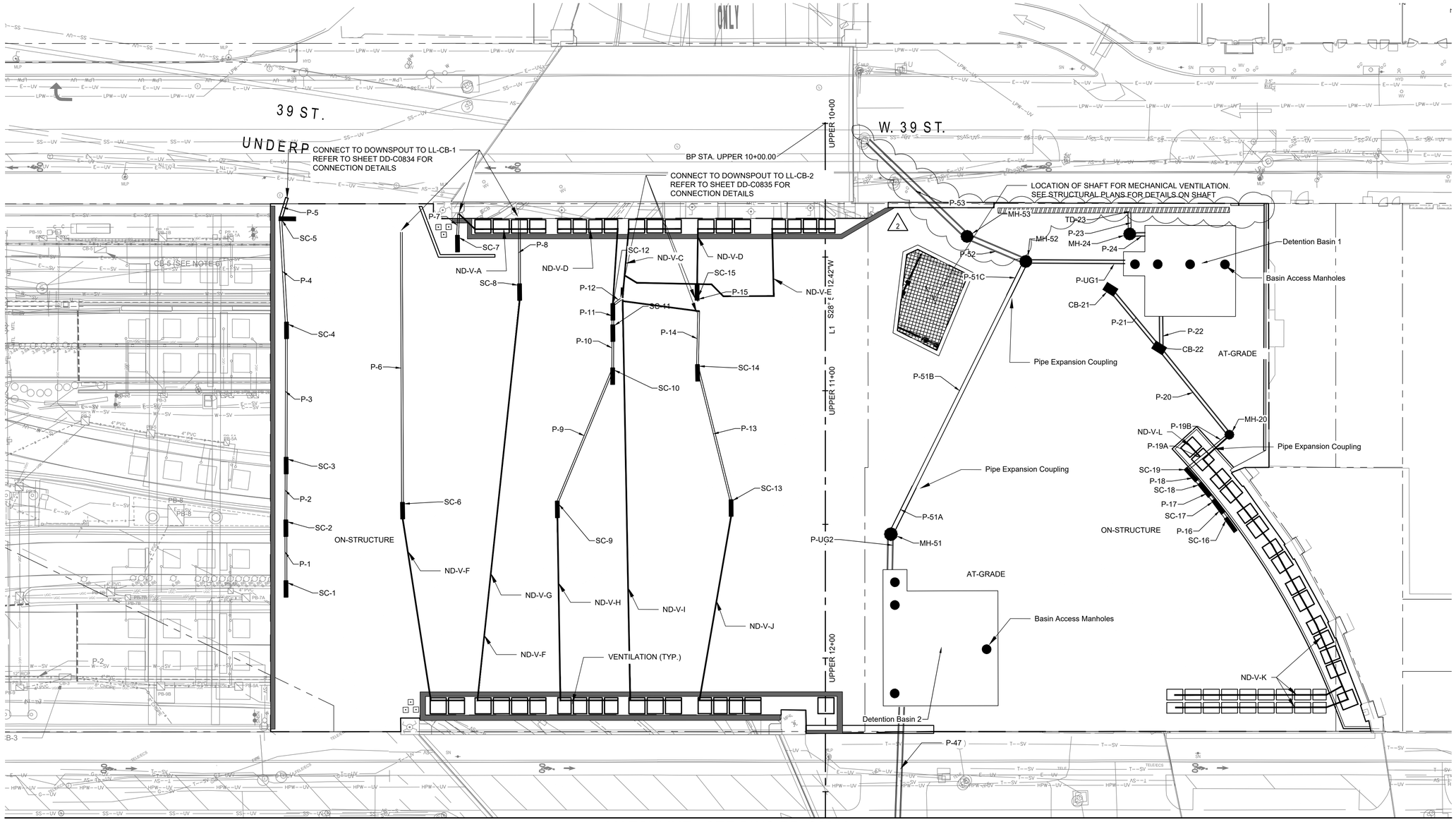
Designed by	B. van Beek
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0711
PID#	18982000

NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. AT GRADE CATCH BASINS TO INCLUDE VAPOR TIGHT TRAP FOR FLOATABLE DEBRIS CONTAINMENT.
3. REFER TO STRUCTURAL DRAWINGS FOR DECK PIPE SUPPORT AND DOWNSPOUT DETAILS.
4. REFER TO CIVIL DRAWING DD-C0833 FOR EXPANSION COUPLING DETAIL.
5. REFER TO STRUCTURAL DRAWINGS DD-S3101, DD-S3102, AND DD-S3103 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 1.
6. REFER TO STRUCTURAL DRAWINGS DD-S3104, DD-S3105, AND DD-S3106 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 2.
7. REFER TO CIVIL DRAWING DD-C01025 FOR VENTILATOR DETAIL.
8. PIPING WITH DESIGNATION "ND-V" IS THE PIPING REQUIRED TO DRAIN THE VENTILATOR BOXES, PROVIDED PATHS ARE DIAGRAMMATIC. CONTRACTOR IS TO COORDINATE WITH VENTILATOR MANUFACTURER TO DETERMINE FINAL LAYOUT OF THE PIPING. LAYOUT IS TO BE COORDINATED WITH THE FINAL SELECTED VENTILATOR. CONTRACTOR SHALL SUBMIT PIPE ROUTING AND SHOP DRAWINGS FOR APPROVAL. DRAINAGE ELEMENTS AND ASSOCIATED SUPPORTS FOR VENTILATOR BOXES SHALL COMPLY WITH SPECIFICATION 334170 BRIDGE DRAINAGE SYSTEM OR AN ALTERNATIVE PROPOSED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

LEGEND

VENTILATION DRAINAGE



MATCHLINE - SEE DWG DD-C0812

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SCALE IN FEET

Sheet 74 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · VICTOR CHANG · 106180 · LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

DRAINAGE PLAN
UPPER LEVEL
SHEET 1

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Designed by	S. Molina
Drawn by	B. van Beek
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0811
PID#	18982000

NOTES:

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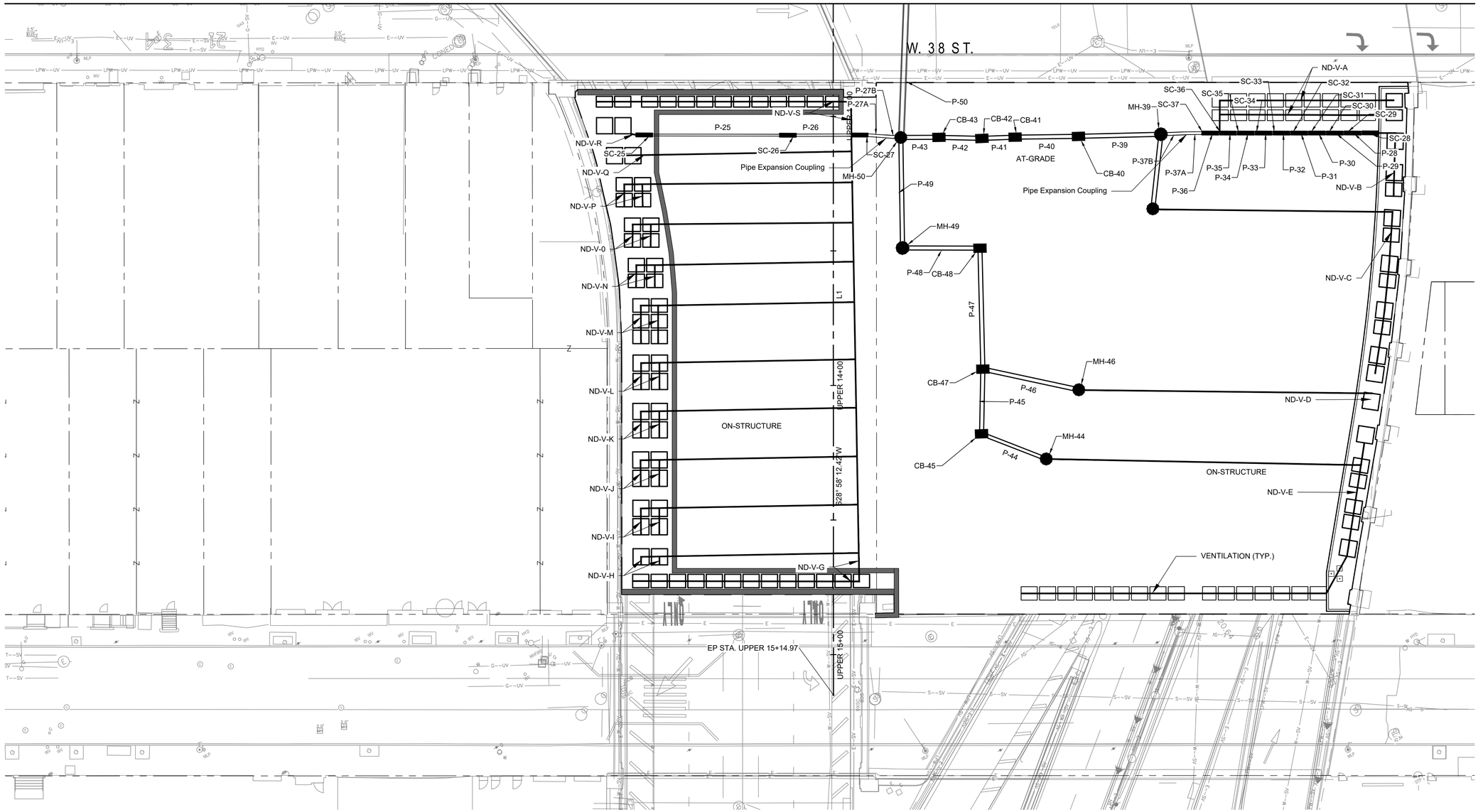
3. REFER TO STRUCTURAL DRAWINGS FOR DECK PIPE SUPPORT AND DOWNSPOUT DETAILS.
4. REFER TO CIVIL DRAWING DD-C0833 FOR EXPANSION COUPLING DETAIL.
5. REFER TO CIVIL DRAWING DD-C0102S FOR VENTILATOR DETAIL.
6. PIPING WITH DESIGNATION "ND-V" IS THE PIPING REQUIRED TO DRAIN THE VENTILATOR BOXES, PROVIDED PATHS ARE DIAGRAMMATIC. CONTRACTOR IS TO COORDINATE WITH VENTILATOR MANUFACTURER TO DETERMINE FINAL LAYOUT OF THE PIPING. LAYOUT IS TO BE COORDINATED WITH THE FINAL SELECTED VENTILATOR. CONTRACTOR SHALL SUBMIT PIPE ROUTING AND SHOP DRAWINGS FOR APPROVAL. DRAINAGE ELEMENTS AND ASSOCIATED SUPPORTS FOR VENTILATOR BOXES SHALL COMPLY WITH SPECIFICATION 334170 BRIDGE DRAINAGE SYSTEM OR AN ALTERNATIVE PROPOSED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

2

1

MATCHLINE - SEE DWG DD-C0811



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SCALE IN FEET

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK
VICTOR CHANG
106180
LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

DRAINAGE PLAN UPPER LEVEL SHEET 2

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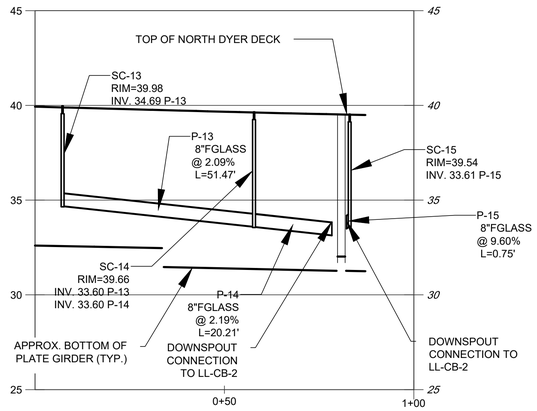
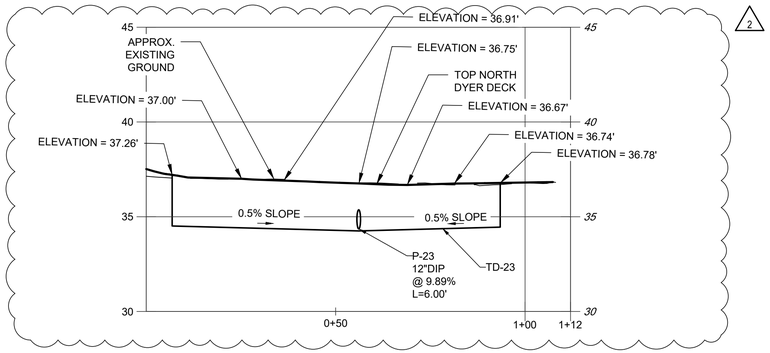
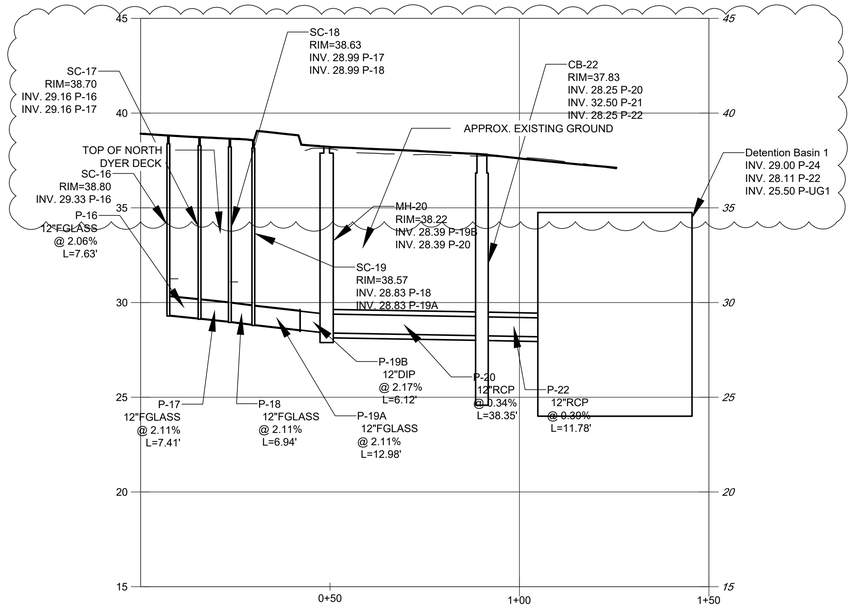
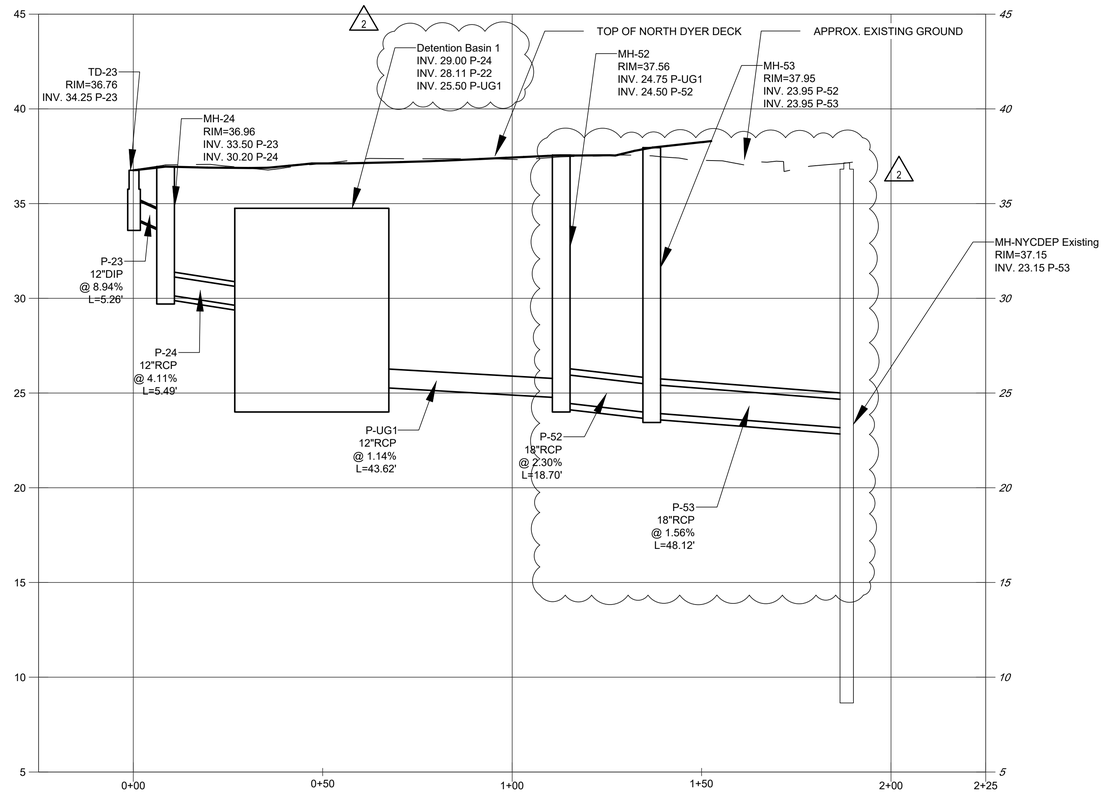
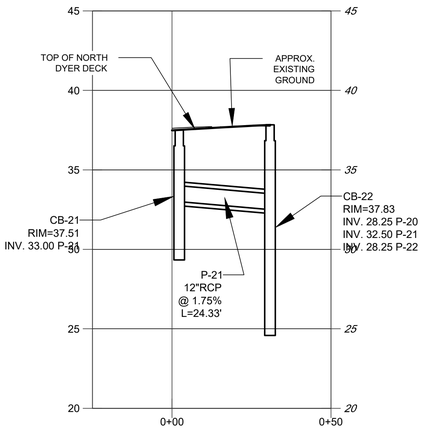
Designed by	S. Molina
Drawn by	B. van Beek
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0812
PID#	18982000











NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS DD-S3101, DD-S3102, AND DD-S3103 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 1.

VERT 0 8 16 SCALE IN FEET

HOR 0 20 40 SCALE IN FEET

Sheet 77 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · VICTOR CHANG · 106180 · LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

DRAINAGE PROFILES SHEET 2

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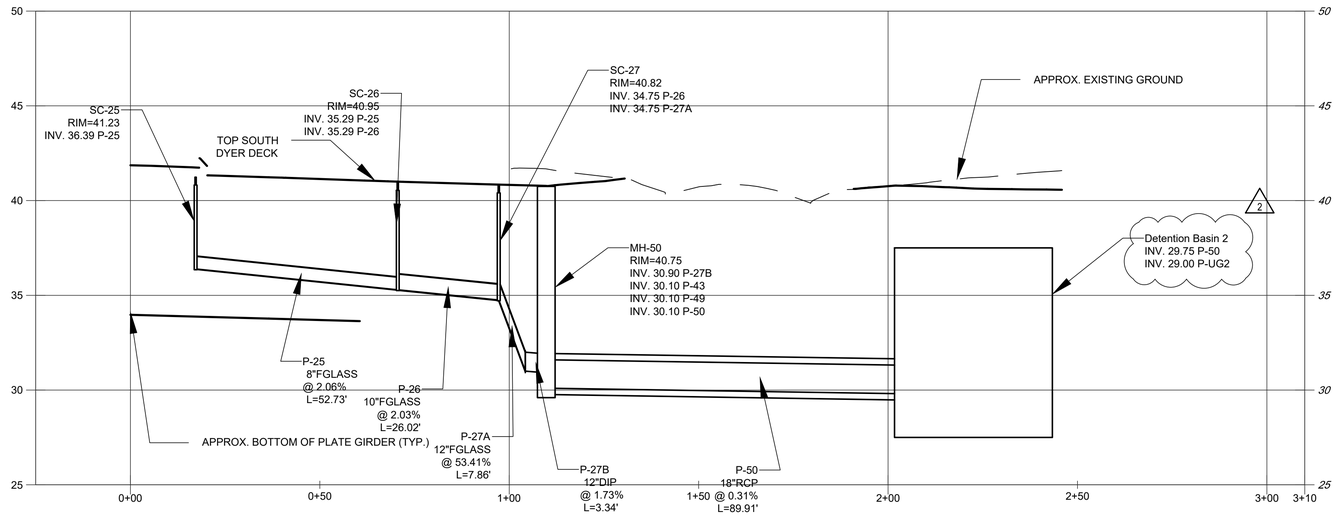
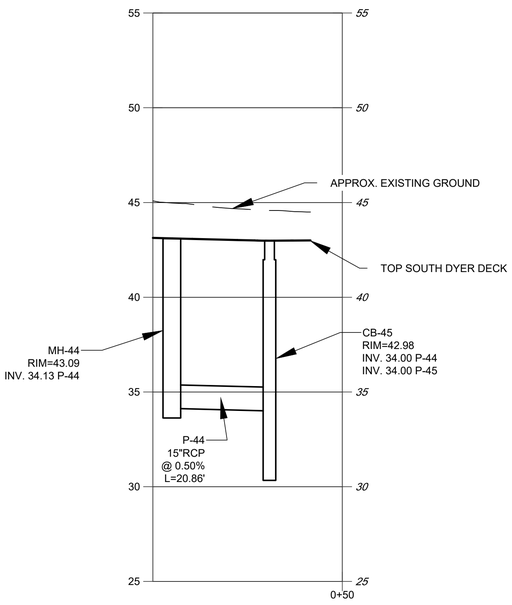
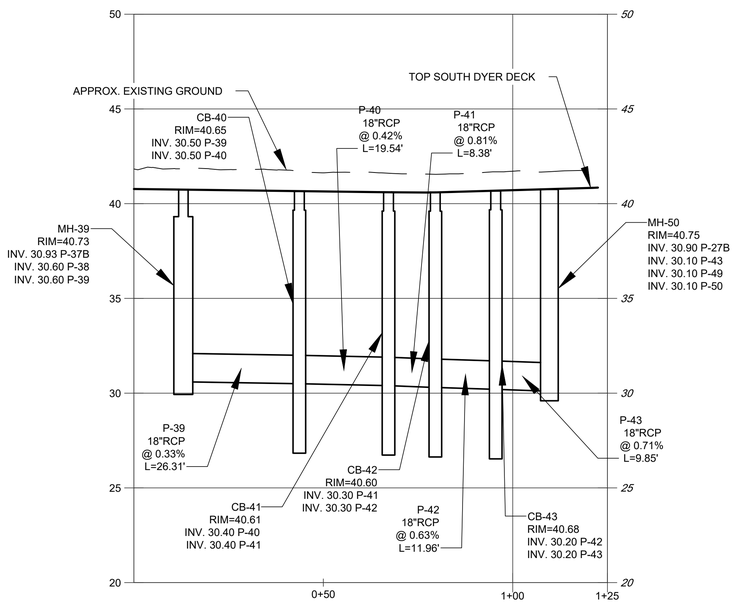
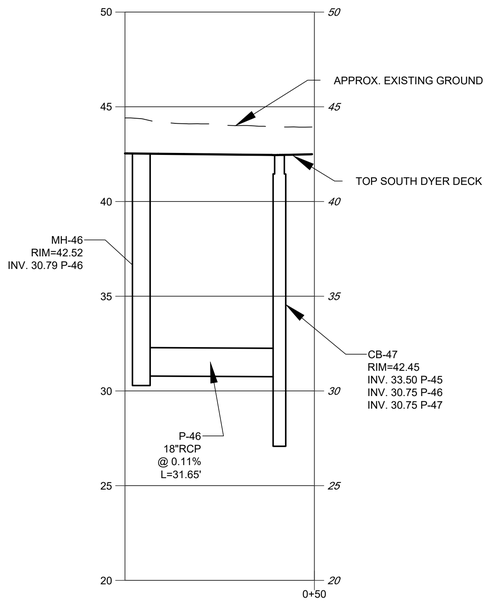
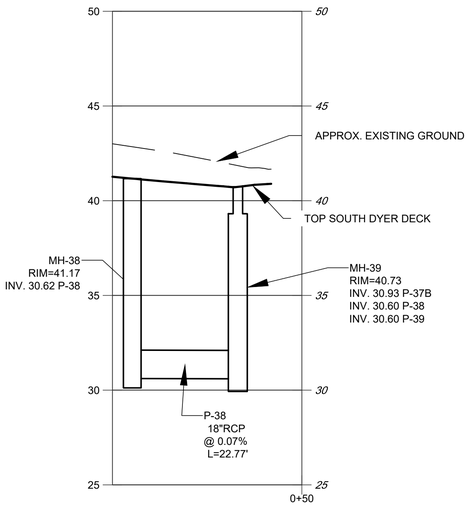
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0816
PID#	18982000











NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS DD-S3104, DD-S3105, AND DD-S3106 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 2.

VERT 0 8 16 SCALE IN FEET

HOR 0 20 40 SCALE IN FEET

1

Sheet 78 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK VICTOR CHANG 106180 LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

DRAINAGE PROFILES SHEET 3

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent. 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: 2 Montgomery Street - 1st Floor, Jersey City, NJ 07302 or the office of the Chief Procurement Officer, 4 World Trade Center, 21st Floor, New York, NY 10007.
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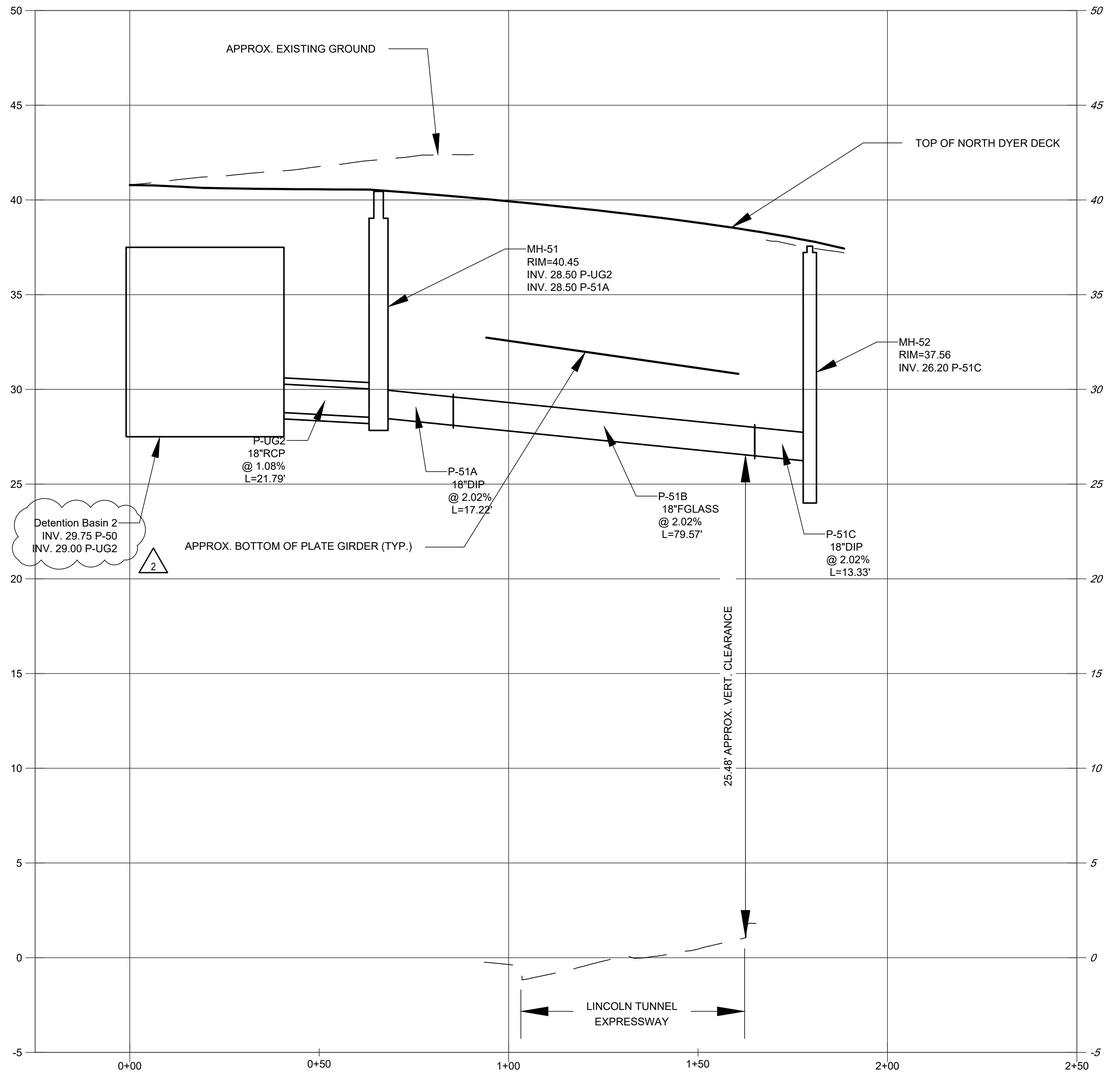
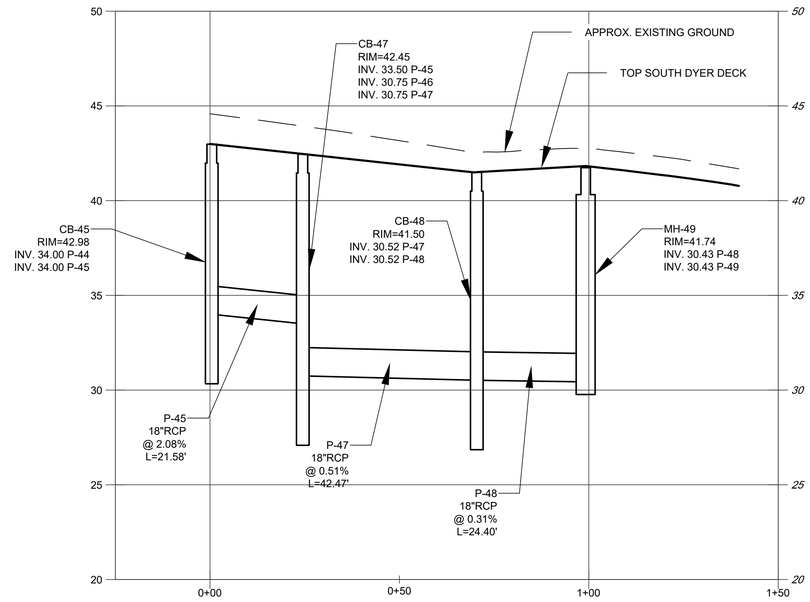
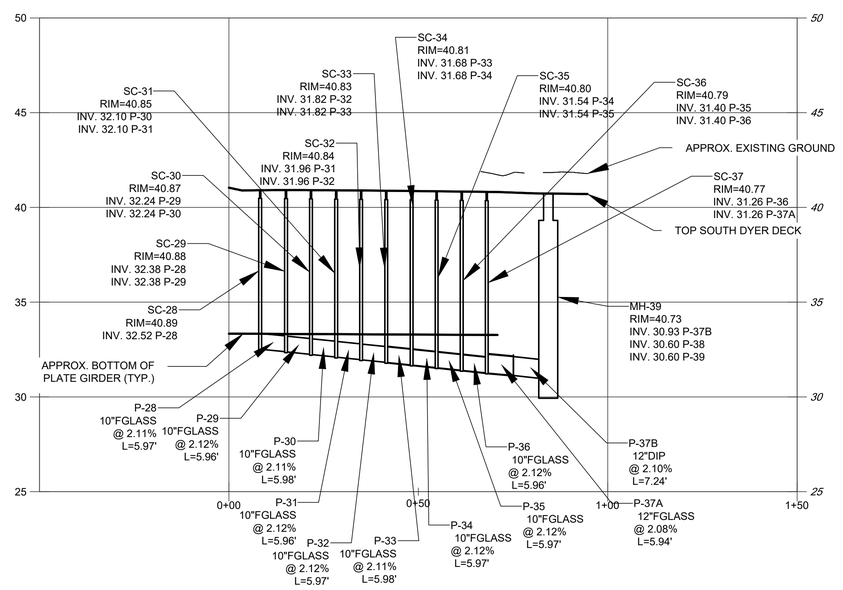
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0817
PID#	18982000







NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS DD-S3104, DD-S3105, AND DD-S3106 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 2.

VERT 0 8 16 SCALE IN FEET

HOR 0 20 40 SCALE IN FEET

1

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK VICTOR CHANG 106180 LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

DRAINAGE PROFILES SHEET 4

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Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0818
PID#	18982000

NOTES:

1. REFER TO STRUCTURAL DRAWINGS FOR DECK PIPE SUPPORT AND DOWNSPOUT DETAILS
2. REFER TO CIVIL DRAWING DD-C0833 FOR DOWNSPOUT CONNECTION TO EXISTING DRAINAGE STRUCTURE DETAIL.

STRUCTURE TABLE

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE INVERT (1)	STRUCTURE TYPE
LL-CB-1	Ramp H 12+88.51	-1.74 LT	215127.4641	985396.9973	7.49	3.19	Existing Catch Basin Downspout Connection
LL-CB-2	Dyer Plaza Ramp 13+92.22	-10.39 LT	215059.5217	985469.0991	-1.17	-5.96	Existing Catch Basin Downspout Connection
LL-CB-3	Ramp K 13+21.82	1.59 RT	215009.3081	985358.4390	11.19	7.53	PA-Catch Basin-Type II
LL-CB-4	Ramp L 13+17.78	3.08 RT	214972.2437	985342.7571	10.74	6.19	Reset
LL-CB-5	Ramp N 14+65.15	43.19 RT	214935.1792	985507.6717	16.91	11.69	PA-Catch Basin-Type II
LL-CB-7	Ramp N 14+35.29	27.77 RT	214938.4040	985465.7939	16.65	11.08	PA-Catch Basin-Type II
LL-CB-8	Ramp M 14+52.17	-18.75 LT	214891.3953	985453.1471	16.99	12.62	Set PA-Catch Basin-Type II Frame and Grate
LL-CB-9	Dyer Plaza Ramp 15+07.63	-46.31 LT	215015.5429	985592.3484	-0.92	-5.17	Reset
LL-CB-11	Ramp L 14+56.51	35.91 RT	214857.6455	985369.8169	15.10	10.10	Set PA-Catch Basin-Type II Frame and Grate
LL-CB-12	Ramp M 15+18.59	-25.08 LT	214813.4558	985442.2517	18.32	13.32	Set PA-Catch Basin-Type IV Frame and Grate
LL-CB-13	Ramp L 15+69.01	35.11 RT	214770.1803	985335.4061	18.98	15.23	PA-Catch Basin-Type II Doghouse
LL-CB-14	Ramp L 16+69.90	35.06 RT	214682.0629	985286.2609	23.09	19.79	PA-Catch Basin-Type II Doghouse
LL-CB-15	Dyer Plaza Ramp 19+55.85	-19.64 LT	214591.6279	985477.1492	20.72	16.94	Set PA-Catch Basin-Type II Frame and Grate
LL-CB-16	Dyer Plaza Ramp 19+00.81	-19.21 LT	214628.0806	985518.3893	18.25	11.28	PA-Catch Basin-Type II
LL-MH-6	Ramp N 14+59.18	32.37 RT	214942.0216	985496.1036	17.07	11.46	PA-Manhole-Type II
LL-MH-10	Dyer Plaza Ramp 15+30.81	-19.61 LT	214978.0578	985588.3846	-0.44	-5.91	PA-Manhole-Type II

PIPE TABLE

PIPE NAME	FROM STR	FROM INVERT	TO STRUCTURE	TO INVERT	SIZE	MATERIAL	LENGTH	SLOPE	MIN. COVER
Downspout to LL-CB-1	Downspout LL-CB-1	3.36	LL-CB-1	3.19	10.00	FGLASS	12.68	1.20%	3.39
Downspout to LL-CB-2	Downspout LL-CB-2	-5.60	LL-CB-2	-5.96	8.00	FGLASS	3.31	8.00%	3.95
LL-P-3	LL-CB-3	7.53	LL-CB-4	7.13	12.00	RCP	36.80	0.99%	2.24
LL-P-5	LL-CB-5	12.69	LL-MH-6	12.55	15.00	RCP	10.20	1.04%	2.64
LL-P-6	LL-MH-6	12.46	LL-CB-7	12.15	15.00	RCP	26.05	1.02%	2.92
LL-P-7	LL-CB-7	12.08	LL-CB-8	11.60	15.00	RCP	44.50	0.99%	2.99
LL-P-9	LL-CB-9	-4.12	LL-MH-10	-5.81	12.00	DIP	33.65	4.47%	2.11
LL-P-10	LL-MH-10	-5.91	Existing Catch Basin	-6.27	12.00	RCP	33.77	1.00%	3.02
LL-P-15	LL-CB-15	16.94	LL-CB-16	14.38	12.00	RCP	51.11	4.65%	2.47
LL-P-16	LL-CB-16	14.38	Existing Manhole	11.48	12.00	RCP	57.25	4.89%	2.43

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

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STATE OF NEW YORK · VICTOR CHANG · 106180 · LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

DRAINAGE TABLES LOWER LEVEL SHEET 1

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Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0821
PID#	18982000

STRUCTURE TABLE

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE INVERT	STRUCTURE TYPE
CB-21	Proposed UL ALG 10+62.09	-106.68 LT	214971.4898	985650.9690	37.51	30.00	PA-Catch Basin-Type II
CB-22	Proposed UL ALG 10+84.04	-124.94 LT	214943.4450	985656.3093	37.83	25.25	PA-Catch Basin-Type II
MH-20	Proposed UL ALG 11+16.49	-151.18 LT	214902.3378	985663.5541	–	28.39	PA-Manhole-Type II
MH-24	Proposed UL ALG 10+41.40	-113.94 LT	214986.0717	985667.3420	–	30.20	PA-Manhole-Type II
MH-51	Proposed UL ALG 11+53.68	-24.52 LT	214931.1571	985534.7282	40.45	28.50	PA-Manhole-Type II
MH-52	Proposed UL ALG 10+51.65	-75.04 LT	214995.9427	985628.3461	37.56	24.50	PA-Manhole-Type II
MH-53	Proposed UL ALG 10+42.29	-53.06 LT	215014.7864	985613.6521	37.95	23.95	PA-Manhole-Type II

STRUCTURE TABLE - SCUPPERS

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE TYPE
SC-1	Proposed UL ALG 11+71.56	201.84 RT	215025.1518	985328.0335	37.47	Scupper
SC-2	Proposed UL ALG 11+48.84	201.87 RT	215045.0449	985339.0088	37.30	Scupper
SC-3	Proposed UL ALG 11+25.41	201.76 RT	215065.4874	985350.4562	36.99	Scupper
SC-4	Proposed UL ALG 10+74.84	201.63 RT	215109.6679	985375.0649	35.69	Scupper
SC-5	Proposed UL ALG 10+35.60	203.80 RT	215145.0506	985392.1714	34.15	Scupper
SC-6	Proposed UL ALG 11+42.28	158.22 RT	215029.6354	985380.3720	37.83	Scupper
SC-7	Proposed UL ALG 10+42.40	137.63 RT	215107.0485	985446.7702	38.03	Scupper
SC-8	Proposed UL ALG 10+60.54	114.41 RT	215079.9277	985458.2951	38.37	Scupper
SC-9	Proposed UL ALG 11+41.84	100.30 RT	215001.9730	985431.2579	39.38	Scupper
SC-10	Proposed UL ALG 10+92.01	79.55 RT	215035.5198	985473.5503	39.03	Scupper
SC-11	Proposed UL ALG 10+75.92	79.51 RT	215049.5775	985481.3778	38.95	Scupper
SC-12	Proposed UL ALG 10+67.95	79.50 RT	215056.5358	985485.2457	38.91	Scupper
SC-13	Proposed UL ALG 11+41.34	35.27 RT	214970.9064	985488.3931	39.98	Scupper
SC-14	Proposed UL ALG 10+90.77	47.83 RT	215021.2348	985501.8972	39.66	Scupper
SC-15	Proposed UL ALG 10+65.53	47.99 RT	215043.3960	985513.9900	39.54	Scupper
SC-16	Proposed UL ALG 11+48.11	-150.23 LT	214875.1345	985647.4074	38.80	Scupper
SC-17	Proposed UL ALG 11+41.36	-145.46 LT	214883.3568	985646.5029	38.70	Scupper
SC-18	Proposed UL ALG 11+35.17	-140.32 LT	214891.2660	985645.0030	38.63	Scupper
SC-19	Proposed UL ALG 11+29.57	-135.20 LT	214898.6424	985643.2321	38.57	Scupper

STRUCTURE TABLE - BASIN ACCESS

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE TYPE
Basin 1 - Access 1	Proposed UL ALG 10+52.74	-115.90 LT	214975.2055	985663.5694	37.21	Basin Access Manhole Cover
Basin 1 - Access 2	Proposed UL ALG 10+52.78	-124.45 LT	214971.0264	985671.0228	37.17	Basin Access Manhole Cover
Basin 1 - Access 3	Proposed UL ALG 10+52.85	-136.49 LT	214965.1373	985681.5206	37.13	Basin Access Manhole Cover
Basin 1 - Access 4	Proposed UL ALG 10+52.78	-149.60 LT	214958.8500	985693.0288	37.14	Basin Access Manhole Cover
Basin 2 - Access 1	Proposed UL ALG 11+71.62	-25.96 LT	214914.7642	985527.3027	40.60	Basin Access Manhole Cover
Basin 2 - Access 2	Proposed UL ALG 11+80.22	-26.05 LT	214907.1971	985523.2168	40.68	Basin Access Manhole Cover
Basin 2 - Access 3	Proposed UL ALG 11+96.76	-60.38 LT	214876.0972	985545.2352	40.47	Basin Access Manhole Cover
Basin 2 - Access 4	Proposed UL ALG 12+13.08	-25.78 LT	214878.5746	985507.0630	40.94	Basin Access Manhole Cover

PIPE TABLE

PIPE NAME	FROM STR	FROM INVERT	TO STRUCTURE	TO INVERT	SIZE	MATERIAL	LENGTH	SLOPE	MIN. COVER
P-1	SC-1	32.49	SC-2	31.99	8.00	FGLASS	22.07	2.21%	4.29
P-2	SC-2	31.99	SC-3	31.47	8.00	FGLASS	22.78	2.22%	4.63
P-3	SC-3	31.47	SC-4	30.35	8.00	FGLASS	49.92	2.21%	4.65
P-4	SC-4	30.35	SC-5	29.48	10.00	FGLASS	38.65	2.21%	3.82
P-5	SC-5	29.48	Downspout LL-CB-1 Fitting 1	29.30	12.00	FGLASS	7.83	2.21%	3.60
P-6	SC-6	31.52	Downspout LL-CB-1 Fitting 2	29.47	8.00	FGLASS	101.27	2.02%	5.57
P-7	SC-7	33.00	Downspout LL-CB-1 Fitting 3	32.81	8.00	FGLASS	8.35	2.19%	3.72
P-8	SC-8	30.78	Downspout LL-CB-1 Fitting 4	30.29	8.00	FGLASS	24.02	2.01%	6.59
P-9	SC-9	33.10	SC-10	32.02	8.00	FGLASS	53.33	2.00%	5.12
P-10	SC-10	32.02	SC-11	31.69	8.00	FGLASS	15.44	2.05%	6.32
P-11	SC-11	31.69	SC-12	31.53	8.00	FGLASS	7.31	2.01%	6.57
P-12	SC-12	31.53	Downspout LL-CB-2 Fitting 1	29.72	8.00	FGLASS	3.50	49.19%	6.69
P-13	SC-13	34.69	SC-14	33.60	8.00	FGLASS	51.46	2.09%	4.80
P-14	SC-14	33.60	Downspout LL-CB-2 Fitting 2	33.15	8.00	FGLASS	20.21	2.19%	5.37
P-15	SC-15	33.61	Downspout LL-CB-2 Fitting 3	33.51	8.00	FGLASS	0.74	9.60%	5.24
P-16	SC-16	29.33	SC-17	29.16	12.00	FGLASS	7.63	2.06%	8.44
P-17	SC-17	29.16	SC-18	28.99	12.00	FGLASS	7.41	2.11%	8.52
P-18	SC-18	28.99	SC-19	28.83	12.00	FGLASS	6.94	2.11%	8.61
P-19A	SC-19	28.83	Expansion Coupling 1	28.55	12.00	FGLASS	12.97	2.11%	8.71
P-19B	Expansion Coupling 1	28.55	MH-20	28.39	12.00	DIP	6.12	2.17%	8.69
P-20	MH-20	28.39	CB-22	28.25	12.00	RCP	38.35	0.34%	8.33
P-21	CB-21	33.00	CB-22	32.50	12.00	RCP	24.32	1.75%	3.26
P-22	CB-22	28.25		28.11	12.00	RCP	34.26	0.39%	7.76
P-23	TD-23	34.25	MH-24	33.50	12.00	DIP	5.24	8.94%	1.43
P-24	MH-24	30.20		29.00	12.00	RCP	27.08	4.11%	5.51
P-51A	MH-51	28.50	Expansion Coupling 4	28.10	18.00	DIP	17.22	2.02%	10.31
P-51B	Expansion Coupling 4	28.10	Expansion Coupling 5	26.49	18.00	FGLASS	79.55	2.02%	10.00
P-51C	Expansion Coupling 5	26.49	MH-52	26.20	18.00	DIP	13.33	2.02%	9.71
P-52	MH-52	24.50	MH-53	23.95	18.00	RCP	18.70	2.30%	11.22
P-53	MH-53	23.95	MH-NYCDEP Existing	23.15	18.00	RCP	48.11	1.56%	12.17
P-UG1		25.50	MH-52	24.75	12.00	RCP	63.61	1.14%	10.37
P-UG2		29.00	MH-51	28.50	18.00	RCP	44.41	1.08%	9.80

STRUCTURAL TABLE - TRENCHDRAIN

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE INVERT	STRUCTURE TYPE
TD-23	Proposed UL ALG 11+31.64	-135.7200	215017.6254	985628.4769	37.26	34.51	Trenchdrain
			215008.7810	985644.5282	37.00	30.40	
			215003.2715	985654.2469	36.91	34.35	
			214993.6653	985671.5081	36.75	34.25	
			214987.6682	985682.8452	36.67	34.31	
			214981.6655	985693.7392	36.74	34.38	
			214975.8377	985704.3159	36.78	34.44	

NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS FOR DECK PIPE SUPPORT AND DOWNSPOUT DETAILS.

PORT AUTHORITY NY NJ
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STATE OF NEW YORK VICTOR CHANG 106180 LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

DRAINAGE TABLES UPPER LEVEL SHEET 1

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Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0822
PID#	18982000

STRUCTURE TABLE

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE INVERT	STRUCTURE TYPE
CB-40	Proposed UL ALG 13+07.48	-91.09 LT	214764.3539	985518.4735	40.65	27.50	PA-Catch Basin-Type II
CB-41	Proposed UL ALG 13+07.76	-67.56 LT	214775.5051	985497.7518	40.61	27.40	PA-Catch Basin-Type II
CB-42	Proposed UL ALG 13+08.22	-55.21 LT	214781.0850	985486.7216	40.60	27.30	PA-Catch Basin-Type II
CB-43	Proposed UL ALG 13+07.82	-39.26 LT	214789.1633	985472.9598	40.68	27.20	PA-Catch Basin-Type II
CB-45	Proposed UL ALG 14+17.98	-55.05 LT	214685.1436	985433.4221	42.98	31.00	PA-Catch Basin-Type II
CB-47	Proposed UL ALG 13+93.95	-55.53 LT	214705.9305	985445.4865	42.45	27.75	PA-Catch Basin-Type II
CB-48	Proposed UL ALG 13+49.00	-54.47 LT	214745.7636	985466.3276	41.50	27.52	PA-Catch Basin-Type II
MH-38	Proposed UL ALG 13+34.40	-118.71 LT	214727.4238	985529.6016	41.17	30.62	PA-Manhole-Type II
MH-39	Proposed UL ALG 13+06.71	-121.70 LT	214750.1994	985545.6295	40.73	30.60	PA-Manhole-Type II
MH-44	Proposed UL ALG 14+27.32	-79.06 LT	214665.3366	985449.9061	43.09	34.13	PA-Manhole-Type II
MH-46	Proposed UL ALG 14+01.63	-91.19 LT	214681.9376	985472.9564	42.52	30.79	PA-Manhole-Type II
MH-49	Proposed UL ALG 13+48.92	-25.72 LT	214759.7627	985441.2096	41.74	30.43	PA-Manhole-Type II
MH-50	Proposed UL ALG 13+07.85	-25.09 LT	214795.9967	985460.5496	40.75	30.10	PA-Manhole-Type II

STRUCTURE TABLE - SCUPPERS

STRUCTURE ID	STATION (±)	OFFSET (FT)	NORTHING	EASTING	RIM ELEVATION	STRUCTURE TYPE
SC-25	Proposed UL ALG 13+06.92	67.71 RT	214841.7653	985379.8156	41.23	Scupper
SC-26	Proposed UL ALG 13+07.03	14.34 RT	214815.8193	985426.4560	40.95	Scupper
SC-27	Proposed UL ALG 13+06.97	-12.32 LT	214802.9532	985449.8100	40.82	Scupper
SC-28	Proposed UL ALG 13+06.21	-197.03 LT	214714.1530	985611.7730	40.89	Scupper
SC-29	Proposed UL ALG 13+06.26	-190.41 LT	214717.3181	985605.9571	40.88	Scupper
SC-30	Proposed UL ALG 13+06.27	-183.80 LT	214720.5133	985600.1726	40.87	Scupper
SC-31	Proposed UL ALG 13+06.26	-177.17 LT	214723.7305	985594.3793	40.85	Scupper
SC-32	Proposed UL ALG 13+06.27	-170.57 LT	214726.9233	985588.5940	40.84	Scupper
SC-33	Proposed UL ALG 13+06.26	-163.95 LT	214730.1361	985582.8066	40.83	Scupper
SC-34	Proposed UL ALG 13+06.25	-157.32 LT	214733.3513	985577.0145	40.81	Scupper
SC-35	Proposed UL ALG 13+06.26	-150.71 LT	214736.5449	985571.2242	40.80	Scupper
SC-36	Proposed UL ALG 13+06.25	-144.09 LT	214739.7604	985565.4401	40.79	Scupper
SC-37	Proposed UL ALG 13+06.25	-137.48 LT	214742.9576	985559.6547	40.77	Scupper

PIPE TABLE

PIPE NAME	FROM STR	FROM INVERT	TO STRUCTURE	TO INVERT	SIZE	MATERIAL	LENGTH	SLOPE	MIN. COVER
P-25	SC-25	36.39	SC-26	35.29	8.00	FGLASS	52.72	2.06%	4.16
P-26	SC-26	35.29	SC-27	34.75	10.00	FGLASS	26.01	2.03%	4.81
P-27A	SC-27	34.75	Expansion Coupling 2	31.00	12.00	FGLASS	6.94	53.41%	5.04
P-27B	Expansion Coupling 2	31.00	MH-50	30.90	12.00	DIP	3.34	1.73%	8.69
P-28	SC-28	32.52	SC-29	32.38	10.00	FGLASS	5.97	2.11%	7.51
P-29	SC-29	32.38	SC-30	32.24	10.00	FGLASS	5.96	2.12%	7.64
P-30	SC-30	32.24	SC-31	32.10	10.00	FGLASS	5.98	2.11%	7.77
P-31	SC-31	32.10	SC-32	31.96	10.00	FGLASS	5.96	2.12%	7.90
P-32	SC-32	31.96	SC-33	31.82	10.00	FGLASS	5.97	2.12%	8.02
P-33	SC-33	31.82	SC-34	31.68	10.00	FGLASS	5.98	2.11%	8.15
P-34	SC-34	31.68	SC-35	31.54	10.00	FGLASS	5.96	2.12%	8.28
P-35	SC-35	31.54	SC-36	31.40	10.00	FGLASS	5.97	2.12%	8.40
P-36	SC-36	31.40	SC-37	31.26	10.00	FGLASS	5.96	2.12%	8.53
P-37A	SC-37	31.26	Expansion Coupling 3	31.13	12.00	FGLASS	5.94	2.08%	8.49
P-37B	Expansion Coupling 3	31.13	MH-39	30.93	12.00	DIP	7.24	2.10%	8.55
P-38	MH-38	30.62	MH-39	30.60	18.00	RCP	22.77	0.07%	8.28
P-39	MH-39	30.60	CB-40	30.50	18.00	RCP	26.31	0.33%	8.30
P-40	CB-40	30.50	CB-41	30.40	18.00	RCP	19.54	0.42%	8.32
P-41	CB-41	30.40	CB-42	30.30	18.00	RCP	8.38	0.81%	8.38
P-42	CB-42	30.30	CB-43	30.20	18.00	RCP	11.96	0.63%	8.47
P-43	CB-43	30.20	MH-50	30.10	18.00	RCP	9.85	0.71%	8.64
P-44	MH-44	34.13	CB-45	34.00	15.00	RCP	20.86	0.50%	7.38
P-45	CB-45	34.00	CB-47	33.50	18.00	RCP	21.58	2.08%	7.12
P-46	MH-46	30.79	CB-47	30.75	18.00	RCP	31.65	0.11%	9.87
P-47	CB-47	30.75	CB-48	30.52	18.00	RCP	42.47	0.51%	9.14
P-48	CB-48	30.52	MH-49	30.43	18.00	RCP	24.40	0.31%	9.14
P-49	MH-49	30.43	MH-50	30.10	18.00	RCP	36.44	0.80%	8.82
P-50	MH-50	30.10		29.75	18.00	RCP	110.64	0.31%	8.81

NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS FOR DECK PIPE SUPPORT DETAILS.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · VICTOR CHANG · 106180 · LICENSED PROFESSIONAL ENGINEER

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

DRAINAGE TABLES
UPPER LEVEL
SHEET 2

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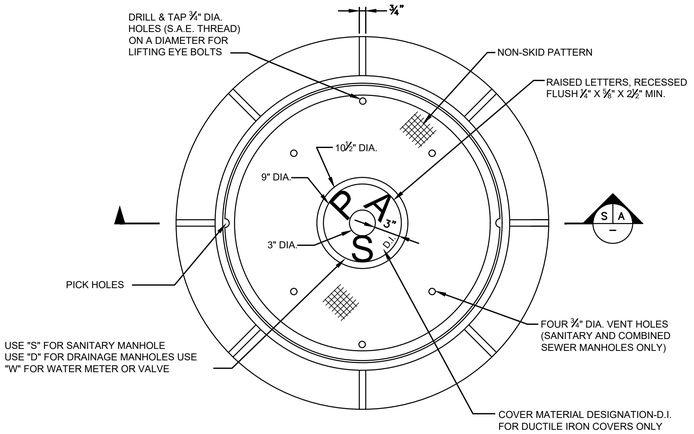
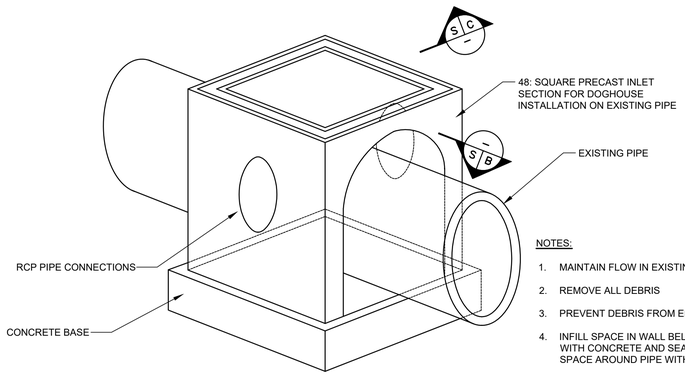
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0823
PID#	18982000



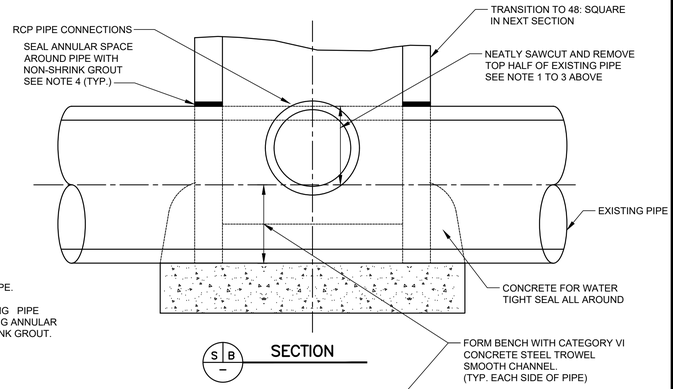
PLAN



ISOMETRIC

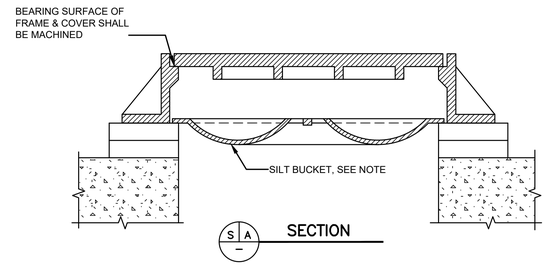
NOTES:

1. MAINTAIN FLOW IN EXISTING PIPE.
2. REMOVE ALL DEBRIS
3. PREVENT DEBRIS FROM ENTERING PIPE.
4. INFILL SPACE IN WALL BELOW EXISTING PIPE WITH CONCRETE AND SEAL REMAINING ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.



DOGHOUSE INLET BASE DETAIL

N.T.S.

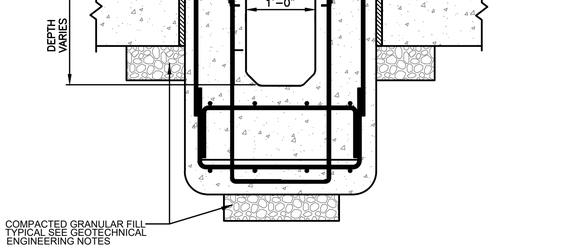


NOTES

FOR SANITARY AND COMBINED SEWER MANHOLES FURNISH CAST ALUMINUM SILT BUCKETS.

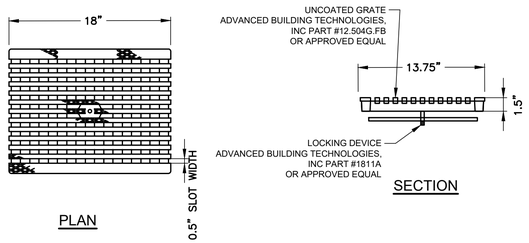
MANHOLE FRAME AND COVER

011.004 MHCOVH



CROSS SECTIONAL VIEW

NOTE:

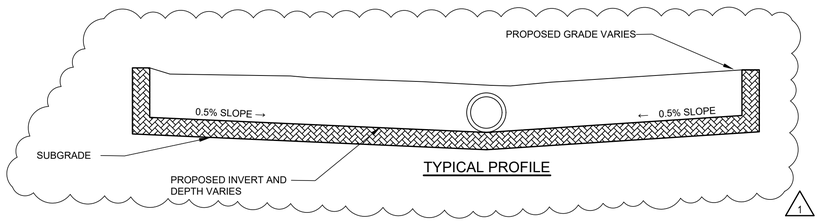


PLAN

SECTION

NOTES:

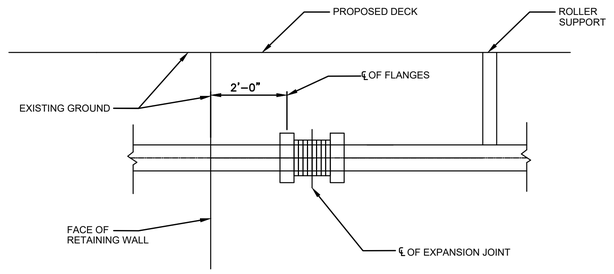
1. GRATES:
   DUCTILE IRON PER ASTM A536-84 GRADE (UNCOATED)
   OPEN AREA: 0.25 FT2 PER LINEAL FOOT
   LOAD RATING: 2496 PSI (AASHTO M-306 TEST METHOD)
2. CONCRETE: REFER TO STRUCTURAL DRAWING DD-S3040 FOR CONCRETE THICKNESS AND REINFORCEMENT DETAILS. REFER TO DD-C0001 FOR CONCRETE REQUIREMENTS.
3. DEPTH : REFER TO CIVIL DRAWING DD-C0822 FOR VARIED DEPTHS



TYPICAL PROFILE

TRENCHDRAIN

N.T.S.



NOTES:

1. CONTRACTOR TO SELECT EXPANSION COUPLING PER MANUFACTURER RECOMMENDATION AND SUBMIT PRODUCT DATA AND SHOP DRAWING FOR APPROVAL BY ENGINEER ON RECORD.
2. REFER TO STRUCTURAL DRAWINGS FOR ROLLER SUPPORT DETAIL AND RETAINING WALL PUNCTURE DETAIL.

PIPE EXPANSION COUPLING

N.T.S.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA
WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

DRAINAGE DETAILS SHEET 2

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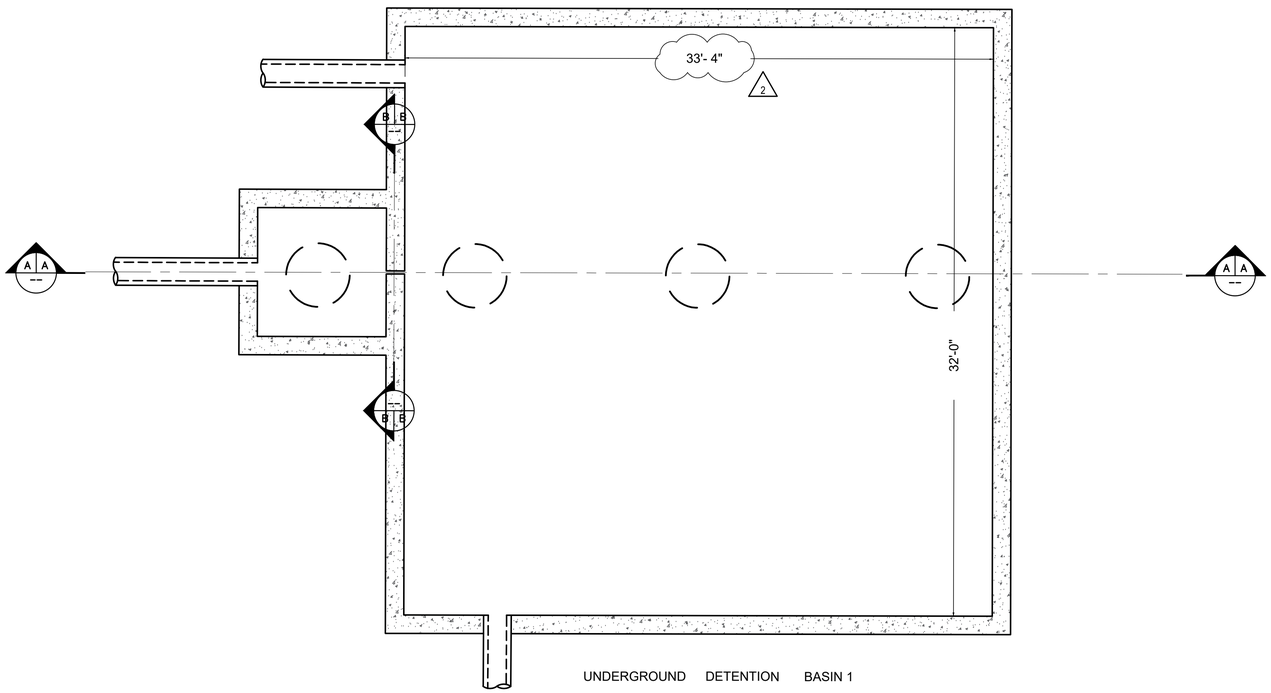
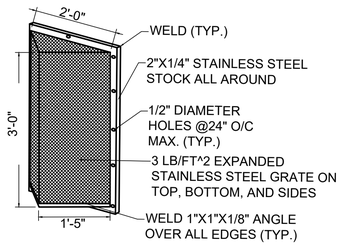
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0832
PID#	18982000

NOTES:

1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS DD-S3101, DD-S3102, AND DD-S3103 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 1.

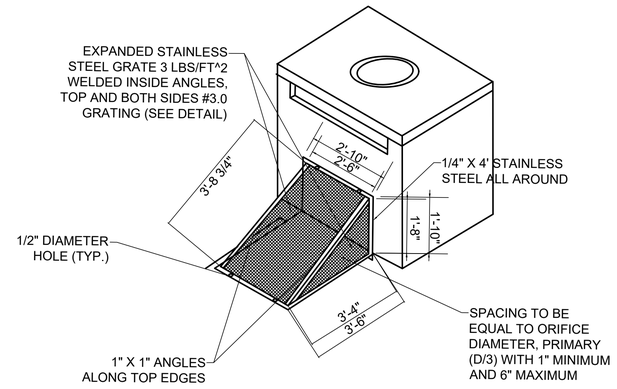


UNDERGROUND DETENTION BASIN 1

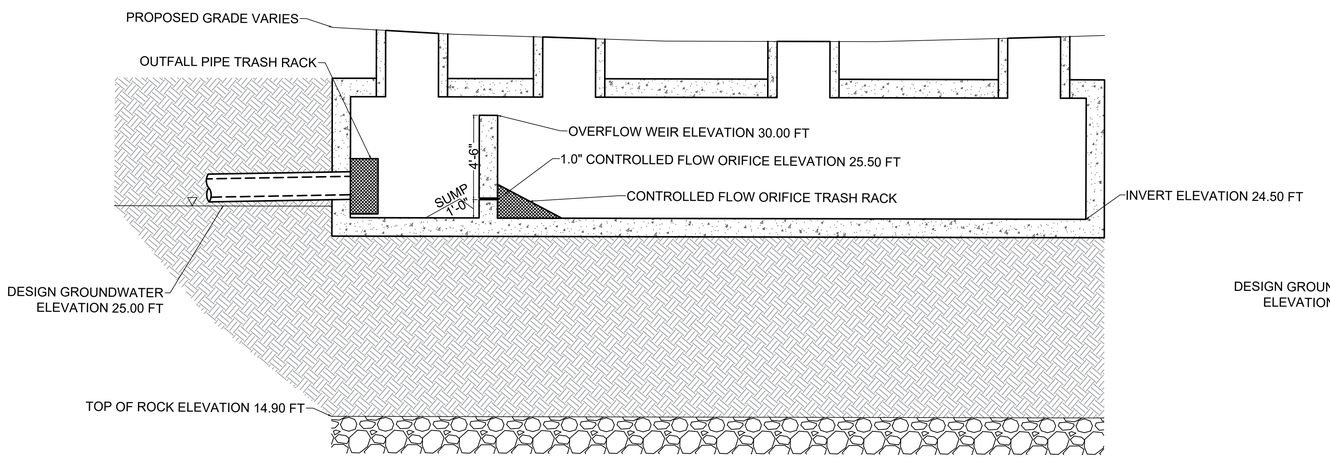


OUTFALL PIPE TRASH RACK PROTECTION
N.T.S.

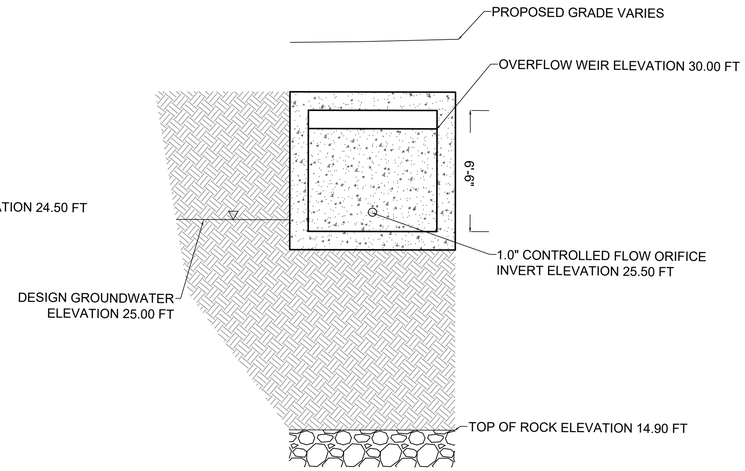
NOTES:
1. TRASH RACKS TO BE CENTERED OVER OPENING.
2. STAINLESS STEEL TO CONFORM TO ASTM A-320
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING.



CONTROLLED FLOW ORIFICE TRASH RACK PROTECTION
N.T.S.



SECTION A-A



SECTION B-B

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

STORMWATER MANAGEMENT DETAILS SHEET 1

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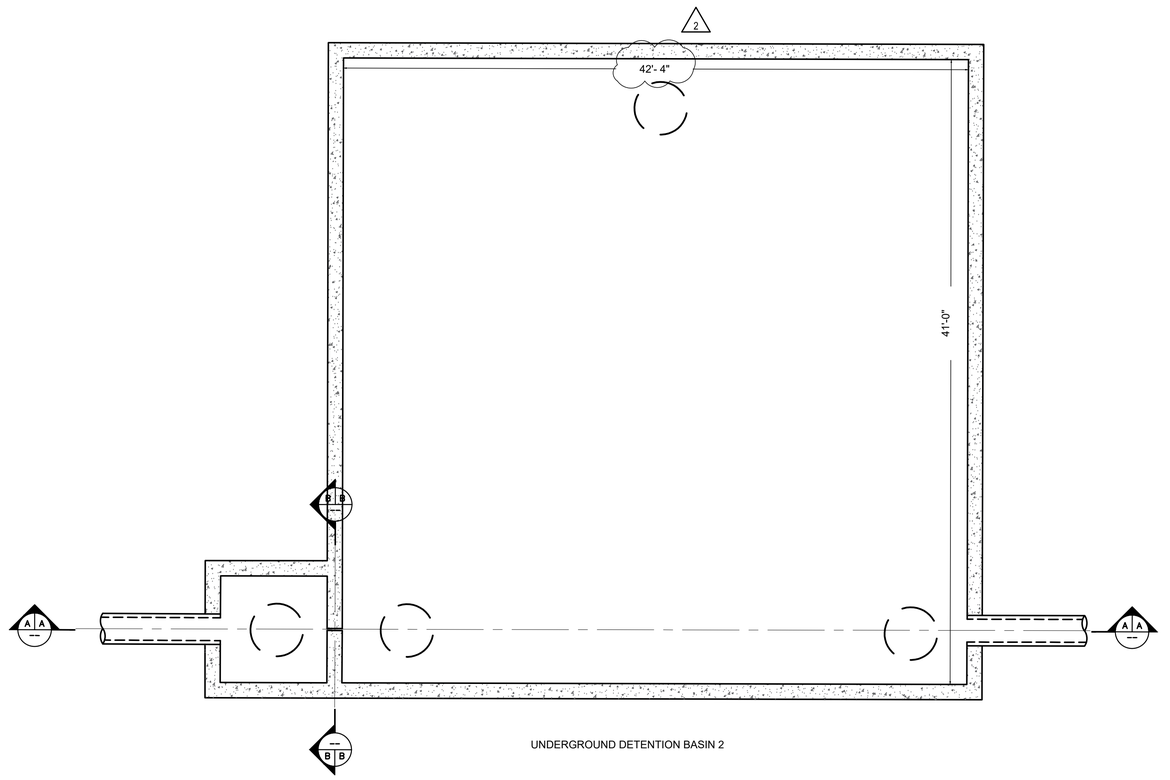
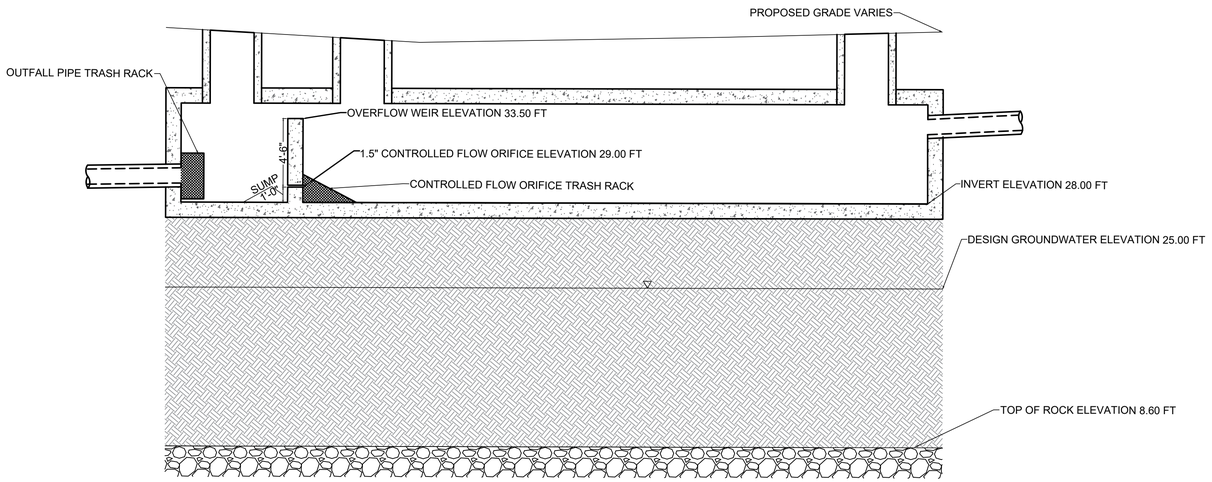
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0851
PID#	18982000

NOTES:

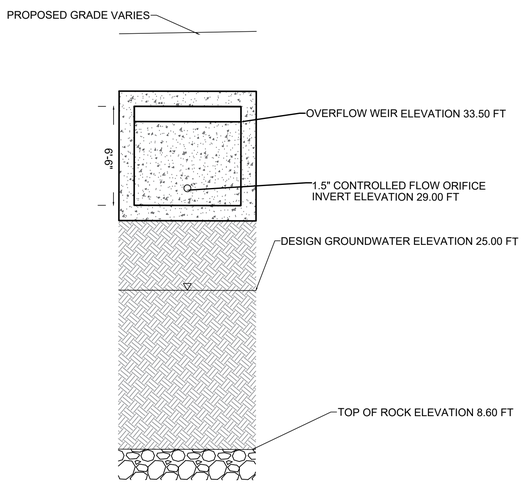
1. NYCDEP SITE CONNECTION IS STILL UNDER GOING COORDINATION AND HAS NOT BEEN FINALIZED OR APPROVED BY NYCDEP.
2. REFER TO STRUCTURAL DRAWINGS DD-S3104, DD-S3105, AND DD-S3106 FOR THE STRUCTURAL DESIGN AND ACCESS MANHOLE DETAILS OF DETENTION BASIN 2.



UNDERGROUND DETENTION BASIN 2



SECTION A-A



SECTION B-B

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA
WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

VICTOR CHANG
NY Professional Engineering # 106180

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

STORMWATER MANAGEMENT DETAILS SHEET 2

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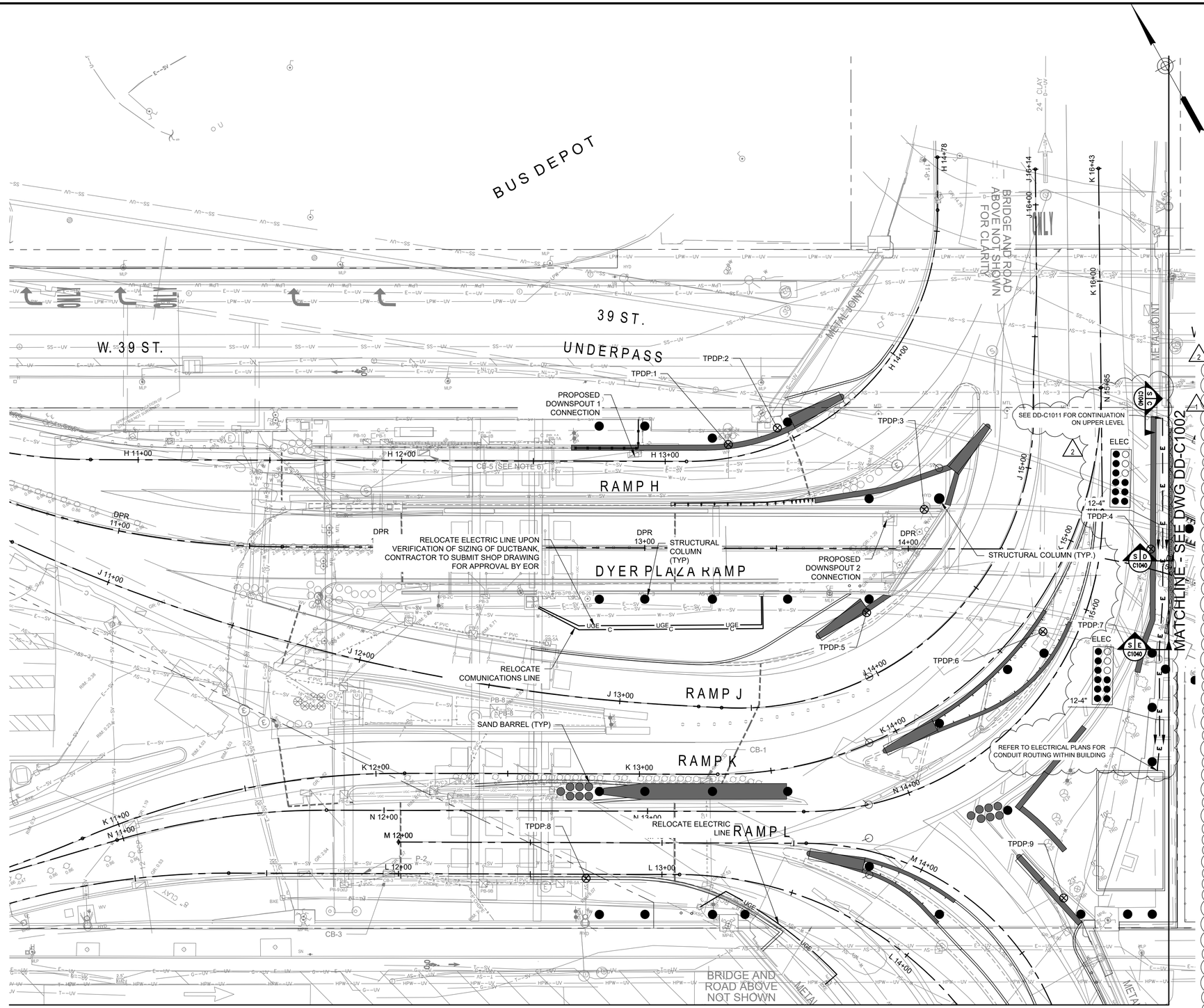
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C0852
PID#	18982000



NOTES:

1. EXISTING UTILITIES ARE SHOWN BASED ON DATA PROVIDED BY THE PORT AUTHORITY. ADDITIONAL FIELD VERIFICATION REQUIRED.
2. IT IS THE CONTRACTORS RESPONSIBILITY UNDER PART 753 OF THE NEW YORK STATE INDUSTRIAL CODE TO DETERMINE THE EXACT LOCATION OF THE UNDERGROUND FACILITIES PRIOR TO WORKING IN THE AREA. ANY DAMAGE CAUSED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
3. TEST PITS SHALL BE DUG TO VERIFY THE NEED TO RELOCATE FACILITIES. TEST PIT LOCATIONS SHALL BE AS SHOWN ON THE PLANS OR AS ORDERED BY ENGINEER WHERE CONFLICTS BETWEEN THE PROPOSED AND EXISTING FACILITIES ARE ANTICIPATED.
4. NEGATIVE OFFSETS REFER TO OFFSET DISTANCES LEFT OF THE ALIGNMENT.
5. THERE SHALL BE NO EXCAVATION BELOW THE TOP OF FOOTING FOR EXISTING WALLS EXCEPT AS SHOWN IN DRAWINGS OR WITH PRIOR APPROVAL OF THE ENGINEER
6. HAZMAT SURVEY WAS PREFORMED AT THE SITE AND A REPORT WAS ISSUED. ABOVEGROUND AND UNDERGROUND UTILITIES WERE NOT ACCESSIBLE FOR THE HAZMAT SURVEY. CONTRACTOR TO TREAT ALL UTILITIES WITH APPROPRIATE ENVIRONMENTAL CONSIDERATIONS UNTIL EXISTING MATERIALS ARE CONFIRMED IN THE FIELD BY THE CONTRACTOR.
7. EXISTING ELECTRICAL MANHOLES AND/OR HANDHOLES MAY BE FILLED WITH WATER. PROVIDE NECESSARY EQUIPMENT SUCH AS PUMPS WITH FLOW NOT EXCEEDING 45 GALLONS PER MINUTE, DISCHARGE HOSES, SUCTION HOSES, ETC., TO MAINTAIN A SAFE AND WORKING CONDITION DURING CONSTRUCTION.
8. FURNISH AND INSTALL NYLON PULL CORD OF NOT LESS THAN 200 POUND TENSILE STRENGTH, IN EACH EMPTY CONDUIT RUN OVER 10 FEET LONG. THE NYLON CORD SHALL WITHSTAND THE STRESS NECESSARY TO PULL A MANDREL THROUGH THE CONDUIT SYSTEM. CAP ALL SPARE CONDUITS.
9. WHERE UNDERGROUND CONDUITS ARE TO BE CONNECTED TO AN EXISTING MANHOLE OR HANDHOLE, CORE DRILL OPENINGS AND PERFORM ALL REQUIRED PATCHWORK. SUBMIT PATCHING PROCEDURE AND DETAILS TO THE EOR FOR APPROVAL PRIOR TO STARTING WORK.
10. PERFORM PROPER PHASING OF THE FEEDERS TO THE SATISFACTION OF THE ENGINEER TO ENSURE EACH PHASE IS TERMINATED TO CORRESPONDING PHASE AT BOTH ENDS.
11. PROPERLY SECURE AND SEAL CABLE ENDS NOT YET SPLICED TO AVOID ABSORPTION OF HUMIDITY AND/OR WATER. MAINTAIN MANUFACTURER'S ORIGINAL END CAPS UNTIL SPLICING OR FURNISHING AND INSTALLING APPROVED END CAPS.
15. ALL MANHOLES SHALL BE HS25-44 TRUCK LOAD RATED.
16. ALL SPARE CONDUITS AND DUCTBANKS SHOWN AS INSTALLED ON ELECTRICAL DRAWINGS ARE FOR FUTURE USE BY THE PANYNJ.
17. FOR EXISTING CABLES TO BE RELOCATED OR SPLICES INTO, PROVIDE 72 HOURS NOTICE TO THE ENGINEER AND THE PORT AUTHORITY PERSONNEL. PA PERSONNEL WILL IDENTIFY , DE-ENERGIZE AND SPARE THE CABLE PRIOR TO START OF ANY WORK.
18. MIN. DUCT BANK SLOPE: ¼" PER 50' AND MIN. COVER OF 30" SHALL BE MAINTAINED UNLESS OTHERWISE NOTED. SLOPE TOWARD MANHOLES TO PROVIDE ADEQUATE DRAINAGE.
19. INSTALL ELECTRICAL MANHOLES AND HANDHOLES AT LOCATIONS SUCH THAT MAXIMUM PULL LENGTHS DO NOT EXCEED 450 FEET MAXIMUM.
20. CONTRACT DRAWINGS FOR ROUTING ARE DIAGRAMATIC IN NATURE AND DO NOT SHOW FULL EXTENT OF EXISTING CONDITIONS, BUT SHOW THE GENERAL ARRANGEMENT AND LOCATION OF THE SYSTEMS. PERFORM FIELD SURVEY AS NECESSARY TO DETERMINE FINAL ROUTING AND LOCATION OF RACEWAYS.
21. VERIFY THAT FEEDERS/EQUIPMENT TO BE WORKED ON ARE DE-ENERGIZED AND THAT NECESSARY SWITCHES/CIRCUIT BREAKERS HAVE BEEN LOCKED OPEN AND TAGGED-OUT PRIOR TO COMMENCING ANY WORK ON THAT PORTION OF THE SYSTEEM. TAKE ALL SAFETY MEASURES INCLUDING DISCHARGING OF CABLE CAPACITANCE AND GROUNDING TO PROTECT AGAINST ELECTRICAL SHOCK.
22. DUCTBANK BEND RADIUS SHALL HAVE INNER RADIUS NOT LESS THAN 10 TIMES THE TRADE DIAMETER OF THE ASSOCIATED CONDUIT IN ACCORDANCE WITH SPECIFICATION 260543.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
2	04/16/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

UTILITY PLAN
SHEET 1

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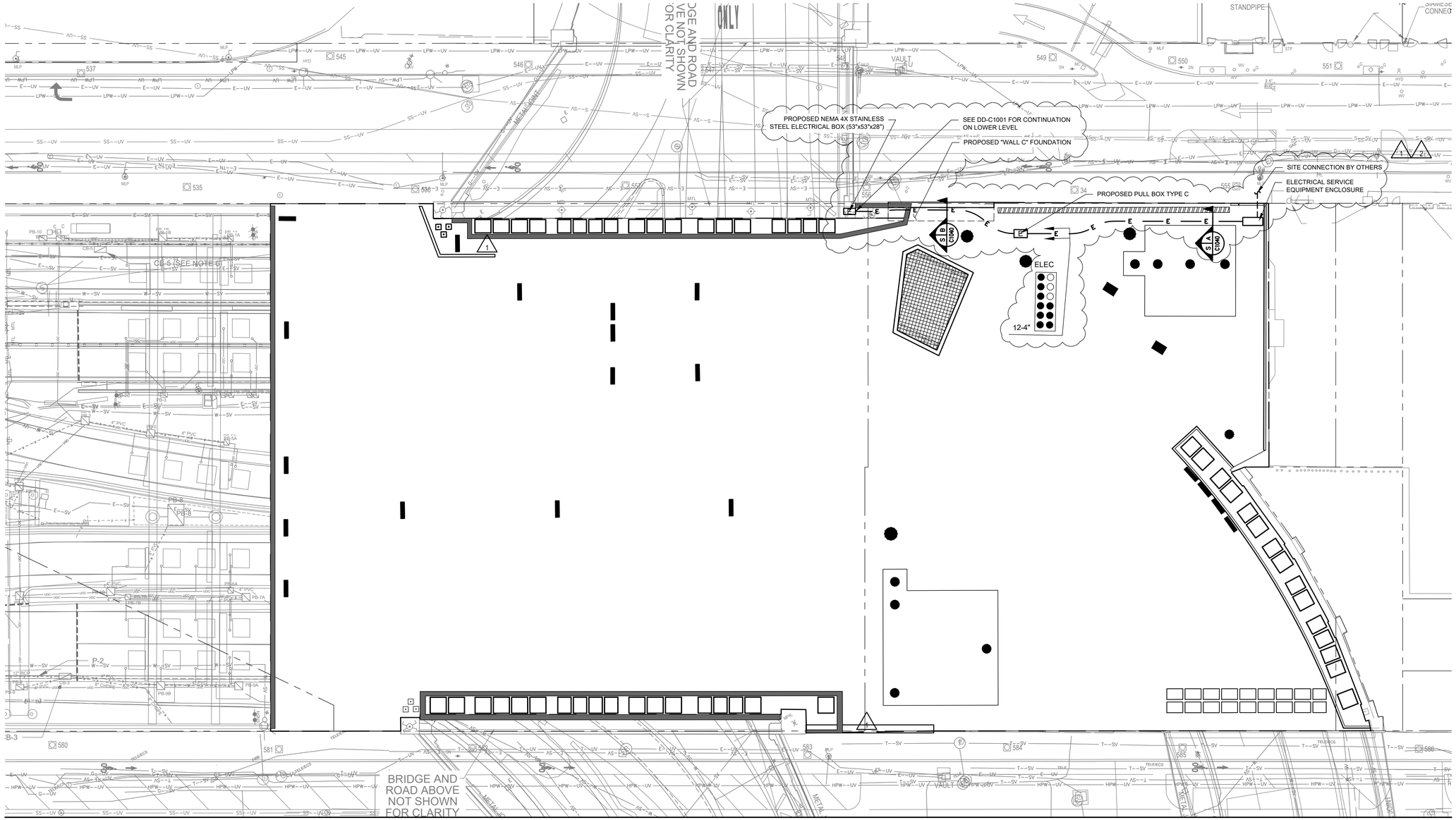
Designed by	B. van Beek
Drawn by	C. Blakeley
Checked by	T.Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1001
PID#	18982000

NOTES
1. NO WORK ON THIS SHEET



Sheet 98 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK
KEVIN PHU
093233
LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

UTILITY PLAN UPPER LEVEL SHEET 1

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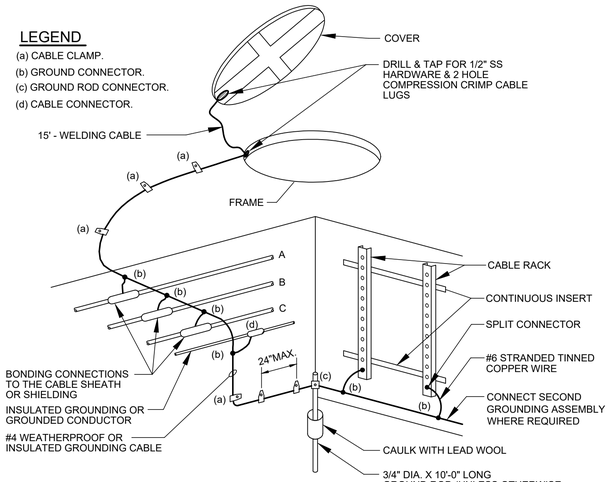
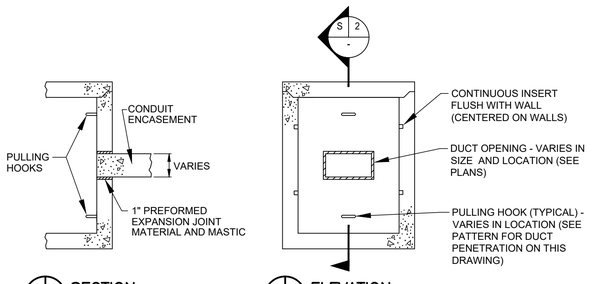
Designed by	S. Molina
Drawn by	B. van Beek
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1011
PID#	18982000



NOTE:
1. CABLE RACK ASSEMBLY SHALL BE INSTALLED ON TWO LONG SIDES OF THE RECTANGULAR TYPE MANHOLE.
2. CABLE RACK ASSEMBLY SHALL BE INSTALLED ON EACH OF FOUR SIDES OF THE OCTAGONAL TYPE MANHOLE.

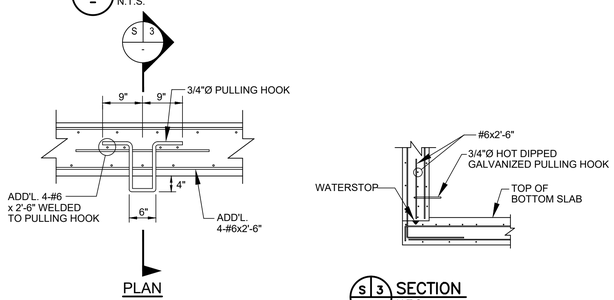
D 1 – GROUNDING OF COMMUNICATION MANHOLES
N.T.S.



S 2 – SECTION N.T.S.

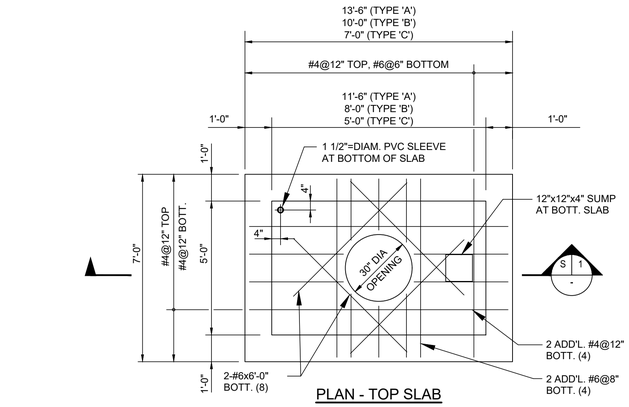
E 1 – ELEVATION N.T.S.

D 3 – TYPICAL DETAIL OF WINDOW & SIDING CONNECTION FOR DUCT
N.T.S.

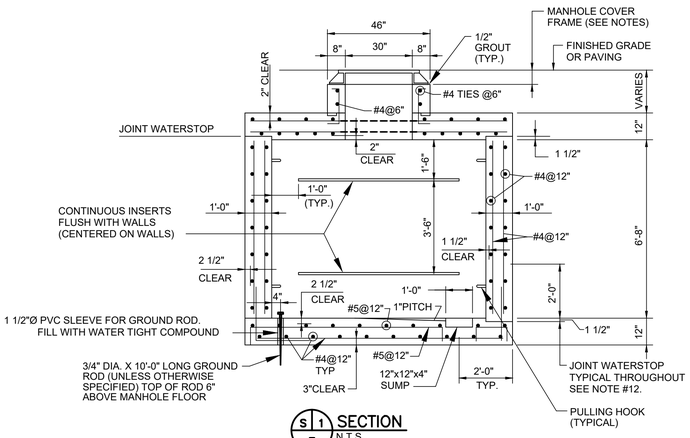


S 3 – SECTION N.T.S

D 4 – TYPICAL DETAIL OF PULLING HOOK
N.T.S.



PLAN - TOP SLAB



S 1 – SECTION N.T.S.

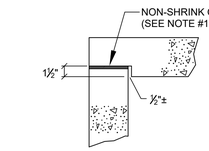
D 2 – COMMUNICATIONS MANHOLE
N.T.S.

NOTES:

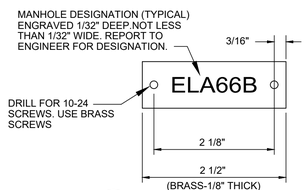
1. MANHOLE FRAMES AND COVERS RATED TO SUPPORT HS25-44 TRUCK LOADS SHALL BE CAST IRON. COVER SHALL HAVE STAINLESS STEEL BOLTS (TYPE 304) AND NON-PENETRATING PICKHOLES. FOR COVER MARKINGS SEE DETAILS ON THIS DRAWING. MANHOLE FRAME AND COVER SHALL BE CAMPBELL FOUNDRY #1012 OR APPROVED EQUAL.

   MANHOLE FRAMES RATED TO SUPPORT AIRCRAFT LOADS SHALL BE CAST IRON. MANHOLE COVERS RATED TO SUPPORT AIRCRAFT LOADS SHALL BE DUCTILE IRON. COVER SHALL HAVE STAINLESS STEEL BOLTS (TYPE 304) AND NON-PENETRATING PICKHOLES. FOR COVER MARKINGS SEE DETAILS ON THIS DRAWING. MANHOLE FRAME AND COVER SHALL BE CAMPBELL FOUNDRY #1511 OR APPROVED EQUAL.
2. MINIMUM SPLICE LENGTHS REQUIRED FOR REINFORCING BARS: #4 BAR 1'-4"; #5 BAR : 1'-8"; #6 BAR : 2'-0".
3. INSERTS SHALL BE HOT DIPPED GALVANIZED STEEL UNISTRUT, (GALVANIZED IN ACCORDANCE WITH ASTM A123 AND A153.) SERIES P-3200, OR APPROVED EQUAL; COMPLETE WITH END CAPS OF SIMILAR MATERIAL AND FINISHED WITH PLASTIC COATED FILLER.
4. PULLING HOOK SHALL BE ASTM A36 STEEL, HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153. STEEL SHALL BE WELDED TO REINFORCING. WELDED AREA SHALL BE PREPARED AND CLEANED IN ACCORDANCE WITH ASTM A780. PAINT WITH 2 COATS OF COLD GALVANIZING COMPOUND CONTAINING A MINIMUM OF 92% ZINC CONTENT IN DRY FILM. FURNISH AND INSTALL GROUNDING ASSEMBLY AS SHOWN ON THE CONTRACT DRAWINGS.
5. REINFORCING BARS SHALL BE ASTM A-615 GRADE 60.
6. INSTALL GROUNDING ASSEMBLY AS SHOWN ON THE DRAWING.
7. PAINT ALL GROUND CONNECTIONS WITH ASPHALT BASE PAINT.
8. FURNISH AND INSTALL PERCAST MANHOLES IN CONFORMANCE WITH SPECIFICATION SECTION 334914.
9. ALL CONCRETE SHALL BE IN CONFORMANCE WITH SPECIFICATION SECTION 033010, WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SUBMIT DESIGN CALCULATIONS FOR ALL FORCES GENERATED BY TRANSPORTATION OF PRECAST MANHOLES TO THE ENGINEER FOR REVIEW. CALCULATIONS SHALL BE PREPARED, SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN NEW YORK STATE. A MINIMUM IMPACT MULTIPLIER OF 1.5 SHALL BE USED. SUBMIT DETAIL FOR CONNECTIONS AND ADDITIONAL REINFORCING REQUIRED FOR TRANSPORATION OF PRECAST MANHOLES.
10. WHEN THE HEIGHT OF THE COLLAR THAT SUPPORTS THE MANHOLE COVER IS LESS THAN 4 INCHES, A SINGLE COURSE OF SOLID CONCRETE MASONRY MAY BE USED TO SUPPORT THE COVER. IF MASONRY IS USED, MASONRY SHALL BE 3 5/8" WIDE x 7 5/8" LONG x HEIGHT OF COLLAR. IF THE COLLAR IS GREATER THAN 4 INCHES HIGH, THE COLLAR SHALL BE POURED IN PLACE CONCRETE.
11. GROUT SHALL BE NON-SHRINK, NON-METALLIC GROUT IN CONFORMANCE WITH ASTM C1107, GRADE C. USE ONE OF THE FOLLOWING, OR AN APPROVED EQUAL:
    1. "MASTERFLOW 928" AS MANUFACTURED BY MASTER BUILDERS
    2. "FIVE STAR GROUT" AS MANUFACTURED BY FIVE STAR PRODUCTS, INC.
    3. "EUCO NS GROUT" AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY.
12. WATERSTOP:

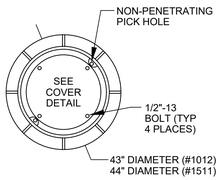
    FOR PRECAST CONCRETE, WATERSTOP SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
    1. "SWELLSEAL JOINT" AS MANUFACTURED BY DENEEF CONSTRUCTION CHEMICALS, INC., WALLER, TX.
    2. "SWELLSTOP" AS MANUFACTURED BY GREENSTREAK, ST. LOUIS, MO.
    3. "ADEKA ULTRA SEAL P-201" AS MANUFACTURED BY MITSUBISHI INTERNATIONAL CORPORATION USA.
13. DUCT BANKS SHALL PENETRATE THE NARROW WALLS OF A MANHOLE ONLY. WHERE PENETRATION OF THE WIDER WALL IS REQUIRED, SUCH PENETRATION IS SUBJECT TO THE REVIEW AND APPROVAL OF THE ENGINEER.
14. IF AN ORGANIC SOIL LAYER IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATION FOR THE MANHOLE, A MINIMUM OF 3 FEET OF OVER EXCAVATION OF THE SOIL LAYER SHALL BE REQUIRED. REPLACEMENT SHALL BE WITH I-12 MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 312323.
15. ENSURE THAT THE SUBGRADE FOR THE MANHOLE AS WELL AS CONTROLLED BACKFILLING OF THE EXCAVATION IS INSPECTED BY THE ENGINEER IN ACCORDANCE WITH SPECIFICATION SECTION 312323. "EXCAVATION, BACKFILLING AND FILLING."
16. CONDUITS SHALL BE TERMINATED WITH END BELL FLUSH WITH INSIDE WALL.
17. FOR OCTAGONAL TYPE OF ELECTRICAL MANHOLE SEE STRUCTURAL DRAWINGS.



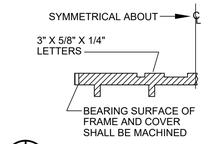
D 5 – CORNER DETAIL
N.T.S.



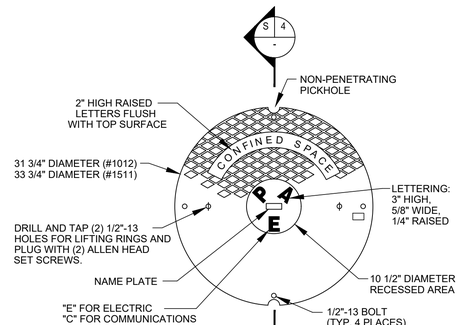
D 8 – NAMEPLATE DETAIL
N.T.S.



D 6 – MANHOLE FRAME & COVER DETAIL
N.T.S.



S 4 – SECTION N.T.S.



D 7 – MANHOLE COVER DETAIL
N.T.S.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA
WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019
STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER
KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title
DYER DECK-OVERS

UTILITY DETAILS
SHEET 1A

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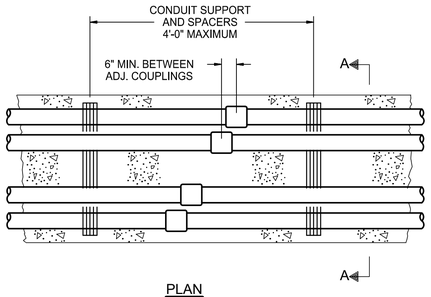
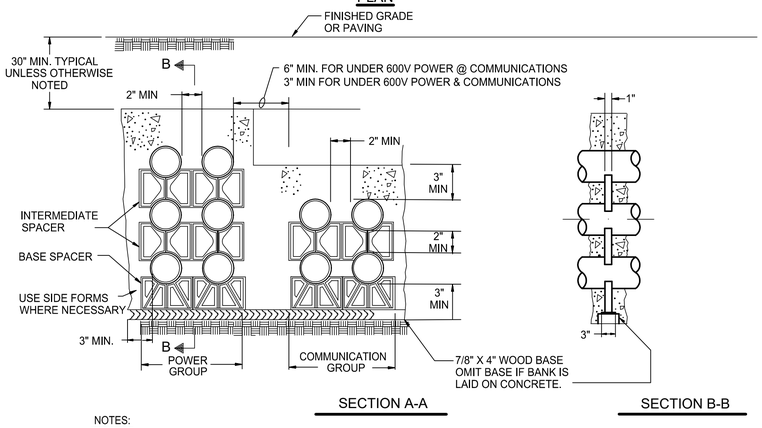
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1021A
PID#	18982000



PLAN



SECTION A-A

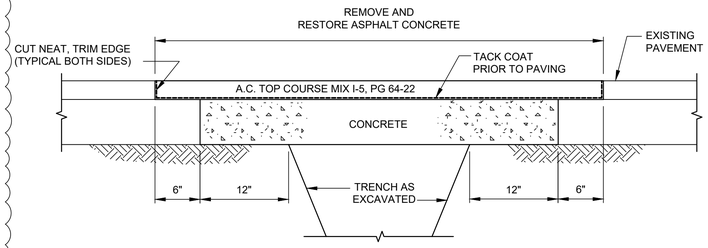
SECTION B-B

NOTES:

1. FOR SIZE AND NUMBER OF CONDUITS AS WELL AS DUCT BANK FORMATION, SEE PLANS.
2. COMMUNICATIONS CONDUIT GROUP SHALL BE SEPARATED FROM THE POWER GROUP ON EITHER LEFT OR RIGHT SIDE AS SHOWN ON PLANS.

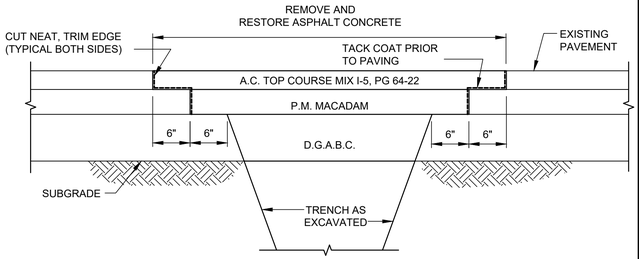
DUCT BANK DETAILS – TYPICAL ARRANGEMENT

NTS



RIGID BASED PAVEMENT RESTORATION

060.005 RBPR



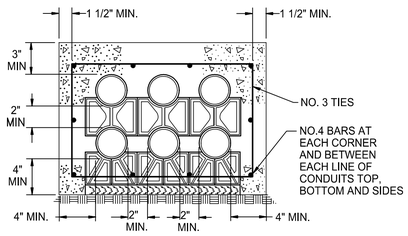
FLEXIBLE PAVEMENT RESTORATION

060.006 FPR

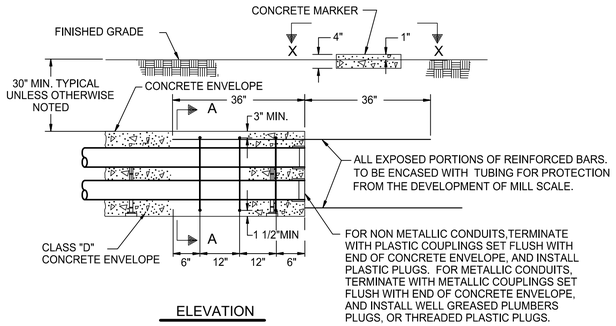
1

NOTES:

1. DUCTS UNDER VEHICULAR ROADWAYS OR OTHER AREAS (PARKING LOTS, RUNWAYS, TAXIWAYS, ETC.) WHERE TRUCKS, AIRCRAFT OR OTHER HEAVY EQUIPMENT TRAVEL SHALL BE CONCRETE ENCASED WITH VERY HIGH EARLY STRENGTH CONCRETE THAT HAS A SIX HOUR DESIGN COMPRESSIVE STRENGTH OF 2000 PSI. CONCRETE SHALL CONFORM TO THE REQUIREMENT OF PA SPECIFICATION SECTION 03302.



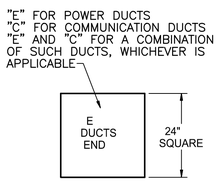
SECTION A-A



ELEVATION

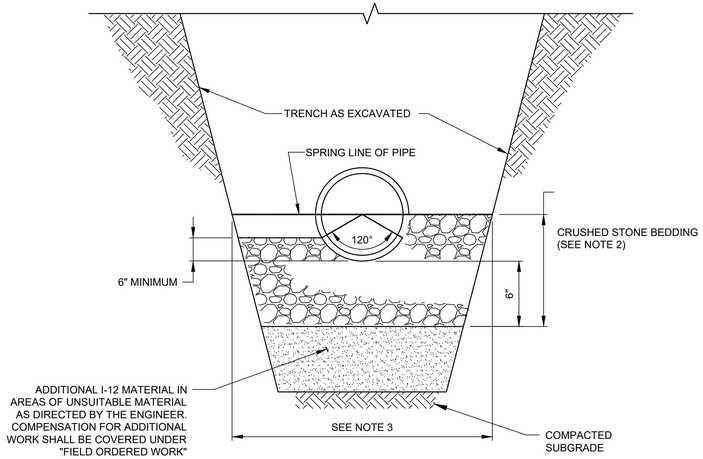
DETAIL OF DEAD–ENDING DUCT BANKS

NTS



LETTERS SHALL BE 4" X 3" X
4" WITH A STROKE 1/2" WIDE

PLAN X-X



NOTES:

1. BACKFILL TRENCH TO THE SURROUNDING EXISTING GROUND ELEVATION OR PAVEMENT SUBGRADE, WHICHEVER IS LOWER.
2. FOR CORRUGATED HIGH DENSITY POLYETHYLENE AND CORRUGATED POLYPROPYLENE PIPES BRING CRUSHED STONE TO SPRING LINE OF PIPE.
3. PIPE OUTSIDE DIAMETER + 2'-0" FOR THE PIPES UP TO AND INCLUDING 18" INSIDE DIAMETER, PIPE OUTSIDE DIAMETER + 3'-0" FOR PIPES OVER 18" INSIDE DIAMETER AND STRUCTURES.

BEDDING DETAIL

(STORM DRAINAGE, WATER SUPPLY AND SANITARY SEWER SYSTEMS)

N.T.S.

066.001 BEDET

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA
WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

UTILITY DETAILS
SHEET 2

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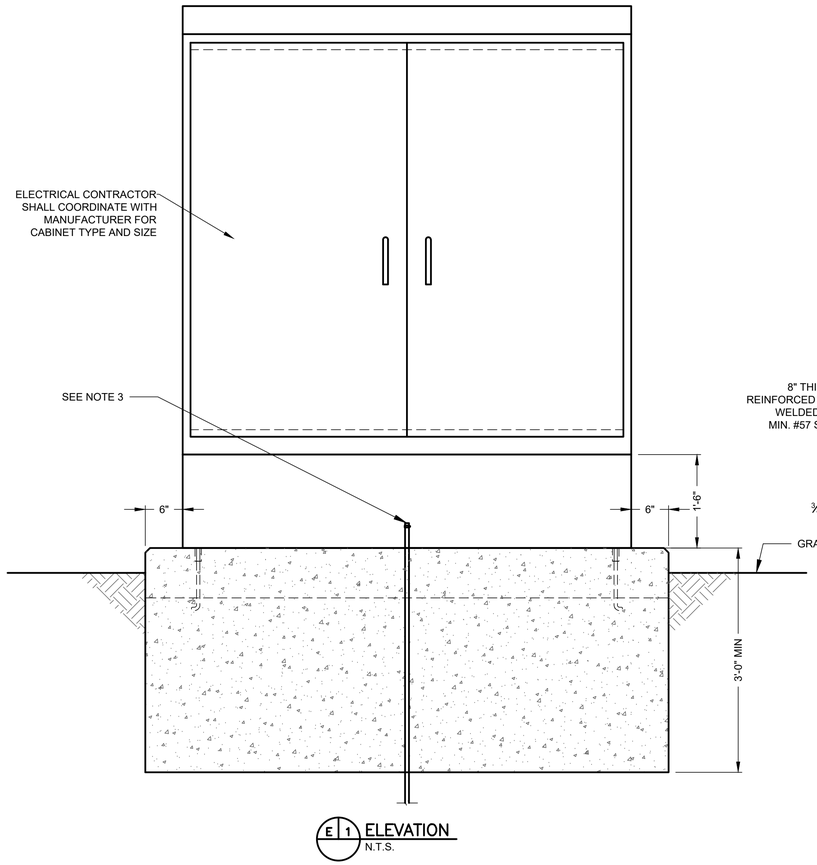
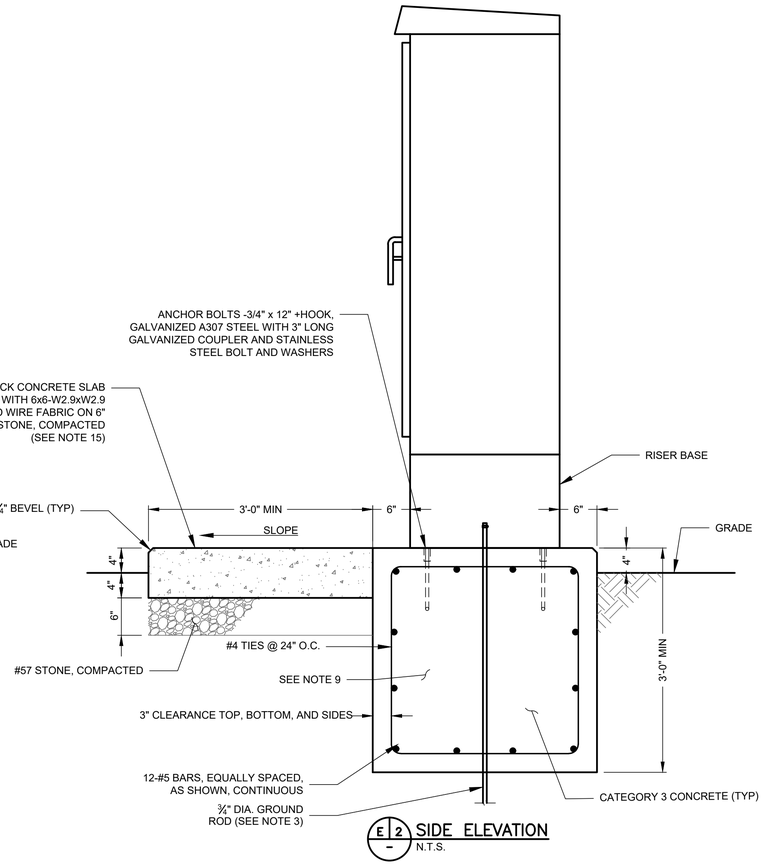
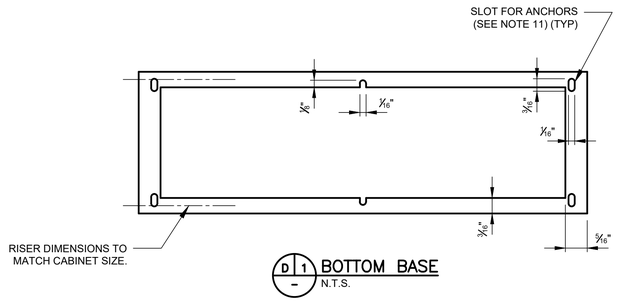
Designed by	S. Molina
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1022
PID#	18982000



E 1 ELEVATION
N.T.S.



E 2 SIDE ELEVATION
N.T.S.



D 1 BOTTOM BASE
N.T.S.

TYPICAL ELECTRICAL SERVICE EQUIPMENT ENCLOSURE FOUNDATION

N.T.S.

NOTES:

1. SEE ELECTRICAL DRAWINGS FOR LEGEND, ABBREVIATIONS, & GENERAL NOTES.
2. NOTES ON THIS DRAWING APPLY TO SERVICE EQUIPMENT ENCLOSURE DETAILS.
3. CONTRACTOR SHALL SUBMIT SCALED DRAWINGS TO VERIFY ALL COMPONENTS WILL FIT INTO CABINETS. CONTRACTOR SHALL SUBMIT SCALED DRAWINGS OF FOUNDATIONS.
4. SERVICE EQUIPMENT ENCLOSURE SHALL BE PROVIDED WITH AN ALUMINUM BACKBOARD, NEMA 3R RATED, AND MADE FROM 0.125" ALUMINUM (5052-H32). CABINET SHALL NOT BE PAINTED.
5. PROVIDE STRUT CHANNEL SUPPORTS FOR ALL EQUIPMENT MOUNTED TO BACKBOARD.
6. ALL BOLTS SHALL BE VANDAL PROOF TYPE.
7. FURNISH AND INSTALL GROUNDING AND BONDING IN ACCORDANCE WITH NEC REQUIREMENTS. BONDING TO GROUND RODS SHALL BE WITH A MINIMUM #4 AWG CONDUCTOR. REFER TO SPECIFICATION 260526.
8. FURNISH AND INSTALL GROUND ROD (¾" X 10'-0" LONG MIN) AT ALL CABINETS AND BOXES. ENSURE RESISTANCE TO GROUND IS MAXIMUM 25 OHMS.
9. CONDUITS WITHIN FOUNDATION NOT SHOWN. NUMBER OF CONDUITS FROM CABINET TO JUNCTION BOXES VARIES PER LOAD CENTER LOCATION. CONDUITS SHALL STUB UP INTO CABINET PEDESTAL MINIMUM 5" ABOVE THE FOUNDATION.
10. THE CONTRACTOR SHALL SUBMIT REINFORCEMENT STEEL DESIGN LAYOUT FOR CABINET FOUNDATIONS. CONCRETE FOUNDATIONS SHALL BE AS PER SPECIFICATION SECTION 03302.
11. THE CONFIGURATION AND DETAILS OF THE CABINET ANCHOR BOLT PATTERN SHALL BE AS PER CABINET AND RISER BASE MANUFACTURER.
12. ALL CONDUITS SHALL BE 4" UNLESS OTHERWISE NOTED.
13. FURNISH AND INSTALL INDOOR POCKET TO HOLD AS-BUILT ONE-LINES, PANEL SCHEDULES, AND MANUFACTURER'S MANUALS. CONTRACTOR SHALL COMPLETE AS-BUILT ONE-LINE DIAGRAM AT INSTALLATIONS COMPLETION. DIAGRAM SHALL SHOW CONTRACTOR'S NAME AND BE DATED.
14. BASIS OF DESIGN EQUIPMENT DIMENSION USED IN DETAIL. CONTRACTOR SHALL SUBMIT SCALED DRAWINGS TO VERIFY ALL COMPONENTS WILL FIT INTO CABINETS PRIOR TO THE INSTALLATION OF ALL EQUIPMENT.
15. CONCRETE SLAB IN FRONT OF CABINETS NOT REQUIRED WHERE INSTALLING IN SIDEWALKS.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Added	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

UTILITY DETAILS SHEET 3A

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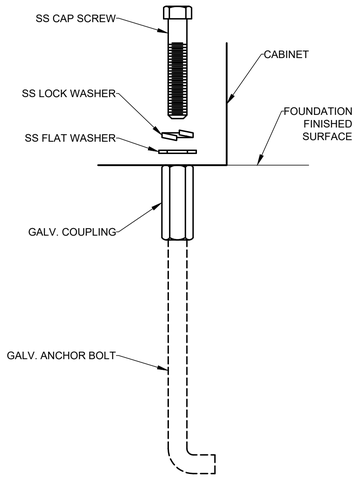
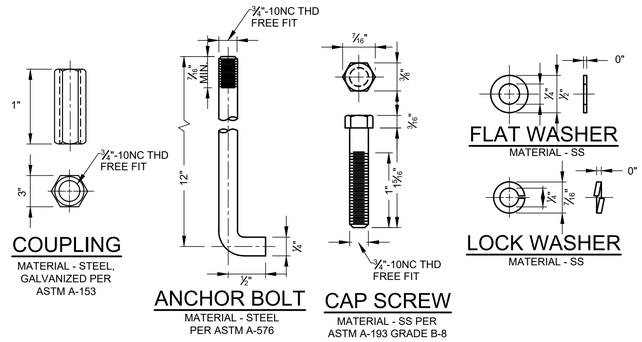
Designed by	K. Phu
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1023A
PID#	18982000



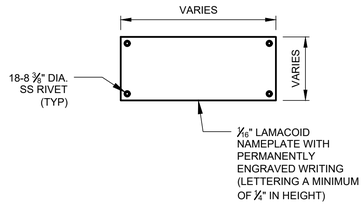
ANCHOR BOLT ASSEMBLY

N.T.S.



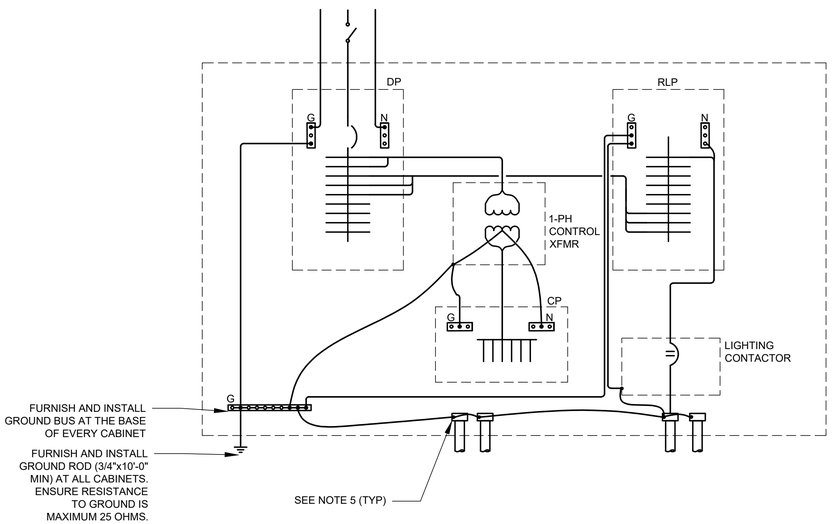
NOTES:

1. THE CONFIGURATION AND DETAILS OF THE CABINET ANCHOR BOLT PATTERN SHALL BE AS PER CABINET AND RISER BASE MANUFACTURER.
2. TAG SHALL INDICATE LOAD CENTER DESIGNATION, VOLTAGE CLASS (208V), AND INSTALLATION DATE OF INSTALLATION.
3. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE MINIMUM #4 WITH GREEN INSULATION.
4. EXTEND #2 BARE COPPER CONDUCTOR TO FOUNDATION REBAR FROM GROUND ROD AND EXOTHERMICALLY WELD TO BARS AND ROD.
5. BOND ALL CONDUITS AT BASE OF CABINET WITH MINIMUM #2 GROUNDING CONDUCTOR.
6. REFER TO ELECTRICAL SHEETS FOR ALL GROUNDING REQUIREMENTS.



EQUIPMENT TAG

N.T.S.



TYPICAL GROUNDING ONE LINE FOR CABINETS

N.T.S.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Added	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

UTILITY DETAILS
SHEET 3B

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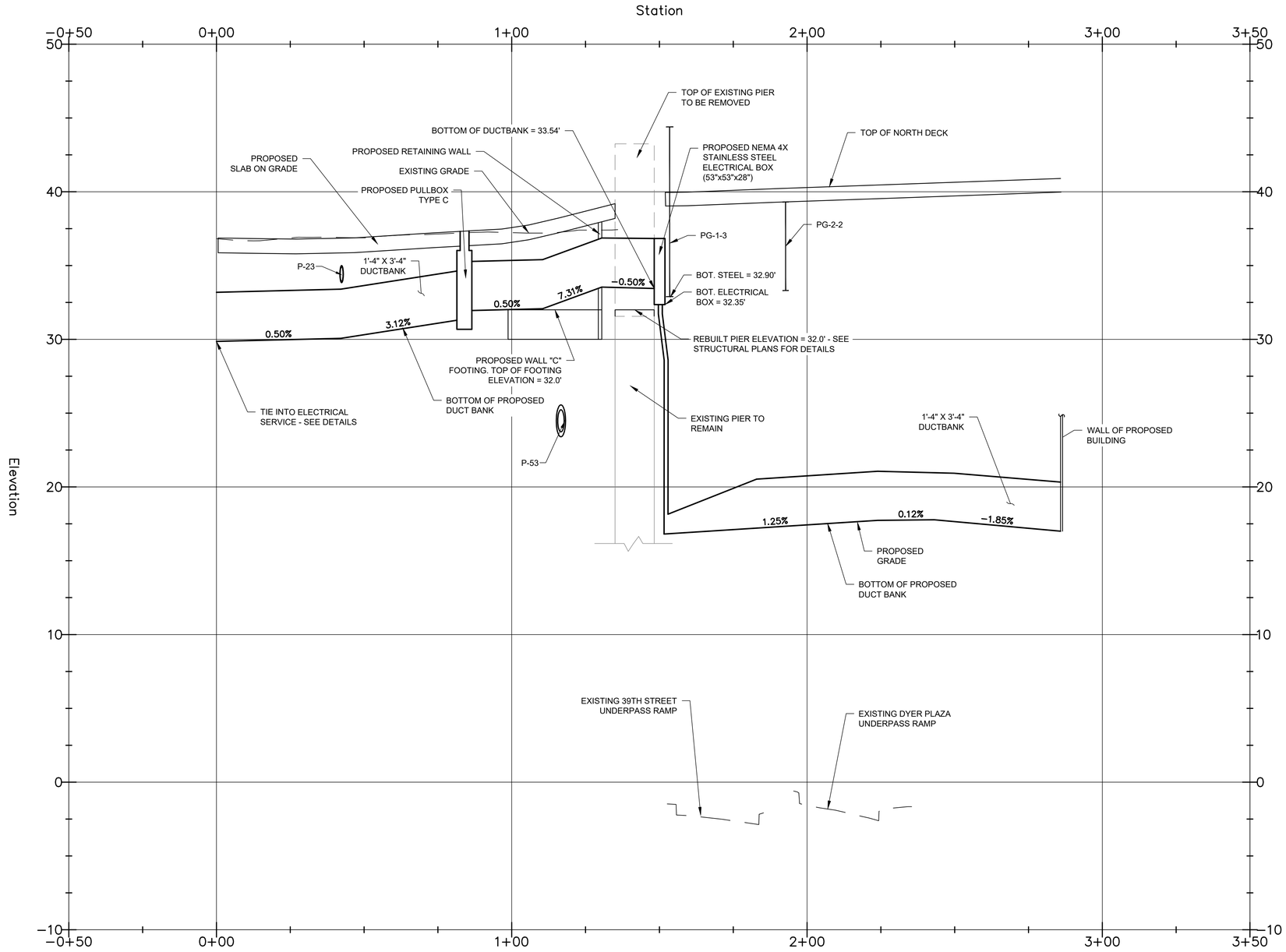
Designed by	K. Phu
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1023B
PID#	18982000

PROPOSED ELECTRICAL DUCTBANK PROFILE



Sheet 105A of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Added	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL

Title

DYER DECK-OVERS

ELECTRICAL PROFILE

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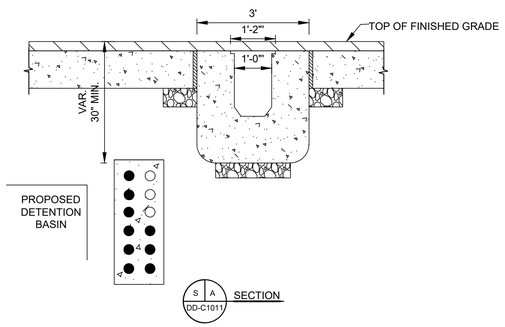
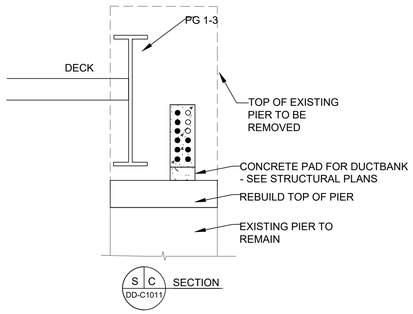
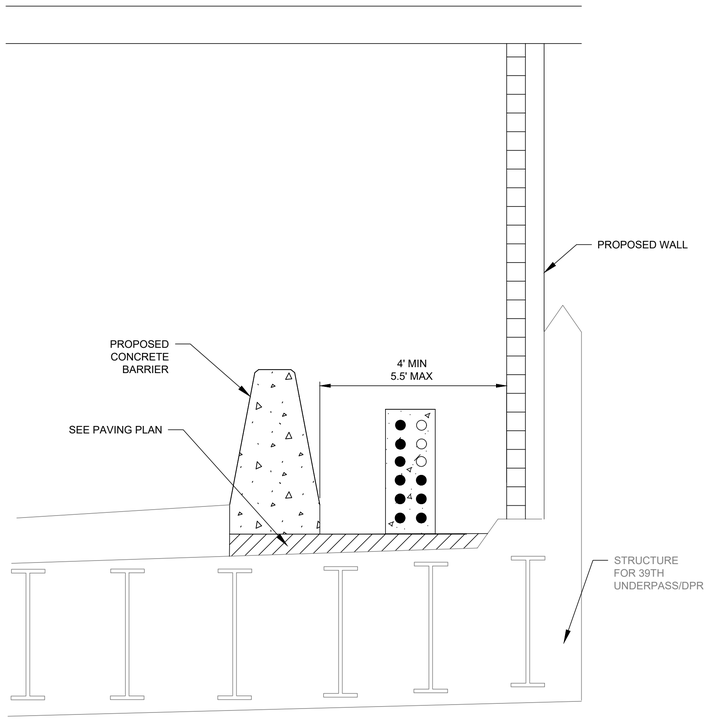
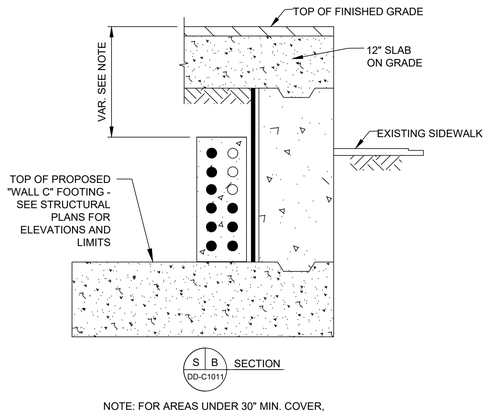
Designed by	M. Ohara
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1031
PID#	18982000

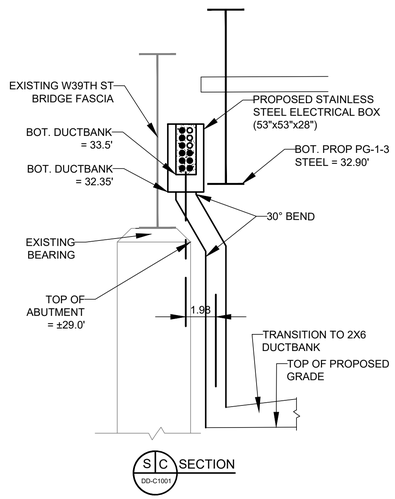


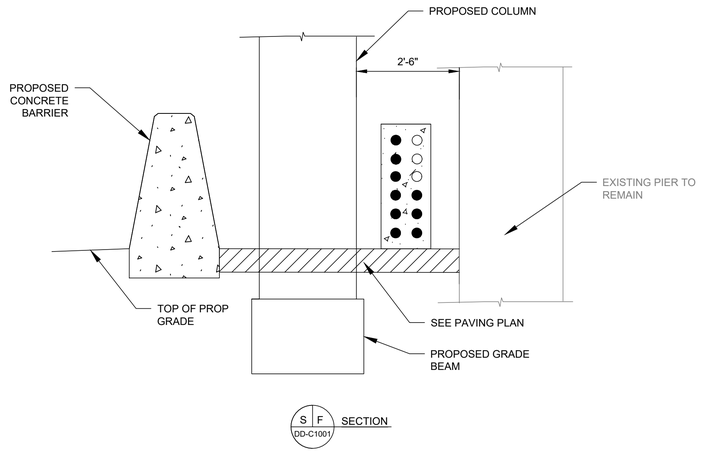






NOTE: FOR AREAS UNDER 30" MIN. COVER,
PROVIDE 1" STEEL PLATE ON TOP OF DUCTBANK
OR OTHER METHODS APPROVED BY ENGINEER





NOTE (APPLICABLE FOR SHEET DD-C1040):
1. STRUCTURAL DETAILS (SUCH AS GIRDERS, COLUMNS, DECKS, SLABS, RETAINING WALL REMOVALS, CONNECTIONS, ETC.) SHOWN IN THESE SECTIONS ARE FOR GRAPHICAL REPRESENTATION ONLY. REFER TO STRUCTURAL DRAWINGS FOR DETAILS. ITEMS SHOWN IN THESE SECTIONS ARE NOT TO SCALE AND MAY NOT DISPLAY THE TOTALITY OF STRUCTURAL WORK REQUIRED.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Added	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

CIVIL
Title

DYER DECK-OVERS

UTILITY DETAILS

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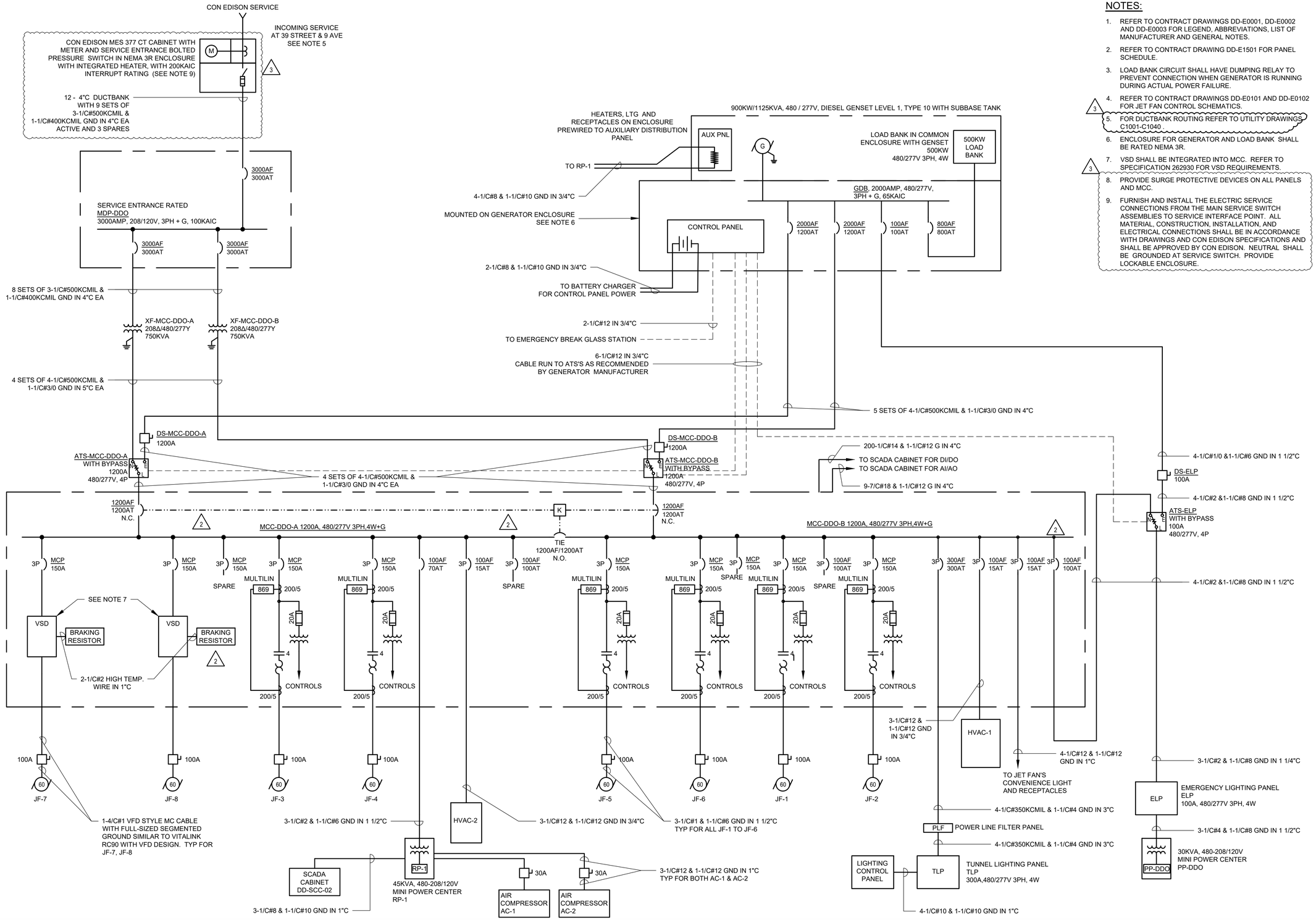
Designed by	M. Ohara
Drawn by	C. Blakeley
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-C1040
PID#	18982000



NOTES:

1. REFER TO CONTRACT DRAWINGS DD-E0001, DD-E0002 AND DD-E0003 FOR LEGEND, ABBREVIATIONS, LIST OF MANUFACTURER AND GENERAL NOTES.
2. REFER TO CONTRACT DRAWING DD-E1501 FOR PANEL SCHEDULE.
3. LOAD BANK CIRCUIT SHALL HAVE DUMPING RELAY TO PREVENT CONNECTION WHEN GENERATOR IS RUNNING DURING ACTUAL POWER FAILURE.
4. REFER TO CONTRACT DRAWINGS DD-E0101 AND DD-E0102 FOR JET FAN CONTROL SCHEMATICS.
5. FOR DUCTBANK ROUTING REFER TO UTILITY DRAWINGS C1001-C1040 .
6. ENCLOSURE FOR GENERATOR AND LOAD BANK SHALL BE RATED NEMA 3R.
7. VSD SHALL BE INTEGRATED INTO MCC. REFER TO SPECIFICATION 262930 FOR VSD REQUIREMENTS.
8. PROVIDE SURGE PROTECTIVE DEVICES ON ALL PANELS AND MCC.
9. FURNISH AND INSTALL THE ELECTRIC SERVICE CONNECTIONS FROM THE MAIN SERVICE SWITCH ASSEMBLIES TO SERVICE INTERFACE POINT. ALL MATERIAL, CONSTRUCTION, INSTALLATION, AND ELECTRICAL CONNECTIONS SHALL BE IN ACCORDANCE WITH DRAWINGS AND CON EDISON SPECIFICATIONS AND SHALL BE APPROVED BY CON EDISON. NEUTRAL SHALL BE GROUNDED AT SERVICE SWITCH. PROVIDE LOCKABLE ENCLOSURE.

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK LUBA SEVERINOVSKY 077734-1 LICENSED PROFESSIONAL ENGINEER

LUBA SEVERINOVSKY
NY Professional Engineering # 077734-1

No.	Date	Revision	Approved
3	04/19/2024	Addendum No. 5 Electrical Service - Sheet Revised	L.S.
2	03/28/24	ADDENDUM 3 VFD MODIFICATIONS - SHEET REVISED	L.S.
1	03/15/24	ADDENDUM 1 SHEET ADDED	L.S.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

ELECTRICAL

Title

DYER DECK-OVERS

PROPOSED
ONE LINE DIAGRAM

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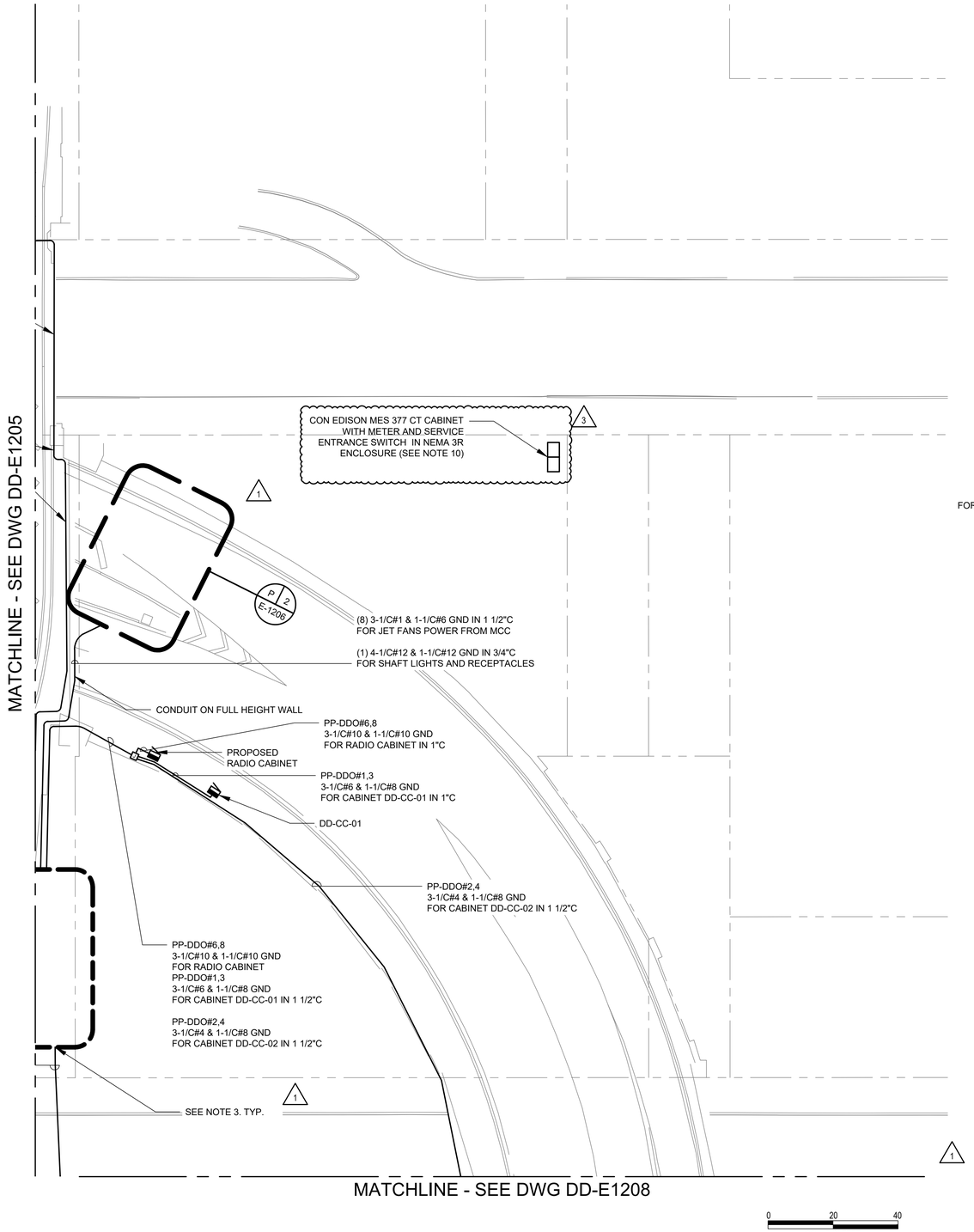
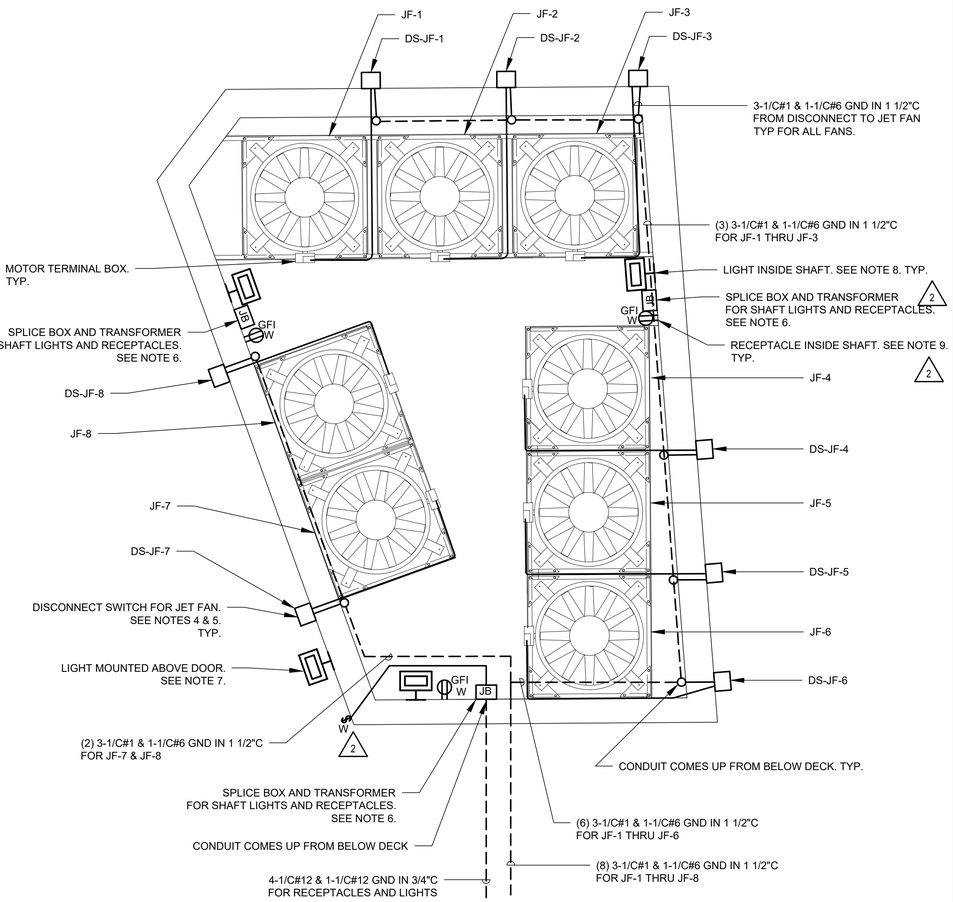
Designed by	L.SEVERINOVS
Drawn by	K.KOSLIK
Checked by	S.DELUCIA
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-E0100
PID#	18982000



NOTES:

1. REFER TO CONTRACT DRAWINGS DD-E0001, DD-E0002 AND DD-E0003 FOR LEGEND, ABBREVIATIONS, LIST OF MANUFACTURERS AND GENERAL NOTES.
2. REFER TO "ES SERIES" COMMUNICATION CONTRACT DRAWINGS FOR EXACT LOCATION OF COMMUNICATION CABINETS.
3. ALL WALL/CEILING PENETRATIONS TO BE COORDINATED WITH STRUCTURAL CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT. ALL OPENINGS SHALL BE SEALED BY ROTEX , OZ/GEDNEY, OR APPROVED EQUAL.
4. SEE CONTRACT DRAWING DD-E1503 FOR JET FAN DISCONNECT MOUNTING DETAILS.
5. ALL (8) JET FAN DISCONNECTS (DS-JF-1 THRU DS-JF-8) SHALL BE PROVIDED WITH A KEYED PADLOCK.
6. SEE CONTRACT DRAWING DD-E1503 FOR SPLICE BOX AND TRANSFORMER MOUNTING DETAILS.
7. FURNISH AND INSTALL PHOTOCELL TO CONTROL LIGHT FIXTURE, TORK 2002 OR APPROVED EQUAL. FIXTURE SHALL BE WIRED AHEAD OF SHAFT LIGHT SWITCH.
8. MOUNT LIGHT AT 10' ABOVE SERVICE PLATFORM.
9. MOUNT RECEPTACLE AT 4' ABOVE SERVICE PLATFORM.
10. REFER TO CONTRACT DRAWINGS C1001-C1040 FOR EXACT LOCATIONS, HOUSEKEEPING PAD, AND DUCT BANK INFORMATION. FURNISH AND INSTALL GROUND ROD BONDED TO CABINET.



P 2 E-1206 JET FAN SHAFT PART PLAN

0 4 8
SCALE IN FEET

Sheet 129 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · SEVERINOVSKY LUBA · 077734-1 · LICENSED PROFESSIONAL ENGINEER

LUBA SEVERINOVSKY
NY Professional Engineering # 077734-1

No.	Date	Revision	Approved
3	04/18/24	ADDENDUM 5 ELECTRICAL SERVICE - SHEET REVISED	L.S.
2	03/28/24	ADDENDUM 3 VFD MODIFICATIONS - SHEET REVISED	L.S.
1	03/15/24	ADDENDUM 1 SHEET REVISED	L.S.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

ELECTRICAL

Title

DYER DECK-OVERS

ROADWAY POWER CONSTRUCTION PLAN SHEET 2 OF 4

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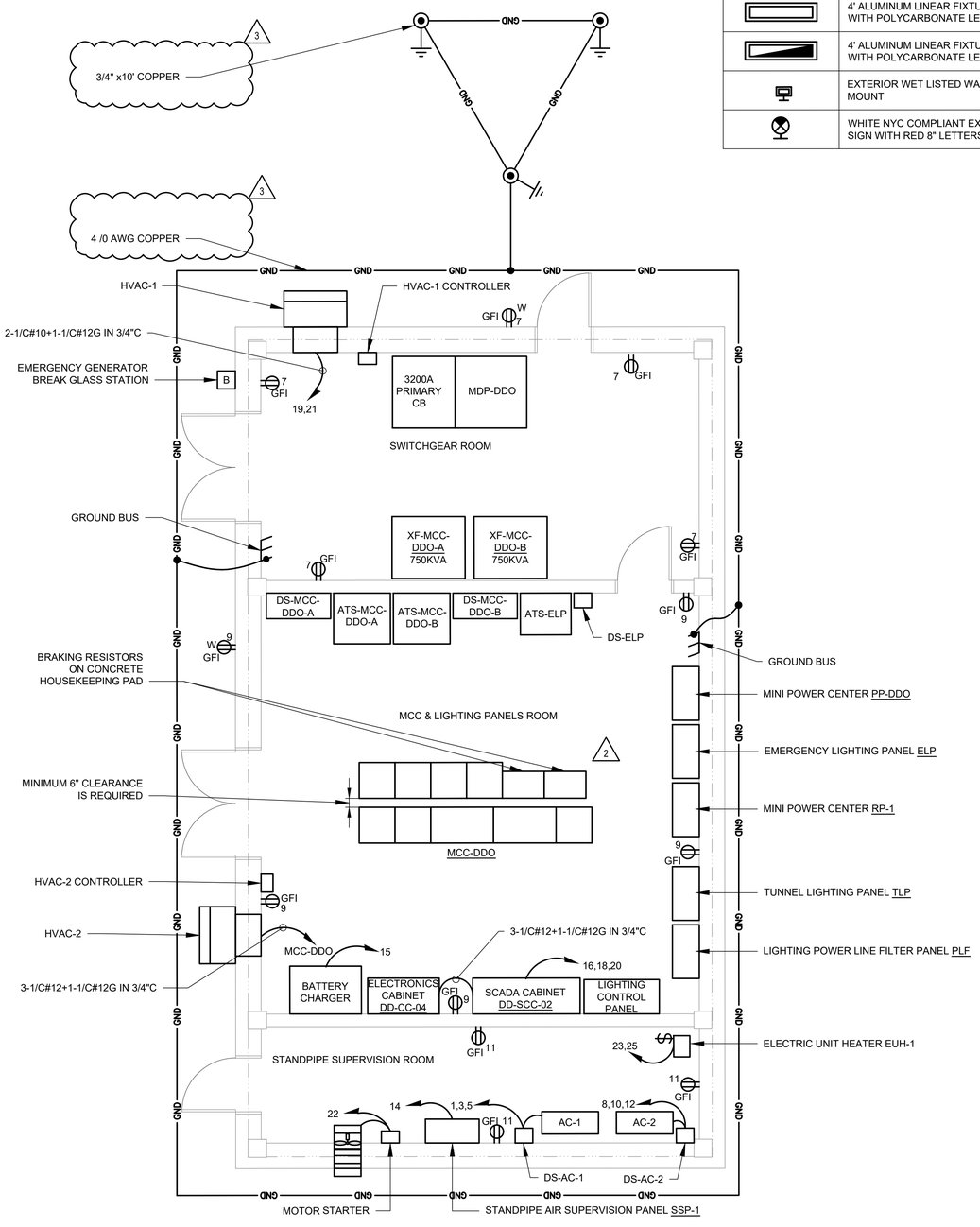
Designed by	L.SEVERINOVS
Drawn by	A.ISFAR
Checked by	S.DELUCIA
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-E1206
PID#	18982000

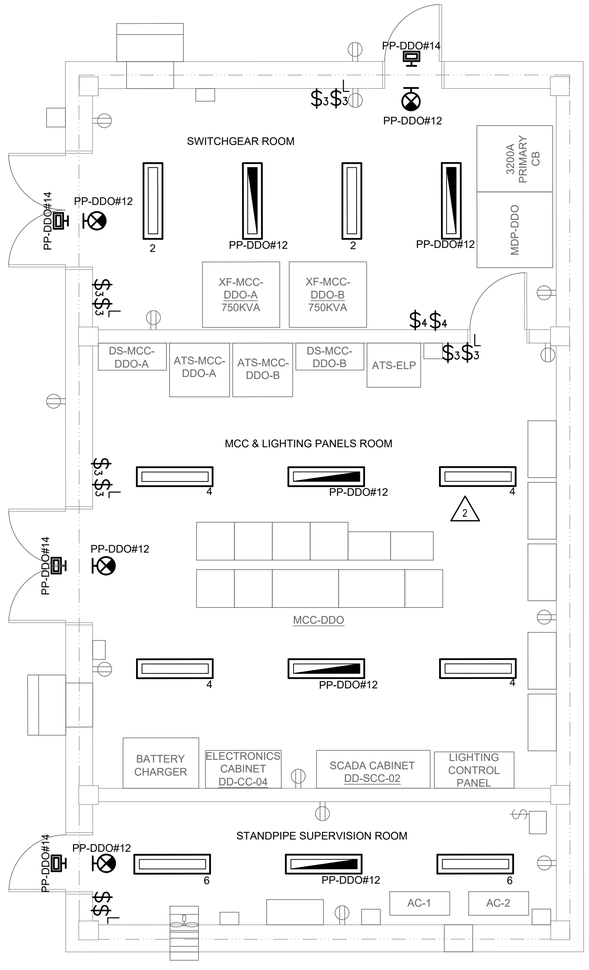
LIGHTING FIXTURE SCHEDULE						
SYMBOL	DESCRIPTION	LAMP	VOLTAGE	MANUFACTURER AND CATALOG NO.	MOUNTING	SEE NOTES
	4' ALUMINUM LINEAR FIXTURE WITH POLYCARBONATE LENS	LED, 4000K	120V	ACUITY VISION VPF4-4FT-NODIM-20W-4000K-MVOLT-CLP-GRY OAE	PENDANT	MOUNT 8' AFF
	4' ALUMINUM LINEAR FIXTURE WITH POLYCARBONATE LENS	LED, 4000K	120V	ACUITY VISION VPF4-4FT-NODIM-20W-4000K-MVOLT-CLP-GRY OAE	PENDANT	MOUNT 8' AFF.
	EXTERIOR WET LISTED WALL MOUNT	LED, 4100K	120-277	HUBBELL - VWGL-1LED WITH GUARD	WALL	
	WHITE NYC COMPLIANT EXIT SIGN WITH RED 8" LETTERS.	LED	120V	EXIT LIGHT CO NYCS-R OAE	WALL	

NOTES:

1. REFER TO CONTRACT DRAWINGS DD-E0001, DD-E0002 AND DD-E0003 FOR LEGEND, ABBREVIATIONS, LIST OF MANUFACTURERS AND GENERAL NOTES.
2. ALL WALL/CEILING PENETRATIONS TO BE COORDINATED WITH STRUCTURAL CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT. ALL OPENINGS SHALL BE SEALED BY ROTEC , OZ/GEDNEY, OR APPROVED EQUAL.
3. ALL BRANCH CIRCUITS SHALL BE 2-1/C#12 & 1-1/C#12 GND IN 3/4" RGS CONDUIT, U.O.N. ALL BRANCH CIRCUITS SHALL BE CIRCUITED TO PANEL RP-1, UON.
4. FLOOR MOUNTED EQUIPMENT SHALL BE INSTALLED ON 4" HOUSEKEEPING PADS. PADS SHALL EXTEND 6" FROM EQUIPMENT EDGE ON ALL SIDES



P 1 / E-1209 ELECTRICAL BUILDING POWER PLAN



P 2 / E-1209 ELECTRICAL BUILDING LIGHTING PLAN

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

ORIGINAL SIGNED BY

STATE OF NEW YORK — ALEKSANDR VYSTUPOV — 077734 — LICENSED PROFESSIONAL ENGINEER

No.	Date	Revision	Approved
3	04/19/2024	Addendum No. 5 Electrical Service - Sheet Revised	L.S.
2	03/28/24	ADDENDUM 3 VFD MODIFICATIONS - SHEET REVISED	L.S.
1	03/15/24	ADDENDUM 1 SHEET ADDED	L.S.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

ELECTRICAL

Title

DYER DECK-OVERS

ENLARGEMENT PLAN

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Designed by	L.SEVERINOVS
Drawn by	K.KOSLIK
Checked by	S.DELUCIA
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-E1209
PID#	18982000

TUNNEL LIGHTING PANEL TLP
300 AMP MCB, 277/480V, 3 PH, 4W+G, 60 HZ, 22 KAIC (2)

VA	SERVICE	TRIP	CKT	CKT	TRIP	SERVICE	VA
-	SPARE	20	1	2	20	SPARE	-
2894	RAMP H - TH1, TH2, 2 WAY	20	3	4	25	RAMP J - TH1, TH2 ZONES	4678
4400	RAMP H- TH1	20	5	6	20	RAMP J - TH1, TH2, TR1, TR2 ZONES 2 WAY	3780
2750	RAMP H- TH2,TR1	20	7	8	20	RAMP J - TH1, TH2 ZONES	3989
3850	RAMP H- TH2,TR1 2 WAY	20	9	10	20	RAMP J - TH1, TH2 ZONES	1933
694	RAMP H- TR1 2 WAY	20	11	12	20	RAMP J - TH1, TH2 ZONES	2750
-	SPARE	20	13	14	20	SPARE	-
-	SPARE	20	15	16	20	RAMP K - TH1 TH2 TR1 TR2 ZONES	4128
4400	RAMP D TH1 ZONE	20	17	18	20	RAMP K - TH1 TH2 TR1 TR2 ZONES	4267
4400	RAMP D TH1 ZONE	20	19	20	20	RAMP K - TH1 TH2 TR1 TR2 ZONES	3444
4400	RAMP D TH1,TH2 ZONES	20	21	22	20	RAMP P - TH1, TH2 TR1 ZONES	3300
4400	RAMP D TH1,TH2 ZONES	20	23	24	20	RAMP P - TH1, TH2 TR1 ZONES	3300
4400	RAMP D TH2,TR,TR1 ZONES	20	25	26	20	SPARE	-
4400	RAMP D TH2,TR, TR1 ZONE	20	27	28	20	SPARE	-
3717	RAMP D TR1,TR2 ZONES	20	29	30	20	RAMP L- TH1 TH2 TR1 TR2 INT ZONES	3994
1522	RAMP D TR1,TR2 ZONES	20	31	32	20	RAMP L- TH1 TH2 TR1 TR2 INT ZONES	3856
556	RAMP D INTERIOR 2 WAY	20	33	34	20	RAMP L- TH1 TH2 TR1 TR2 INT ZONES	3856
-	SPARE	20	35	36	20	RAMP L- TH1 TH2 TR1 TR2 INT ZONES	3856
-	SPARE	20	37	38	20	SPARE	-
-	SPARE	20	39	40	20	SPARE	-
-	SPARE	20	41	42	20	RAMP M- TH1 TH2 TR1 TR2 INT ZONES	2756
4539	RAMP DN TH1, TH2, TR1,TR2 & TR3 ZONES	25	43	44	20	RAMP M- TH1 TH2 TR1 TR2 INT ZONES	1933
4128	RAMP DN TH1, TH2, TR1, TR2 &TR3 ZONES	20	45	46	20	RAMP M- TH1 TH2 TR1 TR2 INT ZONES	2617
4128	RAMP DN TH1, TH2, TR1,TR2 & TR3 ZONES	20	47	48	20	RAMP N- TH1 TH2 TR1 TR2 INT ZONES	4267
3989	RAMP DN TH1, TH2, TR1,TR2 & TR3 ZONES	20	49	50	20	RAMP N- TH1 TH2 TR1 TR2 INT ZONES	3444
4539	RAMP A TH1, TH2, TR1 ZONES	25	51	52	20	RAMP N- TH1 TH2 TR1 TR2 INT ZONES	4128
4400	RAMP A TH1, TH2, TR1 ZONES	20	53	54	20	SPARE	-
4895	RAMP A TH1, TH2, TR1 ZONES	25	55	56			3325
-	SPARE	20	57	58	20	LIGHTING CONTROL PANEL	3325
-	SPARE	20	59	60			3325

PHASE A: 46487 VA (2)
PHASE B: 52731 VA
PHASE C: 58433 VA (2)
TOTAL: 157651 VA
CONNECTED LOAD: 189.63 A (1)

EMERGENCY LIGHTING PANEL ELP
100 AMP MCB, 277/480V, 3 PH, 4W+G, 60 HZ, 22 KAIC (2)

VA	SERVICE	TRIP	CKT	CKT	TRIP	SERVICE	VA
833	RAMP H	20	1	2	20	RAMP J	1111
4006	RAMP D	20	3	4	25	RAMP K & P	1528
4417	RAMP D	20	5	6	20	RAMP L	1528
2361	RAMP DN & A	20	7	8	20	RAMP M & N	1528
2372	RAMP DN & A	20	9	10	20	RAMP M & N	1389
-	SPARE	20	11	12	20	SPARE	-
-	SPARE	20	13	14	20	RAMP L	1528
1528	RAMP B & E	20	15	16	20	SPARE	-
1389	RAMP B & E	20	17	18	20	SPARE	-
-	SPARE	20	19	20			10284
-	SPARE	20	21	22	45	MINI POWER CENTER, 22.5KVA	8930 (1)
-	SPARE	20	23	24			7607

PHASE A: 17646 VA (2)
PHASE B: 19755 VA
PHASE C: 14941 VA (1)
TOTAL: 52341 VA
CONNECTED LOAD: 62.95 A (2)

NOTES:

1. REFER TO CONTRACT DRAWINGS DD-E0001, DD-E0002 AND DD-E0003 FOR ELECTRICAL LEGEND, ABBREVIATIONS, LIST OF MANUFACTURES AND GENERAL NOTES. (1)
2. EACH PANEL SHALL BE PROVIDED WITH SURGE PROTECTION DEVICE . (1) (2)
3. REFER TO CONTRACT DRAWINGS DD-E1201 THRU DD-E1204 FOR PROPOSED LIGHTING PLANS.
4. PROVIDE IDENTIFIED HANDLE TIES FOR THE INDIVIDUAL SINGLE-POLE BREAKER AS SHOWN IN PANEL SCHEDULE.

MINI POWER CENTER, RP-1
100 AMP MCB, 120/208V, 3 PH. 4W+G, 60HZ, 14 KAIC (2)

VA	SERVICE	TRIP	CKT	CKT	TRIP	SERVICE	VA
998	AIR COMPRESSOR AC-1 2HP	20	1	2	20	ELEC. BLDG LIGHTS	162
998			3	4	20	ELEC. BLDG LIGHTS	162
998			5	6	20	ELEC. BLDG LIGHTS	81
720	ELEC. BLDG RECEPT.	20	7	8	20	AIR COMPRESSOR AC-2 2HP (STANDBY)	-
720	ELEC. BLDG RECEPT.	20	9	10			-
540	ELEC. BLDG RECEPT.	20	11	12			-
-	SPARE	20	13	14	20	STANDPIPE SUP. PNL	133
1000	BC CONTROL POWER	20	15	16	35	DD-SCC-02	5000
3000	GENSET AUX PNL	40	17	18			5000
3000			19	20			5000
3000			21	22	15	EF-1 7/4HP	700
1300	EUH-1	20	23	24	20	SPARE	
1300			25	26	20	SPARE	
	SPARE	20	27	28	20	SPARE	
	SPARE	20	29	30	20	SPARE	

PHASE A: 11013 VA
PHASE B: 11880 VA
PHASE C: 10919 VA (2)
TOTAL: 33812 VA
CONNECTED LOAD: 93.85A (1)

MINI POWER CENTER, PP-DDO
100 AMP MCB, 120/208V, 3 PH. 4W+G, 60HZ, 14 KAIC (2)

VA	SERVICE	TRIP	CKT	CKT	TRIP	SERVICE	VA
2936	DD-CC-01	30	1	2	30	DD-CC-02	2936
2936			3	4			2936
2936	DD-CC-03	30	5	6	20	RADIO CABINET	1478
2936			7	8			1478
3059	DD-SCC-01	30	9	10	20	SPARE	-
3059			11	12	20	ELEC. BLDG LTG & EXIT	135 (1)
-	SPARE	20	13	14	20	ELEC. BLDG EXT. LTG	350
-	SPARE	20	15	16	20	SPARE	-
-	SPARE	20	17	18	20	SPARE	-
-	SPARE	20	19	20	20	SPARE	-

PHASE A: 10284 VA
PHASE B: 8930 VA
PHASE C: 7607 VA (1)
TOTAL: 26822 VA
CONNECTED LOAD: 74.5 A

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · SEVERINOVSKY LUBA · 077734-1 · LICENSED PROFESSIONAL ENGINEER

LUBA SEVERINOVSKY
NY Professional Engineering # 077734-1

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	L.S.
1	03/15/24	ADDENDUM 1 SHEET ADDED	L.S.

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

ELECTRICAL

Title

DYER DECK-OVERS

PANEL SCHEDULES

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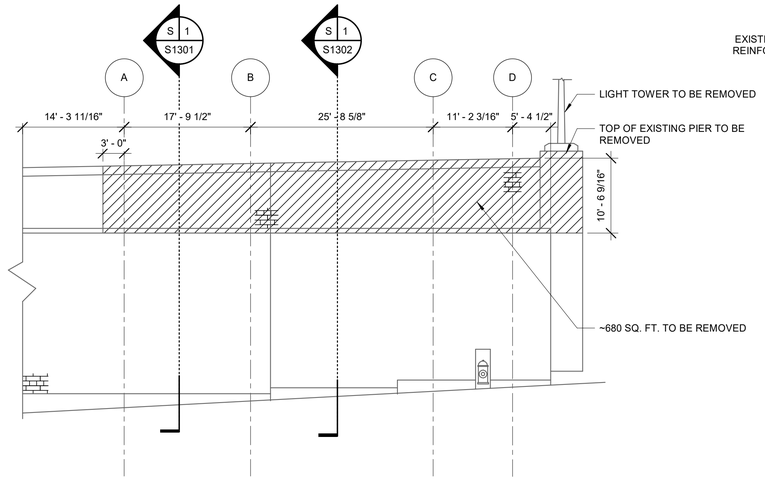
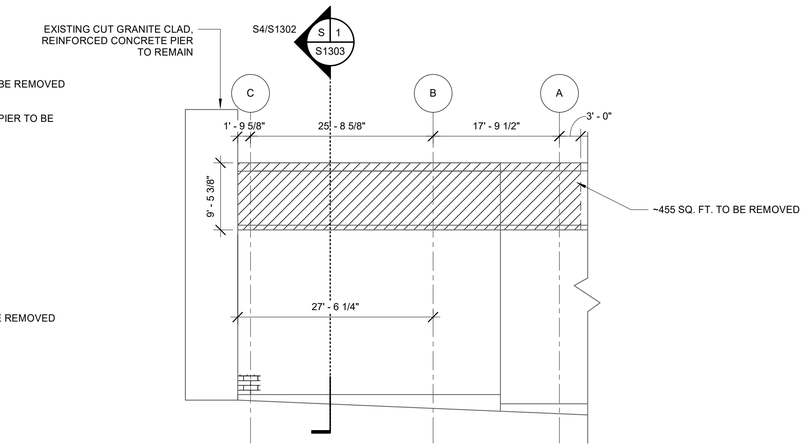
Designed by	L.SEVERINOVS
Drawn by	A.ISFAR
Checked by	S.DELUCIA
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-E1501
PID#	18982000



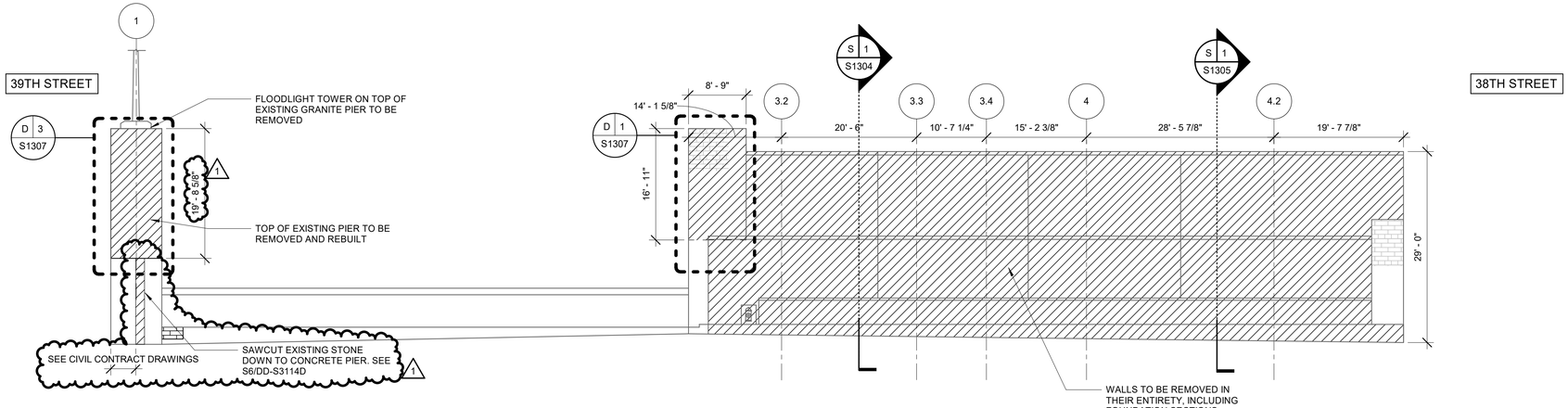
E 1 / S1101 DYER PLAZA - REMOVAL ELEVATION NORTH WALL

SCALE: 0 8 16 32 feet



E 2 / S1101 DYER PLAZA - REMOVAL ELEVATION SOUTH WALL

SCALE: 0 8 16 32 feet



E 3 / S1101 DYER PLAZA - REMOVAL ELEVATION EAST WALL

SCALE: 0 8 16 32 feet

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

THORNTON TOMASETTI
120 BROADWAY, NEW YORK, NY

STATE OF NEW YORK · NAJIB NADIM ABBOUD · LICENSED PROFESSIONAL ENGINEER · 086518

NAJIB. N ABBOUD
NY Professional Engineer # 086518

No.	Date	Revision	Approved
1	04/18/24	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

STRUCTURAL

Title

DYER DECK-OVERS

RETAINING WALL
REMOVAL ELEVATION I

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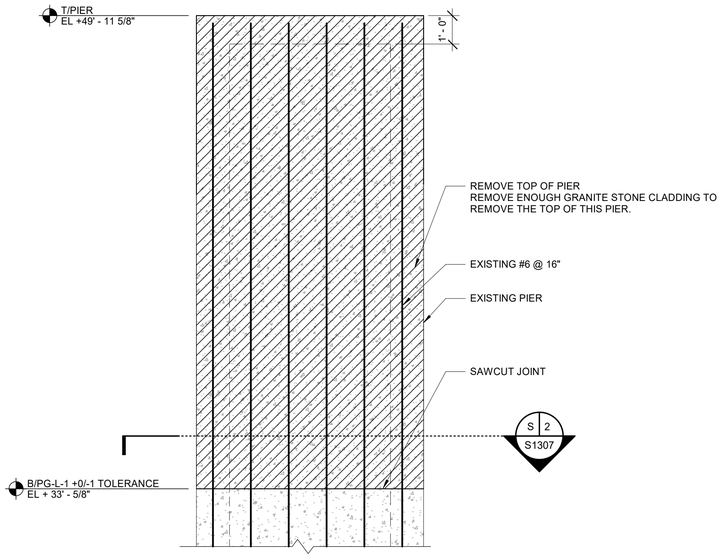
ensure that third persons will not have access to the documents' contents either before, during, or after disposal. Documents may also be returned for disposal purposes to the Contract Desk: 2 Montgomery Street - 1st Floor, Jersey City, NJ 07302 or the office of the Chief Procurement Officer, 4 World Trade Center, 21st Floor, New York, NY 10007. It is a violation of law for any person to alter a document in any way, unless acting under the direction of a licensed professional engineer or registered architect. If this document bearing the seal of an engineer/architect is altered, the altering engineer/architect shall affix to the document their seal and the notation "altered by" followed by their signature and the date of such alteration, and a specific description of the alteration.

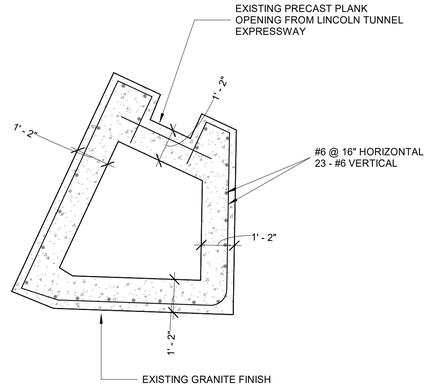
Designed by	D. VIEIRA
Drawn by	A. PRIEN
Checked by	O. GLADOUN
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-S1201

PID #18982000



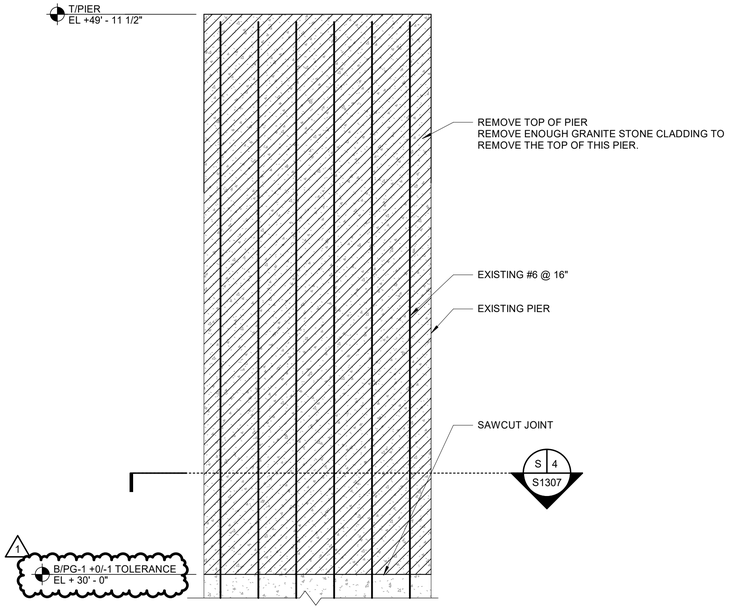
D 1 S1201 REMOVAL DETAIL AT PIER L-3.1

SCALE: 0 2 4 8 feet



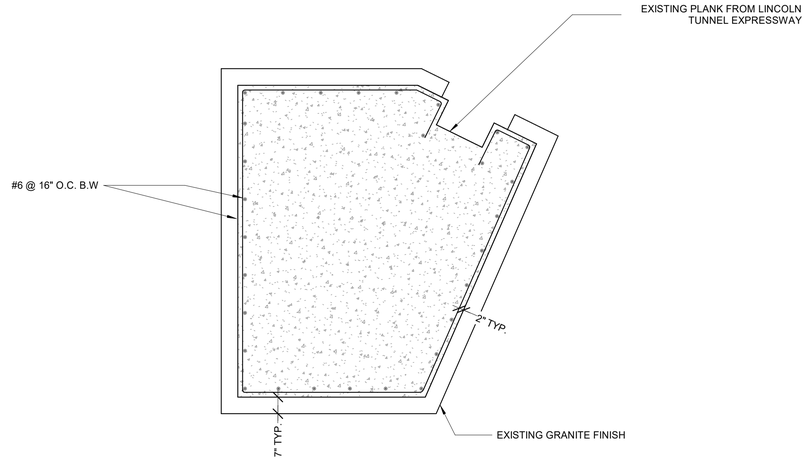
S 2 REMOVAL DETAIL AT PIER L-3.1 SECTION VIEW

SCALE: 0 2 4 8 feet



D 3 S1201 REMOVAL DETAIL AT PIER K-1

SCALE: 0 2 4 8 feet



S 4 REMOVAL DETAIL AT PIER K-1 SECTION VIEW

SCALE: 0 2 4 8 feet

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

THORNTON TOMASETTI
120 BROADWAY, NEW YORK, NY

STATE OF NEW YORK · NAJIB NADIM ABBOUD · LICENSED PROFESSIONAL ENGINEER · 086518

NAJIB. N ABBOUD
NY Professional Engineer # 086518

No.	Date	Revision	Approved
1	04/18/24	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

STRUCTURAL

Title

DYER DECK-OVERS

REMOVAL DETAILS VII OF X

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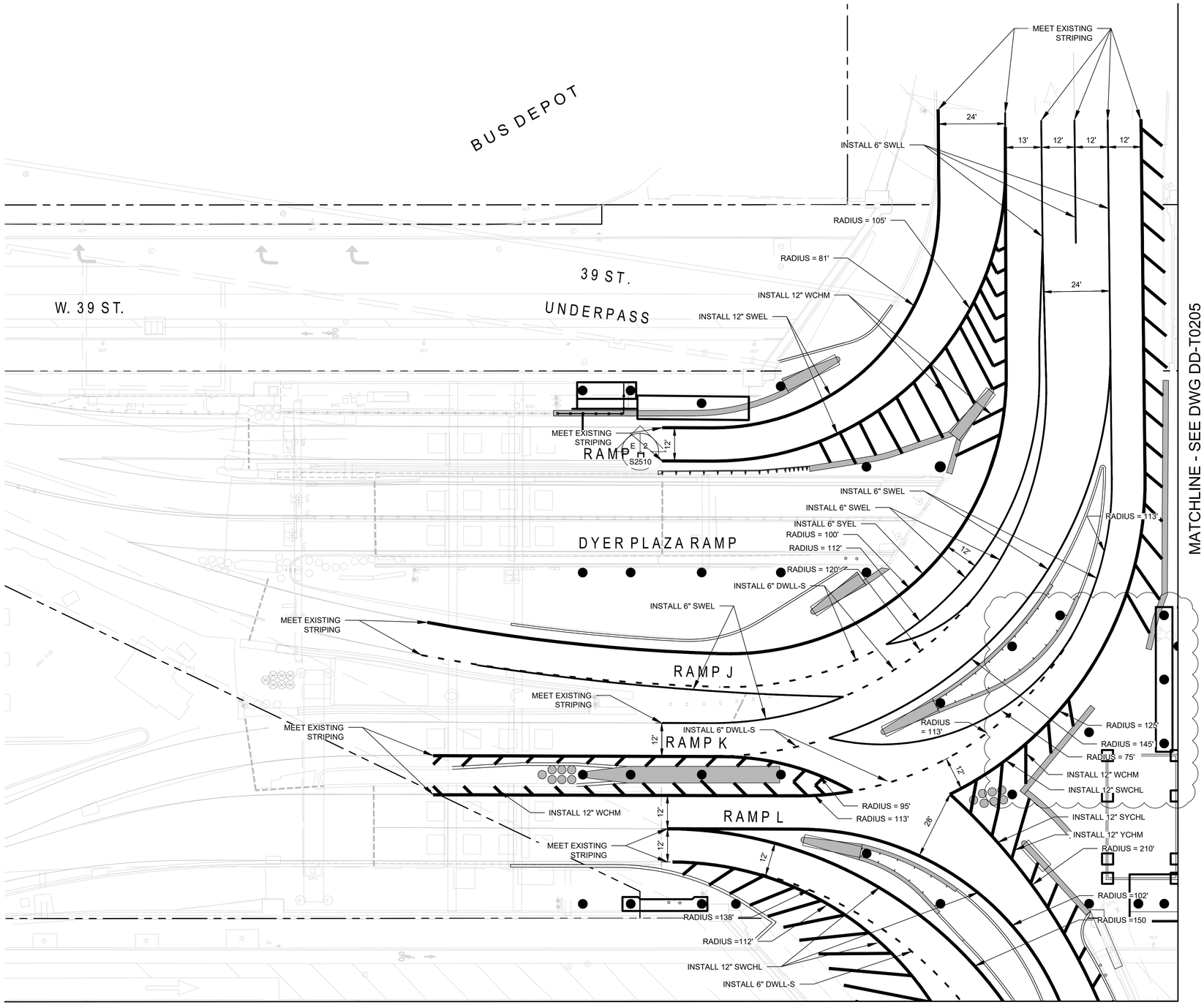
Designed by	S. OZUNA
Drawn by	A. PRIEN
Checked by	O. GLADOUN
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-S1307

PID #18982000



Sheet 333 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

RADIN CONSULTING, INC.
222 BROADWAY, SUITE 2005, NEW YORK, NY 10038

JOHN P. KOVAR
NY Professional Engineering # 099215

No.	Date	Revision	Approved
1	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

TRAFFIC

Title

DYER DECK-OVERS

PAVEMENT MARKING PLAN
SHEET 1

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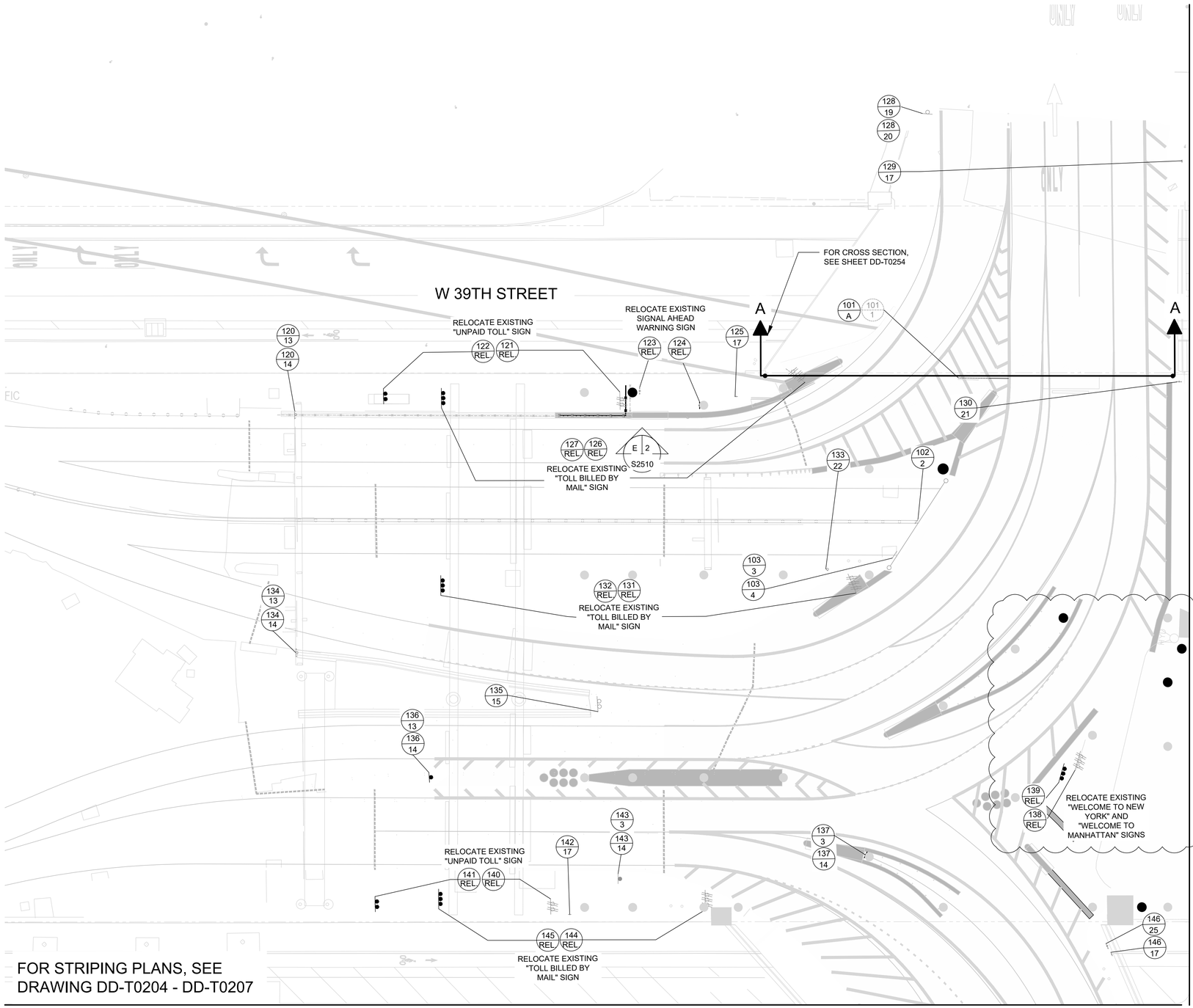
Designed by	KP
Drawn by	AG
Checked by	TB
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-T0204
PID#	18982000



0 10 20
SCALE IN FEET

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

RADIN CONSULTING, INC.
222 BROADWAY, SUITE 2005, NEW YORK, NY 10038

JOHN P. KOVAR
NY Professional Engineering # 099215

No.	Date	Revision	Approved
1	04/19/2024	Addendum No. 5 Electrical Service - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

TRAFFIC

Title

DYER DECK-OVERS

VEHICULAR GUIDE SIGN LOCATION PLAN SHEET 1 OF 4

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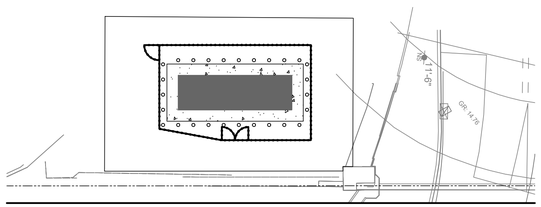
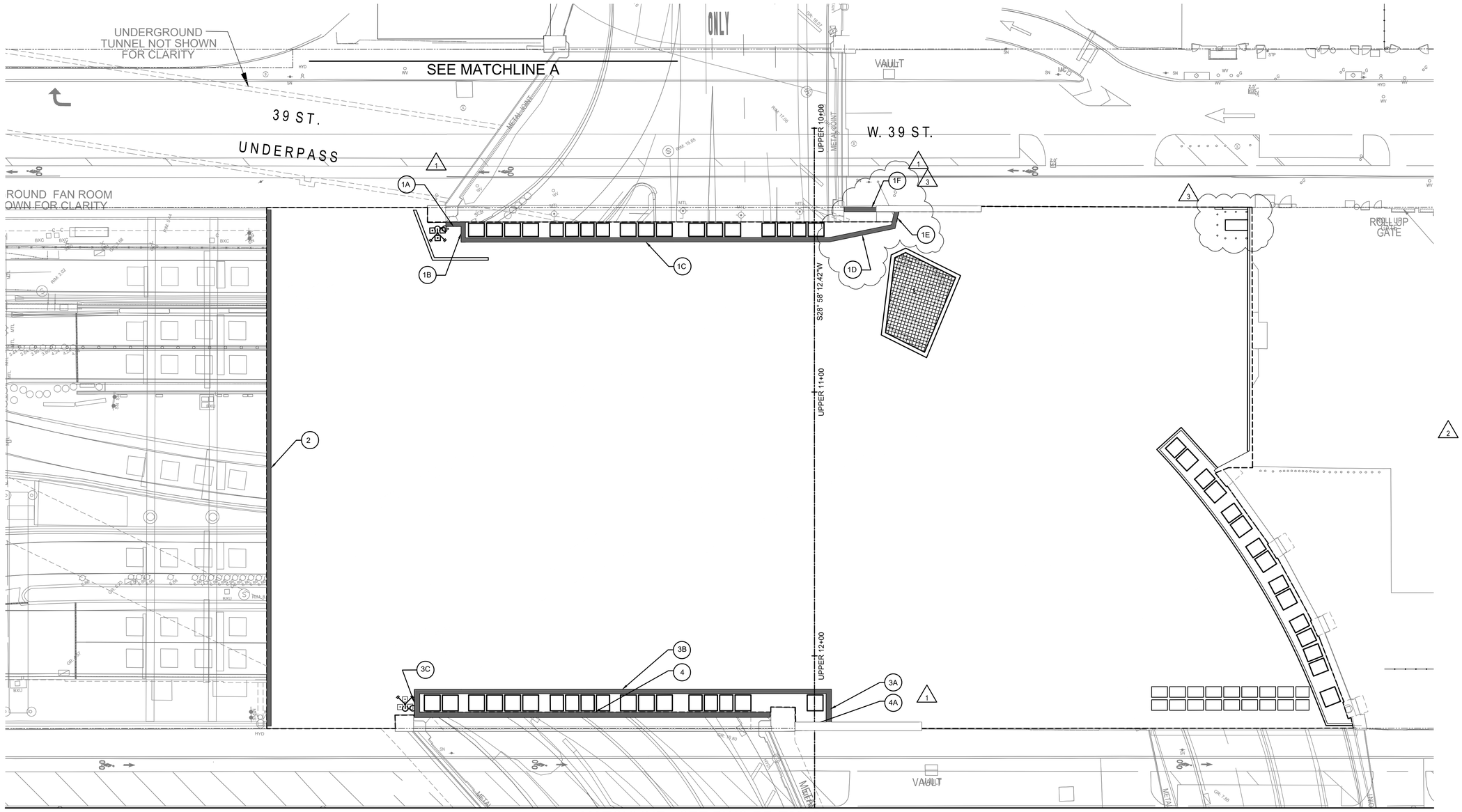
Designed by	E. TINIO
Drawn by	E. TINIO
Checked by	J. KOVAR
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-T0250
PID#	18982000





0 20 40
SCALE IN FEET

Sheet 352 of 446

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
3	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
2	03/28/2024	Addendum No. 3 VFD Modifications - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

TRAFFIC

Title

DYER DECK-OVERS

ROADSIDE PROTECTION PLAN UPPER LEVEL SHEET 1

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Designed by	M. O'HARA
Drawn by	M. O'HARA
Checked by	T. BURKE
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-T0311
PID#	18982000

BARRIER TABLE - UPPER ALIGNMENT				
BARRIER SEGMENT NO.	START STATION/OFFSET	END STATION/OFFSET	RADIUS	BARRIER TYPE
1A	STA. UPPER 10+37.20 OFF. 139.67	STA. UPPER 10+37.20 OFF. 133.92	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
1B	STA. UPPER 10+37.20 OFF. 133.92	STA. UPPER 10+43.15 OFF. 133.92	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
1C	STA. UPPER 10+43.14 OFF. 133.92	STA. UPPER 10+43.10 OFF. -5.74	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
1D	STA. UPPER 10+43.10 OFF. -5.74	STA. UPPER 10+38.01 OFF. -30.60	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
1E	STA. UPPER 10+38.01 OFF. -30.60	STA. UPPER 10+30.02 OFF. -32.32	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
1F	STA. UPPER 10+30.02 OFF. -32.32	STA. UPPER 10+29.97 OFF. -11.28	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
2	STA. UPPER 10+30.86 OFF. 205.92	STA. UPPER 12+26.54 OFF. 205.91	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER AT EDGE OF SLAB
3A	STA. UPPER 12+28.20OFF. -5.36	STA. UPPER 12+12.63 OFF. -5.63	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
3B	STA. UPPER 12+12.63 OFF. -6.06	STA. UPPER 12+12.64 OFF. 151.65	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
3C	STA. UPPER 12+12.64 OFF. 151.65	STA. UPPER 12+22.81 OFF. 151.65	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
4	STA. UPPER 12+21.31 OFF. 149.98	STA. UPPER 12+21.30 OFF. 16.57	N/A	EDGE PARAPET
4A	STA. UPPER 12+27.62 OFF. 7.091	STA. UPPER 12+27.62 OFF. -6.391	N/A	EDGE PARAPET
5	STA. UPPER 12+92.04 OFF. 94.93	STA. UPPER 12+92.04 OFF. -2.10	N/A	1'-2" EDGE PARAPET
6A	STA. UPPER 12+90.04 OFF. -3.77	STA. UPPER 12+99.30 OFF. -3.77	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
6B	STA. UPPER 12+99.30 OFF. -3.77	STA. UPPER 12+99.30 OFF. 64.82	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
6C	STA. UPPER 12+99.30 OFF. 64.81	STA. UPPER 13+20.76 OFF. 64.81	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
6D	STA. UPPER 13+20.76 OFF. 64.81	STA. UPPER 13+35.61 OFF. 61.79	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
6E	STA. UPPER 13+35.61 OFF. 61.79	STA. UPPER 13+50.77 OFF. 59.39	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
6F	STA. UPPER 13+50.77 OFF. 59.39	STA. UPPER 13+65.42 OFF. 58.21	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
7A	STA. UPPER 13+65.42 OFF. 58.21	STA. UPPER 14+67.97 OFF. 58.21	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
7B	STA. UPPER 14+67.96 OFF. 58.21	STA. UPPER 14+67.96 OFF. -24.24	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER
7C	STA. UPPER 14+67.95 OFF. -24.24	STA. UPPER 14+86.18 OFF. -24.24	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER AT EDGE OF SLAB
7D	STA. UPPER 14+86.17 OFF. -24.24	STA. UPPER 14+86.37 OFF. -15.63	N/A	1'-8" HALF SECTION SINGLE SLOPE CRASH RATED BARRIER AT EDGE OF SLAB
8	STA. UPPER 14+75.63 OFF. -22.57	STA. UPPER 14+75.64 OFF. 78.61	N/A	EDGE PARAPET

* FOR PARAPET AND BARRIER REINFORCEMENT DETAILS SEE STRUCTURAL DRAWINGS
** STA/OFFSET ARE APPROXIMATE AND CONTRACTOR TO MEET EXISTING CONDITIONS IN THE FIELD

△3 △1 △2

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

WSP USA
ONE PENN PLAZA, NEW YORK, NY 10019

STATE OF NEW YORK · KEVIN PHU · 093233 · LICENSED PROFESSIONAL ENGINEER

KEVIN PHU
NY Professional Engineering # 093233

No.	Date	Revision	Approved
3	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
2	03/26/2024	Addendum No. 3 VFD Modifications - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Revised	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

TRAFFIC

Title

DYER DECK-OVERS

ROADSIDE PROTECTION BARRIER UPPER LEVEL LOCATION TABLES

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent. 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: 2 Montgomery Street - 1st Floor, Jersey City, NJ 07302 or the office of the Chief Procurement Officer, 4 World Trade Center, 21st Floor, New York, NY 10007.
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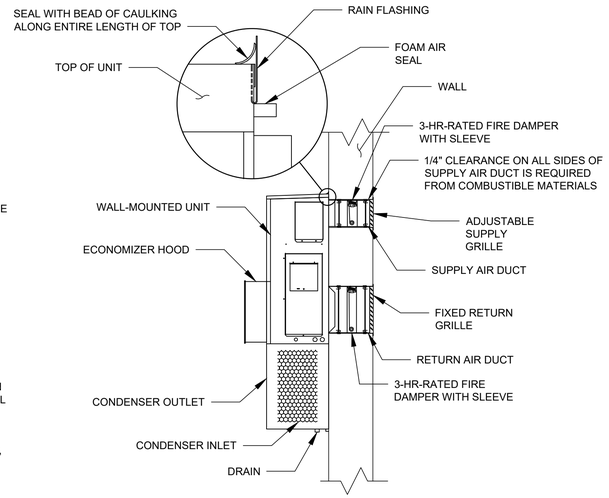
Designed by	A. Gibbons
Drawn by	A. Gibbons
Checked by	T. Burke
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-T0313
PID#	18982000

MECHANICAL NOTES

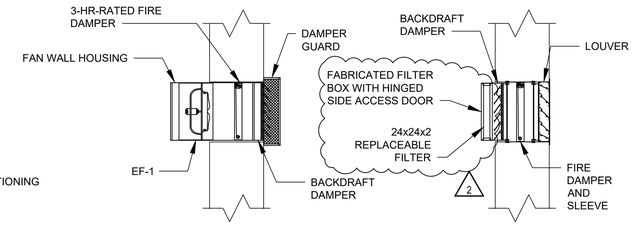
1. DIMENSIONS, LOCATIONS AND CONDITIONS SHOWN ARE APPROXIMATE. VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO PREPARING SHOP DRAWINGS, ORDERING ANY MATERIALS AND EQUIPMENT, OR PERFORMING WORK. NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES OR CHANGES.
2. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS AND INSTRUCTIONS. COMPLY WITH THE MANUFACTURER'S WRITTEN STORAGE, HANDLING, AND RIGGING INSTRUCTION.
3. COORDINATE EQUIPMENT SUBMITTALS TO ELIMINATE DIMENSIONAL CONFLICTS AND TO ALLOW SUFFICIENT ACCESS AND CLEARANCE, INCLUDING MANUFACTURER'S REQUIRED ACCESS AND CLEARANCES, FOR EQUIPMENT RIGGING AND INSTALLATION.
4. SHOP DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE DIVISION 1 CLAUSE ENTITLED "SHOP DRAWINGS, CATALOG CUTS AND SAMPLES," SHALL BE DRAWN TO SCALE, 3/8" = 1'-0" AT A MINIMUM, AND SHALL BE FULLY DIMENSIONED FROM ESTABLISHED BUILDING REFERENCE POINTS, SUCH AS COLUMNS AND WALLS.
5. UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS, DUCTWORK AND PIPING INSTALLATION SHALL BE CONCEALED ABOVE CEILINGS OR BEHIND WALLS, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK AND PIPING SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO UNDERSIDE OF BEAMS, SLABS AND JOISTS.
6. UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS, INSTALL THERMOSTATS 3'-6" ABOVE FINISHED FLOOR.
7. UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS, SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE STEEL. EPOXY ANCHORS ARE NOT PERMITTED.
8. NOTIFY THE ENGINEER A MINIMUM OF ONE (1) WEEK IN ADVANCE OF INTENTION TO START MECHANICAL WORK AT THE CONSTRUCTION SITE. FIELD WORK SHALL NOT COMMENCE UNTIL ALL RELATED SUBMITTALS ARE APPROVED.
9. TEST ALL INSTALLED EQUIPMENT/SYSTEMS IN ACCORDANCE WITH SPECIFICATION SECTION 23 05 95 TESTING, ADJUSTING AND BALANCING OF AIR AND HYDRONIC SYSTEMS. REPAIR ALL DEFECTS TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE AUTHORITY.
10. RESTORE TO EXISTING CONDITIONS ALL AREAS DISTURBED BY CONTRACTOR OPERATIONS, INCLUDING SIDEWALKS, CURBS, PAVEMENT, GRAS AND OTHER ADJACENT AREAS.
11. FURNISH AND INSTALL WALL-MOUNTED AIR CONDITIONING UNITS SERVING THE SWITCHGEAR AND THE MCC AND LIGHTING PANELS ROOMS. FURNISH AND INSTALL ALL COMPONENTS AND ACCESSORIES REQUIRED FOR FUNCTIONAL SYSTEMS INCLUDING CONTROLS, SENSORS, AND CONDENSATE DISPOSAL PIPING. COORDINATE WITH ELECTRICAL TRADE TO PROVIDE POWER FOR UNITS AND UNIT ACCESSORIES AS REQUIRED.



S 1 / M0201 — HVAC UNIT INSTALLATION SECTION VIEW
NTS

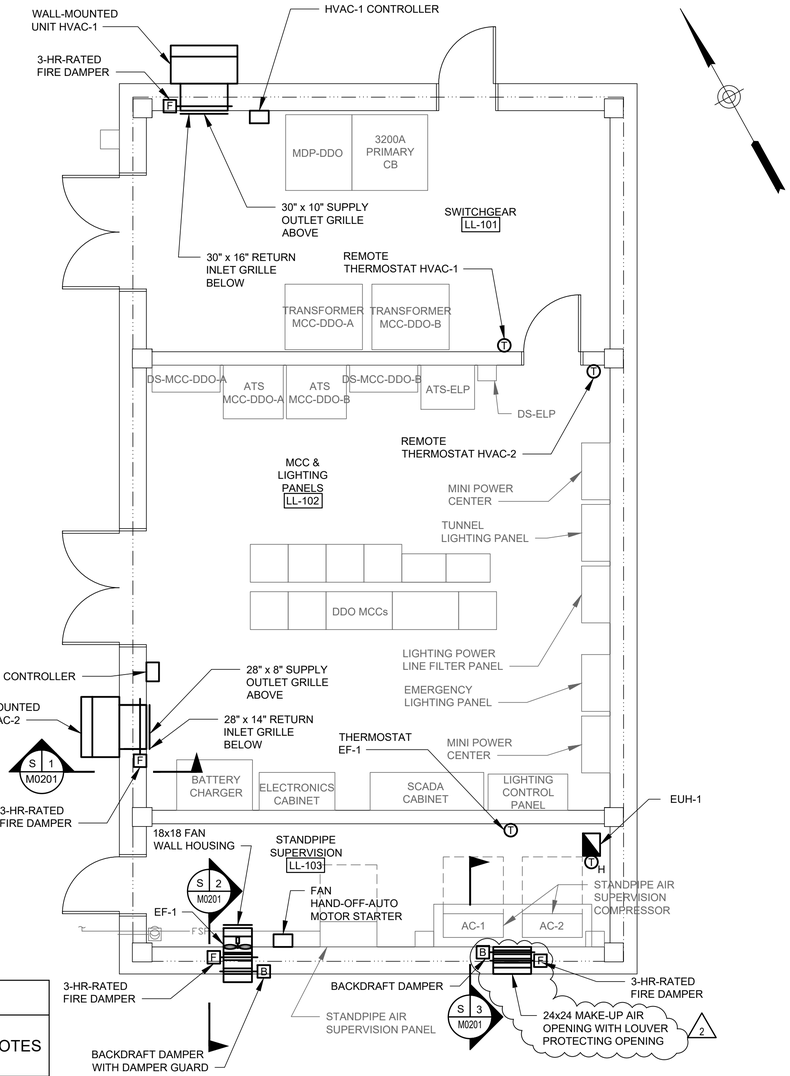
MECHANICAL ABBREVIATIONS

A	AMPERE
AC	AIR COMPRESSOR
ATS	AUTOMATIC TRANSFER SWITCH
BTU	BRITISH THERMAL UNIT
CB	CIRCUIT BREAKER
CFM	CUBIC FEET PER MINUTE
CON ED	CONSOLIDATED EDISON, INC.
EF	EXHAUST FAN
EUH	ELECTRIC UNIT HEATER
FLA	FULL-LOAD AMPERES
FSP	FIRE STANDPIPE
HP	HORSEPOWER
HR	HOUR
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
Hz	CYCLES PER SECOND
IN. W.G.	INCHES WATER GAUGE
kW	KILOWATTS
MCC	MOTOR CONTROL CENTER
MERV	MINIMUM EFFICIENCY REPORTING VALUE
NTS	NOT TO SCALE
NY	NEW YORK
PANYNJ	THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
RPM	REVOLUTIONS PER MINUTE
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION



S 2 / M0201 — EXHAUST FAN SECTION VIEW
NTS

S 3 / M0201 — MAKE-UP AIR INLET SECTION VIEW
NTS



D 1 / M0201 — ELECTRICAL ROOMS MECHANICAL HVAC PLAN
0 4 8
SCALE IN FEET

FAN SCHEDULE

FAN TAG	AIRFLOW [CFM]	STATIC PRESSURE [IN. W.G.]	FAN SPEED [RPM]	MOTOR SIZE [HP]	DESIGN BASIS MODEL	NOTES
EF-1	900	0.50	1750	1/4	GREENHECK SE1-12-432-A4	1,2,3

1. FURNISH WITH MANUFACTURER'S HAND-OFF-AUTO MOTOR STARTER ACCESSORY
2. FURNISH WITH MANUFACTURER'S FAN WALL HOUSING, BACKDRAFT DAMPER, AND DAMPER GUARD ACCESSORIES
3. FAN AUTO MODE CONTROLLED BY THERMOSTAT WITH ADJUSTABLE SETPOINT

UNIT HEATER SCHEDULE

UNIT TAG	CAPACITY [kW]	AIRFLOW [CFM]	FAN SPEED [RPM]	MOTOR SIZE [HP]	DESIGN BASIS MODEL	NOTES
EUH-1	2.6	410	1,650	1/40	CHROMALOX HVH-02-81-00	1,2,3,4

1. HORIZONTAL DISCHARGE
2. FURNISH AND INSTALL WITH CEILING SWIVEL MOUNTING BRACKET
3. FURNISH AND INSTALL WITH DISCONNECT SAFETY SWITCH ACCESSORY
4. FURNISH AND INSTALL WITH INTEGRAL THERMOSTAT

DAMPER SCHEDULE

DAMPER TYPE	FIRE RATING	CLOSURE DEVICE	FUSIBLE LINK RATING	DESIGN BASIS MODEL	NOTES
DYNAMIC FIRE DAMPER	3-HR	FUSIBLE LINK AND CURTAIN	165°F	GREENHECK DFD-310	1,2
EXHAUST BACKDRAFT DAMPER	NONE	NONE	NONE	GREENHECK WD-320	
MAKE-UP BACKDRAFT DAMPER	NONE	NONE	NONE	GREENHECK WD-430	

1. UL 555 LISTED
2. FURNISH WITH MANUFACTURER'S "TYPE A" SLEEVE

AIR CONDITIONER SCHEDULE

UNIT TAG	AIRFLOW [CFM]	NOMINAL COOLING CAPACITY [BTU/HR]	ELECTRIC HEAT [kW]	ELECTRICAL DATA			DESIGN BASIS MODEL	NOTES
				VOLTAGE	PHASE	Hz		
HVAC-1	1,750	60,000	9.0	460	3	60	BARD W60ACPC095MX3C	1,2,3,4,5,6,7
HVAC-2	1,150	36,000	6.0	460	3	60	BARD W36ABPC065MX3C	1,2,3,4,5,6,7

1. LOW AMBIENT COOLING CONTROL AND COMPRESSOR CRANKCASE HEATER
2. COATED EVAPORATOR AND CONDENSER COILS
3. MERV11 DISPOSABLE FILTER (REPLACEABLE)
4. FULL FLOW ECONOMIZER
5. STANDARD BAKED ENAMEL FINISH
6. SINGLE ZONE CONTROLLER WITH REMOTE TEMPERATURE SENSOR .
7. UNIT COMMON ALARM DRY CONTACT OUTPUT MONITORED BY SCADA SYSTEM.

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ONE PENN PLAZA, NEW YORK, NY 10019
STATE OF NEW YORK · RICHARD E. RAY · REGISTERED PROFESSIONAL ENGINEER · 075063
RICHARD E. RAY JR.
NY Professional Engineering # 075063

No.	Date	Revision	Approved
2	04/18/2024	Addendum No. 5 Electrical Service - Sheet Revised	
1	03/15/2024	Addendum No. 2 Mechanical Ventilation - Sheet Added	

MAJOR CAPITAL PROJECTS

MIDTOWN BUS TERMINAL REPLACEMENT PROGRAM

HVAC
Title
DYER DECK-OVERS

ELECTRICAL ROOMS ENLARGED MECHANICAL PLAN

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Designed by	J. BARTELL
Drawn by	J. BARTELL
Checked by	R. RAY
Date	01/23/2024
Contract Number	MCP-254.254
Drawing Number	DD-M0201
PID#	18982000

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

ANALYSIS OF BID

THIS IS NOT PART OF THE CONTRACT

PROJECT **Midtown Bus Terminal Replacement Program - Dyer Deck-Overs**

CONTRACTOR

Unit No.	Descriptions	Unit	Amount
1	**Field General Conditions, Field Staff (Project Management and Supervision, Superintendents, Safety, Administration, etc.), Mobilization/Demobilization, Engineering, Surveying, General Protection, Field Office, Temp Facilities/Utilities, Permitting, Maintenance and Protection of Traffic and Pedestrians, etc.**	**LS**	
2	**Furnish and Install Civil**	**LS**	
3	**Furnish and Install Structural (Steel, Concrete, Geotechnical)**	**LS**	
4	**Furnish and Install Mechanical / Electrical / Plumbing / Fire Protection**	**LS**	
5	**Furnish and Install Architectural / Fireproofing / Traffic / Other**	**LS**	
6	**Indirect and Non-Field Overhead, Home Office Costs & Profit**	**LS**	
7	**Project Allowance for third Party work (SCADA, Access control and CCTV camera)[i]**	**LS**	**$ 950,000.00**
	Total Amount		

NOTE

i An Allowance in the amount of $950,000 shall be specifically designated for third party works related to the Contractor's Installation, Programing and Integration of the SCADA, new access control and CCTV camera equipment's as outlined in the contract documents. This allowance covers various tasks such as providing equipment's, software, labor, supervision, installation, configuration with Port Authority systems, attending coordination meetings, submitting required documentation, and other necessary works pertaining to these specified sole source components as outlined in the contract documents. Any activities related to these sole sources will be compensated through this Allowance, which can only be utilized with explicit written approval and direction from the Port Authority and solely for the purposes described in the contract. All costs unused against these allowances will be credited back to the Owner in the form of a deduct change order at the remaining value.