

**CAPITAL REGION INTERNATIONAL AIRPORT
CARGO RAMP EXPANSION (PHASE 2 & 3) AND DEICING CONTAINMENT FACILITY
LANSING, MICHIGAN**

**AIP GRANT No. 3-26-0055-065-2023
RS&H No. 1010-0095-000**

**ADDENDUM NO. 2
February 10, 2023**

The following changes shall be made to the Contract Documents, which bear the above title and project numbers and are dated January 20, 2023.

TO ALL HOLDERS OF CONTRACT DOCUMENTS

1. Your attention is directed to the following interpretations of, changes in, and/or additions to the contract documents for the above-named project.
2. This addendum is part of the Contract Documents.
3. Bidders are required to acknowledge receipt of this Addendum in the space provided on Page P-2 of the Proposal Form.
4. The following changes shall be made:

CHANGES TO PROJECT MANUAL

None

CHANGES TO DRAWINGS

- *REMOVE plan sheet E201 and REPLACE with attached plan sheet E201 / ADD-2. Circuit numbers have been changed and an existing handhole near High Mast Pole 16 is shown.*
- *REMOVE plan sheet E202 and REPLACE with attached plan sheet E202 / ADD-2. Circuit numbers have been changed.*
- *REMOVE plan sheet E503 and REPLACE with attached plan sheet E503 / ADD-2. A new Detail 3 has been added—"DIRECT BURIED CONDUIT DETAIL – 1 WAY, 3" PVC".*
- *REMOVE plan sheet E505 and REPLACE with attached plan sheet E505 / ADD-2. Circuit numbers have been changed.*
- *ADD plan sheet E601 to the plan set.*

CLARIFICATIONS:

- *Current Plan-Holders lists are included as part of this Addendum.*
- *Add Note 9 to Sheet C101: Cost for 24" end section removal and cutting and capping of 24" RCP shall be included in the cost for Pay Item D-701-5.6 Pipe Removal.*

ANSWERS TO SUBMITTED QUESTIONS:

- *Some items have extraordinarily long lead times, up to the length of the project or longer (i.e. 32 week lead time for 30" butterfly valves). Please advise how this will be handled.*
 - Answer: Long lead items must be identified within 30 days of contract execution. If there are long lead items that are not available for installation within the contract duration, installation must be coordinated with RS&H and the Airport. Liquidated damages will not be assessed for these long lead items that exceed the contract duration so long as backup documentation is provided within 30 days of contract execution.

- *Can further clarification be given as to what the airport anticipates from the contractor regarding directing traffic? During the pre-bid meeting, CRAA advised that the traffic control personnel should be within a yelling distance.*
 - Answer: Gate guard and signage is required per Sheet C020. Any non-badged personnel who are working under escort must be within speaking distance from badged personnel.

- *Will a map showing spoil disposal locations be given? Are there any parameters as to the size of these spoil piles?*
 - Answer: Refer to Addendum 1 Questions and the image below for details about spoil disposal locations. Exact disposal locations and grading will be as directed by the airport.



- *The bid form and pay item descriptions list 30 mil HDPE as the "liner" and "cover" for the pond. Is it correct to assume that the "liner" is the base liner that would be installed over subgrade with the "cover" being the floating cover shown on Sheet C432?*
 - Answer: That is correct.

- *Referencing the Details on Sheet C431, the Liner Detail 1/C431 references a GCL with 40 mil HDPE on top of it for the base liner. Note that Details 2 and 3 on this page reference the same materials. With that said, the project manual does not include any material specifications for GCL and/or 40 mil HDPE, only the 30 mil HDPE material. Please clarify the correct materials and provide specifications for any omitted material items.*
 - Answer: 30 mil HDPE is acceptable. Any deicing containment facility plan or specification reference to 40 mil HDPE shall be replaced with 30 mil HDPE. 40 mil HDPE will be accepted as well if the contractor proposes this material in lieu of 30 mil HDPE. There will be no additional payment for use of 40 mil HDPE in lieu of 30 mil HDPE.
- *Is the contractor required to supply these New 6 High Mast Poles, or does the Airport Authority already have them purchased?*
 - Answer: Yes. Contractor to procure and install the 6 new high mast lights.
- *If the project requires these New 6 Poles to be supply and installed, are there any detail drawings and specifications for these poles?*
 - Answer: Yes, details are provided in the plans and specifications within the project manual.
- *May I have a copy for the Specification and drawings if available?*
 - Answer: Drawings and specifications are available at the locations noted on the Invitation to Bid.
- *Can Off-Road trucks be used on Taxiway J and the perimeter Service Road that leads to the spoil area north of 10L/28R?*
 - Answer: Yes, but any damage to existing pavements to remain must be repaired at the contractors' expense.
- *Is structure S-08 a new structure? If so, how is the removal of the existing structure paid for?*
 - Answer: S-08 is a new structure. Payment for the removal of the existing structure will be paid under D-751-5.6 Drainage Structure Removal. Technical Specification *Item D-751 Manholes, Catch Basins, Inlets and Inspection Holes* is reissued with this addendum.
- *The Lime Treated Subgrade (P-155) is showing a depth of 18 inches, but the max depth the lime stabilizing equipment is 16 inches, if the 18 inches is required, this will create a lot more earth moving to achieve the full depth compaction and will need to be done in two lifts. Please advise if 16 inches is acceptable for this application, as it would be significant cost savings.*
 - Answer: 16 inches is acceptable.
- *Typically, there is a separator fabric between the subbase material (P-154) and the aggregate base (P-209), is this required?*
 - Answer: Geotextile fabric is proposed between the subgrade and P-154 layers only.
- *The bid form and specifications indicate that the pond liner is 30 Mil but the details 2/C431 is shown at 40 Mil, please clarify which is correct.*
 - Answer: 30 mil HDPE is acceptable. Any deicing containment facility plan or specification reference to 40 mil HDPE shall be replaced with 30 mil HDPE. 40 mil HDPE will be accepted as well if the contractor proposes this material in lieu of 30 mil HDPE. There will be no additional payment for use of 40 mil HDPE in lieu of 30 mil HDPE.

- *Detail 1/C410 and D-701 does not specify the type of bedding or suitable backfill material needed for sewer trenches, can you let us know what these materials are?*
 - Answer: Class IIA Granular Materials are suitable for bedding. Granular Material Class II, III, or IIIA are suitable for backfill.

- *Is the pond excavation included in the Base Bid Package B, Item P-152-4.1 Unclassified Excavation?*
 - Answer: Yes.

- *Is the intent to use the excel bid form provided in Addendum 1 in lieu of the bid form in the project manual?*
 - Answer: The bid form in the Project Manual and the excel bid form in Addendum 1 will both be accepted. Updated pdf and excel bid forms are being provided in Addendum 2.

- *Does the Excel spreadsheet (issued in Addenda 1) replace Pages P-17 thru P-24 as the formatting is not the same?*
 - Answer: The bid form in the Project Manual and the excel bid form in Addendum 1 will both be accepted. Updated pdf and excel bid forms are being provided in Addendum 2.

- *The PDF version requests the "Total" amounts be written in words and the excel version does not.*
 - Answer: Please include the total bid in words at the bottom of the excel spreadsheet.

- *Page GP-9 Item 20-07 states each item is to be written in both words and numerals.*
 - Answer: Please include the total bid in numerals and words at the bottom of the excel spreadsheet.

- *Which Buy American form needs submitted at the time of bid?*
 - Answer: Please include both P-15 and P-16 Certificate of Buy American Compliance for Manufactured Projects and MCP-5 and MCP-6 Certificate of Compliance with FAA Buy American Preference – Construction Projects with the bid.

Attachments:

Plan-Holders List

Technical Specifications - *Item D-751 Manholes, Catch Basins, Inlets and Inspection Holes / ADD-2*

Proposal Form – P-17 through P-25 / ADD-2

Excel Proposal Form / ADD-2

Plan Sheet E201 / ADD-2

Plan Sheet E202 / ADD-2

Plan Sheet E503 / ADD-2

Plan Sheet E505 / ADD-2

Plan Sheet E601 / ADD-2

END OF ADDENDUM NO. 2

Florence cement co./ 51515 corridor dr. Utica mi 48315

Mark Anthony contracting/ 4844 old plank rd. milford mi 48381

Angelo iafrate const./ 26300 sherwood ave. warren mi 48091

Toebe construction/ 28990 s wixom rd. wixom mi 48393

Miller bros. const./ 1613 defiance st. archbold oh 43502

Et Mackenzie/ 3012 7th ave. lansing mi 48906

Independence excavating/ 5720 e Schaaf rd independence oh 44131

Ajax paving/ 1957 crooks rd troy mi 48084

J ranck electric/ 1993 gover parkway mt. pleasant mi 48858

Companies that have viewed 2023-00E7 -- Lansing - Capital Regional Airport Authority - Cargo Ramp Expansion (Phase 2 & 3) and Deicing Containment Facility

Company	Views
Block Supplier	
Grand Blanc Cement Products, Inc.	1
Concrete Contractor	
Baker Concrete Construction, Inc.	4
Electrical Contractor	
Centennial Electric LLC	2
H & R Electrical Contractors	2
Summit Contractors, Inc.	3
Superior Electric of Lansing, Inc.	2
Excavating/Site Work Contractor	
Central Excavating	1
General Contractor	
The Christman Company	1
Clark Construction Co.	4
Laux Construction, LLC	1
Masonry Contractor	
Schiffer Mason Contractors, Inc.	1
Mechanical Contractor	
T.H. Eifert Mechanical Contractors	1
Limbach Co.	1
Misc	
Consumers Concrete Corp	5
DeWitt Fence Co.	2
Ferguson Waterworks	1
Hoffman Bros., Inc.	3
E. T. MacKenzie Company	1
Michigan Lighting Systems	2
Plumbers & Pipefitters Local Union 333	1
Rieth-Riley Construction Co., Inc.	2

Company	Views
Rieth-Riley Construction Co., Inc.	4
TL Contracting, Inc.	1
Supplier	
Shafer Redi-Mix, Inc.	7
Standard Electric Company	1



Unique Visitors

Company	Views
Concrete Contractor	
Duran Contractors Inc	2
Jelsema Concrete Construction	1
Legacy Concrete LLC	29
Pro Concrete Services LLC	1
Electrical Contractor	
Great Lakes Essential Power	3
J Ranck Electric Inc	2
Newkirk Electric Associates Inc	7
West Michigan Lighting Inc	5
Engineer	
Materials Testing Consultants Inc	19

Company	Views
Excavation Contractor	
E T MacKenzie Co	1
Iron Horse Excavation LLC	7
J & N Construction LLC	2
Leavitt & Starck Excavating Inc	4
M & M Excavating	3
SIS Contracting LLC	1
Wadel Stabilization Inc	4
Fire Safety & Security Contractor	
National Time & Signal Corp	1
General Contractor	
Davis Construction	1
Grand River Construction Inc	5
Kamminga & Roodvoets Inc	9
HVAC Contractor	
Hedrick Associates	1
Raley Brothers	1
Insulation Contractor	
R L Bondy Insulation Inc	4
Irrigation Contractor	
Trost Irrigation	2
Landscaping Contractor	
Horrocks Nursery Farms Inc	2

Company	Views
Mechanical Contractor	
Grand Valley Automation	2
Johnson & Wood LLC	1
Swaney Sales	3
Painting Contractor	
Mid Michigan Pride Painting	1
Paving Contractor	
Michigan Paving & Materials Co	2
Rieth-Riley Construction Co Inc	2
Planroom	
Builders Exchange of Gr & West MI	8
Roofing Contractor	
Beacon Building Products	1
Great Lakes Systems Inc	5
Midwest Wall Company LLC	1
Roofing Innovations LLC	1
Sub / Specialty Contractor	
P K Contracting Inc	3
Progressive Systems Inc	3
TL Contracting	1
Supplier	
Architectural Building Components	1
Consumers Concrete Corp	11

Company	Views
Etna Supply Co	5
Ferguson Waterworks	15
Grand Rapids Gravel Co	2
MBA Distributing Inc / The Water Associates	10
Medler Electric Co	1
Michigan Pipe & Valve Inc	15
Victaulic	1
Utilities Contractor	
EJ	5

Item D-751 Manholes, Catch Basins, Inlets and Inspection Holes

DESCRIPTION

751-1.1 This item shall consist of construction of manholes, catch basins, inlets, and inspection holes, in accordance with these specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the plans or required by the RPR.

MATERIALS

751-2.1 Brick. The brick shall conform to the requirements of ASTM C32, Grade MS.

751-2.2 Mortar. Mortar shall consist of one part Portland cement and two parts sand. The cement shall conform to the requirements of ASTM C150, Type I. The sand shall conform to the requirements of ASTM C144.

751-2.3 Concrete. Plain and reinforced concrete used in structures, connections of pipes with structures, and the support of structures or frames shall conform to the requirements of Item P-610.

751-2.4 Precast concrete pipe manhole rings. Precast concrete pipe manhole rings shall conform to the requirements of ASTM C478. Unless otherwise specified, the risers and offset cone sections shall have an inside diameter of not less than 36 inches (90 cm) nor more than 48 inches (120 cm). There shall be a gasket between individual sections and sections cemented together with mortar on the inside of the manhole. Gaskets shall conform to the requirements of ASTM C443.

751-2.5 Corrugated metal. Corrugated metal shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M36.

751-2.6 Frames, covers, and grates. The castings shall conform to one of the following requirements:

- a. ASTM A48, Class 35B: Gray iron castings
- b. ASTM A47: Malleable iron castings
- c. ASTM A27: Steel castings
- d. ASTM A283, Grade D: Structural steel for grates and frames
- e. ASTM A536, Grade 65-45-12: Ductile iron castings
- f. ASTM A897: Austempered ductile iron castings

All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings, aircraft gear configuration and/or direct loading, specified.

Each frame and cover or grate unit shall be provided with fastening members to prevent it from being dislodged by traffic but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A123.

751-2.7 Steps. The steps or ladder bars shall be gray or malleable cast iron or galvanized steel. The steps shall be the size, length, and shape shown on the plans and those steps that are not galvanized shall be given a coat of asphalt paint, when directed.

751-2.8 Precast inlet structures. Manufactured in accordance with and conforming to ASTM C913.

CONSTRUCTION METHODS

751-3.1 Unclassified excavation.

a. The Contractor shall excavate for structures and footings to the lines and grades or elevations, shown on the plans, or as staked by the RPR. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown. The elevations of the bottoms of footings, as shown on the plans, shall be considered as approximately only; and the RPR may direct, in writing, changes in dimensions or elevations of footings necessary for a satisfactory foundation.

b. Boulders, logs, or any other objectionable material encountered in excavation shall be removed. All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped, or serrated, as directed by the RPR. All seams or crevices shall be cleaned out and grouted. All loose and disintegrated rock and thin strata shall be removed. Where concrete will rest on a surface other than rock, the bottom of the excavation shall not be disturbed and excavation to final grade shall not be made until immediately before the concrete or reinforcing is placed.

c. The Contractor shall do all bracing, sheathing, or shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheathing, or shoring shall be included in the unit price bid for the structure.

d. All bracing, sheathing, or shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall not disturb or damage finished masonry. The cost of removal shall be included in the unit price bid for the structure.

e. After excavation is completed for each structure, the Contractor shall notify the RPR. No concrete or reinforcing steel shall be placed until the RPR has approved the depth of the excavation and the character of the foundation material.

751-3.3 Concrete structures. Concrete structures which are to be cast-in-place within the project boundaries shall be built on prepared foundations, conforming to the dimensions and shape indicated on the plans. The construction shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the RPR before the concrete is placed.

All invert channels shall be constructed and shaped accurately to be smooth, uniform, and cause minimum resistance to flowing water. The interior bottom shall be sloped to the outlet.

751-3.4 Precast concrete structures. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program.

Precast concrete structures shall conform to ASTM C478. Precast concrete structures shall be constructed on prepared or previously placed slab foundations conforming to the dimensions and locations shown on the plans. All precast concrete sections necessary to build a completed structure shall be furnished. The different sections shall fit together readily. Joints between precast concrete risers and tops shall be full-bedded in cement mortar and shall: (1) be smoothed to a uniform surface on both interior and exterior of the structure or (2) utilize a rubber gasket per ASTM C443. The top of the upper precast concrete section

shall be suitably formed and dimensioned to receive the metal frame and cover or grate, or other cap, as required. Provision shall be made for any connections for lateral pipe, including drops and leads that may be installed in the structure. The flow lines shall be smooth, uniform, and cause minimum resistance to flow. The metal or metal encapsulated steps that are embedded or built into the side walls shall be aligned and placed in accordance to ASTM C478. When a metal ladder replaces the steps, it shall be securely fastened into position.

751-3.6 Inlet and outlet pipes. Inlet and outlet pipes shall extend through the walls of the structures a sufficient distance beyond the outside surface to allow for connections. They shall be cut off flush with the wall on the inside surface of the structure, unless otherwise directed. For concrete or brick structures, mortar shall be placed around these pipes to form a tight, neat connection.

751-3.7 Placement and treatment of castings, frames, and fittings. All castings, frames, and fittings shall be placed in the positions indicated on the plans or as directed by the RPR, and shall be set true to line and elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

When frames or fittings are placed on previously constructed masonry, the bearing surface of the masonry shall be brought true to line and grade and shall present an even bearing surface so the entire face or back of the unit will come in contact with the masonry. The unit shall be set in mortar beds and anchored to the masonry as indicated on the plans or as directed by the RPR. All units shall set firm and secure.

After the frames or fittings have been set in final position, the concrete or mortar shall be allowed to harden for seven (7) days before the grates or covers are placed and fastened down.

751-3.8 Installation of steps. The steps shall be installed as indicated on the plans or as directed by the RPR. When the steps are to be set in concrete, they shall be placed and secured in position before the concrete is placed. steps shall not be disturbed or used until the concrete or mortar has hardened for at least seven (7) days. After seven (7) days, the steps shall be cleaned and painted, unless they have been galvanized.

When steps are required with precast concrete structures they shall meet the requirements of ASTM C478. The steps shall be cast into the side of the sections at the time the sections are manufactured or set in place after the structure is erected by drilling holes in the concrete and cementing the steps in place.

When steps are required with corrugated metal structures, they shall be welded into aligned position at a vertical spacing of 12 inches (300 mm).

Instead of steps, prefabricated ladders may be installed. For brick or concrete structures, the ladder shall be held in place by grouting the supports in drilled holes. For metal structures, the ladder shall be secured by welding the top support to the structure and grouting the bottom support into drilled holes in the foundation or as directed by the RPR.

751-3.9 Backfilling.

a. After a structure has been completed, the area around it shall be backfilled with approved material, in horizontal layers not to exceed 8 inches (200 mm) in loose depth, and compacted to the density required in Item P-152. Each layer shall be deposited evenly around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the RPR.

b. Backfill shall not be placed against any structure until approved by the RPR. For concrete structures, approval shall not be given until the concrete has been in place seven (7) days, or until tests establish that the concrete has attained sufficient strength to withstand any pressure created by the backfill and placing methods.

c. Backfill shall not be measured for direct payment. Performance of this work shall be considered an obligation of the Contractor covered under the contract unit price for the structure involved.

751-3.10 Cleaning and restoration of site. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as approved by the RPR. The Contractor shall restore all disturbed areas to their original condition. The Contractor shall remove all tools and equipment, leaving the entire site free, clear, and in good condition.

METHOD OF MEASUREMENT

751-4.1 Manholes, catch basins, inlets, valve structures, outfall structures and inspection holes shall be measured per each.

751-4.2 Manhole, catch basin, and inlet removal shall be measured per each.

BASIS OF PAYMENT

751-5.1 The accepted quantities of manholes, catch basins, inlets, valve structures, outfall structures and inspection holes will be paid for at the contract unit price per each in place when completed. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling and placing of the materials; furnishing and installation of such specials and connections to pipes and other structures as may be required to complete the item as shown on the plans; and for all labor equipment, tools and incidentals necessary to complete the structure.

751-5.2 The accepted quantities of manhole, catch basin, and inlet removal will be paid for at the contract unit price per each in place when completed. This price shall be full compensation for excavation, backfilling, removal of the materials, and restoration.

Payment will be made under:

Item D-751-5.1	Stormwater Inlet and Valve Structure - per each
Item D-751-5.2	Aircraft Rated Inlet - per each
Item D-751-5.3	MDOT Standard Catch Basin with Grate, 4' Diameter – per each
Item D-751-5.4	MDOT Standard Catch Basin with Grate, 5' Diameter – per each
Item D-751-5.5	Deicer Management Pond Outfall Structure – per each
Item D-751-5.6	Drainage Structure Removal – per each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A27	Standard Specification for Steel Castings, Carbon, for General Application
ASTM A47	Standard Specification for Ferritic Malleable Iron Castings
ASTM A48	Standard Specification for Gray Iron Castings

ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM A897	Standard Specification for Austempered Ductile Iron Castings
ASTM C32	Standard Specification for Sewer and Manhole Brick (Made from Clay or Shale)
ASTM C144	Standard Specification for Aggregate for Masonry Mortar
ASTM C150	Standard Specification for Portland Cement
ASTM C443	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
ASTM C478	Standard Specification for Precast Reinforced Concrete Manhole Sections
ASTM C913	Standard Specification for Precast Concrete Water and Wastewater Structures.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M36	Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains
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END OF ITEM D-751

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Airport: Capital Region International Airport
 Project: Cargo Apron Expansion (Phase 2 and 3) and Deicing Containment Facility

Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
<u>Base Bid – Package A</u>				
C-105-2.1	Mobilization (10% Max)	1 LSUM	\$ _____	\$ _____
C-105-2.2	Engineer's Field Office	1 LSUM	\$ _____	\$ _____
G-102-11.1	Safety and Security	1 LSUM	\$ _____	\$ _____
G-102-11.2	Safety Plan Compliance Document (SPCD)	1 LSUM	\$ _____	\$ _____
C-100-14.1	Contractor Quality Control Program (CQCP)	1 LSUM	\$ _____	\$ _____
C-102-5.1	Installation and Removal of Silt Fence	2,370 LFT	\$ _____	\$ _____
C-102-5.2	Inlet Protection	14 EACH	\$ _____	\$ _____
C-102-5.3	Soil Erosion and Sedimentation Control	1 LSUM	\$ _____	\$ _____
P-101-5.1	Pavement Removal	770 SYD	\$ _____	\$ _____
P-152-4.1	Unclassified Excavation	31,410 CYD	\$ _____	\$ _____

Airport: Capital Region International Airport
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Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
P-152-4.2	Undercut and Backfill	4,380 CYD	\$ _____	\$ _____
P-154-5.1	Subbase Course	14,580 CYD	\$ _____	\$ _____
P-154-5.2	Geotextile Fabric	43,720 SYD	\$ _____	\$ _____
P-155-8.1	Lime-Treated Subgrade, 18"	43,720 SYD	\$ _____	\$ _____
P-155-8.2	Lime	1,540 TON	\$ _____	\$ _____
P-209-5.1	Crushed Aggregate Base Course	10,930 CYD	\$ _____	\$ _____
P-304-8.1	Cement Treated Base Course, 6"	43,720 SYD	\$ _____	\$ _____
P-501-8.1	Cement Concrete Pavement, 15"	43,720 SYD	\$ _____	\$ _____
P-620-5.1	Airport Pavement Marking, Black	2,680 SFT	\$ _____	\$ _____
P-620-5.2	Airport Pavement Marking, Yellow	1,300 SFT	\$ _____	\$ _____
P-620-5.3	Pavement Marking Removal	4,320 SFT	\$ _____	\$ _____

Airport: Capital Region International Airport
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Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
D-701-5.1	RCP, Class V, 18-Inch	260 LFT	\$ _____	\$ _____
D-701-5.2	RCP, Class V, 24-Inch	430 LFT	\$ _____	\$ _____
D-701-5.3	RCP, Class V, 30-Inch	510 LFT	\$ _____	\$ _____
D-701-5.4	RCP, Class III, 24-Inch	60 LFT	\$ _____	\$ _____
D-701-5.5	RCP, Class III, 30-Inch	230 LFT	\$ _____	\$ _____
D-701-5.6	Pipe Removal	200 LFT	\$ _____	\$ _____
D-705-5.1	PVC Pipe, Type PS46, Perforated, 6-Inch	3,510 LFT	\$ _____	\$ _____
D-705-5.2	PVC Pipe, Type PS46, Non-Perforated, 6-Inch	350 LFT	\$ _____	\$ _____
D-705-5.3	Underdrain Cleanout	17 EACH	\$ _____	\$ _____
D-705-5.4	Underdrain Demolition	430 LFT	\$ _____	\$ _____
D-705-5.5	Underdrain Cleanout Demolition	4 EACH	\$ _____	\$ _____

Airport: Capital Region International Airport
 Project: Cargo Apron Expansion (Phase 2 and 3) and Deicing Containment Facility

Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
D-751-5.1	Stormwater Inlet and Valve Structure	1 EACH	\$ _____	\$ _____
D-751-5.2	Aircraft Rated Inlet	6 EACH	\$ _____	\$ _____
D-751-5.3	MDOT Standard Catch Basin with Grate, 4' Diameter	1 EACH	\$ _____	\$ _____
D-751-5.4	MDOT Standard Catch Basin with Grate, 5' Diameter Concrete	1 EACH	\$ _____	\$ _____
D-751-5.6	Drainage Structure Removal	1 EACH	\$ _____	\$ _____
D-752-5.1	Concrete Mitered End Section, 30-Inch	1 EACH	\$ _____	\$ _____
T-901-5.1	Seeding	10 ACRE	\$ _____	\$ _____
T-905-5.1	Topsoiling, Obtained On-Site	3,570 CYD	\$ _____	\$ _____
T-908-5.1	Mulching	10 ACRE	\$ _____	\$ _____
L-105-7.1	Remove Taxiway Edge Light and Base Can	12 EACH	\$ _____	\$ _____
L-105-7.2	Remove Taxiway Retroreflective Edge Marker	24 EACH	\$ _____	\$ _____

Airport: Capital Region International Airport
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Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
L-105-7.3	Demolish Junction Can	4 EACH	\$ _____	\$ _____
L-105-7.4	Temporary Airport Lighting	1 LSUM	\$ _____	\$ _____
L-108-5.1	No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Trench, Duct Bank or Conduit	510 LFT	\$ _____	\$ _____
L-108-5.2	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed Above the Duct Bank or Conduit, Including Ground Rods and Ground Connectors	450 LFT	\$ _____	\$ _____
L-108-5.3	No. 4/0 AWG, THWN-2, 600 V Cable, Installed in Conduit	19,100 LFT	\$ _____	\$ _____
L-108-5.4	No. 1 AWG, THWN-2, 600 V Cable, Installed in Conduit	2,880 LFT	\$ _____	\$ _____
L-108-5.5	No. 6 AWG, THWN-2, GND Cable, Installed in Conduit	3,700 LFT	\$ _____	\$ _____
L-109-7.1	Power and Control Building Modification	1 LSUM	\$ _____	\$ _____
L-110-5.1	Remove Existing Cable and Conduit	1 LSUM	\$ _____	\$ _____
L-110-5.2	Remove Existing Cable, Existing Conduit to Remain	1 LSUM	\$ _____	\$ _____

Airport: Capital Region International Airport
 Project: Cargo Apron Expansion (Phase 2 and 3) and Deicing Containment Facility

Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
L-110-5.3	Directional Drilled Electrical Duct Bank, 1-Way, 2-Inch Schedule 40 PVC	170 LFT	\$ _____	\$ _____
L-110-5.4	Direct Buried Electrical Conduit, 1-Way, 3-Inch Schedule 40 PVC	1,500 LFT	\$ _____	\$ _____
L-115-5.1	L-867D Junction Can, in Turf	2 EACH	\$ _____	\$ _____
L-115-5.2	Vehicle Rated Handhole	1 EACH	\$ _____	\$ _____
L-125-5.1	L-853 Taxiway Retroreflective Edge Marker	15 EACH	\$ _____	\$ _____
265619-1	Remove and Relocate 50' High Mast Light Pole with Three Fixtures	2 EACH	\$ _____	\$ _____
265619-2	50' High Mast Light Pole with Three Fixtures	6 EACH	\$ _____	\$ _____

Total Base Bid – Package A Amount (In Words)

_____ Dollars **Total Base Bid - Package A Amount** \$ _____

_____ Cents

Airport: Capital Region International Airport
 Project: Cargo Apron Expansion (Phase 2 and 3) and Deicing Containment Facility

Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
<u>Base Bid – Package B</u>				
C-105-2.1	Mobilization (10% Max)	1 LSUM	\$ _____	\$ _____
G-102-11.1	Safety and Security	1 LSUM	\$ _____	\$ _____
P-152-4.1	Unclassified Excavation	5,240 CYD	\$ _____	\$ _____
T-901-5.1	Seeding	2 ACRE	\$ _____	\$ _____
T-905-5.1	Topsoiling, Obtained On-Site	1,100 CYD	\$ _____	\$ _____
T-908-5.1	Mulching	2 ACRE	\$ _____	\$ _____
DX-100-5.1	8" HDPE Sanitary Sewer Pipe, Installed Under Turf	1,560 LFT	\$ _____	\$ _____
DX-100-5.2	8" HDPE Sanitary Sewer Pipe, Installed Under Pavement	70 LFT	\$ _____	\$ _____
DX-100-5.3	10" HDPE Sanitary Sewer Pipe, Installed Under Turf	250 LFT	\$ _____	\$ _____
DX-100-5.4	Sanitary Sewer Manhole	6 EACH	\$ _____	\$ _____

Airport: Capital Region International Airport
 Project: Cargo Apron Expansion (Phase 2 and 3) and Deicing Containment Facility

Item No.	Item Description	Estimated Quantity	Unit Price in Numbers	Total Amount Per Item
DX-100-5.5	Sanitary Sewer Butterfly Valve	3 EACH	\$ _____	\$ _____
DX-100-5.6	HDPE Flared End Section	1 EACH	\$ _____	\$ _____
DX-100-5.7	Trailer Mounted Pump with 6" Discharge	1 EACH	\$ _____	\$ _____
DX-200-5.1	30 mil HDPE Pond Liner	1 LSUM	\$ _____	\$ _____
DX-200-5.2	30 mil HDPE Pond Cover	1 LSUM	\$ _____	\$ _____
D-751-5.5	Deicer Management Pond Outfall Structure	1 EACH	\$ _____	\$ _____

Total Base Bid – Package B Amount (In Words)

_____ Dollars
 _____ Cents

Total Base Bid – Package B Amount \$ _____

Total Base Bid – Package A and Package B Amount (In Words)

_____ Dollars
 _____ Cents

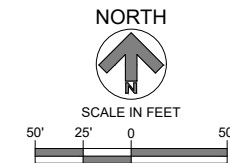
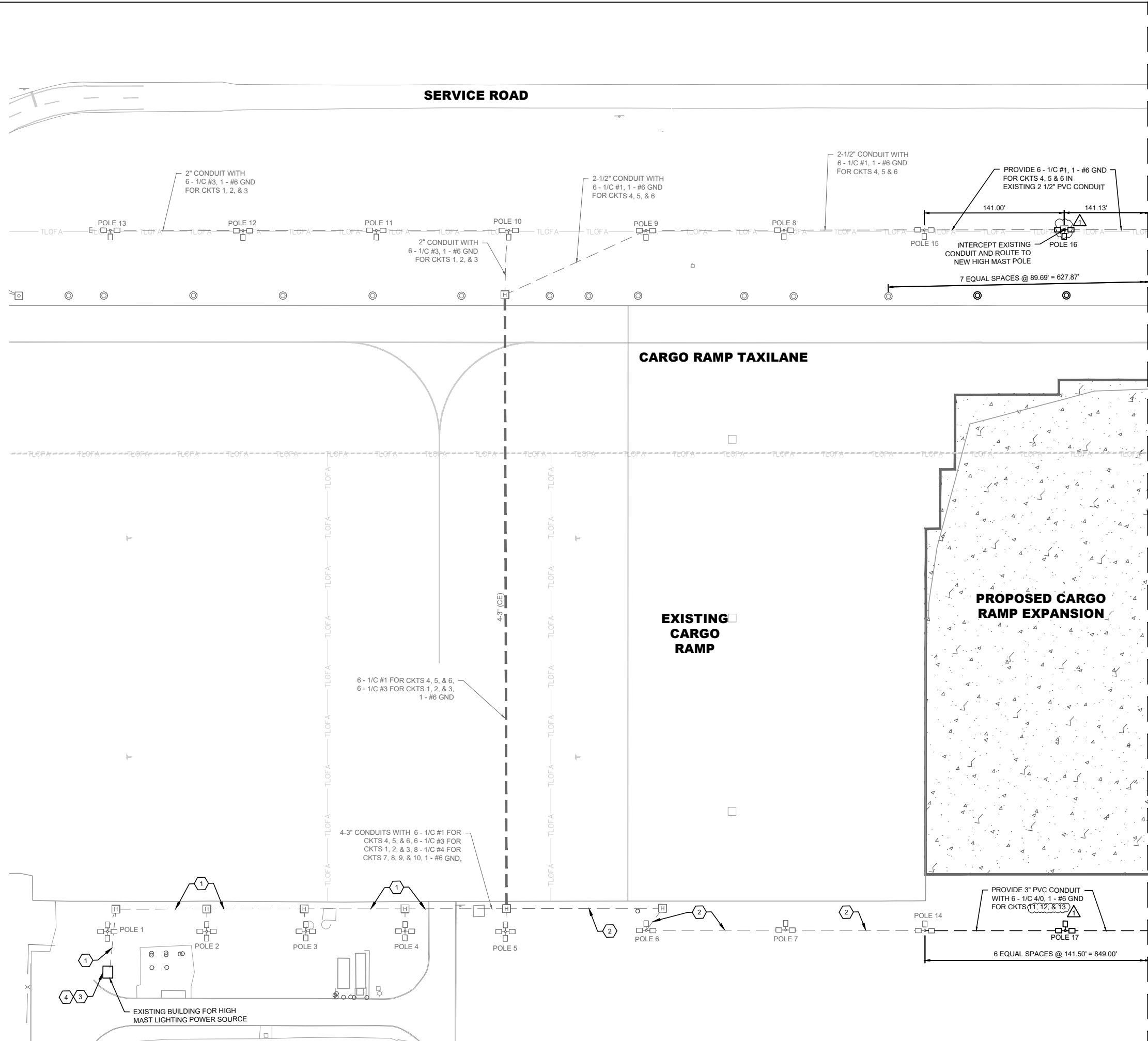
Total Base Bid – Package A and Package B Amount \$ _____

Name of Bidder: _____
(Typed or Printed)

Signature of Bidder: _____
(Same as Proposal Form)

Title: _____

PLOTTED ON: 6/23/2020
 PLOTTED BY: STOCKMAC
 FILE LOCATION: T:\P210095.000 LAN CARGO RAMP & DEICING CAD (2022)\E\LAN E200.DWG



NOTES:

- SEE SHEETS E001 FOR ELECTRICAL NOTES AND ABBREVIATIONS. SEE SHEET E002 FOR ELECTRICAL LEGEND AND CIRCUIT ID.
- SEE SHEET C030 FOR CONSTRUCTION SAFETY AND PHASING PLANS. COORDINATE EQUIPMENT REMOVAL AND DEMOLITION WITH THE SAFETY AND PHASING PLANS.
- REFER TO THE C200 SERIES DRAWINGS FOR PAVEMENT GEOMETRY LEGEND.
- REFER TO THE C400 SERIES DRAWINGS FOR UNDERGROUND UTILITIES OTHER THAN ELECTRICAL UTILITIES SHOWN ON THE ELECTRICAL AREA PLANS.
- THE INSTALLATION OF CONDUIT SHALL BE DETERMINED BY ITS LOCATION AS SHOWN. IN GENERAL, CONDUIT LOCATED OUTSIDE OF PAVEMENT AREAS IS TO BE DIRECT EARTH BURIED (DEB), CONDUIT BELOW SHOULDER PAVEMENT IS TO BE CLSM ENCASED, AND CONDUIT UNDER FULL STRENGTH PAVEMENT IS TO BE CONCRETE ENCASED (CE).
- REFER TO SHEET E505 FOR HIGH MAST LIGHT FIXTURE ORIENT ANGLE AND TILT INFORMATION.
- ALL WORK ASSOCIATED WITH PROVIDING POWER AND CONTROL FOR NEW CIRCUITS 11, 12, AND 13 IN THE EXISTING HIGH MAST LIGHTING POWER BUILDING SHALL BE INCLUDED IN PAY ITEM L-109-7.1.

KEYNOTES:

- PROVIDE 6 - 1/C 4/0, 1 - #6 GROUND IN SPARE 3" CONDUIT BACK TO POWER SOURCE FOR NEW CIRCUITS 11, 12, & 13.
- PROVIDE 6 - 1/C 4/0, 1 - #6 GROUND IN EXISTING 2 1/2" CONDUIT FOR NEW CIRCUITS 11, 12, & 13.
- PROVIDE THREE (3) 60A, 2-POLE BREAKERS IN EXISTING PANELBOARD FOR NEW CIRCUITS 11, 12, & 13. BREAKER SHALL BE THE SAME MANUFACTURER AS THE PANELBOARD TO MAINTAIN THE UL LISTING.
- PROVIDE NEMA 1 RATED ENCLOSURE WITH THREE (3) 60A, 2-POLE RATED CONTACTORS ADJACENT TO EXISTING CONTROL PANEL. PROVIDE THREE (3) HOA SELECTOR SWITCHES ON FRONT WITH LABELS. WIRE THE AUTOMATIC SIDE OF THE SWITCH TO THE EXISTING PHOTOCELL.



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CAPITAL REGION INTERNATIONAL AIRPORT

CARGO RAMP EXPANSION (PHASE 2 & 3) AND DEICING CONTAINMENT FACILITY

MSS DIG System, Inc.
 1-800-482-7171

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	02/10/23

DATE ISSUED: 01/20/2023
 REVIEWED BY: CAT
 DRAWN BY: DNH
 DESIGNED BY: DNH

RS&H PROJECT NUMBER
 1010-0095-000
 AIP GRANT NUMBER
 3-26-055-065-2023
 FEDERAL PROJECT NUMBER
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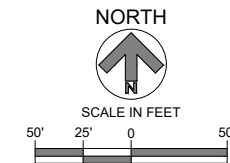
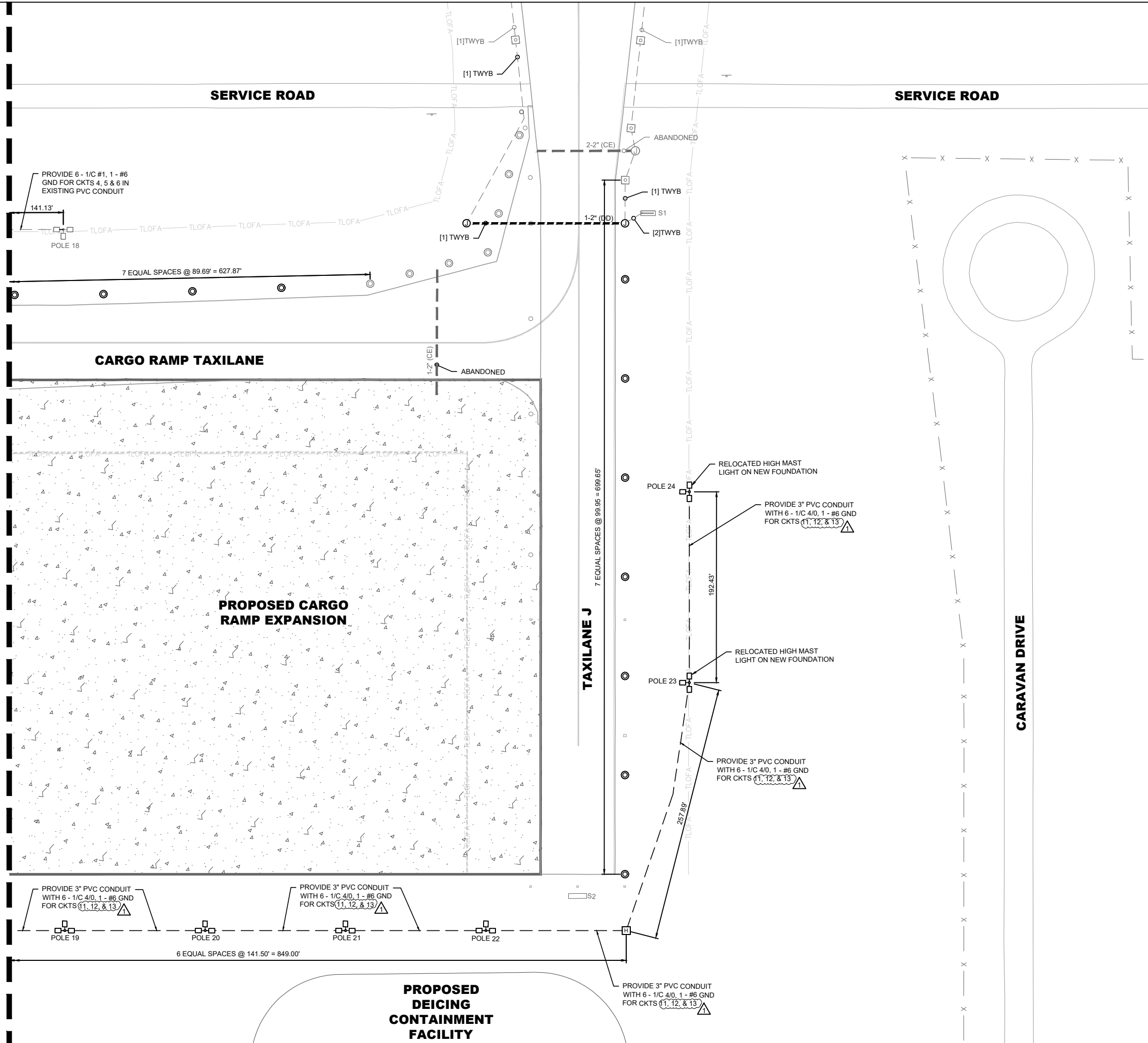
SHEET TITLE
PROPOSED ELECTRICAL PLAN (SHEET 1 OF 2)

SHEET NUMBER
E201

BID DOCUMENTS

6/23/2020
 PLOTTED BY: STOCKMAC
 FILE LOCATION: T:\P\210095.000 LAN CARGO RAMP & DEICING CAD (2022)\E\LAN E200.DWG

MATCHLINE SHEET E201



- NOTES:**
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 - SEE SHEET C030 FOR CONSTRUCTION SAFETY AND PHASING PLANS. COORDINATE EQUIPMENT REMOVAL AND DEMOLITION WITH THE SAFETY AND PHASING PLANS.
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- KEYNOTES:**
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RS&H PROJECT NUMBER 1010-0095-000

AIP GRANT NUMBER 3-26-055-065-2023

FEDERAL PROJECT NUMBER -

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SHEET TITLE

PROPOSED ELECTRICAL PLAN (SHEET 2 OF 2)

SHEET NUMBER

E202

BID DOCUMENTS

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	02/10/23

DATE ISSUED: 01/20/2023
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RS&H PROJECT NUMBER
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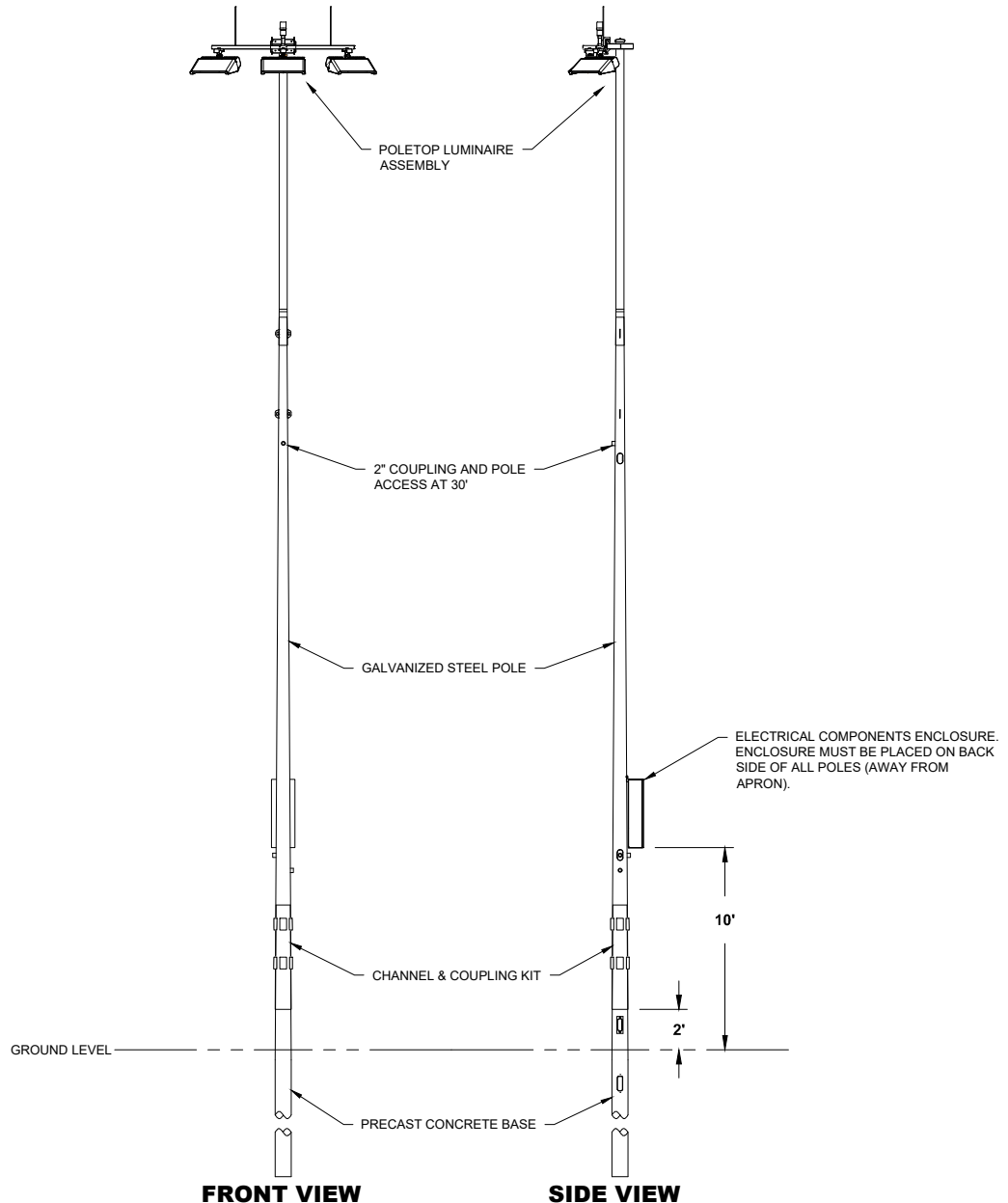
SHEET TITLE

**ELECTRICAL
 DETAILS
 (SHEET 3 OF 4)**

SHEET NUMBER

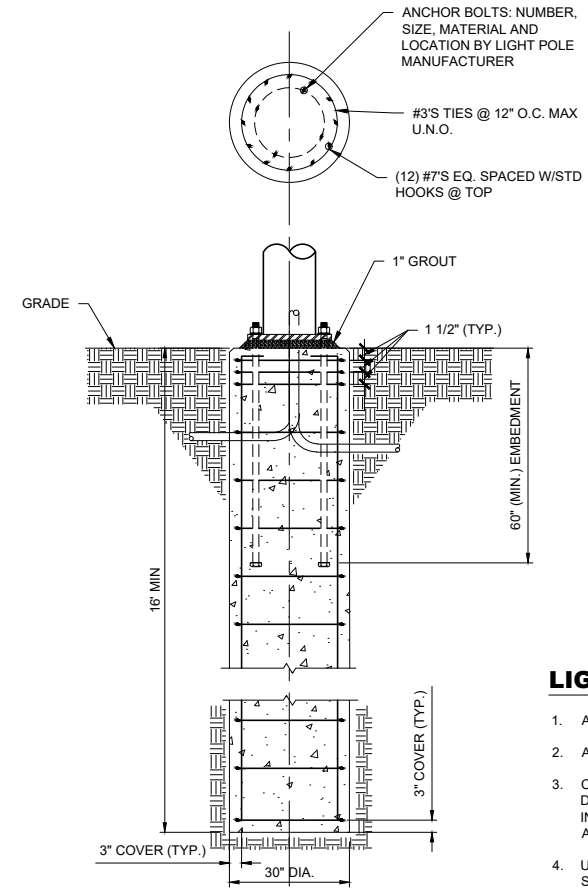
E503

**BID
 DOCUMENTS**



**MUSCO 50FT LIGHT-STRUCTURE SYSTEM POLE TLC
 FOR LED™ LUMINARIES, OR APPROVED EQUAL**

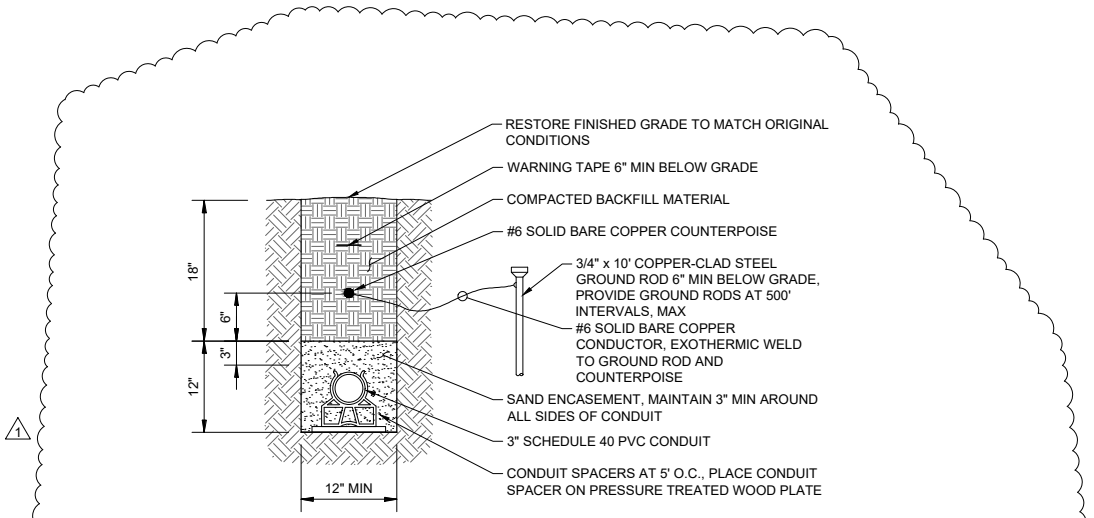
1 HIGH MAST LIGHTING POLE AND FIXTURE DETAIL
 E503 SCALE: NTS



LIGHT POLE FOUNDATION NOTES:

1. ALL CONCRETE SHALL BE 4000 PSI (f_c) AT 28 DAYS.
2. ALL REINFORCING SHALL BE ASTM A615 GR. 60
3. CONSTRUCTION OF LIGHT POLE FOUNDATIONS MAY REQUIRE DEWATERING. ANY DEWATERING SHALL BE CONSIDERED INCIDENTAL TO THE LIGHT POLE FOUNDATION CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE MADE FOR DEWATERING.
4. UPDATED MANUFACTURERS' DETAILS TO BE INCLUDED IN FUTURE SUBMITTAL.

2 HIGH MAST LIGHTING POLE FOUNDATION DETAIL
 E503 SCALE: NTS



**3 DIRECT BURIED CONDUIT DETAIL - 1 WAY, 3\"/>
 E503 SCALE: NTS**

PLOTTED ON: 6/23/2020
 PLOTTED BY: STOCKMAC
 FILE LOCATION: T:\P210095\000 LAN CARGO RAMP & DEICING\CAD (2022)\ELAN E503.DWG



**CAPITAL REGION
 INTERNATIONAL
 AIRPORT**

**CARGO RAMP
 EXPANSION
 (PHASE 2 & 3)
 AND DEICING
 CONTAINMENT
 FACILITY**



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SHEET TITLE
**AIRFIELD SIGN
 AND APRON
 LIGHTING
 SCHEDULE**

SHEET NUMBER
E505

**BID
 DOCUMENTS**

HIGH MAST LIGHTING FIXTURE SCHEDULE

POLE NO.	MOUNTING HEIGHT	LAMP DATA		VOLTAGE	BASIS OF DESIGN							NOTES	
		TYPE	WATTAGE		MANUFACTURER	MODEL OR SERIES	FIXTURE NO.	OPTICS	LUMEN PACKAGE	ORIENT ANGLE	TILT		CIRCUIT
POLE 14	50 FT	LED	580W	208V	MUSCO*	TLC-LED-600*	A	25D	40L	31°	74.4°	11	EXISTING POLE REQUIRES FIXTURE REORIENTATION
							B	40D	40L	0°	74.4°	12	
							C	25D	40L	333°	76.2°	13	
POLE 16	50 FT	LED	580W	208V	MUSCO*	TLC-LED-600*	A	25D	40L	149°	74.4°	4	NEW POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	180°	74.4°	5	
							C	25D	40L	211°	74.4	6	
POLE 17	50 FT	LED	580W	208V	MUSCO*	TLC-LED-600*	A	25D	40L	31°	74.4°	11	NEW POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	0°	74.4°	12	
							C	25D	40L	329°	74.4°	13	
POLE 18	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	149°	74.4°	EXISTING	EXISTING POLE REQUIRES FIXTURE REORIENTATION
							B	40D	40L	180°	74.4°	EXISTING	
							C	25D	40L	211°	74.4°	EXISTING	
POLE 19	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	31°	74.7°	11	NEW POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	0°	74.6°	12	
							C	25D	40L	329°	74.7°	13	
POLE 20	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	31°	74.7°	11	NEW POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	0°	74.6°	12	
							C	25D	40L	329°	74.7°	13	
POLE 21	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	31°	74.7°	11	NEW POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	0°	74.6°	12	
							C	25D	40L	329°	74.7°	13	
POLE 22	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	21°	74.7°	11	NEW POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	0°	74.6°	12	
							C	25D	40L	329°	74.7°	13	
POLE 23	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	301°	73.6°	11	RELOCATED POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	270°	73.5°	12	
							C	25D	40L	232°	73.6°	13	
POLE 24	50 FT	LED	540W	208V	MUSCO*	TLC-LED-550*	A	25D	40L	301°	73.6°	11	RELOCATED POLE AND FIXTURES ON NEW FOUNDATION
							B	40D	40L	270°	73.5°	12	
							C	25D	40L	239°	73.6°	13	

* OR APPROVED EQUAL

NOTES:

- CONTRACTOR IS RESPONSIBLE FOR FIXTURE ORIENTATION AND ALL NECESSARY ADJUSTMENTS AFTER INSTALLATION.
- FIXTURE ORIENTATION DEGREES ARE ESTABLISHED COUNTER CLOCKWISE FROM TRUE NORTH FOR FIXTURES MOUNTED ON POLES, WITH TRUE NORTH EQUAL TO ZERO DEGREES.
- CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS INCLUDING BUT NOT LIMITED TO POLE MOUNTING HARDWARE, CABLE, AND CONNECTIONS AS REQUIRED. THE COST OF ALL LIGHTING CONTROLS SHALL BE INCLUDED IN THE PAY ITEMS 265619-1 AND 265619-2.
- CONTRACTOR SHALL PROVIDE PHOTOMETRIC CALCULATIONS FOR REVIEW AS PART OF THE SUBMITTAL OF THE LIGHT FIXTURE SHOP DRAWINGS.
- ADJUSTMENT OF FIXTURES ASSOCIATED WITH THE EXISTING AND RELOCATED HIGH MAST LIGHT POLES SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM L-109-7.1.

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	02/10/23

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SHEET TITLE

HIGH MAST LIGHTING VAULT

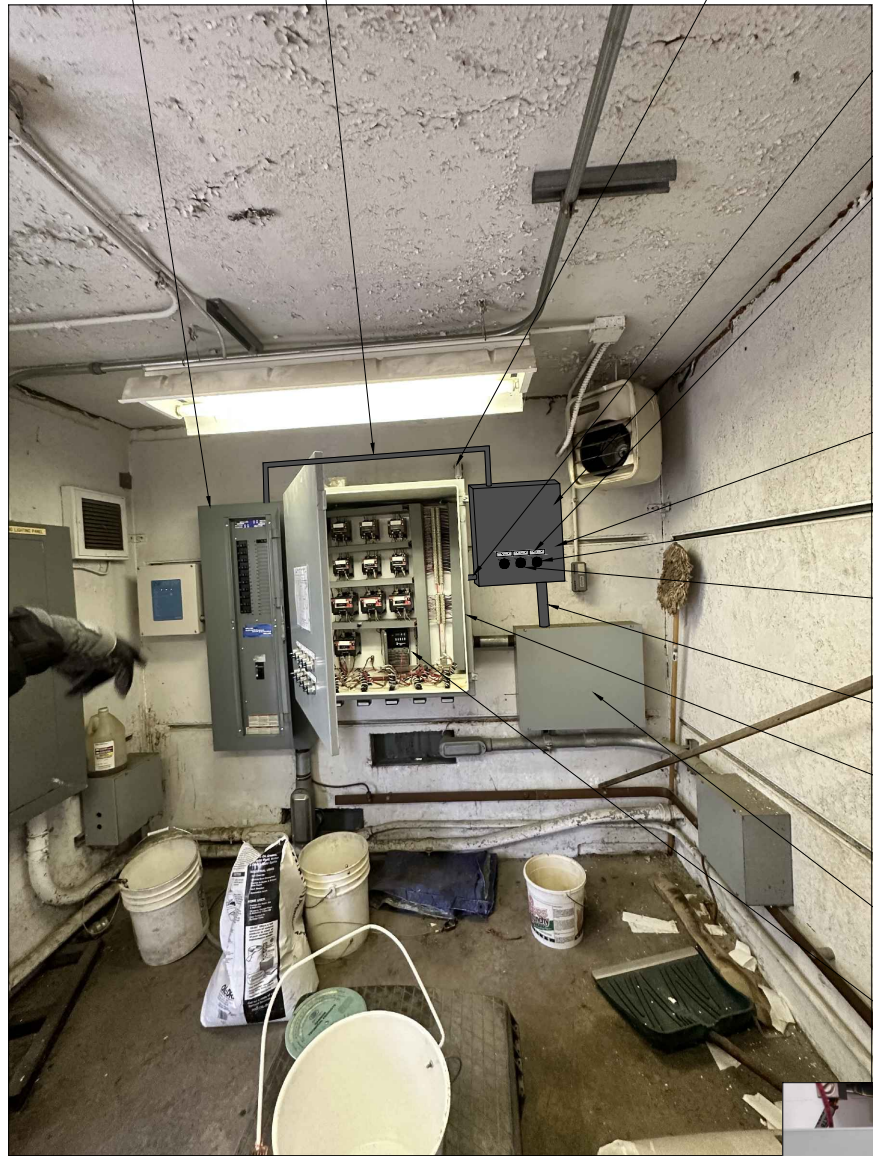
SHEET NUMBER

E601

BID DOCUMENTS

INSTALL CONDUIT FROM PROPOSED CONTACTOR ENCLOSURE TO EXISTING PANELBOARD. CONNECT POWER CABLES TO NEWLY INSTALLED BREAKERS

PANELBOARD



PHOTOCELL

INSTALL CONDUIT FROM PROPOSED CONTACTOR ENCLOSURE TO EXISTING CONTACTOR ENCLOSURE. CONNECT POWER CABLES TO TIMER

PROPOSED CONTACTOR ENCLOSURE

PROVIDE THREE (3) HOA SELECTOR SWITCHES ON FRONT WITH LABELS.

CIRCUIT 11:
 *P 6-7, 14, 17, 19-24
 FIXTURE A*

CIRCUIT 12:
 *P 6-7, 14, 17, 19-24
 FIXTURE B*

CIRCUIT 13:
 *P 6-7, 14, 17, 19-24
 FIXTURE C*

PROVIDE NEMA 1 RATED ENCLOSURE WITH THREE (3) 60A, 2-POLE CONTACTORS ADJACENT TO EXISTING CONTROL PANEL.

CONNECT CABLES FROM THE AUTO SETTING OF THE CIRCUIT 11 & 13 SELECTOR SWITCHES TO THE TIMER

CONNECT CABLE FROM THE AUTO SETTING OF THE CIRCUIT 12 SELECTOR SWITCH TO THE PHOTOCELL

INSTALL CONDUIT FROM PROPOSED CONTACTOR ENCLOSURE TO EXISTING CONDUIT ENCLOSURE

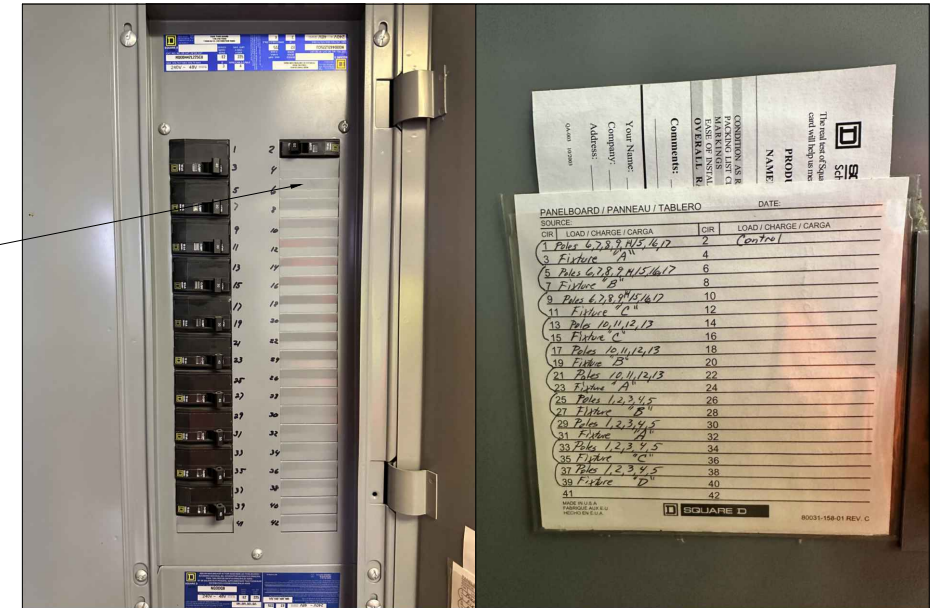
EXISTING CONTACTOR ENCLOSURE

PROVIDE 6 - 1/2" 4/0, 1- #6 GND IN SPARE 3" CONDUIT FROM POWER SOURCE OUT TO CIRCUIT 11, 12, & 13 LIGHTS

TIMER



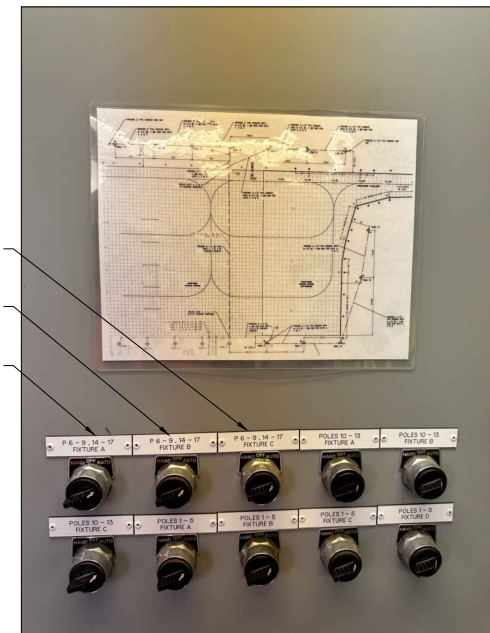
INSTALL THREE (3) 60A, 2-POLE, SQUARE D BREAKERS IN EXISTING PANELBOARD FOR NEW CIRCUITS 11, 12, & 13



REMOVE AND PROVIDE NEW LABEL:
 *P 8-9, 15-16, 18
 FIXTURE C*

REMOVE AND PROVIDE NEW LABEL:
 *P 8-9, 15-16, 18
 FIXTURE B*

REMOVE AND PROVIDE NEW LABEL:
 *P 8-9, 15-16, 18
 FIXTURE A*



GENERAL NOTES:

- ALL EQUIPMENT LISTED WITHIN THE SCHEDULES ON THIS DRAWING OTHER THAN ITEMS CALLED OUT ARE EXISTING TO REMAIN.
- ALL WORK SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE PAY ITEM L-109.
- ENSURE ALL NEC REQUIRED WORKING CLEARANCES ARE MAINTAINED.
- ALL EQUIPMENT SHALL BE SECURED TO MEET SEISMIC REQUIREMENTS FOR THE REGION.
- COORDINATE CONDUIT & SLEEVE ENTRANCES THROUGH FLOOR AND WALLS. PROVIDE FIRE STOPPING AS REQUIRED.
- CONTRACTOR SHALL PROVIDE NEW TYPEWRITTEN PANEL SCHEDULE FOR ALL MODIFIED PANELBOARDS.
- WHERE INDICATED TO PROVIDE A NEW BREAKER IN EXISTING PANELBOARD THE CONTRACTOR SHALL PROVIDE A NEW BREAKER FROM THE ORIGINAL EQUIPMENT MANUFACTURER (SQUARE D) TO MAINTAIN UL LISTING OF PANELBOARD.

