Chemung County-City of Elmira Purchasing Department
150 Lake St. Po Box 588
Elmira, NY 14901
PH: 607-737-3577 FX: 607-873-1352

ADDENDUM # 2

RFB-2650-INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

Bids Due on April 16,2026 1:45 PM (**UNCHANGED**)

Attached please find responses to questions received, revisions/clarifications to contract specifications and contract plans and attachments on pages 2 - 172 of this addendum.

Please contact the Purchasing Office if you have questions.

Thank you

By:

Date Issued: April , 2026

ADDENDUM NO. 02

TO THE

CONTRACT DOCUMENTS

FOR

INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

AT

ELMIRA CORNING REGIONAL AIRPORT

COUNTY OF CHEMUNG

M-J PROJECT NO.: 18965.06

CHEMUNG COUNTY RFB-2650

APRIL 08, 2026

ELMIRA CORNING REGIONAL AIRPORT

INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

TABLE OF CONTENTS

McFARLAND JOHNSON

ADDENDUM No. 02

April 08, 2026

1. INSTRUCTIONS TO ALL HOLDERS OF CONTRACT DOCUMENTS

The following clarifications, corrections, revisions, additions, and/or deletions included in this Addendum, shall be incorporated into the subject Contract Documents as directed herein with immediate effect.

Bidders must acknowledge receipt of this Addendum (including date) on page P-6 of the Proposal Form. Failure of the Bidder to acknowledge this Addendum may result in rejection of the Bid for non-responsiveness.

2. QUESTIONS RECEIVED

The following questions were received via email. Responses follow each question:

Q1: C-101 Construction Safety and Phasing Plan. Please confirm that the installation Phase Notice to Proceed will occur after the PBB fabrication time has elapsed. Current PBB production times are between 16-24 months dependent on the manufacturer selected.

A1: Project phasing has been revised to include a "Phase 0" procurement phase prior to the issuance of the Phase 1 Notice to Proceed.

Q2: C-101 Construction Safety and Phasing Plan. We feel that the 30-calendar day duration is not sufficient to allow for all the work to be completed on time. Most especially due to curing time of concrete and other exterior work which would need to be done before PBB could be installed. We feel that a 60 day duration would be more reasonable especially with the high level of liquated damages associated with the contract.

A2: Phase 1 duration has been evaluated and revised to Forty-Five (45) Calendar Days.

Q3: Confirm if a Fully Renewed PBB will be accepted/considered for the bid.

A3: A Fully Renewed PBB will not be accepted. Refer to specification 149500 Part 6. All equipment and material shall be new.

Q4: What is the Budget for this project?

A4: The Engineer's estimate of construction cost is between $1.5M and $2.5M.

Q5: It was noted at the pre-bid meeting that due to timing of the FAA funding (and we assume a very long lead time on the manufacturing of the PBB), that the Notice To Proceed would be issued in the Spring of 2027 with on-site Construction being limited to May 1st, 2027 to June 1st, 2027 and with a 120 calendar day total Contract Term being in place. What then is the process for the low bidder to be able to proceed with a commitment to the PBB Manufacture and proceed with engineering, submittals, shop drawings, and the manufacturing process, if funding is not in place sometime shortly after bid, this summer? The PBB Manufacturers usually demand significant periodic upfront deposit payments.

A5: Project phasing has been revised to include a "Phase 0" procurement phase prior to the issuance of the Phase 1 Notice to Proceed. Specification 149500 Part 7 has been revised to include a partial payment schedule.

Q6: Does the stipulated Liquidated Damages of $5,000/calendar day apply to the 30 day on-site limited construction period or on the 120-calendar day contract term?

A6: Contract phasing has been revised. Refer to revised sheet C-102A1.

Q7: Who will be the Construction Manager (advisor) or the Resident Project Representative (RPR) on site?

A7: There will be no construction manager for this project. McFarland Johnson will provide the Resident Project Representative.

Q8: Is the General Construction Contract responsible for the purchase and installation of the PBB or is the furnishing of the PBB a Separate Contract held by the Owner? Nothing is mentioned in section 011000 Summary; Div-14 is not assigned to the GC. C300 indicates the GC is to Install the complete PBB, both the fixed and swing portions. C301 General Notes references a "PBB Contractor", perhaps implying a separate contract not a GC.

A8: Refer to specification 149500 Part 1.1: "Contractor shall be responsible for procurement and installation of a new PBB at Gate 4". The reference to a "PBB Contractor" on sheet C-301 refers to the Contractor responsible for procurement and installation of the PBB, who in this case is the General Contractor.

Q9: What is the anticipated schedule? When is the airport expecting the PBBs to be installed?

A9: Refer to the revised project phasing documents included in this addendum.

Q10: Div-3 Supplemental General Provisions, Part-42-C: The Contractor is obligated to perform at least 50% of the total value of contract with his own forces, minus "specialty items". Part-42-D defines the "specialty items" as (1) Airfield electrical work (*which is not in the GC contract*) and (2) pavement markings. If the GC is responsible for provision (furnish & install) of the PBB, the 50% limitation is not achievable.

A10: "Passenger Boarding Bridge and Fixed Walkways" has been added as a Specialty Item under Supplemental General Provisions paragraph 42.D. "Airfield Electrical Work" has been removed from Supplemental General Provisions paragraph 42.D.

Q11: The last portion of the specification book lists several "Pay Items" and their associated description along with payment method. If this is a lump-sum contract, how are these pay items to be used?

A11: Information in the Method of Measurement and Basis of Payment sections of a specification shall be used by the Contractor to develop the detailed Schedule of Values in accordance with specification section 012000. All contract work is to be bid under lump sum items B-001-1 and B-001-2.

Q12: "Pay Item" C-105 Mobilization (page 658 of 723 in PDF of spec) requires and defines what is to be provided by the GC for the RPR/Engineer's Field Office which includes a 400 sqft trailer complete with heating & air-conditioning, hot & cold running water, flush toilets, electric & communications, a kitchenette with microwave and Keurig coffee maker, a full and extensive compliment of office equipment, supplies, and extra printer cartridges, cell phones with data plan, an iPad with unlimited cell service and software applications, on top of a separate high-speed internet service, and a few paved parking spaces.

a. Where, specifically, is this office complex to be placed?
b. Is an exterior frost-free hose bib on this temporary office trailer really needed? Can one on the main facility be found?
c. Where can we access a municipal water source, a sanitary sewer source, and an electrical source to tie into? And still have parking close by?
   We also need a nearby land-line phone service for the Fax machine.
d. This extensive list is obviously a very large expense for a very short duration job – are all these things necessary for a four (4) week project? Is there available space inside the facility that can be used for 30-days?
e. Is a new smart-phone with cell & data plan, and an iPad with cell & data plan, and a separate high-speed internet service all necessary?
f. Is a vehicle-mounted mobile two-way radio also required along with the hand-held units?
   How many of the vehicle-mounted mobile units are to be provided?
g. Are two digital cameras required with the provided smart-phone with camera capabilities?

Please provide a Site Logistics Plan defining where this office trailer and staff parking should be located and positioned, and where utility services may be tied into.

A12: Refer to revised specification section C-105 included in this addendum.

Q13: 1.3 - Fixed Walkway – Technical and Performance Requirements

G – The fixed walkway section for the aircraft boarding bridges, when in use at any extended length, shall be designed to accommodate a wind speed of 80 miles per hour…The walkway is fixed and does not extend. Is this requirement meant for the passenger boarding bridge? If so, is the use of hurricane tie downs acceptable to meet the above requirements?

H – The fixed walkway section for the aircraft boarding bridges, when retracted to the stowed position, shall be designed to accommodate a wind speed of 111 miles per hour… The fixed walkway does not have a stowed position. Is this requirement meant for the passenger boarding bridge? If so, is the use of hurricane tie downs acceptable to meet the above requirements?

A13: Paragraphs 1.3G&H have been revised to clarify the wind speed design requirements. Hurricane tie-downs are not specified for this project.

Q14: 1.6 - Submittal

A.8.c – Plate with vendor name, year of installation, and other pertinent information installed in the cab. TK uses a commercial grade sticker with this information in lieu of a metal name plate. In the event that that there are any changes that require new labeling, this is a cost effective/easily replaceable item. Is this acceptable?

A14: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q15: 2.3 – Fixed Walkway

G - Fixed Walkway loads for roof and flooring must exceed the local Building Codes. Local building codes do not apply to our product, as it is considered "equipment" and not an extension of the building. We will follow the load requirements listed in this specification. Is this acceptable?

A15: The PBB and fixed walkways will be required to be designed in accordance with the load requirements listed in the contract plans and specifications.

Q16: 2.4 – Passenger Boarding Bridge

A.5 – Each PBB shall be equipped with a potentiometer on top of the rotunda that senses the position of the PBB swing and sounds a warning buzzer…
Our design utilizes a swing limit sensor in the rotunda, however it is in the rotunda floor vs the location specified above. The switch is accessible from the rotunda interior. Is this acceptable?

A.6 – The rotunda floor shall remain stationary and level at all times and provide a smooth transition between the terminal and telescoping tunnels.
Our rotunda design allows the rotunda floor to move along with the bridge when in motion. When the bridge is in final position for loading, the floor is stationary and fully meets the remainder of the requirements. Is this acceptable?

A16: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q17: 2.5 – Telescoping Tunnels

A – The apron drive PBB shall be either one, two, or three telescoping tunnels with a corrugated structure…The wall and floor panels shall be constructed from a minimum of 0.075-inch corrugated steel…
The above is the design standard of our competitor. Our standard smooth-sided bridge tunnel design consists of the exterior side, roof and floor panels manufactured from 14 gauge galvannealed steel and galvanized steel panels attached to a framework of angle and tubing. These panels are formed, welded, sealed and painted to form the steel enclosure. Strength is derived from the formed sheet metal ribs, while the flat, exterior walls provide a pleasing architectural appearance. Is this acceptable?

A – …The roof surface shall incorporate a ¾" inch crown to promote water drainage.
We request approval of our standard, flat-panel roof tunnel construction. We use galvannealed sheet metal panels for the roof to create a flat design. Any water build-up will run off due to the slope of the bridge. The flat roof design also includes rain diverters to help eliminate pooling and double sealing to prevent water intrusion. Is this acceptable?

H – The telescoping tunnels shall be equipped with a Pantograph(s) (exterior electrical cable conveyance system) mounted alongside of the PBB.
We utilize our Side Trolley as our primary cable conveyance. It meets all of the requirements outlined in the above section. We believe it is equally effective, while being more aesthetically pleasing than a traditional pantograph. I've included photos at the end of this document showing it in use. Is this acceptable?

I – ¾" pressure treated plywood shall be used for the subfloor material in tunnel sections.
Our standard floor is made of formed, galvannealed sheet metal panels. These are installed with a flat internal profile over the entire length of the bridge that allows a continuous surface for the adhesion of carpet. The corrugated floors used by others require the use of an additional flooring material (usually marine grade plywood). Is this acceptable?

A17: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q18: 2.6 – Service Access

C – A keyed outside knob with inside knob shall be provided at the service door. All knobs shall be keyed to the Airport's standard for locks and hardware. The service door will be controlled by pin pad and card swipe with mag lock. PBB manufacturer will be required to install the box and wire only. The devices will be installed and commissioned by a separate future contractor. If the PBB contractor is installing the provisions, while another contractor is installing and commissioning the devices, who is responsible for providing?

A18: 2.6C has been revised and is included with reissued section 149500 as part of this addendum.

Q19: 2.7 – Control Station

B.1 – Controls: PBB controls shall be accomplished by means of PLC controls with Touchscreen GUI controller. PLC shall be manufactured by Beckhoff or approved equal. Our standard bridge uses Phoenix Contact's PLC. Although we have provided PLCs from other manufacturers in the past, Phoenix Contacts products have proven the most reliable when integrated with our product. Over the years we have integrated specific options and value-added programming into our standard PLC software that will not be available if required to use a PLC from another manufacturer. We request acceptance of our standard PLC.

B.2.e – Push buttons for independent activation of each side of the bellows-type aircraft closure.
We utilize a mechanical push button for this action. We believe it provides more tactile feedback and allows the operator to pay greater attention to completing the task. Is this acceptable?
We do not use individual left/right adjustment buttons in our design. We use self-contained struts that allow each side to lower independently and stop automatically when contact is made with the aircraft. With this design, there is no need for independent activation of the L/R sides. Is this acceptable?

A19: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q20: 2.8 – Aircraft Cab

J – The outer cab floor and inner cab area or "bubble" shall be equipped with Aluminum subfloor and ribbed rubber floor covering.
We utilize the same galvannealed steel in the cab bubble as we do through the rest of the PBB. Is this acceptable?

A20: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q21: 2.11 – Drive Column

C.1 – Electrical/Mechanical vertical drive.
Our vertical drive consists of two (2) extra capacity hydraulic rams. Each ram is independent of the other and capable of supporting the bridge under full design load. An adjustable flow control valve provides the required lift speed. The design includes internally mounted electrical check valves that prevent the bridge from descending in the event of fluid loss or other system failure. Mechanical stops in the cylinders prevent over travel and do not cause any damage should they be reached.
A single hydraulic power unit prevents miss-calibration as seen on Ball Screw designs and it is mounted at the wheel cross-member for easy access for maintenance. No

periodic maintenance is required on the PBB roof due to this. We have been using this system for the last 40 years successfully. They require much less maintenance and will last the life of the bridge without major overhaul, unlike ball screw assemblies that have to be torn-down and resurfaced near ten years of service. Is this acceptable?

A21: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q22: 2.12 – Electrical & Communications Systems and Components

E.b (items i & ii) - …duplex receptacles shall be provided as follows: One near the operator's console. One in each tunnel of the bridge.
Under utilities on page 149500-12, outlets are to be located on the lower portion of the drive column and the corridor. Are outlets required to be in all of these locations?

F.i – An amber colored rotating beacon located under the aircraft cab shall illuminate when the key switch is in the "operate" position.
Although we have supplied rotating amber beacons in the past, we have noted a shorter lifespan due to failures with the mechanical rotation mechanism. Our standard bridge design now utilizes amber-flashing beacons. We've found that the flashing beacon accomplishes the same function as the rotating beacon specified above. Is this acceptable?

H.b – The tunnel, cab and rotunda interior lighting shall be provided by LED light figures that are located on 8' centers and are parallel with the tunnel longitudinal axis.
Our standard lighting arrangement has our light fixture mounted perpendicular to the tunnel centerline. Our light arrangement will provide an equal or greater amount of light in the tunnel than what is being requested. We kindly ask that you approve our standard tunnel lighting arrangement. I've included photos at the end of this document. Is this acceptable?

A22: E: Outlets shall be provided as required by the specifications.
F, H: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q23: 2.13 – Exterior and Interior Finishes

Items A & L – These two items outline the paint system requirements, Sherwin Williams is called out specifically.
Our standard HEMPEL paint system is C5 (ISO 12944) certified. We believe that this not only meets, but exceeds, the requested system. We've used the HEMPEL paint system globally in a variety of harsh conditions and its performance has been outstanding. Additionally the Hempel paint system includes a 10 year warranty. Is this acceptable?

B – Exterior colors will be selected by Greater Binghamton Airport after award.
This appears to be typo. Please confirm if the owner will select colors after award.

D - The ceiling shall be made of plank type panels. The planks run perpendicular to the tunnel centerline and continuously from wall to wall. The planks shall be manufactured from aluminum, with a brushed or baked-on enamel off-white finish. Planks located at the ends of light fixtures shall have a finish to match the fixtures.
This is the design standard of our competitor. We use painted, 20 gauge galvannealed steel sheets for the ceiling panels instead of aluminum plank-type ceiling panels. It provides a clean/minimalist aesthetic that compliments the overall design of the bridge. It comes pre-painted (coated) in the color that we specify. Is this acceptable?

G - The sub-floor throughout the PBB shall be at minimum ¾-inch marine grade plywood and shall provide high resistance to moisture and moisture damage.
Our standard floor is made of formed, galvannealed sheet metal panels. These are installed with a flat internal profile over the entire length of the bridge that allows a continuous surface for the adhesion of carpet. This design removes the need for an additional flooring material (usually marine grade plywood). Is this acceptable?

I - The tunnel wall treatment consists of floor to ceiling high-pressure laminate phenolic and melamine plastic panels. The panels are approximately 4 ft. on center and are supported by clear anodized aluminum trim with a black accent strip. The design allows each panel to be removed individually. The colors shall be as selected by the Owner
Our standard wall panels are made from a 20 gauge ASTM 635 galvannealed sheet metal. We believe these panels provide greater durability and are easier to maintain compared to Laminate/Melamine wall panels. The outer surface side of the wall panel is painted to the customer's specified color (our standard color is RAL 9002). Is this acceptable? Photos are included at the end of this document.

A23: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.
Colors will be selected by Elmira Corning Regional Airport during the shop drawing review process.

Q24: 2.14 – Optional Equipment
A.v - Tunnel mounted ice scrapers for roller tracks
Our rollers are set at fixed points to the angle and do not move out of adjustment during use. With the rollers fixed with respect to the angle, any ice that forms along the angle is sheared off by the roller as it passes along. We have stopped using ice scrapers in all projects in the US and Canada over 15 years ago, and have not had any problems with ice. Is this acceptable?

A24: This product will be subject to a thorough review for general conformance with the design during the shop drawing submission process. The bidder/manufacturer shall note that the materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

Q25: Div-3 Supplemental General Provisions, Part-26: What will be the charge for a Building Permit from Chemung County or whichever other JHA that would issue the appropriate permit?

A25: The permit fee shall be approximately $20 plus 1% of construction cost.

3. REVISIONS/CLARIFICATIONS TO CONTRACT SPECIFICATIONS

Proposal/Front End Specifications Revisions:

REPLACE the following Front End Specification documents:

1. Supplemental General Provisions (SGP) SGP-32 with SGP-32R1.

   Clarifications:
   a. Revised Specialty Items list.

2. Special Provisions (SP-2) – Construction Safety and Phasing Plan (CSPP) 6 with Construction Safety and Phasing Plan (CSPP) 6R1.

   Clarifications:
   a. Revised project phasing.

ADD the following Front End Specification documents:

1. Special Provisions (SP-4) – Geotechnical Investigation Report SP-4-1 through SP-4-83.

   Clarifications:
   a. Geotechnical investigation report as prepared by CME Associates, Inc. dated March 2017 provided for contractor reference.

Technical Specifications Revisions:

REPLACE the following Technical Specification documents in their entirety:

1. 011000 Summary

   Clarifications:
   a. Added Division 14 to General Construction Division of Work.

2. 033000 Cast-in-Place Concrete

   Clarifications:
   a. Updated concrete strength.

3. 149500 Passenger Boarding Bridges (PBB) and Fixed Walkways

   Clarifications:
   a. Revised structural design criteria for fixed walkway to correspond with Structural drawings..
   b. Revised service door hardware specification.
   c. Revised cab docking requirement for RJ aircraft.

d. Added requirements for cameras and fire alarm devices.
e. Revised HVAC equipment requirements.
f. Added requirements for wheelchair/luggage lift.
g. Included additional warranty period requirements.
h. Added partial payment schedule.
i. Revised various sections to address questions received during the bidding process and Owner input.

4. C-105 Mobilization

   Clarifications:
   a. Revised Engineer field office location to rented space in ELM terminal building.
   b. Revised requirements for Engineer field office equipment/supplies.

ADD the following Technical Specification documents:

1. NYSDOT 304 Subbase Course

   Clarifications:
   a. New Specification Section

2. NYSDOT 502 Concrete Pavement

   Clarifications:
   a. New Specification Section

3. P-100 Geotextiles

   Clarifications:
   a. New Specification Section

4. REVISIONS/CLARIFICATIONS TO CONTRACT PLANS

REPLACE the following plans in their entirety:

1. C-101 Construction Safety and Phasing Plan
   Clarifications:
   a. Revised Phase 1 duration.

2. C-102 Construction Safety and Phasing Plan Notes & Details
   Clarifications:
   a. Revised project phasing requirements.

3. C-200 Existing Conditions & Demolition Plan
   Clarifications:
   a. Revised pavement demolition extents.

4. C-300 PBB Layout and Site Plan
   Clarifications:
   a. Revised pavement reconstruction extents, added structural foundation elements, revised Gate 4 parking position markings.

5. C-301 Airside Site Details
   Clarifications:
   a. Revised light duty concrete pavement detail, added construction joint detail, revised PBB plan detail.

6. A101 Passenger Boarding Bridge Modifications
   Clarifications:
   a. Updated jamb detail.

7. S000.1 General Structural Notes
   Clarifications:
   a. Revised General Notes.

8. S100.1 First Floor Framing Plan
   Clarifications:
   a. Revised First Floor Framing Plan – PBB.

9. E100.2 Electrical Plan
   Clarifications:
   a. Update electrical floor plan and equipment schedule.

10. E500.2 Details & Existing Photographs
    Clarifications:
    a. Added existing panel information.

ADD the following plans:

1. S200.1 Sections and Details
   Clarifications:
   a. Added details/sections.

5. ATTACHMENTS

1. Reissued Proposal/Front End Specifications
    1. Supplemental General Provisions SGP-32R1
    2. Construction Safety and Phasing Plan (CSPP) 6R1

2. New Proposal/Front End Specifications
    1. Geotechnical Investigation Report SP-4-1 through SP-4-83

3. Reissued Technical Specifications
    1. 011000 Summary
    2. 033000 Cast-in-Place Concrete
    3. 149500 Passenger Boarding Bridges (PBB) and Fixed Walkways
    4. C-105 Mobilization

4. New Technical Specifications
    1. NYSDOT 304 Subbase Course
    2. NYSDOT 502 Concrete Pavement
    3. P-100 Geotextiles

5. Reissued Plan Sheets
    1. C-101 Construction Safety and Phasing Plan
    2. C-102 Construction Safety and Phasing Plan Notes & Details
    3. C-200 Existing Conditions & Demolition Plan
    4. C-300 PBB Layout and Site Plan
    5. C-301 Airside Site Details
    6. A101 Passenger Boarding Bridge Modificaitons
    7. S000.1 General Structural Notes
    8. S100.1 First Floor Framing Plan
    9. E100.2 Electrical Plan
    10. E500.2 Details & Existing Photographs

6. New Plan Sheets
    1. S200.1 Sections and Details

employed and paid directly by the Contractor and equipment owned, leased, or rented by it from a non-debarred individual or entity, with or without operators. The term "own organization" does not include employees or equipment of a subcontractor, assignee, agent, or supplier of the Contractor. When determining whether the Contractor is in compliance with this 50 percent requirement, the following shall apply:

(1) The cost of materials and manufactured products to be purchased or produced under the Contract shall be included in the amount upon which the 50 percent requirement is computed.

(2) The percentage of subcontracted work shall be based on the Contract, rather than subcontract, unit prices. If only a part of a Contract item is to be sublet, its proportional value shall be determined on the same basis.

(3) When a firm sells materials to a Contractor and performs the work of incorporating the materials into the project, these actions must be considered in combination and as constituting a single subcontract.

D. "Specialty" Items. The cost of "Specialty Items" may be deducted from the total Contract price before computing the amount of work required to be performed by the Contractor's own organization. The following are considered specialty items and may be performed by subcontract:

~~(1) Airfield electrical work.~~
(2) Pavement markings.
(3) Passenger Boarding Bridge and Fixed Walkways

E. Performance Requirements. The Contractor and its subcontractor(s) shall, in the staffing and administration of the Contract, comply with the following performance requirements:

(1) Commercially Useful Function. The Contractor and all subcontractor(s) must each perform a "commercially useful function". This means that the Contractor or Subcontractor is responsible for the execution of a distinct element of the work of a Contract and carries out its responsibilities by actually performing, managing, and supervising the work involved. The Contractor or Subcontractor must have the latitude to independently:

a. Select contracts to be bid;

b. Determine prices to be quoted;

c. Select material suppliers;

d. Hire, fire, supervise, and pay employees; and

e. Direct or cause the direction of the management and policies of the firm.

The Contractor/subcontractor may not broker work for another firm or act as a bidding conduit.

(2) Contractor to Furnish Competent Representative; Safety Officer; Others. To ensure that any subcontracted work is performed in accordance with the Contract requirements, the Contractor shall be required to furnish:

4. Phasing

The project is divided into one (1) construction Work Area and ~~one (1)~~ *two (2)* Phase*s*.

The following is a summary of the phasing for the project. Each phase was reviewed with the Airport and any comments received from the Airport were incorporated into the CSPP.

PHASE 0 (BASE BID - ANTICIPATED FALL 2026)
Work Area: Not Applicable
Operational Impacts: None

Primary work to be performed in this Phase:
- *Submission and review of shop drawings*
- *Procure passenger boarding bridge and fixed walkway*

PHASE 1 (BASE BID ~~- ANTICIPATED SPRING 2027~~)
Work Area: Area surrounding boarding gates 3 & 4 at northeast end of terminal building.
Operational Impacts: Boarding Gates 3 & 4 Closed, Portion of Commercial Apron Closed
Duration: ~~One Hundred Twenty (120)~~ *Forty-Five (45)* Consecutive Calendar Days

Primary work to be performed in this Phase:
- Establish work area and staging/laydown area
- Excavate and install proposed foundations
- Construct opening in terminal building for fixed walkway
- Install passenger boarding bridge and fixed walkway
- Restripe aircraft parking position at boarding gate 4
- Clean and reopen work area

Sequence of Work Summary:

Phase 0:
Estimated Start Date: *October 2026*

Phase 1:
Estimated Start Date: ~~May 2027~~ *Coordinate start with delivery of PBB such that required site work is complete prior to scheduled delivery date*
~~Estimated Completion Date:~~ ~~June 2027~~
Phase 1 Duration: ~~Thirty (30)~~ *Forty-Five (45)* Calendar Days

~~**Total Duration:**~~ ~~**Thirty (30) Calendar Days**~~

Complete Construction Safety & Phasing Plan drawings, details, and notes are included in Appendix B of this report.

DIVISION 1 – SPECIAL PROVISIONS

Geotechnical Investigation Report

(SP-4)

THIS PAGE LEFT INTENTIONALLY BLANK

Foundation and Soils Investigation Report

Elmira-Corning Regional Airport Terminal Project
Horseheads, New York

Prepared For: (Client)

HUNT Engineers, Architects & Land Surveyors, P.C.
Attn: Mr. Christopher J. Bond, P.E., Vice President
Airport Corporate Park
100 Hunt Center
Horseheads, New York 14845
Phone: 607.358.1000
Fax: 607.358.1800
Email: bondc@hunt-eas.com

Prepared By: (Geotechnical Engineer)

CME Associates, Inc.
Attn: Christopher R. Paolini, P.E., Sr. Vice President
6035 Corporate Drive
East Syracuse, New York 13057
Phone: 315.701.0522
Fax: 315.701.0526
Email: cpaolini@cmeassociates.com

CME Report No.: 27191B-01-0317
March 22, 2017

Table of Contents

Attachment Listing:

CME Exploration Location Plan (1 of 1)
Plan that Shows Existing Basement Location (from others) (1 of 1)
CME Subsurface Exploration-Test Boring Logs, labeled B-1 through B-8 (11 of 11)
Laboratory Test Summary, labeled 27191L-01-0317 (5 of 5)
General Information & Key to Test Boring Logs (4 of 4)

Foundation and Soils Investigation Report
Elmira-Corning Regional Airport Terminal Project
Horseheads, New York

1.0 INTRODUCTION

CME Associates, Inc. (CME) is pleased to submit this Report to HUNT Engineers, Architects & Land Surveyors, P.C. (HUNT - Client) pursuant to the acceptance of CME Proposal/Agreement No. 05.4988, by Mr. Christopher J. Bond, P.E. of Client.

This report provides the results of a limited field and laboratory testing program conducted for the subject project at the existing Elmira-Corning Regional Airport in Horseheads, New York. Recommendations pertaining to the proposed addition's foundations and other geotechnical recommendations are also provided as required in the Agreement.

2.0 PROPOSED DEVELOPMENT

CME understands that a wrap around addition and some reconstruction to the existing building are planned. The addition will be single story with structural steel framing, and no basement, at this time. This may change as the design moves forward, and the existing basement may be expanded to accommodate MEP items. Please refer to the *Plan that Shows Existing Basement Location*, for details of the proposed addition footprint and approximate existing basement location. According to Client, maximum column loading at foundation level will be less than 100 kips. Finish floor is planned to match existing. If any of the above information is incorrect, please let us know. Further, if a basement expansion is planned for the addition, please let us know so that we can revisit our recommendations, and comment on whether additional geotechnical recommendations are required by CME.

3.0 EXPLORATION METHODOLOGY

Client provided CME with a General Plan, which outlines the addition footprint on it. The undersigned Engineer plotted boring locations on said plan and then the CME field crew staked the locations in the field and contacted DSNY to clear public utilities. Due to utility interferences and/or access restrictions, some boring locations were adjusted. An *Exploration Location Plan* is attached, which depicts the as-drilled boring locations and elevations at grade at said boring locations.

All Test Borings were advanced using a Deidrich Model D120 truck mounted, rotary exploration drill rig, equipped with 3-¼" I.D. hollow stem augers. Soil sampling was conducted using a 140-pound automatic hammer dropping through a distance of 30 inches to drive a 2" O.D. and/or a 3" O.D. split barrel sampler in general conformance with ASTM Standard Practice D1586. Each borehole was backfilled with auger cuttings upon completion, and the surface was repaired to nearly match existing grade.

The soil samples were logged and visually classified in the field by the CME Drillers, and a portion of each soil sample was placed and sealed in a glass jar. The Driller classifications were later reviewed by CME Geologist, Mark Schumacher and spot checked by the undersigned Engineer in CME's East Syracuse Laboratory. The visual soil classifications were made using the modified Burmister Classification System, as practiced by CME, and as described in the attached document entitled, *General Information & Key to Test Boring Logs.*

GPS coordinates and elevations at the boring locations were determined by a Trimble GeoXH hand held unit by the CME Team. Please see the Exploration Location Plan for boring locations and elevations.

Laboratory testing was conducted on selected soil samples consisting of Natural Moisture Content Testing (ASTM D2216), Atterberg Limits Testing (ASTM D4318) and Sieve Analyses (ASTM D422). These tests were performed in CME's AMRL[1] Accredited East Syracuse Laboratory, and the results are given in the attached, *Laboratory Test Summary Report.*

4.0 SUBSURFACE CONDITIONS SUMMARY

The subsurface conditions presented herein have been generalized for simplicity and brevity by the undersigned CME Engineer from the actual data presented in the Subsurface Exploration – Test Boring Logs and Laboratory Test Summary attached to this Report. Please refer to this information for actual conditions encountered at the time, location and elevation of each sampling. It is possible for the subsurface conditions between sampling intervals and between exploration locations to vary from those expressed in this section.

4.1 Subsurface Profile

All borings identified 4 to 12 inches of Asphalt at grade, immediately underlain by Fill consisting of a mixture of Silt, Sand and Gravel to 2 to 5 feet depth.

Below Fill, the borings penetrated dirty (Silty) Sand and Gravel, with occasional embedded Cobbles and Boulders to boring termination depth in all borings. Please note, in a couple of the borings, including Boring B-6, intervals of Gravelly Sandy Silt were identified. In the last sampling interval (83.5 to 85 feet) in Boring B-6, highly weathered Shale Rock fragments and Silt were encountered. Standard Penetration Testing "N" numbers reveal that the soil is generally medium compact to very compact in the cohesionless intervals and medium stiff to very stiff in the Siltier intervals.

4.2 Groundwater Observations

Groundwater level observations and measurements are made by the CME Crew when groundwater accumulates in the boreholes. The CME Drillers note water level inside the borehole during advancement and following casing (auger) removal. The Drillers also note the visual appearance of the moisture condition of the samples as retrieved. The conditions and times of groundwater level observations are noted on the individual Test Boring Logs.

Groundwater was observed in Borings B-1 through B-6 between about elevations 76 and 78, based on CME's site datum. Groundwater was not identified in Borings B-7 and B-8, however, these boreholes were terminated at 15 feet depth. Groundwater fluctuations on this site should be expected to occur depending on several factors, such as rainfall, seasonal changes, prevailing climate and adjacent construction operations, among other factors.

4.3 Material Expansiveness

Based on a naked-eye visual examination of the retrieved soil samples, potentially expansive materials were not identified.

---

[1] **AMRL** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.amrl.net.

5.0 GEOTECHNICAL RECOMMENDATIONS

5.1 Engineering Evaluation

The proposed Addition may be founded on a conventional shallow footing foundation system. However, footing bearing grade improvement consisting of compaction of all bearing grades and undercutting and replacement (with Select Granular Fill), of select bearing grades. Please refer to Report Section 5.4 for details.

5.2 Site Characterization and Engineering Significance

The site subsurface conditions are generally characterized to aid those involved in the design and construction to better understand the response of the soils to the anticipated temporary and permanent loadings, and to identify limitations and concerns associated with the planned building construction. The limitations and concerns should be addressed by all those involved in the project. Noteworthy subsurface soil characteristics are given below:

- Excavation to bearing grade will loosen the bearing surface. Therefore, all foundation bearing grades shall be satisfactorily compacted as outlined in Report Section 5.4.
- Some bearing grades will expose loose soils and/or previously placed fill which do not meet the recommended soil bearing pressure outlined in Report Section 5.4. All bearing grades shall be examined by the CME PGE. Bearing grades that do not meet the design soil bearing pressure shall be undercut and backfilled with Select Granular Fill as outlined in Report Section 5.4.
- Cobbles and Boulders are embedded in the soil matrix at this site. Excavations to bearing grade may leave voids or an irregular bearing surface due to the removal of Cobbles and Boulders. The voids left, shall be satisfactorily backfilled with Select Granular Fill, followed by quality control density testing.

The noted limiting characteristics can be overcome by recognizing them and incorporating best management practices in the design and construction. It is important to note that recommendations made by CME in this report are made for service condition loadings which may be static and normal duty and not dynamic and heavy duty construction phase loadings, respectively. In other words, protection methods may be inadequate to support the Contractors' loadings and equipment.

5.3 Site Preparation

All Topsoil, Organic Matter and Asphalt pavement shall be stripped from the Building Pad and all areas to receive pavements or fill.

Following stripping, the surface shall then be "sealed" and proofrolled using a minimum 5-ton (operating weight) smooth steel-drum roller on vibratory mode on a dry day, free of rain. Proofrolling will consist of four to six passes over the subgrade at walking speed in the presence of the CME PGE (Professional Geotechnical Engineer). The CME PGE shall be properly scheduled to be present during the proofrolling to observe and evaluate the subgrade reaction to proofroll. Immediately following a satisfactory proofroll, the Contractor shall install fill, to achieve slab subgrade elevation in a quality controlled manner.

5.4 Footing Foundations

Foundation excavations will expose Silty Sand and Gravel, Existing Fill or New Fill placed under this program at plan foundation bearing elevation. All spread and continuous footing foundation grades shall be compacted with 5 passes of a plate tamper with an operational weight of at least 7,000 pounds. Any bearing grades determined by the CME PGE to not meet the soil bearing pressure recommended below or expose Existing Fill, shall be undercut to achieve firm inorganic virgin soil, and backfilled with compacted and satisfactorily density tested Select Granular Fill (NYSDOT Type 4 Subbase Course). The undercut grade shall be examined approved by the CME PGE prior to placement of backfill.

Footings constructed according to these requirements may be sized using a Presumptive Soil Bearing Pressure of 3,000 psf. Where undercuts are required by the CME PGE, one satisfactory in-place field density test per lift is required at each spread footing location, and one satisfactory in-place field density test is required per 25 lineal feet of continuous footing. The Select Granular Fill Pad shall be 6 inches wider than the footing on all sides, for every one foot of undercut. The Select Granular Fill Pad shall be compacted to a minimum of 95% of Maximum Dry Density, as determined by ASTM D1557 (Modified Proctor Test).

We recommend that the Design and Construction Team budget for 25% of all foundation bearing grades to be undercut and replaced with a 12 inch thick, satisfactorily compacted Select Granular Fill Pad. We also recommend inclusion of an add/deduct line item in the General Contractor's Contract, for undercutting and satisfactorily backfilling bearing grade with Select Granular Fill, on a "per cubic yard" basis.

It is recommended that the following notes or reasonable facsimile be placed on the Foundation Plans to alert the Contractors of CME's concerns.

Foundation Plan Notes

1. All foundation excavations shall be maintained in-the-dry.
2. The Contractor shall stage and schedule foundation construction and footing excavation work such that footing foundation concrete placement occurs within one workshift of excavation.
3. The CME PGE must examine, test and verify design bearing pressure for all footings and foundations at the time of excavation. Notify and schedule the CME PGE at least one business day prior to commencing any foundation excavation.
4. Footing grades deemed to not meet the 3,000 psf design soil bearing pressure by the CME PGE, shall be undercut and replaced with a minimum 12" thick Select Granular Fill Pad, placed over undercut grade approved by the CME PGE. One satisfactory in-place field density test per lift is required at each spread footing location, and one satisfactory in-place field density test is required per 25 lineal feet of continuous footing.
5. All footing bearing grades and Select Granular Fill Pad grades shall be dry and free of mud, water and loose or frozen soil.

CME recommends that all exterior foundations for heated space exhibit 4'-6" of cover for frost protection, measured from bottom of footing to adjacent final grade. Interior footings for heated space may bear as high as practical below the slab-on-grade, but not higher than bottom of existing footings within 10 feet of new.

Minimum footing width shall be 30 inches for exterior spread footings and 42 inches for interior spread footings.

Footings sized, positioned and supported on bearing grade prepared and field verified according to these recommendations, are predicted to settle less than about one inch. Differential settlement between any two adjacent footings is predicted to be less than about three-quarters of an inch.

Further, where new, non-basement areas will meet with the existing basement area, new foundation bearing level shall be stepped down to match existing foundation bearing level.

5.5 Seismic Site Class

Based on a computational analysis using the CME Subsurface Exploration data and the 2015 IBC (New York State Building Code which references the 2010 ASCE/SEI 7-10), the proposed Elmira-Corning Regional Airport Terminal Project in Horseheads, New York is defined as a "Stiff Soil Profile", representative of a Seismic Site Class "D". The CME Test Borings did not reveal soils vulnerable to liquefaction, sudden collapse or failure under seismic loading conditions.

5.6 Re-Use of On-site Borrow

Excavated soils will likely consist of soils with a high Silt content. These soils may be re-useable and compactible to the required in-place density when moisture content is within about 3% of Optimum Moisture Content and oversized particles greater than 4 inches in least dimension are screened off. These soils are considered satisfactory materials for fill outside the building proper, outside the influence area of any exterior slabs and concrete sidewalks, and below subgrade level of pavements.

Only Select Granular Fill Materials (as defined in this Report) are considered satisfactory fill for areas within the building and the influence area of exterior slabs and concrete sidewalks.

The Influence Area is defined as the area within planes sloped downward and outward at a 45-degree angle from horizontal measured from:

1. 1-foot outside outermost edge at base of foundations, slabs and rigid pavements.
2. 1-foot outside outermost edge at surface of roadways and shoulder.
3. 0.5 foot outside exterior at springline of pipes and culverts.

5.7 Protection of Existing Foundations

Foundation excavations for the new Addition and interior renovations may undermine existing foundations. The contractor shall provide satisfactory Support of Excavation (SOE) and temporary excavation protection systems, to protect and prevent any vertical or horizontal movement of existing foundations as well as to provide worker safety per OSHA and NYCRR regulations and law. All SOE and temporary excavation protection systems shall be designed by a NYS Licensed Engineer (hired and paid for by the Contractor), who has at least 5 years of experience in design and installation of such systems.

All SOE and temporary excavation protection system designs shall include the provisions for monitoring the movement of existing structures during installation, in-service, and after extraction/removal of SOE. Such monitoring provisions shall include maximum limits for movement, location, type and details of the geotechnical instruments/monitor points; and shall address maximum fugitive vibration limits so that existing or new construction is not damaged.

6.0 FILL AND BACKFILL

6.1 Select Granular Fill Material

All Fill and Backfill within the Building Footprint and below plan subgrade elevation shall consist of Select Granular Fill.

Select Granular Fill material shall conform to all of the requirements of New York State DOT Standard Specifications Section 304, Type 4 Subbase Course Material.

6.2 Filling & Backfilling Methodology

All filling and backfilling to occur within building areas or under pavement areas shall be accomplished in a workmanlike manner according to good industry practice. All filling and backfilling should be installed in a quality controlled manner with prequalified materials, with quality assurance structural tests and inspections conducted at regular intervals according to the IBC Chapters 17 and 18, and consistent with the following methodology.

1. The area to receive fill should be properly prepared, proofrolled, inspected and approved prior to placement of fill.
2. Fill material shall be placed on the approved subgrade in a manner to minimize segregation. The fill should be placed in nearly horizontal lifts commencing at the lowest fill area elevation and proceeding with each lift upward and outward from the lower lift.
3. The moisture content of the material shall be adjusted prior to application of compaction such that it is within 3% of the Optimum Moisture Content.
4. The compacted lift thickness and minimum in-place field density shall conform to the requirements of Table 1.

Table 1: Structural Fill Compaction and Lift Thickness Recommendations

Minimum In-Place Density*	Range of Compacted Lift Thickness (inches)	Fill Area Description
95%	8 to 12	Mass fill within the building pad and other structural areas
95%	6 to 8	Confined areas such as utility trenches, and foundation backfill, as well as subbase under slabs and pavements
*As determined using ASTM D1557, Modified Effort Proctor.		

5. When the test results indicate that insufficient compaction has been obtained in any layer, the Contractor shall take action to modify or alter the moisture content of the soil, to provide additional compaction or otherwise to increase the in-place soil density. If the Contractor cannot obtain satisfactory compaction due to material properties, the Contractor shall remove the unsatisfactory material and replace with new material.
6. Materials which are frozen or which are contaminated with mud, debris, organics or other deleterious materials shall be removed and replaced with uncontaminated specified material.
7. No fill shall be placed over an area or lift of fill that has not been tested and achieved satisfactory results.

7.0 SOIL AND FOUNDATION SPECIAL INSPECTIONS

CME and the ***2015 IBC as Amended by New York State*** requires special inspections and structural tests to test and verify site preparation, fill placement and foundation load-bearing requirements. We have prepared Table 2, presented on page 8, to satisfy the Soils and Foundation Special Inspection provisions of the *IBC* and this report.

8.0 IMPORTANT OTHER CONSIDERATIONS

CME has provided the information in this section for those using our reports, so they may acquire a better understanding of geotechnical engineering professional practice and the limitations associated with its application to this and other projects.

Table 2: Elmira-Corning Regional Airport Terminal Project, Horseheads, New York Schedule of Soils and Foundation Special Inspection		
Verification, Test and Inspection Description	**Required Frequency and Inspector Qualification**	**References and Standards**
1. Prior to placement of controlled fill, verify complete removal of Topsoil, Organic Matter, Asphalt Pavement and other deleterious materials.	Continuously as grades are exposed by PGE or EIT working under the supervision of the PGE.	ASTM D2487, IBC 1705.6, Geotechnical Report.
2. Perform classification and testing of controlled fill materials.	Continuously by NICET Certified Technician or ICC.	Geotechnical Report, ASTM D2487, IBC 1705.6.
3. Verify use of proper material, density and lift thickness during placement and compaction of controlled fill, including foundation undercut backfill.	Continuously by NICET Certified Technician or ICC. One passing in-place density test per lift per 2,500 square feet of area, and one passing in-place density test per lift for every 25 lineal feet of footing trench.	Geotechnical Report, ASTM D2922, D2487, IBC 1705.6 and 1804.6.
4. Verify that foundation excavations, removals and undercuts are extended to proper depth and have reached satisfactory material.	Continuously as grades are exposed by PGE or EIT working under the supervision of the PGE.	Geotechnical Report, ASTM D2487.
5. Witness compaction of all bearing grades and verify that materials below footings are adequate to achieve the design soil bearing pressure. Direct undercuts of bearing soils not meeting the required bearing pressure and witness placement of Select Granular Fill Pad with satisfactory density tests obtained.	Continuously as grades are exposed by PGE or EIT working under the supervision of the PGE.	Geotechnical Report, ASTM D2487, IBC 1705.6.

Geotechnical Report = Subsurface Exploration and Foundation Report by CME Associates, Inc., CME Report No. 27191B-01-0317
PGE = A Professional Geotechnical Engineer and NY licensed P.E., with a minimum of 5 years of practical field experience.
EIT= An Engineer-In-Training, with a minimum of 3 years of practical field experience.
NICET = National Institute for Certification in Engineering Technologies. A Level II Certified Engineering Technician in Soil Construction Materials and/or Geotechnical Construction.
ICC = International Code Council – Certified Soil Special Inspector.
*The Testing Agency providing these Special Inspections and Structural tests shall be Accredited to demonstrate compliance with ASTM E329-11c to conduct soil and aggregate materials testing. The agency shall possess written approval by the Code Enforcement Official (CEO) and file written proof of current accreditation by a recognized national accreditation authority with the CEO.

Approved Agency:

Items 1 through 5: CME Associates, Inc.
Tom Hamilton,
Branch Manager
Horseheads, New York
Phone: 607.739.4033
Fax: 607.739.4085

By: Christopher R. Paolini, P.E./Registered NY #079486,Registered Design Professional-Geotechnical

8.1 Project Development & Drawing Development

CME has described in Report Section 2.0 our understanding of the proposed development at the time this report is published. It is anticipated that the preliminary plans will change during design phase and/or during the bidding/negotiating/value engineering phases. Substantial changes consist of many items such as, but not limited to; bearing elevation, floor elevation, planned depth of cuts or fills, decrease or increase in design loads, building footprint growth or shrinkage, building location movement, time period of construction (compression or relaxation), and addition or deletion of sublevel (basement or crawlspace) area, among others. Please advise CME of substantial changes so we can revisit our analyses and recommendations. It will help reduce your risk, could save you time and money, and result in a higher quality construction project. In addition, CME recommends that it review the Construction Contract Documents (CCD) pertaining to the geotechnics to verify a correct interpretation of CME's recommendations and considerations.

8.2 Construction Phase Geotechnical Services

The analysis and recommendations contained in this report are preliminary and are based on the specific data obtained from the limited subsurface explorations referenced in this report. The explorations indicate subsurface conditions only at the specific locations and times, and only to the depths penetrated. The validity of the recommendations is based in part on CME's assumptions about the stratigraphy, as well as, information about the proposed development provided by others. CME's assumptions may be confirmed only during earthwork.

It is very important to point out that CME's engineering recommendations given in this Report are premised upon CME being retained to provide Construction Phase Geotechnical Services as they relate to site and building earthwork, filling and backfilling, and foundation installations. If others are retained to provide these construction phase services, a complete understanding, interpretation or execution of CME's reported recommendations may not occur. CME will not assume responsibility for the performance of the structures, slabs and pavements when CME is not providing the construction phase services. CME will not be responsible for claims, disputes, costs or schedule delays associated with any of the constructions or earthwork addressed in this Report when CME is not providing construction phase services.

The recommendations made in this report are based on the "Observational Method". The Observational Method insures continuity from the design to the construction and has been at the heart of many successful construction projects. It relies upon extensive use of monitoring and observational procedures during the construction. Construction monitoring allows CME to take advantage of conditions more favorable than those anticipated based on the subsurface exploration program. It often provides for timely warning when conditions are less favorable, allowing for changes or alterations to be made before a problem shows itself in newly completed construction.

8.3 Standard of Care and Warranty

CME has endeavored to conduct the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the geotechnical engineering profession currently practicing in the same locality and under similar conditions as this project. No warranty, either express or implied, is made or intended by CME's proposal, contract, and written and oral reports, all of which warranties are hereby expressly disclaimed. CME shall not be responsible for the acts or omissions of Client, its contractors, agents and consultants. CME has relied upon information supplied by Client, its contractors, agents and consultants, or information available from generally accepted reputable sources, without independent verification, and CME assumes no responsibility for the accuracy thereof.

8.4 Closing Comments

In accordance with CME's Terms and Conditions for Geotechnical Services, CME will dispose of all unconsumed samples thirty (30) days after submission of this report. All consumed samples were disposed of immediately after test completion. If you would like to keep the unconsumed samples, please email a request to do so, within five (5) business days from the date of this report to Brianna Fraone, bfraone@cmeassociates.com.

Please do not hesitate to contact our office if you have any questions regarding this report, its conclusions, its recommendations, or its application to actual field conditions revealed during construction.

Respectfully Submitted,
CME Associates, Inc.

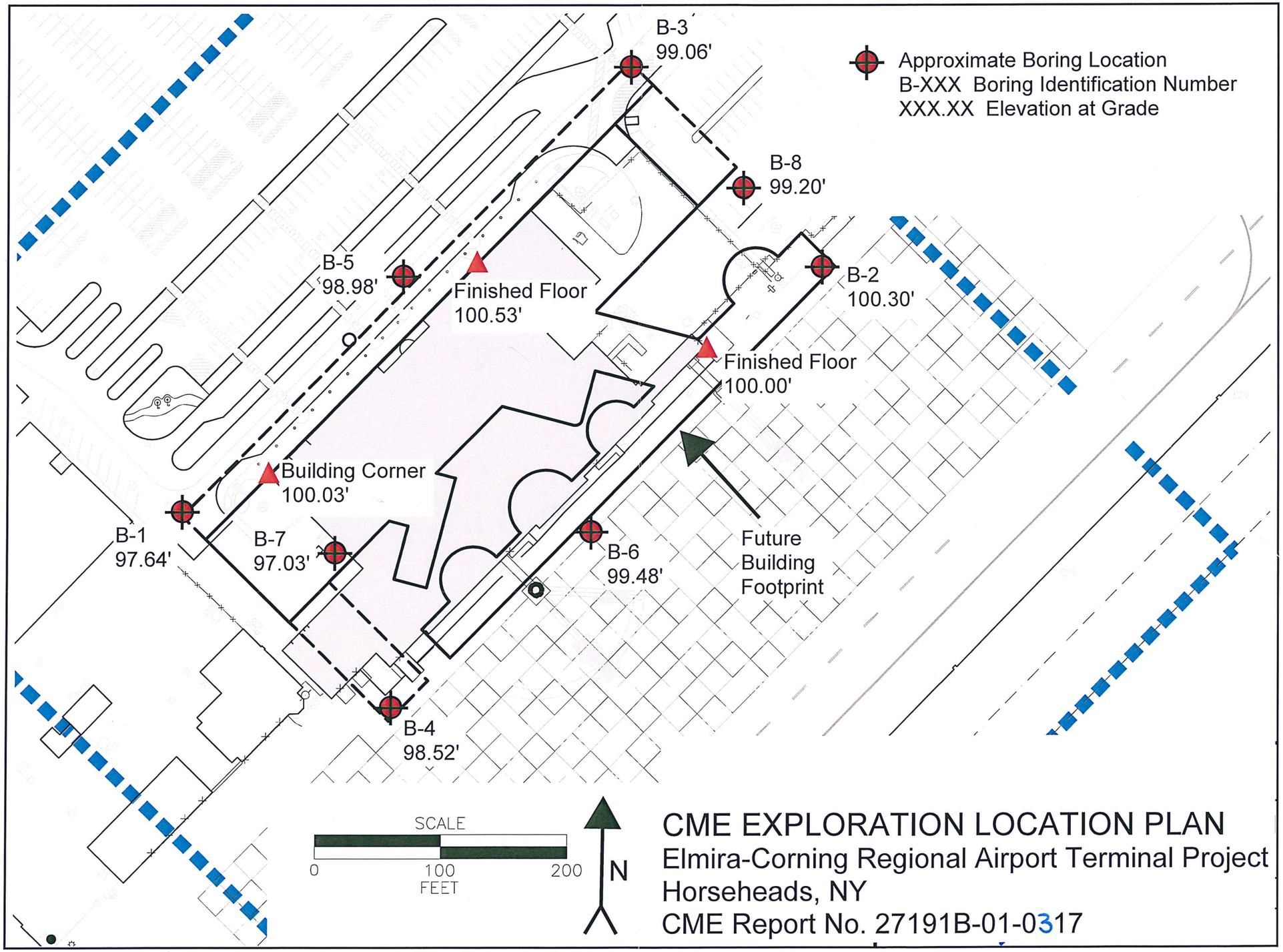
Christopher R. Paolini, P.E.
Senior Principal Engineer

Reviewed By,
CME Associates, Inc.

Anas. N. Anasthas, P.E.
Geotechnical Engineer

Attachment Listing:

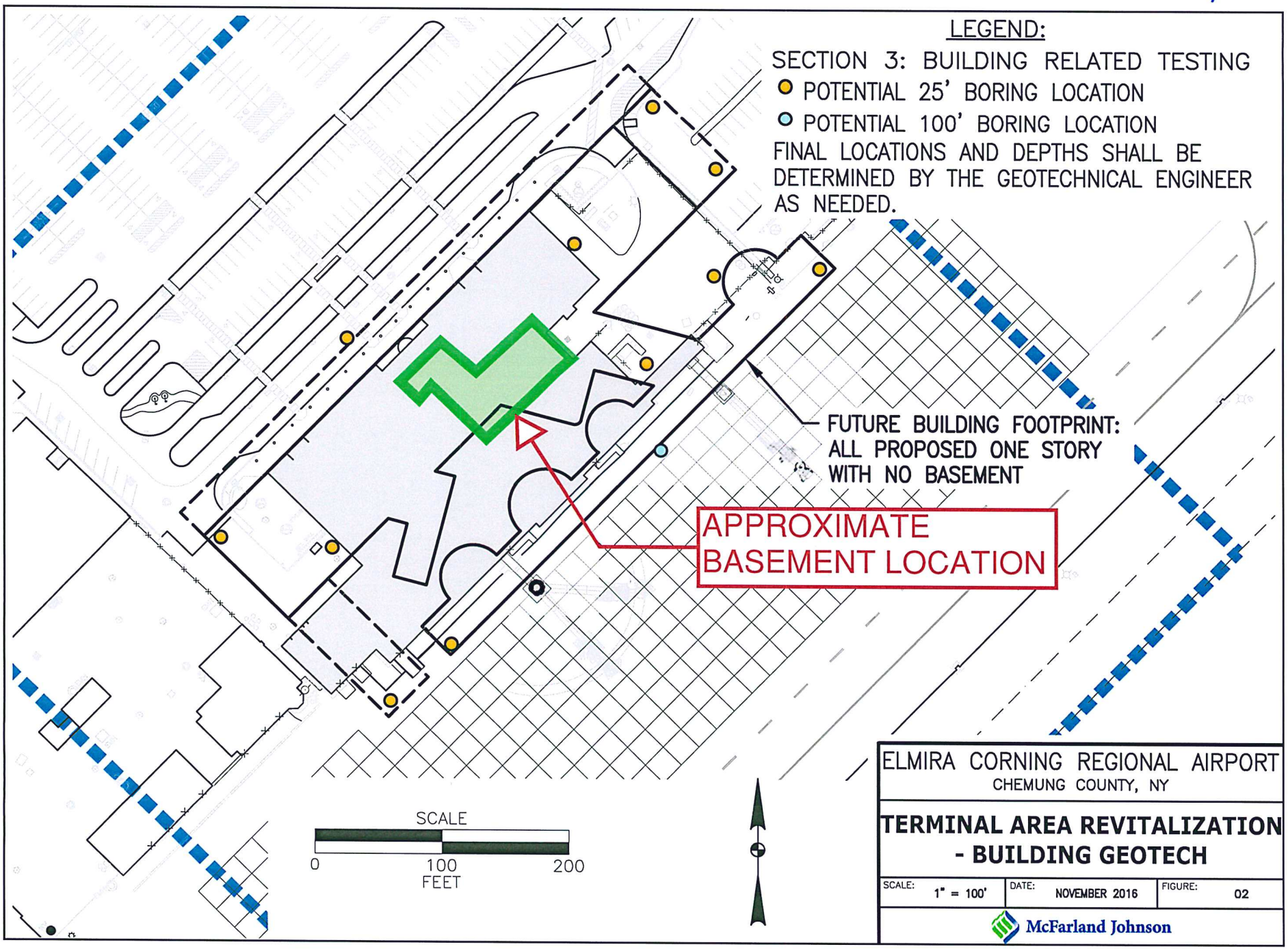
CME Exploration Location Plan (1 of 1)
Plan that Shows Existing Basement Location (from others) (1 of 1)
CME Subsurface Exploration-Test Boring Logs, labeled B-1 through B-8 (11 of 11)
Laboratory Test Summary, labeled 27191L-01-0317 (5 of 5)
General Information & Key to Test Boring Logs (4 of 4)



CME EXPLORATION LOCATION PLAN

Elmira-Corning Regional Airport Terminal Project
Horseheads, NY
CME Report No. 27191B-01-0317

PLAN THAT SHOWS EXISTING BASEMENT LOCATION (FROM OTHERS)



SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-25-17 **Finished:** 01-25-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 97.64'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-25-17	While drilling	21.2'	23.5'
01-25-17	Before casing removed	21.0'	48.5'
01-25-17	After casing removed	None Noted	out
01-25-17	After casing removed	caved @ 20.5'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.4	Asphalt	
		1	0.5	2.0	SS/13	9-28-17	2.0	FILL; cmf sand, mf gravel, silt (moist)	45
	H	2	2.0	4.0	SS/15	12-8-6-6		Brown mf GRAVEL, some cmf SAND, little SILT (moist, medium compact)	14
	O	3	4.0	6.0	SS/16	5-4-12-12		Brown mf GRAVEL and cmf SAND, little SILT (moist, medium compact)	16
5									
	L	4	6.0	8.0	SS/18	15-22-29-60		Similar as above (moist, very compact)	51
	L								
		6	8.0	10.0	SS/22	30-38-59-46		Similar as above (moist, very compact)	97
	O								
10									
	W								
		6a	13.5	14.0	SS/16	9-49-48		Brown cmf SAND, little mf GRAVEL, trace SILT (moist, very compact)	97
							14.0		
	S	6b	14.0	15.0				Grey ROCK FRAGMENTS/COBBLE (dry)	
15									
	T								
	E								
		7	18.5	20.0	SS/15	6-8-14		Brown cmf SAND, little mf GRAVEL, trace SILT (moist, medium compact)	22
	M								
20									
	A								
		8	23.5	25.0	SS/0	5-6-6		Brown cmf SAND and mf GRAVEL, trace SILT (wet, medium compact) *See Remark 1*	12
	U								
25									
	G								
	E								
		9	28.5	30.0	SS/6	7-8-8		Similar as above (wet, medium compact)	16
	R								
30								Continued on page 2	

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

LOG OF BORING SAMPLES							CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
30								Continued from page 1	
	H O L L O W S T E M A U G E R	10	33.5	35.0	SS/13	8-9-8		Brown cmf GRAVEL and cmf SAND, little SILT (wet, medium compact)	17
35									
		11	38.5	40.0	SS/8	5-9-11		Similar as above (wet, medium compact)	20
40									
		12	43.5	45.0	SS/10	5-8-8		Brown cmf SAND, little mf GRAVEL, trace SILT (wet, medium compact)	16
45									
								Drilled gravelly at 46.8'	
		13	48.5	50.0	SS/9	27-25-21		Brown mf GRAVEL and cmf SAND, trace SILT (wet, compact)	46
50	XXX							Bottom of Boring @ 50.0'	
55									
60									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-23-17 **Finished:** 01-23-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 100.30'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-23-17	While drilling	22.8'	23.5'
01-23-17	Before casing removed	22.8'	23.5'
01-23-17	After casing removed	None Noted	out
01-23-17	After casing removed	caved @ 10.6'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						1.0	Asphalt	
		1	1.0	3.0	SS/14	11-14-11-10		FILL; cmf sand, cmf gravel, silt (moist)	25
	H						3.0		
	O	2	3.0	5.0	SS/12	5-7-3-3		Brown SILT, some cmf SAND, some mf	10
	L						5.0	GRAVEL, trace CLAY (moist, stiff)	
5	L	3	5.0	7.0	SS/0	3-4-7-7		Brown cmf SAND, little mf GRAVEL, little SILT,	11
	O							trace CLAY (moist, medium compact)	
	W							*See Remark 1*	
		4	7.0	9.0	SS/0	7-7-7-4		Similar as above (moist, medium compact)	14
								See Remark 1	
		5	9.0	11.0	SS/0	9-9-7-8		Brown cmf SAND and cmf GRAVEL, little	16
10								SILT (moist, medium compact) *See Remark 1*	
	S								
	T	6	13.5	15.0	SS/13	9-17-16		Brown cmf SAND and mf GRAVEL, little SILT	33
	E							(moist, compact)	
15	M								
		7	18.5	20.0	SS/15	16-22-27		Brown cmf GRAVEL and cmf SAND, little SILT	49
								(moist, compact)	
20	A								
	U								
	G								
	E								
	R	8	23.5	25.0	SS/13	8-12-10		Brown cmf GRAVEL, little cmf SAND, trace	22
								SILT (wet, medium compact)	
25	XXX							Bottom of Boring @ 25.0'	
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-26-17 **Finished:** 01-26-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 99.06'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** A. VanVorce
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-26-17	While drilling	21.6'	23.5'
01-26-17	Before casing removed	21.6'	23.5'
01-26-17	After casing removed	None Noted	out
01-26-17	After casing removed	caved @ 10.5'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.4	Asphalt	
		1	0.5	2.0	SS/11	8-7-8		FILL; silt, cmf sand, cmf gravel (moist)	15
	H						2.0	*See Remark 1*	
	O	2	2.0	4.0	SS/11	10-9-9-8		Brown cmf GRAVEL, some cmf SAND, little SILT (moist, medium compact)	18
	L								
5	L	3	4.0	6.0	SS/13	5-4-3-3		Brown cmf GRAVEL, some cmf SAND, some SILT, trace CLAY (moist, loose)	7
	O								
	W	4	6.0	8.0	SS/14	3-4-7-11		Brown cmf SAND, some mf GRAVEL, little SILT (moist, medium compact)	11
		5	8.0	10.0	SS/16	11-17-26-27		Similar as above (moist, compact)	43
10									
	S								
	T	6	13.5	15.0	SS/14	8-13-14		Similar as above (moist, medium compact)	27
	E								
15	M								
								Drilled softer at 18.0'	
		7	18.5	20.0	SS/9	11-10-8		Similar as above (moist, medium compact) *See Remark 1*	18
20	A								
	U								
	G								
	E								
	R	8	23.5	25.0	SS/11	5-7-11		Brown cmf GRAVEL, some cmf SAND, little SILT (wet, medium compact)	18
25	XXX							Bottom of Boring @ 25.0'	
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-24-17 **Finished:** 01-24-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 98.52'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** A. VanVorce
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-24-17	While drilling	21.8'	23.5'
01-24-17	Before casing removed	21.8'	23.5'
01-24-17	After casing removed	None Noted	out
01-24-17	After casing removed	caved @ 10.2'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.9	Asphalt	
		1	1.0	3.0	SS/18	11-26-22-23		FILL; cmf sand, mf gravel, silt (moist)	48
	H	2a	3.0	4.0	SS/17	12-8-5-4		Similar as above (moist)	13
	O						4.0		
	L	2b	4.0	5.0				Brown mf GRAVEL and SILT, some cmf SAND (moist, stiff)	
5	L								
	O	3	5.0	7.0	SS/0	1-2-3-5		Similar as above (moist, medium stiff)	5
	W						7.0	*See Remark 1*	
		4	7.0	9.0	SS/13	3-4-5-6		Brown cmf SAND and cmf GRAVEL, little SILT (moist, loose)	9
		5	9.0	11.0	SS/15	9-11-18-29		Similar as above (moist, medium compact)	29
10								*Drilled harder and more gravelly at 10.0'*	
	S								
	T	6	13.5	15.0	SS/14	34-42-29		Brown cmf SAND, some cmf GRAVEL, little SILT (moist, very compact)	71
	E								
15	M								
		7	18.5	20.0	SS/17	6-15-12		Similar as above (moist, medium compact)	27
20	A								
	U								
	G								
	E								
	R	8	23.5	25.0	SS/13	25-16-13		Brown cmf GRAVEL, some cmf SAND, trace SILT (wet, medium compact)	29
25	XXX							Bottom of Boring @ 25.0'	
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-26-17 **Finished:** 01-26-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 98.98'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** A. VanVorce
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-26-17	While drilling	21.6'	23.5'
01-26-17	Before casing removed	21.6'	23.5'
01-26-17	After casing removed	None Noted	out
01-26-17	After casing removed	caved @ 10.2'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse, **m** – **m**edium, **f** – **f**ine; **and** – 35 to 50 %, **some** – 20 to 35 %, **little** – 10 to 20 %, **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.5	Asphalt	
		1	0.5	2.0	SS/11	14-17-19		FILL; cmf sand, mf gravel, silt (moist)	36
	H						2.0		
	O	2	2.0	4.0	SS/0	15-18-7-6		Brown cmf SAND, some SILT, some fine GRAVEL (moist, medium compact) *See Remark 1*	25
	L								
5	L	3	4.0	6.0	SS/8	4-5-4-7		Brown cmf SAND, some mf GRAVEL, little SILT (moist, loose)	9
	O								
	W	4	6.0	8.0	SS/12	10-9-12-3		Brown cmf SAND, little mf GRAVEL, trace SILT (moist, medium compact)	21
		5	8.0	10.0	SS/7	10-9-10-9		Similar as above (moist, medium compact)	19
10									
	S								
	T	6	13.5	15.0	SS/12	19-16-12		Brown cmf SAND and mf GRAVEL, little SILT (moist, medium compact)	28
	E								
15	M								
		7	18.5	20.0	SS/8	3-5-5		Brown cmf SAND, some mf GRAVEL, little SILT (moist, loose)	10
20	A								
	U								
	G								
	E								
	R	8	23.5	25.0	SS/5	7-10-11		Brown mf GRAVEL, some cmf SAND, trace SILT (wet, medium compact)	21
25	XXX							Bottom of Boring @ 25.0'	
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-24-17 **Finished:** 01-24-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 99.48'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-24-17	While drilling	22.3'	23.5'
01-24-17	Before casing removed	31.8'	83.5'
01-24-17	After casing removed	18.8'	out
01-24-17	After casing removed	caved @ 25.2'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						1.0	Asphalt	
		1	1.0	3.0	SS/17	7-16-20-20		FILL; cmf sand, silt, mf gravel (moist)	36
	H								
		2	3.0	5.0	SS/16	12-9-6-6		Similar as above (moist)	15
	O						5.0		
5		3	5.0	7.0	SS/12	6-6-5-3		Brown mf GRAVEL, some cmf SAND, some SILT (moist, medium compact)	11
	L							*Drilled gravelly and cobbly at 7.0'*	
	L	4	7.0	9.0	SS/0	12-10-7-7		Brown cmf GRAVEL, some cmf SAND, trace SILT (moist, medium compact)	17
	O							*See Remark 1*	
10		5	9.0	11.0	SS/6	6-3-3-3		Similar as above (moist, loose)	6
	W								
		6	13.5	14.0	SS/14	18-18-25		Brown cmf SAND, some cmf GRAVEL, little SILT (moist, compact)	43
	S								
15	T								
	E								
		7	18.5	20.0	SS/13	7-7-7		Brown cmf GRAVEL, some cmf SAND, little SILT (wet, medium compact)	14
	M								
20									
	A								
		8	23.5	25.0	SS/12	8-6-7		Similar as above (wet, medium compact)	13
	U								
25									
	G								
							27.5		
	E							*Drilled more firm at 27.5'*	
		9	28.5	30.0	SS/14	7-11-16		Brown SILT and cmf SAND, some mf GRAVEL, trace CLAY (wet, very stiff)	27
	R								
30								Continued on page 2	

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

LOG OF BORING SAMPLES							CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
30								Continued from page 1	
	H	10	33.5	35.0	SS/14	14-13-14		Brown cmf GRAVEL and cmf SAND, little SILT (wet, medium compact)	27
35	O								
	L	11	38.5	40.0	SS/12	15-17-19		Similar as above (wet, compact)	36
40	L O W								
		12	43.5	45.0	SS/15	24-15-12		Similar as above (wet, medium compact)	27
45	S								
	T	13	48.5	50.0	SS/9	8-8-9		Similar as above (wet, medium compact)	17
50	E M								
							51.2	*Drilled smooth and soft at 51.2'*	
	A	14	53.5	55.0	SS/9	3-4-5		Brown/Grey SILT and mf GRAVEL, trace cmf SAND, trace CLAY (wet, stiff)	9
55	U								
	G	15	58.5	60.0	SS/7	3-4-5		Brown/Grey SILT, trace fine SAND, trace CLAY (moist, stiff)	9
60	E R							Continued on page 3	

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

LOG OF BORING SAMPLES							CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
60	H							Continued from page 2	
	O	16a	63.5	64.0	SS/12	WH-2-4	64.0	Grey SILT, little fine SAND, trace CLAY (moist, medium stiff)	6
	L	16b	64.0	65.0				Brown fine SAND, trace SILT (wet, loose)	
65	L								
	O	17	68.5	70.0	SS/12	6-11-11		Brown cmf SAND and mf GRAVEL, little SILT (wet, medium compact)	22
	W								
70	S								
	T							*Drilled gravelly at 70.1'* *Drilled harder at 71.4'*	
	E	18	73.5	75.0	SS/13	37-82-55		Brown cmf GRAVEL, some cmf SAND, little SILT (wet, very compact)	137
75	M								
	A	19	78.5	80.0	SS/14	30-30-39		Grey Similar as above (wet, very compact)	69
	U								
80	G								
	E	20	83.5	85.0	SS/12	23-39-49		Grey SILT and ROCK FRAGMENTS; highly weathered SHALE (moist, hard)	88
	R								
85	XXX							Bottom of Boring @ 85.0'	
90									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-26-17 **Finished:** 01-26-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 97.03'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** A. VanVorce
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-26-17	While drilling	None Noted	None Noted
01-26-17	Before casing removed	None Noted	13.5'
01-26-17	After casing removed	None Noted	out
01-26-17	After casing removed	caved @ 7.0'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine / **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.3	Asphalt	
		1	0.5	2.0	SS/12	5-24-14		FILL; cmf sand, cmf gravel, silt (moist)	38
	H						2.0		
		2	2.0	4.0	SS/16	8-8-6-6		Brown cmf SAND and mf GRAVEL, some SILT (moist, medium compact)	14
5		3	4.0	6.0	SS/12	8-10-11-10		Brown cmf SAND, little mf GRAVEL, little SILT (moist, medium compact)	21
		4	6.0	8.0	SS/19	14-23-21-25		Similar as above (moist, compact)	44
	S								
		5	8.0	10.0	SS/13	14-21-20-15		Similar as above (moist, compact)	41
10									
	A	6	13.5	15.0	SS/17	25-32-46		Brown cmf SAND and cmf GRAVEL, trace SILT (moist, very compact)	78
15	XXX							Bottom of Boring @ 15.0'	
20									
25									
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-01-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-26-17 **Finished:** 01-26-17
Location of Boring: See Exploration Location Plan **Elevation of Surface of Boring:** 99.20'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** A. VanVorce
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-26-17	While drilling	None Noted	None Noted
01-26-17	Before casing removed	None Noted	13.5'
01-26-17	After casing removed	None Noted	out
01-26-17	After casing removed	caved @ 6.6'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.3	Asphalt	
		1	0.5	2.0	SS/10	7-10-9		FILL; cmf sand, mf gravel, silt (moist)	19
	H						2.0		
		2	2.0	4.0	SS/11	6-3-3-3		Brown SILT, trace cmf SAND, trace CLAY (moist, medium stiff) ~ Possible Fill ~	6
5		3	4.0	6.0	SS/12	2-3-4-5		Brown mf GRAVEL, some SILT, some cmf	7
							6.0	SAND (moist, medium stiff)	
		4	6.0	8.0	SS/9	4-5-4-3		Brown cmf SAND, some mf GRAVEL, little SILT (moist, loose)	9
	S								
		5	8.0	10.0	SS/9	3-9-14-11		Similar as above (moist, medium compact)	23
10									
	A	6	13.5	15.0	SS/13	22-54-22		Brown cmf SAND and cmf GRAVEL, trace SILT (moist, very compact)	76
15	XXX							Bottom of Boring @ 15.0'	
20									
25									
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

LABORATORY TEST SUMMARY
Elmira-Corning Regional Airport
CME Report No.: 27191L-01-0317
March 6, 2017

CME Representatives obtained soil samples from Test Borings advanced as part of the Subsurface Exploration Program conducted for the subject project. Selected samples were delivered to CME's East Syracuse facility, an AASTHO AMRL[1] accredited laboratory for various laboratory testing. The results are presented below:

Sample ID Notations: B - Test Boring, S – Sample

I. Natural Moisture Content (ASTM D2216)

Sample ID	Natural Moisture (%)
B-1; S-3	12.4
B-1; S-10	7.8
B-2; S-2	20.3
B-4; S-3	13.0
B-5; S-2	11.0
B-6; S-3	11.6
B-6; S-14	18.0
B-7; S-2	11.3
B-8; S-3	14.3

II. Atterberg Limits Testing (ASTM D4318)

Sample ID	Liquid Limit	Plastic Limit	Plasticity Index	Natural Moisture (%)
B-4; S-3	Non-Plastic			13.0
B-6; S-14	Non-Plastic			18.0

[1] **AMRL** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory. AMRL is a Federal Agency having jurisdiction to assess laboratory competence according to the standards of the United States. **CME** East Syracuse accreditation includes tests of Portland Cement Concrete, Aggregate and Soil Materials. www.amrl.net

III. Particle Size Analysis (ASTM D422)

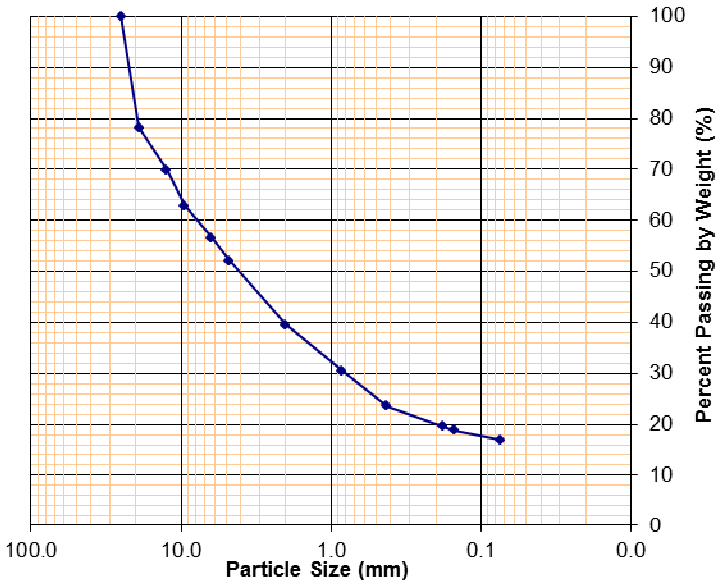
Material Identification

Sample #
B-1; S-3

Classification
Brown mf GRAVEL and cmf SAND, little SILT

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1"	25.0	100
3/4"	19.0	78
1/2"	12.5	70
3/8"	9.5	63
1/4"	6.25	57
No.4	4.75	52
No.10	2.00	40
No.20	0.850	31
No.40	0.425	24
No.80	0.180	20
No.100	0.150	19
No.200	0.075	17

Grain Size Distribution Curve



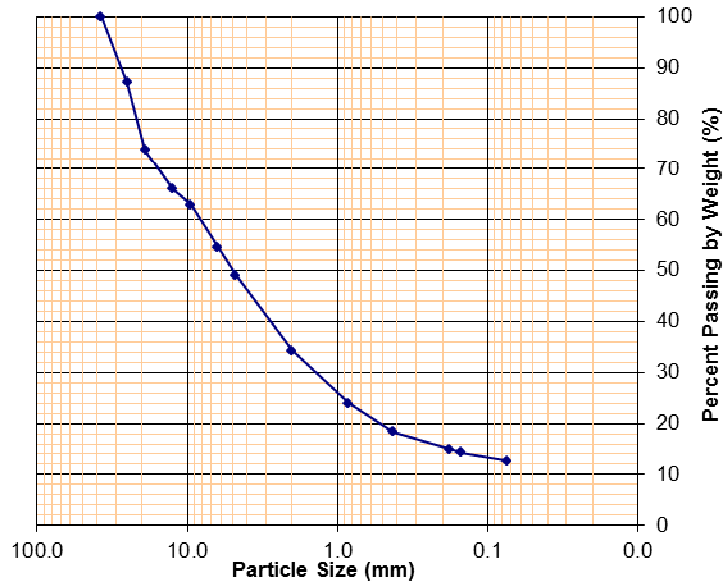
Material Identification

Sample #
B-1; S-10

Classification
Brown cmf GRAVEL and cmf SAND, little SILT

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1-1/2"	37.5	100
1"	25.0	87
3/4"	19.0	74
1/2"	12.5	66
3/8"	9.5	63
1/4"	6.25	55
No.4	4.75	49
No.10	2.00	34
No.20	0.850	24
No.40	0.425	18
No.80	0.180	15
No.100	0.150	14
No.200	0.075	13

Grain Size Distribution Curve



Material Identification

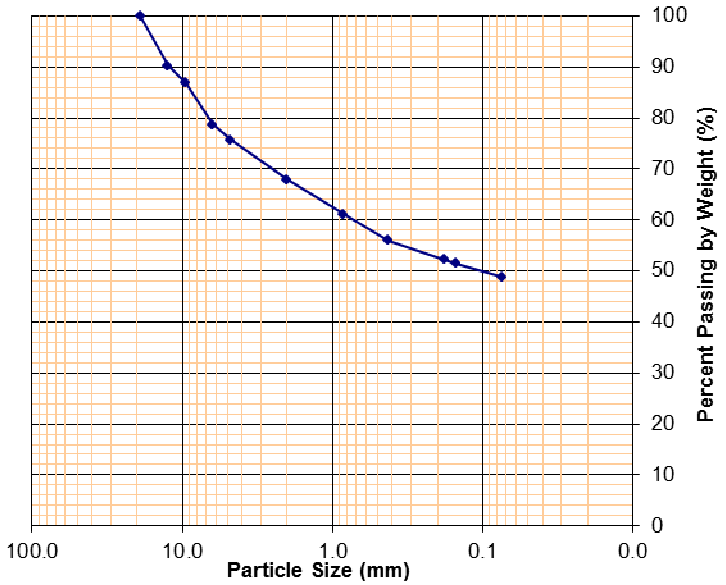
Sample #
B-2; S-2

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3/4"	19.0	100
1/2"	12.5	90
3/8"	9.5	87
1/4"	6.25	79
No.4	4.75	76
No.10	2.00	68
No.20	0.850	61
No.40	0.425	56
No.80	0.180	52
No.100	0.150	51
No.200	0.075	49

Classification

Brown SILT, some cmf SAND, some mf GRAVEL, trace CLAY

Grain Size Distribution Curve



Material Identification

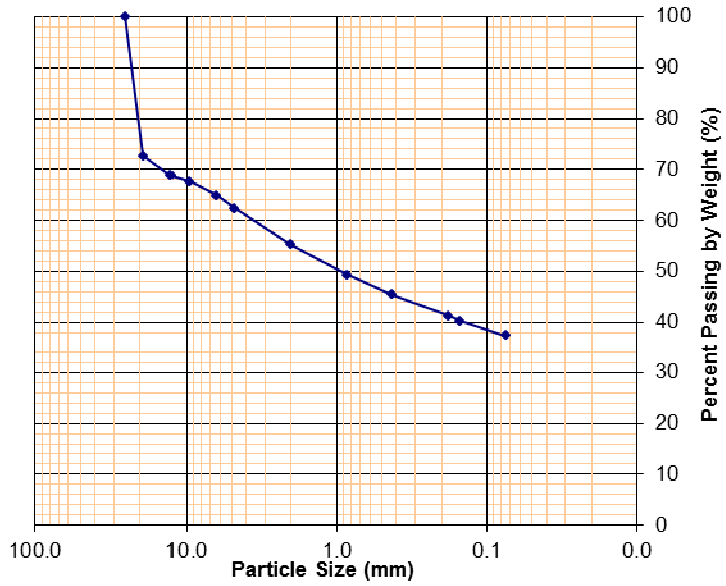
Sample #
B-4; S-3

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1"	25.0	100
3/4"	19.0	73
1/2"	12.5	69
3/8"	9.5	68
1/4"	6.25	65
No.4	4.75	62
No.10	2.00	55
No.20	0.850	49
No.40	0.425	45
No.80	0.180	41
No.100	0.150	40
No.200	0.075	37

Classification

Brown mf GRAVEL and SILT, some cmf SAND

Grain Size Distribution Curve



Material Identification

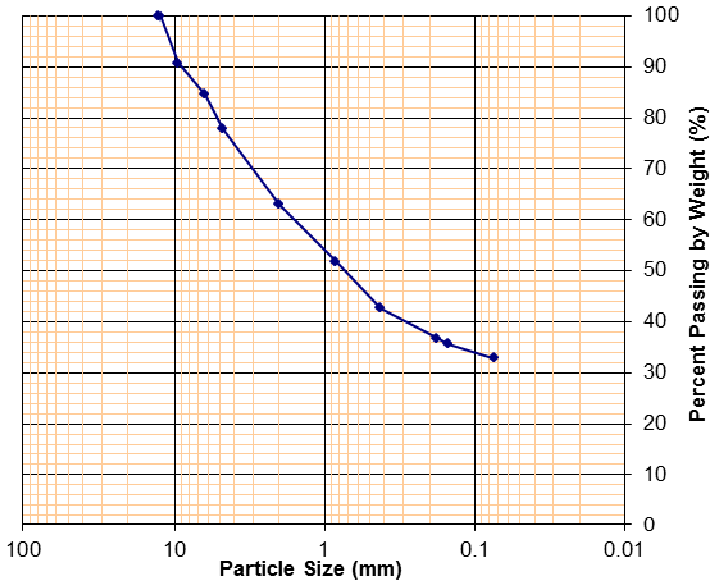
Sample #
B-5; S-2

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1/2"	12.5	100
3/8"	9.5	91
1/4"	6.25	85
No.4	4.75	78
No.10	2.00	63
No.20	0.850	52
No.40	0.425	43
No.80	0.180	37
No.100	0.150	36
No.200	0.075	33

Classification

Brown cmf SAND, some SILT, some fine GRAVEL

Grain Size Distribution Curve



Material Identification

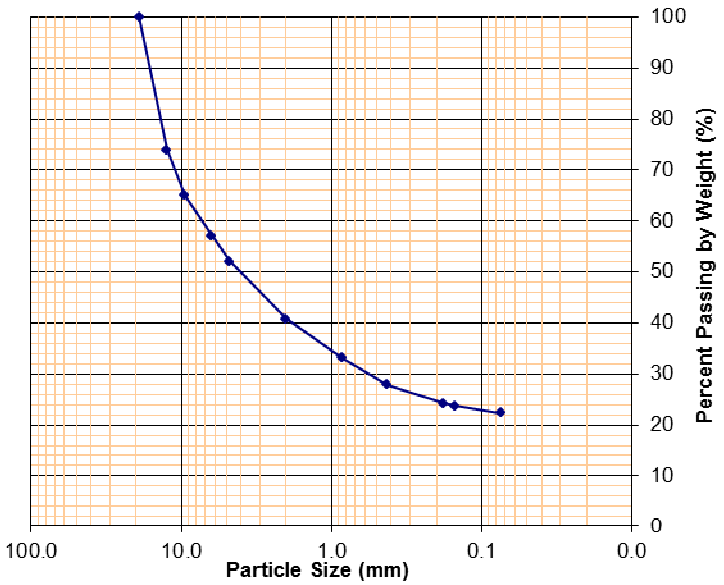
Sample #
B-6; S-3

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3/4"	19.0	100
1/2"	12.5	74
3/8"	9.5	65
1/4"	6.25	57
No.4	4.75	52
No.10	2.00	41
No.20	0.850	33
No.40	0.425	28
No.80	0.180	24
No.100	0.150	24
No.200	0.075	22

Classification

Brown mf GRAVEL, some cmf SAND, some SILT

Grain Size Distribution Curve



Material Identification

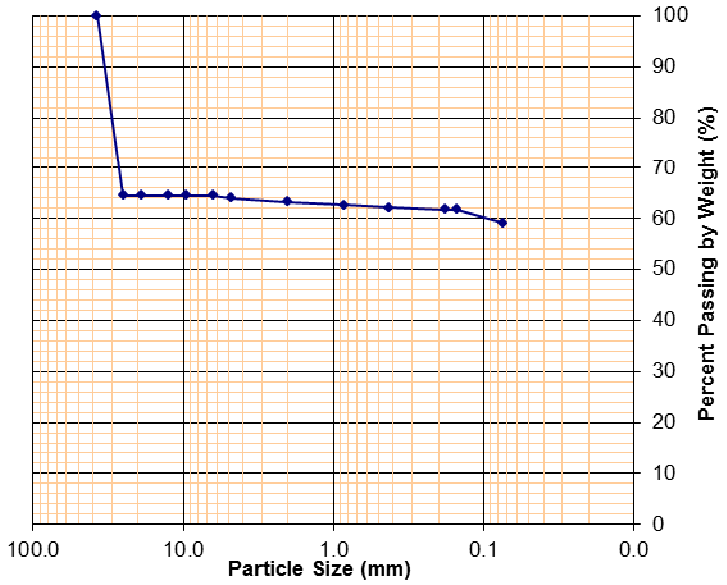
Sample #
B-6; S-14

Classification

Brown/Grey SILT and mf GRAVEL, trace cmf SAND, trace CLAY

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1-1/2"	37.5	100
1"	25.0	65
3/4"	19.0	65
1/2"	12.5	65
3/8"	9.5	65
1/4"	6.25	65
No.4	4.75	64
No.10	2.00	63
No.20	0.850	63
No.40	0.425	62
No.80	0.180	62
No.100	0.150	62
No.200	0.075	59

Grain Size Distribution Curve



Material Identification

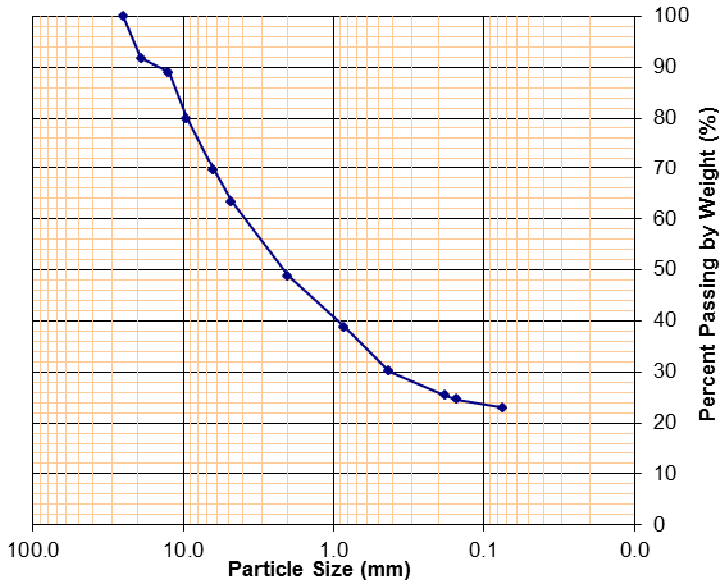
Sample #
B-7; S-2

Classification

Brown cmf SAND and mf GRAVEL, some SILT

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1"	25.0	100
3/4"	19.0	92
1/2"	12.5	89
3/8"	9.5	80
1/4"	6.25	70
No.4	4.75	63
No.10	2.00	49
No.20	0.850	39
No.40	0.425	30
No.80	0.180	25
No.100	0.150	25
No.200	0.075	23

Grain Size Distribution Curve



CME Associates, Inc.

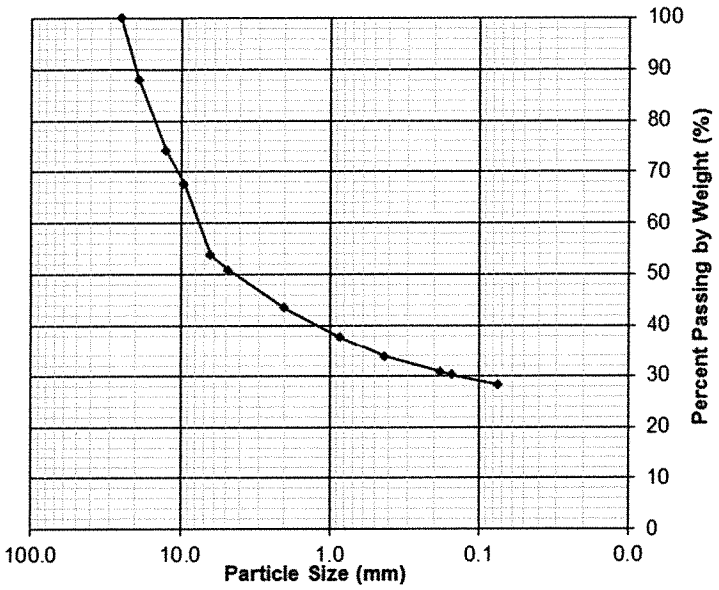
Material Identification

Sample #
B-8; S-3

Classification
Brown mf GRAVEL, some SILT, some cmf SAND

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
1"	25.0	100
3/4"	19.0	88
1/2"	12.5	74
3/8"	9.5	68
1/4"	6.25	54
No.4	4.75	51
No.10	2.00	43
No.20	0.850	38
No.40	0.425	34
No.80	0.180	31
No.100	0.150	30
No.200	0.075	28

Grain Size Distribution Curve



If you have any questions regarding this report please contact our office.

Yvonne Chu
Laboratory Supervisor

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration - Test Boring Logs produced by CME Associates, Inc.** present the observations and mechanical data collected by the driller while at the site, supplemented, at times, by classification of the materials removed from the borings as determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in this Key defines some of the procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 3 for key number.

Key No. **Description**

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.

2. **CASING BLOWS/FOOT** - shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted under the **Methods of Investigation**. If the casing is advanced by means other than driving, the method of advancement will be indicated under **Methods of Investigation** at the top of the Log. If Hollow Stem Augers or Coring is used, it will be so noted in this column.

3. The **SAMPLE I.D.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.

4. The **DEPTH OF SAMPLE** column gives the exact depth range from which a sample was recovered.

5. The **SAMPLE TYPE/RECOVERY** column is used to signify the various type of sample attempt. "SS" is Split Spoon, "P" is piston tube, "U" is Undisturbed tube. For soil samples, the recovered length of the sample is also indicated, in inches. If a rock core sample is taken, the core bit size designation is given here.

6. **BLOWS ON SAMPLER** - shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6 inch to 18 inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced the 6 inch interval under **W**eight of **H**ammer or **W**eight of **R**ods, respectively.

7. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line.

8. **CLASSIFICATION OF MATERIAL - Soil materials** encountered and sampled are described by the driller on the original log. Notes of driller observations are also placed in this column. Recovered samples may also be visually classified by a Soil Technician upon receipt in the Laboratory. Visual sample classification is by Burmister System and strata may be classified additionally by the Unified System. The Burmister System is a type of visual-manual textural classification estimated by the Driller or Technician on the basis of weight-fraction of the recovered soil. See Table 1 **"Classification of Materials"**. The description of the relative soil compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the soil moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may have affected the in-situ moisture content of the sample. Special terms are used as required to describe materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

8. **CLASSIFICATION OF MATERIAL** (continued)
The Description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Table 3. The length of core run is defined as length of penetration between retreivals of the corebarrel from the bore hole, expressed in inches. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in **Column 5**. The more commonly used sizes of core barrels are denoted "AX" and "NX". An "NX" core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties is needed. A better estimate of in-situ rock quality is provided by a *modified core recovery ratio* known as the **"Rock Quality Designation" (RQD)**. This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The diameter of the core should preferably be not less than 2 inches (NX). The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 gives the rock quality description as related to the **RQD**.

9. The **SPT "N"** or **RQD** is given in this column as applicable to the specific sample taken. In Very Compact coarse grained soils the N-value may be indicated as 50+, and in Hard fine-grained soils the N-value may be indicated as 30+. This typically means that the blow count was achieved prior to driving the sampler the entire 6 inch interval or the sampler refused further penetration. For "NX" rock cores, the RQD is reported here, expressed in percent.

10. **GROUND WATER OBSERVATIONS** and timing noted by the driller are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. Ground water levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or ground water observation well installations.

TABLE 1 - VISUAL CLASSIFICATION OF MATERIALS (BURMISTER)

GROUP	TEXTURAL CLASSIFICATION SIZES
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001mm size (see below *)

ABBREVIATIONS	PERCENT OF TOTAL SAMPLE BY WEIGHT	
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

***PLASTICITY DESCRIPTIONS**

TERM	PLASTICITY INDEX	DRY STRENGTH	FIELD TEST
Non-plastic	0 - 3	Very low	falls apart easily
Slightly plastic	4 - 15	Slight	easily crushed by fingers
Plastic	15 - 30	Medium	difficult to crush
Highly plastic	31 or more	High	impossible to crush with fingers

*TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"**		
Primary Soil Type	**Descriptive Term of Compactness**	**Range of Standard Penetration Resistance (N)**
COARSE GRAINED SOILS	Very loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size.)	Loose	4 to 10
	Medium compact	10 to 30
	Compact	30 to 50
	Very compact	Greater than 50
FINE GRAINED SOILS	**Descriptive Term of Consistency**	**Range of Standard Penetration Resistance (N)**
(More than half of material is smaller than No. 200 sieve size.)	Very soft	less than 2 blows per foot
	Soft	2 to 4
	Medium stiff	4 to 8
	Stiff	8 to 15
	Very stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140 pound weight falling 30 inches to drive 2 inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS		
Rock Classification Terms		**Field Test or Meaning of Term**
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered Weathered Sound	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
Bedding (Natural Breaks in Rock Layers)	Laminated Thinly bedded Bedded Thickly bedded Massive	less than 1inch 1inch to 4 inches 4 inches to 12 inches 12 inches to 36 inches greater than 36 inches

TABLE 4 **Relation of Rock Quality Designation (RQD) and in-situ Rock Quality**	
RQD (%)	**Rock Quality Term Used**
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

BORING NO.: B-1 Page 1 of 1

SUBSURFACE EXPLORATION - TEST BORING LOG

Project: **Report No.:**

Client: **Date Started:** **Finished:**

Location of Boring: **Elevation of Surface of Boring:**

METHODS OF INVESTIGATION	**GROUND WATER OBSERVATIONS**			
Casing: 3-1/4" I.D. Hollow Stem Auger **Hammer:**	Date	Time	Depth	Casing At
Other:		While drilling		
Soil Sampler: 2" O.D. Split Barrel **Rod Size:**		Before casing removed		
Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.		After casing removed		
Make & Model of Drill Rig:				

LOG OF BORING SAMPLES							**CLASSIFICATION OF MATERIAL**		
Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (inches)	Blows on Sampler Per 6 inches	Depth of Change (feet)	**f** - fine **m** - medium **c** - coarse	**and** - 35 to 50% **some** - 20 to 35% **little** - 10 to 20% **trace** - 0 to 10%	STP "N" or RQD
1	2	3	4	4	5	6	7	8		9

Denotes Key Number (see page 1)

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

Transmittal

March 30, 2017

HUNT Engineers, Architects & Land Surveyors, P.C.
Airport Corporate Park
100 Hunt Center
Horseheads, New York 14845

Attn: Mr. Christopher J. Bond, P.E., Vice President

Re: Elmira-Corning Regional Airport Terminal Project
Horseheads, New York
CME Project No.: 27191-05

Gentlepeople:

Enclosed you will find….

Number of Copies	Report Number/Description
3	27191B-02-0317/Subsurface Exploration Data Report

This report was emailed to Mr. Christopher J. Bond, P.E., Vice President at bondc@hunt-eas.com on 03/30/17.

Respectfully submitted,
CME Associates, Inc.

Mark J. Schumacher
Drilling Division Manager

MJS.bmf

A New York State Certified Woman-Owned Business Enterprise (WBE)

Subsurface Exploration Data Report

Elmira-Corning Regional Airport Terminal Project
Horseheads, New York

Prepared For: (Client)

HUNT Engineers, Architects & Land Surveyors, P.C.
Attn: Mr. Christopher J. Bond, P.E., Vice President
Airport Corporate Park
100 Hunt Center
Horseheads, New York 14845
Phone: 607.358.1000
Fax: 607.358.1800
Email: bondc@hunt-eas.com

Prepared By: (Project Manager)

CME Associates, Inc.
Attn: Mark J. Schumacher
6035 Corporate Drive
East Syracuse, New York 13057
Phone: 315.701.0522 Ext 147
Fax: 315.701.0526
Email: mschumacher@cmeassociates.com

CME Report No.: 27191B-02-0317
March 30, 2017

Table of Contents

Attachment Listing:

Subsurface Exploration Data Report
Elmira-Corning Regional Airport Terminal Project
Horseheads, New York

1.0 INTRODUCTION

CME Associates, Inc. (CME) was retained by HUNT Engineers, Architects & Land Surveyors, P.C. (HUNT - Client) to provide subsurface exploration services for the subject project. CME cored the pavement surface at five locations (PB-1 to PB-5) and then advanced five test borings (PB-1 to PB-5) at the same locations. CME also advanced two test borings and installed monitoring wells (PB-4W and PB-5W) and two test pits (TP-1 and TP-2) at the subject site between January 23rd and February 27th, 2017. Laboratory soil testing was also conducted on selected soil samples.

The Scope of Basic Services and this report have been provided pursuant to the acceptance of CME Proposal/Agreement No. 05.4988, by Mr. Christopher J. Bond, P.E. of Client. This report provides a summary of exploration activities conducted at the Elmira-Corning Regional Airport Terminal. All Test Boring Logs, Pavement Core Information and Photographs, Test Pit Logs and Photographs, an Exploration Location Plan, GPS Coordinates and Elevations at exploration locations and Laboratory Test Reports are attached to this report.

2.0 EXPLORATION METHODOLOGY

An exploration location map was provided by HUNT and the indicated exploration locations were then marked in the field by CME. Following the field mark out, CME contacted Dig Safe New York (DSNY) to clear public utilities. Private utilities onsite were cleared by New York Leak Detection, Inc. (NYLD), which is a third party private utility locator. Due to utility interferences some boring locations were adjusted to provide for a safe working distance. NYLD's Field Report is attached.

GPS coordinates at the final exploration locations were determined by the CME team using a Trimble GeoXH hand held unit. Elevation at grade at each exploration location was determined by CME using standard survey equipment and by tying the location to the finished floor located at the southeast corner of the terminal building. A reference elevation of 100.0 feet was established for the location. GPS coordinates and survey elevations are provided on the attached GPS Coordinates and Elevation Summary Table. An Exploration Location Plan is attached, which depicts the exploration locations and relative elevations at grade at all exploration locations.

2.1 Pavement Coring

Five pavement cores (PB-1 to PB-5) were advanced to measure pavement thickness and to determine subbase course material and thickness in asphalt and concrete areas across the site. The pavement coring was performed using a 6-inch inner diameter (I.D.) core barrel with water used as a lubricant. Please refer to the attached Pavement Core Summary and Pavement Core Photographs for findings.

2.2 Test Borings

Seven Test Borings (PB-1 to PB-5, PB-4W and PB-5W) were advanced using a Deidrich Model D120 truck mounted, rotary exploration drill rig, equipped with 3-¼" I.D. hollow stem augers and drive sampling tools. Soil sampling was conducted using a 140-pound automatic hammer dropping through a distance of 30 inches to drive a 2" O.D. and/or a 3" O.D. split barrel sampler in general conformance with ASTM Standard Practice D1586. Each borehole was backfilled with auger cuttings upon completion, and the surface was repaired with non-shrink concrete grout to match existing grade.

Samples were logged and visually classified in the field by the CME Drillers and/or a CME Geologist, and a portion of each soil sample was placed and sealed in a glass jar. The soil classifications were later reviewed by a CME Geologist. The visual soil classifications were made using the modified Burmister Classification System, as practiced by CME, and as described in the attached document entitled, *General Information & Key to Test Boring Logs.* Test Boring Logs labeled PB-1 to PB-5, PB-4W and PB-5W are attached.

2.3 Test Pits

Two test pits (TP-1 and TP-2) were excavated to a depth of six feet below grade utilizing a John Deere Model 416D Rubber Tire backhoe equipped with a 24-inch wide general purpose bucket. The Test Pits were excavated and backfilled by CME. Backfill material consisted of excavated material placed in one to two feet thick lifts with each lift compacted using the backhoe bucket making several lifts.

The Test Pits were observed by a CME Geologist, who logged and sampled soils and prepared the attached Test Pit Logs. Selected Test Pit Photographs showing conditions generally noted during this program are also attached.

2.4 Monitoring Wells

Two monitoring wells (PB-4W and PB-5W) were installed to a depth of 27 feet below grade to monitor groundwater conditions onsite. Monitoring wells were installed in Test Borings PB-4W and PB-5W following completion of the borings. Monitoring wells were constructed of 10 feet of PVC 0.01-inch slot well screen and 17 feet of PVC riser. The well screen was set at a depth designed to straddle to groundwater table. A sand pack was placed around the well screen and extended to a depth of two feet above the top of the well screen. A two foot layer of bentonite hole-plug was placed above the sand pack followed by auger cutting to a depth of approximately three feet below grade. The well was finished with a three-foot cement/bentonite grout seal, a bolt down flush mount cover and j-plug. Groundwater Observation Well Reports are attached, which detail well construction.

2.5 Laboratory Testing

Laboratory testing was conducted on selected soil samples consisting of Natural Moisture Content Testing, Sieve Analyses, Proctor Analysis and California Bearing Ratio (CBR) Testing. These tests were performed in CME's AMRL[1] Accredited East Syracuse Laboratory, and the results are given in the attached, Laboratory Test Summary Report labeled CME Report Number 27191L-02-0317.

Samples TP-1 and TP-2 were collected from their respective test pits at depths of between 1-foot and 3-feet below grade. Sample COMP-1 is a composite sample collected from Test Borings PB-1, PB-2 and PB-3 at depths between 0.7-feet and 3.2-feet below grade. Sample COMP-2 is a composite sample collected from Test Borings PB-4 and PB-4W at depths between 0.5-feet and 2-feet below grade. Sample COMP-3 is a composite sample collected from Test Borings PB-5 and PB-5W at depths between 0.5-feet and 2-feet below grade. Due to the limited volume of materials available from the test borings, composite samples were collected from the borings having similar material characteristics in order to have sufficient quantities to conduct the selected testing. One Point CBRs were conducted on samples COMP-1, COMP-2 and COMP-3 due to insufficient sample volume to run Three Point CBRs.

[1] **AMRL** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.amrl.net.

2.6 Groundwater Observations

Groundwater level observations and measurements are made by the CME Drillers when groundwater accumulates in the borehole. The CME Drillers note water levels inside the boreholes during advancement and following auger removal. If the hole caves-in after auger removal, the depth of cave-in is noted on the CME Borings Logs. The drillers also note whether samples retrieved are dry, moist or wet. The conditions and times of groundwater level observations are noted on the individual Test Boring Logs.

During exploration activities groundwater was noted in test borings PB-4W and PB-5W at depths of 23.5 feet below grade.

Groundwater fluctuations should be expected to occur at this site depending on several factors such as rainfall, seasonal changes, prevailing climate, ambient weather conditions, and adjacent construction operations, among other factors.

3.0 CLOSING

CME's services have been provided according to the requirements of the referenced CME Proposal/Agreement. No other representations, expressed or implied, are intended or made with respect to the information provided herein, and including but not limited to, its suitability for use by others.

Respectfully Submitted,
CME Associates, Inc.

Mark J. Schumacher

Mark J. Schumacher
Project Manager

Attachment Listing:

NYLD Field Report (3 of 3)
GPS Coordinates and Elevation Summary (1 of 1)
CME Exploration Location Plan 1A (1 of 1)
Pavement Core Summary (1 of 1)
Pavement Core Photographs (5 of 5)
CME Subsurface Exploration-Test Boring Logs, labeled PB-1 to PB-5, PB-4W and PB-5W (7 of 7)
CME Subsurface Exploration – Test Pit Logs, TP-1 and TP-2 (2 of 2)
CME Groundwater Observation Well Report, PB-4W and PB-5W (2 of 2)
Laboratory Test Summary, labeled 27191L-02-0317 (16 of 16)
General Information & Key to Test Boring Logs (4 of 4)

NYLD Infrastructure Field Report

NEW YORK LEAK DETECTION, INC.

Date: Thurs. 01/12/2017 & Fri. 01/13/2017 Technician: Steve Birmingham

Customer: CME Associates, Inc.

Site Address: Corning Elmira Regional Airport 276 Sing Sing Road Horseheads, NY

Contact Person: Mark Schumacher Phone: Cell: 315.679.0252 Phone: _____

Scope of Work: Utility Location Services

Type of Service:

☐ *Leak Detection* ☒ *Utility Location/GPR* ☐ *Video Inspection*

☐ *Infrastructure Assessment* ☐ *Utility Mapping/AutoCAD*

Type of Equipment Used

☐ *Profiler EMP 400* ☒ *RD4000* ☐ MetroTech Vivax vLocPro2

☐ *LC2500 Leak Correlator* ☒ *Noggin 250 mHz* ☐ PosiTector UTG G3

☐ *S-30 Surveyor* ☐ Noggin 500 mHz ☐ *Video Inspection Camera*

☐ *Sonde* ☐ Conquest 1000 mHz ☐ *Helium #* *Bottles*

☐ *Leica Robotic Total Station* ☐ *Leica GPS*

Marking Used

☐ *Paint* ☐ *Flags* ☐ *Chalk*

☐ *Updated existing maps onsite* ☐ *Other:* _____

Instructions from Onsite Contact: _____

Size of Pipe: _____

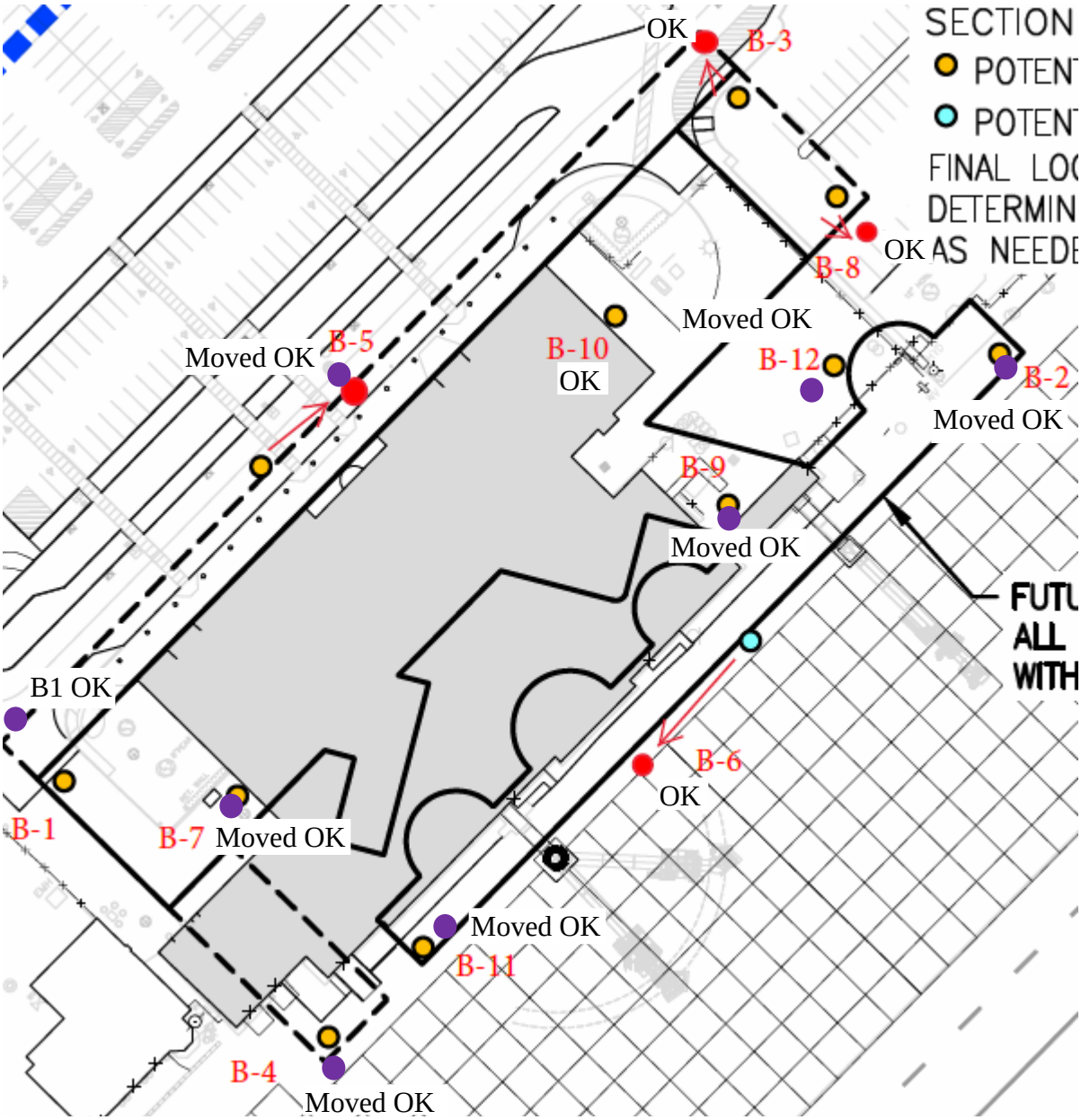
Ground Cover/Weather Conditions: Blacktop & Concrete Chilly & rain

Site Access/Safety Training: _____ **Expiration Date:** _____

Information Transfer

☒ *Information relayed on site to: Mark Schumacher* ☐ *Hand drawn map (forward to office for digital remake)* ☐ *All markings picked up by surveyors*

Notes/Testing Results:



--- Relocated boring location

Key

Blue	Water
Red	Power
Orange	Communications
Yellow	Gas/Flammable Fuel
White	Unknown
Green	Storm/Sanitary

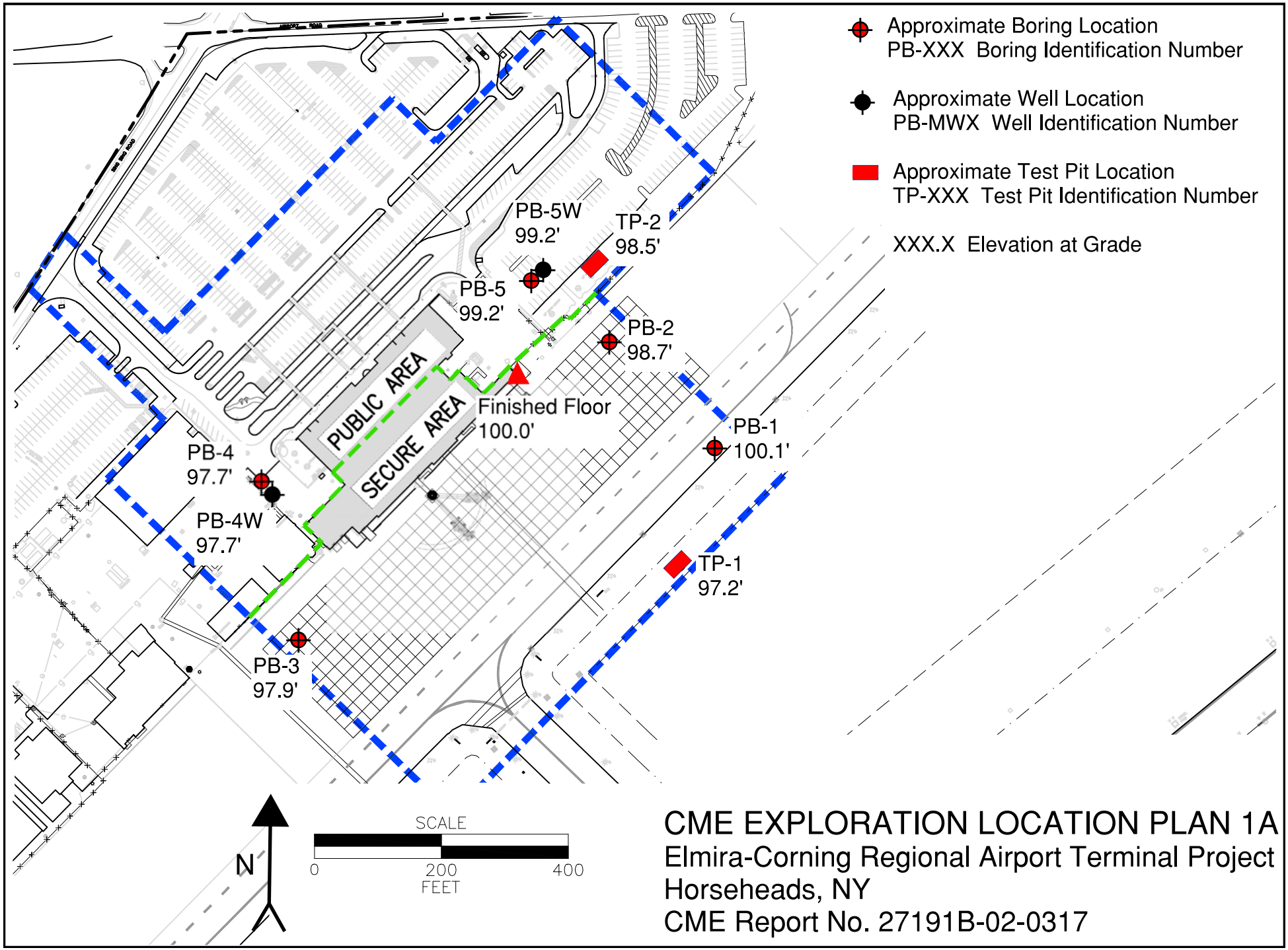
Attachment to CME Report No.: 27191B-02-0317

GPS Coordinates and Elevation Summary
Elmira-Corning Regional Airport Terminal Project, Horseheads, NY

Boring ID	N Latitude	W Longitude	Elevation (FT. AMSL)
PB-1	42.16316962	-76.89431234	100.1
PB-2	42.16268015	-76.89385791	98.7
PB-3	42.16188472	-76.89612633	97.9
PB-4	42.16256133	-76.89632278	97.7
PB-4W	42.16254133	-76.89632578	97.7
PB-5	42.16350593	-76.89468077	99.2
PB-5W	42.16351593	-76.89468177	99.2
TP-1	42.16221893	-76.89399335	97.2
TP-2	42.16350227	-76.89437588	98.5
Southeast Building Corner FF *	NA	NA	100.0

Notes:
GPS coordinates were obtained utilizing a Trimble GeoXH system.
Latitude and Longitude are based on the World Geodetic System of 1984 (WGS 1984).

* Reference Elevation set at 100.00 at the finished floor elevation outside of doorway.



CME EXPLORATION LOCATION PLAN 1A

Elmira-Corning Regional Airport Terminal Project
Horseheads, NY
CME Report No. 27191B-02-0317

Pavement Core Summary

Attachment to CME Report Number: 27191B-02-0317

Project Name: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY

Prepared By: Mark J. Schumacher
Date: 3/13/2017

Asphalt Core ID	Total Concrete Thickness (in.)	Total Asphalt Thickness (in.)	Thickness of Top Course (in.)	Thickness of Binder Course (in.)	Total Core Thickness (in.)	Subbase Course Material		Geotextile Fabric Present Below Subbase?	Subgrade Soil Classification	USCS
						Thickness (in.)	Soil Classification			
PB-1	13.0	None				25.0	FILL; grey cmf sand and cmf gravel (angular), trace silt	No	Brown cmf SAND, little mf GRAVEL, little SILT	SP
PB-2	None	8.0	5.0	3.0	8.0	12.0	FILL; grey cmf sand and cmf gravel (angular), trace silt	No	Brown cmf SAND, some mf GRAVEL, little SILT	SP
PB-3	14.0	None				21.5	FILL; grey cmf sand and cmf gravel (angular), trace silt	No	Brown cmf SAND, little mf GRAVEL, little SILT	SP
PB-4	None	5.0	2.0	3.0	5.0	19.0	FILL; brown cmf sand and mf gravel, little silt	No	Brown cmf SAND, some mf GRAVEL, little SILT	SP
PB-5	None	4.0	3.0	1.0	4.0	20.5	FILL; brown cmf sand and cmf gravel, little silt	No	Brown cmf GRAVEL, some cmf SAND, some SILT	GM

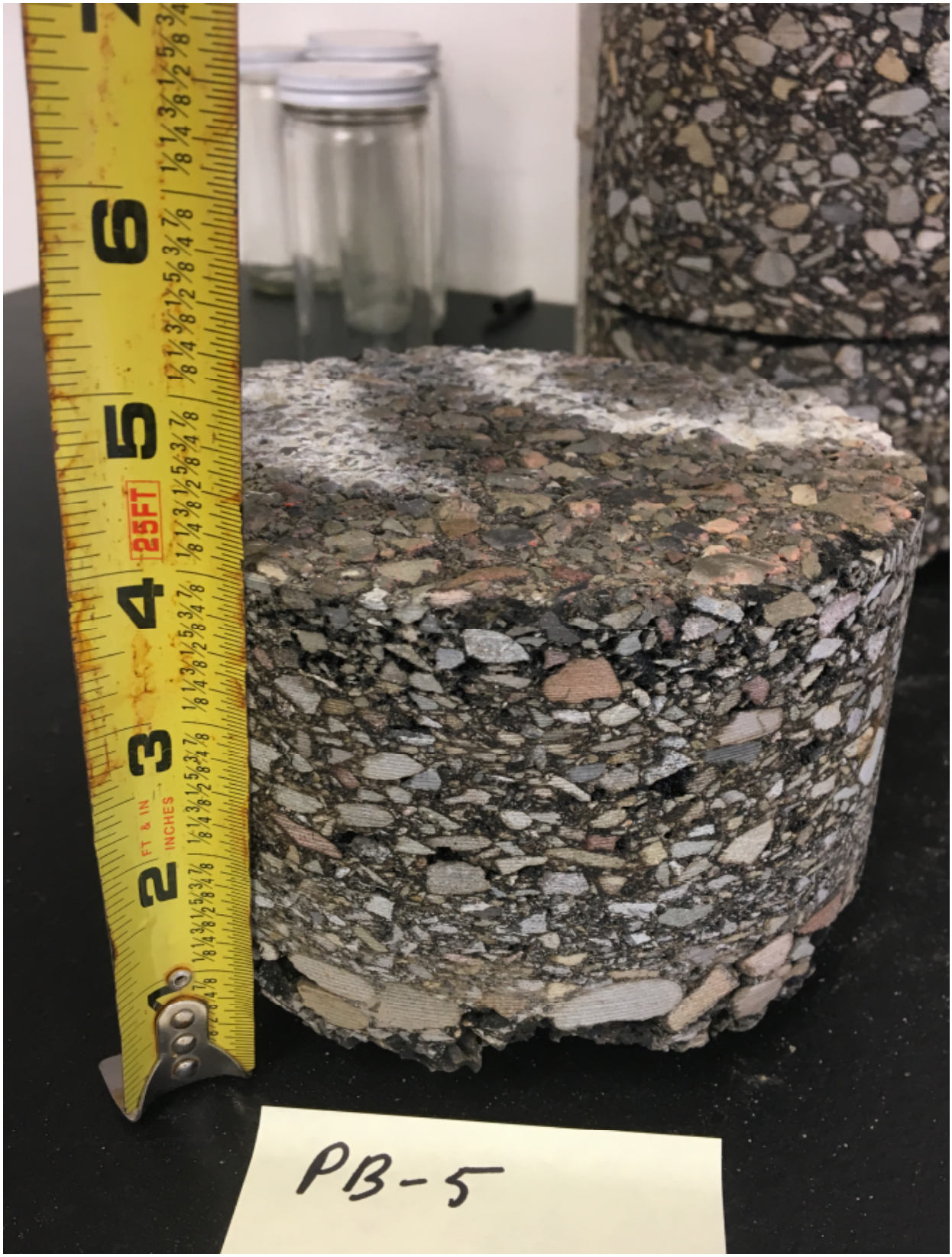
Remarks:

Photograph 1: Core PB-1

Photograph 2: Core PB-2

Photograph 3: Core PB-3

Photograph 4: Core PB-4



Photograph 5: Core PB-5

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-23-17 **Finished:** 01-23-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 100.1'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** Mark Schumacher
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-23-17	While drilling	None Noted	None Noted
01-23-17	Before casing removed	None Noted	7.2'
01-23-17	After casing removed	None Noted	out
01-23-17	After casing removed	caved @ 4.0'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	Classification of Material (**c** – **c**oarse, **m** – **m**edium, **f** – **f**ine; **and** – 35 to 50 %, **some** – 20 to 35 %, **little** – 10 to 20 %, **trace** – 0 to 10 %)	SPT "N" or RQD
0	XXX						1.1	Concrete	
	HOLLOW STEM AUGER	1	1.2	3.2	SS/16	26-32-30-28	3.2	FILL; Subbase, grey cmf sand and cmf gravel (angular), little silt (moist) *See Remark 1*	62
		2	3.2	5.2	SS/0	12-6-4-2		Brown cmf SAND, little mf GRAVEL, little SILT (moist, loose) *See Remark 2* *SP - Unified Soil Classification*	10
5		3	5.2	7.2	SS/0	3-3-5-8		Similar as above (moist, loose) *See Remark 2* *SP - Unified Soil Classification*	8
		4	7.2	8.7	SS/0	5-6-5		Brown cmf SAND and cmf GRAVEL, little SILT (moist, medium compact) *See Remark 2* *SP - Unified Soil Classification*	11
		5	8.7	10.2	SS/10	5-9-15		Brown cmf SAND some mf GRAVEL, little SILT (moist, medium compact) *SP - Unified Soil Classification*	24
10	XXX							Bottom of Boring @ 10.2'	
15									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon was utilized – 100@3" refusal with 3" split spoon sampler.
2. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-23-17 **Finished:** 01-23-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 98.7'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:** Mark Schumacher
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-23-17	While drilling	None Noted	None Noted
01-23-17	Before casing removed	None Noted	8.0'
01-23-17	After casing removed	None Noted	out
01-23-17	After casing removed	caved @ 4.3'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.7	Asphalt	
		1a	0.7	1.7	SS/18	28-47-38-26		FILL; Subbase, grey cmf sand and cmf gravel (angular), little silt (moist)	85
							1.7	*See Remark 1*	
	H O L L O W	1b	1.7	2.7				Brown cmf SAND, some mf GRAVEL, little SILT (moist, very compact) *SP - Unified Soil Classification*	
		2	2.7	4.7	SS/15	9-7-7-11		Brown mf SAND, little mf GRAVEL, little SILT (moist, medium compact) *SP - Unified Soil Classification*	14
5	S T E M	3	4.7	6.7	SS/13	6-5-4-11		Brown mf GRAVEL, some cmf SAND, little SILT (moist, loose) *GP - Unified Soil Classification*	9
	A U U G E R	4	6.7	8.7	SS/16	20-23-56-68		Similar as above (moist, very compact) *GP - Unified Soil Classification*	79
10		5	8.7	10.2	SS/13	32-37-34		Brown cmf SAND and mf GRAVEL, little SILT (moist, very compact) *SP - Unified Soil Classification*	71
	XXX							Bottom of Boring @ 10.2'	
15									

SS – Split Spoon, U – Undisturbed Tube, C – Core
Remarks: 1. 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-25-17 **Finished:** 01-25-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 97.9'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: 6" thin wall **Inspector:** Amanda Van Vorce
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-25-17	While drilling	None Noted	None Noted
01-25-17	Before casing removed	None Noted	9.0'
01-25-17	After casing removed	None Noted	out
01-25-17	After casing removed	caved @ 4.1'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						1.2	Concrete	
		1	1.1	3.0	SS/16	53-33-41-43	3.0	FILL; Subbase grey cmf sand and cmf gravel (angular), little silt (moist)	74
	H O L L L O W	2	3.0	5.0	SS/14	24-24-21-14		Brown cmf SAND, little mf GRAVEL, little SILT (moist, Compact) *SP - Unified Soil Classification*	45
5	S T E M	3	5.0	7.0	SS/11	11-9-7-7		Similar as above (moist, medium compact) *SP - Unified Soil Classification*	16
		4	7.0	9.0	SS/14	9-14-14-14		Brown cmf SAND, little mf GRAVEL, little SILT (moist, medium compact) *SP - Unified Soil Classification*	28
	A U G E R	5	9.0	11.0	SS/15	15-23-34-46		Brown cmf SAND, little cmf GRAVEL, trace SILT (moist, very compact) *SP - Unified Soil Classification*	57
10									
	XXX							Bottom of Boring @ 11.0'	
15									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-31-17 **Finished:** 01-31-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 97.7'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: 6" thin wall **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-31-17	While drilling	None Noted	None Noted
01-31-17	Before casing removed	None Noted	8.0'
01-31-17	After casing removed	None Noted	out
01-31-17	After casing removed	caved @ 4.7'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.4	Asphalt	
		1	0.5	2.0	SS/14	11-10-7		FILL; brown cmf sand and mf gravel, little silt (Moist)	17
	H O L L O W						2.0		
		2	2.0	4.0	SS/14	7-6-7-5		Brown cmf SAND, some mf GRAVEL, little SILT (moist, medium compact) *SP - Unified Soil Classification*	13
		3	4.0	6.0	SS/15	4-3-3-6		Similar as above (moist, loose) *SP - Unified Soil Classification*	6
5	S T E M								
		4	6.0	8.0	SS/17	10-11-92-24		Brown mf GRAVEL, some cmf SAND, some SILT (moist, very compact) *Drove spoon through cobble* *GP - Unified Soil Classification*	103
	A U G E R	5	8.0	8.7	SS/7	35-100@3"		Brown cmf GRAVEL and cmf SAND, little SILT (moist, very compact) *GP - Unified Soil Classification*	100+
	XXX							Bottom of Boring @ 8.7'	
10									
15									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-30-17 **Finished:** 01-30-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 99.2'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: 6" thin wall **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-30-17	While drilling	None Noted	None Noted
01-30-17	Before casing removed	None Noted	8.0'
01-30-17	After casing removed	None Noted	out
01-30-17	After casing removed	caved @ 5.9'	out

LOG OF BORING SAMPLES / **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
0	XXX						0.3	Asphalt	
		1	0.4	2.0	SS/10	11-11-7		FILL; brown cmf sand and cmf gravel, little silt (moist)	18
	H						2.0		
	O	2	2.0	4.0	SS/0	6-3-2-3		Brown cmf GRAVEL, some cmf SAND, some SILT (moist, loose) *See Remark 1* *GP - Unified Soil Classification*	5
	L								
	L								
	O								
	W	3	4.0	6.0	SS/9	2-4-5-5		Brown cmf SAND, some mf GRAVEL, some SILT (moist, loose) *SP - Unified Soil Classification*	9
	S								
5	T								
	E								
	M	4	6.0	8.0	SS/0	4-5-7-6		Brown cmf SAND and cmf GRAVEL, little SILT (moist, medium compact) *See Remark 1* *SP - Unified Soil Classification*	12
	A								
	U								
	G								
	E								
	R	5	8.0	10.0	SS/8	4-4-3-3		Brown cmf SAND, some mf GRAVEL, little SILT (moist, medium loose) *SP - Unified Soil Classification*	7
10	XXX								
								Bottom of Boring @ 10.0'	
15									

SS – Split Spoon, U – Undisturbed Tube, C – Core

Remarks: 1. No recovery with 2" split spoon sampler, therefore a 3" split spoon sampler was utilized.

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-31-17 **Finished:** 01-31-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 97.7'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-31-17	While drilling	20.4'	23.5'
01-31-17	Before casing removed	None Noted	8.0'
01-31-17	After casing removed	None Noted	out
01-31-17	After casing removed	no cave	out

LOG OF BORING SAMPLES **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
10	XXX							*Drilled to 13.5'- see PB-4 Test Boring Log*	
	H O L L O W	1	13.5	15.0	SS/16	24-40-33		Brown cmf SAND, some mf GRAVEL, little SILT (moist, very compact) *SP - Unified Soil Classification*	73
15									
	S T E M	2	18.5	20.0	SS/8	4-8-12		Brown cmf SAND, little cmf GRAVEL, little SILT (moist, medium compact) *SP - Unified Soil Classification*	20
20									
	A U G E E R	3	23.5	25.0	SS/10	7-7-6		Brown mf GRAVEL and cmf SAND, little SILT (wet, medium compact) *GP - Unified Soil Classification*	13
25									
	XXX							*Drilled to 27.0' – set well*	
								Bottom of Boring @ 27.0'	
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core
Remarks:

SUBSURFACE EXPLORATION – TEST BORING LOG

Project: Elmira-Corning Regional Airport Terminal Project, Horseheads, NY **Report No.:** 27191B-02-0317
Client: HUNT Engineers, Architects & Land Surveyors, P.C. **Date Started:** 01-30-17 **Finished:** 01-30-17
Location of Boring: See Exploration Location Plan 1A **Elevation of Surface of Boring:** 99.2'

METHODS OF INVESTIGATION

Casing: 3-1/4" ID H. Stem Auger **Driller:** Dave Lyons
Casing Hammer: **Driller:** John Winks
Other: **Inspector:**
Soil Sampler: 2" OD Split Barrel **Rod Size:** AWJ
Sampler Hammer: Wt. 140 lbs./ Auto **Fall:** 30 in.
Make & Model of Drill Rig: Diedrich D-120 Truck-Mounted

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
01-30-17	While drilling	21.2'	23.5'
01-30-17	Before casing removed	None Noted	None Noted
01-30-17	After casing removed	None Noted	out
01-30-17	After casing removed	no cave	out

LOG OF BORING SAMPLES **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (Inches)	Blows On Sampler Per 6 inches	Depth Of Change (feet)	**c** – **c**oarse **m** – **m**edium **f** – **f**ine **and** – 35 to 50 % **some** – 20 to 35 % **little** – 10 to 20 % **trace** – 0 to 10 %	SPT "N" or RQD
10	XXX							*Drilled to 13.5'- See PB-5 Test Boring Log*	
							12.7	*Drilled harder and more gravelly at 12.7'*	
	H O L L O W	1	13.5	15.0	SS/10	27-19-17		Brown cmf SAND and cmf GRAVEL, little SILT (moist, compact) *SP - Unified Soil Classification*	36
15									
	S T E M	2	18.5	20.0	SS/8	6-5-5		Brown cmf SAND, little mf GRAVEL, little SILT (moist, loose) *SP - Unified Soil Classification*	10
20									
	A U G E E R	3	23.5	25.0	SS/8	5-6-8		Brown cmf GRAVEL and cmf SAND, little SILT (wet, medium compact) *GP - Unified Soil Classification*	14
25									
	XXX							Bottom of Boring @ 27.0' *Drilled to 27.0' set well*	
30									

SS – Split Spoon, U – Undisturbed Tube, C – Core
Remarks:

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

TEST PIT LOG

Project:	Elmira-Corning Regional Airport Terminal Project, Horseheads, NY	**Report No.:**	27191B-02-0317
		Location of Test Pit:	See Exploration Location Plan 1A
Client:	HUNT Engineers, Architects & Land Surveyors, P.C.	**Ground Elevation:**	97.2'
		Date:	**Start:** 02-27-17 **Finish:** 02-27-17
Test Pit No. TP-1	Sheet 1 of 1	**Representative:**	Amanda Van Vorce

Ground Water Observations

Date	Time	Depth
02-27-17	11:00 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
0				0.7		Topsoil (frozen)
	TP-1	0.7	3.0			Brown cmf GRAVEL, some cmf SAND, some COBBLES, little SILT (moist)
					In place density = 1.25 tons/ft at 3.0' below grade	
5						
					dug E to W	Test Pit terminated @ 6'
10						

f - FINE and 35-50%
m - MEDIUM some 20-35%
c - COARSE little 10-20%
trace 0-10%

REMARKS:

1. This test pit was excavated by CME utilizing a CAT 416D Backhoe equipped with a 24" wide general purpose bucket.

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

TEST PIT LOG

Project:	Elmira-Corning Regional Airport Terminal Project, Horseheads, NY	**Report No.:**	27191B-02-0317
		Location of Test Pit:	See Exploration Location Plan 1A
Client:	HUNT Engineers, Architects & Land Surveyors, P.C.	**Ground Elevation:**	98.5'
		Date	**Start:** 02-27-17 **Finish:** 02-27-17
Test Pit No. TP-2	Sheet 1 of 1	**Representative:**	Amanda Van Vorce

Ground Water Observations

Date	Time	Depth
02-27-17	11:50 AM	None Noted

DEPTH (Feet)	SAMPLE NUMBER	DEPTH OF SAMPLE FROM (FEET)	DEPTH OF SAMPLE TO (FEET)	DEPTH OF CHANGE (FEET)	NOTES OR PIT PROFILE	CLASSIFICATION OF MATERIAL
0				1.3		Topsoil
	TP-2	1.3	3			Brown SILT, some cmf SAND, some cmf GRAVEL, trace COBBLES (moist)
					In place density = 2.0 tons/ft at 3.0' below grade	
5						
					dug E to W	Test Pit terminated @ 6'
10						

f - FINE and 35-50%
m - MEDIUM some 20-35%
c - COARSE little 10-20%
trace 0-10%

REMARKS:

1. This test pit was excavated by CME utilizing a CAT 416D Backhoe equipped with a 24" wide general purpose bucket.

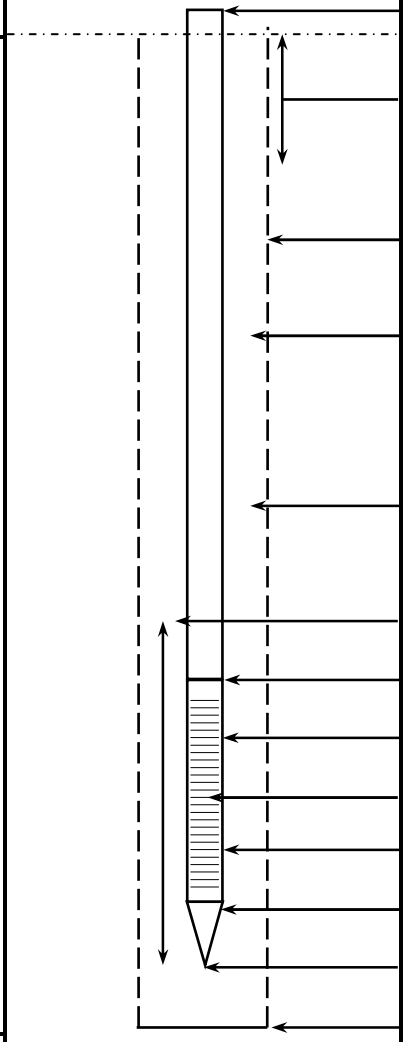
GROUNDWATER OBSERVATION WELL REPORT

Project	Elmira-Corning Regional Airport Terminal Project, Horseheads, NY			**Report No.**	27191B-02-0317		
Client	HUNT Engineers, Architects & Land Surveyors, P.C.			**Boring No.**	PB-4W		
Location	Horseheads, NY			**Well No.**	MW-4		
Contractor	CME Associates, Inc.			**Location**	See ELP		
Driller	Dave Lyons	**Inspector**		**Surface Elevation**	98.5’		
Installation Date	1/31/2017			**Sheet**	1	**of**	1

Summarize Soil Conditions (not to scale)

See Test Boring Logs PB-4 and PB-4W

BOB @ 27.0



Elevation/stickup above ground surface of riser pipe.	+0.0 ft. (Flush mount)
Thickness of surface seal	3.0’
Type of surface seal	Cement/Bentonite Grout
Diameter of Borehole	8”
Type of backfill around riser	cuttings
Thickness of seal	2 ft.
Type of seal	Bentonite Hole Plug
Thickness of backfill/filter around well	12’
Elevation/Depth of bottom of Riser	81.5’/17.0’
Screen gauge or size of openings	0 .010’
Diameter of well	2”
Type of backfill/filter back around well	#2 SAND
Elevation/Depth of bottom of well	71.5’/27.0’
Elevation/Depth of bottom of borehole	71.5’/27.0’

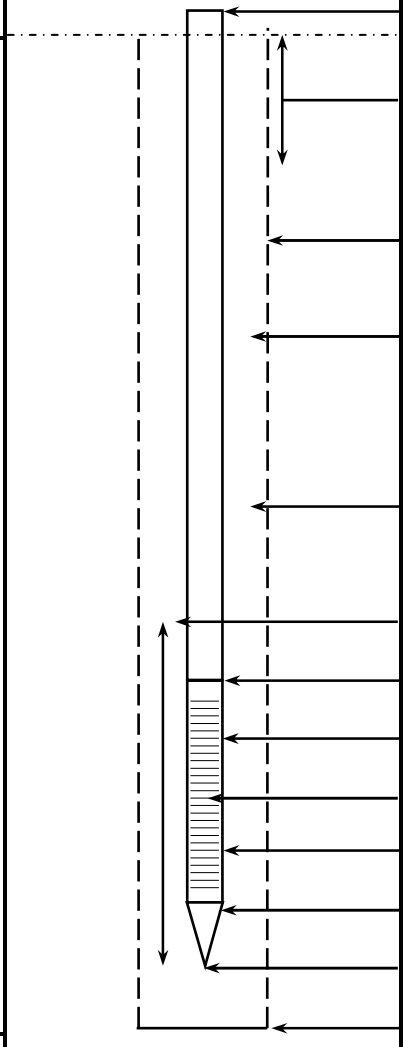
GROUNDWATER OBSERVATION WELL REPORT

Project	Elmira-Corning Regional Airport Terminal Project, Horseheads, NY			**Report No.**	27191B-02-0317		
Client	HUNT Engineers, Architects & Land Surveyors, P.C.			**Boring No.**	PB-5W		
Location	Horseheads, NY			**Well No.**	MW-5		
Contractor	CME Associates, Inc.			**Location**	See ELP		
Driller	Dave Lyons	**Inspector**		**Surface Elevation**	99.0’		
Installation Date	1/31/2017			**Sheet**	1	**of**	1

Summarize Soil Conditions (not to scale)

See Test Boring Logs PB-5 and PB-5W

BOB @ 27.0



Elevation/stickup above ground surface of riser pipe.	+0.0 ft. (Flush mount)
Thickness of surface seal	3.0’
Type of surface seal	Cement/Bentonite Grout
Diameter of Borehole	8”
Type of backfill around riser	cuttings
Thickness of seal	2 ft.
Type of seal	Bentonite Hole Plug
Thickness of backfill/filter around well	12’
Elevation/Depth of bottom of Riser	82’/17.0’
Screen gauge or size of openings	0 .010’
Diameter of well	2”
Type of backfill/filter back around well	#2 SAND
Elevation/Depth of bottom of well	72.0’/27.0’
Elevation/Depth of bottom of borehole	72.0’/27.0’

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

LABORATORY TEST SUMMARY
Elmira-Corning Regional Airport
CME Report No.: 27191L-02-0317
March 16, 2017

CME Representatives obtained soil samples from Test Borings advanced as part of the Subsurface Exploration Program conducted for the subject project. Selected samples were delivered to CME's East Syracuse facility, an AASTHO AMRL[1] accredited laboratory for various laboratory testing. The results are presented below:

Sample ID Notations: TP- Test Pit, Comp- Composition

I. Natural Moisture Content (ASTM D2216)

Sample ID	Natural Moisture (%)
TP-1	5.9
TP-2	5.6
Comp-1	8.7
Comp-2	8.1
Comp-3	8.4

[1] **AMRL** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory. AMRL is a Federal Agency having jurisdiction to assess laboratory competence according to the standards of the United States. **CME** East Syracuse accreditation includes tests of Portland Cement Concrete, Aggregate and Soil Materials. www.amrl.net

II. Particle Size Analysis and Moisture Density Relationship Determination (ASTM 698)

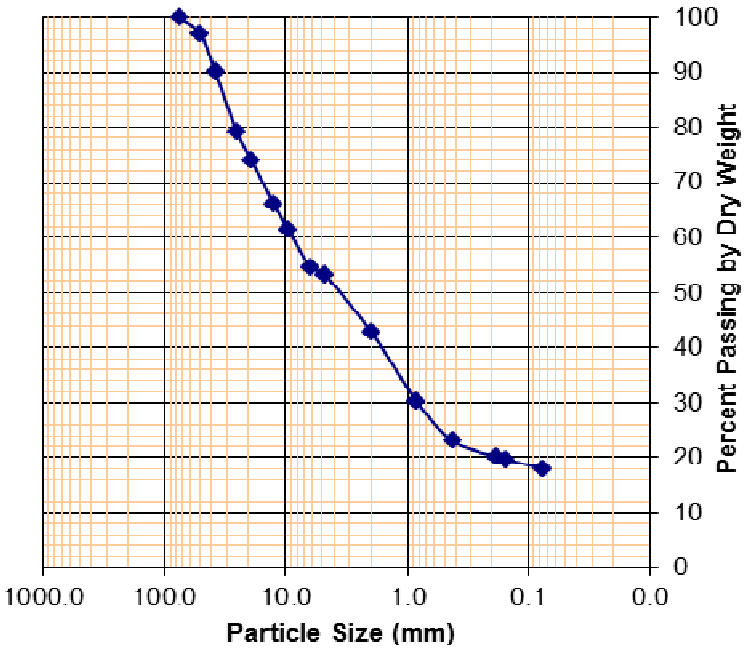
Material Identification

Sample #
TP-1

Classification
Brown cmf GRAVEL, some cmf SAND, little SILT

Sieve Designation	Sieve Size (mm)	% Passing by Dry Weight
3"	75.0	100
2"	50.0	97
1 1/2"	37.5	90
1"	25.0	79
3/4"	19.0	74
1/2"	12.5	66
3/8"	9.50	61
1/4"	6.25	55
#4	4.75	53
#10	2.00	43
#20	0.850	30
#40	0.425	23
#80	0.180	20
#100	0.150	20
#200	0.075	18

Grain Size Distribution



Note: Proposed Use of Material not Provided.

Moisture-Density Relationship **(ASTM D-698: Standard Proctor)**

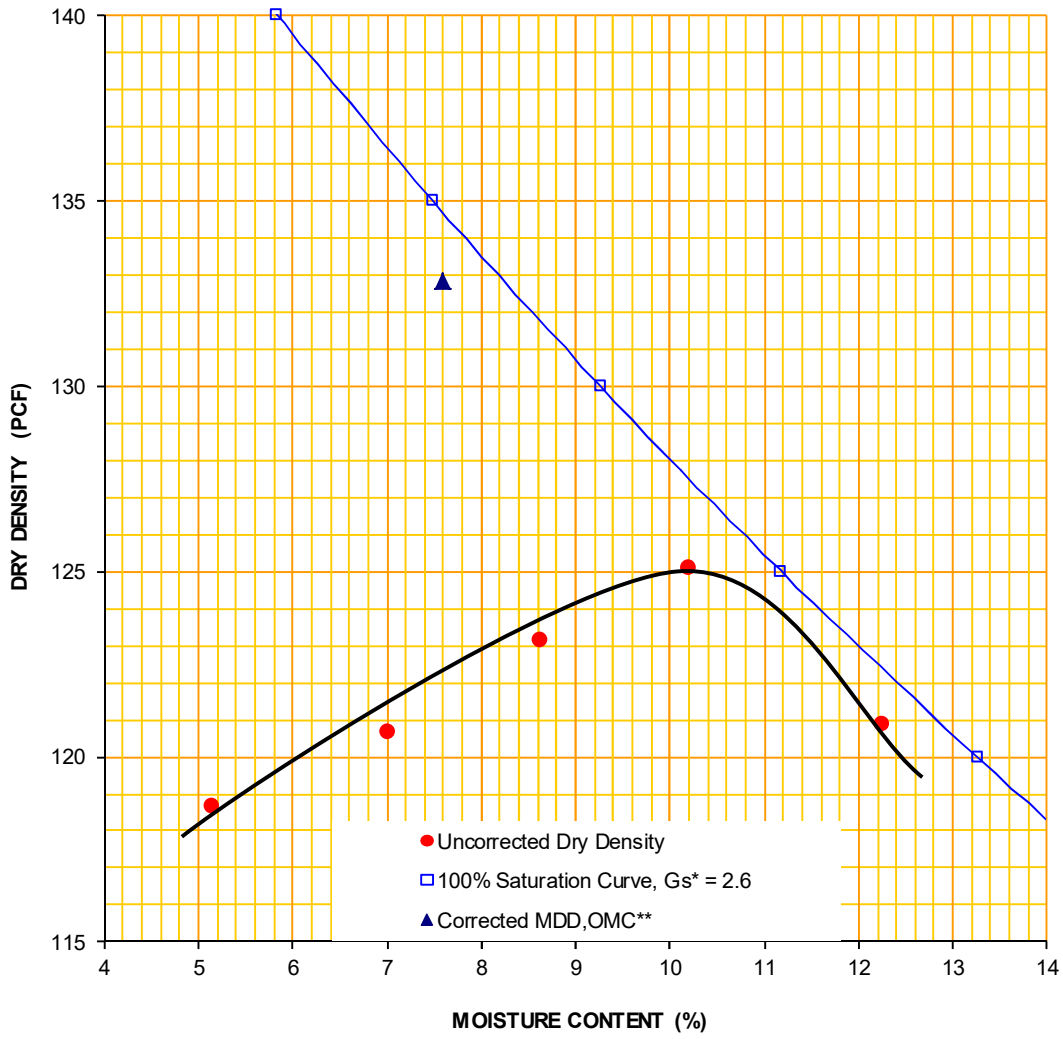
		Sample # LN-10083	
Corrected Maximum Dry Density (pcf)	=	**132.8**	
Corrected Optimum Moisture Content (%)	=	**7.6**	
Oversized Particles, Percent by Weight (%)	=	**26**	*

* Particles retained on3/4-inch sieve

CME Associates, Inc.

SOIL CLASSIFICATION:	**Brown cmf GRAVEL, some cmf SAND, little SILT**	SAMPLE NO.:	**TP-1**

Moisture - Density Relationship Curve



Particle Size Analysis ASTM D422

Sieve Size	% Passing
3"	**100**
2"	**97**
1-1/2"	**90**
1"	**79**
3/4"	**74**
1/2"	**66**
3/8"	**61**
1/4"	**55**
No.4	**53**
No.10	**43**
No.20	**30**
No.40	**23**
No.80	**20**
No.100	**20**
No.200	**18**

Test Procedure Information

Test Method	☐ ASTM D-1557 (Modified)	☑ ASTM D-698 (Standard)	
Procedure Used	☐ A	☐ B	☑ C
Preparation Method	☐ Dry	☑ Moist	
Description of Rammer	☐ Manual	☑ Mechanical	

Test Results

Corrected MDD (PCF) = **132.8**
Corrected OMC (%) = **7.6**

Oversize Fraction by Dry Weight
26 % Retained on ☐ No.4 Sieve ☐ 3/8" Sieve ☑ 3/4" Sieve

* Specific Gravity, estimated
** MDD = Maximum Dry Density, OMC = Optimum Moisture Content

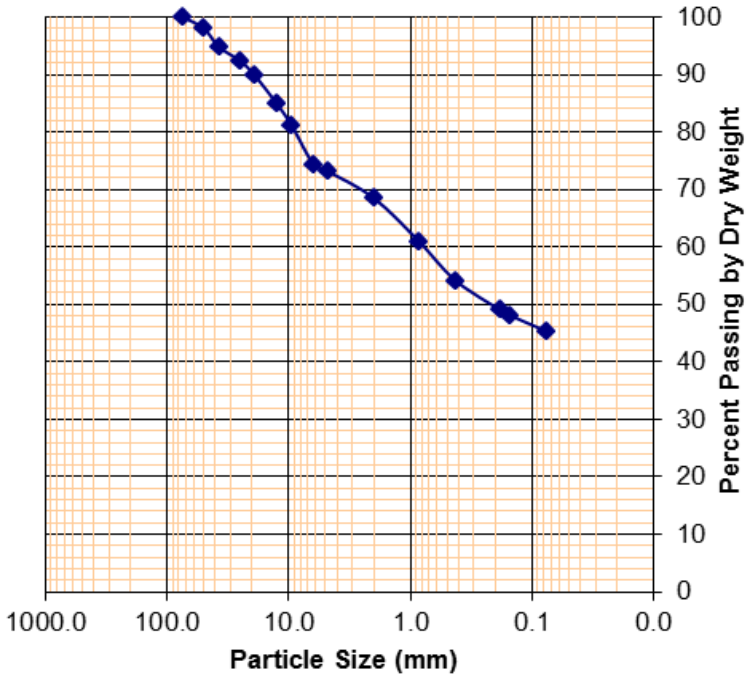
Material Identification

Sample #
TP-2

Classification
Brown SILT, some cmf SAND, some cmf GRAVEL

Sieve Size	Sieve Size (mm)	% Passing by Dry Weight
3"	75.0	100
2"	50.0	98
1 1/2"	37.5	95
1"	25.0	92
3/4"	19.0	90
1/2"	12.5	85
3/8"	9.50	81
1/4"	6.25	74
#4	4.75	73
#10	2.00	69
#20	0.850	61
#40	0.425	54
#80	0.180	49
#100	0.150	48
#200	0.075	45

Grain Size Distribution



Note: Proposed Use of Material not Provided.

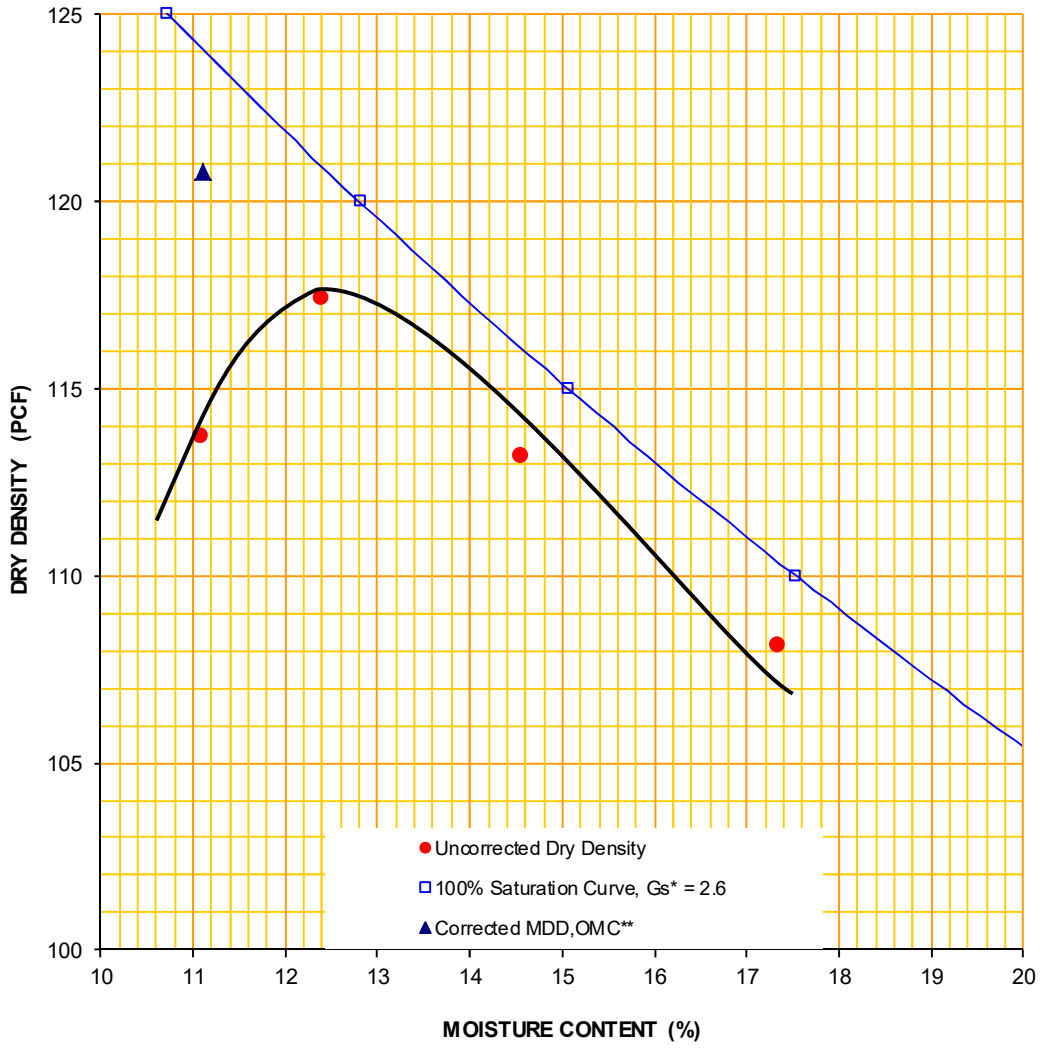
Moisture-Density Relationship **(ASTM D-698: Standard Proctor)**

		Sample # TP-2	
Corrected Maximum Dry Density (pcf)	=	**120.8**	
Corrected Optimum Moisture Content (%)	=	**11.1**	
Oversized Particles, Percent by Weight (%)	=	**10**	*

* Particles retained on 3/4-inch sieve

SOIL CLASSIFICATION:	**Brown SILT, some cmf SAND, some cmf GRAVEL**	SAMPLE NO.:	**TP-2**

Moisture - Density Relationship Curve



Particle Size Analysis ASTM D422

Sieve Size	% Passing
3"	**100**
2"	**98**
1-1/2"	**95**
1"	**92**
3/4"	**90**
1/2"	**85**
3/8"	**81**
1/4"	**74**
No.4	**73**
No.10	**69**
No.20	**61**
No.40	**54**
No.80	**49**
No.100	**48**
No.200	**45**

Test Procedure Information

Test Method	☐ ASTM D-1557 (Modified)	☑ ASTM D-698 (Standard)	
Procedure Used	☐ A	☐ B	☑ C
Preparation Method	☐ Dry	☑ Moist	
Description of Rammer	☐ Manual	☑ Mechanical	

Test Results

Corrected MDD (PCF) = **120.8**

Corrected OMC (%) = **11.1**

Oversize Fraction by Dry Weight

10 % Retained on ☐ No.4 Sieve ☐ 3/8" Sieve ☑ 3/4" Sieve

* Specific Gravity, estimated

** MDD = Maximum Dry Density, OMC = Optimum Moisture Content

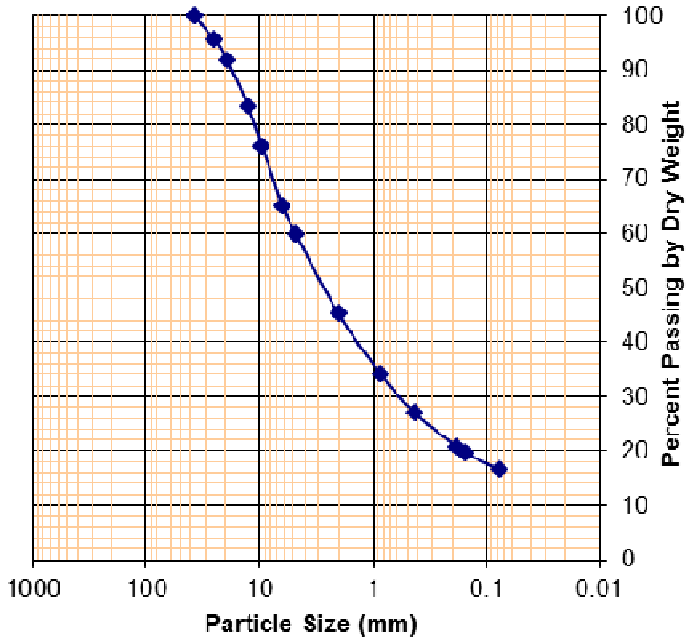
Material Identification

Sample #
Comp-1

Classification
Grey cmf SAND and cmf GRAVEL, little SILT

Sieve Size	Sieve Size (mm)	% Passing by Dry Weight
1 1/2"	37.5	100
1"	25.0	96
3/4"	19.0	92
1/2"	12.5	83
3/8"	9.50	76
1/4"	6.25	65
#4	4.75	60
#10	2.00	45
#20	0.850	34
#40	0.425	27
#80	0.180	21
#100	0.150	19
#200	0.075	16

Grain Size Distribution



Note: Proposed Use of Material not Provided.

Moisture-Density Relationship (ASTM D-698: Standard Proctor)

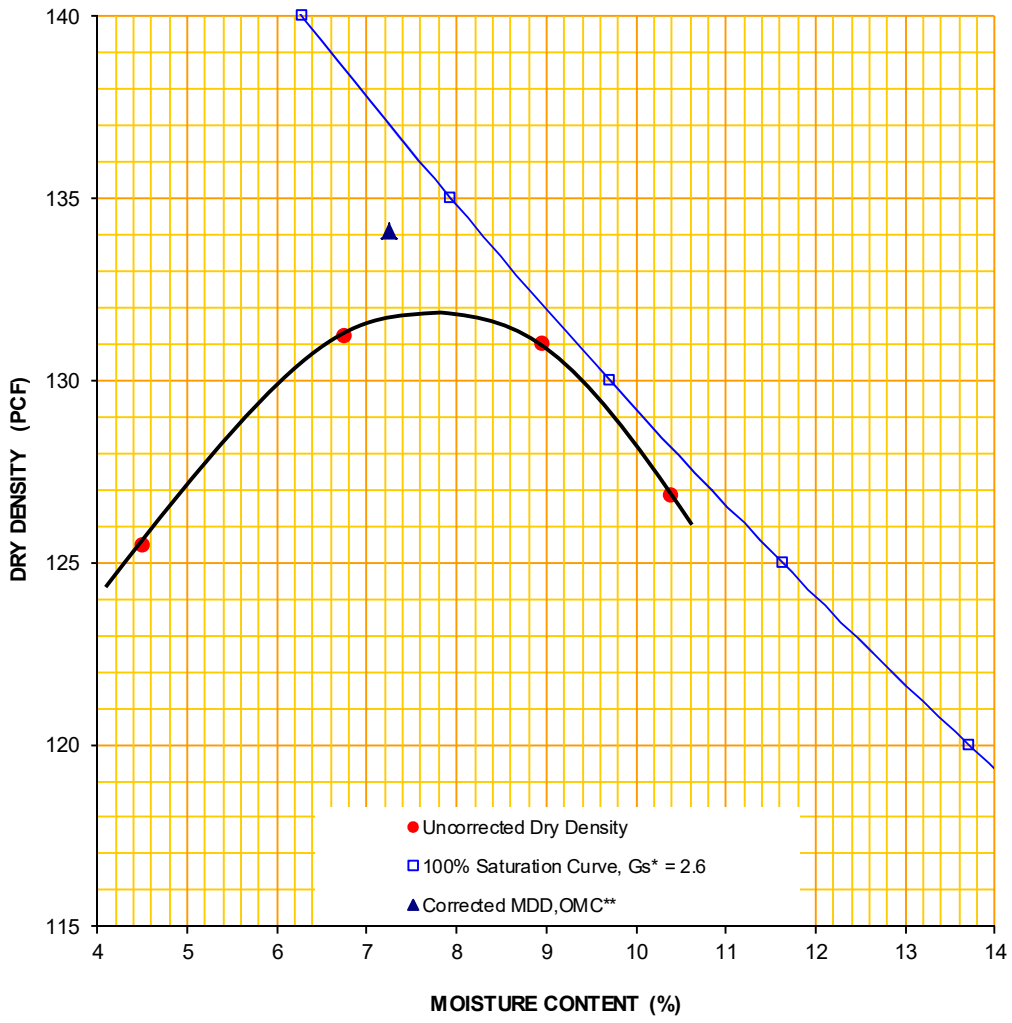
		Sample # Comp-1	
Corrected Maximum Dry Density (pcf)	=	**134.1**	
Corrected Optimum Moisture Content (%)	=	**7.2**	
Oversized Particles, Percent by Weight (%)	=	**8**	*

* Particles retained on 3/4-inch sieve

CME Associates, Inc.

SOIL CLASSIFICATION:	**Grey cmf SAND and cmf GRAVEL, little SILT**	SAMPLE NO.:	**Comp-1**

Moisture - Density Relationship Curve



Particle Size Analysis ASTM D422

Sieve Size	% Passing
1-1/2"	**100**
1"	**96**
3/4"	**92**
1/2"	**83**
3/8"	**76**
1/4"	**65**
No.4	**60**
No.10	**45**
No.20	**34**
No.40	**27**
No.80	**21**
No.100	**19**
No.200	**16**

Test Procedure Information

Test Method	☐ ASTM D-1557 (Modified)	☑ ASTM D-698 (Standard)
Procedure Used	☐ A ☐ B	☑ C
Preparation Method	☐ Dry	☑ Moist
Description of Rammer	☐ Manual	☑ Mechanical

Test Results

Corrected MDD (PCF) = **134.1**

Corrected OMC (%) = **7.2**

Oversize Fraction by Dry Weight

8 % Retained on ☐ No.4 Sieve ☐ 3/8" Sieve ☑ 3/4" Sieve

* Specific Gravity, estimated

** MDD = Maximum Dry Density, OMC = Optimum Moisture Content

CME Associates, Inc.

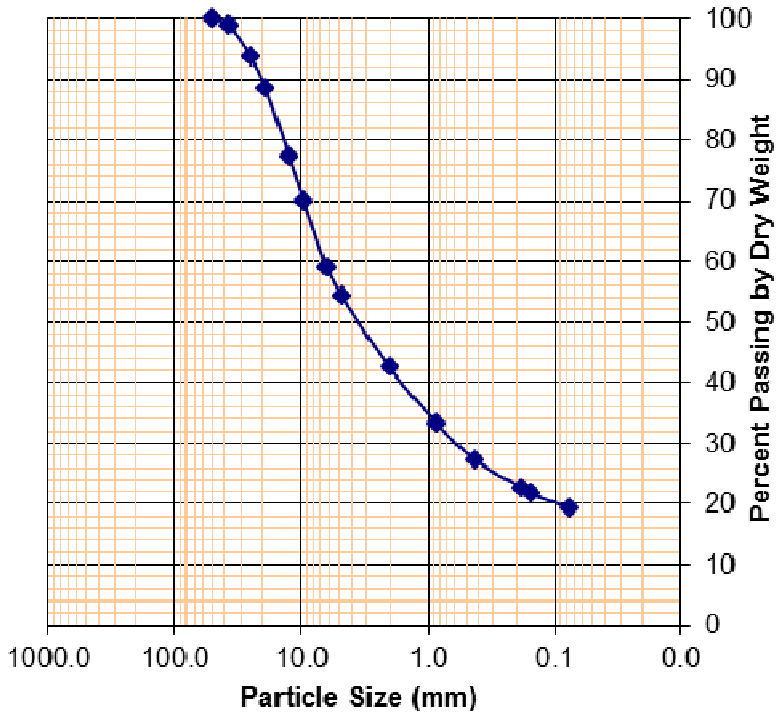
Material Identification

Sample #
Comp-2

Classification
Brown cmf GRAVEL, some cmf SAND, little SILT

Sieve Size	Sieve Size (mm)	% Passing by Dry Weight
2"	50.0	100
1 1/2"	37.5	99
1"	25.0	94
3/4"	19.0	88
1/2"	12.5	77
3/8"	9.50	70
1/4"	6.25	59
#4	4.75	54
#10	2.00	42
#20	0.850	33
#40	0.425	27
#80	0.180	23
#100	0.150	22
#200	0.075	19

Grain Size Distribution



Note: Proposed Use of Material not Provided.

Moisture-Density Relationship **(ASTM D-698: Standard Proctor)**

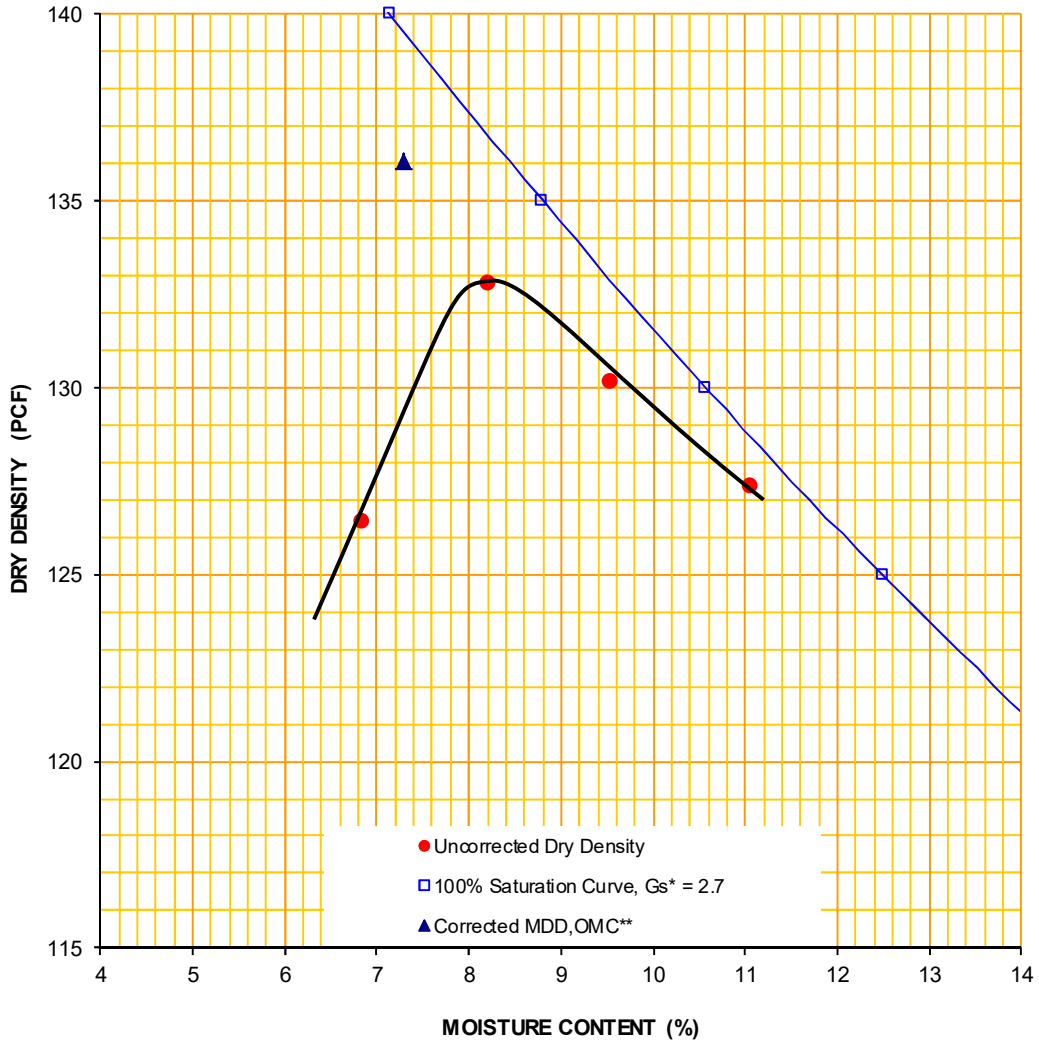
		Sample # Comp-2	
Corrected Maximum Dry Density (pcf)	=	**136.1**	
Corrected Optimum Moisture Content (%)	=	**7.3**	
Oversized Particles, Percent by Weight (%)	=	**12**	*

* Particles retained on 3/4-inch sieve

CME Associates, Inc.

SOIL CLASSIFICATION:	**Brown cmf GRAVEL, some cmf SAND, little SILT**	SAMPLE NO.:	**Comp-2**

Moisture - Density Relationship Curve



Particle Size Analysis ASTM D422

Sieve Size	% Passing
2"	**100**
1-1/2"	**99**
1"	**94**
3/4"	**88**
1/2"	**77**
3/8"	**70**
1/4"	**59**
No.4	**54**
No.10	**42**
No.20	**33**
No.40	**27**
No.80	**23**
No.100	**22**
No.200	**19**

Test Procedure Information

Test Method	☐ ASTM D-1557 (Modified)	☑ ASTM D-698 (Standard)	
Procedure Used	☐ A	☐ B	☑ C
Preparation Method	☐ Dry	☑ Moist	
Description of Rammer	☐ Manual	☑ Mechanical	

Test Results

Corrected MDD (PCF) = **136.1**
Corrected OMC (%) = **7.3**

Oversize Fraction by Dry Weight
12 % Retained on ☐ No.4 Sieve ☐ 3/8" Sieve ☑ 3/4" Sieve

* Specific Gravity, estimated
** MDD = Maximum Dry Density, OMC = Optimum Moisture Content

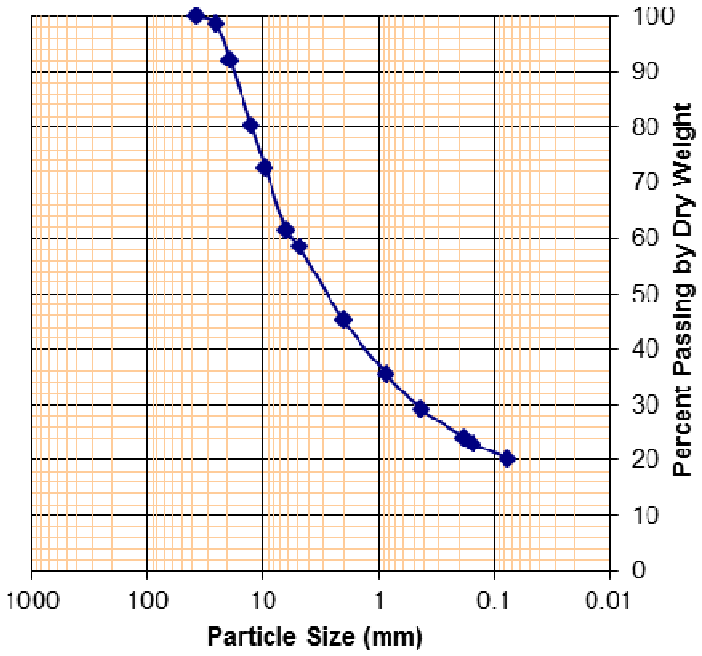
Material Identification

Sample #
Comp-3

Sieve Size	Sieve Size (mm)	% Passing by Dry Weight
1 1/2"	37.5	100
1"	25.0	99
3/4"	19.0	92
1/2"	12.5	80
3/8"	9.50	73
1/4"	6.25	62
#4	4.75	58
#10	2.00	45
#20	0.850	36
#40	0.425	29
#80	0.180	24
#100	0.150	23
#200	0.075	20

Classification
Brown cmf GRAVEL and cmf SAND, some SILT

Grain Size Distribution



Note: Proposed Use of Material not Provided.

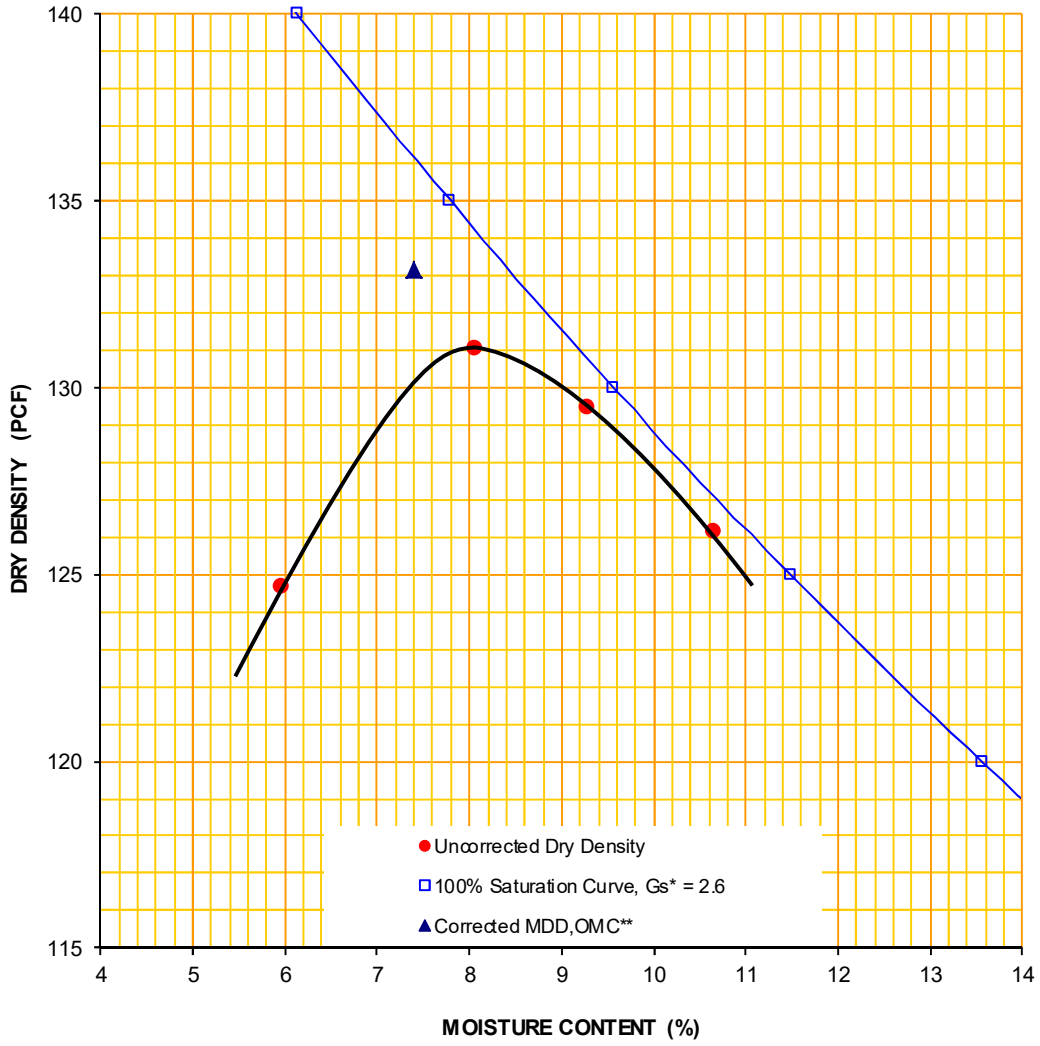
Moisture-Density Relationship (ASTM D-698: Standard Proctor)

		Sample # Comp-3	
Corrected Maximum Dry Density (pcf)	=	**133.2**	
Corrected Optimum Moisture Content (%)	=	**7.4**	
Oversized Particles, Percent by Weight (%)	=	**8**	*

* Particles retained on 3/4-inch sieve

SOIL CLASSIFICATION:	**Brown cmf GRAVEL and cmf SAND, some SILT**	SAMPLE NO.:	**Comp-3**

Moisture - Density Relationship Curve



Particle Size Analysis ASTM D422

Sieve Size	% Passing
1-1/2"	**100**
1"	**99**
3/4"	**92**
1/2"	**80**
3/8"	**73**
1/4"	**62**
No.4	**58**
No.10	**45**
No.20	**36**
No.40	**29**
No.80	**24**
No.100	**23**
No.200	**20**

Test Procedure Information

Test Method	☐ ASTM D-1557 (Modified)	☑ ASTM D-698 (Standard)	
Procedure Used	☐ A	☐ B	☑ C
Preparation Method	☐ Dry	☑ Moist	
Description of Rammer	☐ Manual	☑ Mechanical	

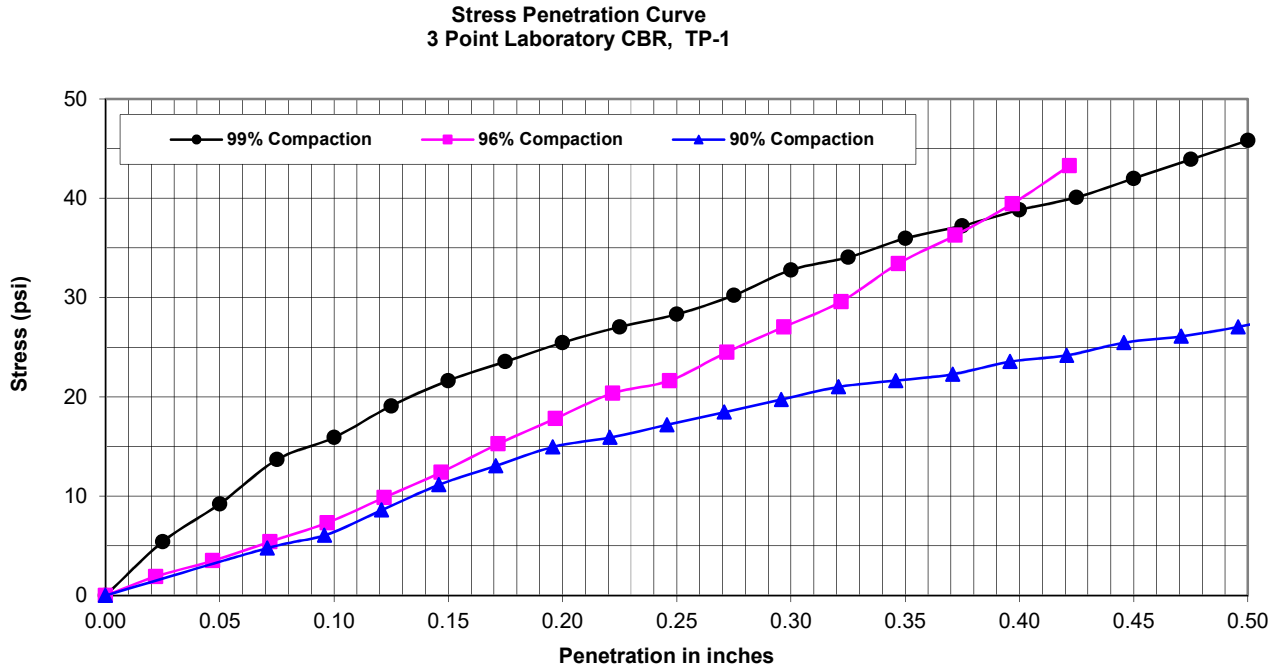
Test Results

Corrected MDD (PCF) = **133.2**
Corrected OMC (%) = **7.4**

Oversize Fraction by Dry Weight
8 % Retained on ☐ No.4 Sieve ☐ 3/8" Sieve ☑ 3/4" Sieve

* Specific Gravity, estimated
** MDD = Maximum Dry Density, OMC = Optimum Moisture Content

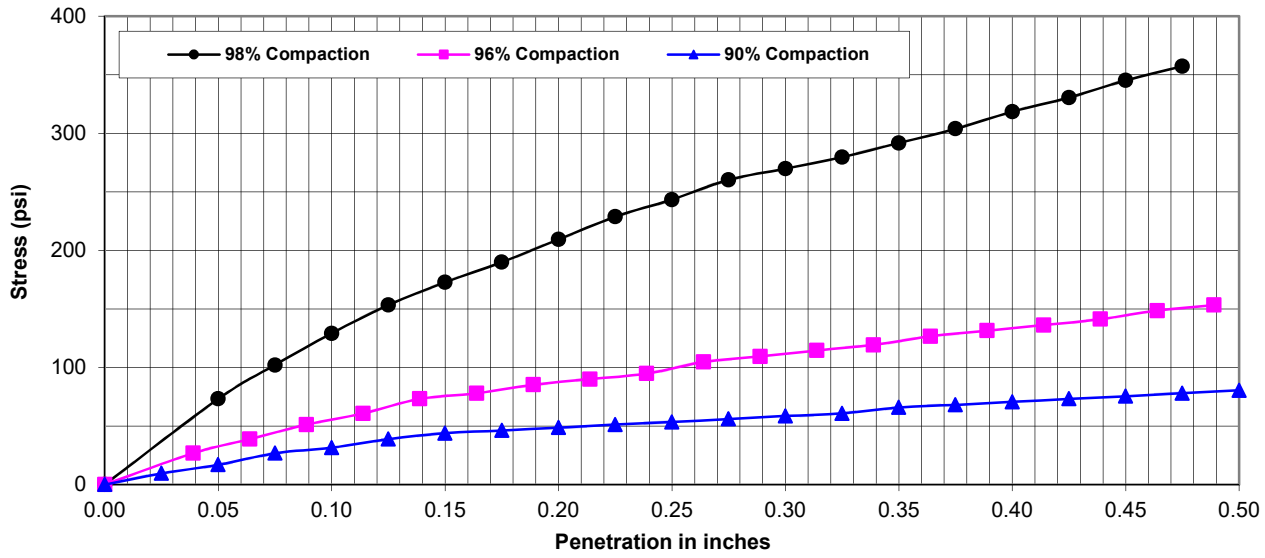
III. CBR (California Bearing Ratio) of Laboratory-Compacted Soils (ASTM D1883)



Sample ID: TP-1	**90% Compaction**	**96% Compaction**	**99% Compaction**
As Molded Moisture Content (%)	**9.0**	**8.5**	**9.6**
Molded Dry Density (pcf)	**112.4**	**120.2**	**124.4**
No. Blows	**12**	**23**	**56**
Precent Compaction, based on ASTM D698 (%)	**89.8**	**96.0**	**99.3**
Time Soaked (hrs.)	**96**	**96**	**96**
Percent Swell (%)	**0.00**	**0.07**	**0.09**
Moisture Content After Soaking (%)			
Top 1 Inch	**12.0**	**10.0**	**12.7**
Center	**11.5**	**10.1**	**11.9**
Ring Capacity (lbs.)	**6000**	**6000**	**6000**
Surcharge Weight (lbs.)	**10**	**10**	**10**
Soaked CBR @ 0.1	**0.7**	**0.8**	**1.6**
Soaked CBR @ 0.2	**1.0**	**1.2**	**1.7**

Burmister Classification
Brown cmf GRAVEL, some cmf SAND, little SILT

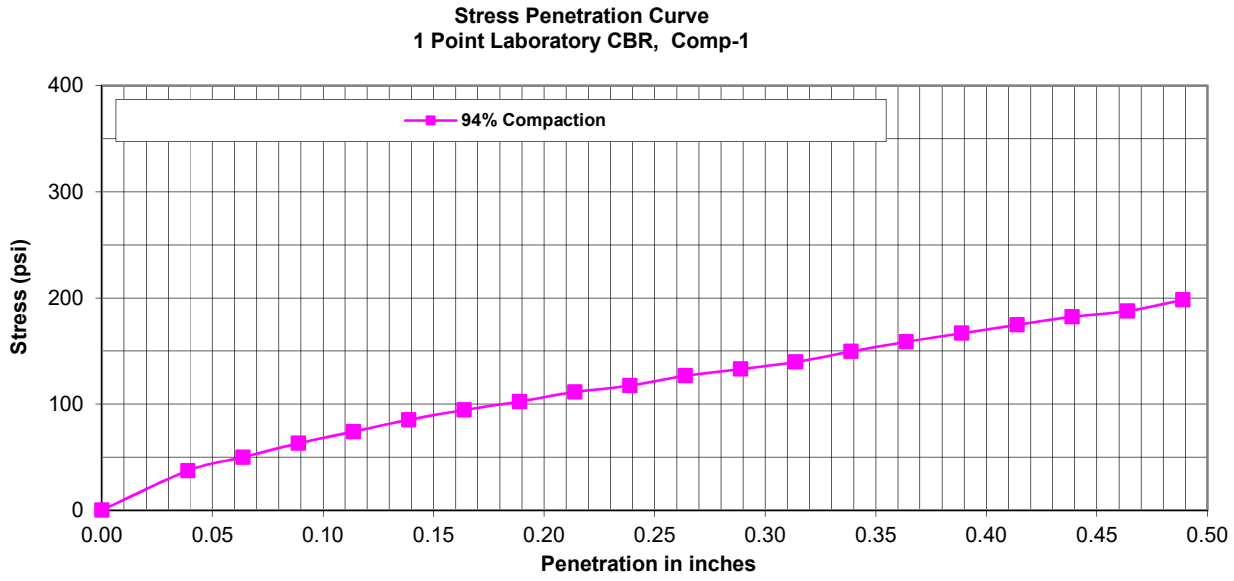
Stress Penetration Curve
3 Point Laboratory CBR, TP-2



Sample ID: TP-2	**90% Compaction**	**96% Compaction**	**98% Compaction**
As Molded Moisture Content (%)	**12.5**	**10.4**	**11.7**
Molded Dry Density (pcf)	**105.5**	**112.4**	**115.1**
No. Blows	**20**	**35**	**56**
Precent Compaction, based on ASTM D698 (%)	**89.7**	**95.6**	**97.9**
Time Soaked (hrs.)	**96**	**96**	**96**
Percent Swell (%)	**0.72**	**1.07**	**0.96**
Moisture Content After Soaking (%)			
Top 1 Inch	**18.9**	**18.7**	**17.2**
Center	**18.2**	**15.9**	**14.1**
Ring Capacity (lbs.)	**6000**	**6000**	**6000**
Surcharge Weight (lbs.)	**10**	**10**	**10**
Soaked CBR @ 0.1	**3.2**	**5.5**	**12.9**
Soaked CBR @ 0.2	**3.2**	**5.7**	**14.0**

Burmister Classification

Brown SILT, some cmf SAND, some cmf GRAVEL

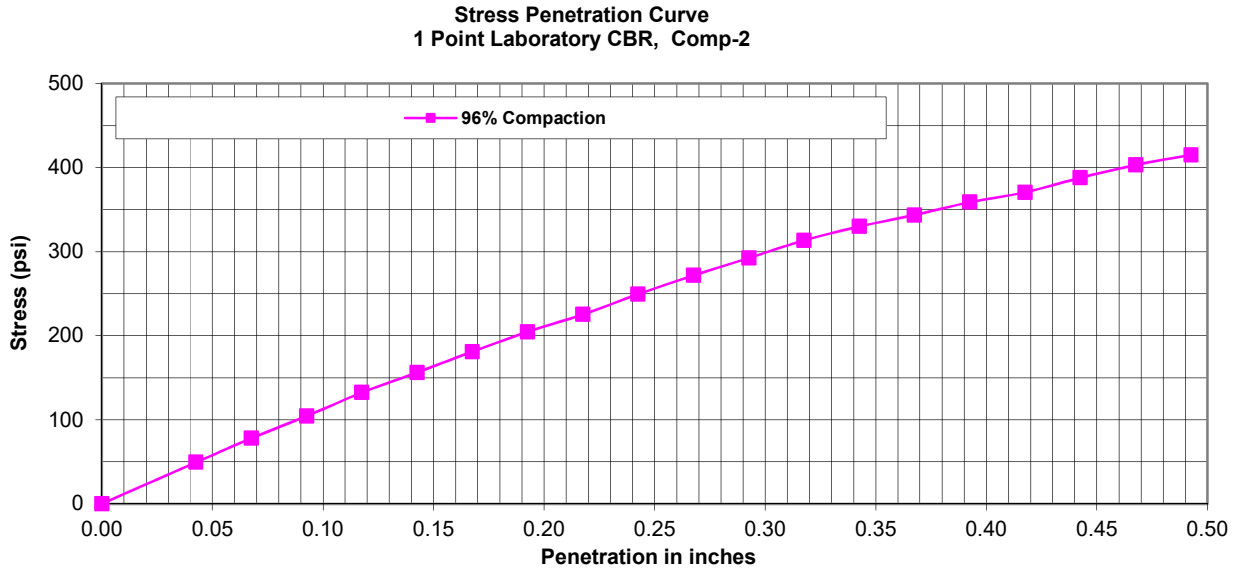


Sample ID: Comp-1

	96% Compaction
As Molded Moisture Content (%)	**7.3**
Molded Dry Density (pcf)	**126.3**
No. Blows	**37**
Precent Compaction, based on ASTM D698 (%)	**94.1**
Time Soaked (hrs.)	**96**
Percent Swell (%)	**0.00**
Moisture Content After Soaking (%)	
Top 1 Inch	**7.3**
Center	**8.0**
Ring Capacity (lbs.)	**6000**
Surcharge Weight (lbs.)	**10**
Soaked CBR @ 0.1	**6.3**
Soaked CBR @ 0.2	**6.8**

Burmister Classification

Grey cmf SAND and cmf GRAVEL, little SILT



Sample ID: Comp-2

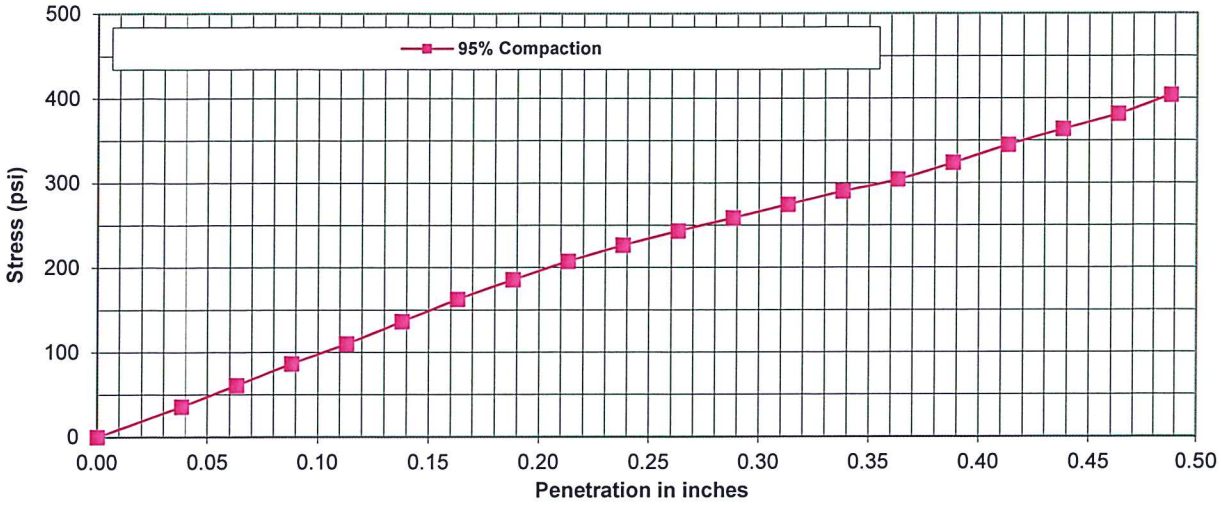
	96% Compaction
As Molded Moisture Content (%)	**7.0**
Molded Dry Density (pcf)	**130.1**
No. Blows	**35**
Precent Compaction, based on ASTM D698 (%)	**95.6**
Time Soaked (hrs.)	**96**
Percent Swell (%)	**0.04**
Moisture Content After Soaking (%)	
Top 1 Inch	**7.3**
Center	**7.9**
Ring Capacity (lbs.)	**6000**
Surcharge Weight (lbs.)	**10**
Soaked CBR @ 0.1	**11.0**
Soaked CBR @ 0.2	**14.0**

Burmister Classification

Brown cmf GRAVEL, some cmf SAND, little SILT

CME Associates, Inc.

Stress Penetration Curve
1 Point Laboratory CBR, Comp-3



Sample ID: Comp-3

	95% Compaction
As Molded Moisture Content (%)	**7.3**
Molded Dry Density (pcf)	**125.9**
No. Blows	**37**
Precent Compaction, based on ASTM D698 (%)	**94.6**
Time Soaked (hrs.)	**96**
Percent Swell (%)	**0.04**
Moisture Content After Soaking (%)	
Top 1 Inch	**7.6**
Center	**7.5**
Ring Capacity (lbs.)	**6000**
Surcharge Weight (lbs.)	**10**
Soaked CBR @ 0.1	**9.8**
Soaked CBR @ 0.2	**13.1**

Burmister Classification
Brown cmf GRAVEL and cmf SAND, some SILT

If you have any questions regarding this report please contact our office.

Yvonne Chu
Laboratory Supervisor

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration - Test Boring Logs produced by CME Associates, Inc.** present the observations and mechanical data collected by the driller while at the site, supplemented, at times, by classification of the materials removed from the borings as determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in this Key defines some of the procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 3 for key number.

Key No. **Description**

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.

2. **CASING BLOWS/FOOT** - shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted under the **Methods of Investigation**. If the casing is advanced by means other than driving, the method of advancement will be indicated under **Methods of Investigation** at the top of the Log. If Hollow Stem Augers or Coring is used, it will be so noted in this column.

3. The **SAMPLE I.D.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.

4. The **DEPTH OF SAMPLE** column gives the exact depth range from which a sample was recovered.

5. The **SAMPLE TYPE/RECOVERY** column is used to signify the various type of sample attempt. "SS" is Split Spoon, "P" is piston tube, "U" is Undisturbed tube. For soil samples, the recovered length of the sample is also indicated, in inches. If a rock core sample is taken, the core bit size designation is given here.

6. **BLOWS ON SAMPLER** - shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6 inch to 18 inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced the 6 inch interval under **W**eight of **H**ammer or **W**eight of **R**ods, respectively.

7. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line.

8. **CLASSIFICATION OF MATERIAL - Soil materials** encountered and sampled are described by the driller on the original log. Notes of driller observations are also placed in this column. Recovered samples may also be visually classified by a Soil Technician upon receipt in the Laboratory. Visual sample classification is by Burmister System and strata may be classified additionally by the Unified System. The Burmister System is a type of visual-manual textural classification estimated by the Driller or Technician on the basis of weight-fraction of the recovered soil. See Table 1 **"Classification of Materials"**. The description of the relative soil compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the soil moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may have affected the in-situ moisture content of the sample. Special terms are used as required to describe materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller.

8. **CLASSIFICATION OF MATERIAL** (continued)
The Description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Table 3. The length of core run is defined as length of penetration between retreivals of the corebarrel from the bore hole, expressed in inches. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in **Column 5**. The more commonly used sizes of core barrels are denoted "AX" and "NX". An "NX" core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties is needed. A better estimate of in-situ rock quality is provided by a *modified core recovery ratio* known as the **"Rock Quality Designation" (RQD)**. This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The diameter of the core should preferably be not less than 2 inches (NX). The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 gives the rock quality description as related to the **RQD**.

9. The **SPT "N"** or **RQD** is given in this column as applicable to the specific sample taken. In Very Compact coarse grained soils the N-value may be indicated as 50+, and in Hard fine-grained soils the N-value may be indicated as 30+. This typically means that the blow count was achieved prior to driving the sampler the entire 6 inch interval or the sampler refused further penetration. For "NX" rock cores, the RQD is reported here, expressed in percent.

10. **GROUND WATER OBSERVATIONS** and timing noted by the driller are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. Ground water levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or ground water observation well installations.

TABLE 1 - VISUAL CLASSIFICATION OF MATERIALS (BURMISTER)

GROUP	TEXTURAL CLASSIFICATION SIZES
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001mm size (see below *)

ABBREVIATIONS	PERCENT OF TOTAL SAMPLE BY WEIGHT	
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

***PLASTICITY DESCRIPTIONS**

TERM	PLASTICITY INDEX	DRY STRENGTH	FIELD TEST
Non-plastic	0 - 3	Very low	falls apart easily
Slightly plastic	4 - 15	Slight	easily crushed by fingers
Plastic	15 - 30	Medium	difficult to crush
Highly plastic	31 or more	High	impossible to crush with fingers

*TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"**		
Primary Soil Type	**Descriptive Term of Compactness**	**Range of Standard Penetration Resistance (N)**
COARSE GRAINED SOILS	Very loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size.)	Loose	4 to 10
	Medium compact	10 to 30
	Compact	30 to 50
	Very compact	Greater than 50
FINE GRAINED SOILS	**Descriptive Term of Consistency**	**Range of Standard Penetration Resistance (N)**
(More than half of material is smaller than No. 200 sieve size.)	Very soft	less than 2 blows per foot
	Soft	2 to 4
	Medium stiff	4 to 8
	Stiff	8 to 15
	Very stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140 pound weight falling 30 inches to drive 2 inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS		
Rock Classification Terms		**Field Test or Meaning of Term**
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered Weathered Sound	Judged from the relative amounts of disintegration, iron staining, core recovery, clay seams, etc.
Bedding (Natural Breaks in Rock Layers)	Laminated Thinly bedded Bedded Thickly bedded Massive	less than 1inch 1inch to 4 inches 4 inches to 12 inches 12 inches to 36 inches greater than 36 inches

TABLE 4 **Relation of Rock Quality Designation (RQD) and in-situ Rock Quality**	
RQD (%)	**Rock Quality Term Used**
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

BORING NO.: B-1 Page 1 of 1

SUBSURFACE EXPLORATION - TEST BORING LOG

Project: **Report No.:**

Client: **Date Started:** **Finished:**

Location of Boring: **Elevation of Surface of Boring:**

METHODS OF INVESTIGATION

Casing: 3-1/4" I.D. Hollow Stem Auger **Hammer:**

Other:

Soil Sampler: 2" O.D. Split Barrel **Rod Size:**

Sampler Hammer: Wt. 140 lbs. **Fall:** 30 in.

Make & Model of Drill Rig:

GROUND WATER OBSERVATIONS

Date	Time	Depth	Casing At
	While drilling		
	Before casing removed		
	After casing removed		

LOG OF BORING SAMPLES **CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Casing Blows/ Foot	Sample I.D.	Depth of Sample (Feet) From	Depth of Sample (Feet) To	Sample Type/ Recovery (inches)	Blows on Sampler Per 6 inches	Depth of Change (feet)	**f** - fine **m** - medium **c** - coarse	**and** - 35 to 50% **some** - 20 to 35% **little** - 10 to 20% **trace** - 0 to 10%	STP "N" or RQD
1	2	3	4	4	5	6	7	8		9

Denotes Key Number (see page 1)

SECTION 011000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Installation of New Passenger Boarding Bridge

B. Owner's Name: Chemung County

C. The Project generally consists of the following work items:

- Selective demolition and construction of new opening in terminal building,
- Demolition of airside pavements, excavation, and construction of passenger boarding bridge foundations.
- Reconstruction of airside pavements in demolished areas.
- Procurement and installation of new passenger boarding bridge and fixed walkways.
- Restriping of pavement markings for aircraft parking at gate 4.

1.02 CONTRACT DESCRIPTION

A. Contract Type: Multiple Prime contracts to include:

- Bid Contract One – Bid Item B-001-1 – General Construction.
- Bid Contract Two – Bid Item B-001-2 – Electrical Construction.

B. The work of the prime contracts is identified in this section.

1.03 DESIGN/MANAGEMENT IDENTIFICATION

A. OWNER or SPONSOR

Chemung County

276 Sing Sing Rd, Suite 1

Horseheads, NY 14845

B. ENGINEER

McFarland Johnson

49 Court Street

Binghamton, NY 13901

C. ARCHITECT

Hunt

100 Hunt Ctr

Horseheads, NY 14845

1.04 DESCRIPTION OF ALTERATIONS WORK

A. Scope of demolition, removal and construction work is shown on drawings and described in the technical specifications.

B. The project includes the items identified in Section 1.01C of this specification.

1.05 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Not used.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner, Transportation Security Administration (TSA), and Tenant occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.

B. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Work by Others.
   3. Use of site and premises by the public.

C. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

D. Existing building spaces may not be used for storage.

E. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
   3. Limit shutdown of utility services to 8 hours at a time, arranged at least 24 hours in advance with Owner.
   4. Prevent accidental disruption of utility services to other facilities.

1.07 WORK SEQUENCE

A. Work of all trades within the construction area shall occur at the same time with coordination taking place between the prime contractors.

B. Coordinate construction schedule and operations with Owner.

1.08 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.

A. Section 012000 - Price and Payment Procedures

B. Section 012200 - Lump Sum Items

C. Section 013000 - Administrative Requirements

D. Section 014000 - Quality Requirements

E. Section 015000 - Temporary Facilities and Controls

F. Section 015100 - Temporary Utilities

G. Section 017000 - Execution and Closeout Requirements

H. Section 017800 - Closeout Submittals

I. Section C-105 – Mobilization

PART II – DIVISION OF WORK

1.09 BID CONTRACT ONE – GENERAL CONSTRUCTION

A. GENERAL

1. The work of this project is separated into a number of Bid Packages, of which Package "General Construction" is the portion of work belonging to this Contractor. The Contractor will provide a final lump sum cost proposal for the "General Construction" that will include the work defined herein.
   a. General Construction
      1) Provide the necessary materials, labor, equipment, and supervision to perform the "General Construction" work as indicated in the Division of Work of this Section.
      2) Provide and utilize the necessary equipment to perform the work in a safe and expeditious manner.
   b. Perform the work under lump sum contract with Chemung County, Owner. Furnish all labor, materials, tools, equipment, supervision, layout, delivery, trucking, shop drawings, submittals, as-built drawings, etc. necessary to complete the work described in Division of Work for this Contract, whether specified above or not.
2. The following requirements apply to all bid items and must be included in bidding any or all of the bid items.
   a. All existing conditions must be verified in the field. The Owner takes no responsibility for actual conditions found deviating from the drawings. If existing condition interferes with Contract Work, Contractor is responsible to eliminate the condition.

B. DIVISION OF WORK

1. Furnish and install all labor, material, supervision, engineering, administration, project management, equipment, layout, deliveries, trucking, hoisting, supplies, mock-ups, rigging, shop drawings, submittals, and all other items related and required to complete all Work in accordance with the Contract Documents and all applicable codes, laws, and regulations having jurisdiction.
2. The Contractor represents they have expertise in the performance of work for this trade and assure all systems to be complete, functional, and installed in accordance with the best practices consistent with premium quality material and workmanship. The Scope of Work includes, but is not limited to the following:
   a. All work shown and described in the following drawing Series of the drawing set titled "Installation of New Passenger Boarding Bridge":
      1) General (G-series drawings)
      2) Aviation / Site-Civil (C-series drawings)
      3) Structural (S-series drawings)
      4) Architectural (A-series drawings)
   b. All work required and described in the following Specification Sections:
      1) Division 2 – Existing Conditions in its entirety.
      2) Division 3 – Concrete in its entirety.
      3) Division 5 – Metals in its entirety.
      4) Division 6 – Woods, Plastics and Composites in its entirety.
      5) Division 7 – Thermal and Moisture Protection in its entirety.
      6) Division 8 – Openings in its entirety.
      7) Division 9 – Finishes in its entirety.
      8) Division 10 – Specialties in its entirety.

9) Division 11 – Equipment in its entirety.
10) Division 12 – Furnishings in its entirety.
11) Division 14 – Conveying Equipment in its entirety.
12) Division 31 – Earthwork in its entirety.
13) Division 32 – Exterior Improvements in its entirety.
14) Division 33 – Utilities in its entirety.
15) Aviation / Site-Civil / NYSDOT Specifications in their entirety

c. The work associated with this contract involves working on and immediately adjacent to the airport, which will remain operational during the project. Extreme care must be taken so that the existing airport operations are not impacted. Any work that may affect the current facility operations will need to be scheduled and approved prior to commencing work.
d. Extreme care is to be taken to avoid any unplanned interruptions to the existing facilities operations. Any work to be performed that may impact the operations of the facility will be done on a planned basis utilizing off-shift and weekend hours at the cost of Contractor.
e. All equipment and materials, fuel, oil, and repairs for equipment utilized in this scope of work.
f. Provide daily clean-up of work, staging areas, and private and public roads. Place debris in containers provided by Contractor. Any hazardous debris shall be handled in strict accordance with all applicable laws and regulations by Contractor. Contractor must maintain a clean jobsite. Failure to maintain a clean jobsite may lead to a notice to remedy and potential back charges to cover costs incurred by others to perform cleanup efforts.
g. Contractor is responsible for all scaffolding, fall protection, hoisting, and any other labor, materials, or equipment necessary to complete this scope of work.
h. All labor and material to provide weather protection required to perform the work and protect the finished work within this scope.
i. Maintenance of all staging areas as it pertains to this scope of work.
j. Contractor must comply with all Airport and Contractor's own site-specific safety policies.
k. Contractor is responsible for all permits/inspections required to perform this scope of work.
l. Contractor is responsible for cleanup, trash removal, and cost of any hazardous materials, oil contaminated materials, spills, or leaks.
m. Contractor must protect their own work as well as the work of others when performing this scope of work.
n. Contractor will be required to correct all defective work as directed.
o. Contractor is responsible for adhering to all OSHA requirements for personal and job site safety pertaining to their specific scope of work.
p. Contractor will be required to submit a sequence and logistics plan for any activities and locations that may affect visibility of the existing apron, taxiways, runways, etc. for review and approval by the Airport and the FAA prior to the start of work.
q. The work in this contract is not limited to any particular drawings. All drawings should be reviewed to determine the scope of this contract.
r. Any dust control and street cleaning that may be required by the Contractor’s use of the site.
s. Contractor must comply with Airport site specific safety policies, including the project Construction Safety and Phasing Plan (CSPP). Contractor must complete,

sign, and submit to the Engineer the Safety Plan Compliance Document (SPCD) prior to the issuance of the Notice to Proceed.

t. Contractor will be required to attend a pre-installation meeting as indicated in the project drawings and specifications or as required by the RPR.
u. Contractor is responsible for attending weekly project review meetings and others that may be deemed necessary. For this bid package, a weekly on-site review meeting will be necessary from award through completion of this contract's work. Attendance is mandatory for the Contractor's project manager and superintendent. Note that the bi-monthly Owner meetings in the Division 1 specifications are in addition to the weekly project review meetings.
v. Contractor will be required to supply a cellular phone for all onsite superintendents/foremen and project manager and will provide the RPR with the numbers.
w. Contractor is responsible to provide notification of any loads coming to or from the site which are permitted loads, over height, over length, over width, or over weight prior to leaving or arrival.
x. On-site storage for tools and materials will be provided by the Contractor. A Logistics plan for staging and storing will be developed between the Contractor and RPR. If the Contractor requires additional road access, lay down, or storage space beyond what is indicated on the Logistics drawings, it will be at their own expense.
y. Contractor shall provide all flagmen, traffic control, and coordinate deliveries around local peak traffic periods.
z. Contractor is required at all times to use the designated roads and gates when entering and exiting the jobsite.
aa. Contractor is required to make sure the Foreign Object Debris plans are followed and all materials are secure and not a threat to leave the project site.
ab. Contractor is responsible for maintaining all barricades and barriers per OSHA requirements as it pertains to this scope of work.
ac. All employees under this contract will be required to have a site-specific safety orientation prior to working on site. Contractor will conduct these sessions.
ae. Schedule milestones are provided for the purpose of bidding and for establishing a working schedule to meet the milestones. Schedule is a critical component of this project. Schedule milestones shall be strictly adhered to unless otherwise noted.
af. Contractor will be required to provide a detailed Critical Path Method schedule within 21 days of award that meets these milestones and provides coordination with other Contractors.
ag. Contractor is responsible for all premium time required to meet schedule milestones unless Owner receives in writing reasons that it should not be this contractor's responsibility and such reasons are acceptable by Owner.
ah. Contractor is responsible for any costs incurred for off-site visits deemed necessary to verify quality/schedule of materials being produced off-site.
ai. Contractor will be responsible to repair any damage to site-specific erosion and sediment control measures as it relates to this contract.
aj. Contractor will provide all certified and calibrated test equipment as it relates to this scope of work.
ak. All water, electric, phone, data, costs for wiring, equipment, piping, etc., are the responsibility of each individual Contractor for construction trailer services unless specifically noted. General Construction Contractor is responsible for all costs associated with the RPR's field office.

al. Building Permit and any special permits are the responsibility of the General Contractor.
am. Contractor will be required to periodically submit a list of on-site employees as directed by the RPR.
an. Contractor and their subcontractors are required to provide up-to-date Insurance Certificates before starting work on site. Contractor is required to provide updated certificates prior to expiration or cancellation of the previous certificate.
ao. Unless otherwise specifically noted, Contractor is to provide all cutting and patching to allow for the completion of their work. All patching must restore the original finish to as good or better condition.
ap. Contractor is required to hold daily toolbox safety talks and turn over a copy of the agenda each week to the RPR.
aq. Temporary toilet facilities will be provided by the "General Construction" Contractor for use by all other contractors. Contractor's employees are not allowed to use the existing airport facilities. Contractor is to direct their employees that they are not to deface, litter in, or otherwise damage temporary toilet facilities.
ar. Contractor is required to submit daily work reports on a daily basis as directed. Daily work reports shall include Contractor's number of personnel working on site that day, any Subcontractors working on site and number of personnel, work completed, any issues that prevented work from being completed as scheduled, equipment on site, etc.
as. Provide general snow removal, salting, sanding, deicing, etc. within the contract work and staging areas throughout the winter season(s). Snow removal to keep clear paths to office trailers, for general site access, for access to working areas for all trades, etc. as required to continue operations throughout winter. Salt shall not be used on or adjacent to airfield work areas.
at. Specification section 015000 Temporary Facilities and Controls specifies additional items to be provided by the Contractor, all of which are to be included within this scope of work.
au. Contractor is responsible to disconnect, drain, cap, and otherwise make safe for demolition all utilities.
av. Costs associated with installation and removal of any required crane, boring rig, or other pads are to be included in this scope of work.
aw. Contractor will be required to adhere to all FAA-mandated crane identification and operational procedures to ensure the safe and efficient travel of air traffic and aircraft navigational aids.

1.10 BID CONTRACT TWO – ELECTRICAL CONSTRUCTION

A. GENERAL
1. The work of this project is separated into a number of Bid Packages, of which Package "Electrical Construction" is the portion of work belonging to this Contractor. The Contractor will provide a final lump sum cost proposal for the "Electrical Construction" that will include the work defined herein.
a. Electrical Construction
1) Provide the necessary materials, labor, equipment, and supervision to perform the "Electrical Construction" work as indicated in the Division of Work of this Section.
2) Provide and utilize the necessary equipment to perform the work in a safe and expeditious manner.

b. Perform the work under lump sum contract with Chemung County, Owner. Furnish all labor, materials, tools, equipment, supervision, layout, delivery, trucking, shop drawings, submittals, as-built drawings, etc. necessary to complete the work described in Division of Work for this Contract, whether specified above or not.

2. The following requirements apply to all bid items and must be included in bidding any or all of the bid items.
   a. All existing conditions must be verified in the field. The Owner takes no responsibility for actual conditions found deviating from the drawings. If existing condition interferes with Contract Work, Contractor is responsible to eliminate the condition.

B. DIVISION OF WORK
1. Furnish and install all labor, material, supervision, engineering, administration, project management, equipment, layout, deliveries, trucking, hoisting, supplies, mock-ups, rigging, shop drawings, submittals, and all other items related and required to complete all Work in accordance with the Contract Documents and all applicable codes, laws, and regulations having jurisdiction.
2. The Contractor represents they have expertise in the performance of work for this trade and assure all systems to be complete, functional, and installed in accordance with the best practices consistent with premium quality material and workmanship. The Scope of Work includes, but is not limited to the following:
   a. All work shown and described in the following drawing Series of the drawing set titled "Installation of New Passenger Boarding Bridge":
      1) Electrical (E-series drawings)
   b. All work required and described in the following Specification Sections:
      1) Division 26 – Electrical in its entirety.
      2) Division 27 – Communications in its entirety.
      3) Division 28 – Electronic Safety and Security in its entirety.
   c. The work associated with this contract involves working on and immediately adjacent to the airport, which will remain operational during the project. Extreme care must be taken so that the existing airport operations are not impacted. Any work that may affect the current facility operations will need to be scheduled and approved prior to commencing work.
   d. Extreme care is to be taken to avoid any unplanned interruptions to the existing facilities operations. Any work to be performed that may impact the operations of the facility will be done on a planned basis utilizing off-shift and weekend hours at the cost of Contractor.
   e. All equipment and materials, fuel, oil, and repairs for equipment utilized in this scope of work.
   f. Provide daily clean-up of work, staging areas, and private and public roads. Place debris in containers provided by Contractor. Any hazardous debris shall be handled in strict accordance with all applicable laws and regulations by Contractor. Contractor must maintain a clean jobsite. Failure to maintain a clean jobsite may lead to a notice to remedy and potential back charges to cover costs incurred by others to perform cleanup efforts.
   g. Contractor is responsible for all scaffolding, fall protection, hoisting, and any other labor, materials, or equipment necessary to complete this scope of work.
   h. All labor and material to provide weather protection required to perform the work and protect the finished work within this scope.
   i. Maintenance of all staging areas as it pertains to this scope of work.

j. Contractor must comply with all Airport and Contractor's own site-specific safety policies.
k. Contractor is responsible for all permits/inspections required to perform this scope of work.
l. Contractor is responsible for cleanup, trash removal, and cost of any hazardous materials, oil contaminated materials, spills, or leaks.
m. Contractor must protect their own work as well as the work of others when performing this scope of work.
n. Contractor will be required to correct all defective work as directed.
o. Contractor is responsible for adhering to all OSHA requirements for personal and job site safety pertaining to their specific scope of work.
p. Contractor will be required to submit a sequence and logistics plan for any activities and locations that may affect visibility of the existing apron, taxiways, runways, etc. for review and approval by the Airport and the FAA prior to the start of work.
q. All drawings should be reviewed to understand the full scope of work for this contract.
r. Any dust control and street cleaning that may be required by the Contractor's use of the site.
s. Contractor must comply with Airport site specific safety policies, including the project Construction Safety and Phasing Plan (CSPP). Contractor must complete, sign, and submit to the Engineer the Safety Plan Compliance Document (SPCD) prior to the issuance of the Notice to Proceed.
t. Contractor will be required to attend a pre-installation meeting as indicated in the project drawings and specifications or as required by the RPR.
u. Contractor is responsible for attending weekly project review meetings and others that may be deemed necessary. For this bid package a weekly on-site review meeting will be necessary from award through completion of this contract's work. Attendance is mandatory for the Contractor's project manager and superintendent. Note that the bi-monthly Owner meetings in the Division 1 specifications are in addition to the weekly project review meetings.
v. Contractor will be required to supply a cellular phone for all onsite superintendents/foremen and project manager and will provide the RPR with the numbers.
w. Contractor is responsible to provide notification of any loads coming to or from the site which are permitted loads, over height, over length, over width, or over weight prior to leaving or arrival.
x. On-site storage for tools and materials will be provided by the Contractor. A Logistics plan for staging and storing will be developed between the Contractor and RPR. If the Contractor requires additional road access, lay down, or storage space beyond what is indicated on the Logistics drawings, it will be at their own expense.
y. Contractor shall provide all flagmen, traffic control, and coordinate deliveries around local peak traffic periods as it relates to this scope of work.
z. Contractor is required at all times to use the designated roads and gates when entering and exiting the jobsite.
aa. Contractor is required to make sure the Foreign Object Debris plans are followed and all materials are secure and not a threat to leave the project site.
ab. Contractor is responsible for maintaining all barricades and barriers per OSHA requirements as it pertains to this scope of work.
ac. All employees under this contract will be required to have a site-specific safety orientation prior to working on site. Contractor will conduct these sessions.

ae. Schedule milestones are provided for the purpose of bidding and for establishing a working schedule to meet the milestones. Schedule is a critical component of this project. Schedule milestones shall be strictly adhered to unless otherwise noted.
af. Contractor will be required to provide a detailed Critical Path Method schedule within 21 days of award that meets these milestones and provides coordination with other Contractors.
ag. Contractor is responsible for all premium time required to meet schedule milestones unless Owner receives in writing reasons that it should not be this contractor's responsibility and such reasons are acceptable by Owner.
ah. Contractor is responsible for any costs incurred for off-site visits deemed necessary to verify quality/schedule of materials being produced off-site.
ai. Contractor will be responsible to repair any damage to site-specific erosion and sediment control measures as it relates to this contract.
aj. Contractor will provide all certified and calibrated test equipment as it relates to this scope of work.
ak. All water, electric, phone, data, costs for wiring, equipment, piping, etc., are the responsibility of each individual Contractor for Contractor's construction trailer services unless specifically noted. General Construction Contractor is responsible for all costs associated with the RPR's field office.
al. The building permit will be provided by others. Any special permits are the responsibility of the Contractor.
am. Contractor will be required to periodically submit a list of on-site employees as directed.
an. Contractor and their subcontractors are required to provide up-to-date Insurance Certificates before starting work on site. Contractor is required to provide updated certificates prior to expiration or cancellation of the previous certificate.
ao. Unless otherwise specifically noted, Contractor is to provide all cutting and patching to allow for the completion of their work. All patching must restore the original finish to as good or better condition.
ap. Contractor is required to hold weekly toolbox safety talks and turn over a copy of the agenda each week to the RPR.
aq. Temporary toilet facilities will be provided by the General Construction Contractor for use by all other contractors. Contractor's employees are not allowed to use the existing airport facilities. Contractor is to direct their employees that they are not to deface, litter in, or otherwise damage temporary toilet facilities.
ar. Contractor is required to submit daily work reports on a daily basis as directed. Daily work reports shall include Contractor's number of personnel working on site that day, any Subcontractors working on site and number of personnel, work completed, any issues that prevented work from being completed as scheduled, equipment on site, etc.
as. Specification section 015000 Temporary Facilities and Controls specifies additional items to be provided by the Contractor, all of which are to be included within this scope of work.
at. Costs associated with installation and removal of any required crane, boring rig, or other pads are to be included in this scope of work.
au. Contractor will be required to adhere to all FAA-mandated crane identification and operational procedures to ensure the safe and efficient travel of air traffic and aircraft navigational aids.
av. Coordination with "General Construction" Contractor for excavation and backfill of this scope.

aw. Provide temporary power stations throughout temporary building for all trades and connection and disconnection of specialty equipment for other trades such as welders.
ax. Provide temporary lighting and removal to meet all OSHA requirements and provide sufficient light for completion of work by all trades.
ay. Sub-metering for all temporary electric used during construction.
az. Coordination with all other Contractors for electrical requirements to all equipment. This Contractor will be responsible for correcting power and data rough-ins in the event the proper coordination is not completed.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 011000

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Concrete foundations for passenger boarding bridge and associated fixed tunnel walkway..

C. Concrete reinforcement.

D. Joint devices associated with concrete work.

E. Concrete curing.

1.02 REFERENCE STANDARDS

A. ACI CODE-318 - Building Code for Structural Concrete—Code Requirements and Commentary; 2025.

B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

C. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

D. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.

E. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.

F. ACI PRC-308 - Guide to External Curing of Concrete; 2016.

G. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

H. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

I. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

J. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2026.

K. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2024a.

L. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2024.

M. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2026.

N. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2026.

O. ASTM C150/C150M - Standard Specification for Portland Cement; 2024.

P. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.

Q. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2026.

R. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2024.

S. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2025.

T. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2024.

U. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes; 2023.

V. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2025a.

W. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2023.

X. ASTM C845/C845M - Standard Specification for Expansive Hydraulic Cement; 2024.

Y. ASTM C989/C989M - Standard Specification for Slag Cement for Use in Concrete and Mortars; 2025.

Z. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.

AA. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.

BB. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete; 2025.

CC. ASTM C1582/C1582M - Standard Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete; 2024.

DD. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.

EE. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics; 2026.

FF. ASTM D2103 - Standard Specification for Polyethylene Film; 2023a.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
   1. For membrane-forming, moisture emission-reducing, curing and sealing compound, provide manufacturer's installation instructions,.

C. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI SPEC-301, Section 4 - Concrete Mixtures.
   2. Indicate proposed mix design complies with requirements of ACI CODE-318, Chapter 5 - Concrete Quality, Mixing and Placing.

D. Test Reports: Submit report for each test or series of tests specified.

E. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.

F. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.

B. Follow recommendations of ACI PRC-305 when concreting during hot weather.

C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

1.05 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
   2. Form Coating: Release agent that will not adversely affect concrete.
   3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.

B. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch (1.29 mm).
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
   3. Provide galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type IIA - Air Entraining Portland type.

B. Fine and Coarse Aggregates: ASTM C33/C33M.

C. Fly Ash: ASTM C618, Class C or F.

D. Calcined Pozzolan: ASTM C618, Class N.

E. Ground Granulated Blast Furnace Slag: ASTM C989/C989M.

F. Silica Fume: ASTM C1240, proportioned in accordance with ACI PRC-211.1.

G. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

F. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.

G. Accelerating Admixture: ASTM C494/C494M Type C.

H. Retarding Admixture: ASTM C494/C494M Type B.

I. Water Reducing Admixture: ASTM C494/C494M Type A.

J. Workability-Retaining Admixture: For on-site production of concrete with Type S cement in accordance with ASTM C494/C494M.

K. Shrinkage Reducing Admixture: For on-site production of concrete with Type S cement in accordance with ASTM C494/C494M.

L. Shrinkage Compensating Admixture: For on site production of concrete with ASTM C845/C845M, Type K cement.

M. Corrosion Inhibiting Admixture:
1. ASTM C494/C494M, Type C.
2. ASTM C1582/C1582M.

2.05 ACCESSORY MATERIALS

A. Non-Shrink Epoxy Grout: Moisture-insensitive, two-part; consisting of epoxy resin, nonmetallic aggregate, and activator.
1. Composition: High solids content material exhibiting positive expansion when tested in accordance with ASTM C827/C827M.
   a. Maximum Height Change: Plus 4 percent.
   b. Minimum Height Change: Plus 1 percent.
2. Minimum Compressive Strength at 7 days, ASTM C579: 12,000 pounds per square inch (82.7 MPa).
3. Minimum Compressive Strength at 7 days, ASTM D695: 12,000 pounds per square inch (82.7 MPa).

2.06 ~~*BONDING AND JOINTING PRODUCTS*~~

2.07 CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

B. Moisture-Retaining Sheet: ASTM C171.
1. Curing paper, regular.
2. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch (0.102 mm).
3. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard (1.71 kg/sq m).

C. Polyethylene Film: ASTM D2103, 4 mil, 0.004 inch (0.102 mm) thick, clear.

D. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.
1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.

D. Normal Weight Concrete:
1. *Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 4,500 pounds per square inch (31.0 MPa).*
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Calcined Pozzolan Content: Maximum 10 percent of cementitious materials by weight.
4. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.
5. Cement Content: Minimum ___ pounds per cubic yard (___ kg per cu m).

6. Water-Cement Ratio: Maximum ~~40~~ 45 percent by weight.
7. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
8. Maximum Slump: 3 to 5 inches (76 to 127 mm).
9. Maximum Aggregate Size: 1 inch (25 mm).

2.09 MIXING

A. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI PRC-304.

B. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

C. Ensure reinforcement, inserts, and embedded parts will not be disturbed during concrete placement.

D. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.05 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch (6 mm) or more in height.

3.06 CURING AND PROTECTION

A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.

D. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
      a. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
   2. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches (75 mm) and seal with waterproof tape or adhesive; secure at edges.
      b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.07 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

E. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards (76 cu m) or less of each class of concrete placed.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.08 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.09 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 149500
PASSENGER BOARDING BRIDGES (PBB) AND FIXED WALKWAYS

PART 1 GENERAL

1.1 SCOPE

A. This specification section provides the performance, supply, and installation requirements for Passenger Boarding Bridges (hereafter referred to as PBB) for airline passenger use.

Gate 4 PBB – Contractor shall be responsible for procurement and installation of a new PBB at Gate 4 which will include two sections. The first section consists of a fixed walkway ramp and the second section consists of an articulating multiple section bridge to connect to the aircraft. This new PBB will connect to An existing ground level boarding gate – designated Gate 4 – at the eastern end of the existing Terminal Departure Lounge and shall accommodate service for the existing commercial aircraft utilizing the airport

B. The Contractor is responsible for the procurement and installation of all components listed in these specifications, as well as those required to provide a complete functional PBB system for the locations noted above. The Owner shall not be responsible for any engineering, purchasing, installation, coordination, obtaining permits, or any other activity listed as part of these specifications. The SUPPLIER/Contractor (hereafter referred to as the Contractor) shall be responsible for the necessary repairs and replacement of components, fabrication and assembly, shipping, installation, debugging, testing, documentation, and start-up of the PBB and Fixed Walkways (WWs). The Contractor shall provide and install fully operable, safe, and reliable PBB for this project.

C. The Contractor shall undertake the responsibility for confirming actual height measurements and anchor bolt patterns at each interface with the terminal building and foundations.

D. The Contractor shall be responsible for verifying layout and proper alignment/mating with the types of aircraft listed herein and shown on the plans.

E. Contractor shall be responsible to abide by all Airport, FAA, and TSA regulations pertaining to security and driving. While on the airport, the Contractor will always have badged personnel on the site during the installation. Contractor will pay any cost involved in badging personnel. See Specification M-120 Maintenance and Protection of Traffic for further information.

1.2 APPLICABLE CODES, REGULATIONS, REFERENCES AND SPECIFICATIONS

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

B. The PBB shall conform to all applicable Federal, State, and Local codes and regulations that apply to the installation site. The necessary design, fabrication, and installation of all new parts and subassemblies shall be in accordance with good commercial practices to assure safe, efficient, and practical systems in keeping with standards, which have been adopted by the PBB industry. Applicable documents include, but are not limited to, the following:

1. American Institute of Steel Construction (AISC)

2. Society of Automotive Engineers (SAE) Standards
3. American Society of Mechanical Engineers (ASME) Standards
4. National Fire protection Association (NFPA — 70 (National Electrical Code) and 415 (Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways))
5. Steel Structures Painting Council (SSPC)
6. National Electrical Code (NEC)
7. National Electrical Manufacturers Association (NEMA) Standards
8. Occupational Safety and Health Administration (OSHA)
9. American Welding Society (AWS) Standards
10. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
11. Underwriters Laboratories (UL)
12. Institute of Electrical and Electronic Engineers (IEEE)
13. Air Transportation Association (ATA) — Specification 101 — Manufacturer's Technical Data
14. Code of Federal Regulations (CFR)
    a. 36 CFR 1191 — Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities
    b. 14 CFR 382 — Nondiscrimination on the Basis of Disability in Air Travel
    c. 28 CFR 36 — Nondiscrimination on the Basis of Disability by Public Accommodation and in Commercial Facilities
15. New York Building Code, latest edition

C. Material Specifications
1. Structural Steel ASTM-A36
2. Structural Steel Shapes ASTM-500
3. Steel Pipe ASTM-A53
4. Steel Sheet ASTM-A570
5. T-1 Steel ASTM-A514 & A517
6. Hinge Pins ASTM — A311 Grade 1018 & Grade 1144
7. Bolts — Standard ASTM-A307
8. Bolts — High Strength SEA J429 Grades 5 and 8
9. American Welding Society (AWS)
10. American Wood Preservers' Association (AWPA)
11. International Conference of Building Officials (ICBO)
12. National Association of Architectural Metal Manufacturers (NAAMM)
13. Steel Door Institute (SDI)
14. American National Standards Institute (ANSI)

1.3 FIXED WALKWAY – TECHNICAL AND PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer registered in the State of New York, and as defined in Section 014000 "Quality Requirements," to design fixed walkways.

B. The fixed walkway sections shall be designed to accommodate all imposed loads collectively. In the worst operating configuration, structural margins of safety as recommended by AISC specifications for the design and erection of steel structures shall be maintained.

C. All mechanisms for actuating, restraining, and guiding the bridge and its components shall be designed so that no noise, sway, or sense of insecurity will be apparent to the passengers. No operating vibration or loads are to be transmitted to the terminal building.

D. The fixed walkway sections submitted shall be designed not to exceed 1 in 12 (8.33%) tunnel slope when servicing any aircraft.

E. In addition to the structure's self-weight and the weight of attached components, the fixed walkway floor structure shall be designed to accommodate a live load of ~~40~~ *100* pounds per square foot over the total floor area. *In addition to the structure's self-weight and the weight of attached components, the PBB floor structure shall be designed to accommodate a live load of 40 pounds per square foot over the total floor area.*

F. The roof shall accommodate a flat roof snow load of ~~34~~ *54.1* pounds per square foot over the total roof area in addition to calculated drifting snow loads specific to the location and roof elevation. Roof concentrated load shall be designed to accommodate 250 pounds at any point on the roof.

G. The fixed walkway section ~~for the aircraft boarding bridges~~ *and the PBB*, when in use at any extended length, shall be designed to accommodate a wind speed of 80 miles per hour, with applicable design wind pressures as calculated using the MWFRS provisions contained in ASCE 7-~~16~~ *22* without loss of stability or control.

H. The fixed walkway section ~~for the aircraft boarding bridges~~ *and the PBB*, when retracted to the stowed position, shall be designed to accommodate a wind speed of ~~111~~ *118* miles per hour, with applicable design wind pressures as calculated using the MWFRS provisions contained within ASCE 7-~~16~~ *22* without loss of stability or control.

I. The fixed walkway section for the aircraft boarding bridges shall be designed to resist seismic loads:

- Site Class ~~B~~ *D*
- Importance Factor I=1.25
- Seismic Design Category A
- Short Period Spectral Acceleration S_S = ~~0.14g~~ *0.130g*
- Short Period Spectral Response Acceleration S_{DS} = ~~0.084g~~ *0.120g*
- One-Second Period Spectral Acceleration S_1 = ~~0.041g~~ *0.040g*
- One-Second Period Spectral Acceleration S_{D1} = ~~0.022g~~ 0.056g

J. The fixed walkway section design, with adequate maintenance, shall provide a useful service life of 20 years minimum.

K. Additional design and loading criteria shall be referenced from the "Design Basis" on Structural drawing ~~S-001.2~~ *S-000.1*

1.4 FIXED WALKWAY – ENVIRONMENTAL CONSIDERATIONS AND MAINTAINABILITY

A. The fixed walkway section shall operate satisfactorily under ambient temperatures from -25 degrees F. to 125 degrees F. with winds up to 80 miles per hour on wet, ice-covered, or snow laden apron surfaces.

B. The entire fixed walkway section between the aircraft and terminal building is to be weatherproof.

C. Equipment and controls that are exposed to the weather are to be of a weatherproof type or housed in weatherproof boxes that meet or exceed the requirements of NEMA 4X, SS/316L.

D. Externally mounted electrical control panels and/or cabinets shall be equipped with space heaters to control condensation if applicable due to environmental climate changes.

E. The fixed walkway section shall be designed to emphasize simplicity, ruggedness, and ease of maintenance. There shall be no special tools required for routine maintenance

1. Attention shall be given to the design of each component and assembly to minimize the number of routine maintenance items on the fixed walkway section.
2. Components shall be selected and assemblies shall be designed to facilitate troubleshooting and to minimize repair or replacement time.
3. Access panels enclosing areas requiring maintenance shall be large enough to permit accomplishment of the task required.
4. Where practical, components shall be built in subassemblies for ease of replacement and shall be designed to be installed or removed by one person.
5. Where the weight of a component requires mechanical assistance, the component shall be provided with lifting eyes or other suitable hoisting arrangement.

1.5 INTENT

A. The PBB covered by these specifications shall be modified and installed to extend from the terminal departure level doorway to the aircraft boarding door so that passengers can walk between the two, completely protected from inclement weather, aircraft engine blast, and blown dust. The PBB shall provide a simple convenient, safe, and controlled method for passenger loading. The complete assembly shall be weatherproof, both when sealed to the aircraft and when parked with the cab weather door closed. Particular attention shall be given to the safety of the passengers. The PBB shall have all electrical and communications cabling and connections required for monitoring including all required cabling, disconnects, J-boxes, network switches, cabinets etc. from the terminal connection point along the PBB. This shall also include all power conduit and cabling to the mounting location for a 90kVA 400Hz Ground Power Unit (GPU) and a 45-ton Pre-Conditioned Air (PCA) Unit with heat and bridge pre-cool capabilities.

B. The PBB shall consist of the following components:

1. Rotunda entry corridor
2. Rotunda.
3. Telescoping tunnels.
4. Vertical and horizontal drive column assembly.
5. Rotating cab with operator control console.
6. Automatic leveling device (auto leveler).
7. Service door, landing and service stair.
8. Canopy closure to aircraft.
9. New 45 Ton PCA Unit with 60 kW heat and bridge pre-cool capabilities via the bridge cool plenum, and new basket, new hose, and new connector. *Provide sufficient length of hose to reach all aircraft in the listed fleet mix.*
10. New 90 kVA 400 Hz with cable hoist.
11. Each PBB will have a 400Hz GPU

C. This specification includes apron drive type only PBB. A reduction of the Three tunnel bridge to

Two tunnel bridges and / or shorter bridge models will not be considered.

D. PBB provided shall accommodate all aircraft listed in Part 1.8. (DESIGN AIRCRAFT MIX) of these Specifications.

E. PBB provided shall meet the following minimum dimensions:

1. Maximum operational limit: 104’-0”
2. Minimum operational limit: 53’-0”

1.6 SUBMITTAL

A. The following information shall be submitted:
1. Shop Drawings: Provide detailed layout drawings, elevations and details. Indicate at a minimum, overall dimensions, locations and sizes of support posts, base plate configurations and anchor size requirements, bottom of base plate elevations and building interface details.
2. Calculations: Provide a set of stamped design calculations including all applicable reaction forces at supports for both fixed sections and rotundas.
3. PBB: Provide manufacturer cut sheets and other related information or data for the PBB, including remote monitoring points, software, wiring, and replacement parts.
4. Fixed Walkway: Provide manufacturer cut sheets and other related information or data for the Fixed Walkways.
5. Training Data: Information describing the training course for operating personnel, training aids and samples of training aids, training schedules, and notification of training.
6. Samples and Finishes: Samples of materials and products requiring color or finish selection by the Owner. Finishes shall be chosen from the contractor’s standard selections.
7. Operation and Maintenance Data PBB: One electronic copy of the Operation Manual outlining the step-by-step procedures for system startup, operation, and shutdown. Manuals shall include original manufacturer’s name, model number, service manual parts list and brief description of all equipment, including basic operating features. One electronic copy of the maintenance manual listing routine maintenance procedures, possible breakdowns, and repairs, and troubleshooting guides. Manuals shall include equipment layout and complete wiring and control diagrams of applicable new systems as installed.
8. Close-Out and As-Built Drawings
    a. One set of As-Built (red lined) drawings depicting the as-built conditions at each PBB installed under this contract. As-built drawings shall include foundation locations and elevations, rotunda floor heights, dimensions of WWs, pavement replacement and other information relating to the work under this contract.
    b. Laminated Electrical Drawings shall be provided inside of the electrical cabinets of each PBB, prior to acceptance.
    c. Plate with vendor name, year of installation, and other pertinent information installed in cab.

1.7 FIELD MEASUREMENTS

A. The Contractor shall become familiar with all details of the work, verify all dimensions in the field and advise the Airport’s project representative of any discrepancy before performing any work.

B. The Contractor shall be responsible for verifying all field conditions including, but not limited to

the following:

1. Foundation Heights/Locations/Supports
2. Foundations Bolt Patterns
3. Terminal Door Sill Heights
4. Existing Electrical Power
5. Aircraft Ramp Elevations at Aircraft Parking Positions
6. All other Special Conditions that may affect the installation of the PBB.

1.8 DESIGN AIRCRAFT MIX

A. The PBB furnished under this contract shall accommodate, (at a minimum) the following Aircraft:
   1. Gate 4: A320, 737-700, 737-800, 737-900, CRJ200, CRJ700, and CRJ900
   2. The PBB must be capable of reaching all specified aircraft types and aircraft parking positions as designed on the Contract Documents. The bridge cab shall have sufficient flexibility to enable it to mate with the aircraft passenger-boarding door when the aircraft is parked at the gate. The PBB shall have sufficient vertical travel to accommodate all aircraft specified in the "Design Aircraft Mix" section of this specification.

1.9 SAFETY PROVISIONS

A. The PBB shall be installed to achieve the maximum safety of aircraft passengers, crew, operators, and maintenance personnel. The PBB shall conform to all applicable current Federal, State, Local, Occupational Health and Safety Codes, and NFPA, along with standards developed and adopted by the PBB industry to the extent practical for PBB. All new components used in the PBB must conform to the latest version of the NFPA and UL requirements, as required.

B. Operating controls and maintenance features shall be built so that errors in the operation and maintenance of the PBB cannot cause structural damage to any of its elements.

C. Positive mechanical stops shall be provided to prevent hazardous over-travel where any component might become disengaged from its guiding or restraining component.

D. The operator's position in the cab shall be arranged to permit the operator to operate the PBB with the cab weather door closed. The Operator console shall be positioned on the left side for jet aircraft (when facing the aircraft from inside the cab).

E. Sheared or sharp metal edges must be deburred or broken, and all exposed metal corners are to be rounded. All critical fasteners are to incorporate suitable locking devices.

F. Audible and visual alarms shall be included to alert personnel when the PBB is in motion or operational.

1.10 DELIVERY OF PBB

1. Delivery and installation of the PBB shall be scheduled to meet the operational dates required by the

Owner.

PART 2 – PROCUREMENT

2.1 GENERAL – PASSENGER BOARDING BRIDGE

The PBB shall have independent style lift columns for maximum versatility. The PBB shall be able to extend from a terminal departure lounge doorway to the aircraft boarding door. The PBB shall enable passengers to enplane and deplane during normal or emergency operations while providing an environment which is protected from hazardous and atmospheric conditions. The PBB shall provide a simple, convenient, and controlled method for loading passengers. The complete assembly shall be protected against inclement weather conditions, both when sealed against an aircraft and when parked with the weather door closed. All materials or products used in the PBB shall be in accordance with NFPA 415 and local fire code regulations as applicable.

2.2 GENERAL – FIXED WALKWAY

The fixed walkway section shall be designed to provide a clean, structurally sound, comfortable, and functional transition between the aircraft and terminal building. The fixed walkways are to be installed between the rotunda entry corridor of the new passenger boarding bridges and the terminal building exit. Construction of the fixed walkway shall be substantially identical to that of the new bridge tunnels. Interior and Exterior materials, finishes, paints, lighting, flooring not limited to listed items.

2.3 FIXED WALKWAY

A. The fixed walkway sections shall be designed and installed so as not to impose any load on the terminal building unless the building has been designed to meet manufacturer's requirements. The contractor must provide all supports and haunches. Haunches must be provided where additional foundations are not reflected on the contract drawings.

B. Dedicated fixed walkway section support columns shall be provided by the contractor with the fixed walkway sections.

C. Fixed walkway sections shall be provided with a flat roof designed to prevent the accumulation of water in low points and pockets of structure, and shall be provided with diverters, baffles etc., to prevent buildup of water.

D. The fixed walkway sections shall be in the length generally as indicated on the aircraft parking layout and architectural drawings. The final length and configuration of the fixed walkway shall be determined and designed by the contractor as necessary to achieve the required completed installation. The contractor shall conduct field measurements and surveys as necessary to determine the design conditions.

E. The fixed walkway sections shall be provided with the provisions for all MEP services across the bottom of walkways. It is the contractor's responsibility to ensure all necessary MEP services for the acceptable conditioning levels for the fixed walkway section are met. A field survey is the responsibility of the contractor to determine proper sizing of MEP services. All said services must be accessible for maintenance.

F. Fixed Walkways interior must match interior of PBB's including handrails for full length on both sides. Construction must meet all boarding equipment requirements. Walkways must be insulated.

G. Fixed Walkway loads for roof and flooring must exceed the local Building Codes.

H. The minimum inside height of the fixed walkway shall be 7 feet, 8 inches and the minimum inside width shall be 5 feet, 8 inches, unless otherwise specified.

I. The design of the fixed walkway section shall accommodate a terminal door size of 3 feet, 6 inches wide by 6'-8" high for Gate 4.

J. Threshold plate with a non-slip surface shall bridge the gap between the terminal building and the adjacent fixed walkway section and the rotunda corridor.

K. Interior and exterior flashing shall be installed between the terminal building and/or fixed walkway and the rotunda corridor to effect a weather-tight connection. Interior face of joints to have stainless steel cover at all sides.

L. The fixed walkway connector shall be provided with a 120V, 20A single point connection for powering the lights only. No loads besides light fixtures shall be provided with the fixed walkway connector.

M. The fixed walkway connector shall be provided with a 120V, 20A, 3-way light switch to control the light fixtures furnished with the connector.

2.4 PASSENGER BOARDING BRIDGE

A. Rotunda Assembly

1. The rotunda assembly shall be made up of a corridor, rotunda and support structure with walkway support haunch. The assembly shall be designed and installed so that no loads or vibrations are transmitted to the building,
2. The rotunda assembly shall be installed as the terminal end pivot for PBB vertical and horizontal motion. As the main pivot for the PBB, the rotunda assembly shall allow the PBB to swing a total of nearly 175 degrees, or about 87.5 degrees clockwise, and about 87.5 degrees counterclockwise from the corridor centerline.
3. Slope, over-travel and operational swing limits are located on the rotunda assembly. Slope limits shall be adjustable up to 10% (5.71 degrees) for both up and down slopes. This limit shall be adjustable to meet local operating conditions and requirements.
4. The over-travel swing limit switch shall be located on the support column. The trip plate for this switch shall be located on the rotunda and shall be adjustable to meet local conditions. When this switch is actuated, it shall cut off all control power so that the PBB can only be moved by using the by-pass switch in the control console. The rotunda frame shall be equipped with rubber bumper type mechanical stops to prevent collapse of the telescoping tunnel sections,
5. Each PBB shall be equipped with a potentiometer on top of the rotunda that senses the position of the PBB swing and sounds a warning buzzer at the control console prior to the actuation of the over-travel swing limit. The actuation of this warning buzzer shall be adjustable to meet local conditions. The warning buzzer shall be within the over-travel limit envelope and signals the rotational operational limits.
6. The rotunda floor shall remain stationary and level at all times and provide a smooth

transition between the terminal and telescoping tunnels.

7. Flap type seals will provide weather protection between the rotunda and the hinged telescoping tunnel section. Flap type seals shall also be provided along the top of rotating curtain to prevent wildlife from entering/nesting in the rotunda. *Bird nest prevention screens shall be installed on the rotunda exterior.*

7. Corridor

1. The corridor is the interface between the rotunda and the terminal building or fixed walkway. The rotation of the PBB shall not restrict the inside clear width of the corridor to less than 4 feet – 4 inches. This restriction will be limited to a minimum distance of 15 inches. The minimum clear height shall be 7 feet – 3 inches.
2. The configuration of the corridor shall allow for the installation of flexible weather seals and a floor threshold to the face of the fixed walkway or terminal portal doorway.

7. Support Column

1. The support column is the structural support for the PBB. The support column shall be custom built to meet specific site conditions. Contractor shall field verify the dimensions required for fabrication and installation of the support column. The support column shall also be painted to match the PBB.
2. Contractor shall verify installation of anchor bolts of foundations prior to fabrication and to shipping of columns. Contractor shall make necessary adjustments or modifications to anchor bolts and patterns as necessary to accommodate the support column when using existing foundations.
3. The Contractor shall provide an electrical disconnect panel to be mounted on the rotunda support column or an electrical cabinet to be located inside the bridge. Disconnects and J-boxes mounted on the column shall not exceed the outside parameters of the PBB foundation. Either shall provide the electrical disconnects and transformers needed to adapt the specified terminal power to the PBB electrical requirements. Contractor shall make all necessary electrical connections for a complete and operations system in accordance with local, State and National code requirements.

2.5 TELESCOPING TUNNELS

A. The apron drive PBB shall be either one, two, or three telescoping tunnels with a corrugated structure. The telescoping tunnels, “A” (smallest), “B” (mid-size on three tunnel PBBs, largest on two tunnel PBB), and “C” (largest) shall be rectangular in cross section. The wall and floor panels shall be constructed from a minimum of 0.075-inch corrugated steel, or a structure of equivalent strength as approved by the Owner. The roof surface shall incorporate a ¾” inch crown to promote water drainage. Water diverter slats at the aircraft end of each tunnel roof shall provide additional deflection of water to the drainage system. Wall panels shall be constructed using watertight, continues welded seams. The tunnels with the largest cross section shall be closest to the aircraft.

B. The operational tunnel floor slope will be limited to 8.33% (1:12) maximum.

C. Provide hinged transition ramp to accommodate the difference in elevation where telescoping tunnel sections overlap. The ramps shall have yellow chamfered edges and brushed aluminum or stainless-steel handrails, with returns, on both sides. The transition ramps shall be covered with ribbed rubber.

D. Right side and left side handrails, with returns, shall be provided for this full length of the “A”

tunnel. A smooth continuous brushed stainless steel or aluminum handrail shall be provided.

E. The tunnel's walls and ceiling shall have new insulation to meet industry standards.

7. Minimum interior clear dimensions for PBB are as follows:
1. Minimum Floor Width: 4'-10"
2. Minimum Interior Height: 7'-0"
3. Minimum Inter-Tunnel Ramp Width: 4'-6"
4. Minimum Corridor Width: 4'-4"

H. The telescoping tunnels shall be equipped with a Pantograph(s) (exterior electrical cable conveyance system) mounted along the side of the PBB. The system shall contain all PBB power and control cabling on one side and the required input power cable for 90Kva 400Hz ground power unit & PCA on the opposite side of the PBB. This system shall be accessible to maintenance personnel for inspection or cable addition at all PBB positions and operating conditions. Access to the conveyance system shall not impede passenger traffic or PBB operation. The system shall be capable of supporting a combination of cables and hoses with a maximum weight of 12 pounds per foot and a maximum cross-sectional area of 12 square inches consisting of two 6-square-inch areas. The largest tunnel shall be equipped with an aluminum wire way to continue electrical cable routing beyond the electrical cable conveyance system.

I. ¾" pressure treated plywood shall be used for the subfloor material in tunnel sections. The first and last sheet of plywood in each tunnel section and in the entire outer cab and bubble area shall be marine grade plywood.

J. Emergency Lighting: Emergency power for interior LED lighting shall be provided by means of UPS that shall automatically engage when power is lost and shall be of sufficient size to power all light fixtures for a period of no less than 45 minutes.

K. Tunnel Ice Scrapers: Provide tunnel ice scrapers — EXTERNAL to the tunnels.

2.6 SERVICE ACCESS

A. A service door, landing, and stair leading to the apron area constitute the service access. The service access shall be located on the right-hand side of the cab end of the PBB for Gate 4. It shall provide access between the PBB and apron for authorized personnel.

B. The service door shall be steel, half wire-glass, hollow core, with matching hardware. It must meet or exceed the ¾ hour fire rating per ASTM E152. At a minimum, the door shall be 30" wide and 80" height. The door shall be equipped with medium duty commercial-type hardware and automatic door closure. The door opens outward onto the landing. A keyed outside knob with inside knob shall be provided. A 30-inch stainless steel kick plate shall cover the lower inside and outside portions of the door. A wire-glass window (658 square inches minimum) shall be provided in the service door.

C. ~~A keyed outside knob with inside knob shall be provided at the service door. All knobs shall be keyed to the Airport's standards for locks and hardware. The service door will be controlled by pin pad and card swipe with mag lock. PBB manufacturer will be required to install the box and wire only. The devices will be installed and commissioned by a separate, future Contractor.~~ *The exterior and interior knobs installed on the service door shall include push-button type cypher*

locks. Provide the combination and instructions to set new combinations to the airport.

D. The service stair landing shall be parallel to the adjacent tunnel floor. It shall be made of hot dipped galvanized steel, open mesh grating, covered with a non-slip tread. The landing shall be protected on the open sides by galvanized steel handrails that are designed to meet the OSHA standards. An exterior rated 60-watt incandescent light fixture shall be provided on the exterior of the PBB above the service stair and landing to illuminate the service access. A photocell shall operate the service access light automatically during darkness, with an interior light switch that has the ability to override the photocell.

E. The service stair shall be equipped with self-adjusting risers and open mesh steel treads made from galvanized steel channel sections, which shall be expanded metal with a serrated edge for a gripping surface. All steps shall have an equal rise. The tread width shall be 28 inches and the maximum tread rise shall be 9-1/2 inches. The length of the stair stringers shall vary depending on the type of aircraft serviced. The service stair shall be equipped with handrails on each side that are designed to meet OSHA standards for handrails located at stairs. The service stair shall be accessible to ramp service personnel at all operational heights and positions of the PBB. Stair assembly shall be free of dents, cuts, or defects and shall be rust free.

F. Maintenance Access: An OSHA standard ladder (with OSHA standard cage) must be supplied order to access vertical drive components and PBB roof. *Full-length roof handrails shall be installed on the C-Tunnel.*

G. The service door shall contain an interlock to prevent PBB operation unless the service door is closed.

2.7 CONTROL STATION

A. The control station or operator compartment shall be located at the aircraft end of the PBB. It shall provide the operator with a control console, service utilities, and control interlocks required to accomplish PBB operation. This compartment shall be positioned on the left side of the cab and oriented to position the operator facing forward in full view of the aircraft during the maneuvering and docking operations. It shall provide the optimum PBB maneuvering visibility for 95% of the adult population without obstructing passenger traffic flow.

B. Control Console: The control console shall be located in the operator compartment and is protected from the outside environment. Control console shall be clean/painted, and have a faceplate, digital GUI, operators, and joystick.

1. Controls: PBB controls shall be accomplished by means of PLC controls with Touchscreen GUI controller. PLC shall be manufactured by Beckhoff or approved equal. PLC shall provide auto-parking capability that shall position the PBB in a pre-determined safe parking area. PLC shall provide pre-positioning capability that shall position the PBB at a proper elevation and pre-determined position on the ramp to facilitate simplified docking. Pre-positioning elevation and ramp position shall be set up for all aircraft in the required mix during PBB installation. Both PBB auto-parking and pre-positioning shall require that the operator continually press the appropriate control during PBB motion. PBB shall immediately cease all movement upon release of either the auto-park or pre-position control.

2. All PBB motion controls shall be the momentary contact type (deadman) controls. All the motion controls shall be of the design type relative to the function of the PBB being controlled, i.e., raise and lower functions, the "raise" push button shall be located above the "lower" push button. The control console shall include the following controls:
   a. Provide a three-position master key switch used to select "OFF", "OPERATE" or "AUTO" (automatic leveling).
   b. Provide a joystick for forward/reverse, left and right horizontal drive steering control.
   c. Push button switches for raising and lowering the cab end of the PBB.
   d. Push button switches for cab rotation, left or right. The Aircraft Closure Cab Rotate Interlock prevents cab rotation during deployment of the cab enclosure. This will not prevent the PBB from being driven away from the aircraft in reverse.
   e. Push buttons for independent activation of each side of the bellows-type aircraft closure.
   f. A switch for LED floodlights that illuminate the apron area under the aircraft and drive column undercarriage.
   g. A switch to change the cab floor level adjustment from an automatic operation to a manual operation.
   h. A relative motion push-button switch is to be provided to control the cab floor level adjustment while in the manual mode.
   i. A red illuminated emergency stop button shall shut down all PBB movement when pressed.
   j. Provide a hoist interlock bypass button as well as a button to bypass the swing limits.
   k. Horn button to alert that the bridge is about to move.
   l. An alarm to sound if the sensors on the canopy are not touching the aircraft fuselage.

7. Indicators: The control console/ GUI screen shall have indicators that display the current PBB status. The PBB status indicators shall be as follows:
   1. A position indicator displays the relative vertical position of the lift column.
   2. A wheel Position indicator displays wheel orientation with respect to the operator's position. A wheel position indicator maintains correct wheel orientation while the cab is being rotated.
   3. A Visual Alert shall indicate the auto-leveling system is energized and functioning.
   4. A visual and audible warning that indicates the auto-leveler sustained travel timer has tripped. See "AUTOMATIC LEVELING" of this specification for a full description of this protection.
   5. A Visual warning shall indicate that the PBB has reached the operational horizontal rotation limits. An audible warning shall precede this warning.
   6. A Visual warning shall indicate the drive wheels have reached an over-steer condition unless mechanical stops prevent over-steer conditions.
   7. A visual warning shall indicate that the aircraft closure is deployed. An interlock shall ensure that the closure must be fully retracted before the PBB can be moved forward.
   8. A visual warning shall indicate vertical drive column fault. See "DRIVE COLUMN" of this specification for additional system description.
   9. The GUI screen shall indicate full extension or retraction of the PBB.

7. Utilities
1. A four pair, category 6 cable outlet for the installation of telephone or intercom equipment shall be located on left side wall adjacent to the control console.
2. Duplex outlets (un-switched 120-volt, single phase, 20-amp) shall be located near control console, on the lower portion of the drive column (industrial grade, GFCI-type), and in the corridor.

7. Control Features and Interlocks
1. Mechanical interlocks (where applicable) shall be provided to prevent damage to control circuits or PBB components by selecting opposite motions simultaneously. For example, depressing the up button prevents depressing the down.
2. When the master switch is in the "OFF" or "AUTO" position, the controls for horizontal and vertical movement, steering, aircraft closure and cab rotation shall be inoperative.
3. Both a keyed master selector switch plus operator log on shall be required to operate the PBB.

7. Display Pre-Conditioned Air (PCA) and Ground Power Unit (GPU) status on the touchscreen.

2.8 AIRCRAFT CAB

A. The aircraft cab shall be capable of rotating approximately 125 degrees (near the original manufacturer's specification). Rotation is about 92.5 degrees counterclockwise and about 32.5 degrees clockwise from the tunnel centerline.

B. The cab shall rotate at a speed near that of the original manufacturer's specification of 145 degrees per minute (or about 2.41°/sec). Limit switches and physical stops control the rotation limits.

C. The cab shall be equipped with a forward-facing control console. The console shall be located behind laminated glass windows. Operation of the PBB shall be possible without opening the weather doors. Additional visibility shall be obtained through the vision panels in the cab side-coiling curtains and windows located in front, left and right to the operator. When the front weather door is closed, the window in the front of the control console must be able to provide the operator full view of the entire aircraft contact area, including the auto-leveler, without opening the weather doors. *The front window shall include a powered exterior wiper.* The minimum size of the windows must be the following:

- Front – surface area of 750 square inches
- Left – surface area of 300 square inches
- Right – surface area of 150 square inches

D. **Cab Docking.** The cab shall allow docking to all of the aircraft listed in the Aircraft Mix. Docking to RJ aircraft is to be accomplished by means of an approved ~~Regional Jet Floor~~ *mobile bridge adapter, provided by the contractor upon delivery of the PBB*. *The mobile bridge adapter shall be compatible with all regional aircraft in the fleet mix. A sufficient number of restraint connection points shall be provided on the exterior of the cab to anchor the mobile bridge adapter.* ~~Regional Jet Floor system shall include the addition of any required canopy pad modifications required for proper seal to regional jet aircraft~~.

E. **Cab Mirrors**. *Stainless steel* cab mirrors shall be mounted to allow the operators to view the apron area from their console. If cracked or damaged, mirrors shall be replaced with new. Provide mirrors as follows:

1. Mirrors shall be located outside the cab on the left and right-hand sides, visible through the operator's windows. They should allow the operator to view the service stairs and the ramp around the service stair area.

F. **Aircraft Spacer**. A new full width spacer shall be located at the aircraft end of the cab floor. The spacer material shall meet the fire protection specifications of NFPA-415 and shall be sufficiently flexible regardless of the temperature and shall be non-abrasive to prevent scratching or other damage to the aircraft fuselage. Spacers shall be properly equipped to drain so as to not retain precipitation or moisture.

1. Since the PBB shall have docking capabilities for regional aircraft, the spacer must be continuous in all applications. For example, if slots are incorporated into the design for mating with a small regional aircraft with stairs and handrails, the spacer must be able to be re-positioned to allow a continuous surface (no holes or gaps) when docked with larger aircraft.
2. The spacer must be designed to not cause damage to any fuselage protrusion such as antenna or pilot tubes, etc.
3. The spacer must contain a left side cutout for additional clearances of the aero sensors on the 737 aircraft.

G. **Adjustable Cab Floor**. The aircraft end of the cab shall be equipped with a cab floor that adjusts to the optimum position relative to the aircraft door. The floor shall be actuated and independently adjustable to adapt to the slope of aircraft doorsills. It shall be designed to level automatically and shall be equipped with a manual override control switch. The floor shall be capable of providing a level surface adjacent to the aircraft doorsill for PBB slopes from -10% to +10%. No portion of the cab floor shall exceed 8.33% slope in the direction of expected passenger traffic. The automatic leveling system shall correct the floor to a slope less than 0.5% (0.30) after a slope of 2.0% (1.20) has been reached.

1. A hinged floor shall be included to provide a smooth transition between the level floors and the tunnel section. This transition floor shall provide a smooth platform sloped approximately in the direction of passenger traffic flow. There shall be no raised surfaces, which may introduce a tripping hazard to the passenger. Adjacent surfaces shall be at the same level regardless of the position of the cab floor or the PBB.
2. The cab floor substrate shall be aluminum.
3. The cab floor shall be heated.
4. The cab floor shall come equipped with a pitot tube cutout for the 737 aircraft.

H. Exterior LED floodlights shall be provided for nighttime operation to illuminate the apron area ahead of the PBB. A floodlight shall also be provided to illuminate the drive column wheel bogey area. This light shall be located under the tunnel section.

1. A weatherproof LED fixture shall be also provided outside the weather doors to illuminate the cab-aircraft interface.

I. The cab area shall be equipped with a fire extinguisher. The fire extinguisher shall be 10 lb. dry chemical.

J. The outer cab floor and inner cab area or "bubble" shall be equipped with Aluminum subfloor and ribbed rubber floor covering. The outer cab floor shall be equipped with a thermostat-controlled floor-

heat system to prohibit the buildup of ice and snow during inclement weather.

K. Weather doors must be provided adjacent to the console to seal and secure the interior when the PBB is not in use. These doors must be swinging double doors that open inward and can be latched open or closed. The clear width of the weather doors when open must be no less than 43 inches. The use of an electronic rollup door in lieu of the double swinging doors is an acceptable alternative.

L. Bird nest prevention screen shall be installed on the exterior of the cab.

2.9 AIRCRAFT CLOSURE

A. The aircraft end of the cab shall be equipped with a folding bellows style aircraft closure. The closure, when fitted against the fuselage, surrounds both the open aircraft door and the doorway to protect passengers from the elements. The covering shall not absorb water, shall be highly tear resistant and remains flexible from -31 degrees F to 127 degrees F. The aircraft closure fabric shall be fire rated.

B. Each side of the aircraft shall be independently actuated to seal against the aircraft contours.

C. The aircraft closure shall be designed to prevent excessive pressure on the aircraft through the use of pressure sensitive switches or other pressure sensitive switch devices.

D. The contacting seal shall be a soft material to prevent scratching or damage to the aircraft skin. The seals that contact the aircraft shall be segmented for easy replacement. Seals shall also be properly equipped to drain so as to not retain precipitation or moisture.

E. The aircraft closure shall be capable of safely and securely providing full closure on all aircraft listing the aircraft mix.

F. Closure arms shall be rounded to prevent damage to the inner canopy fabric.

2.10 AUTOMATIC LEVELING

A. The PBB shall be equipped with an automatic leveling system. This system shall allow the PBB to follow changes in the aircraft elevation that occur during aircraft loading and unloading. The auto-leveling system shall function with equal reliability for all aircraft contours. The auto-leveler shall be located on the right side of the cab.

B. The auto-leveler shall be in full view of the operator at the control console.

C. The auto-leveler shall be engaged when the master key switch is positioned to “AUTO.”

D. The auto-leveler circuit shall include a sustained travel timer. The timer limits auto-level, operation to a time, which shall be adjustable from 1.6 to 10 seconds (Contractor shall recommend the setting). If the operation exceeds the set time limit a fault condition shall be assumed, all motor power shall be disconnected; audible and visual alarms shall be energized.

E. A remote auto level alarm shall be located at the terminal end of the PBB.

2.11 DRIVE COLUMN

A. The drive column shall provide the vertical and horizontal motion for the PBB. The drive column and control systems shall be designed for smooth, quiet operation. The vertical and horizontal movements can both be operated at the same time.

B. The drive column shall be divided into two major components: Vertical Drive and Horizontal Drive.

C. Vertical Drive

1. Electrical/Mechanical
   a. The PBB shall be moved vertically by means of two re-circulating ball bearing screw assemblies.
   b. Each assembly shall be independent with individual motors and brakes. Each assembly is capable of supporting the PBB under full design load. This design shall provide 100% redundancy.
   c. The ball nut shall be equipped with wiper brushes to remove grit or dirt from the screw threads.
   d. The ball nut shall be equipped with a special thread profile designed to support the PBB in the absence of the re-circulating ball bearings.
   e. The vertical drive motors shall be New 5HP AC induction motors (Sumitomo or Engineer Approved Equal) with integral reducer and brake. The brakes shall be spring applied and electrically released. The brakes shall hold securely at all elevations whenever electrical power is not applied.
   f. A fault detector shall provide a final failsafe for the vertical drive system. The detector shall disconnect electrical power from the vertical drive motors if a fault is detected.
   g. The vertical travel speed shall be 3.6 feet per minute.
   h. Provide covers for vertical drive motors.

D. Horizontal Drive

1. Electrical/Mechanical
   a. A variable speed, electro-mechanical drive system shall provide horizontal travel.
   b. Tires for each PBB shall be solid rubber tires or solid elastomer, especially designed for PBB applications and rated for the application load.
   c. The horizontal drive system shall use 7.5 HP AC drive gear motors (Sumitomo or approved equal) with integral brakes. Motors shall include a direct, inline attachment to each drive shaft. The motors shall be driven by solid –state variable frequency motor controllers. The drive system shall provide high efficiency, smooth performance, and good component availability. The controller provides a variable frequency signal to provide adjustable speeds from 0 to 90 feet per minute. The controller can be adjusted to provide optimum responsiveness to the horizontal controls. The controller provides built-in diagnostics to assist with troubleshooting.
   d. A steer angle of nearly 180 degrees shall be possible. Steering speed shall be adjustable from approximately 16 degrees per second minimum to approximately 42 degrees per second maximum.
   e. A regenerative braking system shall allow the PBB to come to smooth controlled stops. Integral spring-applied electrically released brakes shall be provided with each drive motor. The brakes shall lock the PBB in place when electrical power is disconnected. This shall also occur when the joystick is in the neutral position or in a neutral position (if equipped with joystick).

f. The horizontal drive motors shall be equipped with manual brake releases. This shall allow the PBB to be towed in the event of power failure. Tow lugs shall be a component of the lower wheel frame.
g. Provide covers for horizontal drive motors.

2.12 ELECTRICAL & COMMUNICATIONS SYSTEMS AND COMPONENTS

A. From the cab of the PBB, there shall be a 3 phase 480-volt, 60-amp, 60 Hz, wye configuration with neutral and ground service terminating in a weather-proof "J" box on the terminal wall or adjacent to the rotunda column of the bridge, A manual, fused, main disconnect for the motor, lighting, and control circuits shall be mounted on the building face or rotunda support column. If a rotunda mounted electrical cabinet is provided, it shall be positioned to create no interference for the Ground Service Equipment (GSE) (i.e., may require rotating disconnect 90 degrees).

B. All standard lighting, duplex receptacles, operator controls, and fractional HP motors shall operate on 120-volt, single phase, 60 Hz power. The transformer and separate circuit breaker for lighting and control power shall be mounted in the power control panel.

C. All electrical boxes on the PBB shall be non-corrosive NEMA 4 rated enclosures (painted steel boxes are not acceptable).

D. All new electrical equipment and methods of installation shall conform to the requirements and recommendations of the American Insurance Association (AIA), the National Electrical Manufacturers Association (NEMA), and the National Electrical Code (NEC).

E. Wiring and installation shall be in accordance with National Electric Code, applicable local electrical codes, and the Airport's requirements.

a. Both ends of all conductors shall be color coded or identified. Particular attention shall be given to separating circuits of different voltages, emergency lighting, and telephone lines.

b. Unswitched, parallel slots, 125 volts, 1 phase, 60Hz, 20 Amp three-conductor duplex receptacles shall be provided as follows:

i. One near the operator's console,
ii. One in each tunnel of the bridge

c. The bridge shall contain a flush mounted "J" box containing CAT-6 cables near the operator's position and wall-mounted telephone connected to the Airports phone system.

F. The bridge shall be designed with safety as the priority. The following control features, interlocks, and warning devices shall be included in the bridge.

a. With the Operator Key Switch in the "Off" position, all controls shall be inoperative.
b. Spring-loaded wheel brake(s) shall be automatically set whenever controls for horizontal travel are not actuated by the operator. The drive system shall have provisions to manually release the brakes to permit towing of the unit in the event of a power failure. The manual release mechanism shall automatically reset when electrical

power is applied to the motor/brake circuit.

c. The vertical lift column safety stops are to be automatically engaged whenever controls for vertical travel are not actuated by the operator.
d. With the Operator Key Switch in the "Auto-Level" position, all manual motion controls shall be inoperative. In this mode, vertical travel shall be regulated by the automatic leveling system.
e. With the Operator Key Switch in the "Operate" position, the Auto-Leveler shall be inoperative. The control circuits shall be wired so that it is impossible to select opposite motions simultaneously, e.g., extend and retract or raise and lower travel.
f. Two limit switches, one for slow and one for stop, shall slow to half speed and then halt forward or reverse travel of the bridge when the tunnel extension or retraction limits have been reached. New limit switches shall be provided.
g. Limit switches shall prevent movement of the bridge beyond specified Rotunda and Cab operating parameters.
h. A 6-inch diameter alarm bell located under the aircraft cab shall sound continuously whenever the bridge is in drive mode of operation.
i. An amber colored rotating beacon located under the aircraft cab shall illuminate when the key switch is in the "Operate" position.
j. Limit switches mounted on each of the electrical mechanical vertical drive columns to stop the motion of the screws prior to reaching the mechanical limits of the screw and in the event that the normal electronic travel controls fail to stop the screws. New limit switches shall be provided.
k. A non-contact sensor shall slow the bridge horizontal motion as it approaches the aircraft when in operate mode.
l. Dual aircraft proximity sensors shall be mounted to the cab.
m. Cab side spacer proximity/limit sensors shall be mounted to each side of the cab.
n. Provide a horizontal distance sensor mounted to the interior PBB ceiling to measure the real-time length of the bridge.
o. An audible alarm shall sound in the event the horizontal controls are activated.
p. New switches shall be provided for all limit switches on the PBB.

G. In addition to the pre-positioning system, the operator shall be able to manually pre-position the bridge to the approximate height of the aircraft serviced by reading the vertical height indicator while raising or lowering the bridge in the manual mode.

H. The following interior and exterior lights shall be provided:

a. Interior lighting shall include the lighting in the cab/bubble area. The level of illumination shall be as specified in the ATA PBB Specifications with the roll-up doors closed.
b. The tunnel, cab and rotunda interior lighting shall be provided by LED Light Fixtures that are located on 8' centers and are parallel with the tunnel longitudinal axis. The average light intensity at the floor with 50% reflection is 35-foot candles. The lights shall be controlled by two away switches. One shall be located in the control cab and one in the rotunda corridor adjacent to the terminal door.
c. Two exterior LED type floodlights forward facing, and one drive column floodlight shall be provided.
d. A sealed exterior type LED fixture shall illuminate the cab area forward of the door.
e. A weatherproof exterior LED light Fixture shall be installed over the service

door to illuminate the service stairs and landing. It shall be controlled by a switch located on the inside wall of the tunnel adjacent to the door.

f. Beacon lights and a horn/buzzer/bell will be supplied which will warn of bridge movement prior to the drive motors engaging. The horn/buzzer/bell shall be located on the drive column cross tube. Beacon lights shall be provided under the cab and at the ends of the wheel bogie cross tubes.

I. Deployed Canopy Interlock: All bridge motions, except auto leveling shall be possible only when aircraft canopy is in the fully retracted position.

a. Provide dead-man type canopy interlock bypass switch to permit retraction of bridge tunnels only in the case of mechanical emergency or mechanical failure with canopy not in the fully retracted position.

b. Contrary control signal interlock: All bridge motion shall be prevented from occurring whenever contrary control signals (i.e. extend and retract) are activated.

J. When master key switch is in “OFF” or “AUTO” position, controls for horizontal and vertical movement, steering, aircraft closure, and cab rotation shall be rendered inoperative.

K. The following equipment shall be provided, installed, connected to and integrated into the terminal building’s existing monitoring systems. Devices shall be selected such that they are compatible with the existing system to which they will be connected. Provisions for installation and mounting of devices (conduit, cable, boxes, etc.) shall be installed during the PBB and fixed walkway manufacturing process.

a. 360-degree surveillance camera mounted to the interior rotunda ceiling.

b. 180-degree surveillance camera mounted to the PBB cab exterior.

c. 180-degree surveillance camera mounted to the interior PBB cab ceiling.

d. Addressable smoke alarm mounted in PBB cab.

L. A 7-inch diagonal color LCD monitor shall be mounted in the control console that continuously displays a camera image of the PBB horizontal drive wheel area. The Closed-Circuit Television (CCTV) camera shall be mounted at a location that provides a clear view of the wheel area.

2.13 EXTERIOR AND INTERIOR FINISHES

A. Exterior Finish Shall be a two-part system consisting of the following:

Primer coat One coat of Sherwin-Williams High Build Epoxy Chromate Free Primer E65 AC8\E65RC5 or (equivalent) shall be applied over the prepared surface to a dry film thickness of 6-10 mils.

Finish Coat: One finish coat of Sherwin-Williams polane (aliphatic) high solids, catalyzed, pigmented Polyurethane, shall be applied over the primer coat at a dry film thickness of 2-3 mils. The color shall be white. Color shall be as selected by the Owner.

The total exterior finish shall provide a minimum dry film thickness of 8 mils.

B. Exterior colors will be selected by *Elmira Corning Regional Airport* after award.

C. The interior finish of the PBB shall be durable and easy to clean.

D. The ceiling shall be made of plank type panels. The planks run perpendicular to the tunnel centerline and continuously from wall to wall. The planks shall be manufactured from aluminum, with a brushed or baked-on enamel off-white finish. Planks located at the ends of light fixtures shall have a finish to match the fixtures.

E. The aluminum corner molding that finishes the ends of the ceiling plank and the top edge of the wall panels shall be painted to match the interior light fixtures.

F. Insulation in the ceiling shall be at a minimum ½-inch thick, fire-resistant fiberglass.

G. The sub-floor throughout the PBB shall be at minimum ¾-inch marine grade plywood and shall provide high resistance to moisture and moisture damage.

H. Ribbed rubber ¼ inch thick shall be applied to the floor from the aircraft end of the PBB to the terminal side of the service door.

I. The tunnel wall treatment consists of floor to ceiling high-pressure laminate phenolic and melamine plastic panels. The panels are approximately 4 ft. on center and are supported by clear anodized aluminum trim with a black accent strip. The design allows each panel to be removed individually. The colors shall be as selected by the Owner.

J. Wall treatments in the pivoting sections (rotunda and cab support) shall be galvanized steel slats.

K. Provide view panels in cab.

L. Interior Finishes.

Contaminants shall be removed from the surface in accordance with SSPC SP-1 and appropriate SSPC commentaries.

The surface shall be mechanical cleaned in accordance with SSPC SP-3 to remove loose scale and contaminants from the surface where required.

The cab surface shall be dry abrasive blast cleaned in accordance with SSPC SP-6 to obtain a 1-3 mil profile.

Primer: One coat of Sherwin-Williams High Build "Chromate Free" Epoxy Primer E65AC8\E65AC12 (or equivalent) shall be applied. The dry film thickness shall be 4-7 mils.

Finish Coat: Sherwin-Williams high solids Polane S Poly-urethane (or approved equivalent) shall be applied. The dry film thickness shall be 2-3 mils. The color shall match the wallboard color unless otherwise specified.

The total dry film thickness shall be 6-10 mils.

2.14 OPTIONAL EQUIPMENT

The following optional equipment for the PBB's shall also be provided:

A. Winterization Equipment:

i. Cab floor deicer.
ii. *Upper and lower* console heaters.
iii. Tunnel gutter heaters.
iv. Wind flaps *and thermal brushes* on rolling curtains at cab and rotunda.
v. Thermal brushes at tunnel lap sections.
vi. Tunnel mounted ice scrapers for roller tracks.
vii. Heated forward, left side, and right side windows
viii. Heated interior roller tracks

B. Heating, Ventilating, and Air Conditioning Equipment:

i. Forced air heater mounted in the bubble area.
~~ii. Forced air heater mounted in fixed walkway~~ *Package rooftop unit installed on the fixed walkway to provide heating and cooling of the walkway interior space.*
iii. *Baseboard heat in the A-Tunnel*

C. Other Equipment:

i. Provide and install a PBB-mounted wheelchair and luggage lift that is capable of moving up to 500-pounds from the bridge level to the ground for loading and unloading (P&J Airport Services Nova Baggage/Wheelchair Lift or approved equal). The wheelchair and luggage lift shall be compatible with the Passenger Boarding Bridge.
ii. 3-sided LED lighted gate number sign mounted on cab roof.

2.15 MANUALS

A. Contractor shall provide one (1) electronic copy of Operations and Maintenance Manual for the PBB and two (2) hard copies of red-lined schematics in the operators control console for every PBB installed.

2.16 WARRANTY

A. The warranty shall include all parts, labor, travel time, and expenses necessary for repairs or

replacement of defective or malfunctioning bridge units or defective system components. All new parts and materials shall be guaranteed against defects in material and workmanship for a period of 2-years (24 months) from the date of acceptance of the work by the Owner.

B. All work by the contractor within this warranty period shall be provided without cost to the Owner and shall include all labor and necessary materials required to replace defective material and workmanship.

C. Contractor shall warrant that the equipment and all new components and accessories furnished in connection therewith, shall comply fully with contract documents; be free of any defect in design, material, or workmanship; be new and of good quality; and free and clear from any liens, encumbrances and title defects.

D. Contractor shall supply evidence of maintaining minimum spare parts on hand during the warranty period.

E. One (1) year from the date of acceptance, the Contractor shall perform a complete on-site inspection and testing of the PBB and fixed walkways to evaluate proper functionality and operation. Testing and inspection shall be completed by a technician with a minimum of ten (10) years of experience performing this type of work. At this time, all necessary adjustments shall be made at the Contractor's expense to return the PBB to first-class working conditions. If defects are identified during this inspection, they shall be addressed as noted above.

PART 3 – INSTALLATION, INSPECTION, TESTING

3.1 PRE-INSTALLATION MEETINGS

A. Primary: Conduct a PBB work pre-installation meeting at the Project Site prior to start of the installation work. The Meeting shall include review of construction constraints, environmental requirements and coordination required for installation of the work, and responsibilities for temporary operation of permanent mechanical systems required for the work. Meeting participants shall include Airport representatives, installers of mechanical work, electrical and related work, and product manufacturer representatives, as necessary. The Contractor shall assist in working out conflicts, interferences, adjustment, and responsibilities.

B. Other Work: When required, installers of mechanical and electrical work shall participate in other pre-installation meetings at the Project site to review conditions of other related project work. Assist in working out conflicts, interfaces, adjustments, and responsibilities.

C. The Contractor shall furnish crews familiar with installation procedures and work site conditions.

3.2 INSTALLATION

A. General: Install all work, meeting the requirements of the Contract Conditions and in accordance with product manufacturer's instructions and recommendations, NFPA requirements, and requirements as specified herein.

B. Workmanship: Install all equipment, materials, specialties, etc., in accordance with the best practice and standards for this type of work.

C. Surface Finishes: All surfaces and edges of miscellaneous steel, etc. shall be smooth and free of marks, burrs, roughness, and other defects. Finish welds to match parent material. Where possible, grind welds smooth; remove flux, oxide, splatter or any other residue from the weld and adjacent areas of exterior and interior surfaces.

D. The Contractor will be responsible for installation of the PBB, and all ancillary equipment as described in this specification.

E. The Supplier/Contractor shall provide qualified supervisory and service personnel during the installation of the passenger boarding bridges to assure proper installation. The same supervisor shall be on-site the entire duration of the installation.

F. Contractor is responsible for obtaining sill and column elevations.

3.3 CLEANUP

A. Prior to inspection, clean the Project site. Remove all miscellaneous construction equipment, dispose of all trash and unnecessary excavated material in a manner acceptable to the Owner.

3.4 INSPECTIONS AND TESTS

A. General: Test all the equipment installed under this specification and demonstrate its proper operation to the Owner. Furnish all required labor, testing, instruments, and devices required for tests and pay for all expenses involved in conducting such tests. Provide 48 hours written notice to the Owner of all tests and demonstrations.

B. Install electrical connections for power, controls, and devices in accordance with the recommendations and requirements of the NEMA and the NEC. Motors shall be installed and adjusted in accordance with manufacturer's published instructions and the requirements specified herein.

C. Perform equipment pre-operational checks activities, where appropriate. Note that these activities shall be coordinated with the startup and testing work.

D. Field Testing and Final Checking: After the equipment has been installed and the various units have been inspected, adjusted, and placed in correct operating condition, the equipment shall be field tested in accordance with Contractor's testing procedures and requirements. The field tests shall demonstrate that the equipment functions in compliance with the specifications over the entire range of operation. Report any unusual conditions. Correct deficiencies of any of the field-installed units.

PART 4 – QUALITY ASSURANCE

4.1 GENERAL

A. Install all new electrical, instrumentation, and mechanical works to the satisfaction of the Owner, and inspecting authorities having jurisdiction.

B. Notify the Engineer and Owner in writing of any instances in the Specifications that conflict with the aforementioned Codes. Required changes shall be adjusted before the Contract is awarded.

C. Deviations from the Specifications required for conformance with the applicable codes and/or laws shall be corrected immediately but not until such deviations have been brought to the attention of the Engineer and Owner.

D. Applicable codes and/or laws to govern the minimum requirements; where the Specifications call for materials, vents, ductwork, sizes, design details, etc., in excess of the code requirements, the Specifications shall govern.

7.1 SUPPLIER / INSTALLER/CONTRACTOR QUALIFICATIONS

A. The PBB supplier/installer shall be by companies who have previously installed aircraft PBB's, fixed walkways, ground electrical power systems and Pre-conditioned Air systems for aircraft at major airport installations.

B. All work done on the PBB's, and associated systems/appurtenances shall be performed by a company who has at least 10 years' experience in this type of work and must be able to supply a list of at least thirty similar projects involving the provision and installation of PBB's during the same time period.

C. The Superintendent or person in charge of all craft personnel shall have at least 10 years' experience in installing and have installed at least fifty aircraft PBB's and associated systems/ equipment. Also, said individual shall be knowledgeable in the fabrication, assembly, installation, and operation of the required electrical and mechanical systems and equipment, the engineering essentials, safety requirements and be capable of reading, interpreting, and coordinating the drawings, specifications, and submittal data of the electrical and mechanical work.

D. Coordinator shall plan and expedite delivery of the PBB's products to the Project site, and to schedule labor to meet the progress schedule of the work.

E. It will not be acceptable for a Contractor who meets the experience qualifications to subcontract the PBB's work to a Sub-Contractor who does not meet the same experience qualifications.

F. Contractor shall submit, as part of their proposal a Statement of Qualifications that attests to each of the above requirements. Statement must include a list of projects as referenced in Item B.

G. If the contractor will not be installing the PBB's then the contractor must both name and submit a Statement of Qualifications for the sub-contractor who will be performing the installation.

PART 5 – ON-SITE ASSISTANCE, TRAINING AND MAINTENANCE

5.1 GENERAL

A. On-site instructions/demonstrations shall be given to designated operating personnel covering operation, adjustments, and maintenance of PBBs, and monitoring software use and capabilities shall be included as part of the eight-hour training as outlined in the following section.

5.2 TRAINING

A. Onsite Training shall be provided for operator's trouble shooting and problem solving. It shall include theory and hands on training. Up to eight (8) hours of training shall be provided split over two days (4 hours per day) for technicians on Owner's Maintenance Staff. It shall cover the PBB power points system and monitoring software points. On completion of training, each participant shall be issued with a certificate of competency.

B. Onsite Training shall be provided for operating procedures. Up to eight (8) hours of training class shall be included split over two days (4 hours per day). A completed training roster shall be provided to the owner's representative following the course completion.

PART 6 – EQUIPMENT

6.1 GENERAL REQUIREMENTS

A. All equipment and material shall be new.

B. Where items exceed one in number, provide products with similar construction, model numbers, and appearance, from the same manufacturer.

C. Insofar as possible, products shall be the standard and proven design of the manufacturer. Manufacturer shall be engaged in the manufacture of the product for a minimum of 5 years. When standard products are modified to suit these Contract Conditions, manufacturer shall certify operating conditions, ratings and capacity of the product based on qualification tests and Contractor shall submit compliance certificates.

D. Acceptable Products: Certain makes and/or manufacturers of material and equipment are specified herein and/or indicated on the Drawings as acceptable products. Prior to submittal, use manufacturer's published data to verify that the product meets the requirements of the Contract Documents. Notify the Owner of conflicts.

E. Substitutions: Submit the specified materials and equipment. Where "or equal" products are specified, equivalent materials and equipment of other manufacturers may be submitted for consideration for approval by the Owner but shall be clearly distinguished in the submittal as substitutions.

PART 7 – METHOD OF MEASUREMENT

7.1 Passenger Boarding Bridge and Fixed Walkways. The quantity of PBB's to be paid for under this item shall be the number of PBB's installed and accepted as completed units, in place, ready for operation.

This item will be paid based on the value listed in the Contractor's Schedule of Values for section 149500 with the following schedule of partial payments:

a) *The first **25%** shall be paid upon final approval of the complete PBB and fixed walkway shop drawing package by the Engineer.*

b) *The remaining **75%** shall be paid in incremental payments with each application for payment proportionate to the percentage of work completed during the period included in the application for payment.*

PART 8 - BASIS OF PAYMENT

8.1 Passenger Boarding Bridge and Fixed Walkways. Payment will be made at the contract price for each completed PBB including fixed walkways installed, in place by the Contractor, and accepted by the RPR. This price included in the Contractor's schedule of values shall be full compensation for removing and disposing of existing equipment, furnishing all materials including air handling and ground power units and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item. The cost to install the passenger boarding bridge and fixed walkways is inclusive to the lump sum price bid for Item B-001-1.

END OF SECTION 149500

Item C-105 Mobilization

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. Mobilization shall be limited to **3** percent of the total project cost.

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. The Contractor shall provide dedicated space for the use of the field RPR and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall furnish water, sanitary facilities, heat, air conditioning, and electricity in accordance with local building codes.

The field office shall be fully operational a minimum of two (2) weeks prior to the start of construction and shall be so continued if required by the Resident Project Representative (RPR) for a period not to exceed one month (30 calendar days) after the last day of contract work.

No construction shall be started until the office is furnished as herein specified and made available to the RPR.

a. **General.** The Contractor shall furnish the following furniture and equipment:

TABLE 105-1 FIELD OFFICE FURNITURE AND EQUIPMENT	
Field Office Item	**Quantity**
Office desk	2
Office swivel chairs	3
Folding chairs	8
Folding conference table	2
Cork bulletin board	2
Dry erase board	2
Fire resistant cabinet (4-drawer)	1
Waste baskets	3
First aid kit	1
Fire extinguisher, dry chemical type for A, B, C ratings	1
Refrigerator	1
Microwave	1
Keurig coffee maker with supply of K-cups	1
Water cooler with hot/cold supply	1
Printer/photocopier/scanner/fax machine	1
~~24" Monitor~~	~~2~~
~~Docking Station~~	~~2~~
~~Cellular Telephone~~	~~1~~
~~Tablet with Rugged Case~~	~~1~~
~~Digital camera~~	~~2~~
Portable AirBand Two Way Radios	2
~~Infrared thermometer~~	~~2~~
Cleaning Supplies	As needed

The above furniture need not be new (with the exception of the coffee pot, water cooler, computer equipment, and microwave) but must be in first class serviceable condition. Acceptability of all items shall be determined by the RPR.

The Contractor shall provide, paper, ink for the printer and copier, bottle water and other supplies throughout the duration of the project.

The Contractor shall provide all servicing, repairs, replacement and up keep on the Contractor supplied equipment throughout the project duration.

b. Engineer's Field Office. *The Engineer's Field Office consists of an existing office located in the Elmira Corning Regional Airport Terminal Building located at 276 Sing Sing Rd, Horseheads, NY 14845.*

The Contractor shall furnish all equipment specified herein and shall be responsible for the cost of the office space for a three (3) month period at a rate of $500 per month.

~~The Engineer's Field Office shall be within a secured, weatherproof building or mobile trailer. If two or more mobile trailer units are provided, they shall be joined with weatherproof connections. Mobile trailers shall be in new or like new condition. The Contractor may furnish equivalent facilities in an existing building, provided that the building is located to provide convenient service. The minimum floor area for the RPR's Field Office shall be 400ft² with a minimum ceiling height of 7 feet. It shall be divided into a minimum of two rooms and shall have at least 6 windows with adequate locks and blinds.~~

~~Two exterior doors, with locks, shall be provided. For each exterior door, there shall be provided two sets of keys for the RPR. Screens shall be provided for all exterior windows and doors and shades shall be provided for windows and doors. The Engineer's Field Office shall be in accordance with the requirements of the New York State Uniform Fire Prevention and Building Code, 19 NYCRR, and any applicable local codes.~~

~~The office shall have an adequate lighting installation including lighting fixtures, outlets, lamps, wiring, switches and work as required. The electrical system shall be able to continuously operate all equipment and be provided with adequate receptacles. To accommodate computer equipment, the field office shall be provided with a dedicated 20-amp electrical service and a vacant floor-to-ceiling area with a 3-foot x 3-foot footprint along a wall for the installation of a computer hardware rack/cabinet. Electric light shall be provided by non-glare-type luminaries to provide a minimum illumination level of 100 foot-candles at desk-height level.~~

~~The type and layout of the heating system shall be approved by the RPR. It shall be adequate to maintain an ambient air temperature of 70ºF inside the building with an outside temperature of -20ºF. The Contractor shall provide any fuel required for heating purposes.~~

~~For summer use, air conditioning unit(s) shall be provided for each room in the building. The air conditioning system shall be capable of maintaining an inside room temperature of 60ºF with an outside air temperature of 100ºF.~~

~~The contractor shall provide replacement filters which should be replaced once per month or more frequently if needed.~~

~~Fire extinguishers and smoke and carbon monoxide detectors shall be provided and installed.~~

~~All utilities shall be provided and maintained by the Contractor.~~

~~**i. Potable Water.** From a local municipal water supply, certified well or bottled with a heating/refrigerator unit to provide hot and cold water. An exterior frost free hose bib shall be provided in a location adjacent to the RPR's Field Office. The hose bib need not be installed on a potable water line, and if the water in the line is not potable, it shall be clearly marked as such.~~

~~**ii. Restroom.** A separately enclosed room, lockable from the inside, that is properly ventilated and in compliance with applicable sanitary codes. The Contractor shall provide all lavatory amenities, necessary paper and soap products, hot and cold running water and~~

~~a toilet. The toilet shall be flush type where sanitary facilities are available, and a type approved by the RPR prior to installation where sanitary facilities are not available. The sanitary facilities shall be maintained and cleaned throughout the duration of the project on a weekly basis.~~

~~**iii. Parking Area.** The Contractor shall provide and/or construct a paved or hard surfaced (gravel or bankrun material) secure parking area with dedicated parking spaces adjacent to the RPR's Field Office. Each parking space shall be 9 feet by 18 feet, and the minimum required number of spaces to be provided shall be 6.~~

~~**iv. Cellular Telephone.** A portable cellular "smart phone(s)" for the exclusive use of the inspection staff. The minimum required number of cellular phones to be provided is specified in Table 105-1 (these lines are in addition to the separate line to be provided for the facsimile machine). The smart phone(s) shall be supplied with a data plan and have voicemail and texting capabilities. It shall include a protective case, wall charger, car charger, and a belt clip/case. Telephone service shall be maintained throughout the course of the project.~~

v. Printer/Photocopier. The Contractor shall furnish, install and maintain a multi-function copier/printer/fax/scanner, HP Officejet Pro 8600 e-All-in-One Printer - N911a or approved equal. The copying machine shall have a dedicated telephone line for use as a fax machine. The Contractor shall furnish all of the copy paper, ink cartridges and other supplies required by the RPR. The Contractor shall maintain the unit fully operational and in proper adjustment for the duration of required use of the RPR's office. At the conclusion of the project the copier will be returned to the Contractor. Initially 6 new black ink cartridges (HP 950XL) and 3 new color ink cartridges (HP 951XL) shall be provided. Additional cartridges shall be provided as required throughout the construction period.

vi. Exterior Bulletin Board. An installed 4 foot x 8-foot weatherproof bulletin board in front of or adjacent to the RPR's Field Office. The bulletin board may be attached to an outside wall of the office. The location selected must be handicapped accessible and clearly visible.

vii. Interior Bulletin Board. An installed, wall-mounted 4 foot x 6-foot bulletin board made of cork or similar material in a large room, and one 2 foot x 4 foot wall mounted bulletin board installed per room.

viii. Dry Erase Board. Installed, wall-mounted 2 foot x 4-foot dry erase boards, minimum one per room.

ix. Fire Resistant Cabinet. Fire resistant, legal size filing cabinet with locks and 2 keys each, meeting the requirements of ANSI/UL Standard 72 for Insulated Filing Devices, Class 350-1 hour. Each office shall be provided with two 2-drawer cabinets, and the required number of additional 4-drawer cabinets as specified in Table 105-1.

x. Wastebasket. Minimum 7-gallon wastebasket, minimum one per desk.

xi. Refrigerator. Electric, providing a minimum storage space of 4 cubic feet.

xii. Kitchenette. To include a minimum 1 cubic foot, 1,300-watt microwave oven, a sink with hot and cold running water with minimum dimensions of 15 inch x 15 inch x 6 inch

deep, usable counter space with minimum dimensions of 5 feet long x 2 feet deep and cabinet space with minimum dimensions of 5 feet long x 1 1/2 feet deep x 2 1/2 feet high. If the water in the sink is not potable, it shall be clearly marked as such.

xiii. **First Aid Kit.** A Type III kit in accordance with ANSI Z308.1 Minimum Requirements for Workplace First Aid Kits. The minimum number of first aid kits to be provided is specified in Table 105-1.

~~xiv. **Infrared Thermometer.** LCD display with the ability to measure surface temperatures in a range of -10°F to 800°F or greater and at a minimum 10:1 distance-to-spot ratio. Basic accuracy shall not exceed +/- 5.0%. Minimum battery life shall be 12 hours.~~

xv. **Office Desk and Chair.** Fully assembled freestanding office desks and chairs. Each desk shall have a 5 feet long by 2 1/2 feet wide work surface and a height of 30 inches, at least 2 lockable drawers and include an adjustable shelf approximately 1 foot wide and no less than 2 1/2 feet long. Each desk shall also be provided with an adjustable chair with arms, 5 legs with casters and be adjustable from approximately 16 inches to 24 inches in height. Each desk shall have a dedicated electrical outlet receptacle. The required number of office desks and chairs to be provided is specified in Table 105-1.

xvi. **Office/Conference Table.** Commercial-grade rectangular table with weather/spill resistant top, a minimum of 8 feet long by 2 1/2 feet wide by 30 inches high. The minimum required number of office/conference tables to be provided is specified in Table 105-1.

xvii. **Folding Chair.** Commercial-grade, folding steel chair with approximate overall dimensions of 30 inches high by 19 inches wide by 21 inches deep. The minimum required number of folding chairs to be provided is specified in Table 105-1.

xviii. **Portable AirBand Two Way Radios.** Handheld Radios shall be Icom A16 (or approved equal), supplied new, with spare batteries, exterior antennas (magnetic mount), ear plug, remote mic, belt carrying case, and battery chargers. The radios shall be frequency adjustable and capable of tuning into the Airport's UNICOM frequency. At the completion of the project, the radios will remain the property of the Contractor.

~~xix. **Mobile AirBand Two Way Radios.** Mobile radios shall be Icom A210 or A220, supplied new, with vehicle mount kit (Icom MB-53), 12V DC power cable, hardware kit, speaker (Icom SP-5), hand microphone (Icom HM-176), and all other hardware/accessories required for the radio to be installed and made operable in a vehicle. At the completion of the project, the radios and all hardware/accessories will remain the property of the Contractor.~~

~~xx. **Tablet with Rugged Case.** NEW tablet(s) shall be supplied for the sole use of the inspection staff. Tablets(s) shall be 10.9" Apple iPad 10th Generation or similar. Tablet(s) shall be supplied with a charger and rugged case. Rugged case(s) shall be OtterBox Defender Pro or similar.~~

~~The following apps/software shall be installed, activated, and functioning on each tablet: Microsoft Office 2017 (Full Version) and Bluebeam Revu. Tablets shall be configured such that the RPR has full administrative access to download and install software.~~

~~Tablet(s) shall be supplied with an unlimited cellular data plan from a carrier that has reliable service at the project site.~~

~~The tablet(s) shall be set up, configured, operational, and provided to the RPR two (2) weeks prior to the start of construction. At the conclusion of the project, the laptop computer(s) will be returned to the Contractor with its hard drive wiped clean~~

~~xxi. **Monitors.** Two (2) 24" Full HD monitors shall be supplied for the sole use of the inspection staff. Monitors shall be ViewSonic VA2447 or similar. Monitors shall be supplied in new condition and shall include all cables and adapters required for connection to the laptop and/or docking station.~~

~~xxii. **Docking Stations.** Two (2) docking stations shall be supplied for the sole use of the inspection staff. Docking stations shall be ThinkPad USB 3.0 Pro or similar, shall be compatible with laptops and monitors supplied, and shall include all cables and adapters required for connection to laptops and monitors. Docking stations shall be new at the start of construction.~~

xxiii. **Cleaning Supplies.** The Contractor shall supply sufficient cleaning supplies for the RPR to perform minor daily cleaning of the RPR's Field Office.

CONSTRUCTION DETAILS

105-5 Engineer's Field Office. The Engineer's Field Office shall be fully equipped and made available for use and occupancy by the inspection staff prior to the start of any contract work and shall be made available after contract final acceptance as directed in writing by the Engineer.

All furniture and equipment shall be fully assembled, operational, clean and serviceable. The Engineer's Field Office shall be cleaned weekly or more often if required, and the timing of the cleaning operations shall be coordinated with the Engineer. The Contractor shall remove and dispose of all rubbish generated in the office and shall keep the office free from pests. The Contractor shall remove snow from all areas subject to vehicular circulation and parking.

After completion, all portable buildings or trailers, fencing, surfacing and utilities shall be removed from the location and the areas cleaned, loamed and restored as required.

105-6 Electrical Power. The Contractor shall provide utility electrical power to the Engineer's Office. The Contractor shall pay for the installation of the electrical service and pay all electric bills for the service.

105-7 High Speed Internet Service. The Contractor shall provide high speed internet service either hardwired or wireless and maintain and pay for the service throughout the duration of Construction.

METHOD OF MEASUREMENT

105-5 BASIS OF MEASUREMENT AND PAYMENT. Mobilization and Demobilization costs shall be included in the lump sum price bid for Items B-001-1 and B-001-2. No separate measurement for payment shall be made for these items. Based upon the price shown on **each** Prime Contractor's Schedule of Values for the below listed Item(s), partial payments will be allowed as follows:

a. With first pay request, 50%.

b. When 50% or more of the original contract is earned, an additional 40%.

c. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation,* the final 10%.

Should the Bidder exceed the foregoing three percent (~~5%~~ *3%*), the Engineer will make the necessary adjustment to determine the total amount bid based on the arithmetically correct proposal.

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.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

NYSDOT Item 304.12 Subbase Course, Type 2

DESCRIPTION

304-1.1 All provisions of Section 304 – Subbase Course of the New York State Department of Transportation Standard Specifications, with an effective letting date of January 1, 2026, including all applicable revisions and addenda, shall apply.

METHOD OF MEASUREMENT

304-2.1 Subbase Course. No separate measurement for payment will be made for subbase course. The furnishing, hauling, placement, grading, shaping, watering, compacting, and finishing of the subbase material, as well as all associated work, shall be considered incidental to Items B-001-1 and B-001-2, and no separate measurement will be made.

BASIS OF PAYMENT

304-3.1 No separate payment will be made for subbase course. All labor, materials, and equipment associated with furnishing, hauling, placing, grading, shaping, watering, compacting, testing and finishing the subbase material, including all tools, and incidentals necessary to complete the work in accordance with the plans and specifications, shall be considered incidental to and included in the lump sum price bid for Items B-001-1 and B-001-2.

END OF ITEM 304.12

NYSDOT Item 502.0129 Portland Cement Concrete Pavement

DESCRIPTION

502-1.1 All provisions of Section 502 – Portland Cement Concrete Pavement of the New York State Department of Transportation Standard Specifications, with an effective letting date of January 1, 2026, including all applicable revisions and addenda, shall apply.

METHOD OF MEASUREMENT

502-2.1 Concrete. No separate measurement for payment will be made for concrete. All work necessary to furnish, handle, and place concrete and its associated reinforcement, including forming, delivery, handling, placement, consolidation, finishing, curing, protection, testing, and any necessary rehandling or adjustments, shall be considered incidental to Items B-001-1 and B-001-2, and no separate measurement will be made.

BASIS OF PAYMENT

502-3.1 No separate payment will be made for concrete. All labor, materials, and equipment associated with delivery, handling, placement, consolidation, finishing, curing, protection, including all tools, and incidentals necessary to complete the work in accordance with the plans and specifications shall be considered incidental to and included in the lump sum price bid for Items B-001-1 and B-001-2.

END OF ITEM 502.0129

Item P-100 Geotextiles

DESCRIPTION

100-1.1 Geotextiles. This work shall consist of furnishing and installing approved Geotextile of the Class and Type indicated, over the prepared subgrade surfaces, and in the manner shown on the plans or as directed by the RPR, in writing, prior to performing the work.

100-1.2 General. No separate measurement for payment will be made for geotextile fabric used in the installation of the following items, rather it shall be considered incidental to the installation/construction of that item. Additionally, material requirements for geotextile fabric shall be as specified in the following items.

- Item C-102 – Temporary Air and Water Pollution, Soil Erosion, and Siltation Control
- Item P-152 – Excavation and Embankment
- Item D-705 – Pipe Underdrains for Airports
- Other items as specified

MATERIALS

100-2.1 Geotextile Fabric. Geotextile fabric shall consist of woven or non-woven filaments of polypropylene, polyester, nylon or polyethylene. Woven fabric may be monofilament or multifilament. Non-woven fabric may be needle punched, heat-bonded, or combinations thereof. The fabric shall be inert to commonly encountered chemicals, rot proof, dimensionally stable (i.e., fibers must maintain their relative position with respect to each other), resistant to delamination, and conform to the following physical properties:

TABLE P-100-1 GEOTEXTILE REQUIRED PHYSICAL PROPERTIES

Property	**Test Method**	**Units**	**Elongation <50% (Woven)**	**Elongation ≥50% (Non-woven)**
Grab Strength	ASTM D 4632	lbs.	247 (min)	157 (min)
Tear Strength	ASTM D 4533	lbs.	90[1] (min)	56 (min)
Puncture Strength	ASTM D 6241	lbs.	495 (min)	309 (min)
Permittivity	ASTM D 4491	sec^{-1}	0.02 (min)	
Apparent Opening Size	ASTM D 4751	U.S.	No. 30 Sieve max. avg. roll value	

Table 100-1 Notes:

[1] For woven monofilament geotextiles the minimum average value is 56 lbf.

Fabric values shall represent "minimum average roll values (MARV)".

Geotextile requirements differ for stabilization, separation, and slope protection applications. The type of fabric to be provided (stabilization, separation, or slope protection) shall be as indicated on the plans. All geotextile fabric shall be specified by the manufacturer as suitable for use in the proposed application. Stabilization, separation, and slope protection geotextiles shall be provided in accordance with the requirements of Table P-100-2:

TABLE P-100-2 GEOTEXTILE APPLICATION REQUIREMENTS

Application	AASHTO M-288 Strength Class	Material Structure
Stabilization	1	Woven
Separation	1 or 2	Woven or Non-Woven
Slope Protection	1	Non-Woven (needle punched only)

100-2.2 Geogrid. Provide geogrid consisting of a regular network of integrally connected longitudinal and transverse polymer tensile elements having aperture geometry sufficient to allow mechanical interlock with the surrounding material. Provide Type 2 biaxial geogrid fabricated of stiff ribs with connections that are either integrally formed or welded. Type 2 biaxial geogrid shall conform to the following physical properties:

TABLE P-100-3 TYPE 2 BIAXIAL GEOGRID REQUIRED PHYSICAL PROPERTIES			
Property	**Test Method**	**Units**	**Required Value**
Polymer Type	-	-	Polypropylene (PP)
Aperture Size[1,2]	-	in	1.0 (min) – 1.7 (max)
Aperture Open Area[3]	-	in	1.0 (min) – 2.9 (max)
Percent Open Area	-	%	65 (min)
Ultimate Tensile Strength, T_U [1,4]	ASTM D6637 (Method B)	lbs/ft	1780 (min)
Elongation at Ultimate Tensile Strength	ASTM D6637	%	5 (min) – 15 (max)
Junction Efficiency[5]	ASTM D7737 and ASTM D6637	%	90 (min)
Flexural Rigidity	ASTM D1388	g-cm	1000 (min)
Resistance to Installation Damage[6]	AASHTO R69	%	80 (min)

Table 100-3 Notes:

1. Both Machine Direction (MD) and Cross Machine Direction (XD).
2. The value is the size of the opening in each direction.
3. The value is the product of the aperture openings in the MD and XD.
4. Values indicated are minimum average roll values (MARV).
5. Calculate by dividing junction strength (as determined by ASTM D7737) by T_U and multiplying by 100.

CONSTRUCTION METHODS

100-3.1 General. Geotextile fabric shall be placed on the prepared subgrade surface where shown in the plans, on subgrade in prepared undercut areas as described in Item P-152, and as directed by the RPR.

Geogrid shall be installed as shown in the plans or as directed by the RPR to provide base/subgrade reinforcement.

Geotextile fabric and geogrid shall be installed in accordance with the details shown on the Contract Drawings and in strict accordance with the manufacturer's recommendations.

100-3.2 Delivery, Storage, Preparation, and Installation. Geotextile fabric and geogrid shall be delivered to the job site in such a manner as to facilitate handling and incorporation into the work without damage. Material shall be stored in such a manner as to prevent exposure to direct sunlight and damage by other

construction activities. Identification, storage, and handling of geosynthetics shall conform to ASTM D4873.

Prior to the installation of the geotextile fabric, the application surface shall be cleared of debris and sharp objects. All wheel tracks or ruts in excess of three (3) inches in depth shall be graded smooth or otherwise filled with soil to provide a reasonably smooth surface.

Geotextile fabric and/or geogrid may be installed on the application surface either by hand or mechanical methods, provided that the fabric or geogrid is not torn or the surface rutted.

Fabric of insufficient width or length to full cover the specified area shall be lapped or sewn. The following are minimums for each:

1. Lap Only – 12” or manufacturer’s recommendations, whichever is greater.
2. Sewn – 4”

If sewn, the seam strength shall be equal or more than the minimum grab tensile strength of the fabric when tested wet.

The fabric shall be placed to the width and depth directed by the RPR. Unless otherwise specified, the material shall be back dumped on the fabric in a sequence of operations beginning at the outer edges of the treatment area with subsequent placement towards the middle.

Placement of the aggregate on the fabric shall be accomplished by spreading dumped material off previously placed material with a bulldozer blade or end-loader, in such a manner as to prevent tearing or shoving of the cloth. Dumping of material directly on the fabric will only be permitted to establish an initial working platform. No vehicles or construction equipment shall be allowed on the fabric prior to placement of the granular blanket.

The geotextile fabric shall be protected from exposure to sunlight during transport and storage. Following placement, the fabric shall not be left uncovered for more than twenty-four hours.

The fabric shall be installed immediately before the subbase course to minimize exposure to sunlight. Traffic or construction equipment will not be allowed directly on the geotextile fabric. The Contractor shall keep pedestrian traffic on the applied fabric to a minimum and shall repair any damage to the fabric at his cost as directed by the RPR.

Fabric that becomes torn or damaged shall be replaced or patched. The patch shall extend three feet beyond the perimeter of the tear or damage.

METHOD OF MEASUREMENT

100-4.1 Geotextiles. Geotextile will not be measured for payment. The furnishing, placement, seaming, anchoring, protection, and all other work associated with the geotextile as specified herein shall be considered incidental to Items B-001-1 and B-001-2, and no separate measurement will be made.

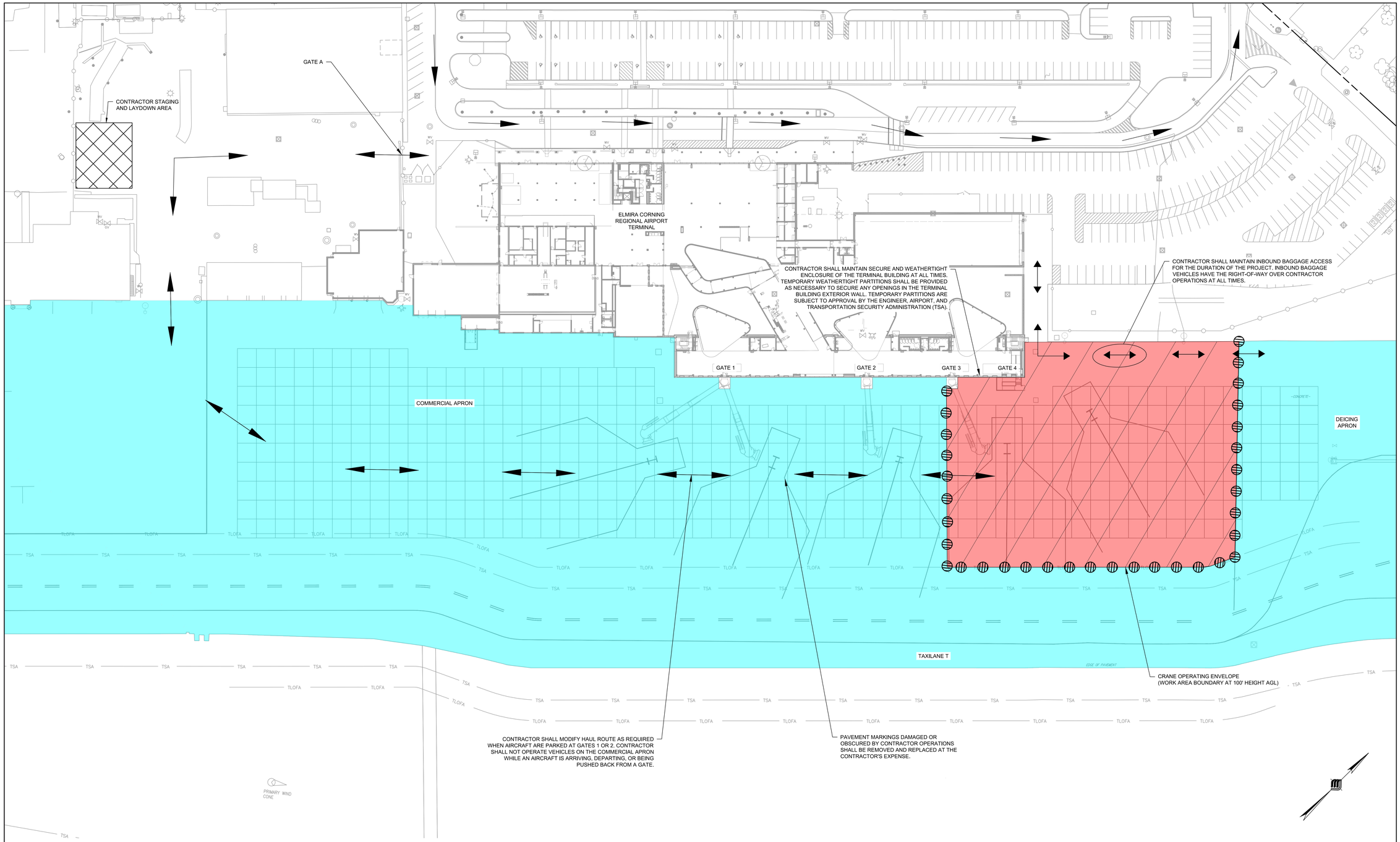
BASIS OF PAYMENT

100-5.1 No separate payment will be made for furnishing, placing, seaming, anchoring, protecting, or otherwise installing the geotextile as specified herein. All costs associated with the geotextile, including materials, labor, equipment, incidentals, surface preparation, and any necessary repairs or replacement, shall be considered incidental to and included in the lump sum price bid for Items B-001-1 and B-001-2 to which the geotextile is applied.

REFERENCES

ASTM D4632	Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
ASTM D4833	Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products
ASTM D4873	Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples
ASTM D4533	Standard Test Method for Trapezoid Tearing Strength of Geotextiles
ASTM D6637	Standard Test Method for Determining Tensile Properties of Geogrids by the Dingle of Multi-Rib Tensile Method
ASTM D7737	Standard Test Method for Individual Geogrid Junction Strength
ASTM D7748	Standard Test Method for Flexural Rigidity of Geogrids, Geotextile and Related Products
GRI:GG9	Geosynthetic Research Institute, Test Method GG9, Torsional Behavior of Bidirectional Geogrids When Subject to In-Plane Rotation
AASHTO M-288	Standard Specification for Geosynthetics for Highway Applications

END OF ITEM P-100



WORK ITEMS / SUGGESTED SEQUENCE OF CONSTRUCTION - PHASE 1	
SEQUENCE	WORK ITEMS
1	ISSUE NOTAM FOR PARTIAL APRON CLOSURE (ELMIRA CORNING REGIONAL AIRPORT)
2	SET UP LOW PROFILE BARRICADES
3	REMOVE EXISTING PAVEMENTS AND EXCAVATE FOR FOUNDATIONS
4	INSTALL PROPOSED FOUNDATIONS, BACKFILL AND RESTORE PAVEMENTS
5	CONSTRUCT OPENING IN EXISTING TERMINAL BUILDING
6	INSTALL NEW PASSENGER BOARDING BRIDGE FIXED WALKWAY AND ROTUNDA
7	INSTALL NEW PASSENGER BOARDING BRIDGE
8	REMOVE EXISTING AND INSTALL NEW PAVEMENT MARKINGS
9	CLEAN WORK AREA AND RECEIVE AIRPORT / RPR APPROVAL TO OPEN THIS AREA
10	REMOVE LOW PROFILE BARRICADES

GENERAL PHASING NOTES:

1. SEE SHEET C-102 FOR PHASING NOTES AND DETAILS.
2. CONSTRUCTION VEHICLES MUST USE THE DESIGNATED HAUL ROUTE AT ALL TIMES DURING THE COURSE OF CONSTRUCTION.
3. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL YIELD TO AIRCRAFT TAXIING ON TAXILANE 'T', COMMERCIAL APRON, OR ANY OTHER AIRFIELD PAVEMENT.
4. THE CONTRACTOR SHALL MAINTAIN INBOUND BAGGAGE ACCESS AT ALL TIMES. BAGGAGE OPERATIONS AND GROUND SUPPORT VEHICLES ALWAYS HAVE RIGHT-OF-WAY OVER CONTRACTOR VEHICLES AND EQUIPMENT.

FACILITIES DISABLED THIS PHASE:

- N/A

CRANE OPERATING NOTES:

CRANES SHALL BE OPERATED ENTIRELY WITHIN THE CRANE ENVELOPE DEPICTED ON THIS PLAN. IF THE CONTRACTOR ANTICIPATES CRANE OPERATIONS WILL EXCEED THE CRANE ENVELOPE *OR* EXCEED 100' IN TOTAL HEIGHT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING *AND* SUBMIT A DETAILED PLAN FOR EACH OPERATION SHOWING MAXIMUM CRANE HEIGHT AND OPERATING ENVELOPE NOT LESS THAN 90 DAYS PRIOR TO THE PROPOSED CRANE OPERATIONS.

1. CRANE OPERATION SHALL ADHERE TO THE FOLLOWING UNLESS OTHERWISE DICTATED BY THE FAA OR ENGINEER:
   - 1.1. WORK SHALL BE DURING DAYLIGHT HOURS ONLY.
   - 1.2. WORK SHALL ONLY TAKE PLACE DURING VFR CONDITIONS. THE CRANE SHALL NOT BE OPERATED DURING IFR CONDITIONS.
   - 1.3. THE CRANE SHALL BE LOWERED WHENEVER IT IS NOT IN USE.
   - 1.4. THE CRANE SHALL BE MARKED WITH A CHECKERED FLAG AND OBSTRUCTION LIGHT CONFORMING TO FAA STANDARDS.
2. CONTRACTOR SHALL ADHERE TO THE PROJECT CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) AT ALL TIMES.
3. ELM AIRPORT PERSONNEL, ELM ATC PERSONNEL, OR THE ENGINEER SHALL HAVE THE RIGHT TO ORDER CRANE OPERATIONS TO BE STOPPED AT ANY TIME.
4. ALL CRANE OPERATIONS, REGARDLESS OF HEIGHT OR LOCATION, SHALL BE COORDINATED A MINIMUM OF 14 DAYS IN ADVANCE WITH THE ENGINEER AND AIRPORT.
5. CRANES SHALL NOT BE OPERATED WHILE COMMERCIAL AIRCRAFT ARE PRESENT ON THE COMMERCIAL APRON.

LEGEND

- WORK AREA
- CLOSED NON-MOVEMENT AREAS
- OPEN AIRCRAFT MOVEMENT AREAS
- NON-MOVEMENT AREAS
- CONTRACTOR'S HAUL/ACCESS ROUTE
- INBOUND BAGGAGE ACCESS ROUTE
- LOW PROFILE BARRICADES

PHASE REQUIREMENTS:

PHASE	CALENDAR TIME	REQUIREMENTS TO BEGIN	WORK HOUR RESTRICTIONS/ REQUIREMENTS	AIRFIELD CLOSURE AREAS	CLOSURE HOURS	LIQUIDATED DAMAGES	AIRPORT OPERATIONAL RESTRICTIONS
1	45 CALENDAR DAYS (1)	NOTICE TO PROCEED	WORK INTERIOR TO THE HOLDROOM OR ASSOCIATED WITH CONSTRUCTION OF THE EXTERIOR WALL OPENING SHALL BE COMPLETED DURING HOURS WHEN THE HOLDROOM IS UNOCCUPIED	PORTION OF COMMERCIAL APRON, BOARDING GATES 3 & 4	24 HOURS PER DAY	$5,000 / DAY OR PORTION THEREOF	BOARDING GATES 3 & 4 CLOSED

0 40 80 120 FT
SCALE

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

STATE OF NEW YORK · JARED PATRICK MOORE · 096515 · LICENSED PROFESSIONAL ENGINEER

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	JEC
DESIGNED	JEC
CHECKED	JPM
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
1	4/7/26	ADDENDUM 2

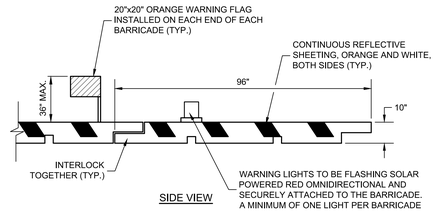
DRAWING TITLE

CONSTRUCTION SAFETY AND PHASING PLAN

DRAWING NUMBER

C-101A1

K:\ECRA\T-18302-19 PASSENGER BOARDING BRIDGE\DRAWINGS\SHEET FILES\18302-19-CSPP.DWG



CONSTRUCTION SAFETY AND PHASING NOTES:

1. THE CONTRACTOR SHALL PROVIDE ADEQUATE EQUIPMENT ONSITE TO CONTINUOUSLY MAINTAIN ALL CONSTRUCTION HAUL ROUTES. ALL AIRFIELD PAVEMENT AND PUBLIC ROADWAYS USED BY THE CONTRACTOR SHALL BE INSPECTED AND CLEANED ON A CONTINUOUS BASIS. A MINIMUM OF (1) OPERABLE VACUUM SWEEPER TRUCK AND (1) WATER TRUCK SHALL BE ONSITE AT ALL TIMES.

2. THE CONTRACTOR SHALL PROVIDE THE RPR WITH 7-DAYS ADVANCE NOTICE IN WRITING PRIOR TO THE START OF CONSTRUCTION IN ANY WORK AREA TO ALLOW FOR THE APPROPRIATE NOTAMs TO BE ISSUED BY THE OWNER

3. ALL WORK SHOWN ON THE CONSTRUCTION SAFETY AND PHASING PLANS AND DETAILS, UNLESS OTHERWISE NOTED, SHALL BE INCLUSIVE TO THE GENERAL CONSTRUCTION BID ITEM B-001-1.

4. FINAL LOCATION AND DIMENSIONS OF CONTRACTOR'S STAGING AREA SHALL BE DETERMINED IN THE FIELD BY THE OWNER, RPR AND CONTRACTOR.

5. PRIOR TO THE START OF CONSTRUCTION, THE RPR, AIRPORT, AND CONTRACTOR SHALL COOPERATIVELY DOCUMENT THE LOCATION AND CONDITION OF ALL HAUL ROUTES, INCLUDING PUBLIC ROADWAYS.

6. AT NO TIME SHALL THE CONTRACTOR'S PERSONNEL, EQUIPMENT OR VEHICLES ENTER THE RUNWAY SAFETY AREA (RSA), TAXIWAY SAFETY AREA (TSA), OR ANY AIRFIELD PAVED AREA, UNLESS AUTHORIZED BY THE OWNER AND THE AREA IS CLOSED TO AIRCRAFT. CONTRACTOR SHALL COORDINATE WITH THE RPR.

7. CONSTRUCTION EQUIPMENT IS NOT PERMITTED IN ANY TAXIWAY OBJECT FREE AREA (TOFA), OR RUNWAY SAFETY AREA (RSA) UNLESS AUTHORIZED THROUGH A CLOSURE OF THE AIRFIELD AREA BY THE AIRPORT.

8. ALL COSTS ASSOCIATED WITH PREPARATION, SET UP, TEAR DOWN AND RESTORATION OF THE CONTRACTOR'S STAGING AREA SHALL BE INCLUSIVE TO THE GENERAL CONSTRUCTION BID ITEM B-001-1.

9. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF FEDERAL AVIATION ADMINISTRATION (FAA) ADVISORY CIRCULAR (AC) 150/5370-2G, OF THE "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" OR LATEST REVISION. SEE CONSTRUCTION SAFETY AND PHASING PLAN IN THE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

10. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE RPR PRIOR TO COMMENCING WORK ON THE AIRPORT, A MINIMUM OF TEN (10) CALENDAR DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. THIS SCHEDULE SHALL BE REVISED WEEKLY. NO WORK SHALL BE PERMITTED OUTSIDE THE AREAS INCLUDED IN THE APPROVED SCHEDULE.

11. PRIOR TO OPENING THE WORK AREAS TO AIRCRAFT TRAFFIC, THE PAVEMENT SURFACE SHALL BE WASHED / SWEPT CLEAN AND THE WORK AREA WILL BE INSPECTED BY THE AIRPORT, CONTRACTOR AND RPR. INSPECTIONS WILL BE SCHEDULED IMMEDIATELY FOLLOWING THE COMPLETION OF THE CONSTRUCTION ACTIVITY THAT CAUSED THE WORK AREA TO BE CLOSED. CONTRACTOR AND RPR SHALL COORDINATE ALL ACTIVITIES WITH AIRPORT OPERATIONS.

12. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE CONSTRUCTION SAFETY AND PHASING PLAN OF THE PROJECT SPECIFICATIONS FOR SPECIFIC WORK AREA INSTRUCTIONS AND REQUIREMENTS.

13. NO PERSONAL CONTRACTOR EMPLOYEE VEHICLES ARE ALLOWED WITHIN THE AIRPORT SECURITY FENCE. ALL CONTRACTOR'S EMPLOYEE VEHICLES MUST REMAIN PARKED OUTSIDE OF THE SECURE AREA IN THE LOCATION NOTED ON THE PLANS. ONLY OFFICIAL COMPANY VEHICLES SHALL BE ALLOWED ON-SITE AND WITHIN THE AIRPORT SECURITY FENCE.

14. THE CONTRACTOR SHALL NOTE THAT NO CONSTRUCTION MAY OCCUR WITHIN A SAFETY AREA WHILE THE ASSOCIATED RUNWAY OR TAXIWAY IS OPEN FOR AIRCRAFT OPERATIONS.

15. OPEN TRENCHES OR EXCAVATION ARE NOT PERMITTED WITHIN A SAFETY AREA WHILE THE ASSOCIATED RUNWAY OR TAXIWAY IS OPEN. IF BACKFILLING EXCAVATIONS BEFORE THE RUNWAY OR TAXIWAY MUST BE OPENED IS IMPRACTICABLE, CONTRACTOR SHALL COVER THE EXCAVATIONS APPROPRIATELY. COVERING FOR OPEN TRENCHES MUST BE DESIGNED AND SUBMITTED TO THE RPR FOR REVIEW AND APPROVAL, TO ALLOW THE SAFE OPERATION OF THE HEAVIEST AIRCRAFT OPERATING ON THE RUNWAY ACROSS THE TRENCH WITHOUT DAMAGE TO THE AIRCRAFT.

16. CONTRACTOR SHALL PROMINENTLY MARK OPEN TRENCHES AND EXCAVATIONS AT THE CONSTRUCTION SITE WITH RED OR ORANGE FLAGS, AS APPROVED BY THE RPR, AND LIGHT THEM WITH RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS.

17. CONSTRUCTION SHALL BE COMPLETED IN SUCH A MANNER THAT AT THE END OF A RUNWAY OR TAXIWAY CLOSURE PERIOD ALL WORK ITEMS ARE COMPLETE, THE SAFETY AREAS ARE IN A CONDITION SUITABLE FOR AIRCRAFT OPERATIONS, SUBJECT TO APPROVAL OF THE RPR AND AIRPORT, AND LIGHTING SYSTEMS ARE OPERATIONAL. NO OPEN TRENCHES, STOCKPILES, LIPS, OR DIPS GREATER THAN 3 INCHES WILL BE ALLOWED IN THE SAFETY AREA OF ANY OPEN RUNWAY OR TAXIWAY.

18. CONTRACTOR SHALL TAKE ALL THE NECESSARY MEASURES TO ENSURE THAT ALL FOREIGN OBJECT DEBRIS (FOD) ARE REMOVED FROM ACTIVE PAVEMENT CROSSINGS. CONTRACTOR MAY NOT LEAVE THE CONSTRUCTION SITE PRIOR TO AIRPORT OPERATIONS APPROVAL THAT ALL ACTIVE PAVEMENT CROSSINGS ARE CLEAN.

19. STOCKPILED MATERIALS ARE NOT PERMITTED WITHIN THE RSA, ROFA, TSA, AND TOFA. STOCKPILE MATERIAL SHALL BE LOCATED AS SHOWN ON CSPP DRAWINGS OR AS ORDERED BY THE RPR. STOCKPILE MATERIAL STORED ON AIRPORT PROPERTY SHALL NOT EXCEED AN ELEVATION OF 25' ABOVE GROUND LEVEL. STOCKPILE MATERIAL SHALL BE PROMINENTLY MARKED AND LIGHTED DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS.

20. CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING ELECTRICAL AND COMMUNICATION FACILITIES AT ALL TIMES. CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION AND INSTALLATION TO MAINTAIN SERVICE BY INSTALLING TEMPORARY ELECTRICAL JUMPERS ABOVE GROUND IN CONDUIT, UNLESS OTHERWISE APPROVED BY THE RPR. TEMPORARY ELECTRICAL JUMPERS SHALL BE PROTECTED WHEN CROSSING THROUGH WORK AREAS BY PLACING ORANGE FLAGGING AT INTERVALS ALONG THE LENGTH OF THE JUMPER AND INSTALLING STEEL PLATES OVER SECTIONS THAT WILL BE UNDER CONSTRUCTION TRAFFIC. COST OF TEMPORARY JUMPER CABLES, CONNECTIONS, CONDUITS, SPLICING, STEEL PLATES, AND CONES SHALL BE INCIDENTAL TO THE GENERAL CONSTRUCTION BID ITEM B-001-1.

21. CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE PATTERNS AND NOT BLOCK ANY DRAINAGE PIPE, OR DITCH FLOWS. CONTRACTOR MAY EXTEND EXISTING CULVERTS AS NECESSARY TO ACCOMMODATE HAUL ROUTE TRUCK TRAFFIC. ANY MODIFICATIONS TO EXISTING DRAINAGE PATTERNS NOT SHOWN ON THE PLANS SHALL BE APPROVED BY THE RPR. COST SHALL BE INCLUSIVE TO THE PROJECT. ALL MODIFICATIONS TO EXISTING DRAINAGE FEATURES MADE BY THE CONTRACTOR AND NOT SHOWN AS PROPOSED ON THE PLANS SHALL BE CONSIDERED TEMPORARY AND SHALL BE REMOVED AND RESTORED BY THE CONTRACTOR PRIOR TO PROJECT COMPLETION.

22. CONTRACTOR SHALL PROTECT UNDERGROUND UTILITIES SUCH AS DRAINAGE PIPES AND ELECTRICAL CABLES / CONDUITS BY PLACING STEEL PLATES AND MILLINGS AT CONTRACTOR HAUL ROUTE CROSSINGS AS REQUESTED BY THE RPR, OR AIRPORT OPERATIONS. COST SHALL BE INCLUSIVE TO THE GENERAL CONSTRUCTION BID ITEM B-001-1.

23. CONTRACTOR SHALL HOLD DAILY SAFETY BRIEFINGS WITH THEIR EMPLOYEES, SUBCONTRACTOR'S EMPLOYEES, AND DRIVERS TO ENSURE ALL CONSTRUCTION PERSONAL KNOW APPLICABLE AIRPORT PROCEDURES AND CHANGES TO THOSE PROCEDURES THAT MAY AFFECT THEIR WORK.

24. THE CONTRACTOR MUST ALSO ADHERE TO THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) FOR THIS PROJECT, AS WELL AS PREPARE AND SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) FOR APPROVAL TO THE RPR AND OWNER A MINIMUM OF FOURTEEN (14) CALENDAR DAYS PRIOR TO THE START OF CONSTRUCTION. NO WORK SHALL COMMENCE UNTIL THE SPCD HAS BEEN SIGNED, SUBMITTED, AND APPROVED.

25. CONTRACTOR SHALL PROVIDE ESCORT TO AND FROM THE WORK AREAS AND STAGING AREA FOR ALL DELIVERIES ON AIRPORT PROPERTY. DRIVER ESCORTS MUST BE EQUIPPED WITH AN APPROVED RADIO FOR AIRCRAFT COMMUNICATIONS. ALL ESCORT VEHICLES AND CONSTRUCTION EQUIPMENT SHALL BE EQUIPPED WITH A WORKING FLASHING AMBER BEACON AND FAA APPROVED FLAGS.

26. ALL MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS WELL AS CHECKED AND APPROVED BY THE RPR AND AIRPORT OPERATIONS PRIOR TO THE START OF CONSTRUCTION.

27. GATE GUARDS SHALL BE REQUIRED FOR ALL MATERIAL DELIVERIES. GATE GUARDS SHALL MONITOR CONSTRUCTION TRUCK TRAFFIC IN AND OUT OF AIRPORT. GATE SHALL BE LOCKED AND SECURED WHEN NOT IN USE OR WHEN GATE GUARD IS NOT PRESENT. ANY FLAGGING OR TRAFFIC CONTROL REQUIRED FOR ANY ACCESS GATE FROM PUBLIC ROADS ONTO THE AIRFIELD SHALL BE CONSIDERED INCIDENTAL TO THE GENERAL CONSTRUCTION BID ITEM B-001-1.

28. THE CONTRACTOR SHALL COORDINATE WITH THE RPR AND AIRPORT OWNER AT LEAST THIRTY (30) CALENDAR DAYS PRIOR TO THE START OF THE CONSTRUCTION WORK FOR ALL LOGISTICS OF THE PROJECT.

29. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE HAUL ROUTE, AS ORDERED BY THE RPR THROUGHOUT THE DURATION OF THIS CONTRACT. THE CONTRACTOR SHALL ALSO FULLY RESTORE THE HAUL ROUTE TO ITS ORIGINAL OR BETTER CONDITION AT THE CONCLUSION OF CONSTRUCTION. ALL WORK ASSOCIATED WITH CONSTRUCTING, MAINTAINING, REPLACING AND RESTORING THE HAUL ROUTE SHALL BE INCLUSIVE TO THE GENERAL CONSTRUCTION BID ITEM B-001-1.

30. SIGNS ADJACENT TO AREAS USED BY AIRCRAFT MUST COMPLY WITH FRANGIBLE REQUIREMENTS OF AC 150/5220-23 OR LATEST REVISON, FRANGIBLE CONNECTIONS, WHICH MAY REQUIRE MODIFICATION TO SIZE AND HEIGHT GUIDANCE IN THE MUTCD. SIGNS SHALL BE MOUNTED ON POLE WITH FRANGIBLE FITTINGS (BREAKAWAY POST)

31. CONTRACTOR IS RESPONSIBLE FOR SNOW REMOVAL IN THEIR WORK AND STAGING AREAS.

SAFETY AND SECURITY NOTES:

1. IN ADDITION TO NORMAL SAFETY PRECAUTIONS EXPECTED OF THE CONTRACTOR, IT IS NOTED THAT SPECIAL CONSIDERATIONS MUST BE GIVEN TO THE FACT THAT CONSTRUCTION ACTIVITY WILL BE TAKING PLACE WITHIN THE CONFINES OF AN ACTIVE AIRPORT. IN THIS REGARD, NO EQUIPMENT OR MATERIAL CAN BE LOCATED SO AS TO OBSTRUCT THE SAFE FLOW OF TRAFFIC ON THE EXISTING RUNWAY AND TAXIWAY SURFACES. PARTICULAR ATTENTION MUST BE GIVEN TO THE USE OF TAXIWAYS FOR THE PURPOSE OF MOVING OR PARKING EQUIPMENT.

2. IN ADDITION TO THE FOLLOWING REQUIREMENTS, REFER TO THE PROJECT DOCUMENTS AND FAA AC 150/5370-2, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, LATEST EDITION. WHERE CONFLICTS OCCUR BETWEEN THE REQUIREMENTS IN THE PROJECT DOCUMENTS AND THOSE INDICATED IN THE REFERENCED FAA ACS, THE MOST STRINGENT SHALL GOVERN, UNLESS NOTED OTHERWISE.

3. THE CONTRACTOR SHALL ALSO BE FAMILIAR WITH, AND COMPLY WITH:
   - A. FAA AC 70/7460-1, OBSTRUCTION MARKING AND LIGHTING, LATEST EDITION;
   - B. FAA AC 150/5210-5, PAINTING, MARKING AND LIGHTING OF VEHICLES USED ON AIRPORTS, LATEST EDITION;
   - C. FAA AC 150/5370-2, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, LATEST EDITION; AND
   - D. TITLE 14 OF THE CODE OF FEDERAL REGULATIONS PART 77, OBJECTS AFFECTING NAVIGABLE AIRSPACE, AND PART 139, CERTIFICATION OF AIRPORTS.

4. THE CONTRACTOR SHALL FAMILIARIZE THEIR PERSONNEL OF THE AIRPORT ACTIVITY AND OPERATIONS THAT ARE INHERENT TO THIS ACTIVE AIR CARRIER AIRPORT. CONDUCT ALL CONSTRUCTION ACTIVITIES TO CONFORM TO ALL ROUTINE AND EMERGENCY AIR TRAFFIC REQUIREMENTS AND GUIDELINES ON SAFETY AS SPECIFIED HEREIN OR AS DIRECTED BY THE OWNER.

5. CONSTRUCTION WORK ON THIS PROJECT WITHIN THE AOA IS SUBJECT TO THE OPERATIONAL SAFETY AND SECURITY REQUIREMENTS OF THE ABOVE AC REFERENCES AND ANY ADDITIONAL REQUIREMENTS BY THE FEDERAL GOVERNMENT, STATE OR AS MAY BE DEEMED NECESSARY BY CHEMUNG COUNTY.

6. THE OWNER, AT ALL TIMES, HAS COMPLETE JURISDICTION OVER THE SAFETY OF AIRCRAFT OPERATIONS DURING THE WORK. WHEREVER THE SAFETY OF AIR TRAFFIC IS CONCERNED, THE DECISIONS OF THE OWNER WILL BE FINAL AS TO METHODS, PROCEDURES, AND MEASURES USED.

7. THE OWNER RESERVES THE RIGHT TO SUSPEND CONSTRUCTION OPERATIONS FOR SHORT PERIODS OF TIME (I.E. WHILE AN AIRCRAFT PASSES), DAILY, OR BETWEEN CONSTRUCTION PHASES, AND / OR CHANGE THE ORDER OF CONSTRUCTION PHASING DURING THE PROJECT IF IT IS DETERMINED AS IN THE BEST INTEREST OF AIRPORT OPERATIONS OR SAFETY. THE CONTRACTOR MAY BE DIRECTED TO MOVE CONTRACTOR PERSONNEL, EQUIPMENT, AND MATERIALS TO SAFE LOCATION AND / OR EVACUATE THE SITE IN ORDER TO ENABLE AIRCRAFT OPERATIONS. NECESSARY EXTENSIONS IN CONTRACT TIME WILL BE GRANTED OR A STOP WORK ORDER WILL BE ISSUED DUE TO THESE DELAYS. HOWEVER, THERE WILL BE NO ADJUSTMENTS IN CONTRACT PRICE DUE TO THESE DELAYS, UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.

8. EACH CONTRACTOR EMPLOYEE WHO OPERATES A GROUND VEHICLE IN ANY PORTION OF THE AOA AT ELM MUST BE FAMILIAR WITH AND COMPLY WITH:
   - A. ELM'S RULES AND REGULATIONS.
   - B. ELM'S PROCEDURES FOR THE OPERATION OF GROUND VEHICLES.
   - C. THE CONSEQUENCES OF NON-COMPLIANCE WITH ELM'S RULES AND REGULATIONS AND / OR PROCEDURES FOR THE OPERATION OF GROUND VEHICLES AS SHOWN ON THE PLANS.

9. CONTRACTOR PERSONNEL, EQUIPMENT, OPERATIONS AND TRAVEL SHALL BE CONFINED TO THE AREA WITHIN THE DEFINED WORK LIMITS SHOWN IN THE PLANS. CONTRACTOR PERSONNEL ARE NOT PERMITTED TO ENTER OR REMAIN IN PART OF THE AOA WHICH WOULD BE HAZARDOUS TO PERSONS OR TO AIRCRAFT OPERATIONS. THE CONTRACTOR SHALL INFORM THEIR PERSONNEL OF THE ROUTES, SPEEDS, AND PROCEDURES FOR TRANSPORTING EQUIPMENT AND MATERIALS TO THE CONSTRUCTION SITE AND RESTRICTIONS TO MOVEMENT OF EQUIPMENT OR CONTRACTOR PERSONNEL WITHIN THE AOA.

10. ROADS DESIGNATED AS CONTRACTOR HAUL ROUTES WILL BE USED BY OTHER AIRPORT VEHICLES, CONTRACTORS, AND THE GENERAL PUBLIC (ALONG PUBLIC ROADS). THE CONTRACTOR SHALL NOT INTERFERE WITH OTHER VEHICLE TRAFFIC AND SHALL YIELD TO EMERGENCY VEHICLES AND AIRCRAFT ALONG ANY OF THE AIRPORT OR PUBLIC ROADS. THE CONTRACTOR SHALL PROVIDE ALL FLAGGING, SIGNING, LIGHTING, ETC. REQUIRED BY ELM, CHEMUNG COUNTY, OR THE STATE TO PROVIDE ALL REASONABLE SAFETY MEASURES TO PROTECT ALL PERSONS UTILIZING ALL ROADS USED BY THE CONTRACTOR.

11. ALL CONSTRUCTION EQUIPMENT MUST MAINTAIN A DISTANCE GREATER THAN 25 FEET FROM ANY PARKED AIRCRAFT.

12. DO NOT EXCEED 15 MPH WITHIN THE AOA.

13. ANY DAMAGE ALONG THE CONTRACTOR ACCESS / HAUL ROUTES DUE TO THE CONTRACTOR'S USE SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST TO ELM. AT THE COMPLETION OF THE PROJECT, ALL PAVEMENTS AND SURFACES ALONG THE ACCESS ROUTES THAT WERE EXISTING AT THE START OF THE PROJECT SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS, AS DETERMINED BY THE ENGINEER. CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE HAUL ROAD AND PUBLIC ROADWAY DUE TO HIS / HER OPERATIONS. THE CONTRACTOR SHALL COORDINATE AND MEET THE CLEANING AND REPAIR REQUIREMENTS SET BY OTHER PUBLIC AGENCIES FOR USE OF THEIR ROADS FOR CONSTRUCTION RELATED WORK. PRIOR TO CONSTRUCTION WORK THE CONTRACTOR AND ENGINEER SHALL PERFORM A PRE-INSPECTION AND DOCUMENTATION OF HAUL ROUTE CONDITIONS.

14. CONTRACTOR VEHICLES AND EQUIPMENT BROUGHT INTO THE AOA SHOULD BE SERVICED AND MAINTAINED PRIOR TO ENTERING THE AOA TO PREVENT FUEL, HYDRAULIC FLUID, OR OTHER CHEMICAL FLUID LEAKS AND EXCESSIVE EXHAUST THAT MAY CAUSE ENVIRONMENTAL ISSUES. VEHICLES AND EQUIPMENT THAT MAY CAUSE ENVIRONMENTALLY DETRIMENTAL CONDITIONS WILL BE PROHIBITED FROM ENTERING THE AOA. HOWEVER, CONTRACTOR PERSONNEL OPERATING CONSTRUCTION VEHICLES AND EQUIPMENT ON THE AIRPORT MUST NOTIFY THE ENGINEER IMMEDIATELY AND EXPEDITIOUSLY CONTAIN AND CLEAN-UP SPILLS RESULTING FROM FUEL, HYDRAULIC FLUID, OR OTHER CHEMICAL FLUID LEAKS WITHIN ONE (1) HOUR OF THE SPILL OCCURRING. TRANSPORT AND HANDLING OF OTHER HAZARDOUS MATERIALS ON AN AIRPORT ALSO REQUIRES SPECIAL PROCEDURES. TO THAT END, DEVELOP AND IMPLEMENT SPILL PREVENTION AND RESPONSE PROCEDURES FOR VEHICLE OPERATIONS. INCORPORATE THESE PROCEDURES INTO THE SPCD. THIS INCLUDES MAINTENANCE OF APPROPRIATE MSDS DATA AND APPROPRIATE PREVENTION AND RESPONSE EQUIPMENT ON-SITE.

15. TRUCKS AND EQUIPMENT SHALL HAVE ALL LOOSE DIRT, ROCKS, AND OTHER MATERIALS REMOVED FROM TIRES AND UNDER CARRIAGE WHEN ACCESSING THE AOA AND WHEN LEAVING A WORK AREA. PROVIDE FOD CHECKS AT EACH OF THESE LOCATIONS.

16. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) OPERATIONAL VACUUM SWEEPER TRUCK AND ONE (1) OPERATIONAL WATER TRUCK ON-SITE AT ALL TIMES DURING WORKING AND NON-WORKING HOURS. ALL ACTIVE PAVEMENT AREAS USED BY THE CONTRACTOR MUST BE CLEANED ON A CONTINUOUS BASIS. PAVEMENTS SHALL BE BRUSHED CLEAN AND HOSED DOWN, IF NECESSARY, TO REMOVE ANY MUD OR DEBRIS AND AS REQUESTED BY THE ENGINEER. ALL DEBRIS DEPOSITED ON ANY AIRPORT PAVEMENT SHALL BE REMOVED CONTINUOUSLY DURING THE COURSE OF WORK. IN ADDITION, THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO PREVENT MATERIALS FROM ESCAPING THE WORK AND/OR STOCKPILE/STAGING AREAS. THIS WORK SHALL BE CONSIDERED INCLUSIVE TO THE PROJECT.

17. THE CONTRACTOR SHALL CONTINUOUSLY SWEEP AND WASH DOWN ALL ACCESS ROUTES TO THE CONSTRUCTION AREAS, HAUL ROUTES, EXISTING PAVED AREAS ADJACENT TO THE WORK AREA, AND AOA PAVEMENTS. THESE AREAS SHALL BE KEPT FREE OF DEBRIS AT ALL TIMES, AT NO ADDITIONAL COST TO THE OWNER.

18. THE CONTRACTOR SHALL PROVIDE TRUCK WASHES, RUMBLE STRIPS, SHAKERS OR OTHER MEANS AS NECESSARY TO PREVENT FOD IN THE AOA AND WILL BE MONITORED BY THE ENGINEER. IF THE CONTRACTOR'S METHOD DOES NOT REMOVE DEBRIS ADEQUATELY TO MEET SAFETY REQUIREMENTS, THE CONTRACTOR MAY BE SHUT DOWN AND WILL BE REQUIRED TO UTILIZE OTHER METHODS AT NO ADDITIONAL COST TO THE OWNER.

19. ALL VEHICLES AND EQUIPMENT SHALL BE KEPT WITHIN THE WORK AREAS ESTABLISHED FOR THAT WORK SHIFT UNLESS TRAVELING TO OR FROM THE SITE. AT THE END OF THE WORK SHIFT, THE CONTRACTOR WILL BE REQUIRED TO PARK ALL VEHICLES AND EQUIPMENT IN THE DESIGNATED STAGING AREA.

20. ALL CONSTRUCTION VEHICLES OPERATING ON AIRPORT PROPERTY MUST MEET THE FOLLOWING REQUIREMENTS:
   - A. DISPLAY A COMPANY PLACARD / LOGO IDENTIFYING THE VEHICLE
   - B. DISPLAY A YELLOW FLASHING LIGHT THAT IS MOUNTED ON THE UPPERMOST PART OF THE VEHICLE STRUCTURE. THE LIGHT MUST BE VISIBLE FROM ANY DIRECTION, DAY AND NIGHT, INCLUDING FROM THE AIR. LIGHTS MUST HAVE PEAK INTENSITY WITHIN THE RANGE OF 40 TO 400 CANDELAS (EFFECTIVE) FROM 0° (HORIZONTAL) UP TO 10° ABOVE THE HORIZONTAL AND FOR 360° HORIZONTALLY. FROM 10° TO 15° ABOVE THE HORIZONTAL PLANE, THE LIGHT OUTPUT MUST BE 1/10TH OF PEAK INTENSITY OR BETWEEN 4 AND 40 CANDELAS (EFFECTIVE). LIGHTS MUST FLASH AT 75 ± 15 FLASHES PER MINUTE.
   - C. DISPLAY A FLAG AT LEAST 3-FOOT BY 3-FOOT SQUARE HAVING A CHECKERED PATTERN OF INTERNATIONAL ORANGE AND WHITE SQUARES AT LEAST 1-FOOT ON EACH SIDE. THE FLAG MUST BE FIXED TO A STAFF AND ATTACHED TO THE VEHICLE SO THAT THE FLAG WILL BE READILY VISIBLE. AT AIRPORTS WITHOUT AIR TRAFFIC CONTROL FACILITIES, FLAGS MUST BE PROVIDED ON ALL VEHICLES.

22. CONTRACTOR PERSONNEL MUST WEAR HIGH-VISIBILITY WARNING GARMENTS AND IDENTIFIABLE HARD HATS IN ACCORDANCE WITH APPLICABLE OSHA, ANSI, ISEA, LOCAL, STATE, AND / OR FEDERAL REGULATIONS WHEN ON-SITE.

23. ANY EQUIPMENT TEMPORARILY PARKED AT A WORK SITE FOR USE DURING THE CURRENT WORK SHIFT SHALL BE PROPERLY MARKED, PARKED OUTSIDE ALL SAFETY AREAS, AND WITHIN THE BARRICADED WORK SITE. EQUIPMENT SHALL NOT EXCEED 25 FEET IN HEIGHT AND SHALL BE LEFT IN THE LOWEST POSITION AT THE END OF THE WORK SHIFT.

24. STOCKPILING OF MATERIALS WILL ONLY BE ALLOWED AT THE CONTRACTOR'S STAGING AREA. THE STOCKPILE HEIGHT SHALL REMAIN BELOW THE FAR PART 77 IMAGINARY SURFACE CONTOURS. OTHER STOCKPILE LOCATIONS PROPOSED BY THE CONTRACTOR MUST BE APPROVED BY THE AIRPORT AND ENGINEER.

25. THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR EQUIPMENT WITHIN 10 FEET OF ANY PERMANENT OR TEMPORARY AIRFIELD SECURITY FENCE.

26. ALL AIRFIELD MARKINGS ALONG HAUL ROUTES AND AREAS ADJACENT TO THE WORK AREA SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT.

27. THE CONTRACTOR'S JOB SUPERINTENDENT IS TO MEET WITH THE RESIDENT PROJECT REPRESENTATIVE (RPR) PRIOR TO THE START OF EACH WORKING DAY TO COORDINATE DAILY CONSTRUCTION ACTIVITIES.

28. CONTRACTOR RADIOS AND MOBILE PHONES MUST ONLY BE USED FOR THE CONTRACTOR'S INTERNAL COMMUNICATIONS. TO COMMUNICATE CLEARANCE FOR MOVEMENT OF EQUIPMENT, PERSONNEL, ETC. ON OR ACROSS ACTIVE AIRFIELD SURFACES, APPROVED AIRPORT RADIOS MUST BE USED. USE OF RADIOS BY THE CONTRACTOR MUST NOT INTERFERE WITH FREQUENCIES USED BY ATC OR THE AIRPORT. USE OF MOBILE PHONES IS RESTRICTED TO WORK-RELATED CALLS. A CURRENT, UP-TO-DATE CONTACT LIST MUST BE PROVIDED BY THE CONTRACTOR TO THE AIRPORT AND ENGINEER.

29. BLASTING IS NOT PERMITTED.

30. OPEN-FLAME WELDING AND TORCH CUTTING IS NOT PERMITTED.

31. ACCESS FOR AIRPORT RESCUE AND FIRE FIGHTING (ARFF) EQUIPMENT AND PERSONNEL SHALL BE MAINTAINED AT ALL TIMES. THE AIRPORT ARFF OPERATIONS SHALL HAVE RIGHT-OF-WAY OVER ALL CONTRACTOR'S OPERATIONS AT ALL TIMES.

32. AT LEAST 72 HOURS IN ADVANCE OF THE WORK, THE CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR THE CLOSURE OF A RUNWAY, TAXIWAY, OR APRON AS REQUIRED TO CONFORM TO THE CONSTRUCTION PHASING DRAWINGS. THIS REQUEST SHALL INCLUDE THE TIMES REQUESTED AND THE CONTRACTOR'S PROPOSED DETAILED SCHEDULE OF OPERATIONS WITHIN THE AREA.

33. THE CONTRACTOR SHALL BE AWARE THAT PERMISSION TO CLOSE A RUNWAY, TAXIWAY, OR APRON MAY NOT BE IMMEDIATELY GRANTED DUE TO AIRPORT OPERATIONS REQUIREMENTS.

PROJECT DURATION, WORK AREA DESCRIPTIONS, AND LIQUIDATED DAMAGES:

PHASE 0:

DESCRIPTION:
CONTAINS ALL WORK ASSOCIATED WITH PROCUREMENT OF THE PASSENGER BOARDING BRIDGE AND FIXED WALKWAY. WORK IN PHASE 0 SHALL ALSO INCLUDE DELEGATED DESIGN TASKS, SELECTION OF OPTIONS BY OWNER, AND SHOP DRAWING SUBMISSION, REVIEW, AND APPROVAL.

TIME OF COMPLETION:
WORK IN PHASE 0 SHALL BEGIN IMMEDIATELY AFTER EXECUTION OF THE CONSTRUCTION CONTRACT BETWEEN THE OWNER AND CONTRACTOR. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH MONTHLY STATUS REPORTS AND SCHEDULE UPDATES REGARDING THE PBB AND FIXED WALKWAY PROCUREMENT DURING PHASE 0.

LIQUIDATED DAMAGES:
NOT APPLICABLE

PHASE 1:

DESCRIPTION:
CONTAINS ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE PASSENGER BOARDING BRIDGE AND FIXED WALKWAY. THIS WORK INCLUDES INSTALLATION OF PHASING MEASURES, CONSTRUCTION OF THE OPENING FOR THE PBB IN THE EXISTING TERMINAL BUILDING, EXCAVATION AND INSTALLATION OF PBB FOUNDATIONS, RESTORATION OF AIRSIDE PAVEMENTS, RESTRIPING OF THE AIRCRAFT PARKING POSITION AT BOARDING GATE 4, INSTALLATION OF THE PBB AND FIXED WALKWAY, AND SITE CLEANUP AND RESTORATION.

TIME OF COMPLETION:
WORK IN PHASE 1 SHALL BE COORDINATED WITH THE SCHEDULED DELIVERY DATE OF THE PBB AND FIXED WALKWAY SUCH THAT REQUIRED SITE AND ARCHITECTURAL WORK IS COMPLETE PRIOR TO THE SCHEDULED DELIVERY DATE. WORK IN PHASE 1 SHALL BE COMPLETED IN 45 CONSECUTIVE CALENDAR DAYS FROM THE NOTICE TO PROCEED (NTP).

LIQUIDATED DAMAGES:
FAILURE TO COMPLETE ALL THE WORK IN PHASE 1 WITHIN THE 45 CALENDAR DAYS SPECIFIED WILL RESULT IN THE ASSESSMENT OF LIQUIDATED DAMAGES IN THE AMOUNT OF $5,000 FOR EACH CALENDAR DAY OR PORTION THEREOF IN WHICH THE WORK ITEMS REMAIN INCOMPLETE.

△1

SIDE VIEW

NOTES:

1. BARRICADES SHALL BE OTW SAFETY AIRPORT BARRICADE (MODEL NO. AR10x96) OR APPROVED EQUAL. ALL BARRICADES SHALL BE NEW AT THE START OF CONSTRUCTION.
2. BARRICADES SHALL BE IN COMPLIANCE WITH AC 150/5370-2G.
3. OMNIDIRECTIONAL LIGHTS SHALL BE OTW SAFETY (MODEL NO. C01) FLASHING RED SOLAR LIGHT OR APPROVED EQUAL. LIGHTS SHALL SECURELY ATTACH TO THE BARRICADES. ALL LIGHTS SHALL BE NEW WHEN THE BARRICADES ARE INSTALLED. THE CONTRACTOR SHALL REPLACE ANY BROKEN OR FAILED LIGHTS IMMEDIATELY.
4. THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL BARRICADES, LIGHTS, AND FLAGS THROUGHOUT THE DURATION OF CONSTRUCTION, AND DURING PERIODS OF NON-WORK, INCLUDING ANY WINTER SHUTDOWN PERIOD.
5. FLAGS SHALL SECURELY ATTACH TO THE BARRICADE AND BE MAINTAINED IN GOOD CONDITION AT ALL TIMES, AS DETERMINED BY THE ENGINEER. WORN OR TATTERED FLAGS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. INSTALLED BARRICADES SHALL BE FILLED WITH WATER TO COUNTERACT WIND AND/OR JET BLAST. DURING SUB-FREEZING TEMPERATURES, FILL WITH POTASSIUM ACETATE OR CALCIUM CHLORIDE SOLUTION.

LOW PROFILE CONSTRUCTION BARRICADE

1
C-102

NOT TO SCALE
INCLUSIVE TO ITEM B-001-1

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL
JARED PATRICK MOORE
096515

KEY PLAN
NORTH

CLIENT:
ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT:
INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN JEC
DESIGNED JEC
CHECKED JPM
SCALE AS NOTED
DATE 03/26/2026
PROJECT 18302.19

NO.	DATE	REVISIONS
1	4/7/26	ADDENDUM 2

DRAWING TITLE
CONSTRUCTION SAFETY AND PHASING PLAN NOTES & DETAILS

DRAWING NUMBER
C-102A1

K:\ECRAIT-18302.19 PASSENGER BOARDING BRIDGE\DRAW\DRAWINGS\SHEET FILES\18302.19-CSPP-DETS.DWG

N: 788307.18
E: 735919.36

N: 788339.83
E: 735971.03

N: 788286.57
E: 735940.36

N: 788328.98
E: 735982.08

REMOVE EXISTING ASPHALT PAVEMENT, SAWCUT AT LIMITS OF REMOVAL TO FULL DEPTH. STAIRS, RAILINGS, RAMP, AND CONCRETE PAVEMENT ARE TO REMAIN AND BE PROTECTED.

REMOVE EXISTING AIRFIELD PAVEMENT MARKINGS IN ACCORDANCE WITH ITEM P-620 (TYP.)

EXISTING PAVEMENT MARKINGS TO REMAIN AND BE PROTECTED (TYP.)

TAXILANE T

TLOFA

TSA

EMH

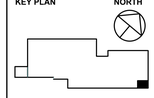
0 10 20 40 FT
SCALE

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

KEY PLAN NORTH



CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	JEC
DESIGNED	JEC
CHECKED	JPM
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
1	4/7/26	ADDENDUM 2

DRAWING TITLE

EXISTING CONDITIONS & DEMOLITION PLAN

DRAWING NUMBER

C-200A1

K:\EDATA\18302.19 PASSENGER BOARDING BRIDGE\DRAWING\SHEET FILES\18302.19-ADD1.DWG

PASSENGER BOARDING BRIDGE ROTUNDA AND FOUNDATION TO BE INSTALLED BY GENERAL CONTRACTOR

N: 788327.43
E: 735968.67

FOUNDATION EXTENTS (TYP.) REFER TO STRUCTURAL DRAWINGS

REINFORCED PCC PAVEMENT TO BE INSTALLED BY GENERAL CONTRACTOR. SEE DETAIL 4, SHEET C-301

N: 788298.18
E: 735939.95

MATCH EXISTING GRADE TYP. ALL SIDES

PASSENGER BOARDING BRIDGE FIXED SECTION AND FOUNDATIONS TO BE INSTALLED BY GENERAL CONTRACTOR

N: 788319.09
E: 735991.17

INSTALL 4" WIDE RED PBB OPERATING RANGE MARKING

COMMERCIAL APRON

N: 788343.81
E: 736020.85

PASSENGER BOARDING BRIDGE TO BE INSTALLED BY GENERAL CONTRACTOR

N: 788359.61
E: 736020.85

N: 788391.01
E: 736026.75

INSTALL AIRCRAFT SAFETY ENVELOPE MARKING (SEE DETAIL 2, SHEET C-301)

N: 788370.57
E: 736048.85

Oper.min

Work.min

Oper.max

Work.max

N: 788383.77
E: 736065.23

N: 788366.69
E: 736069.49

N: 788423.48
E: 736112.29

N: 788352.32
E: 736059.32

AIRCRAFT SHOWN:
CRJ 200/700/900
A320
737-700/800

CRJ-200
CRJ-900
737-700W
737 MAXCRJ-700
737-800W
737 MAX-900
A320-200S

N: 788291.44
E: 736065.72

N: 788298.25
E: 736088.76

N: 788407.79
E: 736195.75

INSTALL LEAD-IN LINE (SEE DETAIL 3, SHEET C-301)

N: 788345.18
E: 736183.99

N: 788282.56
E: 736172.22

TLOFA

TAXILANE T

0 10 20 30 FT
SCALE

GENERAL NOTES:

1. FINAL LOCATION OF PBB FOUNDATIONS SHALL BE COORDINATED AFTER APPROVAL OF THE COMPLETE PBB AND FIXED WALKWAY SUBMITTAL. ADJUSTMENTS TO THE LOCATION OR ORIENTATION OF A FOUNDATION SHALL NOT CONSTITUTE EXTRA WORK.

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

STATE OF NEW YORK
JARED PATRICK MOORE
096515
LICENSED PROFESSIONAL ENGINEER

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	JEC
DESIGNED	JEC
CHECKED	JPM
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

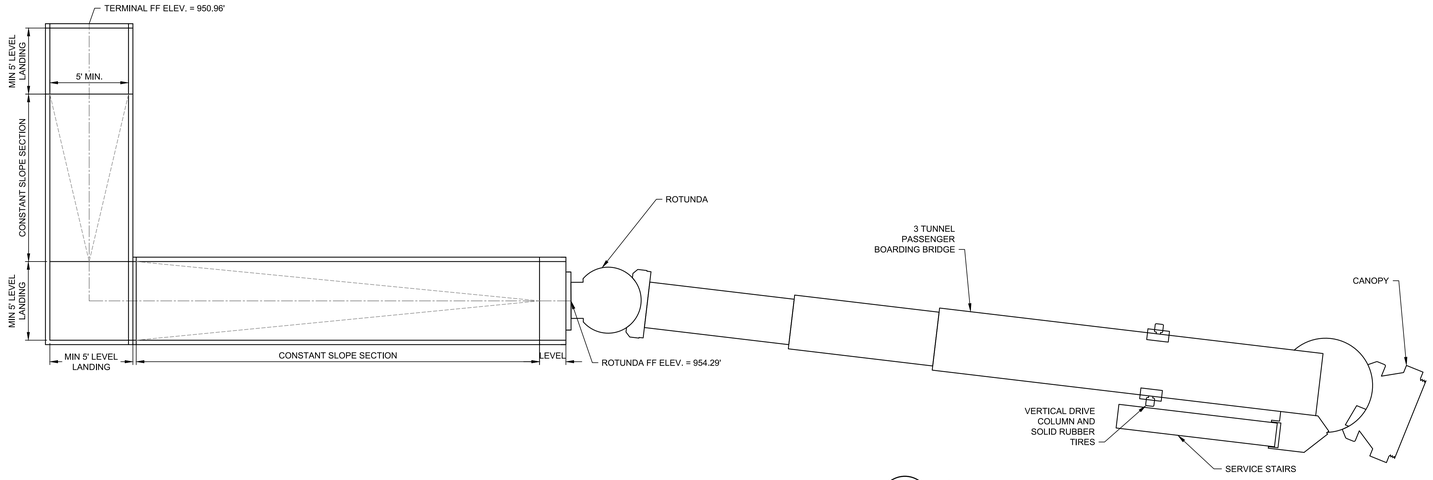
NO.	DATE	REVISIONS
1	4/7/26	ADDENDUM 2

DRAWING TITLE

PBB LAYOUT AND SITE PLAN

DRAWING NUMBER

C-300A1



PASSENGER BOARDING BRIDGE PLAN 1 C-301 ⚠1
NOT TO SCALE
(INCLUSIVE TO ITEM B-001-1)

PASSENGER BOARDING BRIDGE GENERAL NOTES:

1. THE PASSENGER BOARDING BRIDGE (PBB) CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE AND WORKING PBB AS SHOWN ON THE PLANS, AS SPECIFIED WITHIN THE PROJECT SPECIFICATIONS AND AS DIRECTED BY THE RESIDENT PROJECT REPRESENTATIVE (RPR). THE PBB CONTRACTOR IS RESPONSIBLE FOR ALL INCIDENTAL PARTS, LABOR, AND EQUIPMENT NOT EXPLICITLY NOTED TO BE COMPLETED BY OTHERS AS REQUIRED TO PROVIDE A COMPLETE WORKING PBB SYSTEM WITH THE AUXILIARY EQUIPMENT SPECIFIED.

2. THE PBB SHALL BE AN APRON DRIVE, THREE (3) TUNNEL BRIDGE CAPABLE OF SERVICING THE AIRCRAFT INDICATED BELOW. CONSIDERATIONS SHALL INCLUDE: THE PROPOSED FINISHED FLOOR ELEVATION (FFE) OF THE PROPOSED TERMINAL BUILDING DEPARTURE LOUNGE, EXISTING PAVEMENT GRADES OF THE TERMINAL APRON, AND THE AIRCRAFT PARKING POSITIONS AS INDICATED ON THE DRAWINGS.

   PASSENGER BOARDING DESIGN AIRCRAFT FOR GATE 1 & GATE 2 PBB'S:
   - AIRBUS A320
   - BOEING 737-700 / 800
   - BOMBARDIER CRJ 900

   THE PBB CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A RECOMMENDED PBB MODEL THAT SATISFIES THIS BASIS OF DESIGN, COMPLETE WITH GRAPHIC SHOWING THE BRIDGE SERVICING EACH OF THE AIRCRAFT INDICATED.

3. THE PBB CONTRACTOR SHALL PROVIDE ASSISTANCE IN THE LAYOUT OF THE ROTUNDA AND FIXED WALKWAY FOUNDATIONS PRIOR TO ITS CONSTRUCTION. THE PBB CONTRACTOR SHALL PROVIDE THE TEMPLATE(S) FOR LAYOUT OF THE ANCHOR BOLTS AND PROVIDE ALL REQUIRED ANCHOR BOLTS.

4. THE PBB CONTRACTOR SHALL PROVIDE THE REQUIREMENTS FOR THE ELECTRICAL AND COMMUNICATION FEEDS FOR THE PBB TO THE ENGINEER. THE CONNECTION BOXES, ELECTRICAL, AND DATA CONNECTIONS WILL BE THE RESPONSIBILITY OF THE PBB CONTRACTOR. ALL WIRING WITHIN THE PBB TO SERVICE THE PBB AND THE PBB EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE PBB CONTRACTOR.

7. ANY DOOR SHOWN INSIDE THE PBB SHALL BE FABRICATED WITH THE PBB.

8. THE CONTRACTOR SHALL SURVEY ALL PROVIDED ELEVATIONS AND PROVIDE A REPORT TO THE ENGINEER NOTING ANY DISCREPANCIES.

9. THE PBB'S ARE TO BE INSTALLED ON AN ACTIVE AIRCRAFT TERMINAL APRON. THE PBB CONTRACTOR SHALL REFER TO THE CONSTRUCTION SAFETY AND PHASING PLANS, NOTES, AND DETAILS WITHIN THESE PLANS AND SPECIFICATIONS.

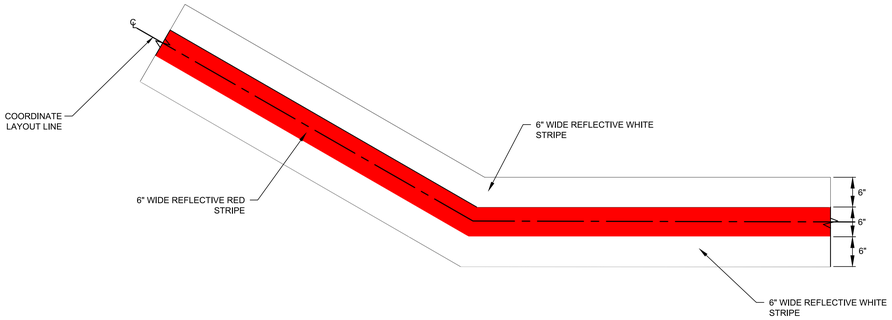
GENERAL AIRSIDE PAVEMENT MARKING NOTES:

1. PRIOR TO FULL PRODUCTION OF PAVEMENT MARKINGS, A TEST STRIP SHALL BE INSTALLED BY THE CONTRACTOR. THE TEST STRIP SHALL BE OF APPROPRIATE SIZE AND OF ADEQUATE VARIETY TO DEMONSTRATE THE CONTRACTOR'S ABILITY TO MEET THE REQUIREMENTS OF THE P-620 SPECIFICATION. THE ENGINEER AND AIRPORT PERSONNEL SHALL REVIEW AND APPROVE THE TEST STRIP PRIOR TO THE CONTRACTOR PROCEEDING WITH ADDITIONAL MARKING.

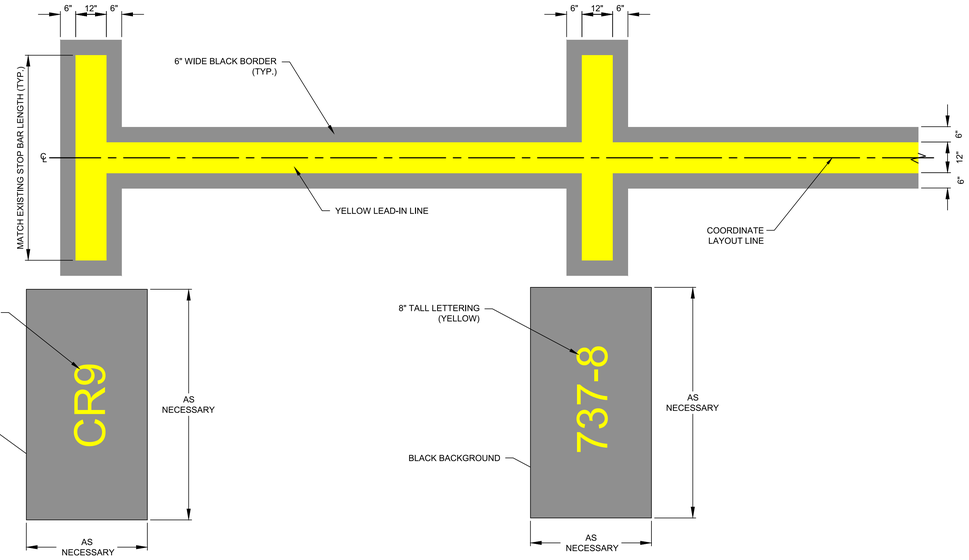
2. ALL NEW MARKINGS PLACED ON EXISTING ASPHALT PAVEMENT AND PCC PAVEMENT SHALL BE OUTLINED IN A SIX-INCH (6") WIDE BLACK BORDER. THE BLACK BORDER WIDTH MAY VARY IN SIZE. SEE MARKING DETAILS ON THIS SHEET FOR DIMENSION. IF NO DIMENSION IS LISTED, THE BLACK BORDER SHALL BE SIX-INCHES (6") WIDE. NO GLASS BEADS SHALL BE APPLIED TO BLACK PAINT.

3. THE BLACK PAINT BORDER SHALL BE PLACED AFTER THE PERMANENT OR TEMPORARY MARKINGS ARE PLACED. IN NO CIRCUMSTANCE WILL BLACK PAINT BE PLACED FIRST. THE CONTRACTOR IS ALSO NOT PERMITTED TO INSTALL NEW WHITE, YELLOW, OR RED PAINT ON TOP OF FRESH BLACK PAINT.

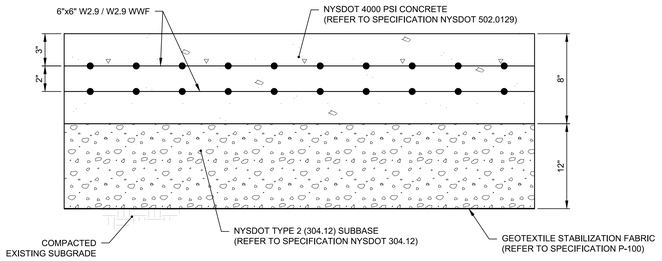
4. CONTRACTOR TO FIELD VERIFY AND MATCH THE DIMENSION AND LAYOUT OF EXISTING PARKING POSITION MARKINGS ON THE COMMERCIAL APRON.



AIRCRAFT SAFETY ENVELOPE MARKING 2 C-301
NOT TO SCALE

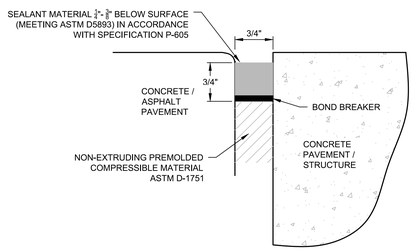


LEAD-IN LINE MARKING DETAIL 3 C-301
NOT TO SCALE
(INCLUSIVE TO ITEM B-001-1)

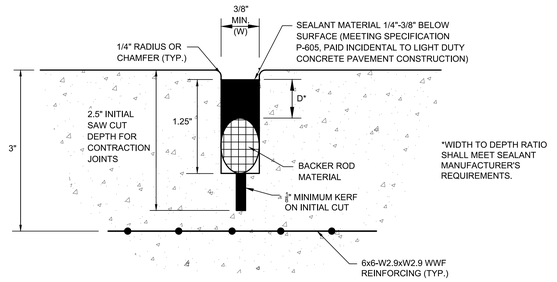


NOTES:
1. SLABS SHALL BE FLOATED AND BROOM FINISHED.
2. PROVIDE CONSTRUCTION/CONTRACTION JOINTS AT 12' O.C. AND WHERE SLAB GEOMETRY CHANGES. MAXIMUM SLAB SIZE SHALL BE 12' x 12'. SEE CONSTRUCTION/CONTRACTION JOINT DETAIL THIS SHEET.
3. PROVIDE EXPANSION JOINTS AT 50' MAX. O.C. AND WHERE SLABS ABUT A STRUCTURE, INCLUDING ALL PBB FOUNDATIONS. SEE EXPANSION JOINT DETAIL THIS SHEET.

LIGHT DUTY CONCRETE PAVEMENT DETAIL 4 C-301 ⚠1
NOT TO SCALE
(INCLUSIVE TO ITEM B-001-1)



EXPANSION JOINT DETAIL 5 C-301
NOT TO SCALE
(INCLUSIVE TO ITEM B-001-1)



NOTES:
1. SEALANT RESERVOIR SHALL BE SIZED TO PROVIDE PROPER SHAPE FACTOR, W/D. FIELD POURED AND PREFORMED SEALANTS REQUIRE DIFFERENT SHAPE FACTORS FOR OPTIMUM PERFORMANCE.
2. BACKER ROD MATERIAL MUST BE COMPATIBLE WITH THE TYPE OF LIQUID SEALANT USED AND SIZED TO PROVIDE THE DESIRED SHAPE FACTOR.
3. SAWCUT LIGHT DUTY CONCRETE PAVEMENTS AT A DEPTH OF 2.5" FOR CONTRACTION JOINTS.

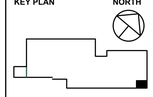
CONTRACTION/CONSTRUCTION JOINT FOR LIGHT DUTY CONCRETE PAVEMENT 6 C-301 ⚠1
NOT TO SCALE
(INCLUSIVE TO ITEM B-001-1)

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

KEY PLAN NORTH



CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	JEC
DESIGNED	JEC
CHECKED	JPM
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

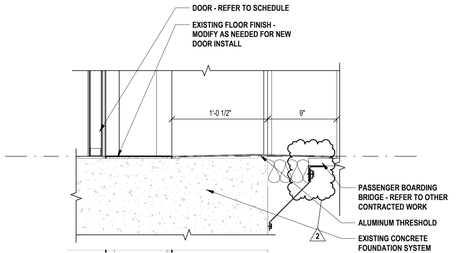
NO.	DATE	REVISIONS
1	4/7/26	ADDENDUM 2

DRAWING TITLE

AIRSIDE SITE DETAILS

DRAWING NUMBER

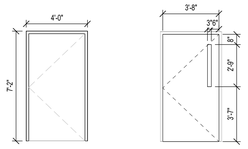
C-301A1

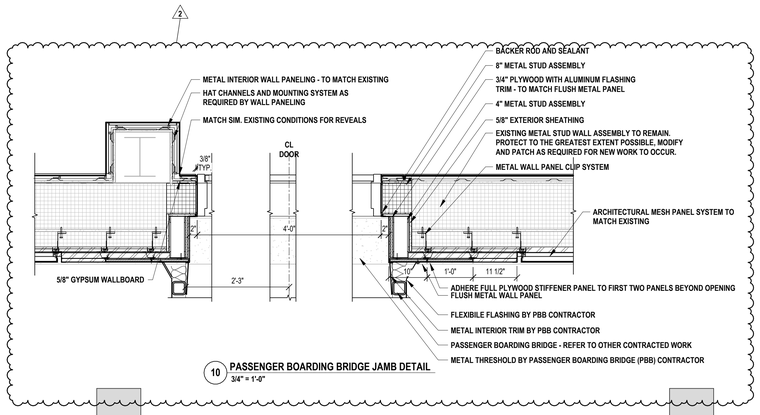


11 PASSENGER BOARDING BRIDGE SILL DETAIL
1 1/2" = 1'-0"

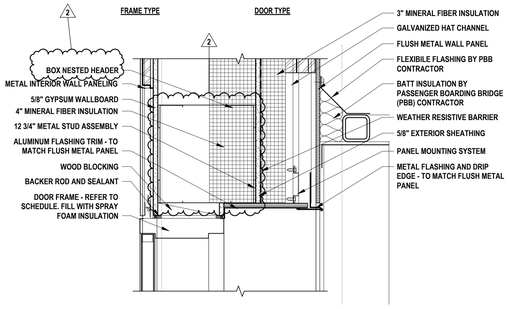
DOOR SCHEDULE

#	DOOR HEIGHT	DOOR WIDTH	DOOR TYPE	DOOR THICK.	DOOR MATL.	DOOR FINISH	ASSEMBLY LABEL	GLAZING MATL.	GLAZING MARKING	HDWR SET	FRAME TYPE	FRAME MATL.	FRAME FINISH	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	NOTES
PBB-101	7' - 0"	3' - 8"	A	1 3/4"	HM	PNT	--			1	1	HM	PNT	9/A101	10/A101	11/A101	INSULATED, CARD ACCESS BOTH SIDES, DK BRONZE, ADD DOOR CONTACTS, DELAYED EGRESS PANIC BAR

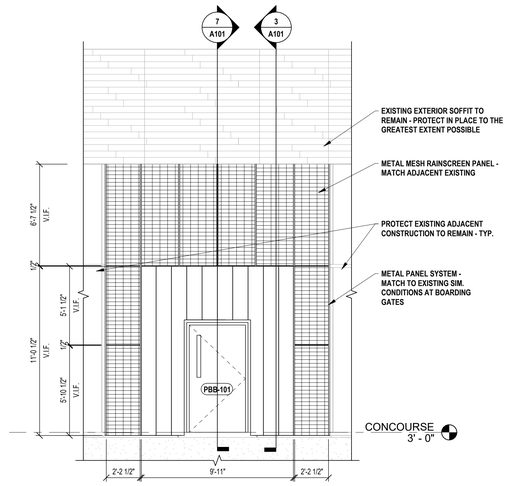




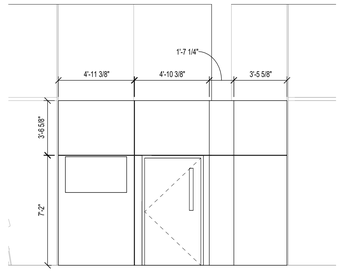
10 PASSENGER BOARDING BRIDGE JAMB DETAIL
3/4" = 1'-0"



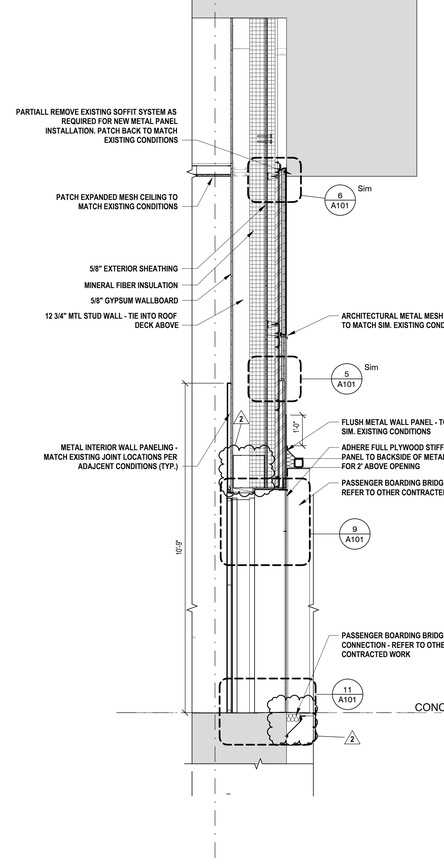
9 PASSENGER BOARDING BRIDGE HEAD DETAIL
1 1/2" = 1'-0"



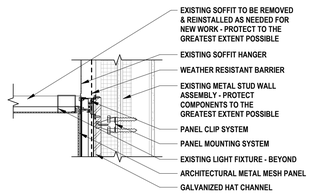
8 EXTERIOR ELEVATION - PASSENGER LOADING BRIDGE
1/4" = 1'-0"



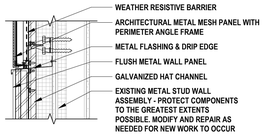
12 INTERIOR ELEVATION
1/4" = 1'-0"



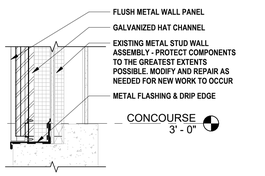
7 WALL SECTION - BOARDING BRIDGE DOOR
1/2" = 1'-0"



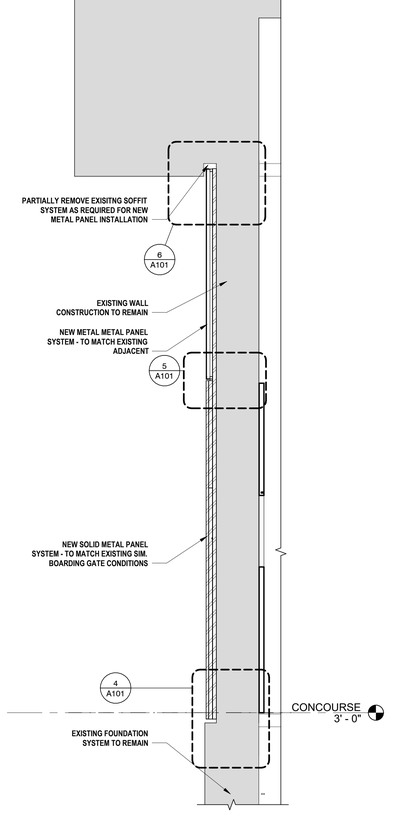
6 MESH PANEL HEAD DETAIL
1" = 1'-0"



5 PANEL TRANSITION DETAIL
1" = 1'-0"



4 METAL PANEL SILL CONDITION
1" = 1'-0"



3 WALL SECTION - METAL MESH PANEL
1/2" = 1'-0"

GENERAL NOTES:

A THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK REQUIRED TO IMPLEMENT THE WORK OF THE CONTRACT, REGARDLESS OF WHETHER SPECIFICALLY INDICATED OR NOT, UNLESS NOTED OTHERWISE.

B THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING ANY WORK AND NOTIFY ARCHITECT IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.

C THE CONTRACTOR SHALL COORDINATE THE WORK OF THIS CONTRACT WITH THE WORK OF ALL OTHER CONTRACTED WORK AND WORK PERFORMED BY THE OWNER.

D ITEMS SHOWN ARE INTENDED TO GIVE APPROXIMATE QUANTITY, LOCATION & TYPE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL QUANTITY & EXISTING FIELD CONDITIONS.

E ALL DIMENSIONS ARE TAKEN FROM FACE OF WALL TO FACE OF WALL. UNLESS NOTED OTHERWISE.

F ALL FINISHED ASSEMBLIES ARE REQUIRED TO BE PROTECTED DURING THE COURSE OF CONSTRUCTION. ALL FINISHED ASSEMBLIES DAMAGED DURING THE COURSE OF CONSTRUCTION ARE REQUIRED TO BE REPLACED OR REPAIRED AT THE ARCHITECTS DIRECTION.

GENERAL DEMO NOTES:

A NO ASBESTOS CONTAINING MATERIALS HAVE BEEN IDENTIFIED AS PART OF THIS PROJECT. THE OWNER HAS REPORTS IDENTIFYING ACM MATERIALS AND WILL HAVE THESE AVAILABLE FOR CONTRACTORS REFERENCE. IF SUSPECT MATERIAL NOT SCHEDULED IS ENCOUNTERED, STOP WORK IMMEDIATELY, DO NOT DISTURB THE MATERIAL AND NOTIFY THE OWNER'S REPRESENTATIVES.

B CONTRACTOR TO PROVIDE PROTECTIVE BARRIER AT ALL AREAS OF DEMOLITION. KEEP ALL EXITS FREE AND CLEAR AT ALL TIMES DURING FACILITY OPERATIONS

C THE OWNER RESERVES THE RIGHT TO RETAIN ANY REMOVED ITEMS AFTER CONTRACTOR REMOVAL. THE CONTRACTOR SHALL REMOVE FROM THE SITE AND DISPOSE OF ALL REMOVED ITEMS THE OWNER DOES NOT WISH TO RETAIN.

D CONTRACTOR SHALL PROTECT EXISTING CONSTRUCTION TO REMAIN AS REQUIRED DURING DEMOLITION. PATCH, REPAIR, PAINT OR RE-FINISH EXISTING CONSTRUCTION MATERIALS AND FINISHES DAMAGED DURING DEMOLITION TO THIER ORIGINAL CONDITION.

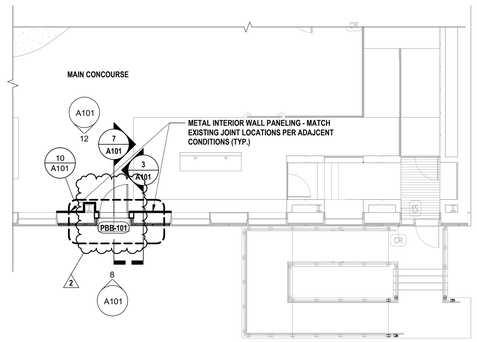
E CONTRACTOR TO COORDINATE THE WORK OF THIS CONTRACT WITH THE WORK OF ALL OTHER CONTRACTED WORK AND WORK PERFORMED BY THE OWNER.

F DIMENSIONS SHOWN FOR ALL NEW OPENINGS IN EXISTING CONSTRUCTION SHOULD BE COORDINATED WITH THE NEW PLANS AND EXISTING CONDITIONS IN THE FIELD.

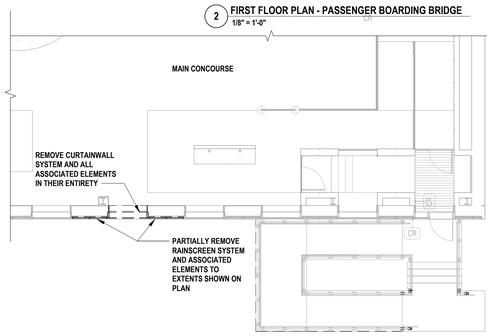
G ITEMS SHOWN ARE INTENDED TO GIVE APPROXIMATE QUANTITY , LOCATION AND TYPE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL QUANTITIES AND EXISTING FIELD CONDITIONS IN ORDER TO COMPLETE THE WORK.

H COORDINATE ANY WALL/FLOOR REPAIR/INFILL THAT IS CAUSED BY THE REMOVAL OF EQUIPMENT BY OTHER PRIME CONTRACTORS AND PREPARE SURFACE TO RECEIVE NEW FINISHES.

I MAINTAIN EXISTING STRUCTURAL SYSTEMS AT ALL TIMES. PROVIDE TEMPORARY SHORING AND BRACING AT LOCATIONS WHERE THE EXISTING STRUCTURE IS BEING MODIFIED. PROTECT THE EXISTING STRUCTURE SCHEDULED TO REMAIN FROM DAMAGE DURING DEMOLITION. MAINTAIN SHORING AND BRACING UNTIL THE NEW STRUCTURE IS INSTALLED AND READY TO ACCEPT LOADS.



2 FIRST FLOOR PLAN - PASSENGER BOARDING BRIDGE
1/8" = 1'-0"



1 FIRST FLOOR DEMOLITION PLAN - PASSENGER BOARDING BRIDGE
1/8" = 1'-0"

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

BID SET

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	SPF
DESIGNED	SPF
CHECKED	GEH
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
2	04/08/26	ADDENDUM 2

DRAWING TITLE

PASSENGER BOARDING BRIDGE MODIFICATIONS

DRAWING NUMBER

A101

GENERAL NOTES

GENERAL

1. ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE BUILDING CODE REFERENCED IN THE DESIGN BASIS AND THAT BUILDING CODE'S REFERENCED CODES AND STANDARDS.
2. THE STRUCTURAL DRAWINGS SHALL BE UTILIZED IN CONJUNCTION WITH DRAWINGS FROM OTHER DESIGN TRADES, SUCH AS ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. THE CONTRACTOR IS TO INFORM THE ENGINEER OF ANY CONCLICTS BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER DRAWINGS.
3. THE STRUCTURAL GENERAL NOTES AND STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS. IN CASE OF ANY CONFLICTS BETWEEN THE NOTES, DRAWINGS AND SPECIFICATION, THE STRICTEST REQUIREMENTS PRESIDE. THE CONTRACTOR IS TO INFORM THE ENGINEER OF ANY CONFLICTS.

DRAWINGS

1. APPLY DETAILS, SECTIONS AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED. AT FEATURES THAT ARE NOT FULLY DETAILED OR SPECIFIED, THEIR CONSTRUCTION IS TO BE SIMILAR TO WHAT IS SHOWN OR SPECIFIED AT OTHER SIMILAR CONDITIONS.
2. DETAILS LABELED "TYPICAL" AND NOTES INCLUDING THE WORD "TYPICAL (OR TYP.)" APPLY AT ALL CONDITIONS THAT ARE SIMILAR IN NATURE, UNLESS NOTED OTHERWISE.
3. USE DIMENSIONS INDICATED ON DRAWINGS. DO NOT SCALE DRAWINGS.
4. CENTERLINES OF COLUMNS, BEAMS, GRADE BEAMS, WALLS, FOUNDATIONS, AND OTHER FRAMING MEMBERS COINCIDE WITH ESTABLISHED GRIDLINES, UNLESS NOTED OTHERWISE.
5. BEAMS, JOISTS, RAFTERS, ETC. ARE ASSUMED TO BE SPACED EQUALLY IF NOT INDICATED OTHERWISE.

EXISTING CONDITIONS

1. THE CONTRACTOR IS TO FIELD VERIFY ALL EXISTING CONDITIONS. THE CONTRACTOR IS TO INFORM THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE STRUCTURAL DRAWINGS, AND OF ANY CONDITIONS THAT MAY NOT HAVE BEEN VISIBLE PRIOR TO CONSTRUCTION. DO NOT COMMENCE SHOP DRAWINGS OR FABRICATION UNTIL ALL EXISITNG CONDITIONS HAVE BEEN VERIFIED.

TEMPORARY CONDITIONS

1. THE STRUCTURE HAS BEEN DESIGNED SUCH THAT IT IS STABLE ONCE ALL ELEMENTS OF THE LATERAL LOAD-RESISTING SYSTEM ARE IN PLACE. THIS INCLUDES ELEMENTS SUCH AS FOUNDATIONS, COLUMNS, BEAMS, BRACES, DECKING AND WELDING. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY STABILITY OF THE STRUCTURE.
2. THE STRUCTURE HAS NOT BEEN DESIGNED TO ACCOMMODATE ANY CONSTRUCTION LOADING THAT HAS NOT BEEN INDICATED IN THE DESIGN BASIS OR ON THE PLANS. THIS INCLUDES LOADS SUCH AS CONSTRUCTION VEHICLES, LIKE CRANES AND MANLIFTS, OR LOADS DUE TO THE STORAGE OF MATERIALS, LIKE PALLETS OF DRYWALL, PLYWOOD OR STONE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE STRUCTURAL CAPACITY OF ANY ELEMENTS THEY INTEND TO LOAD BEYOND THE STATED LOADS. THE CONTRACTOR IS TO SUBMIT DESIGN CALCULATIONS, SIGNED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL, INDICATING AS SUCH.

SUBMITTALS

1. THE CONTRACTOR IS TO PREPARE AND TRANSMIT ALL SUBMITTALS TO THE ENGINEERAND/OR ARCHITECT WITH ADEQUATE TIME TO REVIEW PRIOR TO CONSTRUCTION OR FABRICATION. THE CONTRACTOR IS ALSO TO PREPARE AND KEEP CURRENT A LIST OF ALL SUBMITTALS AND A SUBMITTAL SCHEDULE.
2. THE REUSE OR REPRODUCTION OF ANY PORTION OF THESE DOCUMENTS FOR USE AS SHOP DRAWINGS IS STRICTLY PROHIBITED WITHOUT THE WRITTEN PERMISSION OF MCFARLAND JOHNSON, INC.
3. SHOP DRAWINGS ARE TO BE PREPARED IN ACCORDANCE WITH THE STANDARDS GOVERNING THE TYPE OF WORK.
4. SUBMITTALS REQUIRING REVIEW BY THE STRUCTURAL ENGINEER INCLUDE:
   - A. SHOP DRAWINGS.
   - B. DESIGN CALCULATIONS.
   - C. MIX DESIGNS, AND MATERIAL CERTIFICATES.
   - D. PRODUCT DATA, REPORTS AND OTHER LITERATURE.
5. SHOP DRAWINGS ARE TO BE PROVIDED FOR ALL STRUCTURAL ELEMENTS. SHOP DRAWINGS ARE TO INCLUDE ITEMS SUCH AS:
   - A. PLANS, ELEVATIONS AND SECTIONS.
   - B. LAYOUT OF BEAMS, COLUMNS, WALLS, DECKING, ANCHOR BOLTS, ETC.
   - C. LAYOUT OF EMBEDDED ITEMS.
   - D. LAYOUT OF SLAB/FLOOR/ROOF DECK AND WALL OPENINGS ALONG WITH BEAM PENETRATIONS.
   - E. FASTENING, ATTACHMENTS, SHOP WELDING AND FIELD WELDING.
   - F. LAYOUT AND MAGNITUDE OF ANY LOADING ON THE STRUCTURE.

2

6. DEFERRED SUBMITTALS ARE THOSE WHERE THE DESIGN OF SPECIFIC ELEMENTS AND THEIR ATTACHMENTS HAS NOT BEEN COMPLETED AS PART OF THE CONSTRUCTION DOCUMENTS AND WHOSE DESIGN IS DELEGATED TO A SPECIALTY OR SUB-CONTRACTED ENGINEER HIRED BY THE CONTRACTOR. DEFERRED SUBMITTALS ON THIS PROJECT INCLUDE:
   - A. PASSENGER BOARDING BRIDGE.
   - B. FIXED PASSENGER BOARDING TUNNEL WALKWAY.
   - C. COLD-FORMED METAL FRAMING.
   - D. EXCAVATION SUPPORT AND/OR UNDERPINNING/SHORING.
7. THE CONTRACTOR IS TO ENGAGE A REGISTERED DESIGN PROFESSIONAL TO PROVIDE DESIGN OF ELEMENTS AS PART OF A DEFERRED SUBMITTAL. CALCULATIONS ARE TO BE SIGNED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL.
8. DEFERRED SUBMITTALS ARE TO INCLUDE AT A MINIMUM BOTH SHOP DRAWINGS AND CALCULATIONS. THEY ARE TO BE SUBMITTED TO THE ENGINEER, ARCHITECT AND BUILDING OFFICIAL.

2

TESTING AND INSPECTIONS

1. THE OWNER IS TO ENGAGE AN INDEPENDENT TESTING LABORATORY TO PROVIDE SPECIAL INSPECTIONS AS PER THE CONCRETE NOTES ON THIS SHEET.
2. ENGINEER FOR ANY EXCAVATION SUPPORT AND/OR UNDERPINNING/SHORING ARE TO DETERMINE IF SPECIAL INSPECTIONS ARE REQUIRED FOR THOSE ELEMENTS.

CONCRETE

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, ELECTRICAL, CIVIL AND AVIATION DRAWINGS AND THE SPECIFICATIONS.
2. ALL CONCRETE WORK SHALL COMPLY WITH THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE LOCAL BUILDING CODES.

ACI 211.1	RECOMMENDED PRACTICE FOR SELECTING PROPORTIONS FOR NORMAL WEIGHT CONCRETE
ACI 211.2	RECOMMENDED PRACTICE FOR SELECTING PROPORTIONS FOR STRUCTURAL LIGHTWEIGHT CONCRETE
ACI 212	GUIDE FOR USE OF ADMIXTURES IN CONCRETE – COMMITTEE REPORT
ACI 214	GUIDE TO EVALUATION OF STRENGTH TEST RESULTS OF CONCRETE
ACI 301	SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS
ACI 302	RECOMMENDED PRACTICE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION
ACI 304	GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE
ACI 305	RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING
ACI 306	RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING
ACI 308	RECOMMENDED PRACTICE FOR CURING CONCRETE
ACI 309	RECOMMENDED PRACTICE FOR CONSOLIDATION OF CONCRETE
ACI 315	MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES
ACI 318	BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
ACI 347	RECOMMENDED PRACTICE FOR CONCRETE FORMWORK

2

3. ALL CONCRETE SHALL BE NORMAL WEIGHT HAVING A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS WITH THE FOLLOWING REQUIREMENTS:
   - A. PORTLAND CEMENT - ASTM C150, TYPE I/II.
   - B. AGGREGATE - ASTM C33, 1" MAXIMUM SIZE FOR STRUCTURAL CONCRETE. USE 1 ½" AGGREGATE FOR ALL SLABS-ON-GRADE.
   - C. WATER - POTABLE WITH A MAXIMUM WATER CEMENT RATIO OF 0.45.
   - D. SLUMP - 3" TO 5".
   - E. ADMIXTURES - USE AIR ENTRAINING AGENT CONFORMING TO ASTM C260 WITH 4-6% TOTAL AIR (REDUCE AIR CONTENT TO 2% FOR INTERIOR SLABS-ON-GRADE). USE WATER REDUCING AGENT CONFORMING TO ASTM C494 IN ALL CONCRETE.
   - F. DESIGN MIX - SUBMIT A CURRENT (MAXIMUM 18 MONTHS OLD) DESIGN MIX OF THE EXACT SAME MIX TO BE USED ON THE PROJECT, WITH 28 DAY COMPRESSIVE STRENGTH TESTS, TO THE ENGINEER FOR REVIEW PRIOR TO STARTING CONSTRUCTION. THE MIX SUBMITAL SHALL BE DONE IN ACCORDANCE WITH ACI 301.
4. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60 EXCEPT AS NOTED OTHERWISE. WELDED WIRE FABRIC TO CONFORM TO ASTM A1064. WELDED WIRE FABRIC TO BE FURNISHED IN FLAT SHEETS, NOT ROLLS.
5. LAP ALL BARS 48 DIAMETERS MINIMUM AT SPLICES UNLESS INDICATED OTHERWISE ON THE DRAWINGS. TOP BARS TO BE SPLICED AT MIDSPAN AND BOTTOM BARS AT SUPPORTS. WELDED WIRE FABRIC TO BE LAPPED ONE FULL MESH AT SIDES AND ENDS.
6. REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPER PLACE BEFORE AND DURING POURING OPERATIONS USING APPROVED CHAIRS AND SPACERS AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER. USE PLASTIC TIPPED ACCESSORIES IN CONCRETE EXPOSED TO WEATHER, WATER OR VIEW.
7. WHERE CONTINUOUS BARS ARE CALLED FOR, INDICATED OR REQUIRED, THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS, DOWELED INTO INTERSECTING WALLS AND LAPPED AT NECESSARY SPLICES WITH SPLICES STAGGERED WHEREVER POSSIBLE.
8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

CONCRETE CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER	
#5 (#16) AND SMALLER	1 1/2"
#6 (#19) AND LARGER	2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
SLABS, WALLS AND JOISTS	3/4"
BEAMS AND COLUMNS	1 1/2"

9. THE CONCRETE CONTRACTOR SHALL INSTALL (OR GIVE OTHER TRADES AMPLE OPPORTUNITY TO INSTALL) ALL ANCHORS, BOLTS, PLATE, NAILERS, SLOTS, CHASES, PIPE SLEEVES, ETC., AS REQUIRED BY OTHER TRADES. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE SETTING SCREEDS AND FORMS. FORM RELEASE OIL TO BE AN APPROVED [[NON-TOXIC]] LIQUID.
10. SLABS AND BEAMS SHALL BE POURED MONOLITHICALLY EXCEPT WHERE OTHERWISE SHOWN AND SHALL BE FINISHED AS INDICATED IN THE SPECIFICATIONS (ON THE PLANS). CONSTRUCTION JOINTS IN ELVATED SLABS SHALL BE LOCATED SO THAT EACH INDIVIDUAL POUR DOES NOT EXCEED ACI STANDARDS. SLABS ON GRADE SHALL BE POURED WITH A MAXIMUM DISTANCE BETWEEN CONSTRUCTION OR SAW JOINTS OF 30 FEET UNLESS NOTED OTHERWISE. ALLOW FOR A MINIMUM OF 7 DAYS BETWEEN ADJACENT POURS.
11. CONTRACTOR SHALL REPAIR, AT HIS EXPENSE, ALL CONCRETE SLAB DEFECTS SUCH AS CURLING OR CRACKING. GRINDING, PATCHING, ETC. REPAIR PROCEDURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO STARTING WORK.
12. CHAMFER EDGES OF EXPOSED BEAMS AND COLUMNS.
13. CONCRETE TEMPERATURE DURING THE FIRST SEVEN DAYS SHALL BE MAINTAINED BETWEEN 50 DEG. F AND 90 DEG. F. RAPID DRYING MUST BE PREVENTED.

CONCRETE (CONT.)

14. CURING
    - A. HORIZONTAL SURFACES SHALL BE KEPT CONTINUOUSLY MOIST FOR A MINIMUM OF SEVEN DAYS.
    - B. VERTICAL SURFACES SHALL RECEIVE TWO COATS (ONE AT TIME OF STRIPPING AND ANOTHER THREE DAYS LATER) OF AN APPROVED CURING COMPOUND. CURING COMPOUND SHALL BE COMPATIBLE WITH APPROVED SEALING COMPOUND.
    - C. AFTER CONCRETE HAS CURED FOR A MINIMUM OF 28 DAYS, EXPOSED EXTERIOR CONCRETE SURFACES SHALL RECEIVE A SINGLE APPLICATION OF AN APPROVED SILANE SEALER. IF A SECOND COAT IS REQUIRED (OR IF APPLYING ON A VERTICAL SURFACE WHERE TWO COATS ARE REQUIRED), IT SHOULD BE APPLIED WET ON WET OR AS SPECIFIED BY MANUFACTURER.

2

15. CONTRACTOR TO DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND BRACING NECESSARY TO SAFELY COMPLETE THE CONSTRUCTION.
16. SHOP DRAWINGS PREPARED IN ACCORDANCE WITH ACI STANDARDS WILL BE REQUIRED FROM THE CONTRACTOR FOR REINFORCING STEEL PRIOR TO CONSTRUCTION. THE REUSE OR REPRODUCTION OF ANY PORTION OF THESE DOCUMENTS FOR USE AS SHOP DRAWINGS IS STRICTLY PROHIBITED WITHOUT THE WRITTEN PERMISSION OF MCFARLAND- JOHNSON, INC.
17. THE OWNER WILL EMPLOY A QUALIFIED ENGINEERING TESTING FIRM TO PERFORM STANDARD FIELD TESTING OF THE CONCRETE WORK. CONCRETE SHALL BE TESTED FOR:
    - A. COMPRESSIVE STRENGTH (4 – 6"X12" CYLINDERS: ONE AT 7 DAYS, 2 AT 28 DAYS AND RETAIN ONE FOR 56 DAYS FOR TESTING IN THE EVENT THE 28 DAY RESULTS DO NOT MEET SPECIFICATIONS.) TAKE ONE SET OF FOUR (4) CYLINDERS FOR EACH PLACEMENT AND NOT LESS THAN ONE SET FOR EACH 50 CUBIC YARDS.
    - B. SLUMP (BEFORE AND AFTER PLASTICIZER IF USED).
    - C. TEMPERATURE (AIR AND CONCRETE).
    - D. AIR CONTENT.
    - E. UNIT WEIGHT.

2

18. THE OWNER WILL EMPLOY A QUALIFIED SPECIAL INSPECTIONS FIRM TO PERFORM SPECIAL INSPECTIONS OF THE CONCRETE WORK. CONCRETE SHALL BE INSPECTED FOR:
    - A. INSPECT SIZE, SPACING, COVER, POSITIONING, AND GRADE OF REINFORCEMENT AND VERIFY THAT REINFORCING BARS ARE FREE OF FORM OIL OR OTHER DELETERIOUS MATERIALS. INSPECT BAR LAPS AND/OR MECHANICAL SPLICES.
    - B. INSPECT SIZE, POSITIONING, AND EMBEDMENT OF ANY ANCHORAGE OR EMBEDDED ITEMS.
    - C. INSPECT PLACEMENT OF CONCRETE AND REVIEW CONCRETE BATCH TICKETS TO VERIFY USE OF THE APPROVED MIX DESIGN. VERIFY THAT WATER ADDED AT THE SITE DOES NOT EXCEED THAT ALLOWED BY THE MIX DESIGN. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION AND THAT CONCRETE IS PROPERLY CONSOLIDATED.
    - D. DURING CONCRETE PLACEMENT, VERIFY THAT QUALIFIED ENGINEERING TESTING FIRM IS PRESENT TO FABRICATE SPECIMENS FOR STRENGTH TESTS, THAT THE TESTING FIRM PERFORMS SLUMP AND AIR CONTENT TESTS, AND DETERMINES THE TEMPERATURE OF THE CONCRETE.
    - E. INSPECT CURING AND COLD WEATHER PROTECTION PROCEDURES.

FOUNDATION CONSTRUCTION

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, AVIATION, ARCHITECTURAL, AND ELECTRICAL DRAWINGS AND THE SPECIFICATIONS.
2. FOOTINGS SHALL REST ON AN 12" MINIMUM DEEP BED OF WELL COMPACTED GRANULAR FILL (NYSDOT TYPE 2 SUBBASE COURSE) PLACED TO A WIDTH OF AT LEAST 12" MORE THAN THE FOOTING. GRANULAR FILL SHALL BE PLACED IN MAXIMUM 8" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DEFINED BY ASTM D-1557 (MODIFIED PROCTOR TEST).
3. BOTTOM OF EXCAVATION TO BE PERFORMED WITH A FLAT-LIPPED BUCKET TO PROVIDE A FIRM AND UNDISTURBED BEARING SURFACE FOR GRANULAR FILL. IF BASE IS DISTURBED, EXCAVATE FURTHER TO A FIRM AND UNDISTURBED BEARING SURFACE AND BACKFILL WITH ADDITIONAL COMPACTED GRANULAR FILL. CONTACT ENGINEER PRIOR TO EXCAVATING FURTHER THAN 2 FEET BELOW BOTTOM OF FOOTING.
4. IF CONSTRUCTED IN ACCORDANCE WITH THESE REQUIREMENTS, FOOTINGS BEARING ON THESE CONDITIONS SHALL HAVE A MINIMUM BEARING CAPACITY OF 3000 PSF.
5. ELEVATIONS OF BOTTOM OF FOOTINGS ARE SHOWN ON PLANS, BUT ARE SUBJECT TO REVISION WHEN TRUE SOIL CONDITIONS ARE EXPOSED BY EXCAVATION. THE ENGINEER SHALL BE NOTIFIED PROMPTLY OF ANY WEAK STRATA,WATER CONDITIONS OR OTHER POOR BEARING CONDITIONS.
6. FOOTING EXCAVATIONS SHALL BE DONE IN SUCH A MANNER AS TO DRAIN AWAY ALL SURFACE AND GROUND WATER. EXCAVATION EQUIPMENT AND PROCEDURES SHALL BE USED SUCH THAT FIRM SOIL BEARING CONDITIONS ARE MAINTAINED. THE CONTRACTOR SHALL ALSO PROVIDE TEMPORARY EXCAVATION PROTECTION SYSTEMS AND/OR EXCAVATION SUPPORT TO PROTECT AND PREVENT ANY VERTICAL OR HORIZONTAL MOVEMENT OF EXISTING FOUNDATIONS AND NEARBY AFFECTED PAVEMENT/SLABS AS WELL AS TO PROVIDE REQUIRED WORKER SAFETY MEASURES AS PER OSHA AND NYCRR REGULATIONS AND LAW.
7. UNLESS OTHERWISE NOTED, ALL FOOTINGS, PILES, CAISSONS AND PIERS SHALL BE CENTERED UNDER SUPPORTED MEMBER.
8. THE CONTRACTOR SHALL PROVIDE THE NECESSARY EQUIPMENT AND CONTINUOUSLY DEWATER THE SITE TO FACILITATE CONSTRUCTION AND SAFE WORKING CONDITIONS.

COLD FORMED STEEL FRAMING

1. STEEL STUDS AND JOISTS SHALL BE COLD ROLLED C-SHAPED MEMBERS OF THE TYPE, SIZE AND MINIMUM GAGE AS SHOWN ON THE DRAWINGS. ALL STUDS AND JOISTS SHALL BE MARKED WITH THE MANUFACTURER'S NAME, GAGE OF MATERIAL AND YIELD STRENGTH.
2. STEEL SHALL COMPLY WITH ASTM A1003, TYPE H GRADE 33 OR GRADE 50 AS REQUIRED BY STRUCTURAL PERFORMANCE, WITH A GALVANIZED FINISH COMPLYING WITH G60 COATING WEIGHT.
3. ALL WORK SHALL MEET THE REQUIREMENTS OF THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
   - A. AMERICAN IRON AND STEEL INSTITUTE (AISI) SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.
   - B. AMERICAN WELDING SOCIETY (AWS) D1.3 STRUCTURAL WELDING CODE - SHEET STEEL.
   - C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
   - D. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION.
   - E. ALL PERTINENT FEDERAL, STATE AND LOCAL CODES.
4. PROVIDE AND INSTALL TRACKS, BLOCKING, BRIDGING, CLIP ANGLES AND OTHER ACCESSORIES, AS NEEDED TO PROVIDE A COMPLETE SYSTEM AND AS RECOMMENDED BY MANUFACTURER. TRACKS SHALL BE OF THE SAME GAGE AND SIZE AS THE STUDS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. THE DESIGN OF ALL FASTENERS IS A DELEGATED DESIGN AND SHALL BE THE RESPONSIBILTY OF THE CONTRACTOR. PROVIDE COMPLETE CALCULATIONS AND FABRICATION AND INSTALLATION REQUIREMENTS AS PART OF DEFERRED SUBMITTAL.
6. PROVIDE NUTS, BOLTS, WASHERS, SCREWS AND OTHER FASTENERS WITH CORROSION RESISTANT FINISH.
7. INSTALL JOISTS DIRECTLY OVER BEARING STUDS. PROVIDE WEB STIFFENERS AND JOIST BRIDGING AS SHOWN ON DRAWINGS AND AS REQUIRED. PROVIDE END BLOCKING WHERE JOISTS ENDS ARE NOT OTHERWISE RESTRAINED. STUDS IN LOAD BEARING WALLS SHALL BE SEATED TIGHT AGAINST TRACK WEBS.
8. CHECK FRAMING FOR ACCURATE SPACING/ALIGNMENT AND OPENINGS BEFORE INSTALLING FLOOR, CEILING AND WALL SHEATHING.
9. EXTERIOR STUD WALLS USED IN CONJUNCTION WITH MASONRY VENEERS SHALL BE LIMITED TO A LATERAL DEFLECTION OF L/600 DUE TO WIND LOAD. OTHER EXTERIOR STUD WALLS SHALL BE LIMITED TO A LATERAL DEFLECTION OF L/360 DUE TO WIND. JOISTS SHALL BE LIMITED TO A VERTICAL DEFLECTION OF L/360 DUE TO SNOW LOAD OR LIVE LOAD.
10. THE WALL FRAMING SYSTEM SHALL BE DESIGNED AND DETAILED TO ACCOMMODATE VERTICAL MOVEMENT OF BUILDING FRAMING MEMBERS.
11. ALL WALLS SHALL BE PROVIDED WITH 16 GAGE CONTINUOUS HORIZONTAL COLD ROLLED CHANNEL BRIDGING FASTENED AT EACH STUD INSIDE THE STUD KNOCKOUTS. ALTERNATIVELY, CONTINUOUS TWO INCH 18 GAGE (MINIMUM) STRAP BRIDGING SHALL BE APPLIED ON EACH SIDE OF EACH STUD. SPACING OF ROWS SHALL BE: FIRST ROW AT 5', THE BALANCE AT 4' O.C. LOCATE SOLID BRIDGING AT EACH END OF WALL AND 10' O.C. IN BETWEEN.
12. COLD-FORMED STEEL FRAMING SUPPLIER SHALL DESIGN, DETAIL, FABRICATE AND INSTALL FRAMING IN ACCORDANCE WITH ALL THE REQUIREMENTS OF AISI S100, AISI 202, AND AISI S240 AND ANY OTHER APPLICABLE LOCAL, STATE OR NATIONAL CODE. MINIMUM MEMBER SIZES SHALL BE THOSE SHOWN ON THE DRAWINGS AND NOT LESS THAN REQUIRED BY THE ABOVE CODES. STUDS ACTING AS BACKUP FOR MASONRY VENEER SHALL BE 18 GAGE MINIMUM.
13. SUBMIT COMPLETE SHOP DRAWINGS, INCLUDING ERECTION PLANS AND FABRICATION DRAWINGS, WITH COMPLETE DESIGN CALCULATIONS, ALL STAMPED BY A PROFESSIONAL ENGINEER, FOR ENGINEERS REVIEW AS A DELEGATED DESIGN SUBMITAL PRIOR TO FABRICATION. INDICATE STEEL YIELD STRENGTH, MEMBER GAGES, SPACINGS AND SIZES, CONNECTION DETAILS, TYPE AND LOCATION OF WELDS, BOLTS AND FASTENING DEVICES.

COLD WEATHER CONSTRUCTION PROCEDURES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTINUOUSLY PROTECT SOILS, CONCRETE, MASONRY AND OTHER BUILDING MATERIALS FROM DAMAGE DUE TO COLD TEMPERATURES UNTIL THE BUILDING HAS BEEN TURNED OVER TO THE OWNER. THIS SHALL INCLUDE TEMPORARY ENCLOSURES, INSULATED BLANKETS AND TEMPORARY HEATING.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE ANY DAMAGED OR DEFECTIVE WORK, IN A MANNER APPROVED BY THE ENGINEER.
3. ALL PROTECTIVE AND CORRECTIVE WORK SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

SAFETY AND PROTECTION

1. CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE THE NECESSARY PROTECTION TO PREVENT DAMAGE INJURY OR LOSS TO:
   1. ALL EMPLOYEES ON THE WORK AND OTHER PERSONS WHO MAY BE AFFECTED THEREBY.
   2. ALL THE WORK AND ALL MATERIALS OR EQUIPMENT TO BE INCORPORATED THEREIN, WHETHER IN STORAGE ON OR OFF, THE SITE, AND
   3. OTHER PROPERTY AT THE SITE OR ADJACENT THERETO, INCLUDING TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES AND UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.
2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STANDARDS (SPECIFICALLY INCLUDING OSHA, AND ANY OTHER STATE ADOPTED OSHA PROGRAM), LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY OR TO PROTECT THEM FROM DAMAGE, INJURY OR LOSS; AND SHALL ERECT AND MAINTAIN ALL NECESSARY SAFEGUARDS FOR SUCH SAFETY AND PROTECTION. CONTRACTOR SHALL NOTIFY OWNERS OF ADJACENT PROPERTY AND UTILITIES WHEN EXECUTION OF THE WORK MAY AFFECT THEM.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND OTHER COSTS ARISING FROM ANY DAMAGE AT THE SITE OR ADJACENT THERETO.
4. CONTRACTOR'S DUTIES AND RESPONSIBILITIES FOR THE SAFETY AND PROTECTION OF THE WORK SHALL CONTINUE UNTIL SUCH TIME AS ALL THE WORK IS COMPLETED.

DESIGN BASIS

2

FOUNDATION/PIER LAYOUT, SIZING, AND REINFORCEMENT ARE BASED ON A PRELIMINARY PASSENGER BOARDING BRIDGE LAYOUT WITH THE ASSUMED MAXIMUM ALLOWABLE STRESS DESIGN LOADING BELOW:

A. PASSENGER BOARDING BRIDGE ROTUNDA:

a.	AXIAL LOAD:	61 KIPS
b.	LATERAL LOAD:	6 KIPS
c.	OVERTURNING MOMENT:	257 KIP-FT

B. PASSENGER BOARDING BRIDGE AND FIXED TUNNEL WALKWAY COLUMNS:

a.	AXIAL LOAD:	20 KIPS
b.	LATERAL LOAD:	3 KIPS
c.	OVERTURNING MOMENT:	28 KIP-FT

2

PER THE FINAL SELECTED PASSENGER BOARDING BRIDGE, THE LOADING CRITERIA BELOW SHALL BE INCORPORATED AS A BASIS FOR DESIGN FOR THE PASSENGER BOARDING BRIDGE AND THE FIXED TUNNEL WALKWAY. ALL AUXILARY EQUIPMENT TO BE ATTACHED OR MOUNTED ON THE PASSENGER BOARDING BRIDGE AND/OR THE FIXED TUNNEL WALKWAY SHALL BE INCLUDED IN THE STRUCTURAL ANALYSIS.

BUILDING CODE

1. THE CONSTRUCTION DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE 2025 BUILDING CODE OF NEW YORK STATE..

BUILDING RISK CATEGORY (PER IBC)

1. TERMINAL BUILDING AND PBB: III

SNOW LOADS

1. SNOW LOADING HAS BEEN DETERMINED PER ASCE 7-22, CHAPTER 7. CRITERIA IS AS FOLLOWS:

A.	GROUND SNOW LOAD, P_g:	78 PSF
B.	SNOW EXPOSURE FACTOR, C_e:	0.9
C.	THERMAL FACTOR, C_t:	1.1
D.	FLAT ROOF SNOW LOAD, P_f:	54.1 PSF

WIND LOADS

1. BUILDING WIND LOADING HAS BEEN DETERMINED PER ASCE 7-22, CHAPTERS 26 AND 28. CRITERIA IS AS FOLLOWS:

A.	WIND EXPOSURE CATEGORY:	C
B.	ULTIMATE BASIC WIND SPEED, V:	118 MPH

SEISMIC LOADS

1. BUILDING SEISMIC LOADING HAS BEEN DETERMINED PER ASCE 7-22, CHAPTERS 11 AND 12. CRITERIA IS AS FOLLOWS:

A.	SHORT PERIOD SPECTRAL ACCELERATION, S_s:	0.130g
B.	ONE SECOND PERIOD SPECTRAL ACCELERATION, S_1:	0.040g
C.	SITE CLASS:	D
D.	SHORT PERIOD SPECTRAL RESPONSE ACCELERATION, S_{DS}:	0.120g
E.	ONE SECOND PERIOD SPECTRAL ACCELERATION, S_{D1}:	0.056g
F.	SEISMIC IMPORTANCE FACTOR, I_e:	1.25
G.	SEISMIC DESIGN CATEGORY:	A
H.	ANALYTICAL PROCEDURE:	EQUIVALENT LATERAL FORCE PROCEDURE

2

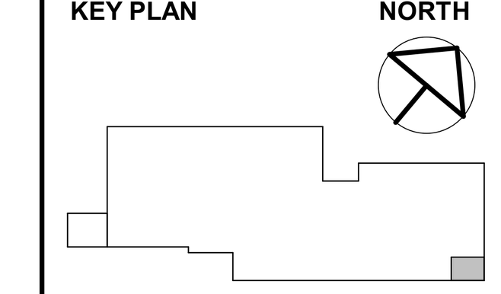
McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

ADDENDUM 2

KEY PLAN NORTH



CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	CM
DESIGNED	CM
CHECKED	OHG
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

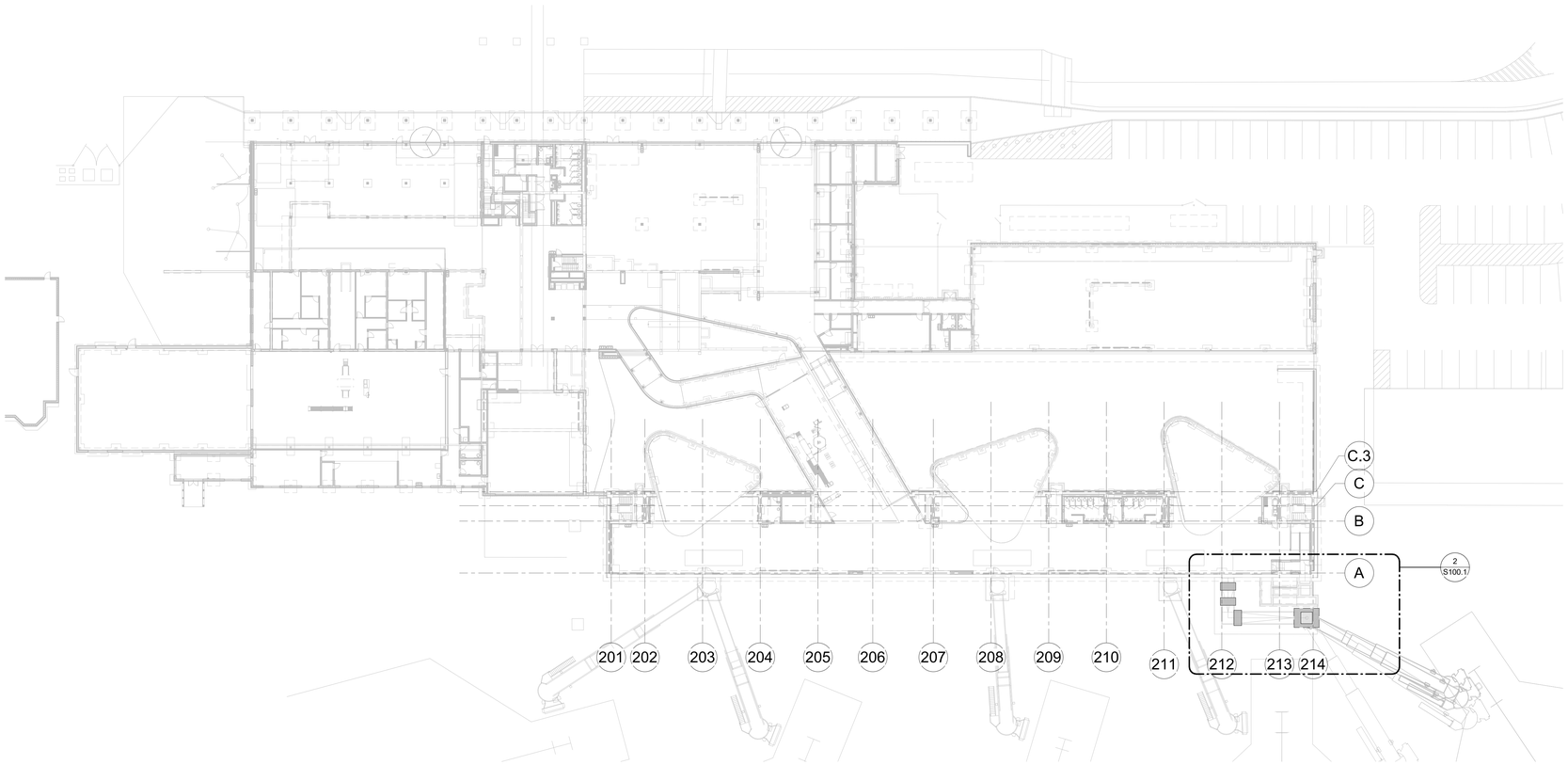
NO.	DATE	REVISIONS
2	4/8/26	ADDENDUM 2

DRAWING TITLE

GENERAL STRUCTURAL NOTES

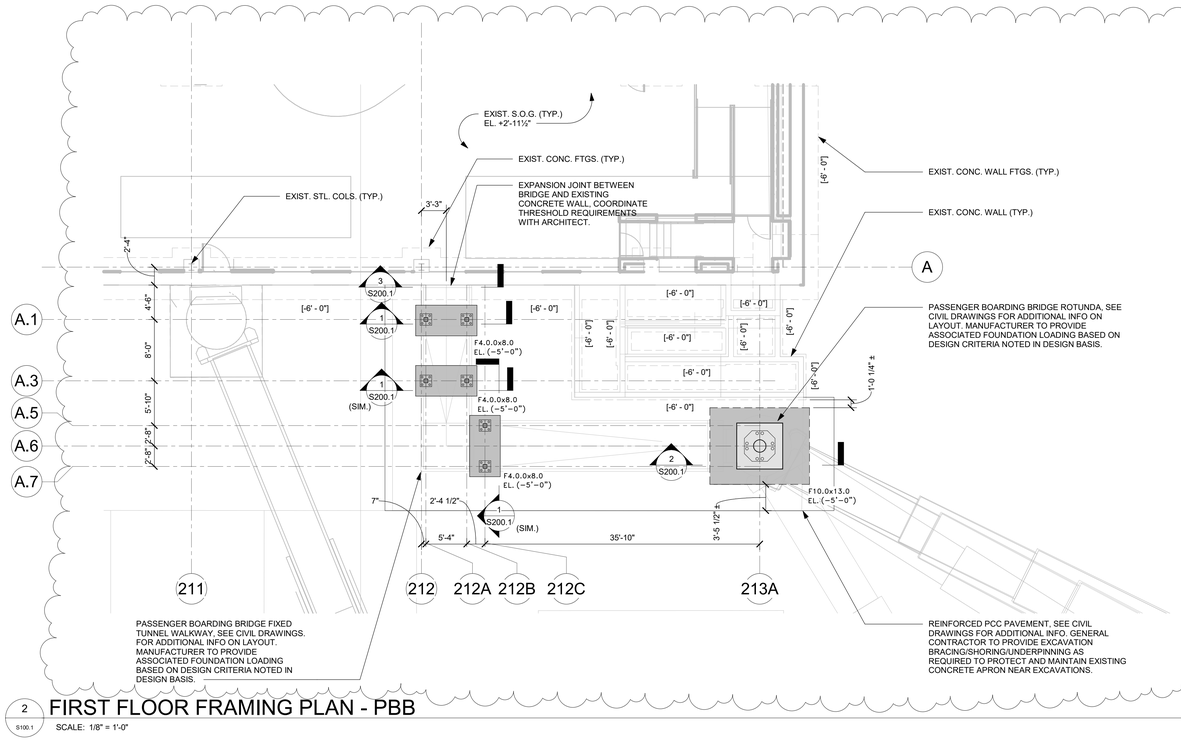
DRAWING NUMBER

S000.1



OVERALL FIRST FLOOR FRAMING PLAN

SCALE: 1" = 30'-0"



2 / S100.1 FIRST FLOOR FRAMING PLAN - PBB

SCALE: 1/8" = 1'-0"

NOTES:

1. FOUNDATION/PIER LAYOUT, SIZING, AND REINFORCEMENT ARE BASED ON THE LOADING NOTED IN THE DESIGN BASIS ON SHEET S-000.1.
   - A. REFER TO PASSENGER BOARDING BRIDGE LAYOUT ON CIVIL DRAWINGS FOR FURTHER INFORMATION ON BRIDGE AND TUNNEL DIMENSIONS.
   - B. PRIOR TO COMMENCEMENT OF FABRICATION OF THE BOARDING BRIDGE AND THE FIXED TUNNEL SYSTEM, THE CONTRACTOR SHALL SUBMIT FINAL ENGINEERED AND STAMPED FOUNDATION LOADING BASED ON THE FINAL LAYOUT OF THE PASSENGER BOARDING BRIDGE TO THE ENGINEER FOR FINAL VERIFICATION OF THE LOCATIONS & SUITABILITY OF THE FOUNDATION AND THE PIERS.
2. ALL ANCHORAGE SHOWN IN ASSOCIATED FOUNDATION DETAILS ARE TO BE HOT DIPPED GALVANIZED AND PROVIDED BY THE PASSENGER BOARDING BRIDGE MANUFACTURER FOR INSTALLATION BY THE GENERAL CONTRACTOR.
3. REFERENCE ELEVATION OF 0'-0" EQUALS ELEVATION OF EXISTING FIRST FLOOR SLAB EL. 948.0'±.
4. ELEVATION BOTTOM OF FOOTING INDICATED THUS (----) ON PLAN FROM 0'-0" (REFERENCE ELEVATION).
5. TOP OF PIER ELEVATION = 0'-0" UNLESS NOTED OTHERWISE.

STRUCTURAL FOUNDATION SCHEDULE

TYPE	ELEVATION AT BOTTOM	LENGTH	WIDTH	THICKNESS	REINFORCEMENT
F4.0.0x8.0	-5' - 0"	8' - 0"	4' - 0"	5'-0"	(6) #5 LONG WAY TOP & BOTTOM AND (12) #5 SHORT WAY TOP & BOTTOM.
F10.0x13.0	-5' - 0"	13' - 0"	10' - 0"	2'-6"	(10) #8 LONG WAY TOP & BOTTOM AND (13) #8 SHORT WAY TOP & BOTTOM.

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

ADDENDUM 2

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	CM
DESIGNED	CM
CHECKED	OHG
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
2	4/8/26	ADDENDUM 2

DRAWING TITLE

FIRST FLOOR FRAMING PLAN

DRAWING NUMBER

S100.1

2

212A 212B

(4) 1½" Ø ASTM F1554 GRADE 36 ANCHOR BOLTS (GALV.) SPACED 12" APART IN EACH DIRECTION. ANCHOR BOLTS TO BE EMBEDDED 1'-4" INTO FOOTING WITH PLATE WASHER (PL. 1" X 4" X 0'-4") & DOUBLE NUT AT BOTTOM AND A LEVELING NUT AND DOUBLE LOCK NUTS AT BASEPLATE. FINAL ANCHOR BOLT SIZING TO BE COORDINATED UPON RECEIPT OF FINAL PASSENGER BOARDING BRIDGE SUBMITTAL.

FIXED TUNNEL WALKWAY SUPPORTS, BASEPLATES, & ANCHORAGE DESIGNED AND PROVIDED BY BOARDING BRIDGE MANUFACTURER AND INSTALLED BY CONTRACTOR.

TOP OF FOUNDATION SHALL BE 6" MIN. ABOVE HIGHEST GRADE. CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING & COORDINATING WITH BOARDING BRIDGE MANUFACTURER TO ESTABLISH FINAL TOP OF PIER ELEVATION.

CHAMFER AT EXPOSED EDGES (TYP.)

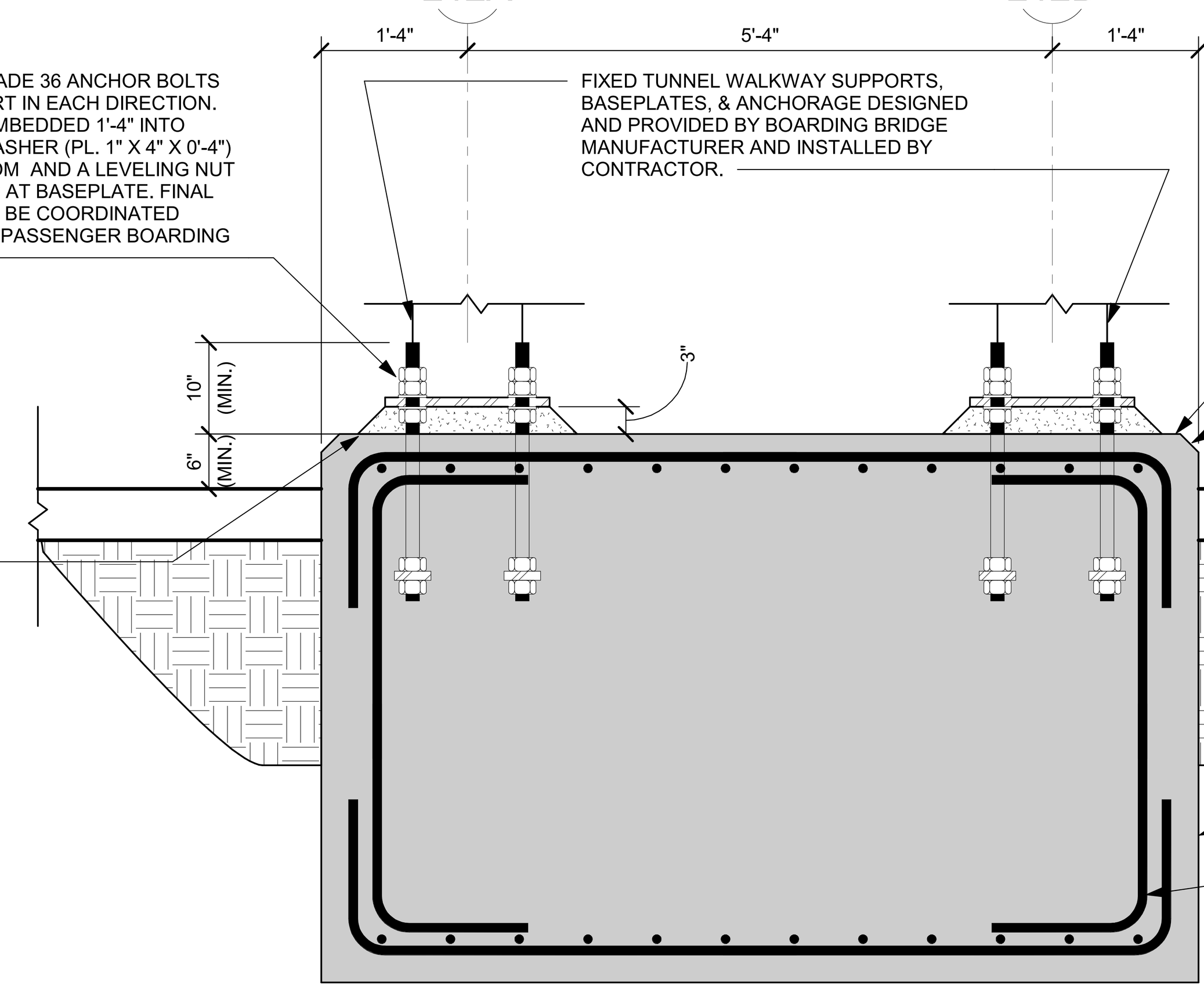
PAVEMENT, SEE CIVIL DRAWINGS FOR ADDITIONAL INFO.

COMPACTED FILL.

NON-SHRINK EPOXY GROUT (TYP.)

CONCRETE FOUNDATION, SEE PLAN FOR SIZING, THICKNESS, AND REINFORCEMENT.

#5 VERTICAL ADDITIONAL REBAR @ 24" O.C. ON EACH VERTICAL FACE OF FOUNDATION WITH STANDARD HOOKS EACH END.

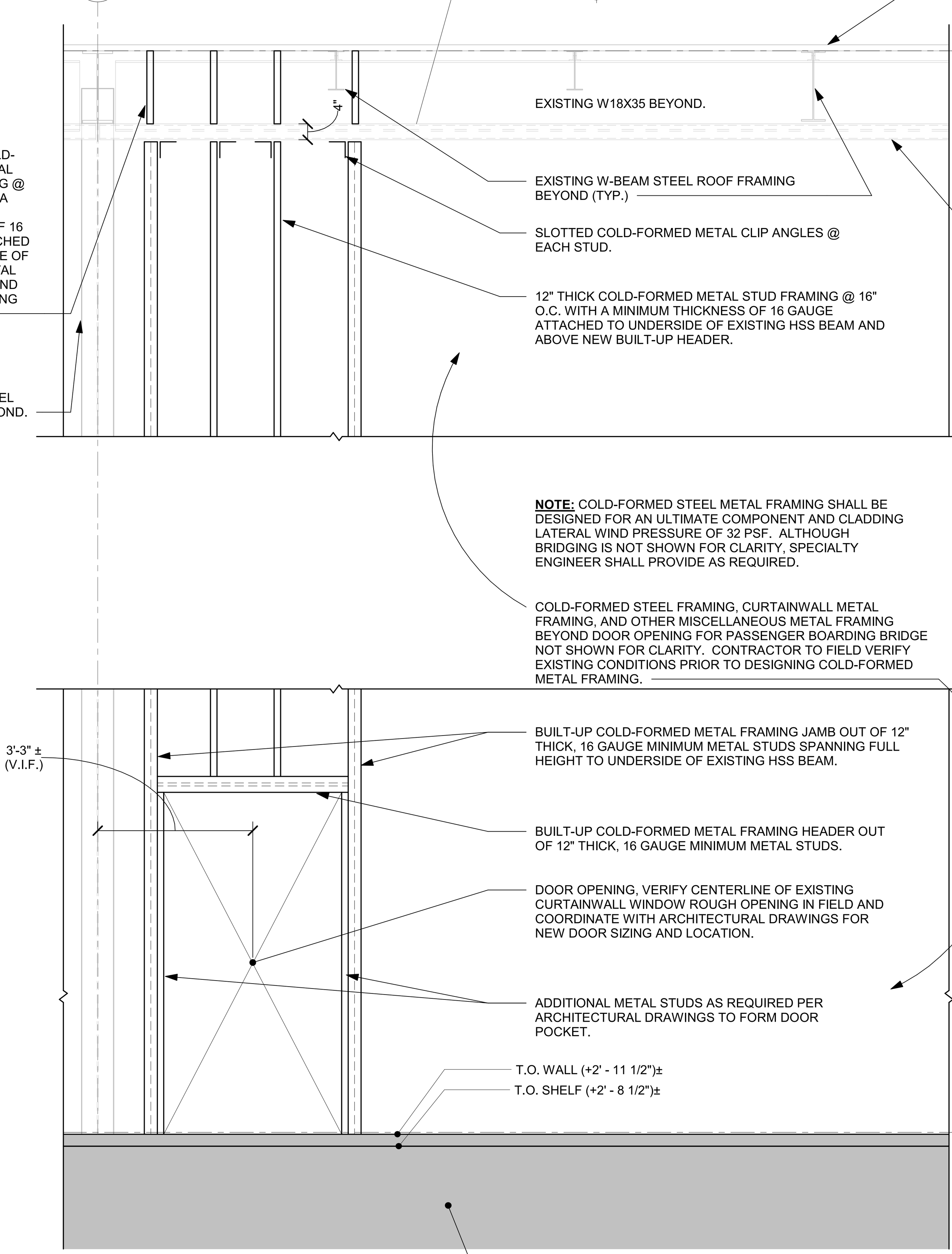


1 SECTION

S200.1

SCALE: 3/4" = 1'-0"

212



EXISTING METAL ROOF DECK.

12" THICK COLD-FORMED METAL STUD FRAMING @ 16" O.C. WITH A MINIMUM THICKNESS OF 16 GAUGE ATTACHED TO UNDERSIDE OF EXISTING METAL ROOF DECK AND ABOVE EXISTING HSS BEAM.

EXISTING W-BEAM STEEL ROOF FRAMING BEYOND (TYP.)

SLOTTED COLD-FORMED METAL CLIP ANGLES @ EACH STUD.

EXISTING HSS 8X4X3/8 BEAM.

12" THICK COLD-FORMED METAL STUD FRAMING @ 16" O.C. WITH A MINIMUM THICKNESS OF 16 GAUGE ATTACHED TO UNDERSIDE OF EXISTING HSS BEAM AND ABOVE NEW BUILT-UP HEADER.

EXISTING STEEL COLUMN BEYOND.

NOTE: COLD-FORMED STEEL METAL FRAMING SHALL BE DESIGNED FOR AN ULTIMATE COMPONENT AND CLADDING LATERAL WIND PRESSURE OF 32 PSF. ALTHOUGH BRIDGING IS NOT SHOWN FOR CLARITY, SPECIALTY ENGINEER SHALL PROVIDE AS REQUIRED.

COLD-FORMED STEEL FRAMING, CURTAINWALL METAL FRAMING, AND OTHER MISCELLANEOUS METAL FRAMING BEYOND DOOR OPENING FOR PASSENGER BOARDING BRIDGE NOT SHOWN FOR CLARITY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO DESIGNING COLD-FORMED METAL FRAMING.

BUILT-UP COLD-FORMED METAL FRAMING JAMB OUT OF 12" THICK, 16 GAUGE MINIMUM METAL STUDS SPANNING FULL HEIGHT TO UNDERSIDE OF EXISTING HSS BEAM.

BUILT-UP COLD-FORMED METAL FRAMING HEADER OUT OF 12" THICK, 16 GAUGE MINIMUM METAL STUDS.

DOOR OPENING, VERIFY CENTERLINE OF EXISTING CURTAINWALL WINDOW ROUGH OPENING IN FIELD AND COORDINATE WITH ARCHITECTURAL DRAWINGS FOR NEW DOOR SIZING AND LOCATION.

ADDITIONAL METAL STUDS AS REQUIRED PER ARCHITECTURAL DRAWINGS TO FORM DOOR POCKET.

EXISTING 20" WIDE CONCRETE WALL WITH 3" DEEP BY 12" WIDE SHELF AT TOP OF WALL. VERIFY PRESENCE OF SHELF IN FIELD, AND COORDINATE INFILL REQUIREMENTS OR THRESHOLD COVER REQUIREMENTS WITH ARCHITECT.

3 SECTION

S200.1

SCALE: 1/2" = 1'-0"

2

213A

2

(8) 2¼" Ø ASTM F1554 GRADE 36 ANCHOR BOLTS (GALV.), ANCHOR BOLTS TO BE EMBEDDED 4'-3" INTO FOOTING WITH PLATE WASHERS (PL. 1" X 6" X 0'-6") & DOUBLE NUT AT BOTTOM AND A LEVELING NUT AND DOUBLE LOCK NUTS AT BASEPLATE. FINAL ANCHOR BOLT SIZING TO BE COORDINATED UPON RECEIPT OF FINAL PASSENGER BOARDING BRIDGE SUBMITTAL.

NON-SHRINK EPOXY GROUT

2

ROTUNDA COLUMN, BASEPLATE, AND ANCHORAGE DESIGNED BY PASSENGER BOARDING BRIDGE MANUFACTURER.

TOP OF PIER SHALL BE 6" MIN. ABOVE HIGHEST GRADE. CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING & COORDINATING WITH BOARDING BRIDGE MANUFACTURER TO ESTABLISH FINAL TOP OF PIER ELEVATION.

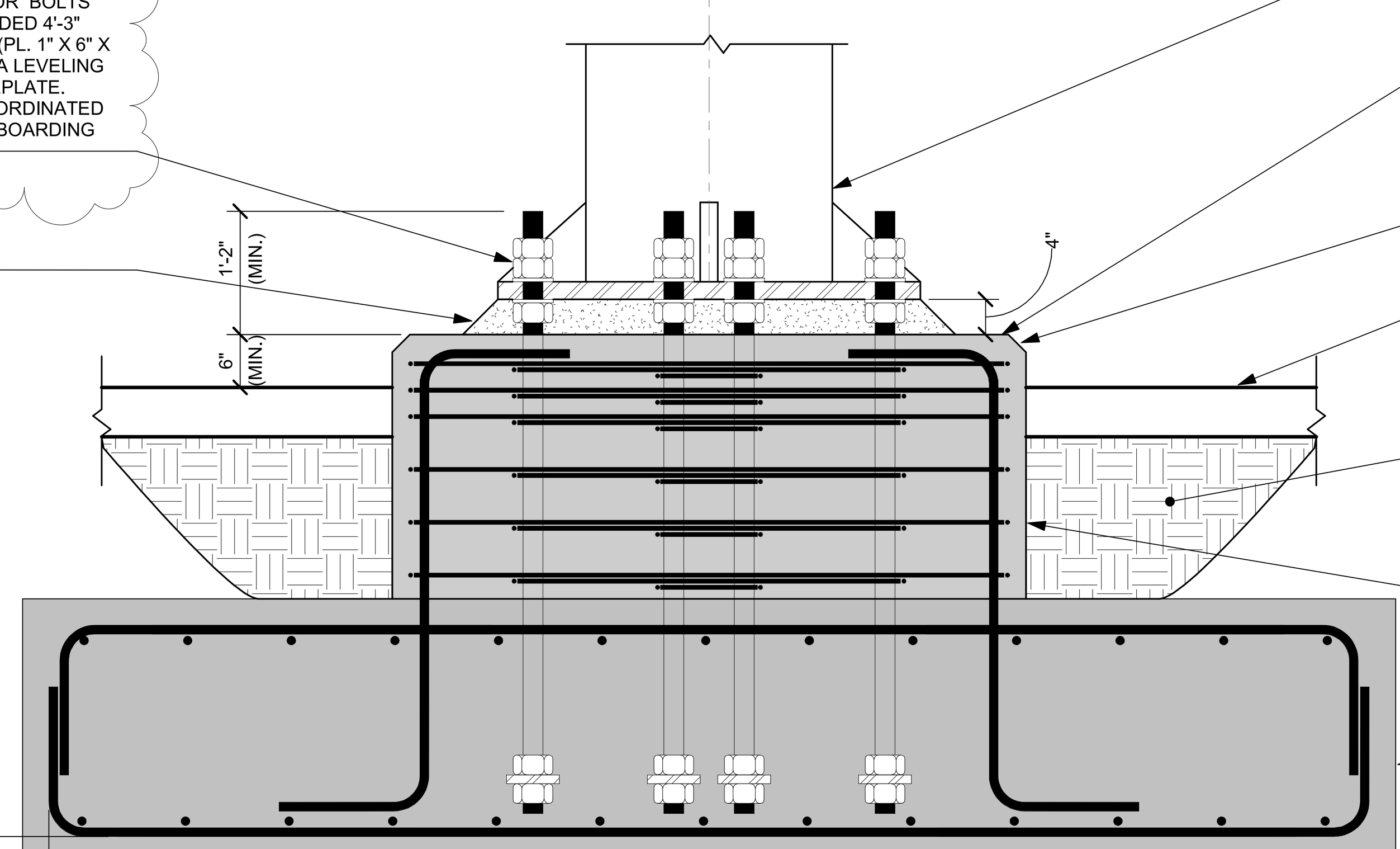
CHAMFER AT EXPOSED EDGES (TYP.)

PAVEMENT, SEE CIVIL DRAWINGS FOR ADDITIONAL INFO.

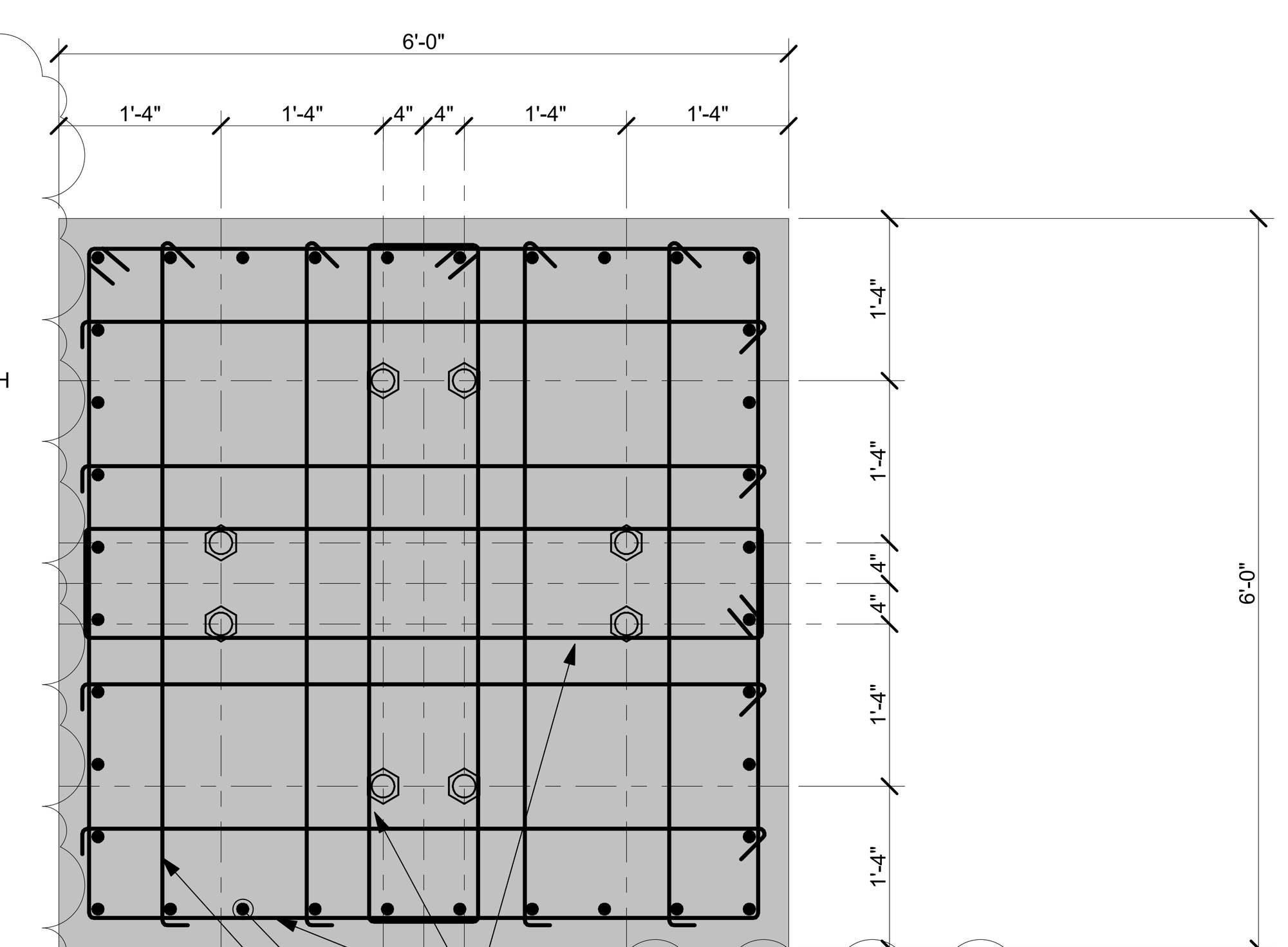
COMPACTED FILL.

6'-0" x 6'-0" CONCRETE PIER WITH REINFORCEMENT AND DIMENSIONS AS SHOWN.

CONCRETE FOUNDATION, SEE PLAN FOR SIZING, THICKNESS, AND REINFORCEMENT.



3" CLEAR COVER (TYP.)



(3) #4 STIRRUPS @ 3" O.C. FOR FIRST 6", AND #4 @ 6" O.C. BEYOND. ALL STIRRUPS SHALL HAVE 135° HOOKS. COORDINATE STIRRUP LOCATIONS WITH FINAL ANCHOR BOLT LAYOUT.

(36) #8 VERTICAL BARS.

#4 HAIRPINS AT SAME SPACING AS STIRRUPS (TYP.)

2

2 SECTION

S200.1

SCALE: 3/4" = 1'-0"

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

ADDENDUM 2

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	CM
DESIGNED	CM
CHECKED	OHG
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
2	4/8/26	ADDENDUM 2

DRAWING TITLE

SECTIONS AND DETAILS

DRAWING NUMBER

S200.1

EQUIPMENT SCHEDULE - PBB

NOTES:

EITHER FLA OR MCA USED TO SIZE WIRE BASED ON MANUFACTURER PROVIDED INFORMATION. REFER TO M-SERIES AND P-SERIES SCHEDULES FOR ADDITIONAL INFORMATION.

ABBREVIATIONS: FS: FUSIBLE DISCONNECT SWITCH; CPT: CONTROL POWER TRANSFORMER; MMS: MANUAL MOTOR STARTER; CMS: COMBINATION MOTOR STARTER; NFS: NONFUSIBLE DISCONNECT SWITCH; VFD: VARIABLE FREQUENCY DRIVE

LOAD	TYPE OF DISCONNECT	VOLTAGE	PHASE	FLA	MCA	HP	MOP	APPARENT LOAD	FS: (POLES,AMPERAGE,FUSE) NFS: (POLES,AMPERAGE) CMS: (POLES,NEMA SIZE,FUSE SIZE)	WIRE & CONDUIT	REMARKS	SOURCE PANEL	COMMENTS	LOAD CLASS
GPU-4	FS	480 V	3Φ	109 A	109 A		125 A	90621 VA	(3,200,125)	(3)#1 & (1)#6G IN 1-1/4"C		MDP2	NEMA 3R	GPU
PBB RTU	FS	480 V	3Φ	18.5 A	23 A		25 A	15381 VA	(3,20,25)	(3)#10 & (1)#10G IN 3/4"C		HVP2	NEMA 3R	HEATING
PBB-4	FS	480 V	3Φ	60 A	60 A		60 A	49883 VA	(3,100,60)	(4)#3 & (1)#8G IN 1-1/4"C		MDP2	NEMA 3R	PBB
PCA-4	FS	480 V	3Φ	151 A	151 A	-	150 A	125539 VA	(3,200,150)	(3)#2/0 & (1)#6G IN 1-1/2"C		MDP2	NEMA 3R	PCA

EP GENERAL NOTES:

1. REFER TO EQUIPMENT SCHEDULES FOR CONDUCTOR AND CONDUIT SIZE FOR EQUIPMENT FEEDERS.
2. REFER TO PROPOSED ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION ON ELECTRICAL DISTRIBUTION EQUIPMENT.
3. PROVIDE PROPER LABELING OF ELECTRICAL PANELS, CIRCUITS, AND EQUIPMENT FOR EASY IDENTIFICATION AND MAINTENANCE. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
4. ADHERE TO ALL RELEVANT ELECTRICAL CODES, STANDARDS, AND REGULATIONS APPLICABLE TO THE PROJECT.
5. GROUND ALL ELECTRICAL PANELS, EQUIPMENT, AND CONDUCTIVE SURFACES, AND PROVIDE PROPER BONDING OF METALLIC COMPONENTS TO MAINTAIN ELECTRICAL CONTINUITY.
6. REFER TO SPECIFICATIONS FOR MINIMUM BRANCH CIRCUIT CONDUCTOR SIZES FOR 20A CIRCUITS.
7. SELECT JUNCTION BOXES OF APPROPRIATE SIZE TO ACCOMMODATE THE NUMBER OF CONDUCTORS AND DEVICES WITHIN THEM. GROUP JUNCTION BOXES ABOVE CEILING TOGETHER AS MUCH AS POSSIBLE.
8. FOLLOW NEC REQUIREMENTS FOR BOX FILL CALCULATIONS, WHICH SPECIFY THE MAXIMUM NUMBER AND SIZE OF CONDUCTORS ALLOWED IN A GIVEN BOX. CONSIDER THE SPACE REQUIRED FOR WIRE SPLICES, CONNECTORS, AND ADEQUATE CLEARANCE FOR PROPER WIRING CONNECTIONS.
9. PROVIDE ALL MISC. EQUIPMENT, DEVICES, BOXES, CONDUIT, WIRING/CABLING & TERMINATIONS REQUIRED TO PROVIDE A FULLY FUNCTIONAL INSTALLATION.

ELECTRIC KEY NOTES (#)

1 PROVIDE A THREADED CONDUIT BODY AND A BUILDING PENETRATION. WATERPROOF AND SEAL THE PENETRATION AS REQUIRED.

2 PROVIDE CONDUIT EXPANSION FITTINGS WITH EXTERNAL BONDING JUMPER FOR ALL CONDUITS CROSSING EXISTING EXPANSION JOINT

3 PROVIDE SURFACE MOUNTED 2'X2'X6" NEMA 4X JUNCTION BOX AND RMC DROPS TO EACH DISCONNECT SWITCH. FUSED DISCONNECTS SHALL BE NEMA 3R RATED AND SIZED AS FOLLOWS: (1) 60A, 3P, 480V WITH 60A FUSES FOR PASSENGER BOARDING BRIDGE (PBB), (1) 200A, 3P, 480V WITH 125A FUSES FOR FIXED GROUND POWER UNITS (GPU), (1) 200A, 3P, 480V WITH 150A FUSES FOR PRE-CONDITIONED AIR (PCA). PROVIDE LIQUID TIGHT FLEXIBLE CONNECTIONS TO BRIDGE/EQUIPMENT. REFER TO EQUIPMENT SCHEDULE FOR PROPOSED FEEDER SIZES.

4 SEAL ENDS OF CONDUITS WITH DUCT SEAL AFTER CONDUCTORS HAVE BEEN INSTALLED .

5 PROVIDE CONDUITS ABOVE EXISTING METAL MESH CEILING. PROVIDE ALL LIFTS AS REQUIRED TO ACCESS THE CONCOURSE CEILING SPACE. COORDINATE WITH AIRPORT ON LOGISTICS OF PROVIDING LIFT ACCESS TO THE CONCOURSE CEILING SPACE.

6 PROVIDE PENETRATIONS TO TRANSITION FROM CONCOURSE CEILING SPACE TO MEZZANINE CEILING SPACE. FIELD VERIFY EXACT LOCATION OF PENETRATIONS IN THE FIELD.

7 REFER TO 1/E500 FOR REQUIRED CIRCUIT BREAKERS IN EXISTING PANEL MDP2 TO ACCOMMODATE CIRCUITS.

8 PROVIDE NEW FIRE ALARM ADDRESSABLE DUAL-ACTION PULL STATION (MAG HOLD OPEN) AND ALSO INSTALL A COMPATIBLE ADDRESSABLE SMOKE DETECTOR IN THE CAB SECTION OF THE PASSENGER BOARDING BRIDGE. NEW DEVICES SHALL BE COMPATIBLE WITH EXISTING SIMPLEX 4100ES FIRE ALARM CONTROL PANEL. COORDINATE ALL WORK WITH AIRPORT'S CURRENT FIRE ALARM SYSTEM VENDOR (JOHNSON CONTROLS). PROVIDE PROGRAMMING OF NEW DEVICE CONNECTIONS IN THE EXISTING FACP, AND ALL INITIATION/INTERFACE CONDUIT & CIRCUITRY. PBB VENDOR WILL PROVIDE JUNCTION BOX AND PATHWAY WITHIN BRIDGE FOR NEW DETECTOR.

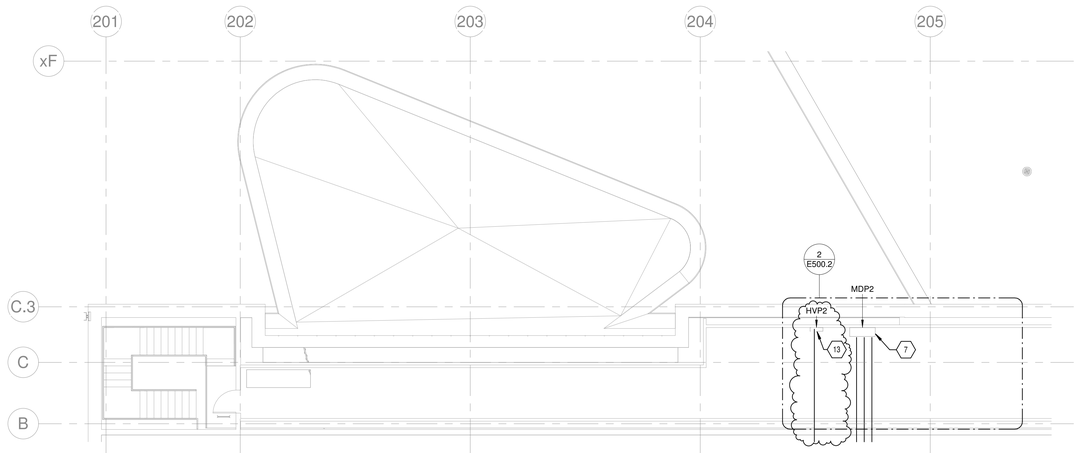
9 REINSTALL EXISTING MAGNETIC DOOR LOCK AND CARD READER. RECONNECT TO EXISTING ACCESS CONTROL CONDUCTORS.

10 REPLACE EXISTING WALL MOUNTED VIDEO SURVEILLANCE DOME CAMERA WITH A NEW 180 DEGREE DOME CAMERA COMPATIBLE WITH THE EXISTING VIDEO SURVEILLANCE SYSTEM. COORDINATE ALL WORK WITH THE AIRPORTS SECURITY VENDOR PRIOR TO INSTALLATION.

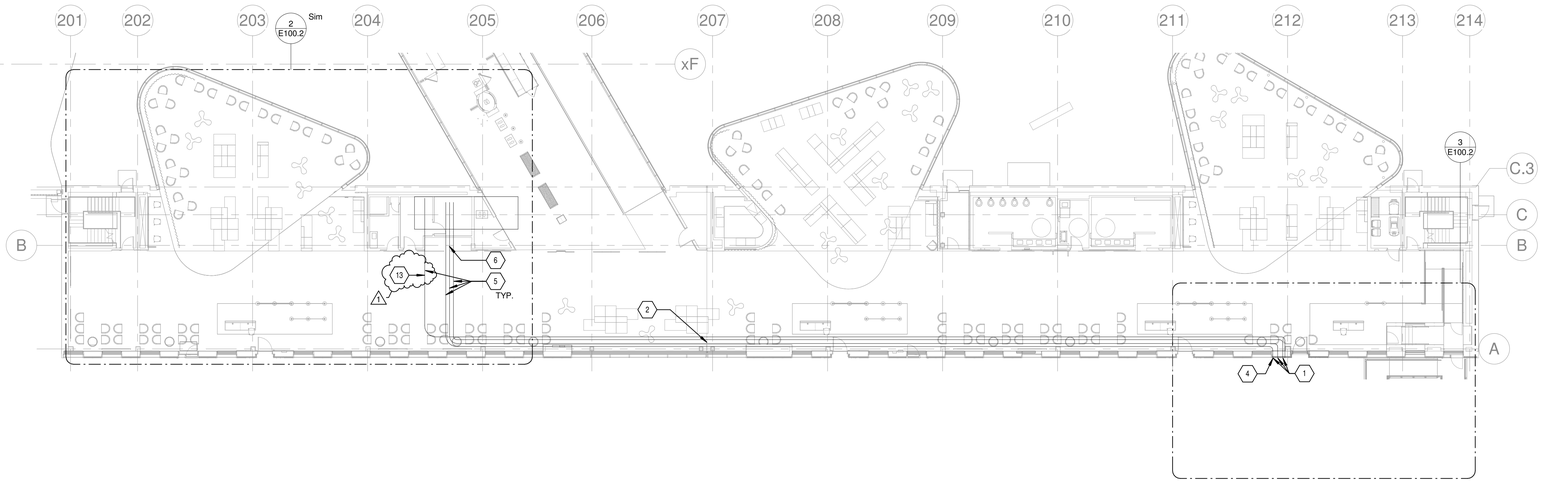
11 REPLACE EXISTING NON-FUNCTIONAL DISPLAY WITH NEW NEC MULTISYNC P554 55" PROFESSIONAL LARGE FORMAT DISPLAY TO MATCH EXISTING. TAKE PHOTOS/LABEL EXISTING CABLING CONNECTIONS PRIOR TO INSTALLATION OF NEW MONITOR SO CABLES CAN BE RE-CONNECTED.

12 PROVIDE NEW WALL MOUNT MICROPHONE COMPATIBLE WITH EXISTING TERMINAL PAGING SYSTEM. MICROPHONE SHALL BE PROGRAMMED TO PERFORM ANNONCEMENTS AT GATE ZONE AND ALL ZONES TO MATCH OTHER EXISTING GATE MICROPHONE INSTALLATIONS. PROVIDE DEVICE, BOX, CONDUIT, CABLING AND ALL INTERCONNECTION REQUIRED TO FURNISH A FULLY FUNCTIONAL INSTALLATION.

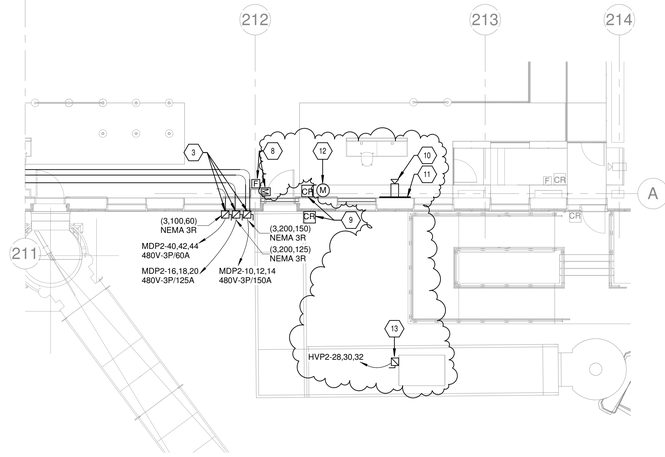
13 PROVIDE A 30A/3P CIRCUIT BREAKER COMPATIBLE WITH EXISTING MEZZ. PANEL HVP2 (SEE DRAWING E500.2) FOR NEW ROOF TOP UNIT TO BE INSTALLED ON THE FIXED SECTION OF THE PBB. PANEL HVP2 IS A GE A-SERIES II PANELBOARD, CAT ASF3424MBX, NO. AX87. FEED NEW RTU WITH (3) #10, #10G IN 3/4" EMT CONDUIT WITHIN BUILDING, THEN WITH RGS AND LFMC ALONG THE FIXED BRIDGE SECTION. PROVIDE A 30A, 600V RATED, NEMA 3R FUSED DISCONNECT AT RTU LOCATION. PROVIDE ALL FINAL CONNECTIONS AND 25 AMP FUSES. COORDINATE BEST CONDUIT ROUTING ALONG THE FIXED BRIDGE WITH THE PBB VENDOR DURING INSTALLATION.



2 PBB CONCOURSE MEZZANINE
SCALE: 1/8" = 1'-0"
0 FT 8 FT 16 FT 24 FT



1 PBB FIRST FLOOR
SCALE: 1/16" = 1'-0"
0 FT 16 FT 32 FT 48 FT



3 PBB FIRST FLOOR - GATE 4
SCALE: 1/8" = 1'-0"
0 FT 8 FT 16 FT 24 FT

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

BID SET

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	AT/BFD
DESIGNED	BFD
CHECKED	CMH
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
1	4/8/26	Addendum 02

DRAWING TITLE

ELECTRICAL PLAN

DRAWING NUMBER

E100.2

HVP2


MDP2

PANEL MARKS: **MDP2**

TECHNICAL SPECIFICATIONS

PANEL TYPE:	SBO PANELBOARD
QUANTITY:	1
AMPS:	1200A
VOLTAGE:	480Y/277V
SYSTEM:	3P4W
KAIC:	65 KAIC SC FULLY RATED
MATERIAL:	ALUMINUM BUS
ENCLOSURE:	NEMA 1 ENCLOSURE
MOUNTING:	SURFACE
SECTION:	1

MAIN DISCONNECT DEVICE

FEED DIR.	Bottom
TYPE:	Breaker
AMPS:	1200
CATALOG NO.:	SKLC3612L3RX
POLES:	3
LUGS:	1-lug/phase 4-cable/lug #250-500 MCM
ACCESSORIES:	GTP1200U1232
ACCESSORIES:	3TCAL125
ACCESSORIES:	SKPLD
ACCESSORIES:	LSI + RELT

Interior X-Values

PNL	MAIN	BRANCH	FEATURE	FILLER
43	6	28	7	2

OPTIONS INCLUDED

QTY	DESCRIPTION
1	Aluminum Bus Heat Rated
1	47 Ckt bonded grd AEG47
1	MET DC Power Supply Module
1	MET Volt 24V DC Battery Pack TVPBP
1	Front Hinged To Box
1	Nameplates (75C141109P109)

BRANCH DEVICES

QTY	AMPS/POLES	DESCRIPTION
~~4~~	~~60A /3P~~	~~SELA36AT0060~~
~~4~~		~~TCAL18~~
~~4~~		~~SRPE60A60~~
4	125A /3P	SELA36AT0150
4		TCAL18
4		SRPE150A125
~~4~~	~~70A /3P~~	~~SELA36AT0100~~
~~4~~		~~TCAL18~~
~~4~~		~~SRPE100A70~~
9	100A /3P	SELA36AT0100
9		TCAL18
9		SRPE100A100
1	400A /3P	SGLA36AT0400
1		TCLK365
1		SRPG400A400
1	200A /3P	SFLA36AT0250
1		TCAL29
1		SRPF250A200

BOM

QTY	CAT #	DESCRIPTION
1	AMCB3GM	Feeder Breaker Straps
1	AMCB3FJ	Feeder Breaker Straps
7	AMCB6EB	Feeder Breaker Straps
1	208C4201G17	Breaker Cover
1	208C4201G54	Breaker Cover
7	208C4201G33	Breaker Cover
1	168D1945G94	Shield
1	ANKN120	Neutral Kit
1	10106052G1	Power Supply
1	10106052G1	Battery Pack

PANEL INFORMATION

	INTERIOR	APNB4312FH1B(1993)
	INTERIOR	
	BOX	APB4096D
	FRONT	APF9643MDH
	TROUGH	
	TROUGH END	
	PULL BOX	
	DIMENSIONS	96"X40"X14.25"

14.25 [361.95] WBS

BLANK FILLERS 2X

1	SGLA4 400A/3P			CENTER MTD	2
3	HVP2			Spaces	4
5				Spaces	6
7				Spaces	8
9	SFLA 200A/3P			Spaces	10
11	TRANS T2			Spaces	12
13				Spaces	14
15	SELA15	125A/3P	125A/3P	SELA15	16
17	JETWAY B 200A SWITCH			SPARE	18
19					20
21	SELA15	125A/3P	125A/3P	SELA15	22
23	JETWAY A 200A SWITCH			JETWAY C 200A SWITCH	24
25					26
27	SELA10	100A/3P	100A/3P	SELA10	28
29	JETWAY C 60A SWITCH			JETWAY C 100A SWITCH	30
31					32
33	SELA10	100A/3P	100A/3P	SELA10	34
35	JETWAY B 100A SWITCH			LP2	36
37					38
39	SELA10	100A/3P	100A/3P	SELA10	40
41	JETWAY C 60A SWITCH			SPARE	42
43					44
45	SELA6	100A/3P	100A/3P	SELA10	46
47	JETWAY A 100A SWITCH			SPARE	48
49					50
51	SELA6	100A/3P		Spaces	52
53	JETWAY A 60A SWITCH			Spaces	54
55				Spaces	56

MET MODULE
LSI + RELT

SKLC12I BreakerA 1200A/ 3P

SKPLD

INCOMING LUGS ON THE LEFT

96.13 [2441.702]   59.13 [1501.78]   22.75 [577.85] WBS

40 [1016]

PROVIDE A 65KAIC, 150AT/250AF CIRCUIT BREAKER COMPATIBLE WITH EXISTING PANEL MDP2 IN SPACES 10,12,14 TO SERVE PCA. MODEL #SFLA36AT0250 & SRPF250A150 TRIP UNIT

REUSE EXISTING 125A/3P SPARE CIRCUIT BREAKER IN SPACES 16,18,20 TO SERVE GPU

REUSE EXISTING 100A/3P SPARE CIRCUIT BREAKER IN SPACES 40,42,44 TO SERVE PBB

1. WBS - WIRE BENDING SPACE.
2. DRAWING NOT TO SCALE.
3. DIMENSIONS ARE IN INCHES[mm]

FACTORY AUTO-LAYOUT. THE LAYOUT IS NOT SPECIFIED, THE FACTORY MAY CHANGE THE LOCATION OF SOME OF THE BREAKERS.

PROJECT NAME : Corning Elmira Airport
CUSTOMER: GEXPRO, SYRACUSE
VERSION.DATE.TIME
PANEL ID: SBO Panelboard
CREATED BY: Shane, Murphy,
CHECKED BY:
APPROVED BY:
DATE: 12/15/2017 12:58:17 PM
REVISION NO.
PRODUCT NAME: *SPECTRA SERIES PANELBOARD*
GE Industrial Solutions
DRAWING NO:
ITEM NO: 22
MARKS: MDP2
QUOTE NO: UAA-00001444
SHEET: 1

1 EXISTING PANEL MDP2 & HVP2
SCALE: N.T.S.

MDP2 (RIGHT HVP2 (LEFT)

(9) EXISTING CONDUITS SERVING EXISTING PBBS AND THEIR ASSOCIATED PERIPHERALS

PROVIDE PENETRATIONS TO TRANSITION FROM MEZZANINE CEILING SPACE TO CONCOURSE CEILING SPACE FOR ADDITIONAL PBB CIRCUITS.

2 EXISTING CONCOURSE MEZZANINE
SCALE: N.T.S.

McFarland Johnson
49 Court Street, Suite 240
Binghamton, NY 13901
P: 607.723.9421
F: 607.723.4979
www.mjinc.com

HUNT
ENGINEERS | ARCHITECTS | SURVEYORS
100 Hunt Ctr,
Horseheads, NY 14845
607-358-1000

SEAL

BID SET

KEY PLAN NORTH

CLIENT: ELMIRA CORNING REGIONAL AIRPORT
CHEMUNG COUNTY, NEW YORK

PROJECT: INSTALLATION OF NEW PASSENGER BOARDING BRIDGE

DRAWN	AT
DESIGNED	AT
CHECKED	CMH
SCALE	AS NOTED
DATE	03/26/2026
PROJECT	18302.19

NO.	DATE	REVISIONS
1	4/8/26	Addendum 02

DRAWING TITLE

DETAILS & EXISTING PHOTOGRAPHS

DRAWING NUMBER

E500.2

Autodesk Docs://ELM Term Projects/ECRA-18302.12&19-Electrical-RVT24.rvt