Washington County
MARYLAND

PURCHASING DEPARTMENT
DIVISION OF BUDGET & FINANCE

PUR-1751
ADDENDUM NO. 1
INVITATION TO BID

HAGERSTOWN REGIONAL AIRPORT
EXPAND/REHABILITATE TERMINAL BUILDING EAST

DATE: Thursday, June 12, 2025

BIDS DUE: Friday, June 27, 2025
2:00 P.M.(EDT/EST)

To Bidders:

This Addendum is hereby made a part of the Contract Documents on which all bids will be based and is issued to correct and clarify the original documents.

Please acknowledge receipt of this Addendum at the appropriate space on the Proposal Form. This Addendum consists of six (6) pages and six (6) attachments.

NOTE: All Bidders must enter the Washington County Administration Complex through either the front door at the 100 West Washington Street entrance or through the rear entrance (w/blue canopy roof) which is handicap accessible and must use the elevator to access the Purchasing Department to submit their bid and/or to attend the Pre-Bid Conference. Alternate routes are controlled by a door access system. The general public will be subject to wand search and will be required to remove any unauthorized items from the building prior to entry. Prohibited items include but are not limited to: Weapons of any type; Firearms, ammunition, and explosive devices; Cutting instruments of any type - including knives, scissors, box cutters, work tools, knitting needles, or anything with a cutting edge, etc.; Pepper spray, mace, or any other chemical defense sprays; and Illegal substances.

ITEM NO. 1: *Inquiry:* Please find attached Substitution Requests for the fluid-applied membrane air barriers (Specification Section 072726) and PVC roofing (Specification Section 075419), related to 2024-HGR-1305 / PUR-1751.

Response: Part 1 of Item No. 1 herein: Attachment A - Spec Section 075419, Article 2.1; ADD Carlisle Sure-Flex PVC Membrane.

Response: Part 2 of Item No. 1 herein: Attachment B - Spec Section 075419, Article 2.1; ADD Soprema Sopraseal LM 204 VP

ITEM NO. 2: *Inquiry:* I am inquiring to see if there is a cost estimate, or engineer's estimate for the above project?

Response: This cost estimate was provided during the Pre-Bid Meeting. $4.5 to $5 million with alternates.

ITEM NO. 3: *Inquiry:* Wage Rates – Is there a listing for Plummer, Sheetmetal Worker and Painter. Current list has Bridge Painter Only.

Response: Building wage rates have been added with this addendum. (Attachment C)

ITEM NO. 4: *Inquiry:* MEP drawings do not depict these Alternates. Please define exactly what will be changed in Alternate #1. There appears to be some overlap between base bid and this alternate.

Response:

1. Base Bid (New Addition): All work associated with the new addition as shown on drawings, shall be under Base Bid.

2. Alternate (Existing Building Renovation): All work associated with existing building renovation, as shown on drawings, shall be under Alternate.

3. See architectural drawings for the exact limits of Base Bid and Alternate.

ITEM NO. 5: *Inquiry:* In Alternate #2 only the additional seats are required, and none of the existing layout is moved to accommodate this layout?

Response: DELETE Drawing A1.9 in its entirety and REPLACE with attached REVISED Drawing A1.9, dated 06.10.25. Drawing has been revised to show new seating throughout. (Attachment E)

ITEM NO. 6: *Inquiry:* The wage scale is for Heavy and Highway. There should be a wage rate for Building that includes roofers.

Response: Building wages rates have been added with this addendum. (Attachment C)

ITEM NO. 7: *Inquiry:* RFI requesting clarification on discrepancies on Spec. Section # 231316 / 2.5 / A Floor Sink & 221429 Pump Description.

Ref. Spec Section 231316 / 2.5 / A FS-1 Floor sink calls for a cast iron body with acid resisting porcelain. The Zurn part No. given is for a Stainless Steel model. Please clarify

Ref. Spec Section 221429 – Pump description does not match the model numbers provided on the Pump schedule shown on drawing P7-1. Please clarify.

Response: Part 1 of Item No. 7 herein: Refer to revised specification issued under Addendum #1. Remove specification section "231316 – Sanitary Waste and Vent Piping" in its entirety and replace with the attached revised specification section "231316 – Sanitary Waste and Vent Piping". (Attachment D)

Response: Part 2 of Item No. 7 herein: Refer to revised specification issued under Addendum #1. Remove specification section "221429 – Plumbing Pumps" in its entirety and replace with the attached revised specification section "221429 – Plumbing Pumps". (Attachment D)

ITEM NO. 8: *Inquiry:* Ref. Spec Section 22400 / 2.1 / Plumbing Fixtures L-1 Lavatory – Please provide finish type, color, and accessories for basin & faucet.

Response: Refer to the revised specification issued under Addendum #1. Remove specification section "224000 – Plumbing Fixtures" in its entirety and replace with attached revised specification section "224000 – Plumbing Fixtures". (Attachment D)

ITEM NO. 9: *Inquiry:* Section 07-54-19-6, 2.3 PVC Membrane Roofing. The Basis of Design is written around Tremco. Are other manufacturers' TPO systems acceptable?

Response: Substitutions will be considered when meeting the minimum attributes of the specifications. (Attachment D)

ITEM NO. 10: *Inquiry:* Section 07-54-19-5, 1.10C Warranty. The 2, 5, 10, 15-year annual inspections and preventive maintenance work are unique to Tremco and not to other roofing manufacturers. May this requirement be deleted?

Response: Provide the manufacturer roofing warranty.

ITEM NO. 11: *Inquiry:* Section 07-54-19-5, 1.1 OE Extended Warranty. This section states the metal wall panels, soffit panels, and trim are to be covered under the Extended Manufacturer's Roof Warranty. These items are furnished by other manufacturers listed in the specifications. Please clarify.

Response: The installation of these components are normally installed by the roofing manufacturer, however the extended warranty on these components are not required under roofing warranty.

ITEM NO. 12: *Inquiry:* Section 07-54-19-8, 2.A Walkways. Please provide a layout for the walkways.

Response: DELETE Drawing A1.5 in its entirety and REPLACE with attached REVISED Drawing A1.5, dated 06.10.25. Drawing has been revised to show walkway

pads. (Attachment E)

ITEM NO. 13: *Inquiry:* Section 07-54-19-11,3.4G Insulation Installation. Is the base layer of insulation being mechanically attached or adhered with adhesive? FM approval may not be available with an adhesive to a metal deck.

Response: The first layer of 2-1/2" roof insulation shall be mechanically attached.

ITEM NO. 14: *Inquiry:* Who is the manufacturer that holds the warranty on the existing roof receiving mechanical equipment?

Response: Sarnafil Roofing systems holds the Warranty; the existing roof is Sarnafil 60 mill PVC membrane. A copy of the warranty is attached to this addendum. (Attachment F)

ITEM NO. 15: *Inquiry:* Please provide the Prevailing Wage Rates for Roofers and Sheet Metal.

Response: Building wage rates have been added with this addendum.(Attachment C)

REVISIONS TO PLANS: (see corresponding reissued sheets in Appendix A):

ITEM NO. 16: Sheet No. G2.0 Construction Safety and Phasing Plan:

REVISE: Suggested Sequence of Construction to specify security fence phasing.

ITEM NO. 17: Sheet No. C1.1 Site Development Plan:

REVISE: Legend to include temporary construction fence.
REVISE: Place callouts for proposed security fence to identify location of tie-in.

ITEM NO. 18: Sheet No. C1.2 Grading and Drainage Plan:

***REVISE*:** Proposed drainage chart:
- Match top elevation of Structure 4 (Manhole) to proposed ground surface elevation.
- Proposed drainage chart presentation style.

ITEM NO. 19: Sheet No. C1.3 Utility Plan:

REVISE: Callout for Proposed Electrical Fiber Optic to read:
PROPOSED ELECTRICAL FIBER OPTIC AND COMMUNICATION LINES IN 2" RGS CONDUIT

ITEM NO. 20: Sheet No. C2.0 Erosion and Sediment Control Plan:

REVISE: Sheet title to read:
EROSION AND SEDIMENT CONTROL PLAN
REVISE: Proposed legend to include Inlet Protection symbol
REVISE: Proposed fence line type for consistency with other plan sheets.

ITEM NO. 21: Sheet No. C2.1 Erosion and Sediment Control Notes and Details:

REVISE: Sheet title to read:
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
ADD: the following details to the sheet:
ROCK CONSTRUCTION ENTRANCE
SILT FENCE
STANDARD INLET PROTECTION

ITEM NO. 22: Sheet No. C3.0 Stormwater Management Plan:

REVISE: Identification of the proposed manhole and add symbol to proposed legend.
REVISE: Proposed fence line type for consistency with other plan sheets.

ITEM NO. 23: Sheet No. CV1.1 Existing Conditions and Demolition Plan:

REVISE: Text style and size for all leaders and text items.

ITEM NO. 24: Sheet No. CV1.2 Final Conditions Plan:

REVISE: Text style and size for all leaders and text items.
REVISE: All leaders for proposed storm drain structures to call out detail sheet CV1.5.
REMOVE: Existing sidewalk (demolished) from plan sheet.
REVISE: Proposed legend to include proposed manhole symbol and to call out detail sheet CV1.5

ITEM NO. 25: Sheet No. CV1.3 Site Plan:

REVISE: Text style and size for all leaders and text items.
REVISE: All leaders for proposed storm drain structures to call out detail sheet CV1.5.
REVISE: Proposed legend to include proposed manhole symbol, call out detail sheet CV1.5, and read PROPOSED BOLLARD (OWNER SUPPLIED MATERIAL – REBAR, CAGE, BOLLARD PIPE AND COVER).
REVISE: Existing security fence-line-to-remain during construction to ensure continuous security fence until proposed security fence is installed
ADD: Note 2.

ITEM NO. 26: Sheet No. CV1.4 Grading and Sediment Control Plan:

REVISE: Text style and size for all leaders and text items.

REVISE: Proposed legend item for proposed storm drain structures to call out detail sheet CV1.5.
ADD: Proposed fence symbol to Proposed Legend.

ITEM NO. 27: Sheet No. CV1.5 Drainage and Erosion and Sediment Control Notes and Details:

REVISE: Text style and size for all text items.
ADD: Standard MDT SHA Manhole detail.
REVISE: Proposed drainage chart:
- Match top elevation of Structure 4 (Manhole) to proposed ground surface elevation.
- Proposed drainage chart presentation style

ATTACHMENTS:

A. Substitution
B. Substitution
C. Building Wage Rates (6 Pages)
D. CJL MEP Addendum #1 (17 Pages)
E. Contract Drawings (A1.5, A1.9, G2.0, C1.1 to C3.0, CV1.1 to CV1.5) (14 pages)
F. Existing Roof Warranty (1 Page)

By Authority of:

Brandi J. Kentner, CPPO
Director of Purchasing

***(NOTE:** The wording of all "Inquiries" submitted are displayed exactly as received.)*

ATTACHMENT A

Advancement of Construction Technology

SUBSTITUTION REQUEST

(During the Bidding Phase)

Project: Hagerstown Regional Airport (HGR) Expand / Rehabilitate Building East

Substitution Request Number:

From: Jason Flynn (Carlisle SynTec)

To: Vince DeCario

C/O: Airport Design Consultants, Inc. (ADCI)

Date: 05/30/25

A/E Project Number: Bid # PUR-1751

Re: PUR-1751 / 2024-HGR-1305

Contract For: Washington County, Maryland

Specification Title: Polyvinyl-Chloride PVC Roofing

Description: Fully adhered PVC roofing system

Section: 07 54 19 Page: 6

Article/Paragraph: 2.3, A

Proposed Substitution: Sure-Flex PVC

Manufacturer: Carlisle SynTec Address: 1285 Ritner Hwy., Carlisle, PA 17013 Phone: (800) 479-6832

Trade Name: Sure-Flex PVC Model No.:

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: Jason Flynn
Signed by: Jason Flynn
Firm: RoofPro, Inc. (Carlisle SynTec Manufacturer's Representative)
Address: 5740 Executive Drive, Suite 220
Baltimore, MD
Telephone: (443) 924-0121

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Supporting Data Attached: ☐ Drawings ☑ Product Data ☐ Samples ☐ Tests ☑ Reports ☐

CARLISLE SYNTEC SYSTEMS

Sure-Flex™ PVC Membrane

Overview

Carlisle's Sure-Flex PVC is an advanced-formula, heat-weldable PVC membrane that is designed for long-term weatherability and performance. The physical properties of the membrane are enhanced by a tenacious, anti-wicking, weft-inserted polyester fabric that is encapsulated by thick PVC-based top and bottom plies. The membrane's smooth surfaces facilitate a permanent weld for a consistent, watertight, monolithic roof assembly.

Features and Benefits

- Exceptional fire and chemical resistance
- Fully formulated monolithic top-ply for long-term weatherability
- Enhanced physical characteristics meeting ASTM D4434 Type IV requirements
- Antimicrobials throughout the polymer for increased resistance to mold, mildew, and algae growth
- Highly flexible with a wide window of weldability for ease of installation
- Available colors:

White | Gray | Tan | Light Gray | Slate Gray

Sustainable Attributes

Carlisle SynTec Systems' focus has always been innovation - Innovation to solve problems, improve performance, reduce labor, and above all, improve sustainability. Carlisle is committed to driving sustainable and efficient processes in the design and manufacturing of our products.

- PVC polymer derived from less than 50% fossil fuels
- Up to 10% pre-consumer recycled content
- Fully recyclable when used in mechanically-attached systems
- 3rd-party verified Environmental Product Declaration available
- California Title 24 compliant*
- See Radiative Properties and LEED Information tables below for additional attributes

*White only.

Installation

Installation requires minimal labor and few components, making it quick and easy to install. Sheet seams are heat-welded together using hot-air welding equipment to create a monolithic, water-tight roof system.

Sure-Flex PVC is suitable for the following roof systems:

Fully-Adhered – membrane is adhered to a suitable substrate utilizing an appropriate bonding adhesive

Mechanically Fastened – membrane is attached to a suitable substrate utilizing plates and fasteners which are overlapped with membrane

Induction-Welded – membrane is attached to a suitable substrate via an induction welding tool being placed over the membrane where a fastened PVC induction welding plate is located to weld the two components together

Review Carlisle specifications and details for complete installation information.

Sure-Flex PVC Membrane

Precautions

- Sunglasses that filter out ultraviolet light are strongly recommended when working on reflective membranes. Roofing technicians should dress appropriately and wear sunscreen.
- Exercise caution when walking on wet membranes; membranes may be slippery when wet or due to frost and ice buildup.
- Care must be exercised while working close to a roof edge when the surrounding area is snow-covered, as the roof edge may not be clearly visible.
- Use proper stacking procedures to ensure sufficient stability of the materials.
- Store membrane in its original, undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins.
- Membrane that has been exposed to the weather or contaminated with dirt must be prepared with Sure-Flex PVC/KEE HP Membrane Cleaner prior to hot-air welding.

Supplemental Approvals, Statements and Characteristics

- Sure-Flex PVC meets or exceeds the requirements of ASTM D4434 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing. Sure-Flex PVC is classified as Type III and/or Type IV as defined by ASTM D4434.
- Sure-Flex reinforced PVC was tested for dynamic puncture resistance per ASTM D5635-04 using the most recently modified impact head. 50-mil thick membrane was watertight after an impact energy of 22.5 J (16.6 ft-lbf), which passes the ASTM D4434 requirement.
- Sure-Flex reinforced PVC was tested for static puncture resistance per ASTM D5602-98 and exceeded 33 lbf (145 N), which passes the ASTM D4434 requirement.

Typical Properties and Characteristics

Physical Property	ASTM D4434 Requirement	50-mil	60-mil	80-mil
Thickness over scrim, in. (mm) ASTM D4434 optical method average of 3 areas	0.016 min (0.40)	0.022 (0.559)	0.027 (0.686)	0.037 (0.940)
Weight, lbs/ft² (kg/m²)	No requirement	0.33 (1.61)	0.40 (1.95)	0.55 (2.68)
Breaking strength (MD × CD), lbf (N) ASTM D751 grab method	275 min (1223)	320 x 300 (1423 x 1334)	330 x 300 (1468 x 1334)	360 x 330 (1601 x 1468)
Elongation break of reinforcement (MD x CD), % ASTM D751 grab method	25 min	30 x 30	30 x 30	30 x 30
Tearing strength (MD x CD), lbf (N) ASTM D751 proc. B, 8 in. x 8 in.	90 min (400)	100 x 120 (445 x 534)	100 x 130 (445 x 578)	100 x 132 (445 x 587)
Low temperature bend, ASTM D2136, no cracks 5x at -40°C	PASS	PASS (-40°C)	PASS (-40°C)	PASS (-40°C)
Linear dimensional change, % ASTM D1204, 6 hours at 176°F	±0.5 max	0.4	0.4	0.4
Ozone resistance, no cracks 7x ASTM D1149, 100pphm, 168 hrs	PASS	PASS	PASS	PASS
Water absorption resistance, mass % ASTM D570, 166 hours at 158°F water	±3.0 max	2.0	2.0	2.0
Field seam strength, lbf/in. (kN/m) ASTM D1876 tested in peel	No requirement	25 (4.4) min 60 (10.5) typ.	25 (4.4) min 60 (10.5) typ.	25 (4.4) min 60 (10.5) typ.
Water vapor permeance, Perms, ASTM E96 proc. B	No requirement	0.10 max 0.05 typ	0.10 max 0.05 typ	0.10 max 0.05 typ
Puncture resistance - Federal, lbf (kN) FTM 101C, method 2031	No requirement	280	320	380
Puncture resistance - Dynamic, J (ft-lbf) ASTM D5635	20 (14.7)	PASS	PASS	PASS
Puncture resistance - Static, lbf (N) ASTM D5602	33 (145)	PASS	PASS	PASS
Xenon-Arc resistance, no cracks/ crazing 10x, ASTM G155 0.35 W/m² at 340-nm, 63°C B.P.T. 12,600 kJ/m² total radiant exposure 10,000 hours	PASS	PASS	PASS	PASS
Properties after heat aging ASTM D3045, 56 days at 176°F Breaking strength, % retained Elongation reinf., % retained	90 min 90 min	90 min 90 min	90 min 90 min	90 min 90 min
Air Permeance ASTM E2178	No requirement	PASS	PASS	PASS

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

CARLISLE SYNTEC SYSTEMS

Sure-Flex PVC Membrane

Radiative Properties for Cool Roof Rating Council (CRRC) and LEED

Physical Property	Test Method	White PVC	Tan PVC	Gray PVC	Light Gray PVC	Slate Gray PVC
CRRC - Initial Solar Reflectance	ASTM C1549	0.87	0.72	0.59	0.74	N/A
CRRC - Solar Reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.56	0.49	0.59	N/A
CRRC - Initial Thermal Emittance	ASTM C1371	0.89	0.87	0.89	0.88	N/A
CRRC - Thermal Emittance after 3 years	ASTM C1371 (uncleaned)	0.88	0.87	0.89	0.89	N/A
Solar Reflective Index (SRI)	ASTM E1980	110	89	70	91	N/A
Solar Reflective Index (SRI) SRI after 3 years	ASTM E1980	86	65	57	70	N/A

LEED® Information

Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI), Initial	White: 110, Tan: 89, Gray: 70, Light Gray: 91, Slate Gray: N/A

800-479-6832 | P.O. Box 7000 | Carlisle, PA 17013 | Fax: 717-245-7053 | **www.carlislesyntec.com**

ICC-ES Evaluation Report

ESR-1463

Reissued October 2023

Revised June 2024

Subject to renewal October 2025

This report also contains:

- CBC Supplement

- LABC Supplement

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

DIVISION: 07 00 00 — THERMAL MOISTURE AND PROTECTION **Section: 07 53 23 — Ethylene-Propelene-Diene-Monomer Roofing** **Section: 07 54 19 – Polyvinyl- Chloride Roofing** **Section: 07 54 23 — Thermoplastic-Polyolefin Roofing**	**REPORT HOLDER:** **CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** **ADDITIONAL LISTEE:** **MULE-HIDE PRODUCTS COMPANY, INC.** **VERSICO, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** **WEATHERBOND, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC.** **ROOFING PRODUCTS INTERNATIONAL, INC.**	**EVALUATION SUBJECT:** **CARLISLE EPDM, PVC AND TPO SINGLE-PLY ROOFING MEMBRANES**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021, 2018, 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2024, 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

For evaluation for compliance with codes adopted by the *Los Angeles Department of Building and Safety* (LADBS), see ESR-1463 LABC and LARC Supplement.

Properties evaluated:

- Weather resistance
- Roof covering fire classification
- Wind uplift resistance
- Impact resistance

2.0 USES

Carlisle ethylene propylene diene monomer (EPDM), polyvinyl chloride (PVC) and thermoplastic polyolefin (TPO) single-ply roofing membranes are used as roof coverings in adhered and mechanically fastened membrane roofing systems.

3.0 DESCRIPTION

3.1 General:

The EPDM, PVC and TPO Membrane Roofing Systems described in this report consist of single-ply roofing membranes, insulation where used, barrier board or slip sheet where used, flashing, mechanical fasteners and adhesives that are installed on a combustible or noncombustible deck. See Table 1 for Carlisle product trade names and corresponding product names for Mule-Hide Products Company, Inc., WeatherBond, Versico, and Roofing Products International, Inc., the additional listees.

3.2 EPDM Membranes:

3.2.1 Sure-Seal EPDM Membrane: Sure-Seal EPDM Membrane is a black, nonreinforced EPDM membrane, 45 mils thick [0.045 inch (1.14 mm)].

3.2.2 Sure-Seal FR EPDM Membrane: Sure-Seal FR EPDM Membrane is a black, nonreinforced EPDM membrane with fire retardants. Available thicknesses range from 45 mils [0.045 inch (1.14 mm)] to 90 mils [0.090 inch (2.29 mm)].

3.2.3 Sure-White EPDM Membrane: Sure-White EPDM Membrane is a white, nonreinforced EPDM membrane. Available in thicknesses of 60 mils [0.060 inch (1.52 mm)] and 90 mils [0.090 inch (2.29 mm)].

3.2.4 Sure-White Reinforced EPDM Membrane: Sure-White Reinforced EPDM Membrane is a white, reinforced EPDM membrane. Available in a thickness of 60 mils [0.60 inch (1.52 mm)].

3.2.5 Sure-Tough EPDM Membrane: Sure-Tough EPDM Membrane is a black, reinforced membrane consisting of a polyester reinforcement encapsulated between two EPDM membrane plies. Available in thicknesses ranging from 45 mils [0.045 inch (1.14 mm)] to 75 mils [0.075 inch (1.90 mm)].

3.2.6 Sure-Seal FleeceBACK EPDM Membrane: Sure-Seal FleeceBACK EPDM Membrane is a 45-mil to 90-mil [0.045 inch to 0.090 inch (1.14 mm to 2.29 mm)] non-reinforced EPDM bonded to a polyester fleece. Available product thicknesses range from 100 mils [0.100 inch (2.55 mm)] to 145 mils [0.145 inch (3.68 mm)].

3.2.7 Sure-White FleeceBACK EPDM Membrane: Sure-White FleeceBACK EPDM Membrane is a 45-, 60- or 90-mil [0.045, 0.060 or 0.090 inch (1.14, 1.52 or 2.29 mm)] nonreinforced white EPDM bonded to a polyester fleece. Available product thicknesses are 100, 115 and 145 mils [0.100, 0.115 or 0.145 inch (2.54, 2.92 or 3.68 mm)].

3.2.8 Sure-Seal AFX EPDM Membrane: Sure-Seal AFX EPDM Membrane is a 45-mil [0.045 inch (1.14 mm) or 60-mil [0.060 inch (1.52 mm)] non-reinforced EPDM bonded to a polyester fleece. Available thicknesses are 90 mils [0.090 inch (2.29 mm)] and 105 mils [0.105 inch (2.67 mm)].

3.3 PVC Membranes:

3.3.1 Sure-Flex PVC Membrane: Sure-Flex PVC Membrane is a heat-weldable PVC thermoplastic membrane consisting of a weft-inserted polyester fabric that is encapsulated by PVC based top and bottom plies. Available thicknesses range from 50 mils [0.050 inch (1.27 mm)] to 80 mils [0.080 inch (203 mm)].

3.3.2 Sure-Flex KEE HP Membrane: Sure-Flex KEE HP Membrane is a heat-weldable thermoplastic membrane that consists of a polyester fabric that is encapsulated by KEE HP based top and bottom plies. Available thicknesses range from 50 mils [0.50 inch (1.27 mm)] to 80 mils [0.80 inch (2.03 mm)].

3.3.3 Sure-Flex PVC FRS Membrane: Sure-Flex PVC FRS Membrane is a heat-weldable thermoplastic membrane that consists of a fiberglass reinforcement encapsulated with PVC based top and bottom plies. Available thicknesses range from 60 mils [0.60 inch (1.52 mm)] to 80 mils [0.80 inch (2.03 mm)].

3.3.4 Sure-Flex PVC FleeceBACK Membrane: Sure-Flex PVC FleeceBACK Membrane consists of polyester reinforcing scrim and polyester fleece backing. Available thicknesses range from 115 mils [0.115 inch (2.92 mm)] to 135 mils [0.135 inch (3.43 mm)].

3.3.5 Sure-Flex KEE HP FleeceBACK Membrane: Sure-Flex KEE HP FleeceBACK Membrane consists of a polyester reinforcing scrim, polyester fleece backing, and DuPont® Elvaloy® KEE HP copolymer. Available thicknesses range from 105 mils [0.105 inch (2.67 mm)] to 135 mils [0.135 inch (3.43 mm)].

3.3.6 Sure-Flex PVC FRS FleeceBACK Membrane: Sure-Flex PVC FRS FleeceBACK Membrane consists of a high-strength fiberglass scrim and polyester fleece backing. Available thicknesses range from 115 mils [0.115 inch (2.92 mm)] to 135 mils [0.135 inch (3.43 mm)].

3.3.7 Sure-Flex KEE HP FRS FleeceBACK Membrane: Sure-Flex KEE HP FRS FleeceBACK Membrane consists of a fiberglass reinforcing scrim, polyester fleece backing, and DuPont® Elvaloy® KEE HP copolymer. Available thicknesses range from 105 mils [0.105 inch (2.67 mm)] to 135 mils [0.135 inch (3.43 mm)].

3.4 TPO Membranes:

3.4.1 Sure-Weld TPO Membrane: Sure-Weld TPO Membrane consists of a polyester reinforcement encapsulated between two plies of TPO. The membrane is available in white, gray, tan and custom colors. Available thicknesses range from 45 mils [0.045 inch (1.14 mm)] to 60 mils [0.060 inch (1.52 mm)].

3.4.2 Sure-Weld EXTRA TPO Membrane: Sure-Weld EXTRA TPO Membrane is a thicker version of the Sure-Weld TPO Membrane specified in Section 3.4.1 for increased strength and weatherability. The membrane isavailable in white, gray, tan and custom colors. Available in a thickness of 80 mils [0.080 inch (2.03 mm)].

3.4.3 Sure-Weld HS TPO Membrane: Sure-Weld HS TPO Membrane is the Sure-Weld membrane formulated with an additional flame retardant for fire resistance at higher slopes. The membrane is available in white, gray, tan and custom colors. Available thicknesses are 45 mils [0.045 inch (1.14 mm)] and 60 mils [0.060 inch (1.52 mm)].

3.4.4 Sure-Weld SAT-TPO Membrane: Sure-Weld SAT-TPO Membrane is a self-adhered version of the Sure-Weld HS TPO membrane with adhesive.

3.4.5 Sure-Weld FleeceBACK TPO Membrane: Sure-Weld FleeceBACK TPO Membrane is the Sure-Weld HS TPO Membrane, 45 mils [0.045 inch (1.14 mm)], 60 mils [0.60 inch (1.52 mm)] and 80 mils [0.60 inch (2.03 mm)] thick, with a laminated polyester fleece backing. Available thicknesses are 100 mils [0.100 inch (2.54 mm)], 115 mils [0.115 inch (2.92 mm)] and 135 mils [0.135 inch (3.43 mm)].

3.4.6 Sure-Weld AFX TPO Membrane: Sure-Weld AFX TPO Membrane is the Sure-Weld HS TPO Membrane with a laminated polyester fleece backing. Available thicknesses range from 120 mils [0.120 inch (3.05 mm)] to 155 mils [0.155 inch (3.94 mm)].

3.4.7 Spectro-Weld TPO Membrane: Spectro-Weld TPO Membrane is the Sure-Weld membrane, described in Section 3.4.1, formulated with a brighter white color. Available thicknesses are 60 mils [0.060 inch (1.52 mm)] and 80 mils [0.080 inch (2.03 mm)].

3.4.8 Spectro-Weld FleeceBACK TPO Membrane: Spectro-Weld FleeceBACK TPO Membrane is the Spectro-Weld membrane with a laminated 5.5-ounce-per-square-yard (0.18 kg/m^2) polyester fleece backing. Available in a thickness of 115 mils [0.115 inch (2.92 mm)].

3.5 Insulation:

See Tables 2 through 5 for insulations for use with specific roofing systems. Insulation must comply with IBC Section 1508.2 or IRC Section R906.2, as applicable. Foam plastic insulation, where used, must have a flame-spread index of not more than 75 when tested at the maximum thickness intended for use in accordance with ASTM E84 or UL 723.

3.6 Barrier Board:

Barrier board, where used, must be either minimum 1/4-inch-thick (6.4 mm) Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck Prime® Roofboard," minimum 1/4-inch-thick (6.4 mm) Owens Corning "StrataGuard," minimum 1/4-inch-thick (6.4 mm) USG Corporation "SECUROCK® Gypsum-Fiber Roof Board" or "SECUROCK® Glass-Mat Roof Board," or minimum 1/2-inch-thick (12.7 mm) gypsum board. Barrier board must be UL-classified for roofing applications or UL-classified gypsum board.

3.7 Slip Sheet:

The slip sheet, where used, must include Carlisle "FR Base Sheet 1S or 2S," GAF "VersaShield® Fire-Resistant Roof Deck Protection (ESR-2053)" or Atlas "FR 10 or FR 50." Slip sheets must be UL-classified for roofing applications.

3.8 Flashing:

Flashing must be provided in accordance with IBC Section 1503.2 or IRC Section R903.2, as applicable. Where flashing is of metal, the metal must be corrosion-resistant, minimum No. 26 gage [0.019 inch (0.483 mm)] galvanized steel.

3.9 Fasteners:

Fasteners, used to mechanically attach insulation and membranes to the roof deck, must be corrosion-resistant, and must be Carlisle fasteners, plates or fastening bars, unless otherwise noted in this report. Refer to Table 4 and 5 for spacing of fasteners.

3.9.1 HP Fastener: This is an epoxy-coated steel screw used in combination with Carlisle's fastening plates or bars to mechanically attach roofing insulation and membranes to steel or wood substrate. Fastener length must be selected to penetrate through the steel deck a minimum of 3/4 inch (19.1 mm), and into the wood deck a minimum of 1 inch (25.4 mm).

3.9.2 InsulFast Insulation Fastener: This is an epoxy-coated steel screw used in combination with Carlisle's insulation plates to mechanically attach roofing insulation to steel or wood substrates. Fastener length must be selected to penetrate through the steel deck a minimum of 3/4 inch (19.1 mm), or into the wood deck a minimum of 1 inch (25.4 mm).

3.9.3 HP Purlin Fastener: This is an epoxy-coated steel screw used in combination with Carlisle's fastening plates or bars to mechanically attach roofing insulation and membranes to structural steel members. Fastener length must be selected to penetrate through the steel member a minimum of 3/4 inch (19.1 mm.)

3.9.4 HD 14-10 Fastener: This is a heavy-duty, epoxy-coated steel screw used in combination with Carlisle's fastening plates or bars to mechanically attach roofing insulation and membranes to concrete roof deck. Fastener length must be selected to penetrate into the concrete deck a minimum of 1 inch (25.4 mm).

3.9.5 CD-10 Fastener: The CD-10 is an epoxy-coated, hammer-driven, nonthreaded fastener specifically designed to be used with insulation and seam fastening plates to secure membrane and insulation to structural concrete. Fastener length must be selected to penetrate into the concrete deck a minimum of 1 inch (25.4 mm).

3.9.6 Lite-Deck Fastener: The Lite-Deck Fastener is used in conjunction with a specially designed 3-inch (76.2 mm) Lite-Deck Metal Plate for insulation attachment to gypsum, cementitious wood fiber (Tectum [ESR-1112]), and lightweight concrete decks. Fastener length must be selected to penetrate into the deck a minimum of 2 inches (50.8 mm).

3.9.7 GypTec Fastener: The GypTec Fastener is a glass-filled nylon auger fastener designed for securing mechanically attached membranes and insulation to gypsum and cementitious wood fiber (Tectum [ESR-1112]) decks. Fastener length must be selected to penetrate into the deck a minimum of 1.5 inches (38.1 mm).

3.9.8 HP Polymer Seam Plate: This is a 2-inch-diameter (50 mm) polymer plate designed to be used with HP and HD 14-10 fasteners to mechanically attach roofing membranes to the roof deck.

3.9.9 Sure-Tite Fastener and ST Fastening Bar: This is a heavy-duty, epoxy-coated steel screw and bar used to secure reinforced EPDM membranes to steel or wood deck. The bar is 1-inch-wide-by-0.040-inch-thick-by-10-foot-long (25.4 mm by 1.1 mm by 3.1 m) galvalume-coated steel with pre-punched holes 6 inches (150 mm) on center.

3.9.10 HP-X Fastener: This is an epoxy-coated carbon steel screw used in combination with the Piranha Fastening Plate to mechanically attach TPO membranes to steel or wood substrate. Fastener length must be selected to penetrate through the steel deck a minimum of 3/4 inch (19.1 mm), and into the wood deck a minimum of 1 inch (25.4 mm).

3.9.11 Piranha Fastening Plate: This is a 2 3/8-inch-diameter (60.3 mm) galvalume-coated steel plate designed to be used with HP-X fasteners to mechanically attach PVC and TPO membranes to the roof deck.

3.9.12 HP-XTRA Fastener: This is an epoxy-coated carbon steel screw used in combination with the Piranha XTRA Fastening Plate to mechanically attach PVC and TPO membranes to steel or wood substrate. Fastener length must be selected to penetrate through the steel deck a minimum of 3/4 inch (19.1 mm) and into the wood deck a minimum of 1 inch (25.4 mm).

3.9.13 Piranha XTRA Fastening Plate: This is a 2 3/8-inch-diameter (60.3 mm) galvalume-coated steel plate designed to be used with HP-XTRA fasteners to mechanically attach PVC and TPO membranes to the roof deck.

3.9.14 PVC Oval Barbed Plate: This is a 1 1/2-inch-by-2 3/4-inch (35 mm by 69.85 mm) Oval Barbed Plate designed to be used with HP-X Fasteners to mechanically attach PVC membranes to the roof deck.

3.9.15 OMG Roofing Products RhinoBond Plate: The RhinoBond Plate is a 3-inch-diameter (76.2 mm), 0.028-inch-thick (0.7 mm) galvalume-coated steel plate, coated with a proprietary adhesive and used with the HP-X fastener to mechanically attach PVC and TPO membranes to the roof deck. The adhesive bonds the plate to the underside of the membrane.

3.10 Carlisle SynTec Adhesives: See Tables 2 and 5 for adhered roofing systems.

3.10.1 90-8-30A Bonding Adhesive: 90-8-30A Bonding Adhesive is a high-strength, solvent-based contact adhesive used to adhere EPDM membranes to the insulation or substrate. It has a coverage rate of approximately 60 square feet per gallon (1.5 m^2/L) when applied to the finished surface area. The adhesive is supplied in 5-gallon (18.9 L) containers and has a shelf life of one year.

3.10.2 Aqua Base 120 Bonding Adhesive: Aqua Base 120 Bonding Adhesive is a high-strength, water-based contact adhesive used to adhere EPDM and TPO membranes to the insulation or substrate. It has a coverage rate of approximately 120 square feet per gallon (3 m^2/L) when applied to the finished surface area.

The adhesive is supplied in 5-gallon (18.9 L) containers and has a shelf life of one year.

3.10.3 Low-VOC PVC Bonding Adhesives: Low VOC PVC Bonding Adhesives is high-strength, solvent-based contact adhesives used to adhere PVC membranes to an insulation or substrate. They have a coverage rate of approximately 60 square feet per gallon (1.5 m^2/L) when applied to the finished surface area. The adhesive is supplied in 5-gallon (18.9 L) containers with a shelf life of one year.

3.10.4 Sure-Weld TPO Bonding Adhesive: Sure-Weld TPO Bonding Adhesive is a high-strength, solvent-based contact adhesive used to adhere TPO membranes to an insulation or substrate. It has a coverage rate of approximately 60 square feet per gallon (1.5 m^2/L) when applied to the finished surface area. The adhesive is supplied in 5-gallon (18.9 L) containers with a shelf life of one year.

3.10.5 Low VOC Bonding Adhesive: Low VOC Bonding Adhesive is a high-strength, solvent-based contact adhesive used to adhere EPDM and TPO membranes to an insulation or substrate. It has a coverage rate of approximately 60 square feet per gallon (1.5 m^2/ L) when applied to the finished surface area. The adhesive is supplied in 5-gallon (18.9 L) containers with a shelf life of one year.

3.10.6 HydroBond Water-Based Bonding Adhesive: HydroBond Water-Based Bonding Adhesive is a water-based, wet lay-in, one-sided adhesive to be used to adhere Sure-Flex PVC, Sure-Flex PVC FRS and FleeceBACK membranes to an insulation or substrate. It has a coverage rate of 100 square feet per gallon (2.5 m^2/L). The adhesive is supplied in 5-gallon (918.9 L) containers with a shelf life of one year.

3.10.7 Low VOC Bonding Adhesive 1168: Low VOC Bonding Adhesive 1168 is high-strength, solvent-based contact adhesive used to adhere EPDM and TPO membranes to an insulation or substrate. It has a coverage rate of approximately 60 square feet per gallon (1.58 m^2/L) when applied to the finished surface area. The adhesive is supplied in 5-gallon (18.9 L) containers with a shelf life of one year.

3.10.8 Cold Applied Adhesive: Cold Applied Adhesive is a solvent-free, asphalt-modified polyether adhesive. This adhesive can be used with all Sure-Seal or Sure-Weld AFX membranes as a one-sided, wet lay-in adhesive. It has a coverage rate of 67 square feet per gallon (1.6 m^2/L). The adhesive is supplied in 5-gallon (18.9 L) containers with a shelf life of one year.

3.10.9 Flexible FAST Adhesive: Flexible FAST Adhesives are two-component polyurethane adhesives used to adhere FleeceBACK membranes and insulations to various substrates. The adhesives have a coverage rate of approximately 100 square feet per gallon (2.5 m^2/L). The adhesives are supplied in 5-gallon (18.9 L) jugs, 15-gallon (56.7 L) and 50-gallon (189 L) drums, box sets, cartridge tubes, dual tanks, and/or cylinders, and have a shelf life of one year.

3.10.10 OlyBond 500 Adhesive: OMG Roofing Products OlyBond 500 Spot Shot and OlyBond 500 BA are two-component polyurethane adhesives used to adhere insulations to various substrates. The adhesives have a coverage rate of approximately 100 square feet per gallon (2.5 m^2/L). The adhesives are supplied in cartridge tubes and box sets, and have a shelf life of one year.

3.10.11 EPDM X-23 Low-VOC Bonding Adhesive: EPDM X-23 Low-VOC Bonding Adhesive is a high strength, solvent-based contact adhesive used to adhere EPDM membranes to an insulation or substrate. It has a coverage rate of approximately 60 square feet per gallon (1.5 m^2/L) when applied to the finished surface area. The adhesive is supplied in 5-gallon (18.9 L) containers with a shelf life of one year.

3.10.12 CAV-GRIP III Low-VOC Adhesive/Primer: CAV-GRIP III Low-VOC Adhesive/Primer is a contact adhesive used to adhere EPDM and TPO membranes to various substrates. It has a coverage rate of 1000 ft^2 per cylinder when applied to the finished surface area. The adhesive is supplied in No. 40 cylinders with a shelf life of one year (unopened).

3.11 Impact Resistance:

The EPDM, PVC, and TPO roofing membranes described in this report meet requirements for impact resistance in 2024 IBC Section 1504.7 (2021 IBC Section 1504.8 (2018, 2015, 2012 and 2009 IBC Section 1504.7), based on testing in accordance with Section 4.6 of FM 4470.

4.0 INSTALLATION

4.1 General:

Installation of the EPDM, PVC, and TPO roofing membranes described in this report must comply with the applicable code, the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions must be available at all times on the jobsite during installation.

The substrate to which the membrane is to be applied must be clean, dry, and free of frost, loose fasteners, and other protrusions or contaminates that will interfere with the adhesion or attachment of the membrane or that will puncture the membrane. All materials must be protected against contact with incompatible materials.

Where gypsum board is used as barrier board in the roofing assembly, weather protection must be provided to prevent damage to the gypsum board prior to application of the roofing membrane.

The slope of the roof on which the single-ply membranes are installed must not be more than the maximum slope indicated for the particular assembly as listed in Tables 2 and 3.

Penetrations and terminations of the roof covering must be flashed and made weather tight in accordance with the requirements of the membrane manufacturer and the applicable code.

4.2 Fire Classification:

4.2.1 New Construction: The adhered and mechanically fastened EPDM, PVC, and TPO single-ply membrane roofing systems, when installed in accordance with this report, are Class A, B or C roof covering systems in accordance with ASTM E108 or UL 790, as noted in Tables 2 and 3.

4.2.2 Reroofing: Prior to installation of new roof coverings, inspection in accordance with 2024 and 2021 IBC Section 1512 [2018 and 2015 IBC Section 1511 (2012 and 2009 IBC Section 1510)]. The existing deck must be inspected to verify that the structure to be reroofed is structurally sound and adequate to support and secure the roofing membrane. Roof covering systems employing mechanical fasteners must be qualified to the satisfaction of the code official as to the adequacy of fasteners penetrating through existing roof coverings into structural substrates.

Class A, B or C roof covering systems may be installed over existing classified roof covering systems under the following conditions without additional roof classification tests, provided the resulting classification is the lower of the new or existing roofing classification:

- New uninsulated systems installed only over existing uninsulated assemblies.
- New insulated systems installed over existing uninsulated systems only.

4.3 Wind Resistance:

4.3.1 New Construction: The allowable wind uplift pressures for the EPDM, PVC, and TPO roofing membranes as parts of roof assemblies are noted in Tables 4 and 5.

Metal edge securement systems must be listed in accordance with the 2017 edition of ANSI/SPRI/FM4435 ES-1 and designed and installed for wind loads in accordance with 2024 and 2021 IBC Section 1504.6 [2018, 2015, 2012 and 2009 IBC Section 1504.5] and IBC Chapter 16.

4.3.2 Reroofing: Mechanically anchored systems may be accepted based on the adequacy of anchors penetrating through existing roof coverings into structural substrates. Since the composition and/or condition of any particular existing underlying material may vary widely, roof recovery, or installing the adhered systems over an existing roof covering,, without removing the existing roof covering, is outside the scope of this report.

5.0 CONDITIONS OF USE:

The single-ply EPDM, PVC, and TPO roofing membranes described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with the applicable code, the manufacturer's published installation instructions and this report. The instructions within this report must govern if there are any conflicts between the manufacturer's installation instructions and this report.

5.2 The adhered and mechanically fastened single-ply membrane roofing systems must be installed by professional roofing contractors who are trained and approved by the manufacturer.

5.3 Foam plastic insulation must be separated from the interior of the building by an approved thermal barrier in accordance with IBC Section 2603.4 or 2024 IRC Section R303.4 (2021, 2018, 2015, 2012 or 2009 IRC Section R316.4), as applicable, unless otherwise noted in an ICC-ES evalution report on the foam plastic insulation for direct-tosteel-deck application

5.4 Foam plastic insulation, where used, must bear the label of an approved agency indicating that the foam plastic has a flame-spread index of not more than 75 when tested at the maximum thickness intended for use in accordance with ASTM E84 or UL 723, subject to the approval of the code official.

5.5 Design wind uplift pressure on any roof area, including edge and corner zones, must not exceed the allowable wind uplift pressure for the system installed in that particular area. Refer to allowable wind uplift pressures for systems as listed in Tables 4 and 5.

5.6 The allowable wind uplift pressures listed in Tables 4 and 5 are for the roof covering system only. The deck and framing to which the system is attached must be designed for the applicable components and cladding wind loads in accordance with the applicable code.

5.7 When application is over existing roofs, documentation of the wind-uplift resistance of the composite roof construction must be submitted to the code official for approval at the time of permit application.

5.8 For buildings under the IBC, above deck thermal insulation board must comply with the applicable standards listed in IBC Table 1508.2 or IRC Table R906.2, as applicable.

5.9 The roofing membranes are manufactured at Carlisle, Pennsylvania; Greenville, Illinois; Tooele, Utah; and Senatobia, Mississippi, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Membrane Roof-covering Systems (AC75), dated July 2010 (editorially revised April 2024).

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-1463) along with the name, registered trademark, or registered logo of the report holder or listee must be included in the product label. [Electronic labeling is the ICC-ES web address (www.icc-es.org); specific URL related to the report; or the ICC-ES machine-readable code placed on the aforementioned items.]

7.2 In, addition, each roll of the roofing membrane must bear a label noting the product name, the manufacturer's name (Carlisle SynTec Systems) or the name of the additional listee, the manufacturer's address or plant code and the ICC-ES evaluation report number (ESR-1463).

7.3 The report holder's contact information is the following:

CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC
POST OFFICE BOX 7000
CARLISLE, PENNSYLVANIA 17013
(717) 245-7000
www.carlislesyntec.com

7.4 The Additional Listees' contact information is the following:

MULE-HIDE PRODUCTS COMPANY, INC.
1195 PRINCE HALL DRIVE
BELOIT, WISCONSIN 53511
(800) 786-1492

VERSICO, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC
POST OFFICE BOX 1289
CARLISLE, PENNSYLVANIA 17013
(800) 992-7663

WEATHERBOND, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC
POST OFFICE BOX 251
PLAINFIELD, PENNSYLVANIA 17081
(866) 471-5125

ROOFING PRODUCTS INTERNATIONAL, INC.
57460 DEWITT STREET
ELKHART, INDIANA 46517
(800) 628-2957

TABLE 1—PRODUCT NAMES

CARLISLE PRODUCT NAME	MULE-HIDE PRODUCT NAME	VERSICO PRODUCT NAME	WEATHERBOND PRODUCT NAME	ROOFING PRODUCTS INTERNATIONAL PRODUCT NAME
Sure-Seal EPDM	Mule-Hide Standard Black EPDM	VersiGard Non-reinforced EPDM	WeatherBond EPDM Non-Reinforced Membrane	Royal Edge Non-Reinforced EPDM
Sure-Seal FR EPDM	Mule-Hide FR EPDM	VersiGard FR Non-Reinforced EPDM	WeatherBond EPDM FR Non-Reinforced Membrane	Royal Edge Non-Reinforced FR EPDM
Sure-Seal FleeceBACK EPDM	-	VersiFleece EPDM	WeatherBond Fleece EPDM Membrane	Royal Edge EPDM FleeceBACK
Sure-Seal AFX EPDM	-	VersiFleece AC EPDM	WeatherBond EPDM AC Fleece Membrane	-
Sure-Tough EPDM	Mule-Hide Standard Reinforced EPDM	VersiGard Reinforced EPDM	WeatherBond EPDM Reinforced Membrane	Royal Edge Reinforced EPDM
Sure-White EPDM	Mule-Hide White-on-Black EPDM	VersiGard –White Standard	WeatherBond EPDM White Membrane	Re-Flex White EPDM
Sure-White Reinforced EPDM	Mule-Hide White on Black Reinforced EPDM	VersiGard White Reinforced EPDM	WeatherBond EPDM White Reinforced Membrane	-
Sure-White FleeceBACK	-	-	-	Re-Flex White EPDM FleeceBACK
Sure-Weld TPO	Mule-Hide TPO-c	VersiWeld Reinforced TPO Membrane	WeatherBond TPO Membrane	Re-Flex TPO
Sure-Weld HS TPO	Mule-Hide TPO-c (FR)	VersiWeld HS	WeatherBond TPO High Slope Membrane	Re-Flex TPO HS
Sure-Weld SAT-TPO	Mule-Hide SA-TPO	VersiWeld QA TPO Membrane	WeatherBond TPO PAS Membrane	Re-Flex TPO SAT
Sure-Weld TPO FleeceBACK	Mule-Hide TPO-c Fleece Back	VersiFleece TPO	WeatherBond FleeceTPO Membrane	Re-Flex TPO FleeceBACK
Sure-Weld TPO AFX	Mule-Hide TPO-c Fleece Back Plus	VersiFleece AC TPO	WeatherBond TPO AC Fleece Membrane	-
Spectro-Weld TPO	-	-	-	-
Spectro-Weld FleeceBACK TPO	-	-	-	-
Sure-Flex PVC	Mule-Hide PVC Membrane	VersiFlex PVC	WeatherBond PVC Membrane	Re-Flex PVC
Sure-Flex KEE HP	Mule-Hide PVC KEE HP Membrane	VersiFlex KEE HP	WeatherBond KEE HP Membrane	Re-Flex KEE HP
Sure-Flex PVC FRS	Mule-Hide PVC FRS Membrane	VersiFlex FRS PVC	WeatherBond PVC FRS Membrane	Re-Flex FRS PVC
Sure-Flex PVC FleeceBACK	Mule-Hide PVC FleeceBack Membrane	VersiFleece PVC	WeatherBond PVC Fleece Membrane	-
Sure-Flex KEE HP FleeceBACK	Mule-Hide PVC KEE HP Fleece Back Membrane	VersiFleece KEE HP	WeatherBond KEE HP Fleece Membrane	-
Sure-Flex PVC FRS FleeceBACK	-	VersiFleece FRS PVC	WeatherBond PVC FRS Fleece Membrane	Re-Flex FRS PVC FleeceBACK
Sure-Flex KEE HP FRS FleeceBACK	-	VersiFleece FRS KEE HP	WeatherBond KEE HP FRS Fleece Membrane	-
90-8-30A Bonding Adhesive	Mule-Hide Bonding Adhesive	G200SA Yellow Substrate Adhesive	LC-60 Bonding Adhesive	Royal Edge Bonding Adhesive
EPDM X-23 Low- VOC Bonding Adhesive	EPDM X-23 Low VOC Bonding Adhesive	EPDM X-23 Low VOC Bonding Adhesive	EPDM X-23 Low VOC Bonding Adhesive	-
Aqua Base 120 Bonding Adhesive	Aqua Base 120 Bonding Adhesive	Aqua Base 120 Bonding Adhesive	Aqua Base 120 Bonding Adhesive	Royal Edge Water Based Bonding Adhesive
Sure-Weld TPO Bonding Adhesive	Mule-Hide TPO-c Bonding Adhesive	VersiWeld TPO Bonding Adhesive	TPO Bonding Adhesive	Royal Edge EPDM/TPO Bonding Adhesive
Low VOC Bonding Adhesive	Low VOC Bonding Adhesive	LOW VOC Bonding Adhesive	Low VOC Bonding Adhesive	Royal Edge Low VOC Bonding Adhesive
Low VOC Bonding Adhesive 1168	Low VOC Bonding Adhesive 1168	Low VOC Bonding Adhesive 1168	Low VOC Bonding Adhesive 1168	--
Low VOC PVC Bonding Adhesive	Low -VOC PVC Bonding Adhesive	Low-VOC PVC Bonding Adhesive	Low-VOC PVC Bonding Adhesive	Re-Flex PVC Low VOC Bonding Adhesive
HydroBond Water-Based Bonding Adhesive	HydroBond Water-Based Bonding Adhesive-	HydroBond Water-Based Bonding Adhesive	HydroBond Water-Based Bonding Adhesive	=
CAV-GRIP III Low VOC Adhesive/Primer	AeroWeb Adhesive	Cav-Grip 3V Low VOC Adhesive/Primer	Cav-Grip III Low VOC Adhesive/Primer	-

TABLE 1—PRODUCT NAMES (continued)

CARLISLE PRODUCT NAME	MULE-HIDE PRODUCT NAME	VERSICO PRODUCT NAME	WEATHERBOND PRODUCT NAME	ROOFING PRODUCTS INTERNATIONAL PRODUCT NAME
Cold Applied Adhesive	Cold Applied Adhesive	Cold Applied Adhesive	Cold Applied Adhesive	RPI Cold Applied Adhesive
Flexible FAST Adhesive	Helix® Max Low-Rise Adhesive	Flexible DASH Adhesive	Flexible DASH Adhesive	FastBond Flex Adhesive
OlyBond 500 Adhesive	-	OlyBond 500 Adhesive	OlyBond 500 Adhesive	OlyBond 500 Adhesive

TABLE 2—FIRE CLASSIFICATION ASSEMBLIES—ADHERED ROOFING SYSTEMS[2,5]

SYSTEM NO.	ROOF CLASS	DECK	MAX SLOPE	BARRIER BOARD OR SLIP SHEET	INSULATION[1]	MEMBRANE
1	A	Noncombustible	1/4:12	—	Any of the following insulations: Carlisle "SecurShield Polyiso", "InsulBase", Hunter Panels "H-Shield" or "H-Shield-CG", any thickness	Sure-Weld, Spectro-Weld
2			3/4:12			Sure-Flex KEE HP FRS FleeceBACK
3			3/8:12			Sure-White Reinforced
4			1/2:12			Sure-Seal FR, Sure-Tough, Sure-White, Sure-Seal FleeceBACK, Sure-Weld HS, Sure-Weld SAT-TPO, Sure-Weld FleeceBACK, Spectro-Weld FleeceBACK, Sure-White FleeceBACK
5			2 1/2:12			Sure-Flex PVC FleeceBACK, Sure-Flex PVC FRS FleeceBACK
6			1½ :12			Sure-Flex PVC, Sure-Flex PVC FRS, Sure-Flex KEE HP, Sure-Flex KEE HP FleeceBACK
7	A	Noncombustible	1/2:12	—	1/2-inch-thick fiberboard[4] or 1/2-inch-thick fiberboard[4] over 5-inch max Insulfoam EPS[3], or 1/2-inch-thick fiberboard over System No. 1 insulations	Sure-White FleeceBACK
8			1:12			Sure-Seal FR, Sure-Tough, Sure-White Reinforced, Sure-Seal FleeceBACK
9			1 1/2:12			Sure-White, Sure-Weld, Spectro-Weld, Sure-Weld HS, Sure-Weld SAT-TPO, Sure-Weld FleeceBACK, Spectro-Weld FleeceBACK, Sure-Flex PVC, Sure-Flex PVC FRS, Sure-Flex KEE HP, Sure-Flex PVC FleeceBACK, Sure-Flex KEE HP FleeceBACK, Sure-Flex PVC FRS FleeceBACK, Sure-Flex KEE HP FRS FleeceBACK
10	A	Noncombustible	3/4:12	1/4-inch thick "DensDeck Prime" or 1/4-inch thick "SECUROCK Gypsum Fiber Roof Board"	(Optional) 5-inch max InsulFoam EPS[3] or System No.1 insulation may be used below the barrier board	Sure-White FleeceBACK
11			1 1/2:12			Sure-White, Sure-Seal FleeceBACK
12			3:12			Sure-Tough, Sure-Weld, Spectro-Weld, Sure-Weld FleeceBACK, Spectro-Weld FleeceBACK
13			4:12			Sure-Weld HS, Sure-Weld SAT-TPO
14			Unlimited			Sure-Seal FR, Sure-Flex PVC, Sure-Flex PVC FRS, Sure-Flex KEE HP
15			3:12			Sure-Flex PVC FleeceBACK, Sure-Flex KEE HP FleeceBACK, Sure-Flex PVC FRS FleeceBACK, Sure-Flex KEE HP FRS FleeceBack

TABLE 2—FIRE CLASSIFICATION ASSEMBLIES—ADHERED ROOFING SYSTEMS[2,5] (continued)

SYSTEM NO.	ROOF CLASS	DECK	MAX SLOPE	BARRIER BOARD OR SLIP SHEET	INSULATION[1]	MEMBRANE
16	A	Combustible	3/4:12	1/4-inch thick "DensDeck Prime" or 1/2-inch thick "SECUROCK Gypsum Fiber Roof Board"	(Optional) 5-inch max InsulFoam EPS[3] or System No.1 insulation may be used below the barrier board	Sure-White FleeceBACK
17			1 1/2:12			Sure-White, Sure-Seal FleeceBACK, Sure-White Reinforced
18			3:12			Sure-Tough, Sure-Weld, Spectro-Weld, Sure-Weld FleeceBACK, Spectro-Weld FleeceBACK, Sure-Flex PVC FleeceBACK, Sure-Flex KEE HP FleeceBACK, Sure-Flex PVC FRS FleeceBACK, Sure-Flex KEE HP FRS FleeceBACK
19			4:12			Sure-Weld HS, Sure-Weld SAT-TPO Sure-Seal FR, Sure-Flex PVC, Sure-Flex PVC FRS, Sure-Flex KEE HP
20	A	Combustible	1/4:12	Barrier board (see Section 3.6) or Slip sheet: 2 layers (see Section 3.7)	Carlisle "InsulBase" or Hunter Panels "H-Shield", any thickness	Sure-Weld, Spectro-Weld
21			3/4:12			Sure-Flex KEE HP FRS FleeceBACK
22			3/8:12			Sure-White Reinforced
23			1/2:12			Sure-Seal FR, Sure-Tough, Sure-White, Sure-Seal FleeceBACK, Sure-Weld HS, Sure-Weld SAT-TPO, Sure-Weld FleeceBACK, Spectro-Weld FleeceBACK, Sure-White FleeceBACK
24			2:12			Sure-Flex PVC FleeceBACK, Sure-Flex PVC FRS FleeceBACK
25			1 1/2:12			Sure-Flex PVC, Sure-Flex PVC FRS, Sure-Flex KEE HP, Sure-Flex KEE HP FleeceBACK
26	C	Noncombustible or Combustible	Unlimited	—	Carlisle "InsulBase" or Hunter Panels "H-Shield" any thickness	Any EPDM, PVC or TPO Membrane specified in this report
27	A	Combustible	Up to 1/2:12[6]	—	Minimum 1-inch Carlisle "SecurShield Polyiso or Hunter Panels "H-Shield-CG"	Any EPDM, PVC or TPO Membrane specified in this report
28	A	Combustible	Up to1:12[6]	—	1/2-inch Carlisle "SecurShield HD", "SecurShield HD Plus", or Hunter Panels H-Shield HD, H-Shield HD90	Any EPDM, PVC or TPO Membrane specified in this report

For **SI:** 1 inch = 25.4 mm.

[1]All foam plastic insulation must be UL-classified foamed plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.
[2]See Section 3.10 for adhesive application rate.
[3]UL Classified EPS may be installed below min. 1-inch-thick Carlisle or Hunter Panels polyisocyanurate insulations (max slope 1:12) or below min. 1/2-inch-thick Carlisle SecurShield HD or Hunter Panels H-Shield HD (max slope 2:12) on noncombustible decks.
[4]Carlisle SecurShield HD or Hunter Panels H-Shield HD may replace fiberboard and may be used as a coverboard over any insulation. When these two boards are used directly below the Sure-Weld membrane, the slope is limited to max. 1/2:12.
[5]When these systems are used for reroofing or recovering, installation must be in accordance with Sections 4.2.2 and 5.7 of this report, and 2024 and 2021 IBC Section 1512 [2018 and 2015 IBC Section 1511 (2012 and 2009 IBC Section 1510)], and 2024,2021, 2018 and 2015 IRC Section R908 (2012 and 2009 IRC Section R907), as applicable.
[6]Max slope determined by the classification of the membrane assembly.

TABLE 3—FIRE CLASSIFICATION ASSEMBLIES—MECHANICALLY FASTENED ROOFING SYSTEMS[4]

SYSTEM NO.	ROOF CLASS	DECK	MAX. SLOPE	BARRIER BOARD OR SLIP SHEET	INSULATION[1]	MEMBRANE/MAX. ROOF SLOPE
1	A	Noncombustible	1/2:12	—	Any of the following insulations: Carlisle "SecurShield Polyiso" or "InsulBase", Hunter Panels "H-Shield" or "H-Shield-CG", any thickness	Sure-Tough, Sure-Weld, Spectro-Weld, Sure-White Reinforced
2			1 1/2:12			Sure-Weld HS
3			2 1/2:12			Sure-Flex PVC, Sure-Flex KEE HP
4	A	Noncombustible	1:12	—	1/2-inch-thick fiberboard[3] or 1/2-inch-thick fiberboard[4] over 5-inch max Insulfoam EPS[2], or 1/2-inch-thick fiberboard over System No. 1 insulations	Sure-Tough, Sure-Flex
5			1 1/2:12			Sure-Weld, Spectro-Weld, Sure-Weld HS
6	A	Noncombustible	1/2:12	—	Insulfoam SP, 5-inch max thickness	Sure-Weld, Spectro-Weld, Sure-Weld HS, Sure-Flex, Sure-Flex KEE HP
7	A	Noncombustible	1:12	—	"Insulfoam SP" or min. 1/2-inch-thick Insulfoam EPS covered with "Insulfoam SP"	Sure-Weld, Spectro-Weld, Sure-Weld HS, Sure-Tough
8	A	Noncombustible	2:12	1/4-inch thick "DensDeck" or 1/4-inch thick "SECUROCK Gypsum Fiber Roof Board	(Optional) 5-inch max InsulFoam EPS[3] or System No.1 insulation may be used below the barrier board	Sure White Reinforced
9			3:12			Sure-Tough, Sure-Weld, Spectro-Weld
10			Unlimited			Sure-Weld HS, Sure-Flex PVC, Sure-Flex KEE HP
11	A	Combustible	2:12	1/4-inch thick "DensDeck" or 1/2-inch thick "SECUROCK Gypsum Fiber Roof Board	(Optional) 5-inch max InsulFoam EPS[3] or System No.1 insulation may be used below the barrier board	Sure White Reinforced
12			3:12			Sure-Tough, Sure-Weld, Spectro-Weld
13			4:12			Sure-Weld HS, Sure-Flex PVC, Sure-Flex KEE HP
14	A	Combustible	1/2:12	Barrier board (see Section 3.6) or Slip sheet: 2 layers, (see Section 3.7)	Carlisle "InsulBase", or Hunter Panels "H-Shield", any thickness	Sure-Tough, Sure-Weld, Spectro-Weld
15			1 1/2:12			Sure-Weld HS
16			2 1/2:12			Sure-Flex PVC, Sure-Flex KEE HP
17	A	Combustible	1:12	Slip sheet, 2 layers (see Section 3.7)	—	Sure-Tough
18			1 1/2:12			Sure Weld, Spectro-Weld, Sure-Weld HS, Sure-Flex, Sure-Flex KEE HP
19	B	Combustible	1 1/2:12	Slip sheet, 1 layer (see Section 3.7)	—	Sure-Tough, Sure-Weld, Spectro-Weld, Sure-Weld HS, Sure-Flex, Sure-Flex KEE HP
20	C	Noncombustible or Combustible	Unlimited	—	Any of the following insulations: Carlisle "SecurShield Polyiso", "InsulBase", Hunter Panels "H-Shield" or "H-Shield-CG", any thickness	Any EPDM, PVC or TPO Membrane specified in this report
21	A	Combustible	1/2:12[5]	—	Minimum 1-inch Carlisle "SecurShield Polyiso" or Hunter Panels "H-Shield-CG"	Any EPDM, PVC or TPO Membrane specified in this report
22	A	Combustible	1:12[5]	—	1/2-inch Carlisle "SecurShield HD", "SecurShield HD Plus", or Hunter Panels H-Shield HD, H-Shield HD90	Any EPDM, PVC or TPO Membrane specified in this report

For **SI:** 1 inch = 25.4 mm.

[1]All foam plastic insulation must be UL-classified foamed plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.

[2]UL Classified EPS may be installed below min. 1-inch-thick Carlisle or Hunter Panels polyisocyanurate insulations (max slope 1:12) or below min. ½-inch-thick Carlisle SecurShield HD or Hunter Panels H-Shield HD (max slope 2:12) on noncombustible decks.

[3]Carlisle SecurShield HD or Hunter Panels H-Shield HD may replace fiberboard and may be used as a coverboard over any insulation. When these two boards are used directly below the Sure-Weld membrane, the slope is limited to ½:12.

[4]When these systems are used for reroofing or recovering, installation must be in accordance with Sections 4.2.2 and 5.7 of this report, and 2024 and 2021 IBC Section 1512 [2018 and 2015 IBC Section 1511 (2012 and 2009 IBC Section 1510)] and 2024, 2021, 2018 and 2015 IRC Section R908 (2012 and 2009 IRC Section R907), as applicable.

[5]Max slope determined by the classification of the membrane assembly.

TABLE 4—WIND RESISTANCE—ADHERED ASSEMBLIES[5,6]

SYSTEM NO.	ALLOWABLE WIND UPLIFT (FIELD) (psf)	DECK[2]	INSULATION / MIN. THICKNESS[1,3]	INSULATION FASTENING RATE	MEMBRANE TYPE
1	45	Combustible or Noncombustible	1/2-inch fiberboard[4], 15/32-inch OSB, or 1/4-inch thick "DensDeck Prime" or 1/4-inch thick "SECUROCK Gypsum Fiber Roof Board"	1 per 2 ft^2	EPDM, PVC and TPO Membranes
2	45	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 1.4 inch with 1/2-inch SECUROCK coverboard (optional)	1 per 3.2 ft^2	EPDM, PVC and TPO Membranes
3	45	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 2.0 inch with 5/8-inch SECUROCK coverboard (optional)	1 per 4 ft^2	EPDM, PVC and TPO Membranes
4	68	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 1.0 inch	FAST Adhesive	FleeceBACK Membranes
5	75	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 2.0 inch with 1/2-inch SECUROCK coverboard (optional)	1 per 1.6 ft^2	EPDM, PVC and TPO Membranes
6	113	Combustible or Noncombustible	Carlisle "SecurShield" or "H-Shield CG" / 2.0 inch	1 per 1ft^2	PVC Membranes
7	120	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 2.0 inch	1 per 1 ft^2	TPO Membranes EPDM membranes (with noncombustible deck only)
8	128	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 2.0 inch with 1/2-inch SECUROCK coverboard (optional)	1 per 1 ft^2	EPDM and TPO Membranes
9	135	Combustible or Noncombustible	Carlisle "InsulBase" or "SecurShield Polyiso"; Hunter Panels "H-Shield" or "H-Shield-CG" / 2.0 inch with 1/2-inch SECUROCK coverboard (optional)	1 per 1 ft^2	FleeceBACK Membranes
10	143	Combustible or Noncombustible	1/2.inch DensDeck Prime	1 per 1 ft^2	FleeceBACK Membranes

For **SI:** 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa

[1]All foam plastic insulation must be UL-classified foamed plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.

[2]Steel deck must be minimum No. 22 gage galvanized steel [base-metal thickness 0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f'_c) of 2500 psi. See Section 5.6 of this report.

[3]UL Classified EPS may be installed below min. 1-inch-thick Carlisle or Hunter Panels polyisocyanurate insulations (max slope 1:12) or below min. 1/2-inch-thick Carlisle SecurShield HD or Hunter Panels H-Shield HD (max slope 2:12) on noncombustible decks.

[4]Carlisle SecurShield HD or Hunter Panels H-Shield HD may replace fiberboard and may be used as a coverboard over any insulation. When these two boards are used directly below the Sure-Weld membrane, the slope is limited to 1/2:12.

[5]When application is over existing roofs, documentation of the wind-uplift resistance of the composite roof construction must be submitted to the code official for approval at the time of permit application. Since the composition and/or condition of any particular existing underlying material may vary widely, reroofing with fully adhered System No. 4 is outside the scope of this report. For reroofing or recovering, installation must be in accordance with 2024 and 2021 IBC Section 1512 [2018 and 2015 IBC Section 1511 (2012 and 2009 IBC Section 1510)] and 2024, 2021, 2018 and 2015 IRC Section R908 (2012 and 2009 IRC Section R907), as applicable.

[6]See Section 3.10 for adhesive application rate.

TABLE 5—WIND RESISTANCE—MECHANICALLY FASTENED ASSEMBLIES[4,7]

SYSTEM NO.	MAXIMUM ALLOWABLE WIND UPLIFT (psf)	DECK[3]	INSULATION [5]	MEMBRANE	MEMBRANE FASTENING	MAXIMUM FASTENER SPACING (inches)	MAXIMUM FASTENER ROW SPACING[8]
1	45	Noncombustible	Foam plastic insulation[1,2], 1/2-inch-thick fiberboard[6] or barrier board (See Sect. 3.6)	Sure-Tough	HP-X Fastener & Metal Fastening Bar	12	6 ft 6 inches
2	75	Noncombustible	Same as System No. 1	Sure-Tough	HP-X Fastener & Metal Fastening Bar	6	6 ft 6 inches
3	52	Noncombustible	Same as System No. 1	Sure-Tough	HP Fastener & Polymer Seam Plate	6	9 ft 6 inches
4	45	Noncombustible	Same as System No. 1	Sure-Tough	Sure-Tite Fastener & ST Fastening Bar	12	9 ft 6 inches
5	30	Noncombustible	Same as System No. 1	Sure-Tough (75 mil)	HP Fastener & Polymer Seam Plate	12	9 ft 6 inches
6	60	Noncombustible	Same as System No. 1	Sure-Tough (75 mil)	HP Fastener & Polymer Seam Plate	6	9 ft 6 inches
7	45	Noncombustible	Same as System No. 1	Sure-Weld or Spectro-Weld	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	12	7 ft 6 inches
8	45	Noncombustible	Same as System No. 1	Sure-Weld or Spectro-Weld	HP-Xtra Fasteners with Piranha Xtra Plates	12	9 ft 6 inches
9	60	Noncombustible	Same as System No. 1	Sure-Weld or Spectro-Weld	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	6	9 ft 6 inches
10	67	Noncombustible	Same as System No. 1	Sure-Weld or Spectro-Weld	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	6	7 ft 6 inches
11	30	Noncombustible	Same as System No. 1	Sure-Weld or Spectro-Weld	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	12	11 ft 6 inches
12	60	Noncombustible	Same as System No. 1	Sure-Weld or Spectro-Weld	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	6	11 ft 6 inches
13	53	Noncombustible	Same as System No. 1	Sure-Flex PVC or Sure-Flex KEE HP	HP-X Fasteners with Piranha Plates	6	6 ft 4 inches
14	83	Noncombustible	Same as System No. 1	Sure-Flex PVC or Sure-Flex KEE HP	HP-X Fasteners with Piranha Plates	6	2 ft 11 inches
15	30	Noncombustible	Same as System No. 1	Sure-Flex PVC or Sure-Flex KEE HP	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	18	6 ft 4 inches
16	45	Noncombustible	Same as System No. 1	Sure-Flex PVC or Sure-Flex KEE HP	HP-X or HP-Xtra Fasteners with Piranha or Piranha Xtra Plates	12	6 ft 4 inches
17	53	Noncombustible	Same as System No. 1	Sure-Flex PVC or Sure-Flex KEE HP	HP-X Fasteners with Piranha Plates	12	2 ft 11 inches
18	60	Noncombustible	Same as System No. 1	Sure-Flex PVC or Sure-Flex KEE HP	HP-X or HP-Xtra Fasteners with Piranha Plates	6	9 ft 7 inches
19	45	Noncombustible	Same as System No. 1	Sure-Weld	HP-X Fasteners with OMG RhinoBond Plates	1 per 5.3 ft^2	N/A
20	60	Noncombustible	Same as System No. 1	Sure-Weld	HP-X Fasteners with OMG RhinoBond Plates	1 per 4 ft^2	N/A

For **SI:** 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa.

[1]Foam plastic insulation must be any of the following (1-inch min. to 6-inch max. thickness): Carlisle “SecurShield Polyiso”, “InsulBase” Hunter Panels “H-Shield” or Hunter Panels “H-Shield- CG”.

[2]All foam plastic insulation must be UL-classified foamed plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.

[3]Steel deck must be minimum No. 22 gage galvanized steel [base-metal thickness 0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f'_c) of 2500 psi. See Section 5.6 of this report.

[4]For existing metal roofing, the assemblies listed must be installed by fastening through the roofing and into structural members (purlins, angle iron, beams, etc.) capable of resisting all expected loads. The maximum allowable wind uplift (field) pressures are shown in Column 2.

[5]UL Classified EPS may be installed below min. 1-inch-thick Carlisle or Hunter Panels polyisocyanurate insulations (max slope1:12) or below min. 1/2-inch-thick Carlisle SecurShield HD or Hunter Panels H-Shield HD (max slope 2:12) on noncombustible decks.

[6]Carlisle SecurShield HD or Hunter Panels H-Shield HD may replace fiberboard and may be used as a coverboard over any insulation. When these two boards are used directly below the Sure-Weld membrane, the slope is limited to 1/2:12.

[7]When these systems are used for reroofing or recovering, installation must be in accordance with Sections 4.2.2 and 5.7 of this report, and 2024 and 2021 IBC Section 1512 [2018 and 2015 IBC Section 1511 (2012 and 2009 IBC Section 1510)] and 2024, 2021, 2018 and 2015 IRC Section R908 (2012 and 2009 IRC Section R907), as applicable.

[8]Fastener row spaces shown are for field of roof only. See Section 4.3 for recognized fascia systems for mechanically fastened roof assemblies. Distance between the edge of the roof and the first row of fasteners must be determined accordingly.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 53 23—Ethylene-Propylene-Diene-Monomer Roofing
Section: 07 54 19—Polyvinyl-Chloride Roofing
Section: 07 54 23—Thermoplastic-Polyolefin Roofing

REPORT HOLDER:

CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC

EVALUATION SUBJECT:

CARLISLE EPDM, PVC AND TPO SINGLE-PLY ROOFING MEMBRANES

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes, described in ICC-ES evaluation report ESR-1463, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes, described in Sections 2.0 through 7.0 of the evaluation report ESR-1463, comply with the LABC Chapters 7A and 15, the LARC Section R337 and LARC Chapter 9, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes, described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-1463.
- The design, installation, conditions of use and identification are in accordance with the 2021 *International Building Code®* (IBC) and 2021 *International Residential Code®* (IRC) provisions noted in the evaluation report ESR-1463.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, or LARC Chapter 3, as applicable.
- The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes must not be installed over existing wood shakes or wood shingles in accordance with LABC Section 1512.
- The installation of the Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes must comply with City of Los Angeles Information Bulletin P/BC 2020-16, “Dwellings in High Wind Velocity Areas (HWA)”.
- Reroofing applications must comply with Sections 4.2.2, 4.3.2 and 5.7 of the evaluation report ESR-1463 and LABC Section 1512 or LARC Section R908, as applicable. Where spaced sheathing exists, a minimum of $^{15}/_{32}$-inch-thick (11.9 mm) plywood shall be installed prior to roofing installations.
- Where moderate or heavy foot traffic occurs for maintenance of equipment, the roof covering shall be adequately protected.
- The Building Inspector shall be notified 24 hours in advance prior to installation of the roof membranes.

- The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes may be used in the construction of new buildings located in any Fire Hazard Severity Zone within a State Responsibility Areas or any Wildland-Urban Interface Fire Area, provided installation is in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of Sections 701A.3 and 705A of the LABC.
- The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes may be used in the construction of new buildings located in any Fire Hazard Severity Zone within a State Responsibility Areas or any Wildland-Urban Interface Fire Area, provided installation is in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of Sections R337.1.3 and R337.5 of the LARC.

This supplement expires concurrently with the evaluation report, reissued October 2023 and revised June 2024.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 53 23—Ethylene-Propylene-Diene-Monomer Roofing
Section: 07 54 19—Polyvinyl-Chloride Roofing
Section: 07 54 23—Thermoplastic-Polyolefin Roofing

REPORT HOLDER:

CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC

EVALUATION SUBJECT:

CARLISLE EPDM, PVC AND TPO SINGLE-PLY ROOFING MEMBRANES

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Carlisle EPDM, PVC and TPO single-ply roofing membranes, described in ICC-ES evaluation report ESR-1463, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Carlisle EPDM, PVC and TPO single-ply roofing membranes, described in Sections 2.0 through 7.0 of the evaluation report ESR-1463, comply with CBC Chapter 15, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapter 15, as applicable.

The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes may be used in the construction of new buildings located in any Fire Hazard Severity Zone within a State Responsibility Areas or any Wildland-Urban Interface Fire Area, provided installation is in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of Sections 701A.3 and 705A of the CBC.

2.1.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Carlisle EPDM, PVC and TPO single-ply roofing membranes, described in Sections 2.0 through 7.0 of the evaluation report ESR-1463, comply with CRC Chapter 95, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 9, as applicable.

The Carlisle EPDM, PVC and TPO Single-ply Roofing Membranes may be used in the construction of new buildings located in any Fire Hazard Severity Zone within a State Responsibility Areas or any Wildland-Urban Interface Fire Area, provided installation is in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of Sections R337.1.3 and R337.5 of the CRC.

This supplement expires concurrently with the evaluation report, reissued October 2023 and revised June 2024.

ATTACHMENT B

Advancement of Construction Technology

SUBSTITUTION REQUEST

(During the Bidding Phase)

Project: Hagerstown Regional Airport (HGR) Expand / Rehabilitate Building East

Substitution Request Number:

From: Jason Flynn (Soprema)

To: Vince DeCario

C/O: Airport Design Consultants, Inc. (ADCI)

Date: 05/30/25

A/E Project Number: Bid # PUR-1751

Re: PUR-1751 / 2024-HGR-1305

Contract For: Washington County, Maryland

Specification Title: Fluid Applied Membrane Air Barriers

Description: Fluid-applied vapor-permeable air barrier

Section: 07 27 26 Page: 3

Article/Paragraph: 2.1

Proposed Substitution: Sopraseal LM 204 VP

Manufacturer: Soprema Address: 310 Quadral Dr., Wadsworth, OH 44281 Phone: (800) 356-3521

Trade Name: Sopraseal LM 204 VP Model No.:

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: Jason Flynn
Signed by: Jason Flynn
Firm: RoofPro, Inc. (Soprema Manufacturer's Representative)
Address: 5740 Executive Drive, Suite 220
Baltimore, MD
Telephone: (443) 924-0121

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Supporting Data Attached: ☐ Drawings ☑ Product Data ☐ Samples ☐ Tests ☐ Reports ☐

SOPRASEAL® LM 204 VP

Vapor Permeable Air Barrier

PRODUCT DATA SHEET PD10299 - REV.220712

ACCESSORIES

WALLS

QUICK FACTS:

UNIT SIZE Gal	COLOR	SOLIDS %	QTY / PALLET	SHELF-LIFE months	USES
5 (19 L)	Blue	98	36 Pails	12	Walls
50 (189 L)			4 Drums		

PRODUCT NUMBERS & PACKAGING:

- A506 - **SOPRASEAL LM 204 VP -** 5 gal (19 L) Pail
- A507 - **SOPRASEAL LM 204 VP -** 55 gal (189 L) Drum

DESCRIPTION & FEATURES:

SOPRASEAL LM 204 VP is a one-component, 98% solids, liquid applied, non-flammable, vapor permeable air barrier membrane used in wall construction. **SOPRASEAL LM 204 VP** utilizes STPE polymer technology for excellent freeze-thaw characteristics and superior curing in low humidity and temperatures, and on damp substrates.

USES:

SOPRASEAL LM 204 VP provides air and moisture mitigation protection behind wall claddings such as brick, siding, metal panels, EIFS, and stucco, and is applied to exterior grade gypsum sheathing or wood, as well as CMU and poured concrete walls.

FEATURES & BENEFITS:

- Can be roller or spray applied
- 98% solids material
- Low VOC content
- Rain resistant in less than 30 minutes
- Adheres to damp concrete
- Up to 180 days of jobsite exposure

APPLICATION & SERVICE TEMPERATURES:

- **SOPRASEAL LM 204 VP** can be applied at temperatures of 25°F (-4°C) or above.
- The material should be kept at a minimum temperature of 40°F (4°C) but preferably 70°F (21°C) during the application.
- The minimum curing temperature is also 25°F (-4°C) and must be maintained for the length of curing process.
- UV exposure should not exceed 180 days.
- The service temperature range is -40°F to 200°F (-40°C to 149°C).

APPLICATION:


ROLLER


SPRAY

SOPRASEAL LM 204 VP is typically applied using a roller or spray equipment, and at approximately a 20mil wet film thickness. Refer to **SOPRASEAL LM 204 VP** application guidelines and our Wall Air Barrier Technical Manual for complete details

SOPREMA®

SOPRASEAL®
LM 204 VP

Vapor Permeable Air Barrier

PRODUCT DATA SHEET PD10299 - REV.220712

ACCESSORIES

WALLS

APPROVALS & TESTING:

- ICC-ES AC212, Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing.
- ABAA evaluated and listed air barrier
- NFPA 285 tested assemblies

STORAGE & HANDLING:

Store pails and drums on end and maintain in an upright position to prevent damage. Store in a clean dry location and cover as necessary to protect from environmental damage such as extreme cold, heat, or moisture and protect from freezing. Monitor varying environmental conditions during storage & handling, and application of the product.

SHELF LIFE:

SOPRASEAL LM 204 VP has a shelf life of 12 months from the date of manufacture when properly stored in original packaging.

LIMITATION:

- Not for use in below grade applications
- Do not apply to contaminated substrates or frost covered surfaces.
- Not intended for permanent UV exposure

CURING & DRY TIME:

SOPRASEAL LM 204 VP cures in 1 to 2 hours when applied at 20 mils at 70°F (21°C) and 50% relative humidity. Cure time varies based on temperature, humidity and applied thickness. Additional lifts of material and tie-ins should be applied within 72 hours of first application.

CLEAN UP:

Before material cures, clean all tools and equipment with xylene or similar solvent. Cured material will need to be mechanically cut or abraded. Clean skin with warm soapy water and a medium bristled brush as needed.

WARRANTY:

Please refer to www.SOPREMA.us for the SOPREMA Standard Warranty or contact us at 800.356.3521 for more information.

EQUIPMENT & TOOLS:

SOPRASEAL® LM 204 VP application guidelines and our Wall Air Barrier Technical Manual for recommended spray pump equipment and other tools.

SOPRASEAL®
LM 204 VP

Vapor Permeable Air Barrier

PRODUCT DATA SHEET PD10299 - REV.220712

ACCESSORIES

WALLS

TECHNICAL INFORMATION & TESTING:

PHYSICAL PROPERTIES		
PROPERTY	**VALUE**	**TEST METHOD**
Air leakage rate of material, cfm/ft² (L/s·m²) @ ΔP=1.57psf (75 Pa)	0.00034 (0.0017)	ASTM E2178
Air leakage rate of assembly, cfm/ft²(L/s·m²) Specimen 1: opaque wall; after wind conditioning @ ΔP= 75Pa Specimen 2: penetration wall; at reference air leakage	0.0004 (0.002) 0.0004 (0.002)	ASTM E2357
Resistance to hydrostatic head pressure	Pass	AATCC 127 (2008)
Fastener seal ability	Pass	ASTM D1970
Pull adhesion, psi (kN/m²) DensGlass® CMU Concrete Exterior grade plywood	 67 (462) 134 (924) 162 (1117) 177 (1220)	ASTM D4541 (Method E)
Crack bridging	No cracking, splitting, or pinholes	ASTM C1305-08
Resistance to UV exposure	Pass	ICC-ES AC212 (2018) Section 4.8
Moisture vapor permeance @ 20mil DFT, perms (ng/s·m²·Pa)	15.8 (902) desiccant method 24.2 (1900) water method	ASTM E96
Surface Burning, Flame Spread Smoke Developed	 25 (Class A) 0 (Class A)	ASTM E84 (UL 723)
Wall assembly fire testing	Approved in various NFPA 285 tested wall assemblies	NFPA 285
ICC-ES AC212 Acceptance Criteria	Pass	ICC-ES AC212 (2018)
Tensile Strength, lb./in²(kN/m²)	185 (1276)	ASTM D412, Die C
Elongation, %	296	ASTM D412, Die C

** Data is represented by average values, unless noted otherwise.*

air barrier
abaa
association of
america

MEMBER CERTIFICATE

Soprema, Inc.

AIR BARRIER ASSOCIATION OF AMERICA INC.

THE MEMBER AGREES TO ACTIVELY CHAMPION THE AIR BARRIER INDUSTRY WHILE SUSTAINING HIGH INDUSTRY STANDARDS, PROFESSIONALISM AND ABIDING BY THE PRINCIPLES OF ABAA.

2024

510-0601

MEMBER #

AIR BARRIER ASSOCIATION OF AMERICA

"General Decision Number: MD20250126 03/14/2025

State: Maryland

Construction Type: Building

County: Washington County in Maryland.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	• Executive Order 14026 generally applies to the contract. • The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	• Executive Order 13658 generally applies to the contract. • The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	03/14/2025

SAMD2024-046 12/01/2024

	Rates	Fringes
BALANCING TECHNICIAN.....	$ 47.92	24.44

BRICKLAYER	$ 33.46	25.04
CARPENTER	$ 30.00	21.25
ELECTRICIAN	$ 40.00	20.20
ELEVATOR MECHANIC	$ 56.36	45.50
FIRESTOPPER	$ 29.81	10.08
GLAZIER	$ 35.60	14.41
INSULATION WORKER	$ 40.02	19.92
IRONWORKER, REINFORCING	$ 30.69	24.40
IRONWORKER, STRUCTURAL	$ 30.69	24.40
LABORER		
AIR TOOL OPERATOR	$ 23.99	22.70
ASPHALT PAVER	$ 23.99	22.70
ASPHALT RAKER	$ 23.81	22.70
BLASTER - DYNAMITE	$ 23.99	22.70
BURNER	$ 23.99	22.70
COMMON	$ 23.81	22.70
CONCRETE PUDDLER	$ 23.81	22.70
CONCRETE SURFACER	$ 23.99	22.70
CONCRETE TENDER	$ 23.81	22.70
CONCRETE VIBRATOR	$ 23.81	22.70
DENSITY GAUGE	$ 23.81	22.70
FIREPROOFER - MIXER	$ 23.81	22.70
FLAGGER	$ 23.81	22.70
GRADE CHECKER	$ 23.81	22.70
HAND ROLLER	$ 23.81	22.70
HAZARDOUS MATERIAL HANDLER	$ 23.99	22.70
JACKHAMMER	$ 23.81	22.70
LANDSCAPING	$ 23.81	22.70
LAYOUT	$ 23.81	22.70
LUTEMAN	$ 23.81	22.70
MASON TENDER	$ 23.99	22.70
MORTAR MIXER	$ 23.81	22.70
PIPELAYER	$ 23.99	22.70
PLASTERER - HANDLER	$ 23.81	22.70
SCAFFOLD BUILDER	$ 23.99	22.70
TAMPER	$ 23.81	22.70
MECHANICAL SYSTEMS SERVICE TECH		
HVAC Systems	$ 46.21	24.90
Plumbing Systems	$ 36.78	19.28
Refrigeration Systems	$ 52.27	24.78
MILLWRIGHT	$ 35.82	20.01
PLUMBER	$ 46.21	24.90
POWER EQUIPMENT OPERATOR		
BACKHOE	$ 36.02	16.70
BULLDOZER	$ 36.02	16.70
CONCRETE PUMP	$ 36.02	16.70
CRANE	$ 41.00	18.10
DRILL - RIG	$ 36.02	16.70
EXCAVATOR	$ 36.02	16.70
FORKLIFT	$ 36.02	16.70

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LOADER	$ 36.02	16.70
MECHANIC	$ 36.02	16.70
OILER	$ 36.02	16.70
ROLLER - EARTH	$ 36.02	16.70
SKID STEER (Bobcat)	$ 36.02	16.70
VACUUM TRUCK	$ 37.50	14.85
ROOFER/WATERPROOFER	$ 30.00	17.46
SHEETMETAL WORKER (including metal roofing)	$ 34.12	24.69
STEAMFITTER/PIPEFITTER	$ 46.21	24.90

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union

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whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took

effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

SECTION 22 14 29: PLUMBING PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SCOPE

A. The pumps shall each be as described in this section, of sizes and capacities as noted on the Drawings.

B. The pumps shall each be installed in accordance with the prevailing local plumbing codes.

C. All pumps must be accessible.

D. Refer to “Electric Motors”, Section 220500.

PART 2 - PRODUCTS

2.1 SUBMERSIBLE PUMPS

A. Submersible Pumps

1. A duplex set of Zurn submersible pumps shall be furnished for each station. Each pump shall be equipped with a hermetically sealed, Class F insulated motor, installed in a heavy ribbed cast iron shell. Pumps utilizing oil filled motors and radial sleeve type bearings shall not be acceptable. Each pump shall be rated as is shown on the pump schedule. Pumps shall be as manufactured by: Zurn, Liberty, Weil Pump Company, KSB Pumps, or Flygt. Refer to the schedule shown on drawings for capacities.
2. The motor shall be equipped with a double mechanical seal housed in an oil filled chamber with no portion of the seal faces coming in contact with the pumping medium. Double mechanical seal shall be opposed single spring with inner or upper seal face material constructed of carbon vs. ceramic. The outer or lower seal face material shall be constructed of silicon carbide vs. silicon carbide. The motor shall include a 25 foot neoprene jacketed power cord
3. The motor shell and pump volute shall be made of close-grained cast iron. Pump shaft shall be 316 stainless steel and all fastening hardware shall be stainless steel. The impeller shall be cast iron, enclosed type for Ground Water Sump Pumps. The impeller shall be bronze, enclosed type for Sanitary Sump Pumps. Pumps utilizing plastic impellers are not acceptable.

B. Quick Removal Fittings
   1. Each duplex set of pumps shall include a Zurn quick removal system which allows the pumps to be lowered and raised from the wet pit without disturbing the discharge piping. Each system shall consist of a floor discharge elbow, yoke, stainless steel lifting rope, upper guide pipe bracket with bosses, discharge flange, gasket and hardware kit. The floor discharge elbow shall be precision machined from close grain cast iron. The outlet shall fit either a standard ANSI flange or a 2-bolt cast iron discharge flange with neoprene compression gasket. Stainless Steel guide pipes are positioned onto the floor discharge elbow and supported at the top by the upper guide pipe bracket. The stainless steel guide pipes steer the submersible pump accurately to the floor discharge elbow. Guide Pipes for Ground Water Pumps shall be 1" stainless steel. Guide Pipes for Sanitary Pumps shall be 2" stainless steel. A wedge design shall assure a tight metal to metal fit between the pump and the floor discharge elbow. Guide rail systems utilizing only one guide rail are not acceptable.

C. Controls
   1. Included are 4-float switch level controls, each with sufficient length to wire direct to control panel without splices of power cable, and to include pump shut-off, lead pump start, stand-by pump start and high water alarm.
   2. Included is 1 - NEMA 1 duplex control panel suitable for wall mounting containing the following items:
      a. 2 – Circuit breakers
      b. 2 – Magnetic starters with overload protection
      c. 1 – Electrical alternator
      d. 1 – Control circuit transformer
      e. 2 – Pump running lights on panel door
      f. 1 – Alarm horn with light and silencing switch
      g. 1 – Lag pump indicating light on panel door
      h. 1 – High Water Alarm Circuit
      i. 1 – Lag Pump Alarm Circuit
      j. 2 – HOA selector switches on panel door
      k. 1 – Numbered and wired terminal strip.
      l. Dry Contacts for all alarm conditions

D. Pump Basin & Cover
   1. Refer to Cover Specification. Provide concrete basin of sizes as shown on schedule. Fittings for inlet, discharge, vent and electrical cords to be as shown on drawing.

E. Miscellaneous
   1. A factory-trained representative shall be available at start-up and provide a written report to the engineer.

2.2 FIBERGLASS SUMP PUMP COVER

A. Aluminum Hinged Door Covers. Sealed steel cover for sump shall be provided with the pump, so that the pipe outlets thru the cover can be aligned with the pump installation.

B. Vent Coupling. Seize as designated on drawings. Coupling shall be 300 series stainless coupling, full welded in the center of a 300 series stainless steel plate with female NPT connections. Mounted with 300 series stainless steel hardware. 1 ¼ inch thru 4 inch. Wet well penetrations to be sealed prior to mounting of coupling.

C. Electric Coupling. For each basin install (3) 2 inch Glass filled Nylon NPT full coupling. Mounted with 300 series stainless steel hardware. Wet well penetrations to be sealed prior to mounting of coupling.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install each pump in accordance with manufacturer's written recommendations and installation instructions.

B. For each recirculating pump, furnish and install a ball shutoff valve and strainer on inlet piping to the pump, with a balancing cock on outlet piping. Furnish and install a check valve where shown.

C. Place each pump in service and check power draw, voltage, and proper system operation. Report the actual current draw and pump flow, and other information for each pump. Provide written results to the Owner.

END OF SECTION 22 14 29

SECTION 22 40 00: PLUMBING FIXTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SCOPE

A. The plumbing fixtures, trim, accessories, and miscellaneous equipment shall be as shown on the drawings. Additional manufacturer's names of fixtures, trim, and miscellaneous equipment shall be listed herein.

B. All plumbing fixtures and trim shall be new and of the best quality. All fixtures shall bear the manufacturers' guarantee label or trademark, indicating first quality.

C. ALL fixtures and associated trim, including traps, stops, faucets, flush valves, etc., shall be 'Lead Free' or 'No Lead' and shall be documented as such as part of the submittal process.

D. All vitreous china, cast iron, and prefabricated fiberglass, polyethylene, acrylic, or polypropylene fixtures shall be white and all fixtures of all types shall be specially selected, free from cracks, chips, flaws, stains and warping, and other defects. Fixtures shall be replaced by the Contractor, and the guarantee period on such replaced fixtures shall be extended for the full term of the guarantee from the date of replacement.

E. The Contractor shall refer to the Drawings for the quantities of plumbing fixtures of each kind to be furnished.

F. Provide adapters on all final piping connections to equipment furnished under other contracts or by the Owner.

G. All fixtures and trim shall be as listed below. Confirm requirements of all fixtures, trim, and manufacturers with Owner prior to ordering. Trim shall be commercial grade.
1. Lavatories – Zurn, American-Standard Brands, Kohler, Bradley or Sloan.
2. Stainless Steel Sinks – Just, Advance Tabco, or Elkay.
3. Lavatory / Sink Faucets – Bradley. Zurn, Chicago Faucet, Speakman, or T&S Brass.
4. Waste/Trap Assemblies – Zurn, McGuire, or Kohler.
5. Water Supplies/Stops – Zurn, McGuire, or Kohler.
6. Insulation Kits – Zurn, McGuire, or Truebro.

H. All fixtures and equipment shall be properly trapped in accordance with local code requirements.

I. All exposed piping to fixtures shall be chrome plated. Chrome traps and chrome tubing shall be 17 gauge minimum. All traps of all types, exposed and accessible concealed, shall each include cleanout. Chrome finishes shall not be required for fixtures that require insulation kits.

J. All escutcheons shall be chrome, cast brass, set screw type, including on drain assemblies, water supplies at fixtures, and including piping inside fixture cabinets.

K. Plumbing Contractor shall furnish templates to General Contractor for cut-out work for built-in sinks and lavatories. Confirm available cabinet sizes with the General Contractor or Equipment Supplier prior to ordering counter sinks or counter lavatories of any type.

L. Supply piping to fixtures, faucets, wall hydrants, and hose bibbs shall be securely anchored to prevent movement.

M. Contractor shall coordinate all installations with Architectural Drawing elevations and ADA required clearances.

N. Wiring with conduit from transformers above ceiling to sensor-operated equipment shall be furnished and installed under the Plumbing Contract; refer to Section 220500.

PART 2 - PRODUCTS

2.1 FIXTURES

A. L-1 – Wall-Mounted Single Station with ***Hard-Wired*** Faucet – ADA Height
1. Bradley Verge No. LVQD1-WB2-T-5-BS-"STAIN-E"-VS-"S-CHROME" wall hung lavatory, 30" x 21", with WashBar WB1. Mount at ADA Height.
2. Drain shall be Zurn No. Z8746-PC flat perforated strainer drain with 1-1/4" offset tailpiece.
3. P-Trap assembly shall be Zurn No. Z8701-9-PC, 1-1/4" x 1-1/2", with cleanout.
4. Water supplies shall be Zurn Z8800-XL-LRLK-PC. Brass ball valve type "convertible" stops acceptable.
5. Zurn No. Z8946-3-NT ADA compliant insulation kit for waste and hot and cold water assemblies, vandal-resistant; when exposed to users.
6. Bradley Infrared Washbar faucet "WB2" provided with sink.
7. No Soap Dispenser.
8. No Hand Dryer.
9. Finish, material and color provided by architect.

B. S-1 – Drop-In Double Bowl Stainless Steel Sink with Manual Faucet – ADA Height
1. Elkay LRAD332250 Lustertone™ Classic Stainless Steel 33" x 22" x 5" Equal Double Bowl Drop-in ADA Sink. Sink is manufactured from 18 gauge 304 Stainless Steel with a Lustrous Satin finish, Rear Center drain placement, and Bottom only pads.
2. Faucet shall be the Zurn No. Z831C4-ICT-XL, 'Lead Free', 8" centers, gooseneck spout, 4" wrist blade handles, and aerator.
3. Elkay LK35 stainless steel drain and tailpiece assembly with 1-1/2" Schedule 40 PVC adjustable P-Trap and waste assembly.

4. Water supplies shall be Zurn Z8800-XL-LRLK-PC. Brass ball valve type "convertible" stops acceptable.
5. Zurn No. Z8946-3-NT ADA compliant insulation kit for waste and hot and cold water assemblies, vandal-resistant; when exposed to users.

6. Sink countertop openings under General Contract. Sink set and sealed by Plumbing Contractor.

C. S-2 – Drop In Single Bowl Stainless Steel Sink with ***Manual*** Faucet – ADA Height
1. Elkay LRAD191950 Lustertone™ Classic Stainless Steel 19-1/2" x 19" x 5" Single Bowl Drop-in ADA Sink. Sink is manufactured from 18 gauge 304 Stainless Steel with a Lustrous Satin finish, Rear Center drain placement, and Bottom only pads.
2. Zurn No. Z831J1-ICT-XL 'Lead Free' ***manual*** faucet with swing spout, lever handles, and aerator.
3. Just J-35 stainless steel drain and tailpiece assembly with 1-1/2" Schedule 40 PVC adjustable P-Trap and waste assembly.
4. Water supplies shall be Zurn Z8800-XL-LRLK-PC. Brass ball valve type "convertible" stops acceptable.
5. Sink countertop openings by General Contractor. Sink set and sealed by Plumbing Contractor.

2.2 GARBAGE DISPOSERS

A. In-Sink-Erator Badger 5 garbage disposer, General Electric, Hobart, or approved equivalent. Galvanized steel grinding elements with two (2) stainless steel 360o swivel lugs; continuous feed; one piece, heavy duty stopper; self-service wrench; enamel finish; permanently lubricated upper and lower bearings; overload protector manual reset; dishwasher drain connection; heavy duty motor, 1/2 HP, 1-60-120V. Warranty, two (2) full year parts and in-building service warranty. UL Listed. Plug dishwasher drain connection when not used. All wiring and control switch under the Electrical Contract.
1. Extend waste piping to prevent standing water in disposer motor housing.
2. Provide trap on outlet of disposer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All fixtures, trim, accessories, and equipment shall be assembled and installed according to manufacturers' recommendations in a neat and workmanlike manner.

B. Thoroughly clean all fixtures, trim, accessories, and equipment installed under this Contract.

C. Refer to the Architectural and Plumbing Drawings for scheduled mounting heights and clearances for fixtures and equipment. Particular attention is directed to mounting and clearances for ADA fixtures.

D. Upon completion of this Contract, the Plumbing Contractor shall furnish the Owner's maintenance personnel with a Supplier faucet repair kit furnished by the approved faucet supplier.

E. Caulk with white silicone sealant caulk on all wall and floor contact edges on all fixtures, or of color caulk selected by the Architect. Caulk shall be of suitable type which can be painted.

F. Refer to "Control Wiring" as specified; refer to Section 220500. All costs shall be included under the Plumbing Contract for extending control wiring in conduit (as described) from transformers to hard-wired sensor-operated trim, including final electrical connections of all types. Transformers shall be furnished, installed, and mounted above ceiling by the Plumbing Contractor. Furnish, install, and mount all required solenoid extension nipples.
   1. Hardwired power converters for 6 VDC flush valves and faucets shall be the Zurn No. P6000-HW6 Series, or approved equivalent.

G. Individual mixing valves shall be utilized at certain fixtures and equipment receiving hot water as designated; refer to Section 220523 regarding mixing valve specifications. The Plumbing Contractor shall verify exact requirements, quantities, and locations of mixing valves with the local Plumbing Inspector prior to ordering or installation.

END OF SECTION 22 40 00

SECTION 22 13 16: SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SCOPE

A. The sanitary waste and vent piping systems shall be as hereinafter described in this section. Make all required connections into the interior sanitary drainage systems.

1.3 CODE COMPLIANCE

A. All sanitary materials and installation methods shall be subject to the acceptability of that material with the prevailing local plumbing codes.

1.4 PIPE AND MATERIALS

A. This Contractor shall furnish and install sanitary sewer and vent piping as indicated on the Drawings. Pipe sizes indicated are minimum sizes. Minimum size below bottom floor or below ground, interior, 4". Pipe sizes shall be larger where required by local codes.

PART 2 - PRODUCTS

2.1 SANITARY SEWER AND VENT PIPING UNDERGROUND, BELOW BOTTOM SLAB, INCLUDING PUMP DISCHARGE PIPING

A. Polyvinyl Chloride (PVC) Plastic Pipe Schedule 40 DWV ASTM 2665 solvent weld. PVC foam core piping and fittings not permitted. PVC pipe and fittings as manufactured by Charlotte, Geneva, Spears, or approved equivalent.

B. High performance coated or Epoxy coated Cast Iron hub and spigot pipe and fittings – ASTM A74. Coated Cast iron pipe and fittings as manufactured by Charlotte, New Age, or Tyler. Coating Performance: Pipe and Fitting Coatings must pass the performance specifications per EN 877. Coated Cast Iron piping systems shall be used in Boiler / Mechanical Room areas, Kitchen / Dishwashing areas, and any high-temperature drainage areas and the piping system shall be used to 20'-0" beyond the area.

C. Provide sanitary sewers exiting the building each with vents, house traps, and cleanouts within the limits of sewer construction included under this Contract work, as required by the prevailing plumbing code and /or the sewer authority having jurisdiction.
   1. For sanitary mains that exit the building below structural components, piping shall be sleeved and encased in concrete a minimum of 2'-0" beyond of the structural component, on either side. Coordinate specific requirements with structural design prior to installation.
   2. For sanitary mains that exit the building through structural components, piping shall be sleeved through the component. Installation, location, and depth of sleeves need to be strictly coordinated with General Contractor prior to installation.

2.2 SANITARY SOIL, WASTE, AND VENT PIPING ABOVE GROUND, INCLUDING PUMP DISCHARGE PIPING

A. Polyvinyl Chloride (PVC) Schedule 40 Plastic Pipe (DWV) ASTM 2665 solvent weld. PVC foam core piping and fittings not permitted. PVC pipe and fittings as manufactured by Charlotte, Geneva, Spears, or approved equivalent.

B. High performance coated or Epoxy coated Cast Iron Hubless pipe and shall conform to ASTM A-888. Pipe and fittings as manufactured by Charlotte, New Age, or Tyler. Coating Performance: Pipe and Fitting Coatings must pass the performance specifications per EN 877.
   1. Extra heavy weight coated cast iron hub and spigot soil pipe and fittings, ASTM A74, shall be utilized where required by local codes.

C. Automatic air vent or relief valve discharge piping shall be Type "L" copper with drainage pattern fittings. Plastic piping and fittings will not be permitted for this installation.

D. Vent piping to atmosphere shall be minimum 3" diameter and terminate a minimum of 12" above roof level. Terminate vent piping at a higher height above roof level where required by local codes. Rigidly support all vent piping extending through roof.

E. Where new vent piping is internally connected to existing vent piping which extends through roof, verify height of that existing vent pipe above roof and modify same as necessary to conform with local code and local Plumbing Inspector requirements for correct vent pipe height above roof.

2.3 TEMPERATURE LIMITATIONS – PVC PIPING SYSTEM

A. The Contractor's attention is directed to temperature limitations of PVC pipe and fittings, normally 140 – 150o F. When temperature limitations of conveyed liquid are expected to exceed approximately 125o F, the Contractor shall utilize cast iron pipe and fittings as herein specified. Use coated cast iron piping only as specified where specifically mentioned herein, such as in plenum spaces, and where elsewhere required for temperature limitations.

2.4 JOINTS AND CONNECTIONS

A. Joints for Hub and Spigot Cast Iron Pipe and Fittings Below Grade
   1. Joints in cast iron hub and spigot shall be made with either (1) a caulked joint using pig lead and oakum with at least 12 ounces of lead per inch of pipe diameter. Lead shall be run in one pouring; (2) a compression joint using a lubricated neoprene gasket, Mission, Tyler "Ty-Seal"; Charlotte Foundry, New Age, or Tyler. Provide appropriate gaskets for connections and joints as needed, (for example EPDM gaskets) as required for pipe materials.
   2. Joints between cast iron hub and spigot pipes and threaded pipes shall be made same as above using a caulking spigot.
   3. Joints in threaded pipe shall be made with clean-cut uniform tapered threads, with suitable pipe joint compound.

B. Joints for Hubless Cast Iron Pipe and Fittings Above Grade
   1. Joints in hubless cast iron pipe above floor level for building construction one (1) story and less, shall be made with a mechanical coupling composed of a heavy duty Type 304 stainless steel shield and neoprene slip-on gasket, ASTM C-1540, Husky HD 2000, Clamp-All 80. For building construction more than one (1) story, use Husky SD 4000, Clamp-All 80, or approved equivalent, heavy duty couplings. Gauges of equivalents must conform. Hubless cast iron pipe below bottom floor, below ground, below crawl space or walkway floors, or at exterior of building not permitted at any location.
   2. Couplings for joining hubless cast iron soil pipe and fittings conforming to ASTM A-888, shall be 3 inches wide for nominal pipe sizes 1 ½ to 4 inches in diameter, 4 inches wide for nominal pipe sizes 5 to 10 inches in diameter, and 5 5/8 inches wide for couplings 12 and 15 inches in diameter. Couplings to be by Charlotte Foundry, New Age, or Tyler. Provide appropriate gaskets for connections and joints as needed, (for example EPDM gaskets) as required for pipe materials. Shields shall have a minimum thickness of .015 inches, (28 gage) type 304 stainless steel. Worm drive clamps shall be type 304 stainless steel with a minimum clamp torque of 80 in/lbs. Sealing Gasket shall be neoprene conforming to ASTM C-564. Couplings shall conform to Factory Mutual Standard 1680, Class 1, or ASTM C-1540, as manufactured by Clamp-All Products Models HI-TORQ 80 and HI-TORQ; or Huskey Technologies Model SD-4000.
      a. Alternative to above, cast iron split clamps secured by stainless steel bolts and nuts with neoprene gasket conforming to ASTM C-564; as manufactured by MG Coupling Company.
      b. Factory Mutual Approved Couplings may be hung with one hanger per length of pipe for 10 foot lengths and at every third fitting where they are contiguous in conformance with manufacturers installation instructions.

C. Joints between copper tubing and threaded pipe shall be made with brass soldered to screwed converter fittings. Fittings for copper tubing by Nibco, Cambridge-Lee, Mueller, Elkhart.

D. Joints in PVC pipe shall be accomplished with socket type fittings and solvent-cement welding for the interior DWV System, above floor or below bottom floor.

E. All transition joints in sewers between dissimilar materials or unequal sizes shall be made water and gas tight by means of an approved connection or adapter of the compression or mechanical seal type. The connector or adapter shall be manufactured of preformed Elastomeric Polyvinyl Chloride conforming to ASTM Standards C-425, C-594, C-564, and D-1869. Couplings of the mechanical seal type shall have tightening clamps or devices made of 305 stainless steel. The compression joint connector or adapter and flexible coupling shall be installed as recommended and specified by the manufacturer and each connector shall bear the manufacturer's name clearly visible when installed, such as manufactured by Fernco Joint Sealer Company, Indiana Seal, or Mission.

F. All joints shall be made permanently gas and water tight.

G. The use of any of the above joints and connections shall be subject to their acceptability with the prevailing local plumbing codes.

H. For above and below ground drainage piping changes in direction - bends, sweeps, tees, and/or wyes shall be installed per the IPC, Section 706, or applicable local plumbing code, for horizontal-to-horizontal, vertical-to-horizontal, and horizontal-to-vertical direction changes. Fitting types shall be uniformly used throughout the project.

2.5 FLOOR DRAINS

A. The Contractor shall furnish and install the following types of floor drains, by Zurn, Josam, Smith, Mifab, Wade, or Watts. Refer to “Tamperproof Screws”, Section 220500. Coordinate all strainer shape, configuration, and design with floor finishes and architect prior to submittal. All drains shall have associated Trap Seals for evaporation protection.
   1. FD-1 – Zurn ZN415-BZ1-VP Series, bottom outlet, coated cast iron body with polished nickel-bronze leveling strainer, ZN400BZ-VP, Type BZ, vandal-proof, or approved equivalent. Strainers in shower rooms and locker rooms shall be 8" size. All other strainers shall be 6" size. (Finished Areas)
   2. FS-1 – Zurn No. FD2376-H-Y, 12" x 12" x 8" deep, cast iron body and square light duty grate, with white acid-resisting porcelain enamel interior receptor and 1/2 nickel-bronze grate, with 1/2” square openings, flange with seepage holes with clamp collar, and white A.R.E. sediment bucket in lieu of dome strainer, or approved equivalent. Set drain flush with floor; confirm setting with local plumbing inspector. (Kitchen Areas)

B. All floor drains in floor construction shall be set over P-traps, except exterior drains and shall be furnished and installed with flashing flanges and clamping collars.

C. The Contractor shall check with the Local Plumbing Inspector for setting of tops of all floor sinks and funnel/floor drains relative to finish floors.

D. The Contractor shall coordinate with finished flooring materials to confirm if any additional accessories, including clamping, bracing, etc., for all drains prior to submittal shall be required.

2.6 CLEANOUTS

A. The Contractor shall furnish and install cleanouts at each change in direction greater than 45o in sanitary drainage systems, at the base of all sanitary drainage stacks, and at all other points indicated on the Drawings.

B. Cleanouts installed on under-floor piping, exterior piping, or piping below slab on grade floors shall be extended to floor level or grade level with 45 degree fittings.

C. Cleanouts on concealed piping shall be extended so as to be easily accessible from finish floor, ceiling, or wall.

D. Cleanouts shall be full pipe size up to and including 4", and shall be 4" on larger size piping, if approved by the local authorities having jurisdiction over the installations.

E. All cleanout equipment shall be Zurn, Josam, Smith, Mifab, Wade, or Watts. Refer to "Tamperproof Screws", Section 220500.
   1. Zurn ZN1443-VP / ZN1447-VP – Cleanout with nickel-bronze access cover with vandal-proof screws, for all piping concealed. For all locations other than where access panels or doors are noted. Plastic, PVC, or fiberglass type cleanout covers not acceptable.
   2. Zurn ZN1400-5BZ1-VP – Adjustable floor cleanout with round top, vandal-proof screws. Zurn ZN1400-X-VP – for vinyl tile; ZN1400-Z-VP – for 1-1/4" terrazzo, vandal-proof screws; ZN1400-CM-VP – for carpet installation, vandal-proof screws.
   3. Zurn Z1400-HD-VP – Adjustable exterior extra heavy-duty round cleanout, vandalproof screws, cast bronze plug, set in concrete slab, 24" x 24" x 6" thick. Provide nickel-bronze finish cleanouts at any finish entrances or exits of building. Refer to the drawing details.

F. For cleanouts on PVC piping above floor level, cleanouts shall be PVC threaded plugs in wye fittings. For cleanouts on cast iron piping above floor level as described herein, cleanouts shall be cast bronze threaded plugs in wye fittings.

G. Floor cleanouts in interior heavy duty traffic areas, shops, equipment rooms, boiler rooms, janitor's closets, and storage rooms shall be cast bronze flush floor plugs, Zurn ZARB-1470-PW, or approved equivalent. Provide two (2) plug wrenches only, total.

H. Floor cleanouts shall be furnished and installed with flashing flanges and clamping collars. Floor cleanouts on the bottom-most slab shall not require flashing.

I. Where vertical piping is installed in chases in finished rooms, extension pieces, if required, shall be placed in tees so as to bring cleanout plugs to the back of the cover plate set flush in the finished walls.

J. Except where cover plates are provided with a recess for inserts of the same material as the floor finish, all cover plates in floors of finished areas shall be scoriated nickel bronze. Frames for the cover plates shall be compatible with the finished flooring material.

K. Care shall be exercised in installing cleanouts to avoid locating them in surfaces to be carpeted. Provide additional piping as required to locate cleanouts in other more accessible surfaces.

L. The Contractor shall lubricate all plugs before installation and shall loosen all covers and plugs before final inspection as directed by the Architect.

2.7 TRAPS

A. Service weight or extra heavy weight cast iron, or PVC, shall be used in accordance with applied piping system.

B. A separate trap shall be provided for each plumbing fixture which does not contain an integral trap. In general, all fixture traps shall be provided with accessible cleanout plugs located on the bottom of the bend.

C. Traps shall be set true with respect to their water seals.

D. Refer to Section 221300 for exterior house traps and related cleanouts and vents.

2.8 TRAP SEALS

A. Furnish and install for each floor drain a manufactured trap seal, to provide for sewer gas emission protection, the Zurn ZSHIELD Z1072, ProSet, Mifab, Smith. Prior to ordering, the Contractor must confirm that the installation of trap seals conforms to national, local, and State plumbing and building code requirements. Trap seals shall be of types recommended by the manufacturer for the particular installation.

B. Trap seal material shall be of elastomeric flexible PVC, which shall never lose its curl seal; seal must be of type that maintains its memory. Trap seal shall be of type that maintains memory when subjected to temperatures of 200o or more. Trap seal shall be capable of handling a flow rate of at least 30 GPM. Trap seal shall be of type that will not allow lime scale build-up.

2.9 UNDERFLOOR PIPE SLEEVES

A. Underfloor pipe sleeves for water or air piping, where shown or required, shall be constructed of 4" diameter minimum size Schedule 40 PVC piping and fittings. Split piping and fitting systems will be acceptable.

B. Underfloor pipe sleeves for gas piping shall be constructed of Schedule 40 ASTM A-53 black steel pipe with welded joints; plastic coated, or taped and wrapped to prevent corrosion. Installation must conform to Gas Company requirements. Vent the sleeves to exterior of building per Gas Company requirements.

PART 3 - EXECUTION

3.1 PIPE PREPARATION AND INSTALLATION

A. Review the proper procedures and methods for coated cast iron installation with the piping system manufacturer. Provide Pipe End Protection as required by the Cast Iron Piping Supplier for all pipe and fitting connections and applications for a thorough and uniform coating throughout the drainage piping system.

3.2 GRADE

A. Elevations and locations of floor drains, funnel drains, floor sinks, and cleanouts shall be adjusted to avoid interference with other utilities and equipment without additional expense.

3.3 FLASHING

A. Provide 48" square sheet lead, copper, or neoprene flashing for floor drains, funnel drains, floor sinks, and cleanouts, set integral with floor slab. Chloroloy or approved equivalent non-plasticized chlorinated polyethylene waterproofing membrane will be acceptable for flashing of floor drains, funnel drains, floor sinks, and cleanouts.

B. Vents through new roof construction will be flashed by the General Contractor. Openings, patching, restoring, and flashing in existing roof by Roofing Contractor at Plumbing Contractor's expense.

3.4 INSTALLATION AND TESTING PROCEDURES

A. Horizontal cast iron pipe and fitting installations above ground, 6" and larger, shall be suitably braced to prevent horizontal movements, at every branch opening or change of direction, by the use of braces, blocks, rodding, or other suitable method, in accordance with pipe manufacturer's and Cast Iron Soil Pipe Institute's installation instructions. Vertical cast iron pipe and fitting installations above ground of all sizes shall be secured at each stack base and at sufficiently close intervals to keep the system in alignment and to adequately support the weight of the pipe and its contents.

B. Unless noted otherwise on the Drawings or herein specified, or required to suit final floor elevations, all sanitary piping 3" and larger shall be installed with a uniform minimum slope of 1/8" to the foot and all sanitary piping 2" and smaller shall be installed with a uniform minimum slope of 1/4" to the foot, or as otherwise required by local codes.
   1. All Kitchen Area grease waste piping shall be installed with a uniform minimum inlet/branch outlet slope of interceptors of 1/4" to the foot.
   2. Maintain 30" minimum ground cover over top of exterior sewers.

C. Interior sanitary drainage piping shall be hydrostatically tested after completion of the roughing-in. Piping being tested shall be filled to the top of vent pipes, and left standing for a period of one (1) hour with no loss of water. Smoke tests will be acceptable if required by local authorities. Confirm requirements prior to bidding.

D. After testing and before final acceptance, the Contractor shall completely flush the entire sewer systems and appurtenances included under this Contract in sufficient volume to remove all settlement and debris to obtain free flow through each pipe. Flushing shall be accomplished by the use of automatic flush tanks, fire hoses, or other means approved by the Architect. Depths of water and velocities shall be as required to produce a hydraulic bore. Remove all obstructions and correct all defects discovered.

E. Exercise extreme care to prevent debris from entering floor drains or cleanouts. Carefully check invert elevations of floor drains to which connections are to be made.

F. Inform the Owner's maintenance personnel of the proper methods of cleaning out all interceptor types.

G. For decontamination tank, inform the Owner's maintenance personnel of the frequency necessitated to keep the unit cleaned, and the proper methods of cleaning the unit.

3.5 CLEANING AND FLUSHING OF EXISTING SANITARY SEWERS

A. The Contractor shall clean and flush out existing interior sanitary sewers inside the building effected by this project, by the hydro-sewer cleaning method, using high pressure water.

B. The Contractor shall clean the designated sanitary sewers of all debris, grease, sand, sludge, soap, rocks, and accumulations, flush out, and ensure that all such sewers are completely free-flowing.

C. All sanitary sewer cleaning and flushing work shall be completed by the hydro-cleaning process, by a competent independent firm, with workers specifically skilled in this type of work.

D. A written report of the cleaning and flushing work and remaining condition of these existing sanitary sewers, shall be included. A copy of each shall be furnished to the Owner and the Architect.

E. All fees, charges, and costs for cleaning and flushing work shall be included under the Plumbing Contract.

3.6 THERMAL EXPANSION AND CONTRACTION – PVC PIPE

A. Highly important is the change of PVC pipe with temperature variations. This fact shall always be considered when installing PVC pipe piping, and allowances made accordingly.

B. Compensate for PVC piping thermal expansion and contraction in accordance with PVC manufacturer's instructions and local code requirements. Utilize the following, but not limited to: offsets, loops, additional bends, piston type expansion joints with "O" ring design, and axial guides. Expansion joints must be accessible.

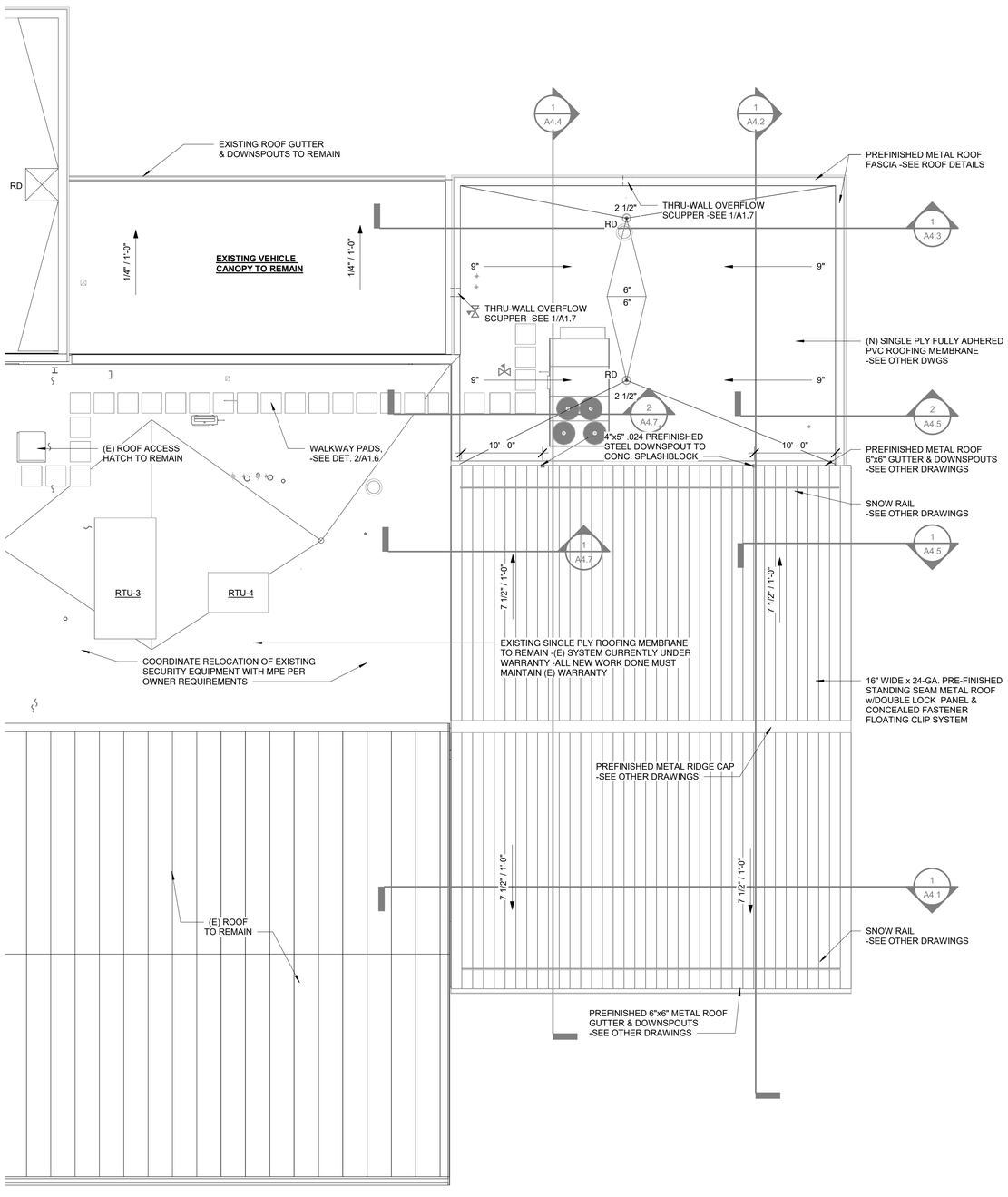
3.7 FINAL INSPECTION

A. At the time of final inspection of the work performed under the Contract, the floor drains and cleanouts shall be complete in every respect and in perfect operating condition. All surplus materials of every description resulting from the work shall have been removed. Floor drains shall be free from debris, sand, silt or other obstructions. Any defects discovered in the floor drains, floor sinks, funnel drains, and cleanouts subsequent to this inspection shall have been corrected.

B. Inform Owner's Operating Personnel to properly maintain trap seals, and periodically flush trap seals with fresh water to clear any foreign objects.

END OF SECTION 22 13 16

ATTACHMENT E

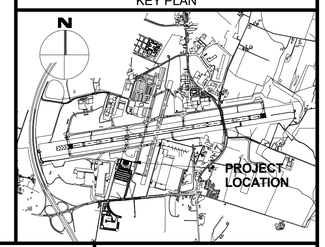


1 A1.5 **ENLARGED ROOF PLAN AT NEW WORK**

1/8" = 1'-0"

1/8" = 1'-0" SCALE 5 0 5 10 15 20 FEET

KEY PLAN



ADCI AIRPORT DESIGN CONSULTANTS, INC.
6011 UNIVERSITY BLVD.
SUITE 490
ELLICOTT CITY, MD 21043
PHONE: 410-465-9600
FAX: 410-465-9602

BFM
BUSHEY FEIGHT MORIN ARCHITECTS
473 NORTH POTOMAC STREET
HAGERSTOWN, MD 21740
301.733.5600 BFM PROJECT # 24043

SEAL: STATE OF MARYLAND · NORMAN E. MORIN · 6157 · ARCHITECT

Professional Certification:

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 6157

Expiration Date: 09/07/2026

DESIGNED:	RAK
DRAWN:	RAK
CHECKED:	NEM
APPROVED:	NEM

No.	DATE	DESCRIPTION
Rev 1	06.10.2025	Revised per Addendum No. 1

HGR HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
ENLARGED ROOF PLAN AT NEW WORK

SCALE: 1/8" = 1'-0"

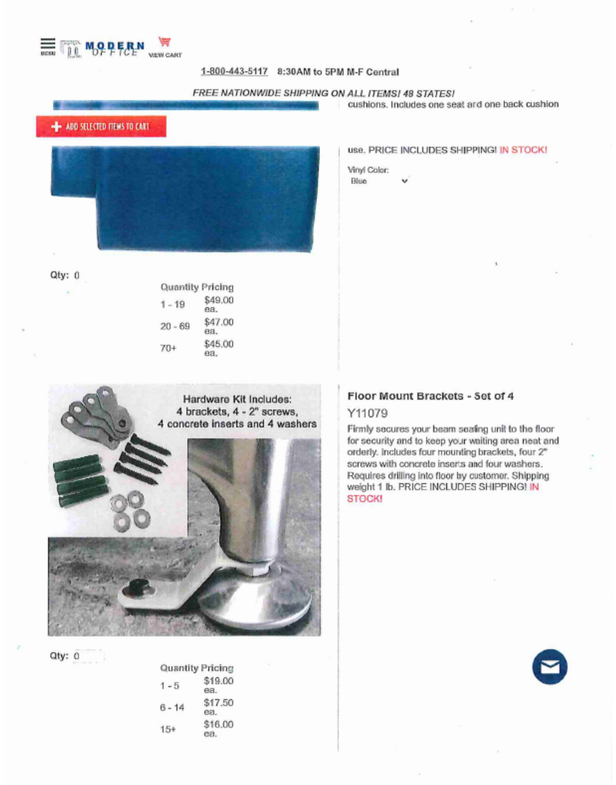
DATE: MAY 2025

FAA AIP No.: 3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

SUBMISSION: BID SET

SHEET No.: **A1.5**

40 OF **102**



TOTAL SEATING = 230

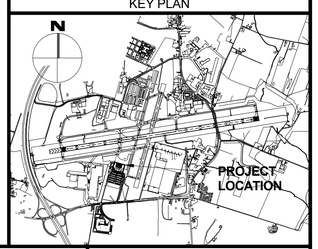
NOTES:

1. ATTACH SEATING TO CONCRETE SLAB WITH FLOOR MOUNT BRACKETS. SEE SPECIFICATIONS.

1 / A1.9 ENLARGED PARTIAL PLAN @ (E) HOLD ROOM (PER ADD ALTERNATE No. 2)
1/8" = 1'-0"

1/8" = 1'-0" SCALE 5 0 5 10 15 20 FEET

KEY PLAN



ADCI AIRPORT DESIGN CONSULTANTS, INC.
6011 UNIVERSITY BLVD.
SUITE 490
ELLICOTT CITY, MD 21043
PHONE: 410-465-9600
FAX: 410-465-9602

BFM BUSHEY FEIGHT MORIN ARCHITECTS
473 NORTH POTOMAC STREET
HAGERSTOWN, MD 21740
301.733.5600 BFM PROJECT # 24043

SEAL: STATE OF MARYLAND NORMAN E. MORIN 6157 REGISTERED ARCHITECT

Professional Certification:
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 6157
Expiration Date: 09/07/2026

DESIGNED:	RAK
DRAWN:	RAK
CHECKED:	NEM
APPROVED:	NEM

No.	DATE	DESCRIPTION
Rev 1	06.10.2025	Revised seating per owner (Addendum No. 1)

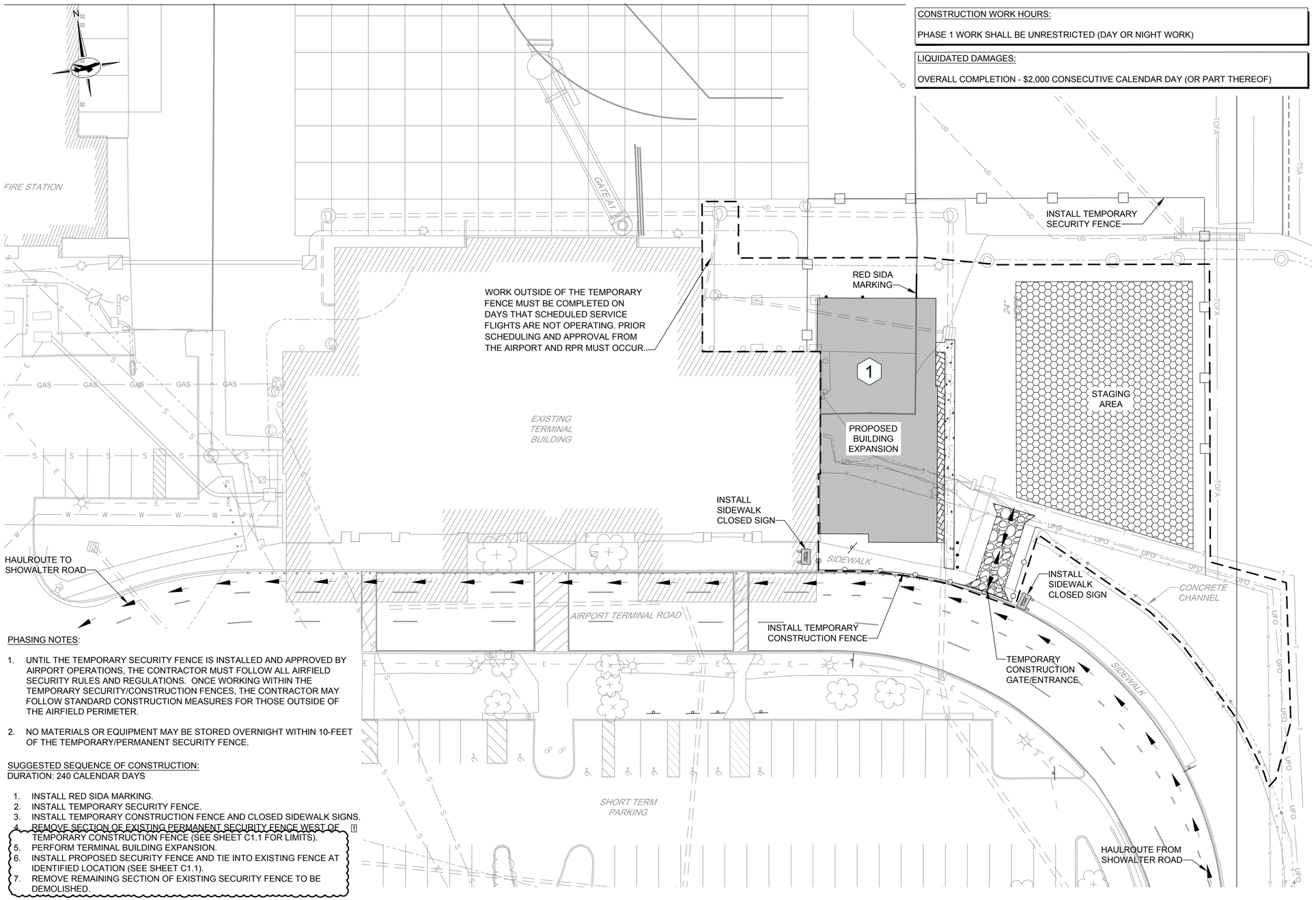
HGR HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
ENLARGED PARTIAL PLAN @ (E) HOLD ROOM

SCALE: As indicated
DATE: MAY 2025

FAA AIP No.: 3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: A1.9
44 OF 102



CONSTRUCTION WORK HOURS:

PHASE 1 WORK SHALL BE UNRESTRICTED (DAY OR NIGHT WORK)

LIQUIDATED DAMAGES:

OVERALL COMPLETION - $2,000 CONSECUTIVE CALENDAR DAY (OR PART THEREOF)

PHASING NOTES:

1. UNTIL THE TEMPORARY SECURITY FENCE IS INSTALLED AND APPROVED BY AIRPORT OPERATIONS, THE CONTRACTOR MUST FOLLOW ALL AIRFIELD SECURITY RULES AND REGULATIONS. ONCE WORKING WITHIN THE TEMPORARY SECURITY/CONSTRUCTION FENCES, THE CONTRACTOR MAY FOLLOW STANDARD CONSTRUCTION MEASURES FOR THOSE OUTSIDE OF THE AIRFIELD PERIMETER.
2. NO MATERIALS OR EQUIPMENT MAY BE STORED OVERNIGHT WITHIN 10-FEET OF THE TEMPORARY/PERMANENT SECURITY FENCE.

SUGGESTED SEQUENCE OF CONSTRUCTION:
DURATION: 240 CALENDAR DAYS

1. INSTALL RED SIDA MARKING.
2. INSTALL TEMPORARY SECURITY FENCE.
3. INSTALL TEMPORARY CONSTRUCTION FENCE AND CLOSED SIDEWALK SIGNS.
4. REMOVE SECTION OF EXISTING PERMANENT SECURITY FENCE WEST OF TEMPORARY CONSTRUCTION FENCE (SEE SHEET C1.1 FOR LIMITS). [1]
5. PERFORM TERMINAL BUILDING EXPANSION.
6. INSTALL PROPOSED SECURITY FENCE AND TIE INTO EXISTING FENCE AT IDENTIFIED LOCATION (SEE SHEET C1.1).
7. REMOVE REMAINING SECTION OF EXISTING SECURITY FENCE TO BE DEMOLISHED.

AIRFIELD IMPACTS:

1. NONE

NOTES:

1. REFER TO SHEETS G2.1 AND G2.2 FOR CONSTRUCTION SAFETY AND PHASING NOTES AND DETAILS.
2. ALL WORK WITHIN THE TOFA WILL ONLY OCCUR WITHIN THE CLOSURES OF THE ASSOCIATED TAXIWAY.
3. CONTRACTOR SHALL COORDINATE PHASING SHOWN WITH "PHASE 2 - DEMOLITION WORK" AS SEEN ON THE ARCHITECTURAL SHEETS.

EXISTING LEGEND:

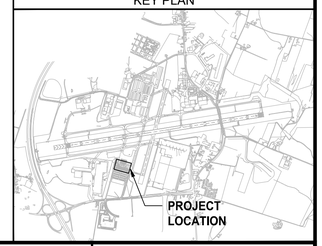
- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- E — ELECTRICAL
- T — TELEPHONE LINE
- UFO — UNDERGROUND FIBER OPTIC
- UD — UNDERDRAIN
- FENCE LINE
- SHRUBS
- TOFA — TAXIWAY OBJECT FREE AREA

PROPOSED LEGEND:

- BUILDING EXPANSION
- PHASE 1 LIMITS
- STAGING AREA
- TEMPORARY CONSTRUCTION ENTRANCE
- RIVER ROCK AREA
- SIDEWALK
- HAUL ROUTE
- 1 — PHASE IDENTIFIER
- SIDEWALK CLOSED SIGN
- TEMPORARY SECURITY FENCE
- FENCE REMOVAL
- TEMPORARY CONSTRUCTION FENCE
- PROPOSED MARKING

20' 10' 0 20' 40'
GRAPHIC SCALE

KEY PLAN



CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL:
STATE OF MARYLAND — DONALD N. MORRIS — No. 32705 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND"
LICENSE NO. _____
EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

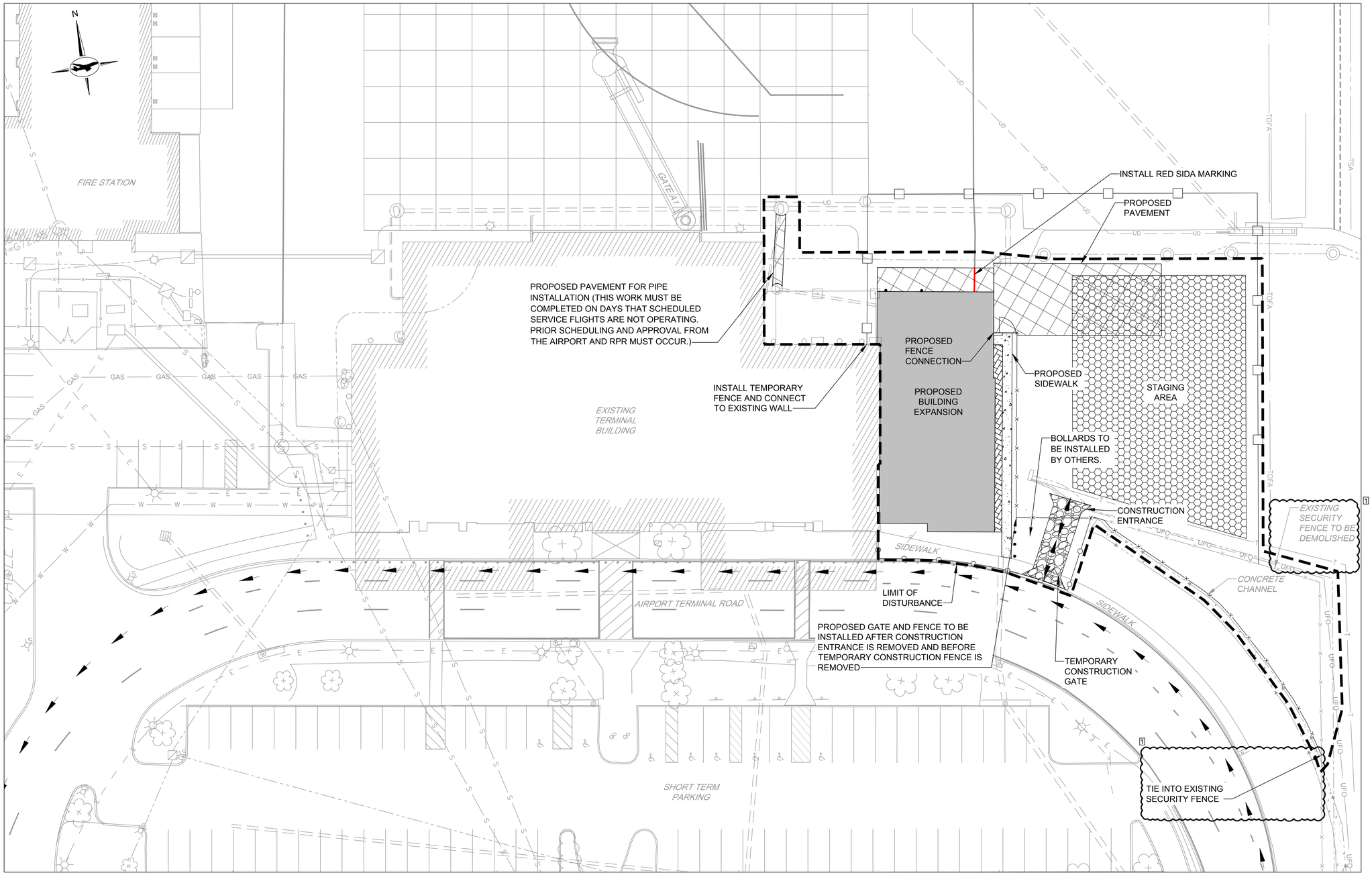
PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
CONSTRUCTION SAFETY AND PHASING PLAN

SCALE: N.A.
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: G2.0
7 OF 102

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0007_G2.0_CONSTRUCTION SAFETY AND PHASING PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:41am USER: DHollowell



NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- E — ELECTRICAL
- T — TELEPHONE LINE
- UFO — UNDERGROUND FIBER OPTIC
- UD — UNDERDRAIN
- FENCE LINE
- SHRUBS
- TOFA — TAXIWAY OBJECT FREE AREA
- TEMPORARY SECURITY FENCE

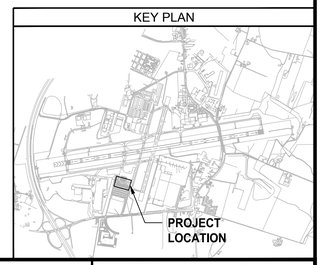
PROPOSED LEGEND:

- BUILDING EXPANSION
- PAVEMENT
- STAGING AREA
- SIDEWALK
- RIVER ROCK AREA
- PROPOSED SECURITY FENCE
- TEMPORARY CONSTRUCTION FENCE [1]
- PROPOSED MARKING
- PROPOSED BOLLARD

20' 10' 0 20' 40'

GRAPHIC SCALE

KEY PLAN



CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL:

STATE OF MARYLAND — HAROLD N. MORRIS — NO. 32705 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND"

LICENSE NO. _____

EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
SITE DEVELOPMENT PLAN

SCALE: N.A.

DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

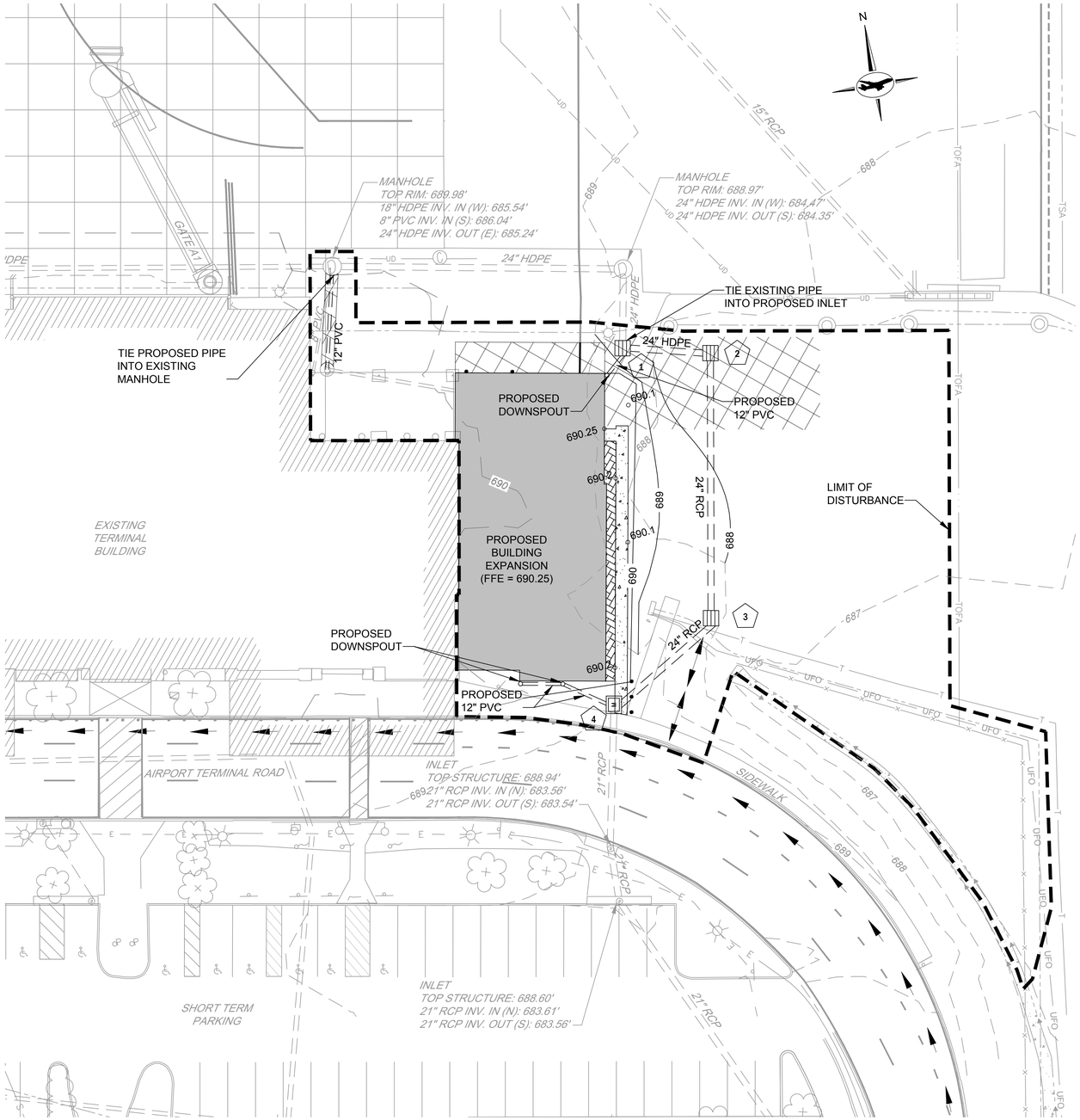
SUBMISSION:
BID SET

SHEET No.:
C1.1
11 OF 102

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0011_C1.1_SITE DEVELOPMENT PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:42am USER: DHollowell

PROPOSED DRAINAGE CHART							
STRUCTURE NUMBER	STRUCTURE TYPE	PIPE SIZE/TYPE (IN)	PERCENT SLOPE	PIPE LENGTH (FT)	TOP ELEVATION (FT)	INVERT IN	INVERT OUT
1	INLET	-	-	-	688.8	-	-
EX. MHA - 1	-	24" HDPE	0.96%	20.25		684.16	684.35
1 TO 2	-	24" HDPE	0.50%	30	-	684.01	684.16
2	INLET	-	-	-	687.75	-	-
2 TO EX	-	24" HDPE	0.32%	86.00	-	683.76	684.04
3	INLET	-	-	-	688	-	-
3 TO 4		24" RCP	0.40%	44		683.54	683.76
4	MANHOLE	-	-	-	689.57	-	-

1



NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- E — ELECTRICAL
- T — TELEPHONE LINE
- UFO — UNDERGROUND FIBER OPTIC
- UD — UNDERDRAIN
- FENCE LINE
- SHRUBS
- TOFA — TAXIWAY OBJECT FREE AREA
- 670 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

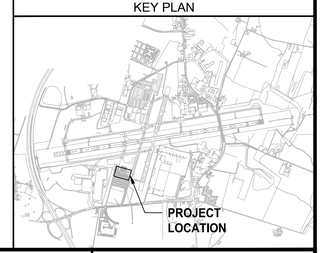
PROPOSED LEGEND:

- BUILDING EXPANSION
- PAVEMENT
- SIDEWALK
- RIVER ROCK AREA
- LIMIT OF DISTURBANCE
- STORM DRAIN
- # — INLET/STRUCTURE NUMBER
- M — PROPOSED DRAINAGE MANHOLE
- 670 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR

20' 10' 0 20' 40'

GRAPHIC SCALE

KEY PLAN



CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL: STATE OF MARYLAND · DONALD N. MORRIS · No. 32705 · PROFESSIONAL ENGINEER · sealed

PROFESSIONAL CERTIFICATION:
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EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HGR HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE: **TERMINAL BUILDING EXPANSION**

SHEET TITLE: GRADING AND DRAINAGE PLAN

SCALE: N.A.

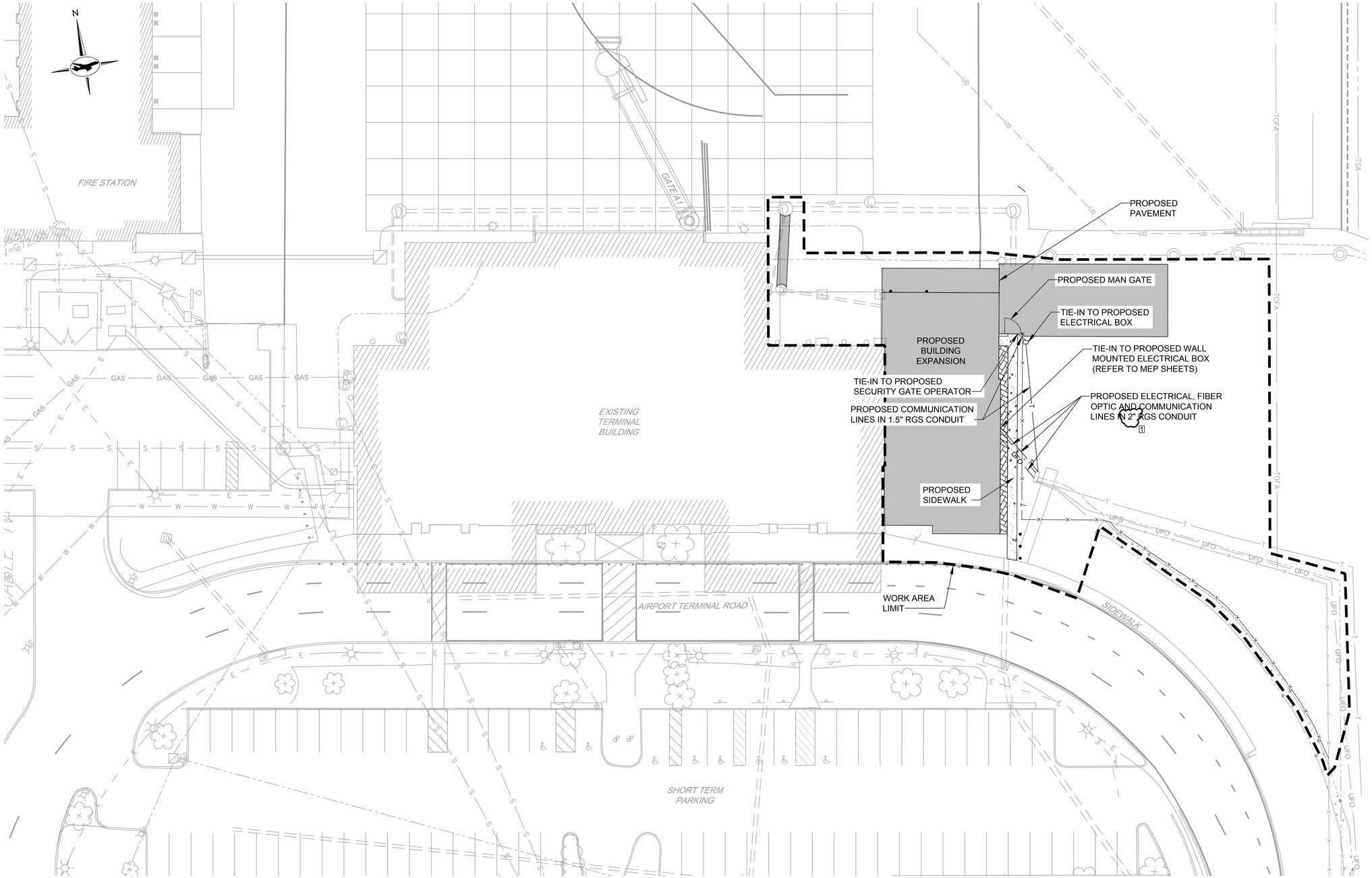
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

SUBMISSION: BID SET

SHEET No.: C1.2

12 OF 102



NOTES:

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EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- E — ELECTRICAL
- T — TELEPHONE LINE
- UFO — UNDERGROUND FIBER OPTIC
- UD — UNDERDRAIN
- FENCE LINE
- SHRUBS
- TOFA — TAXIWAY OBJECT FREE AREA

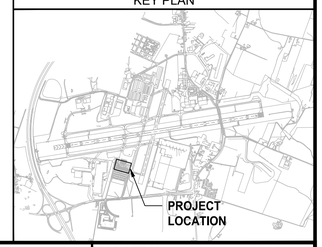
PROPOSED LEGEND:

- BUILDING EXPANSION/PAVEMENT
- SIDEWALK
- RIVER ROCK AREA
- WORK AREA LIMIT
- E — ELECTRICAL CABLE/ CONDUIT
- T — COMMUNICATION CABLE/CONDUIT

20' 10' 0 20' 40'

GRAPHIC SCALE

KEY PLAN



FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0013_C1.3_UTILITY PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:44am USER: DHollowell

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL:
STATE OF MARYLAND · DONALD N. MORRIS · No. 32705 · PROFESSIONAL ENGINEER

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LICENSE NO. _____

EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HGR
HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
UTILITY PLAN

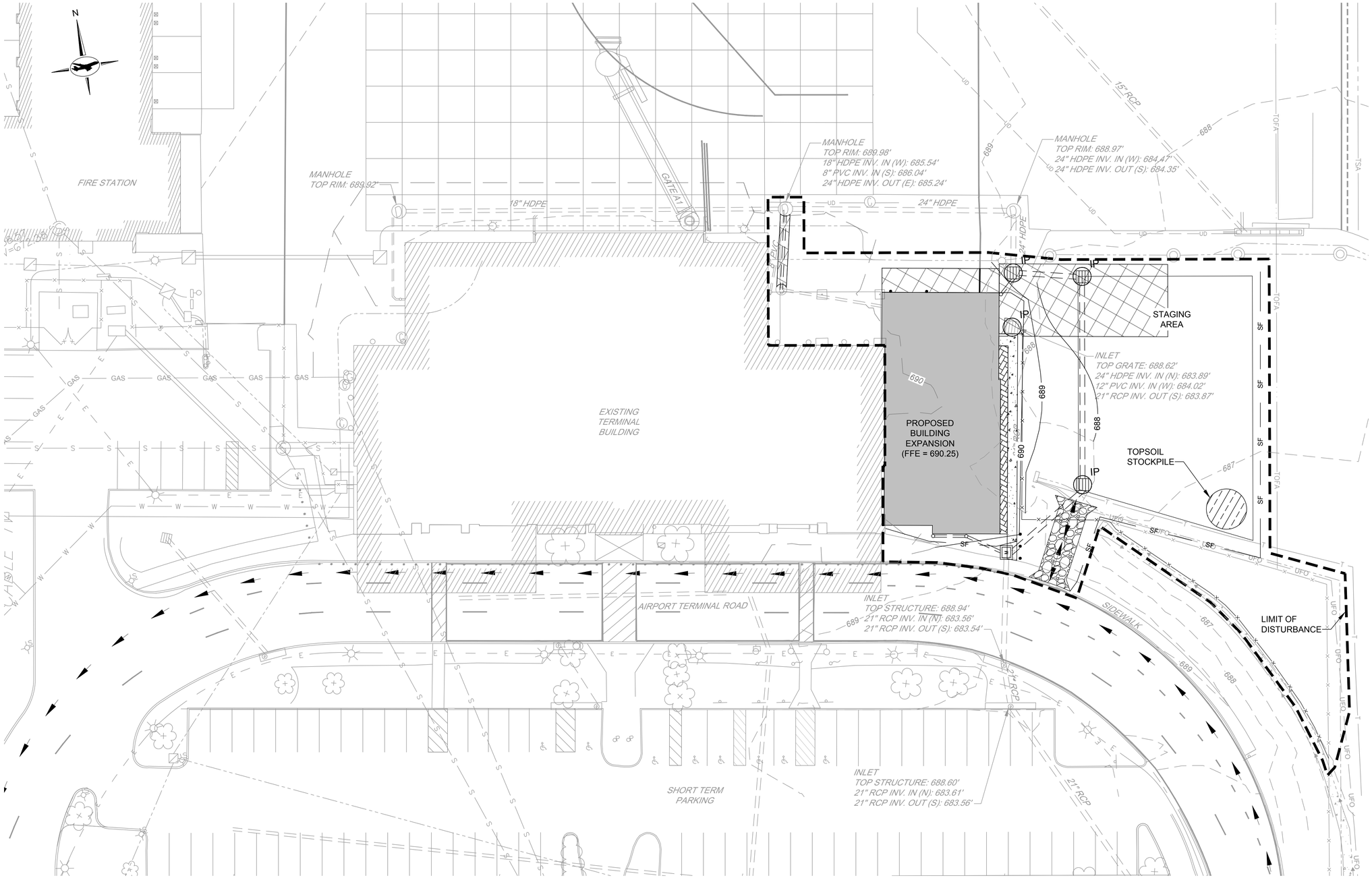
SCALE: N.A.

DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

SUBMISSION:
BID SET

SHEET No.:
C1.3
13 OF 102



NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.

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- LIGHT POLE
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- UD — UNDERDRAIN
- FENCE LINE
- SHRUBS
- TOFA — TAXIWAY OBJECT FREE AREA
- 670 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

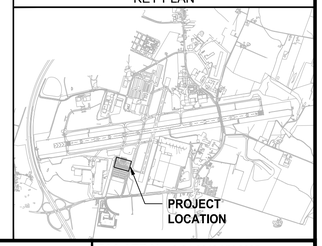
PROPOSED LEGEND:

- BUILDING EXPANSION
- PAVEMENT
- CONSTRUCTION ENTRANCE
- TOPSOIL STOCKPILE
- STAGING AREA
- SIDEWALK
- RIVER ROCK AREA
- LIMIT OF DISTURBANCE
- 670 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- SF — SILT FENCE
- IP — INLET PROTECTION [1]

20' 10' 0 20' 40'

GRAPHIC SCALE

KEY PLAN



FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0014_C2.0_EROSION AND SEDIMENT CONTROL PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:48am USER: DHollowell

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD. SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL:

STATE OF MARYLAND
RONALD N. MORRIS
NO. 32705
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

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DRAWN:	J.A.A.
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APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN [1]

SCALE: N.A.

DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

SUBMISSION:
BID SET

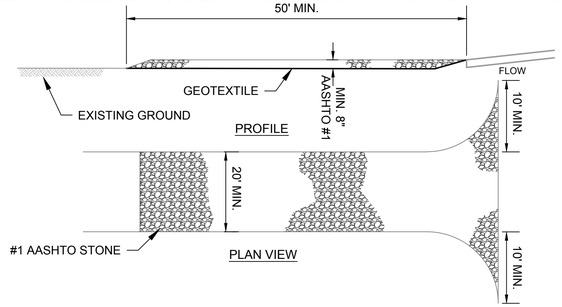
SHEET No.:
C2.0
14 OF 102

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

1. THE EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL SOIL DISTURBING ACTIVITIES CEASE AND PERMANENT STABILIZATION OF DISTURBED AREAS IS COMPLETE AND ACCEPTED BY THE ENGINEER AND THE WV DEPARTMENT OF ENVIRONMENTAL PROECTION. PERMANENT STABILIZATION IS DEFINED AS A UNIFORM 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA.
2. THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL DEVICES AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS AND REMOVE ALL ACCUMULATED SEDIMENT WHENEVER THE LEVEL OF ACCUMULATION HAS REACHED THE SPECIFIED SEDIMENT CLEANOUT LEVEL. DEPOSITS FROM THE SEDIMENT STRUCTURES WILL BE REMOVED TO THE CONTRACTOR'S DISPOSAL AREA OR UTILIZED ON SITE IN A CONTROLLED MANNER.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF HE SUSPECTS THAT ANY SEDIMENT OR EROSION CONTROL DEVICE IS NOT OPERATING CORRECTLY.
4. ALL EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THE CONTROLS. ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE EROSION AND SEDIMENTATION CONTROL DEVICES.
5. COMPOST FILTER SOCKS WILL BE CLEANED OF ACCUMULATED SEDIMENT WHEN THE SEDIMENT REACHES ONE-HALF OF THE BARRIER HEIGHT. IF THE BARRIER FAILS TO HOLD IN ANY WAY, THE FAILED SECTION WILL BE CLEANED AND REPLACED IMMEDIATELY. PRIOR TO THE FINAL REMOVAL OF BARRIER, THE ACCUMULATED SEDIMENT WILL BE REMOVED. AFTER REMOVAL, REGRADE AND RESEED AS REQUIRED.
6. THE EXISTING PAVED ROADWAYS WILL BE KEPT CLEAN OF ALL SEDIMENT AND WILL BE INSPECTED DAILY BY THE CONTRACTOR. WHEN THE LOOSE STONE TIRE TREAD CLEANER AT THE CONSTRUCTION ENTRANCE BECOMES CHOKED WITH SEDIMENT, THE CONTRACTOR WILL REPLACE THE STONE OR PROVIDE ADDITIONAL TOP DRESSING OF CLEAN AASHTO #1 COARSE AGGREGATE AS DIRECTED BY THE ENGINEER. A STOCKPILE AREA SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.
7. CONTRACTOR MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, EQUIPMENT WASHING FLUID CHANGING, DEGREASING, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHERE POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL. STORAGE OF ALL FERTILIZER, PETROLEUM PRODUCTS, AND NON-INERT WASTES SHALL BE PROPERLY COVERED AND CONTAINED TO PREVENT ANY CONTAMINATION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSPECTION REPORTING, DOCUMENTATION , AND FILING PER WV DEP DIVISION OF WATER AND WASTE MANAGEMENT REGULATIONS. UNLESS SPECIFIED DIFFERENTLY, ALL BMP'S SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY OR AFTER EACH STORM EVENT OF 0.5 INCHES OR MORE. WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMP'S IDENTIFIED ON THE PLANS ARE INADEQUATE, THE PLAN SHALL BE MODIFIED, AS APPROPRIATE, IN A TIMELY MANNER. REPORTING OF ANY SPILLAGE OR DISCHARGE OF POLLUTANTS SHALL BE WITHIN 24 HOURS.
9. A COPY OF THE SEDIMENT CONTROL PLAN SHALL BE RETAINED ON-SITE. THE PLAN SHALL BE MODIFIED WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF ANY BMP. THE DEP MUST BE NOTIFIED OF ANY CHANGES TO THE CONSTRUCTION SWPP. DEPENDING ON THE SIGNIFICANCE OF THE REVISIONS, A PERMIT MODIFICATION MAY BE REQUIRED.

CONSTRUCTION SEQUENCE

1. EACH STEP IN THE CONSTRUCTION SEQUENCE SHALL BE COMPLETED BEFORE INITIATION OF THE NEXT STEP.
2. DELINEATE THE LIMITS OF DISTURBANCE IN THE FIELD TO ENSURE NO CONSTRUCTION ACTIVITIES OCCUR OUTSIDE OF THE LIMIT OF DISTURBANCE.
3. INSTALL ROCK CONSTRUCTION ENTRANCE DRIVE AS SHOWN ON THE PLANS.
4. INSTALL THE SILT FENCE AS SHOWN ON THE PLANS AND INLET PROTECTION TO ALL EXISTING INLETS WITHIN THE LIMIT OF DISTURBANCE.
5. ESTABLISH THE CONTRACTOR LAYDOWN AREA AND TOPSOIL STOCKPILE AREA.
6. STABILIZE ALL AREAS DISTURBED WITH THE INSTALLATION OF THE EROSION AND SEDIMENTATION CONTROLS INCLUDING SILT FENCE, ROCK CONSTRUCTION ENTRANCE, LAYDOWN AREA, AND TOPSOIL STOCKPILE AREA.
7. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION AND SEDIMENTATION CONTROL DEVICES AS NECESSARY BASED ON SITE CONDITIONS AND WEATHER PATTERNS DURING CONSTRUCTION.
8. REMOVE THE EXISTING PAVEMENT AND UTILITIES AS SHOWN ON THE DEMOLITION PLAN.
9. CONSTRUCT THE PROPOSED DRAINAGE STRUCTURES AND DISCHARGE PIPES, INCLUDING CONNECTION TO THE EXISTING CONVEYANCE SYSTEM.
10. ROUGH GRADE THE SITE KEEPING RUNOFF DIRECTED TOWARD THE SILT FENCE AND INLET PROTECTION. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.
11. INSTALL THE CONCRETE WASHOUT AREA.
12. INSTALL THE UTILITIES, INCLUDING THE STORMWATER CONVEYANCE, BEGINNING AT THE DOWNSTREAM END OR UNDERGROUND DETENTION FACILITIES AND WORK UPSTREAM. INSTALL INLET PROTECTION AS EACH INLET IS INSTALLED AND UTILIZED FOR STORMWATER RUNOFF. TEMPORARILY ADJUST THE INLET GRATE ELEVATIONS, AS NECESSARY, TO COLLECT THE SEDIMENT LADEN RUNOFF. ENSURE RUNOFF IS DIRECTED TOWARDS THE NEW INLETS, REMAINING EXISTING INLETS, AND/OR SILT FENCE.
13. INSTALL THE AREAS TO BE PAVED TO SUBGRADE ELEVATIONS. FINAL GRADE ALL AREAS TO BE VEGETATED AND STABILIZE APPROPRIATELY.
14. CONSTRUCT ALL PAVEMENT STRUCTURES AND ACCESS DRIVES.
15. A UNIFORM 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA MUST BE ESTABLISHED IN ALL TRIBUTARY AREAS BEFORE EROSION AND SEDIMENTATION BMP'S CAN BE REMOVED. ONCE VEGETATED, THE REMAINING TEMPORARY CONTROLS CAN BE REMOVED. TEMPORARY CONTROLS SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY CONTROLS ARE NO LONGER NEEDED.



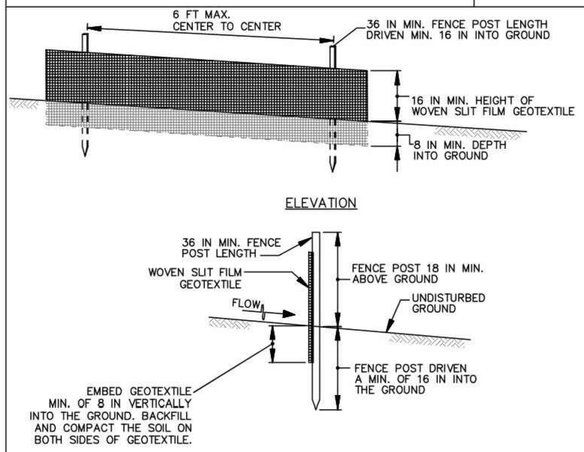
ROCK CONSTRUCTION ENTRANCE NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE / EXIT. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE / EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO HARD SURFACES. THIS MAY REQUIRE PERIODIC DRESSING WITH 1.5 - 3.5 INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ON TO HARD SURFACES OR STORM DRAINS MUST BE REMOVED IMMEDIATELY. ROCK CONSTRUCTION ENTRANCE / EXIT THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON HARD SURFACES OR STORM DRAINS, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE / EXIT BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE HARD SURFACES OR SWEEPING THE DEPOSITS INTO DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

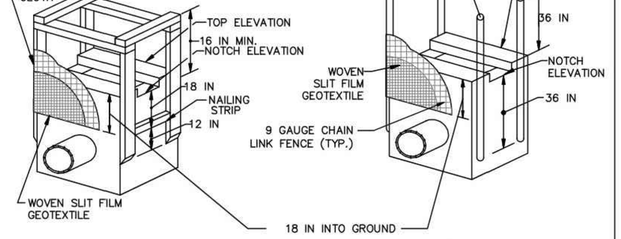
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.2

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



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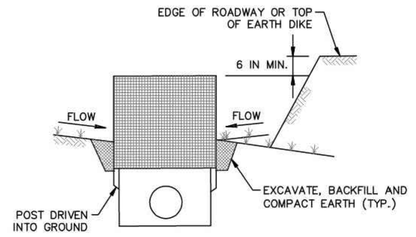

SECTION FOR TYPE A AND B

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.24

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0015_C2.1_EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg PLOTTED: Friday, June 06, 2025 - 9:50am USER: DHollowell

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
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SEAL: STATE OF MARYLAND · RONALD N. MORRIS · No. 32705 · PROFESSIONAL ENGINEER

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LICENSE NO. _____
EXPIRATION DATE: _____

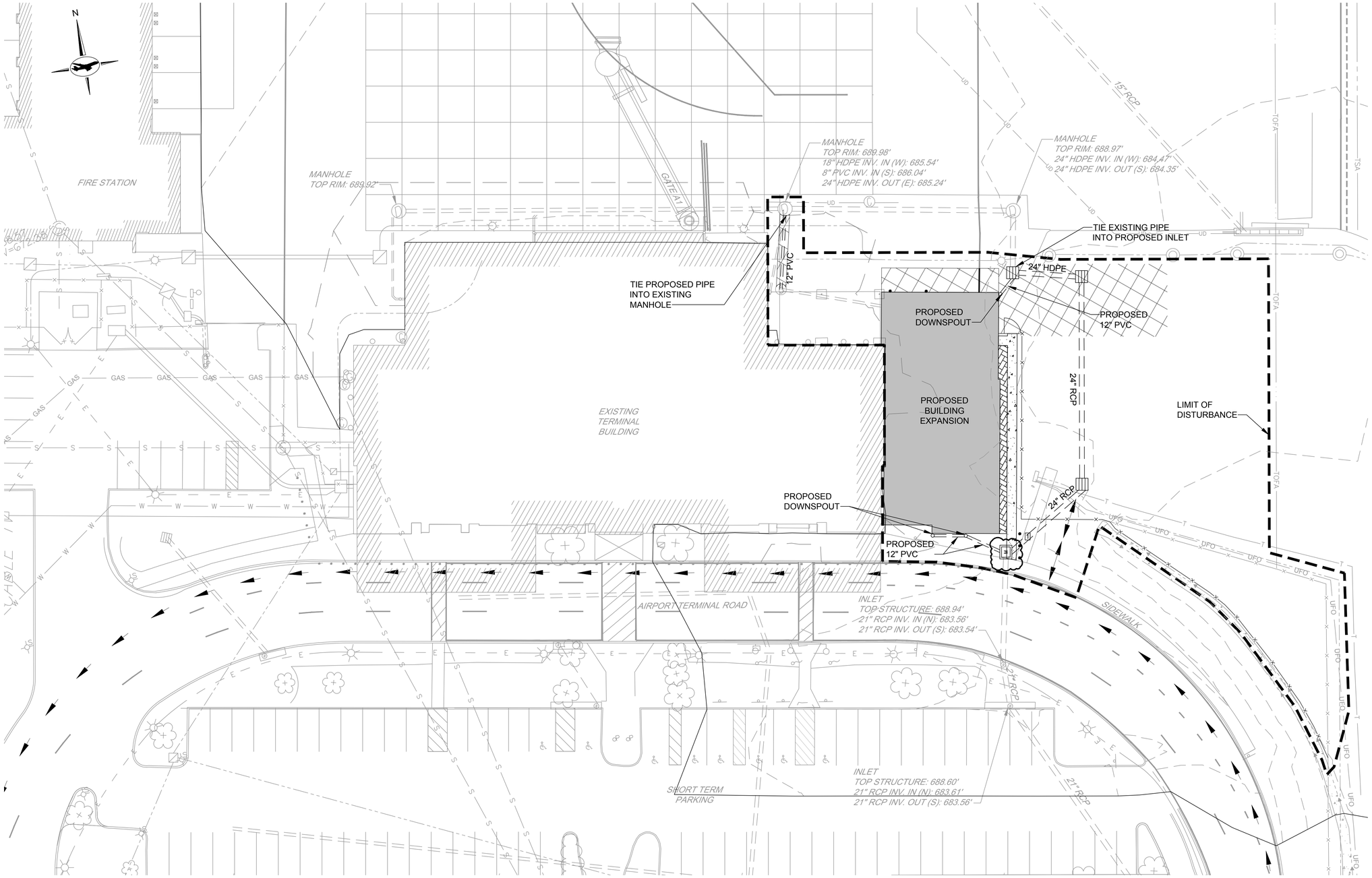
DESIGNED: B.J.D.
DRAWN: J.A.A.
CHECKED: V.J.D.
APPROVED: R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE: TERMINAL BUILDING EXPANSION
SHEET TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: N.A.
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: C2.1
15 OF 102



NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- ELECTRICAL
- TELEPHONE LINE
- UNDERGROUND FIBER OPTIC
- UNDERDRAIN
- FENCE LINE
- SHRUBS
- TAXIWAY OBJECT FREE AREA

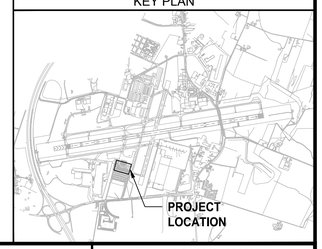
PROPOSED LEGEND:

- BUILDING EXPANSION
- PAVEMENT
- SIDEWALK
- LIMIT OF DISTURBANCE
- STORM DRAIN
- INLET/STRUCTURE NUMBER
- PROPOSED DRAINAGE MANHOLE

20' 10' 0 20' 40'

GRAPHIC SCALE

KEY PLAN



FILE NAME: C:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0016_C3.0_STORMWATER MANAGEMENT PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:58am USER: DHollowell

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD. SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL:
STATE OF MARYLAND
HAROLD N. MORRIS
No. 32705
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND"
LICENSE NO. _____
EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE: **TERMINAL BUILDING EXPANSION**

SHEET TITLE: STORMWATER MANAGEMENT PLAN

SCALE: N.A.

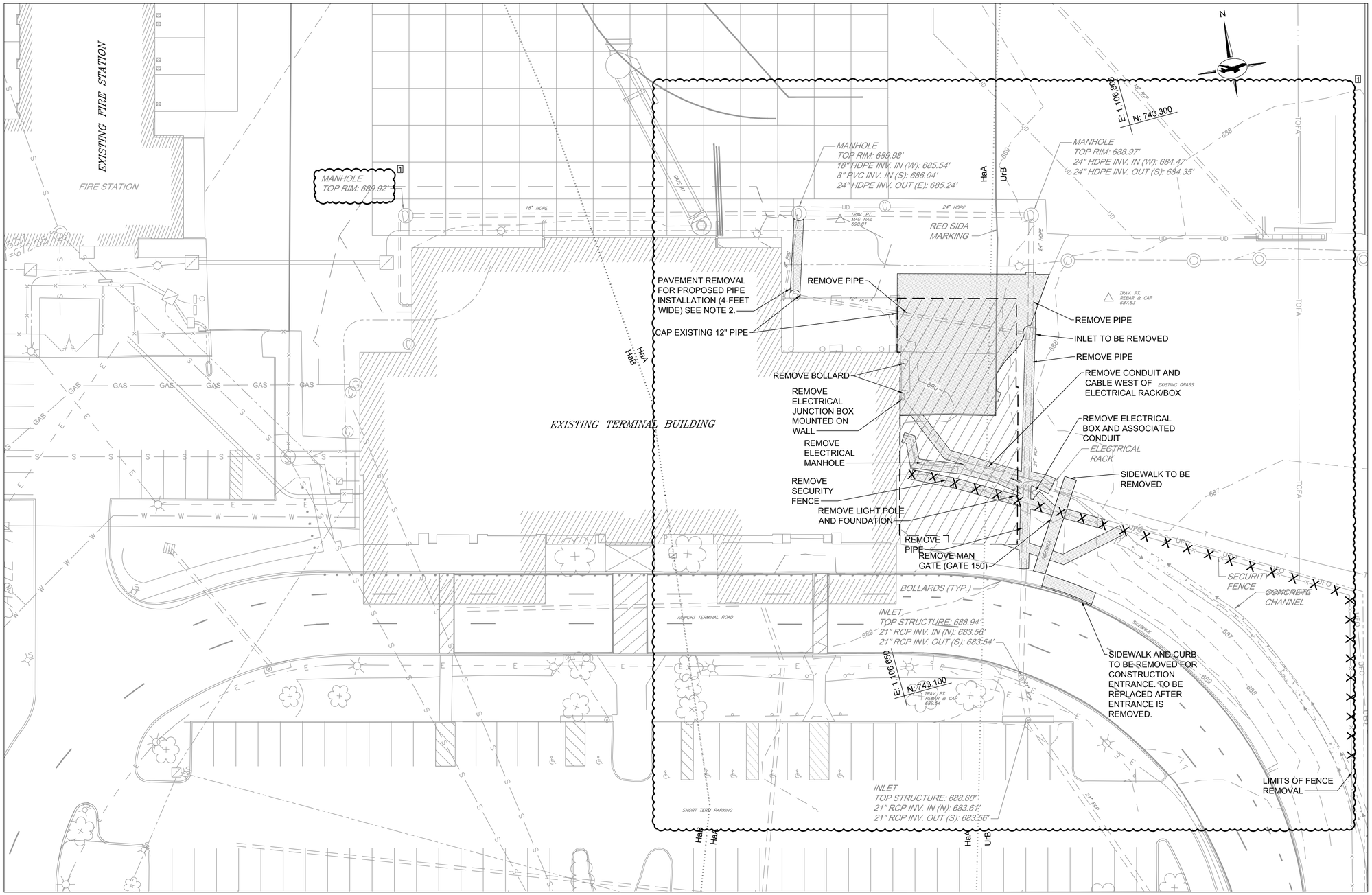
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

SUBMISSION: BID SET

SHEET No.: C3.0

16 OF 102



NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.
2. THIS WORK MUST BE COMPLETED WITHIN A DAY THERE IS NO SCHEDULED SERVICE OPERATIONS AT THE AIRPORT.

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- E — ELECTRICAL
- T — TELEPHONE LINE
- UFO — UNDERGROUND FIBER OPTIC
- UD — UNDERDRAIN
- FENCE LINE
- SHRUBS
- TOFA — TAXIWAY OBJECT FREE AREA
- SOILS BOUNDARY
- 670 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

PROPOSED LEGEND:

- PROPOSED STRUCTURE
- EXISTING IMPERVIOUS COVER TO BE REMOVED

SOIIL DESCRIPTIONS:

HaA	HAGERSTOWN SILT LOAM	0 TO 3 PERCENT SLOPES
HaB	HAGERSTOWN SILT LOAM	3 TO 8 PERCENT SLOPES
UrB	URBAN LAND-HAGERSTOWN COMPLEX	0 TO 8 PERCENT SLOPES

SP-19-005
CIVIL SHEET 2 of 8

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0020_CV1.1_EXISTING CONDITIONS AND DEMOLITION PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:58am USER: DHollowell

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL:
STATE OF MARYLAND · ARNOLD N. MORRIS · NO. 32705 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
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LICENSE NO. _____
EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

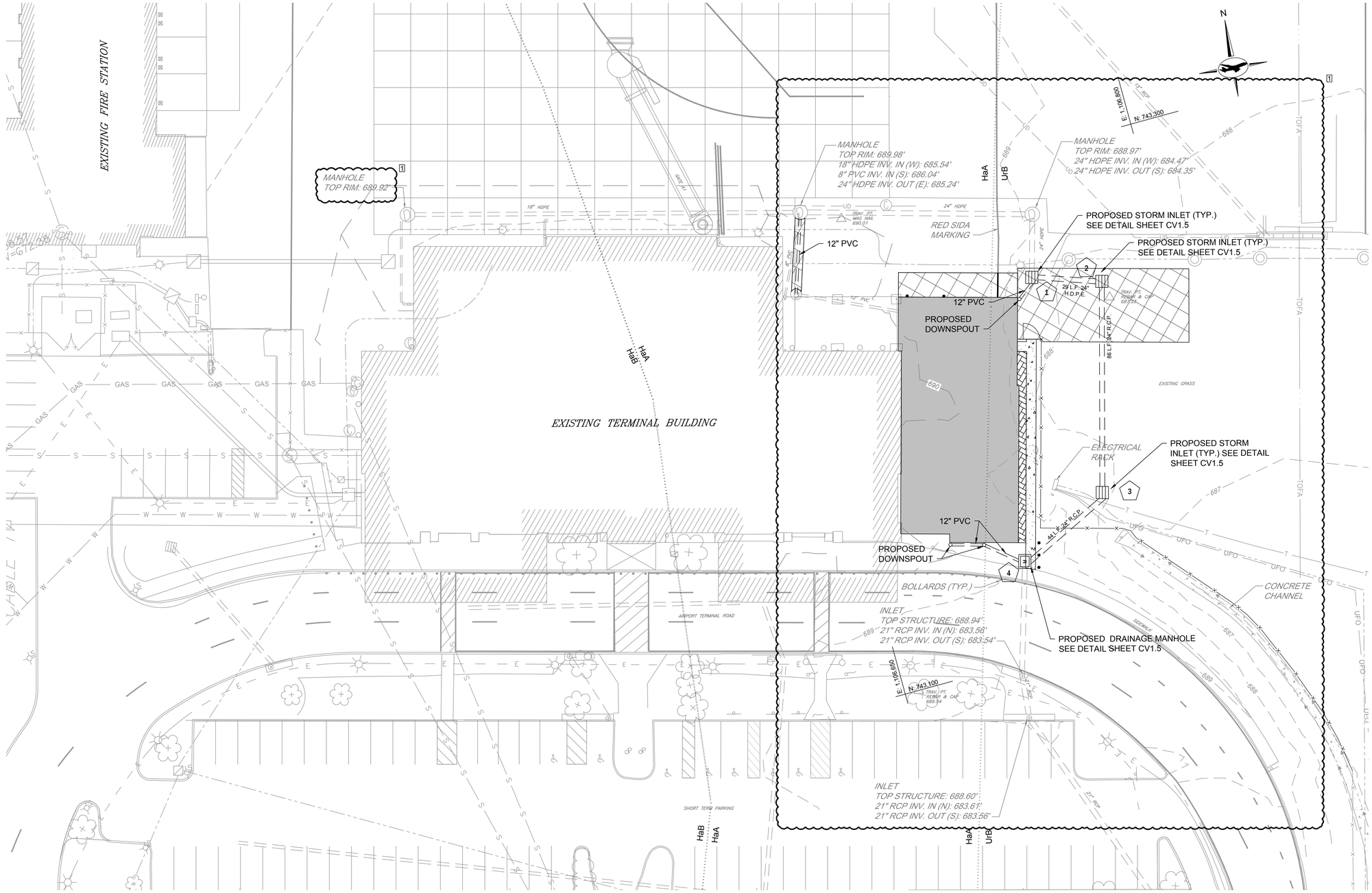
HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 20'
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: CV1.1
20 OF 102



20' 10' 0 20' 40'

GRAPHIC SCALE

NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- ELECTRICAL
- TELEPHONE LINE
- UNDERGROUND FIBER OPTIC
- UNDERDRAIN
- EXISTING FENCE LINE [1]
- SHRUBS
- TAXIWAY OBJECT FREE AREA
- SOILS BOUNDARY
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

PROPOSED LEGEND:

- BUILDING EXPANSION
- PROPOSED BITUMINOUS CONCRETE PAVEMENT REFER TO TYPICAL BITUMINOUS SECTION SHEET CV5.1
- SIDEWALK
- STORM DRAIN
- INLET
- PROPOSED STORM DRAIN STRUCTURE REFER TO DETAIL SHEET CV1.5 [1]
- PROPOSED DRAINAGE MANHOLE
- PROPOSED FENCE LINE

SOIIL DESCRIPTIONS:

HaA	HAGERSTOWN SILT LOAM	0 TO 3 PERCENT SLOPES
HaB	HAGERSTOWN SILT LOAM	3 TO 8 PERCENT SLOPES
UrB	URBAN LAND-HAGERSTOWN COMPLEX	0 TO 8 PERCENT SLOPES

SP-19-005
CIVIL SHEET 3 of 8

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL: STATE OF MARYLAND · DONALD N. MORRIS · No. 32705 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
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LICENSE NO. _____

EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
[1]	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
FINAL CONDITIONS PLAN

SCALE: N.A.

DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX

SUBMISSION: BID SET

SHEET No.: CV1.2
21 OF 102

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0021_CV1.2_FINAL CONDITIONS PLAN.dwg PLOTTED: Friday, June 06, 2025 - 9:59am USER: Dhollowell

SITE DATA

TAX MAP/PARCEL	24 / 471
ELECTION DISTRICT	13
ZONING	AP, AIRPORT DISTRICT
WATERSHED	CONOCOCHEAGUE CREEK (02140504)
PARCEL ACREAGE	25.85 Ac. PER SDAT
FUNCTIONAL DESCRIPTION	EXIST. AIRPORT TERMINAL
MINIMUM BUILDING SETBACK LINES (MBSL)	
FRONT	50' FROM SHOWALTER ROAD
SIDE	75'
REAR	75'
EXISTING TERMINAL BUILDING AREA	23,754 S.F.
PROPOSED BUILDING ADDITION	4,185 S.F.
NET INCREASE IN IMPERVIOUS COVER	1,867 S.F.
PROPOSED BUILDING HEIGHT	NO CHANGE
No. of EMPLOYEES	NO CHANGE
HOURS OF OPERATION	NO CHANGE
SITE USERS TRANSPORTATION	AUTOMOBILE
ON SITE PARKING/PAVEMENT/LANDSCAPE MAINTENANCE	BY OWNER (COUNTY)
PARKING REQUIRED	NO CHANGE
PARKING PROVIDED	NO CHANGE
PARKING LANDSCAPE REQUIREMENT	NO CHANGE
PARKING LANDSCAPE AREAS PROVIDED	NO CHANGE
HANDICAP PARKING REQUIRED & PROVIDED	5
FREIGHT & DELIVERIES	NO CHANGE
WATER	CITY OF HAGERSTOWN
SEWER	WASHINGTON COUNTY DEPT. OF WATER QUALITY
SOLID WASTE STORAGE & DISPOSAL	EX. DUMPSTER PAD
PROJECTED EMISSIONS	NONE
EXISTING WATER ALLOCATION	18,831 GPD
EXISTING WATER USAGE	1,081 GPD
PROPOSED ADDITIONAL ALLOCATION	0 GPD

CITY OF HAGERSTOWN UTILITIES DEPARTMENT – WATER & WASTEWATER DIVISIONS

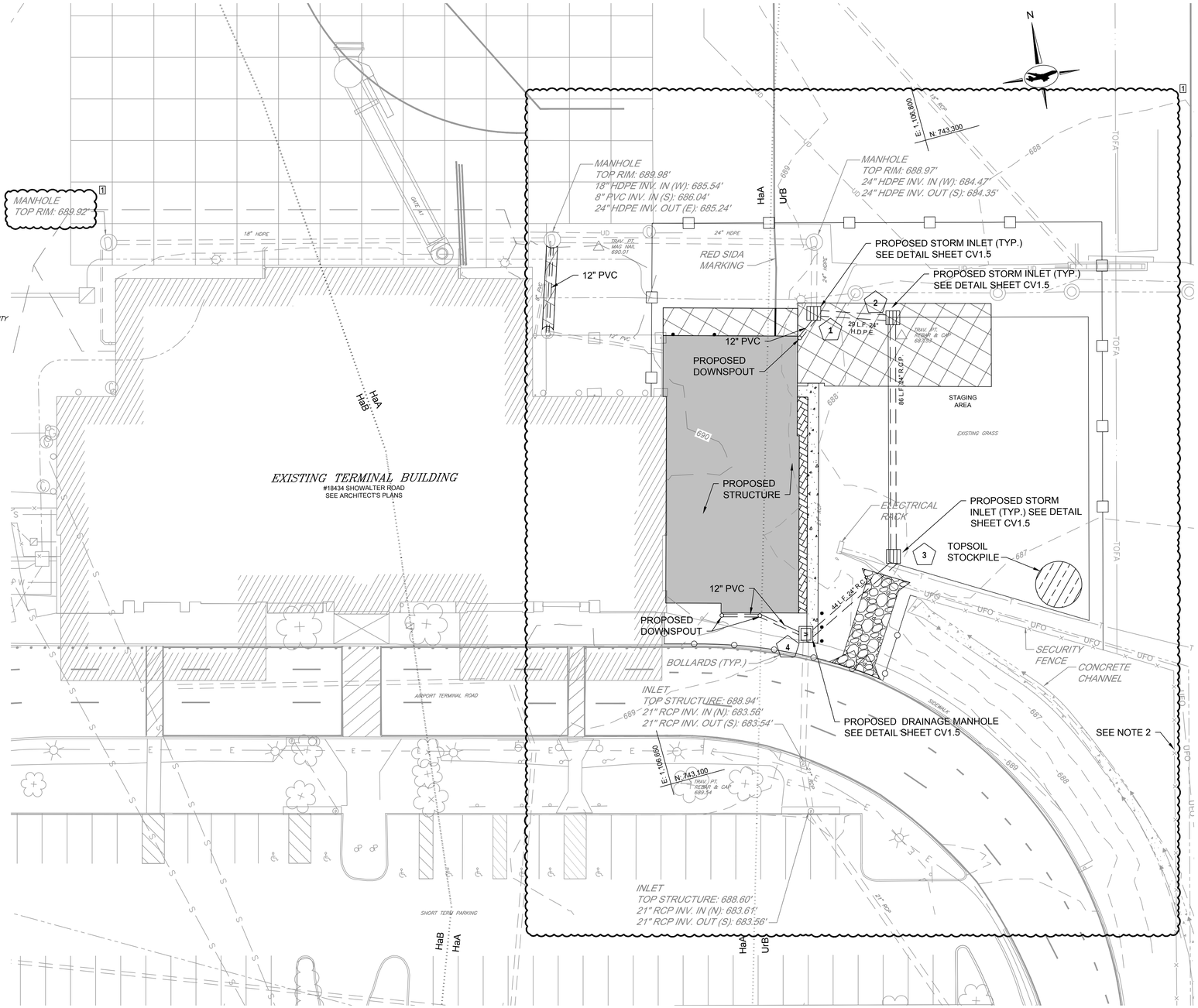
THIS APPROVAL IS FOR THE DESIGN AND LAYOUT OF THE PROPOSED WATER AND WASTEWATER SYSTEM IMPROVEMENTS. ALL WATER AND WASTEWATER SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED TO THE STANDARDS IN EFFECT AT THE TIME OF CONSTRUCTION. THIS APPROVAL DOES NOT GUARANTEE AVAILABILITY OF WATER OR WASTEWATER SERVICE. WATER AND WASTEWATER SERVICE IS AVAILABLE SUBJECT TO CONFORMANCE WITH ALL POLICIES AND STANDARDS IN EFFECT AT THE TIME OF APPLICATION FOR SERVICE, PAYMENT OF FEES AND APPROVAL OF THE WATER AND/OR WASTEWATER SERVICE APPLICATION. THE WATER DIVISION DOES NOT GUARANTEE A SPECIFIC WATER PRESSURE OR FLOW AT ANY METER OR FIRE HYDRANT. THIS APPROVAL IS VALID FOR A PERIOD OF ONE YEAR.

(SIGNATURE) (DATE)

WASHINGTON COUNTY DEPARTMENT OF WATER QUALITY

THIS APPROVAL IS FOR GENERAL CONFORMANCE WITH THE COUNTY'S REQUIREMENTS FOR DESIGN AND LAYOUT OF PROPOSED SEWER AND/OR WATER SYSTEM IMPROVEMENTS OR EXTENSIONS. ALL SEWER AND/OR WATER SYSTEM IMPROVEMENTS OR EXTENSIONS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE COUNTY'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF SANITARY SEWERS AND/OR WATER LINES. THIS APPROVAL DOES NOT GUARANTEE AVAILABILITY OF SEWER AND/OR WATER SERVICE. SEWER AND/OR WATER SERVICE AVAILABILITY IS SUBJECT TO CONFORMANCE WITH ALL RULES, POLICIES, AND REGULATIONS ESTABLISHED BY THE COUNTY AND IN EFFECT AT THE TIME APPLICATION FOR SERVICE IS MADE, AND/OR THE AVAILABILITY OF ALLOCATION REMAINING IN OTHER JURISDICTIONS' FACILITIES THAT MAY BE GRANTED TO THE COUNTY. THIS APPROVAL SHALL BE VALID FOR A PERIOD OF TWO YEARS.

BY: _____ DATE: _____



20' 10' 0 20' 40'

GRAPHIC SCALE

NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.
2. EXISTING SECURITY FENCE TO BE DEMOLISHED AFTER NEW PERMANENT SECURITY FENCE IS INSTALLED. [1]

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- ELECTRICAL
- TELEPHONE LINE
- UNDERGROUND FIBER OPTIC
- UNDERDRAIN
- EXISTING FENCE LINE [1]
- SHRUBS
- TAXIWAY OBJECT FREE AREA
- SOILS BOUNDARY
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

PROPOSED LEGEND:

- BUILDING EXPANSION
- PROPOSED BITUMINOUS CONCRETE PAVEMENT REFER TO TYPICAL BITUMINOUS SECTION SHEET CV5.1
- CONSTRUCTION ENTRANCE
- TOPSOIL STOCKPILE
- STAGING AREA
- SIDEWALK
- STORM DRAIN
- TEMPORARY SECURITY FENCE
- TEMPORARY CONSTRUCTION FENCE
- INLET
- PROPOSED STORM DRAIN STRUCTURE [1] REFER TO DETAIL SHEET CV1.5
- PROPOSED BOLLARD (OWNER-SUPPLIED MATERIAL: REBAR CAGE, BOLLARD PIPE AND COVER)
- PROPOSED DRAINAGE MANHOLE

SOIIL DESCRIPTIONS:

HaA	HAGERSTOWN SILT LOAM	0 TO 3 PERCENT SLOPES
HaB	HAGERSTOWN SILT LOAM	3 TO 8 PERCENT SLOPES
UrB	URBAN LAND-HAGERSTOWN COMPLEX	0 TO 8 PERCENT SLOPES

SP-19-005
CIVIL SHEET 4 of 8

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL: STATE OF MARYLAND · RONALD N. MORRIS · No. 32705 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
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LICENSE NO. _____
EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

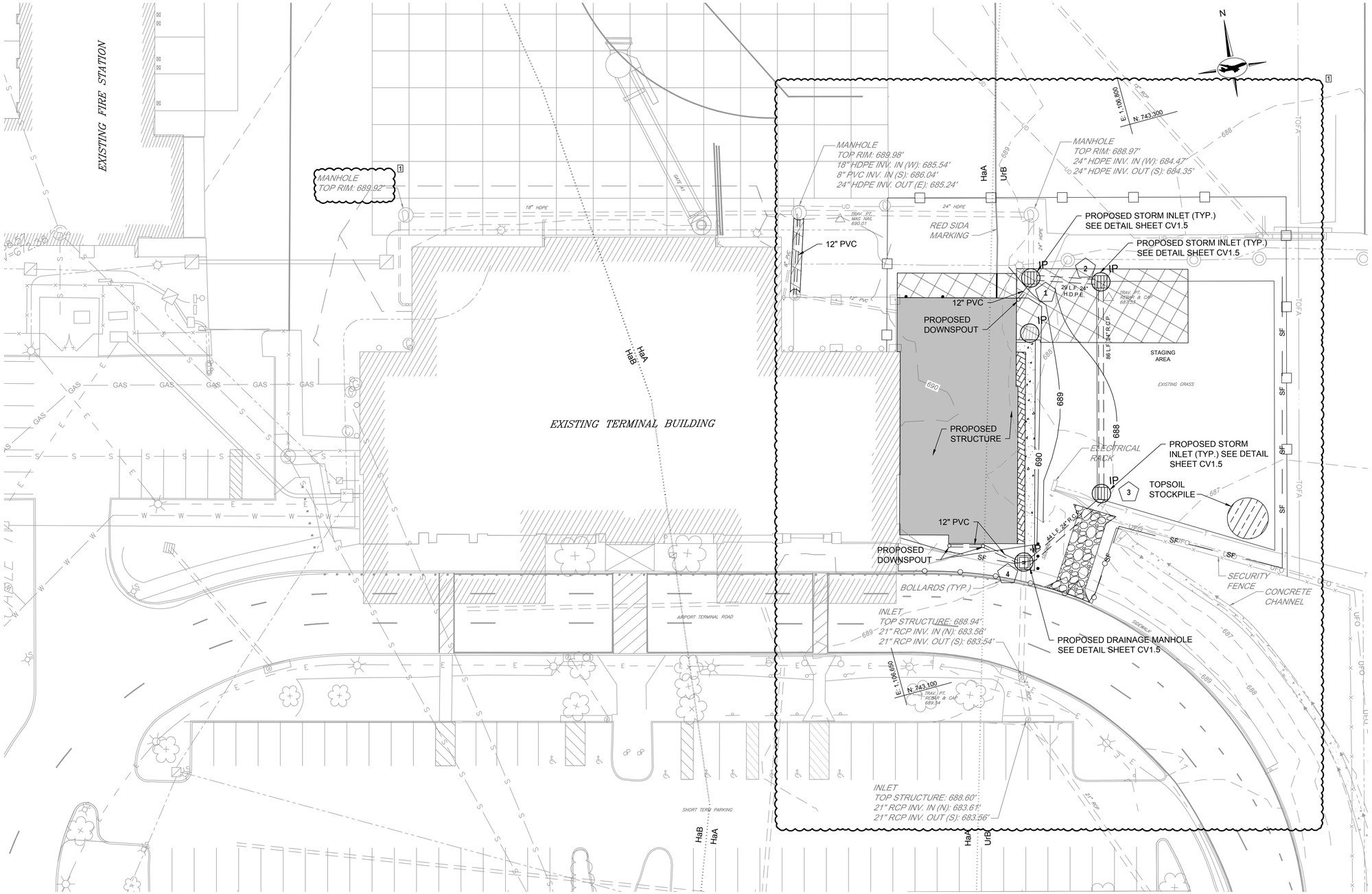
NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE: TERMINAL BUILDING EXPANSION
SHEET TITLE: SITE PLAN
SCALE: N.A.
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: CV1.3
22 OF 102

FILE NAME: O:\HGR Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0022_CV1.3_SITE PLAN.dwg PLOTTED: Friday, June 06, 2025 - 10:02am USER: DHollowell



NOTES:

1. REFER TO CIVIL PHASING SERIES FOR PHASING AND GENERAL PROJECT LAYOUT PLANS.

EXISTING LEGEND:

- LIGHT POLE
- TAXIWAY EDGE LIGHT
- ELECTRICAL HANDHOLE
- DRAINAGE MANHOLE
- INLET
- CLEANOUT
- SANITARY SEWER MANHOLE
- BOLLARD
- STORM DRAIN
- ELECTRICAL
- TELEPHONE LINE
- UNDERGROUND FIBER OPTIC
- UNDERDRAIN
- EXISTING FENCE LINE [1]
- SHRUBS
- TAXIWAY OBJECT FREE AREA
- SOILS BOUNDARY
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

PROPOSED LEGEND:

- BUILDING EXPANSION
- PROPOSED BITUMINOUS CONCRETE PAVEMENT REFER TO TYPICAL BITUMINOUS SECTION SHEET CV5.1
- CONSTRUCTION ENTRANCE
- TOPSOIL STOCKPILE
- STAGING AREA
- SIDEWALK
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- SILT FENCE
- INLET PROTECTION
- STORM DRAIN
- INLET
- PROPOSED STORM DRAIN STRUCTURE REFER TO DETAIL SHEET CV1.5 [1]
- PROPOSED BOLLARD (OWNER-SUPPLIED MATERIAL: REBAR CAGE, BOLLARD PIPE AND COVER)
- PROPOSED DRAINAGE MANHOLE

SOIIL DESCRIPTIONS:

HaA	HAGERSTOWN SILT LOAM	0 TO 3 PERCENT SLOPES
HaB	HAGERSTOWN SILT LOAM	3 TO 8 PERCENT SLOPES
UrB	URBAN LAND-HAGERSTOWN COMPLEX	0 TO 8 PERCENT SLOPES

20' 10' 0 20' 40'
GRAPHIC SCALE

SP-19-005
CIVIL SHEET 5 of 8

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL: STATE OF MARYLAND · HAROLD N. MORRIS · NO. 32705 · PROFESSIONAL ENGINEER

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LICENSE NO. _____
EXPIRATION DATE: _____

DESIGNED:	B.J.D.
DRAWN:	J.A.A.
CHECKED:	V.J.D.
APPROVED:	R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE:
TERMINAL BUILDING EXPANSION

SHEET TITLE:
GRADING AND SEDIMENT CONTROL PLAN

SCALE: N.A.
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: CV1.4
23 OF 102

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0023_CV1.4_GRADING AND SEDIMENT CONTROL PLAN.dwg PLOTTED: Friday, June 06, 2025 - 10:03am USER: DHellowell

PROPOSED DRAINAGE CHART							
STRUCTURE NUMBER	STRUCTURE TYPE	PIPE SIZE/TYPE (IN)	PERCENT SLOPE	PIPE LENGTH (FT)	TOP ELEVATION (FT)	INVERT IN	INVERT OUT
1	INLET	-	-	-	688.8	-	-
EX. MHA - 1	-	24" HDPE	0.96%	20.25		684.16	684.35
1 TO 2	-	24" HDPE	0.50%	30	-	684.01	684.16
2	INLET	-	-	-	687.75	-	-
2 TO EX	-	24" HDPE	0.32%	86.00	-	683.76	684.04
3	INLET	-	-	-	688	-	-
3 TO 4		24" RCP	0.40%	44		683.54	683.76
4	MANHOLE	-	-	-	689.57	-	-

SEQUENCE OF CONSTRUCTION

PHASE 1 - INITIAL DISTURBANCE

1. CONTACT THE WASHINGTON COUNTY DPW - ENGINEERING & CONSTRUCTION AT (240) 313-2400 AND THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT AT (301) 797-6821 EXT. 3 FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION TO SCHEDULE PRE-CONSTRUCTION MEETING.
2. CONDUCT PRE-CONSTRUCTION MEETING.

PHASE 2 - SITE WORK CONSTRUCTION

3. INSTALL TEMPORARY SECURITY FENCE.
4. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE AS SHOWN ON PLAN.
5. INSTALL INLET PROTECTION AND TOPSOIL STOCKPILE AS SHOWN. ANY SPOIL AND/OR BORROW MUST COME FROM OR GO TO A SITE THAT HAS A CURRENT AND APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
6. SAWCUT EXISTING CONCRETE AND PAVING AS SHOWN ON PLAN.
7. WORKING DOWNSTREAM AND PROCEEDING UPSTREAM, INSTALL PROPOSED STORM DRAIN SYSTEM.
8. BEGIN SITE DEMOLITION.
9. BEGIN UTILITY CONSTRUCTION.
10. BEGIN FOOTER AND BUILDING ADDITION ERECTION.
11. BEGIN INSTALLATION OF ASPHALT PAVING SECTION.
12. BEGIN INSTALLATION OF CONCRETE SIDEWALK AND LANDSCAPE STONE.
13. BEGIN BOLLARD AND PERMANENT FENCE INSTALLATION
14. STABILIZE ALL GRASS AREAS, SEED AND MULCH.

PHASE 3 - PROJECT CLOSE-OUT

15. OBTAIN PERMISSION FROM SCD TO REMOVE PERIMETER CONTROLS. STABILIZE AREAS LEFT DISTURBED BY PERIMETER CONTROL REMOVAL.
16. CONTACT THE WASH. CO. SCD AT 301-797-6821 EXT. 3 AND THE WASHINGTON COUNTY DEPARTMENT OF PUBLIC WORKS-ENGINEERING & CONSTRUCTION AT 240-313-2400 TO SCHEDULE A FINAL SITE CLOSEOUT REVIEW MEETING.

SOIL EROSION, SEDIMENT CONTROL & SEEDING NOTES

1. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND THE PROVISIONS OF THE APPROVED PLAN.
2. ALL GRADING AND STABILIZATION SHALL COMPLY WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL". "SECTION B - GRADING AND STABILIZATION" AND THE PROVISIONS OF THE APPROVED PLAN.
3. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES (BMP'S) ARE TO BE CONSTRUCTED AND/OR INSTALLED PRIOR TO OR AT THE INITIATION OF GRADING IN ACCORDANCE WITH "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND THE APPROVED PLAN.
4. A GRADING UNIT IS THE MAXIMUM CONTIGUOUS AREA ALLOWED TO BE GRADED AT A GIVEN TIME AND IS LIMITED TO 20 ACRES. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY AND/OR THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT (APPROVAL AUTHORITY). UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
5. FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, TEMPORARY OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN:
   a) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
   b) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
6. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 7 DAY STABILIZATION REQUIREMENT, AS WELL AS, STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. (AS APPLICABLE)
7. ALL CONSTRUCTED CHANNELS AND SWALES SHALL HAVE SPECIFIED TREATMENT INSTALLED TO THE DESIGN FLOW DEPTH COMPLETED DOWNSTREAM TO UPSTREAM AS CONSTRUCTION PROGRESSES. AN INSTALLATION DETAIL SHALL BE SHOWN ON THE PLANS.
8. ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEEDED WITHIN 3 DAYS OF INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
9. ELECTRIC POWER, TELEPHONE, AND GAS LINES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 3 DAYS AFTER INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
10. NO SLOPE SHALL BE GREATER THAN 2:1.
11. AS REQUIRED BY SECTION B, OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, "ADEQUATE VEGETATIVE STABILIZATION", IS DEFINED AS 95 PERCENT GROUND COVER. THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT REQUIRES THE PROJECT ADHERE TO THIS FOR SCHEDULING OF THE FINAL SITE CLOSEOUT REVIEW, AND/OR THE RELEASE OF THE SITE FOR SOIL EROSION AND SEDIMENT CONTROL.

FOR SITES 1.0 ACRE OR MORE, THE FOLLOWING ARE REQUIRED:

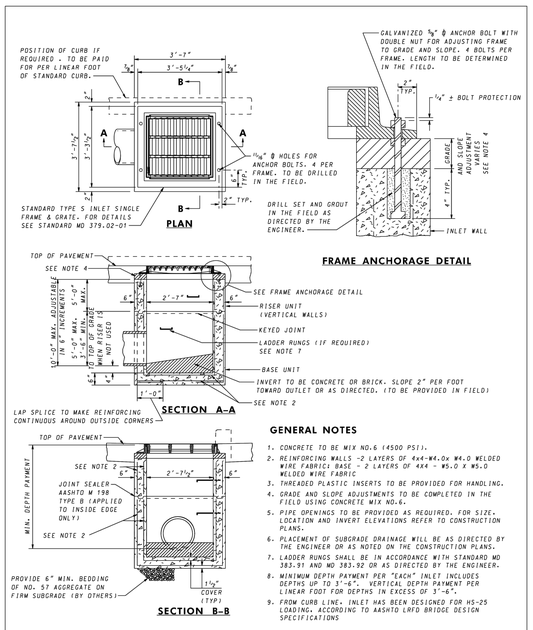
A. MARYLAND DEPARTMENT OF THE ENVIRONMENT, GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH A CONSTRUCTION ACTIVITY, N.P.D.E.S. PERMIT NUMBER MDRC, STATE DISCHARGE PERMIT NUMBER 14GP, OR AN INDIVIDUAL PERMIT.
B. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (GENERAL/INDIVIDUAL PERMIT - NOTICE OF INTENT - N.O.I.) APPLICATION AND PERMIT SHALL BE POSTED AND/OR AVAILABLE ON-SITE AT ALL TIMES.
C. DURING CONSTRUCTION, ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES (B.M.P.'s) SHALL BE INSPECTED AND RECORDED ON THE "STANDARD INSPECTION FORM", "GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY" PER MARYLAND DEPARTMENT OF THE ENVIRONMENT (GENERAL/INDIVIDUAL PERMIT - NOTICE OF INTENT - N.O.I.).
D. FOLLOWING CONSTRUCTION AND RELEASE OF THE SIGHT FOR SOIL EROSION AND SEDIMENT CONTROL BY THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT, I.E., ALL PORTIONS OF A SITE HAVE BEEN PERMANENTLY STABILIZED, AND ALL STORMWATER DISCHARGES FROM THE CONSTRUCTION SITES THAT ARE AUTHORIZED BY THE PERMIT AREA ELIMINATED, THE AUTHORIZED PERMITEE SHALL SUBMIT THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, GENERAL/INDIVIDUAL PERMIT - NOTICE OF TERMINATION - N.O.T.

PERMANENT SEEDING SUMMARY

SEED MIXTURE (HARDINESS ZONE 6B) FROM TABLE B.3					FERTILIZER RATE (10-20-20)			LIME RATE
No.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P205	K20	
6	TALL FESCUE WHITE CLOVER PERENNIAL RYE GRASS	40 8 25	3/15 - 6/1 8/1 - 10/15	½" - ¾"	45 LB/AC (1.0 LB/ 1000 S.F.)	90 LB/AC (2 LB/ 1000 S.F.)	90 LB/AC (2 LB/ 1000 S.F.)	2 TONS/AC (90 LB/ 1000 S.F.)
PERMANENT SEEDING SHALL COMPLY WITH SECTION B-4-5 OF THE 2011 MARYLAND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL								

TEMPORARY SEEDING SUMMARY

SEED MIXTURE (HARDINESS ZONE 6B) FROM TABLE B.1					FERTILIZER RATE (10-20-20)	LIME RATE
No.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
2	BARLEY (HORDEUM VULGARE)	96	3/1 - 5/15 8/1 - 9/30	1.0"	436 LBS/AC (10 LBS/1000 S.F.)	2 TONS/AC (90 LBS/1000 S.F.)
TEMPORARY SEEDING SHALL COMPLY WITH SECTION B-4-4 OF THE 2011 MARYLAND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL						



GENERAL NOTES

1. CONCRETE TO BE MIX NO.6 (4500 PSI).
2. REINFORCING WALLS -2 LAYERS OF 4x4-W4.0x W4.0 WELDED WIRE FABRIC: BASE - 2 LAYERS OF 4X4 - W5.0 X W5.0 WELDED WIRE FABRIC
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. GRADE AND SLOPE ADJUSTMENTS TO BE COMPLETED IN THE FIELD USING CONCRETE MIX NO.6.
5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED. FOR SIZE, LOCATION AND INVERT ELEVATIONS REFER TO CONSTRUCTION PLANS.
6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
7. LADDER RUNGS SHALL BE IN ACCORDANCE WITH STANDARD MD 383.91 AND MD 383.92 OR AS DIRECTED BY THE ENGINEER.
8. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-6". VERTICAL DEPTH PAYMENT PER LINEAR FOOT FOR DEPTHS IN EXCESS OF 3'-6".
9. FROM CURB LINE. INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

SPECIFICATION	CATEGORY CODE ITEMS
305	

APPROVED _____
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

SHA State Highway Administration	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL	4-15-87	APPROVAL	6-23-87
	REVISED	8-3-10	REVISED	7-26-10
	REVISED	10-7-14	REVISED	9-29-14
	REVISED	-	REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

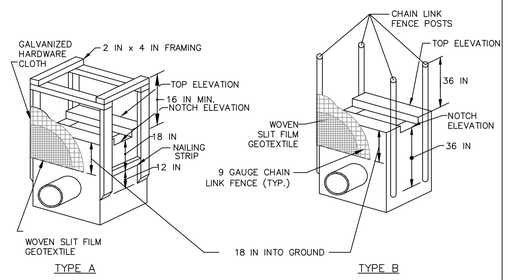
PRECAST STANDARD
TYPE S INLET SINGLE GRATE

STANDARD NO. MD 374.73

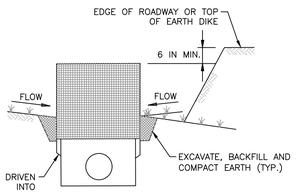
DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



ISOMETRIC VIEW



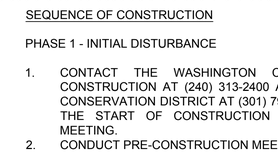
SECTION FOR TYPE A AND B

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

GENERAL NOTES

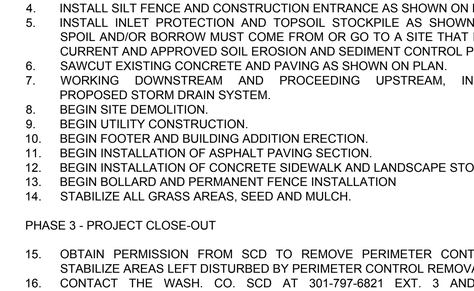
1. WALL REINFORCEMENT SHALL BE NO. 4 DEFORMED BARS @ 6" C/C. 2 WAYS. AND HAVE 3" COVER BELOW DEPTH OF 12'-0" AND 4" COVER TO DEPTH OF 24'-0".
2. BASE REINFORCEMENT SHALL BE NO. 4 DEFORMED BARS @ 6" C/C. 2 WAYS. AND HAVE 2" COVER FROM TOP OF BASE.
3. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING. ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
4. BRICK AND MORTAR MAY BE USED IN NON-TRAFFIC AREAS ONLY.



MANHOLE WALL THICKNESS
8" TO DEPTH OF 12'-0"
12" BELOW DEPTH OF 12'-0" TO DEPTH OF 24'-0"

MANHOLE BASE THICKNESS
8" WALL-USE 12" BASE
12" WALL-USE 15" BASE

BENCH HEIGHT ABOVE OUTGOING PIPE INVERT
STORM WATER 0.5 D
SANITARY 0.9 D



SPECIFICATION	CATEGORY CODE ITEMS
305	

APPROVED _____
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

SHA State Highway Administration	APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL	2-7-51	APPROVAL	3-25-56
	REVISED	10-1-01	REVISED	2-24-89
	REVISED	10-7-14	REVISED	9-29-14
	REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD MANHOLE

STANDARD NO. MD 383.01

SP-19-005
CIVIL SHEET 6 of 8

CONSULTANT:
ADCI
AIRPORT DESIGN CONSULTANTS
6011 UNIVERSITY BLVD, SUITE 490
ELLICOTT CITY, MD 21043
TEL: 410.465.9600
FAX: 410.465.9602

SEAL: STATE OF MARYLAND · HAROLD N. MORRIS · No. 32705 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND"
LICENSE NO. _____
EXPIRATION DATE: _____

DESIGNED: B.J.D.
DRAWN: J.A.A.
CHECKED: V.J.D.
APPROVED: R.N.M.

NO.	DATE	DESCRIPTION
1	06/06/2025	ADDENDUM 1

HAGERSTOWN REGIONAL AIRPORT
Washington County, MD

PROJECT TITLE: TERMINAL BUILDING EXPANSION
SHEET TITLE: DRAINAGE AND EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
SCALE: N.A.
DATE: MAY 2025

FAA ATP No.:3-24-0019-XX-2025
Bid No.: PUR-1751
MAA Grant No.: MAA-GR-XX-XXX
SUBMISSION: BID SET
SHEET No.: CV1.5
24 OF 102

FILE NAME: G:\HGR\Projects\2024-HGR-1305 Terminal East Expansion\CAD\SHEETS\0024_CV1.5_DRAINAGE AND EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg PLOTTED: Friday, June 06, 2025 - 10:03am USER: DHollowell

Sarnafil BUILDING TRUST

20 Year System Warranty

Warranty Serial No.: WAR21-1589386

SIKA CORPORATION ROOFING WARRANTY FOR COMMERCIAL BUILDING

Building Owner: The Board of County Commission
Building Name: Hagerstown Airport addition
Building Address: 18434 Showalter Road, Hagerstown, MD, 21742
Applicator: Kline Assoc. Roofing Contractors, Inc., 350 East First Street, Hagerstown, MD, 21740 Phone: (301) 791-2828

Date of Substantial Completion: 03/16/2021 Date of Inspection: 03/24/2021

Building/Area Name	Used As	Area Warranted (Sq. Ft.)
ADCI	Air - Airport Terminal	4,700

Sika Corporation warrants to the owner of the building described above ("Owner"), that subject to the terms, conditions, and limitations, including the limitations set forth in section 10 below, stated herein, Sika Corporation will repair roof leaks originating from the Sarnafil Roofing Membrane, Sarnatherm Insulation or Sika Corporation Roofing Accessories* installed according to Sika Corporation's Technical instructions by a Sika Corporation Authorized Roofing Applicator for a period of 20 years commencing with the date of substantial completion of the installation of the Roofing Membrane with no monetary limit with respect to roof repair costs.
* For skylights purchased through Sika Corporation, refer to the attached Skylight Warranty Addendum for specific warranty coverage.

TERMS, CONDITIONS, LIMITATIONS

1. Owner shall notify Sika Corporation on the first business day immediately following the discovery of each leak in the Roofing System and confirm in writing within one week.
2. If on Sika Corporation's inspection, Sika Corporation determines that the leak is caused by a defect in Sarnafil Roofing Membrane, Sarnatherm Insulation or Accessory provided by Sika Corporation to the Applicator for this building or from a defect in the Sika Corporation Authorized Applicator's workmanship applied to that Sarnafil Membrane, except as provided in the following paragraph three (3) Owner's remedies and Sika Corporation's liability shall be limited to Sika Corporation's repair of the Roofing Membrane, Sarnatherm Insulation or Accessory.
3. This warranty does not apply and may be null and void if any of the following occur:
   (a) The Roofing Membrane, Sarnatherm Insulation or Accessory is damaged by a natural disaster including, but not limited to, earthquake, lightning, hail, peak wind gust in excess of 60 mph, hurricane, or tornado, as defined by The National Weather Service, or other acts of God, or:
   (b) The Roofing Membrane, Sarnatherm Insulation or Accessory is damaged by any act of negligence, accident, or misuse including, but not limited to, vandalism, falling objects, civil disobedience, or act of war, or:
   (c) A deficient pre-existing condition or equipment is causing water entry, or:
   (d) Metal work or other accessories or equipment is used in the Roofing and causes leaks, or:
   (e) There are any alterations or repairs made on or through the completed roof, or objects such as but not limited to fixtures, equipment, or structures are placed on or attached to the completed roof without first obtaining written authorization from Sika Corporation, or:
   (f) Failure by the Owner or his lessee to use reasonable care in maintaining the roof as described in the Owner's Guide provided with this warranty, including that of sealants and caulking, or:
   (g) Loss of integrity of the building envelope and, or structure including, but not limited to partial or complete loss of roof decking, wall siding, windows, doors or other envelope components or from roof damage by wind blown objects, or:
   (h) Condensation accumulates in the roof assembly, or:
   (i) A significant change in the use of the building by the Owner or his lessee expected by Sika Corporation to effect the Roofing Membrane as originally installed, or:
   (j) The Roofing Membrane is damaged by contaminates and/or spills, or:
   (k) Deficient design applied to the Roofing Membrane such as membrane contact with incompatible materials and/or substrates, or:
   (l) The Owner fails to comply with every term and condition stated herein.
4. During the period of this warranty, Sika Corporation, its agents and employees, shall have free access to the roof during regular business hours.
5. Should the Roofing Membrane be concealed, the cost of exposure of the Roofing Membrane for purposes of Sika Corporation's investigation and/or repair, such as removal and replacement of any paving or overburden, shall be the Owner's responsibility.
6. Sika Corporation shall have no obligation under this warranty until all invoices for materials, installation, and services provided by Sika Corporation and the Sika Corporation Authorized Applicator have been paid for in full.
7. Sika Corporation's failure at any time to enforce any of the terms or conditions stated herein shall not be construed to be a waiver of such provision.
8. This warranty may be transferred to a subsequent Owner of the Building if approved in advance and in writing by Sika Corporation and the cost to process the transfer and to inspect and repair the Sika Corporation Roofing System, if necessary, such as but not limited to, removal and replacement of overburden, shall be the Owner's responsibility.
9. The Owner and Sika Corporation hereby agree that any and all claims (contractual, statutory, common law or otherwise), disputes, or suits that in any way, directly or indirectly, arise out of or relate to this Warranty, or the alleged breach thereof, or to any contracts between the owner and Sika Corporation, or the alleged breach thereof, or to the design, manufacture, sale, distribution, Installation, and/or inspection of the Sika Corporation Roofing System, shall first be submitted to non-binding mediation before a neutral mediator jointly selected by the parties or, in the absence of agreement, as designated by the American Arbitration Association. In the absence of resolution by mediation, all such claims shall be settled by arbitration by the American Arbitration Association in accordance with the Construction Industry Arbitration Rules. Any such mediation and/or arbitration shall take place in Boston, Massachusetts. This Warranty, and any claims, disputes or suits between the parties hereto shall be governed by, and construed and enforced in accordance with, the laws of the Commonwealth of Massachusetts.
10. **THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THE REMEDIES STATED HEREIN ARE EXCLUSIVE REMEDIES AND SIKA CORPORATION SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES INCLUDING THE PRESENCE OF MOLDS, FUNGI, BACTERIA, SPORES, MYCOTOXINS OR THE LIKE OR FURTHER LOSS OF ANY KIND WHATSOEVER, INCLUDING BUT NOT LIMITED TO, DAMAGE TO THE BUILDING ON WHICH THE COMPONENTS OF THE ROOF ARE SITUATED, DAMAGE TO THE CONTENTS THEREOF, LOSS OF USE OF THE BUILDING OR ANY COMPONENT PART THEREOF, OR DAMAGE TO ANY OTHER PROPERTY OR PERSONS.**

NO REPRESENTATIVE OF SIKA CORPORATION HAS AUTHORITY TO MAKE ANY REPRESENTATIONS OR PROMISES EXCEPT AS STATED HEREIN.

This Warranty Is Effective From: 03/16/2021 through: 03/16/2041

Michelle Cavacas — 03/26/2021
Michelle Cavacas
Warranty Issuance Supervisor
Date:

Brian J. Whelan — 03/26/2021
Brian J. Whelan
Executive Vice President
Date:

SIKA CORPORATION • ROOFING
100 Dan Road • Canton, MA 02021
Tel: 781-828-5400 • Fax: 781-828-5365 • usa.sarnafil.sika.com