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FASCIMILE TRANSMITTAL COVER SHEET

DATE: **July 18, 2025**

TO: **Doris Furr**

FROM: **Planholder**

PROJECT: **NEW DORMITORY FOR THE DAUPHIN ISLAND SEA LAB CAMPUS**
FOR DAUPHIN ISLAND SEA LAB
GMC PROJECT NO. AMOB230181

RE: **ADDENDUM NO. 5 AND ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM NO. 5**

ACKNOWLEDGEMENT OF RECEIPT:

PLEASE PRINT RECIPIENT'S NAME, FIRM, AND DATE RECEIVED.

THEN FAX BACK TO (251) 460-4423 or EMAIL doris.furr@gmcnetwork.com
FOR OUR RECORDS AND TO ACKNOWLEDGE YOUR RECEIPT OF THIS ADDENDUM.

_____

NAME *(PLEASE PRINT)*

_____

FIRM *(PLEASE PRINT)*

_____

DATE RECEIVED *(PLEASE PRINT)*

Pages to follow this page

ADDENDUM NUMBER 5 **July 18, 2025**

PROJECT: NEW DORMITORY FOR THE DAUPHIN ISLAND SEA LAB CAMPUS
FOR DAUPHIN ISLAND SEA LAB
GMC PROJECT NO. AMOB230181

AD5-1 CLARIFICATIONS / RFI'S / RESPONSES:

1. Bidders shall acknowledge receipt of the Addendum in writing, as provided on the Acknowledgment Receipt.

2. Door 108A & for all like doors with note 6 "Sound Rated" on A6.01, What is the desired sound rating? Please note with the doors also being 60-mintue fire rated there may be limitations on sound rating. Please provide sound rating specification if it is desired. Spec 081416 does not provide any instruction for sound rated openings.
   RESPONSE: STC doors are not required. Remove Door Schedule Note 6. Provide all required fire rated door requirements.

3. The drawings indicate cement siding to be installed over continuous rigid insulation board (ISO) on CMU walls, with Z furring strips shown at 16" O.C. for securing the insulation. However, no attachment method is indicated for fastening the cement siding to the CMU assembly. Please provide clarification and details on how the cement siding is to be attached to the CMU wall assembly at these locations.
   RESPONSE: The Z-furring attachment to CMU, with the Z-furring spaced at 16" o.c. , attach to the CMU with Simpson Titen Turbo Masonry or Tapcon screws, 3/16" diameter at 12" on center, 1 ¼" embed.
   The fiber cement siding can be fastened to the Z-furring at 12" on center with hot-dipped galvanized #8 wafer head self drilling screws. Refer to Fiber Cement Siding manufacturer requirements and recommendations.

4. Could you kindly provide clarification on the intended FRP door specifications?
   RESPONSE: Provide and install fire rated 60 minute and hurricane impact rated Exterior Fiberglass Reinforced Polymer doors as stated in the drawings. Addendum 5 FRP Specification Section 082250 Fiberglass Doors & Frames is attached.

5. Attached is page 7 of 10 of section 12 2513 window roller window shades. Under accessories ceiling packets as indicated on drawings. Are these being used and what sheet do they show?
   RESPONSE: Ceiling pockets are not used. Roller shades shall be (surface) ceiling mounted per specifications. Roller shades shall be provided and installed only on the first floor and only at windows W-1 through W-4.

6. Decorative Stair Screens:
   Can you please provide details for how the decorative metal panels at the exterior stairwells are attached to the stairs?

a. **RESPONSE: Specification Section 074200 Perforated Metal Wall Panels (Addendum No. 5) is attached with manufacture information. Refer to manufacturer details. The Perforated Metal Wall Panels is listed as Alternate No. 2 in the attached revised Section**

7. Delegated Design – Aluminum Stairs:
   The drawings and specifications indicate that the aluminum stair design is to be delegated to the General Contractor. This is atypical and could result in inconsistent pricing between bidders. Can you clarify or provide structural plans/details to support pricing?
   RESPONSE: No. The exterior aluminum stairs shall be delegated design signed by a license Engineer in the State of Alabama.

8. Lighting Fixture "CP" – Pendant Lights:
   The lighting fixture schedule notes that fixture "CP" is to be selected by the Architect. Can you please advise how we should approach pricing for this fixture? Should we carry a specific allowance?
   RESPONSE: Provide $10k-12k per each CP **fixture. Allowance #3 CP Specialty Fixture description as follows: Custom LED suspended fixture, 3500K, dimmable, not to exceed 50W.**

9. Window W4 – Existing to be Reused:
   Window type W4 is noted as "existing to be reused." Where are these existing windows currently located? Is the contractor responsible for furnishing these windows, or will they be provided by the Owner? Please clarify.
   RESPONSE: The Owner provided windows are located in storage on campus. Refer to Addendum 4.

10. Contact information for the specified Section 09 7200 wallcovering:

    a. Marcy Swerdlow
       Account Executive - Trade & Commercial Sales, Mitchell Black Home
       P 312-667-4477 | E 110 | M (773) 263-7721 | W mitchellblack.com
       marcy@mitchellblackhome.com
       1802 W. Berteau Ave, Suite 114, Chicago IL 60613

11. Rod-Hung Canopy — Specifications detailing materials, finishes, connections, and structural requirements for the rod-hung canopy assembly are also missing.
    Please confirm if specifications will be issued for these scopes, or advise on the required detailing, materials, and installation procedures.
    RESPONSE: Provide and install a delegated design pre-engineered extruded aluminum custom designed overhead supported canopies / awning system. The Section 105320 Aluminum Awnings Addendum 5 is attached.

12. **Carlisle is an approved roofing manufacture contingent on compliance with all the requirements and conditions of the plans and specifications and all addenda to date.**

13. Firm Alarm RFI's:
    a. Will Siemens (fire alarm) be an approved equal?
       RESPONSE: Yes
    b. Will the notification devices be voice or horns?
       RESPONSE: Per Addendum 3, the requirement for voice evacuation was removed from the fire alarm specifications.
    c. Will RSI (BDA/ERRCS) be approved?
       RESPONSE: Yes
    d. Will a site survey be performed first to determine if a (BDA/ERRCS) is needed or will it be required to install a new system?
       RESPONSE: Per Sheet E0.20 – General Note 2 – it is the requirement of the Contractor to have an assessment performed to determine if bi-directional amplification will be required.

14. Fire Alarm RFI's:

a) Fire Alarm Manufacturer Approval: Specification Section 28 31 00 (Part 2.1.A) identifies the Edwards EST IO1000 as the basis of design for the Fire Alarm Control Panel (FACP).
- Will Siemens be accepted as an approved equal for the Fire Alarm System?
Response: Yes

b) Notification Appliance Type:The specifications indicate a voice evacuation system, but the drawings do not clearly depict whether the notification devices are voice or horn/strobe.
- Please confirm which type of notification appliances is required for this project.
Response: Per Addendum 3, the requirement for voice evacuation was removed from the fire alarm specifications.

c) BDA/ERRCS Manufacturer Approval:Specification Section 28 31 00 (Part 2.3) describes Emergency Responder Radio Coverage Systems (ERRCS), but no specific manufacturer is listed.
- Will RSI be accepted as an approved equal for the BDA/ERRCS system?
Response: Yes

d) BDA/ERRCS System Requirement:
i. Will a radio frequency (RF) site survey be performed first to determine if a BDA/ERRCS system is required?
Response: Per Sheet E0.20 – General Note 2 – it is the requirement of the Contractor to have an assessment performed to determine if bi-directional amplification will be required.

ii. Or should the base bid include installation of a complete system regardless of RF signal test results?
Response: Refer to Specification Section Allowance No. 2 <u>EMERGENCY RESPONDER RADIO COVERAGE SYSTEM</u>. Per Allowance No. 2, costs associated with signal testing shall be included in the base bid.

15. **The NEXD clutch FlexShade is approved substitution.**

16. **All exterior guardrails and handrails shall be anodized aluminum.**

17. Please provide any available Cone Penetration Test (CPT) data for the project site. If CPT testing was not performed, please confirm and indicate what geotechnical data was used in its place to support design recommendations.
    RESPONSE: Attached are the files for the CPT data for the three soundings.

18. Please see attached substitution request for the elevator.
    RESPONSE: The Thyssenkrupp TKE Traction Elevator(s) are an acceptable elevator substitution. Thyssenkrupp TKE Elevators and Otis Elevators are approved elevator manufacturers . All submitted elevators shall provide an estimate maintenance cost average for next 20 years.

19. The contract documents currently indicate an electric (traction) elevator system. Please confirm if a hydraulic elevator system would be acceptable for this project in lieu of the specified electric elevator, provided it meets all applicable performance, code, and accessibility requirements.
    RESPONSE: A machine roomless hydraulic elevator system with an oil separator has been listed as a new Alternate #1. Refer to Revised Section 01 2300 Alternates (Addendum No. 5) dated 07/18/2025. All submitted elevators shall provide an estimate maintenance cost average for next 20 years.

20. Alternate Pile Method: Project plans currently call for drilled displacement piers as the foundation support system. We are requesting approval to utilize rammed aggregate piers as an alternate ground improvement method to achieve the required support capacities and settlement control.
    a. Please confirm whether this substitution is acceptable, and if any additional information or submittals are required for review.
    b. Reason for Request: The alternate system offers potential schedule and cost advantages while still meeting the performance criteria indicated in the design documents.
    Response: No. This is <u>not</u> an acceptable substitution.

21. The plans call for 5/8" coverboard but the specs call for ¼". Please advise which is correct.
    Response: Provide 5/8" thick coverboard.

22. **A new Specification Section 282300 IP BASED DIGITAL SURVEILLANCE SYSTEM is provided. These changes were made to clarify the requirements for access controls and security. The Owner's security and access control systems network is existing to remain. All new access controls and security devices shall be 100% compatible with the Owner's existing security network.**

23. Roofing spec list Sarnafil G410 feltback as basis of design which has fiberglass reinforcement and 9oz felt backing. Is this required as the other listed manufacturers use polyester scrim and 3.8oz felt in their PVC? Please advise which is correct.
    Response: Provide a 60 mil PVC Single Ply Membrane roofing system with felt / fleece backing with 20 year minimum warranty.

24. Is BMP inspections by owner or contractor?
    Response: Contractor

25. Structural Shoring: Specification Section 051200 – Structural Steel, Article 3.2.A, requires the contractor to provide temporary shoring to support structural steel and composite deck construction until the concrete has reached its design strength.

    a. Can the design team provide a shoring plan to be used for bidding purposes?
    b. If not, please confirm whether it is the contractor's responsibility to engage a licensed engineer during construction/submittals to develop a shoring plan that meets the design intent and loading requirements.

    Clarification is needed to determine bidding responsibilities and whether the cost and design of temporary shoring should be included in the contractor's scope, or if it will be issued by the design team as part of the construction documents.

    Response: The General Contractor is responsible for all Means and Methods; which, includes all construction activities such as temporary shoring, bracing, etc. Spec 05120 section 3.2 A – Note 1 can be omitted. The structural composite deck will be adequately shored by the second floor bar joists as well as the Tornado Shelter steel framing. Part A still applies and is the contractor's responsibility to temporarily brace structural steel during erection until all bracing, connections, etc. are in place. Shoring of the 2nd floor concrete is not required.

26. Please clarify the FRP doors. The door schedule states that the doors are fire rated but note # 2 which is listed beside the doors call for hurricane impact rated. The FRP cannot be both, please clarify what we need to price, either fire rated FRP or hurricane impact rated FRP doors.
    Response: Revised Section 082250 Fiberglass Doors & Frames (Addendum No. 5) is attached with four FRP Manufactures that meet the project fire rating and hurricane impact requirements.

27. Please advise if there are any building permit fees to be paid for by the contractor.
    Response: Yes, Contractor shall pay all building permit and DCM fees.

28. Please confirm the GC is to pay the DCM Fee.
    Response: Yes, Contractor shall pay all building permit and DCM fees.

29. Please confirm this project is not PSCA funded. If it is, is the owner paying the fee?
    Response: It is not funded with PSCA funds.

30. On G1.21, the partition schedule, has detail 15 showing a 2-hour roof ceiling assembly (UL-P514) . This detail shows a subceiling attached to the bar joist. The plans indicate 2 layers of type-X gyp. board, but the actual UL in the code book requires 2 layers of 5/8 in. type C-board. Does this detail reflect the entire roof and ceiling system of the second-floor shell?

Should type-X be used per the plans or should type-C be used per the code book.

Response: UL#P514 Detail shall be changed to Type C per the UL designation and description. UL#P514 shall be used for the Elevator Room 104 and Fire Riser Room 121 One Hour Roof / Ceiling Assemblies.

AD5-2 ISSUED SPECIFICATIONS:

1. **Section 01 2100 Allowances – Add the following text:**
   a. **Allowance No. 3: Specialty Light Fixtures Fixture:**
      a. **The description as follows: Custom LED suspended fixture, 3500K, dimmable, not to exceed 50W. Provide $12,000 per each specialty fixture.**

2. **Section 01 2300 Alternates:**
   a. **Replace Specification Section 01 2300 Alternates with the attached Section 01 2300 Alternates (Addendum No. 5) dated 07/18/2025 in its entirety.**
      a. **Adds Alternate No. 1: Machine Roomless Hydraulic Elevator.**
      b. **Adds Alternate No. 2: Perforated Metal Wall Panels.**
      c. **Adds Alternate No. 3: Sunshades.**

3. **Section 05 5100 Aluminum Stairs - Revise 1.3 Coordination notes as follows:**
   1.3 Coordinate installation of aluminum stairs that are anchored to or that receive other work including the aluminum decorative panels and required framing. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation

4. **Remove Section 05 5200 Handrails and Railings in its entirety.**

5. **Remove Section 05 7000 Decorative Metal in its entirety.**

6. **Add Section 07 4200 Perforated Metal Wall Panels (Addendum No. 5) dated 07/18/2025 in its entirety.**

7. **Add Section 08 2250 Fiberglass Doors & Frames (Addendum No. 5) dated 07/18/2025 attached in its entirety.**

8. **Add Section 10 5320 Aluminum Awnings (Addendum No. 5) dated 07/18/2025 attached in its entirety.**

9. **Section 07 2500 Spray On Fireproofing - Add the following text in its entirety:**

   2.3 MATERIALS Applied Fire Protection Material for Interior Applications, Concealed: Manufacturer's standard factory mixed material, which when combined with water is capable of providing indicated fire resistance, and complying with following requirements:

1. Bond Strength: 150 pounds per square foot (7.2 kPa), minimum, when tested in accordance with ASTM E736/E736M when set and dry.
2. Dry Density: As required by fire resistance design.
3. Compressive Strength: 8.33 pounds per square inch (57.4 kPa), minimum.
4. Effect of Impact on Bonding: No cracking, spalling or delamination, when tested in accordance with ASTM E760/E760M.
5. Corrosivity: No evidence of corrosion, when tested in accordance with ASTM E937/E937M.
6. Surface Burning Characteristics: Maximum flame spread index of O (zero) and maximum smoke developed index of O (zero), when tested in accordance with ASTM E84.

10. **Specifications Section 282300 IP Based Digital Surveillance System –**
    a. **Replace the specification section in its entirety with the attached specification section 282300 IP BASED DIGITAL SURVEILLANCE SYSTEM Addendum 5 dated 07/18/2025.**

11. **Section 14 21 00 Electric Traction Elevators:**
    a. **Add the following approved elevator manufacturers text under the 2.1 Manufacturer- A. :**
        b. **3. Thyssenkrupp TKE Elevators**
        c. **4. Otis Elevators**

AD5-3 ISSUED DRAWINGS:

1. **Sheet A6.01 Door Schedule, Legend & Notes Addendum 4:**
    a. **Door Frames 101B , 101C, 201A, and 201B are to be changed from Galvanized Hollow Metal (GHM) Frames to Fiberglass Reinforced Polymer (FRP) Frames.**

AD5-4 ATTACHMENTS:

A. Addendum Acknowledgment Response
B. Section 01 2300 Alternates (Addendum No. 5)
C. Section 074200 Perforated Metal Wall Panels (Addendum No. 5)
D. Section 082250 Fiberglass Doors & Frames (Addendum No. 5)
E. Section 105320 Aluminum Awnings (Addendum No. 5)
F. Section 282300 IP Based Digital Surveillance System (Addendum No. 5)
G. B-1
H. B-2
I. B-3

-END OF ADDENDUM-

PREPARED BY

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SECTION 01 2300

ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:

A. Definition: An alternate is an amount proposed by Bidders and stated on the Bid Form that will be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in Contract Documents.

B. Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into the project.

C. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates, if any.

D. Schedule:

1. A “Schedule of Alternates” is included at the end of this section. Specification sections referenced in the Schedule contain requirements for materials and methods necessary to achieve the work described under each alternate.

2. Include as part of each alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the alternate.

PART 2 - PRODUCTS

2.1 Not Applicable.

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES:

A. **Alternate No. 1 –Machine Roomless Hydraulic Elevator:**

a. Provide and install a machine roomless hydraulic elevator system with an oil separator in lieu of an Electric Traction Elevator. Sump Pump is still required.

2. **Alternate No. 2 – Perforated Metal Wall Panels:**

a. Provide and install the delegated design exterior perforated metal wall panels. Refer to Section 07 42 00 Perforated Metal Wall Panels.

3. **Alternate No. 3 – Sunshades:**

a. Aluminum framed sunshade with 3-form Koda XT panel attached to top of frame, frame attached through façade and into CMU; typical at south and east elevations over used windows and tornado windows. Stair and structure for design for delegated design. Aluminum stair must take into consideration the gravity and lateral loads for the coordinate and design the attachment of decorative panel.

END OF ALTERNATES

SECTION 07 42 00

PERFORATED METAL WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Perforated and fabricated architectural metals.

B. Related Sections:

1. Division 1 Section: Submittal Procedures.
2. Division 1 Section: Quality Control.
3. Division 1 Section: Closeout Submittals.
4. Division 3 Section: Cast-in-Place Concrete: Installation of Anchors.
5. Division 4 Section: Masonry Anchorage and Reinforcement: Installation of Anchors.
6. Division 5 Section: Metal Fabrications.
7. Division 5 Section: Metal Stairs and Ladders.

1.02 REFERENCES

A. ASTM International:

1. ASTM B209 Standard Specification for Aluminium and Aluminium-Alloy Sheet and Plate.

1.03 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.

B. Product Data: Submit manufacturer's product data and installation instructions for custom perforated metal architectural designs, including manufacturer's SPEC-DATA® product sheet. Include material, finish, available thicknesses and opening sizes.

C. Drawings:

1. Submit shop drawings detailing installation procedures, including layout, dimensions, anchorage, reinforcement, connections, supports and support placement. Coordinate installation details with the delegated design engineer for the aluminum stairs and stair framing. Provide install all required sub-framing and incidentals for a complete and warrantable installation. Follow manufacturer's written details and instrucitons.

D. Samples:

1. Submit 12" x 12" sample of perforation pattern in required material thickness. Sample to include formed edges per system design and finish as specified.

E. Quality Assurance:

1. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
2. Manufacturer's Instructions: Manufacturer's installation instructions.

F. Manufacturer's Field Reports: Indicate and interpret test results for compliance with

performance requirements.

G. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified herein.

2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Fabricator Qualifications: Fabrication performed in quality controlled manufacturing environment by experienced fabricators with references indicating multiple satisfactory experiences fabricating perforated metals as required for this project.

1.05 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery, Storage and Protection:

1. Deliver materials in original sealed manufacturer's packaging.

2. Store materials in dry, secure location.

3. Store in accordance with manufacturer's written instructions.

1.06 WARRANTY

A. Project Warranty: 1 year manufacturer's warranty on fabrications and material

1. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

2. B. Finish Warranty: 20-year warranty (Fluoropolymer finish)

1.07 WASTE MANAGEMENT & DISPOSAL

A. Deposit packaging materials in appropriate container onsite for recycling or reuse.

B. Avoid using landfill waste disposal procedures when recycling facilities are available.

PART 2 PRODUCTS

2.01 PERFORATED ARCHITECTURAL METALS

A. Manufacturer: Hendrick Architectural, 1 Seventh Ave., Carbondale, PA 18407; Telephone: (877) 840-0881, (570) 282-1010; Fax: (570) 282-1506; Or preapproved equal.

E-mail: arch@hendrickcorp.com; website: www.hendrickarch.com.

1. Panel shall be H-Clad HD Series for concealed fasteners.

B. Material:

1. Aluminum: To ASTM B209.

a. Thickness: .190 thick 5052-H32
b. Sheet Size: 4'x8', 2'x8' and any custom sizes where required.
c. Shape: Formed panel edges per design details
d. Finish: Fluoropolymer Finish.
e. Color: Painted - Bone White.

C. Perforations:
1. Equal to Hendrick Laser Pattern "Seaweed": minimum 50% open area.

D. Panel Margins: 1.25" min. margins all 4 sides with preformed corners.

E. Fasteners: Stainless Steel, per design details, fastener schedule, to meet wind loads provided on the Structural Drawings.

F. Provide and install neoprene spacers where dissimilar metals come in contact.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: Per Specification Section 01 2500 Substitution Procedures

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and Hendrick Manufacturing Co.'s SPEC-DATA sheet.

3.02 EXAMINATION

A. Site Verification of Conditions:
1. Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions.
2. Examine area to receive architectural metalwork for compliance with installation clearances.

3.03 INSTALLATION

A. Install in compliance with manufacturer's product data, including product technical bulletins, application and installation instructions.

B. Erect metalwork square, plumb, straight and true.

C. Provide suitable means of anchorage as recommended by Hendrick Manufacturing Co.

D. Match exposed fastening devices to attached metalwork.

E. Provide components and setting templates to appropriate trades for placement in concrete or masonry.

3.04 FIELD QUALITY CONTROL

A. Have manufacturer of products supplied under this Section review Work involved in handling, installation/application and protection of its product[s], and submit written reports in acceptable format to verify compliance of Work with Contract.

B. Protect installed product's finish surfaces from damage during construction.

3.05 COMPLETION & CLEANUP

A. After installation and prior to final acceptance, inspect metalwork for any damage. Repair or replace damaged installed products.

B. Clean installed products in accordance with Hendrick Manufacturing Co.'s instructions prior to Owner's acceptance. Remove protective coverings.

C. On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

SECTION 08 2250

FIBERGLASS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Fiberglass reinforced polyester (FRP) doors; Large Missile Impact Resistant.

B. Frames for fiberglass reinforced polyester doors; Large Missile Impact Resistant.

C. Hinges and other door hardware and some hardware; Large Missile Impact Resistant.

D. Glazing; Large Missile Impact Resistant.

1.2 RELATED REQUIREMENTS

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

B. Section 08 71 00 - "Finish Hardware": Other door hardware.

C. Section 08 80 00 - "Glass and Glazing": For additional information regarding glass and glazing provided and installed in this Section.

1.3 REFERENCE STANDARDS

A. ANSI A250.4 - American National Standard Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings; 2001.

B. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2006.

C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.

D. ASTM F 476 - Security of Swinging Door Assemblies.

E. SFBC 3603.2 - (b)(5) - Forced Entry Resistance Test

F. ASTM B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

G. ASTM D 1667 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Closed-Cell Form).

H. ASTM D 2000 - Classification System for Rubber Products in Automotive Applications.

I. ASTM D 6670-01 - Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products.

J. TAS 201-94 - Large Missile Impact Resistant.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Obtain hardware templates from hardware manufacturer prior to starting fabrication.
2. Coordinate color of doors to be same as color of windows, unless indicated otherwise.

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. See Section 01 70 00 - "Project Closeout", for additional information and requirements for submittals.

C. Product Data: Provide manufacturer's standard details, installation instructions, and hardware and anchor recommendations.

D. Shop Drawings: Show layout and profiles; include assembly methods.

1. Indicate product components, including hardware reinforcement locations and preparations, accessories, finish colors, patterns, and textures.
2. Indicate wall conditions, door and frame elevations, sections, materials, gages, finishes, location of door hardware by dimension, and details of openings; use same reference numbers indicated on Drawings to identify details and openings.

E. Samples for Initial Selection and for Verification: Submit two complete sets of color chips, illustrating manufacturer's available finishes, colors, and textures.

F. Door Corner Sample: Submit corner cross sections, 10 inch by 10 inch in size, illustrating construction (core, framing, and face sheets), finish, color, and texture.

G. Maintenance Data:

1. Include instructions for repair of minor scratches and damage.
2. Submit manufacturer's maintenance and cleaning instructions for doors, including maintenance and operating instructions for hardware.

H. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer; include detailed terms of warranty.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 70 00 - "Project Closeout", for additional requirements.
2. Package products with protective covering and identify with descriptive labels.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than five years of documented experience.

1. Door and Frame components shall be from same manufacturer.

B. Installer Qualifications: Company specializing in installing products of the type specified in this section with not less than three years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Store materials in original packaging, under cover, protected from exposure to harmful weather conditions and from direct contact with water.

1. Store at temperature and humidity conditions recommended by manufacturer.
2. Do not use non-vented plastic or canvas shelters.
3. Immediately remove wet wrappers.

C. Store in position recommended by manufacturer, elevated minimum 4 inches above grade, with minimum 1/4 inches space between doors.

D. Refer to Division 1 Sections "Summary of Work" for additional information and requirements regarding stored materials.

1.8 FIELD CONDITIONS

A. Do not install doors until structure is enclosed.

B. Maintain temperature and humidity at manufacturer's recommended levels during and after installation of doors.

1.9 WARRANTY

A. General: Warranties shall run concurrently with, be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents or otherwise.

B. Manufacturer's Warranty:

1. Provide manufacturer's warranty that doors, frames, panels and hardware are to be free of defective materials and faulty workmanship.
2. Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors that do not conform to tolerance limitations herein and of referenced quality standards.
3. Warranty shall also include refinishing and reinstallation which may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.
4. Warranty shall be in effect from the date of "Substantial Completion":
5. Provide Limited Lifetime Warranty for door covering:

   a. Failure of corner joinery.
   b. Core deterioration.
   c. Delamination or bubbling of door skin.

6. Provide 10 year manufacturer's warranty that Factory Installed Hardware is securely mounted, and, in normal usage, will not separate from the door.
7. Provide 10 year manufacturer's warranty for the finish of door, and finish of frame.

C. Contractor's Responsibilities: Replace or refinish doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS/ PRODUCTS

A. Fire Rated and Hurricane Impact Rated Molded Fiberglass Doors and Aluminum Frame: Provide one of the following, or pre-approved equivalent properly submitted at least 10 days prior to Bid date, and subsequently accepted for bidding by Architect in writing or by Addendum.

1. Tiger Door - Tiger Door's Extreme Duty Hurricane Doors with UL Rating

2. Oshkosh CorGuard- FRP doors and frames - https://oshkoshdoor.com
3. Chem-Pruf - P-Series Fire Rated Door - https://www.chem-pruf.com
4. CORRIM Company https://corrim.com/products/fire-rated-products/

2.2 DOOR AND FRAME ASSEMBLIES

A. Door Assemblies: Factory-fabricated, prepared and machined for hardware.

1. Door and frame pre-assembled, complete with hinges; shipped with braces, spreaders, and packaging as required to prevent damage.
2. Mechanical Durability: Tested to ANSI A250.4 Level A (1,000,000 cycles), minimum; tested with hardware and fasteners intended for use on project.
3. Screw-Holding Capacity: Tested to 900 psi, minimum.
4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less; when tested in accordance with ASTM E 84.
5. Flammability: Self-extinguishing when tested in accordance with ASTM D 635.
6. Clearance Between Door and Frame: 1/8 inch, maximum.
7. Clearance Between Bottom of Door and Finished Floor: 3/4 inch, maximum; not less than 1/4 inch clearance to threshold.

2.3 COMPONENTS

A. Doors: Flush Doors with Fiberglass reinforced polyester (FRP) face sheets.

1. Construction:

a. Thickness: 1-3/4 inches, overall.
b. Stiles and Rails: Aluminum Alloy 6063-T5, minimum of 2-5/16-inch depth.
c. Corners: Mitered.
d. Provide joinery of 3/8-inch diameter full-width tie rods through extruded splines top and bottom intergral to standard tubular shaped stiles and rails reinforced to accept hardware as specified.
e. Securing Internal Door Extrusions: 3/16-inch angle blocks and locking hex nuts for joinery.
f. Furnish extruded stiles and rails with integral reglets to accept face sheets. Lock face sheets into place to permit flush appearance.
g. Rail caps or other face sheet capture methods are not acceptable.
h. Extrude top and bottom rail legs for interlocking continuous weather bar.
i. Meeting Stiles: Pile brush weatherseals. Extrude meeting stile to include integral pocket to accept pile brush weatherseals.
j. Bottom of Door: Install bottom weather bar with nylon brush weatherstripping into extruded interlocking edge of bottom rail.
k. Glue: Use of glue to bond sheet to core or extrusions is not acceptable.
l. Edges: All exposed aluminum edges shall be finished as described for Face Sheet.

m. Must have integral recessed pulls on exterior.

2. Face Sheet:

a. Material: Fiberglass Reinforced Polyester (FRP), 0.120-inch thickness (minimum), finish color throughout.
b. Protective Coating: Abuse-resistant engineered surface. Provide FRP with "SpecLite3" protective coating, or equal.
c. Texture: Sandstone-textured.
d. Finish and Color: Kynar 3-coat finish in color as selected by Architect from manufacturer's full range of colors.
e. Adhesion: The use of glue to bond face sheet to foam core is not allowed.

3. Core:

a. Material: Poured-in-place polyurethane foam.
b. Density: Minimum of 5 pounds per cubic foot.
c. R-Value: Minimum of 9.

4. Cutouts:

a. Manufacture doors with cutouts for required vision lites, louvers, and panels.
b. Factory install vision lites, louvers, and panels.

5. Hardware:

a. Premachine doors in accordance with templates from specified hardware manufacturers and hardware schedule.
b. Factory install hardware.

6. Materials:

a. Aluminum Members:

1) Extrusions: ASTM B 221.
2) Sheet and Plate: ASTM B 209.
3) Alloy and Temper: As required by manufacturer for strength, corrosion resistance, application of required finish, and control of color.

b. Fasteners:

1) Material: Aluminum, 18-8 stainless steel, or other non-corrosive metal.

2) Compatibility: Compatible with items to be fastened.
3) Exposed Fasteners: Screws with finish matching items to be fastened.

B. Frames: Profiles and dimensions as indicated on drawings; same type and construction used in mechanical durability test for doors.

1. Tubular Framing:

a. Size and Type: As indicated on Drawings. (2-inches by 6-inches, unless indicated otherwise.)
b. Material: Aluminum Alloy 6063-T5, 0.125-inch minimum wall thickness tube.
c. Perimeter Frame Members:

1) Box type with 4 enclosed sides.
2) Factory fabricated.
3) Open-back framing is not acceptable.

d. Applied Door Stops:

1) 0.625-inch high, with screws and weatherstripping.
2) Incorporate pressure gasketing for weathering seal.
3) Counterpunch fastener holes in door stop to preserve full-metal thickness under fastener head.

e. Caulking: Caulk joints before assembling frame members.
f. Joints:

1) Secure joints with fasteners.
2) Provide hairline butt joint appearance.

g. Hardware:

1) Premachine and reinforce frame members for hardware in accordance with manufacturer's standards and door hardware schedule.
2) Factory install door hardware.

h. Anchors:

1) Anchors appropriate for wall conditions to anchor framing to wall materials.
2) Door Jamb and Header Mounting Holes: Maximum or 24-inch centers.

3) Secure head and sill members of transom, side lites, and similar conditions.

i. Applied Stops:

1) For side, transom and borrowed lites and panels.
2) Incorporate pressure gasketing for weathering seal.
3) Reinforce with solid bar stock fill for frame hardware attachments.
4) Corner joints of miter design, secure with furnished aluminum clips, and screw into place.

j. Fasteners:

1) Material: Aluminum, 18-8 stainless steel, or other noncorrosive metal.
2) Compatibility: Compatible with items to be fastened.
3) Exposed Fasteners: Screws with finish matching items to be fastened.

C. Hinge and Hardware Fasteners: Stainless steel, Type 304; wood screws, or as recommended by manufacturer.

D. Finishes:

1. Aluminum Finish: Kynar 500, 3-Coat Finish, in color as selected by Architect from manufacturer's full range of colors.

2.4 ACCESSORIES

A. Vision Lites:

1. Factory Glazing:

a. Exterior: 5/16" Old Castle Storm Glass
b. Interior (if any): 1/4-inch tempered safety glass.

2. Lites in Exterior Doors: Allow for thermal expansion.

3. Rectangular Lites:

a. Size: As indicated on the Drawings.
b. Factory glazed with screw-applied aluminum stops finished to match door.
c. Surface Applied Muntin System: Provide manufacturer's 1/2" surface muntin system.

C. Glazing Gaskets: Gaskets installed in captive assembly of glazing stops.

1. EPDM: ASTM D 2000.
2. Closed-Cell Foam: ASTM D 1667.

D. Hardware: Provide the following, and as otherwise required for Large Missile Impact Resistant rating.

1. Hinges: Geared continuous hinge, by Select Hinge.

a. Color: to match door, unless otherwise indicated.

2. Weatherstripping: Integral with frame.
3. Pulls: Recessed vandal-resistant, fabricated into door at same time door is manufactured .
4. Balance of Hardware: As specified in Section 08 71 00.

2.5 FABRICATION

A. Sizes and Profiles: Required sizes for door and frame units, and profile requirements shall be as indicated on the drawings.

B. Coordination of Fabrication: Field measure before fabrication and show recorded measurements on shop drawings.

C. Assembly:

1. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
2. Remove burrs from cut edges.

D. Welding: Welding of doors or frames is not acceptable.

E. Fit:

1. Maintain continuity of line and accurate relation of planes and angles.
2. Secure attachments and support at mechanical joints with hairline fit at contacting members.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

3.2 PREPARATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

B. Clean and prepare substrate in accordance with manufacturer's directions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's current written instructions; Do not penetrate frames with anchors.

B. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor securely in place.

C. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by the Architect.

D. Set thresholds in bed of mastic and backseal.

E. Install exterior doors to be weathertight in closed position.

F. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

G. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 ADJUSTING

A. Lubricate, test, and adjust doors to operate easily, free from warp, twist or distortion, and to fit watertight for entire perimeter.

B. Adjust hardware for smooth and quiet operation.

C. Adjust doors to fit snugly and close without sticking or binding.

3.5 CLEANING

A. Clean installed products in accordance with manufacturer’s instructions prior to owner’s acceptance.

B. Do not use harsh cleaning materials or methods that would damage finish.

3.6 PROTECTION

A. Protect installed products from damage during subsequent work.

END OF FIBERGLASS DOORS AND FRAMES

SECTION 10 5320

ALUMINUM AWNINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

B. Related work specified elsewhere includes:

1. Section 05500 - "Metal Fabrications"
2. Section 06100 - "Rough Carpentry"
3. Section 07600 - "Flashing and Sheet Metal"
4. Section 07900 - "Joint Sealers"

1.2 DESCRIPTION OF WORK:

A. Work in this section includes design, furnishing and installation of pre-engineered, prefinished watertight, extruded aluminum wall-supported awning and canopy systems, with corrugated pan soffit, drainage, and cladding and profiles as indicated on the Drawings.

B. Related Items:

1. Provide and install, complete with matching accessories and flashings as indicated and otherwise required by project conditions, and matching flashings and sealants, as necessary for a watertight installation.
2. Coordinate placement of concealed supports and blocking, as necessary for support of awning system, including in part, as required to comply with wind loads indicated and otherwise required by applicable codes and authorities having jurisdiction.

1.3 PERFORMANCE REQUIREMENTS:

A. General: Design, fabricate, and install awnings to withstand loads from gravity, wind, snow, ponding, drift, seismic, and structural movement, including thermally induced movement; and to resist, without failure, other conditions of in-service use, including exposure to weather.

B. Structural Performance: Provide awnings capable of withstanding the effects of gravity

loads and the following loads and stresses within limits and under conditions indicated:

1. Wind Loads: Determine loads based on the following minimum design wind pressures:

    a. Wind load at the project site is **140 mph**, unless a greater wind load is indicated on Structural Drawings, or otherwise required by applicable codes and/or authorities having jurisdiction.
    b. Uniform pressure of at least **40 psf**, acting upward or downward.
    c. Wind Uplift: As a minimum, provide awning roof and vertical panel systems including supports meeting requirements of Underwriters Laboratories, Inc. for at least **Class 90** wind uplift resistance.

C. Seismic Performance: Provide awnings capable of withstanding the effects of earthquake motions determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures," and as otherwise require by applicable codes and/or authorities having jurisdiction.

D. Thermal Movements: Provide awnings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, tearing of fabric, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.4 SUBMITTALS:

A. Product Data: Include styles, material descriptions, construction details, fabrication details, dimensions of individual components and profiles, hardware, fittings, mounting accessories, features, finishes, and operating instructions for awnings.

B. Shop Drawings: Show location and extent of awnings. Include elevations, sections, and details not shown in Product Data. Show materials, fabrication, dimensions, mounting heights, connections, anchorages, installation details, attachments to other work, operational clearances, and relationship to adjoining work. Show colors and graphic layout and content.

1. Show locations for blocking, reinforcement, and supplementary structural support to be provided by others.
2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation. Calculate requirements for supporting awnings and for seismic restraint. Verify capacity of members and connections to support loads and verify loads, point reactions, and locations for attachment of awnings

to structure with those indicated on Drawings.

C. Samples for Initial Selection: For each colored or finished component of each type of awning indicated.

1. Include similar samples of accessories involving color selection.

D. Samples for Verification: For each of the following products and for the full range of color, texture, and pattern variations required, prepared on Samples of size indicated below. If finishes involve normal color and texture variations, include sample sets showing the full range of variations expected.

1. Frame Finish: Not less than 6-inch (150-mm) lengths.
2. Frame Corner Intersection: Not less than 12-inch (300-mm) sections showing finished joint construction.
3. Exposed Hardware Finishes: Manufacturer's standard-size unit, not less than 3 inches (76 mm) square.
4. Accessories: Manufacturer's full-size unit.

E. Awning Schedule: Use same designations indicated on Drawings.

F. Welding certificates.

G. Qualification Data: For installer, fabricator and professional engineer.

H. Research/Evaluation Reports: For anchors and fasteners indicated on Shop Drawings, and otherwise required or intended for use.

I. Maintenance Data: For awnings to include in maintenance manuals. Include the following:

1. Methods for maintaining awning finishes.
2. Precautions about cleaning materials and methods that could be detrimental to finishes and performance.
3. Operating hardware (if any).

J. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE:

A. Installer Qualifications: Engage an experienced Installer who has successfully completed at least 10 verifiable awning installations over the past 5 years, similar in material, design, and extent to those indicated for Project, and which is acceptable to manufacturer of awning products herein, as indicated by written statement by their manufacturer(s).

B. Fabricator Qualifications: Manufacturer which has completed fabrication of at least 10

verifiable awning installations over the past 5 years, that employs experienced and skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

1. Fabricator's responsibilities include in part, design and fabricating awnings and providing professional engineering services needed to assume engineering responsibility.

C. Engineer Qualifications: A professional engineer legally authorized to practice in jurisdiction where Project is located and experienced in providing engineering services of the kind indicated that have resulted in the installation of metal awnings similar to this Project in material, design, and extent and that have a record of successful in-service performance.

D. Superintendents and foremen, or other individual in the lead or supervisory position for any portion of the Work under this Contract shall have no less than 10-years verifiable experience in performing the type of work they are responsible for.

E. Refer to Division 1 Section "Special Conditions" for additional information and minimum experience requirements.

F. Source Limitations: Obtain awnings through one source from a single manufacturer.

G. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code--Steel."
2. AWS D1.2, "Structural Welding Code--Aluminum."

H. Regulatory Requirements: Provide awnings complying with or exceeding requirements of authorities having jurisdiction.

1.6 PROJECT CONDITIONS:

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit installation of awnings in exterior locations to be performed according to manufacturers' written instructions, warranty requirements, and reviewed submittal data and shop drawings.

B. Field Measurements: Where awning installation is indicated to fit to other work, verify dimensions of other work by field measurements before fabrication and indicate measurements on Shop Drawings. Allow clearances for fenestration operation throughout the entire operating range. Notify Architect of discrepancies. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.7 DELIVERY, STORAGE, AND HANDLING:

A. Deliver panels and other components so they will not be damaged or deformed. Package extruded components, vertical and roof panels for protection against transportation damage.

B. Handling: Exercise care in unloading, storing, and erecting support system, panels and other system components to prevent bending, warping, twisting, and surface damage.

C. Comply with manufacturer's written instructions and recommendations. Stack materials in stable and secure manner, on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal panels so that they will not accumulate water. Do not store panels or other system components in contact with other materials that might cause staining, denting, or other surface damage.

1. Any materials found stored directly on ground or paving, in standing water, etc., will be rejected, immediately removed from site, and replaced with new materials at the Contractor's expense.
2. Distribute materials around the facility's structures, slabs, framing and roofs in such manner as to prevent any damage to structure, construction, improvements, etc.

D. Deliver accessories, such as reglets, inserts, etc., which are to be installed by other trades and/or in conjunction with the work of other trades, far enough in advance so as not to delay the Work on the project.

E. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

1.8 WARRANTY:

A. Special Project Warranty: The manufacturer and installer shall jointly and severably, in writing, warrant that the awning / canopy system shall remain intact (without perceptible deformation), deteriorations of metals, metal finishes and other materials beyond normal weathering of applied finishes, and completely leak free for a period of **5-years** from the date of acceptance of the project (this warranty need not cover damage from winds exceeding the velocities and/or loading required by the applicable Building Code(s) as generated by a design velocity based on the 100-year probability wind speed).

1. Repairs that become necessary, due to in part and for example, manufacturing defects, installation, leaks, wind damage or temperature stress, deterioration of finishes, etc., while awning / canopy system is under warranty, shall be performed by the installer or manufacturer within 7-days of notification. Should for any reason, the installer not be able to perform the repairs, it shall be incumbent upon the manufacturer to do so. If repairs are not begun on time, Owner shall have

work done by others and costs will be charged to the Contractor, with no detrimental effect or cancellation of the warranty.

B. This warranty shall be in addition to, shall be in effect simultaneously with, and shall not alter other required project or product warranties or guarantees, and shall not limit other remedies available to the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Product/Manufacturer: Subject to compliance with requirements, provide prefinished, extruded aluminum, water-tight awning and canopy systems, with supports, corrugated profile deck / soffit, drainage, and all related components equivalent to standard system(s), **increased as required for project site wind loads**, equivalent to system, as manufactured by :

B. Mapes Industries, Inc.; "Super Lumideck" ; mapescanopies.com

C. Tennessee Valley Metals, Inc. TVM - Custom Designed Overhead Supported Canopies ; https://tvmetals.com (basis-of design)

D. Mitchell Metals; Entrance and Overhead Support Canopies ; https://mitchellmetals.net

E. or by other pre-approved equivalent manufacturer as judged solely by the Architect - properly submitted at least ten (10) days prior to bid date in accordance with requirements of Division 1, and subsequently accepted in writing or by addendum by Architect.

2.2 MATERIALS:

A. Aluminum Extrusions (minimum): Alloy and temper recommended by manufacturer for use intended and as required for proper application of finish indicated but not less than the strength and durability properties specified in ASTM B 221 for 6063-T6.

1. Decking, beams, posts and fascia shall be extruded aluminum, alloy 6063-T6 in profile and thickness shown in current Mapes brochures for applications indicated on the Drawings, and in greater thickness where indicated or otherwise required by the manufacturer's responsible design Engineer, by applicable codes, and/or project conditions;
2. Hanger rods and fittings shall be structural grade extruded aluminum alloy finished to match canopy, or smooth, mill-finish stainless steel.

B. Aluminum Sheet (minimum): Alloy and temper recommended by manufacturer for use intended and as required for proper application of finish indicated but with not less than the strength and durability properties specified in ASTM B 209 for 5005-H15.

C. Fasteners: All fasteners in the plane of the roof deck, wall panels and fascia/gutter shall be concealed wherever possible. No exposed fasteners which would penetrate the

panels, flashings, etc., will be permitted. Penetrating type fasteners will be allowed only in the vertical plane (i.e. fastening of flashings, battens, trim, etc., and then only if neoprene washers are used externally). Materials used in all fasteners shall be non-magnetic (stainless steel). All exposed fasteners shall match adjacent material, finish and/or color. Length and diameter of screws shall be sufficient to meet design criteria.

D. Closures: Precut closures as standard with walkway canopy manufacturer, fabricated from same metal as that receiving closure(s), or from gray cross-linked closed-cell polyethylene composition foam, to the exact profile of the members with which it is to function.

E. Sealants: Non-skinning, non-hardening, non-oxidizing butyl sealant, designed for metal-to-metal concealed joints. Field applied adhesive tape sealants shall be extruded polymeric butyl tape, non-skinning. Use no exposed sealants. Comply with minimum installation requirements of sealant manufacturer and Section 07900 - "Joint Sealers."

F. Bituminous Coating: Cold-Applied asphalt mastic, SSPC-12, compounded for 15-mil dry film thickness per coat, and approved for the intended use by both the mastic and roofing manufacturers.

G. Non-Metallic Shrinkage-Resistant Grout:

1. Pre-mixed, non-metallic, non-corrosive, non-staining product containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water reducing agents, complying with CRD-621.
2. Products offered by manufacturer to comply with requirements for non-metallic, non-shrink grout include the following:

    a. Euco N.S.; Euclid Chemical Company
    b. Crystex; L & M Construction Chemicals.
    c. Masterflow 713; Master Builders.
    d. Five Star Grout; U.S. Grout Corp.
    e. Upcon; Upco Chemical Division, USM Corp.
    f. Propak; Protex Industries, Inc.

2.3 METAL FINISHES:

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.

C. High Performance Organic Coating: AA-C12C42R1x (Chemical Finish: Cleaned with

inhibited chemicals; Chemical Finish: Chemical conversion coating, acid chromate-fluoride-phosphate pretreatment; Organic Coating: As specified below). Prepare, pretreat, and apply coating to exposed metal surfaces, to comply with coating and resin manufacturer's instructions.

1. Fluorocarbon **3-Coat** Coating System: Manufacturer's standard **3-coat** thermo-cured system, with metallic finish, composed of specially formulated inhibitive primer, fluorocarbon color coat and clear top coat, with both color coat and clear top coat containing not less than 70 percent polyvinylidene fluoride resin by weight; Comply with AAMA 2605.2.
2. Colors: As selected by Architect after Bid Date, from manufacturer's "standard" non-metallic colors; Minimum 15 colors to select from, to include in part, color(s) to match window/storefront framing and/or metal roofing and trim.

2.4 FABRICATION:

A. General: Fabricate and finish panels, extrusions and accessories at the factory, by manufacturer's standard procedures and processes, as required to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and dimensional requirements and with structural requirements.

B. Drainage: Unless specifically indicated otherwise, all drainage shall drain internally from the deck to the fascia/gutter to a downspout located against the exterior wall spouting out at ground level away from pedestrian traffic. Minimum downspout size shall be 2-inches x 2-inches, minimum of two per awning located at back corners. Provide a minimum of two wall brackets per downspout located 1-foot from bottom and top of downspouts.

C. Flashings and Trim: Same metal and finish as roof deck unless specifically indicated otherwise, and unless other metal thickness not less than 0.040-inch is permitted by walkway canopy manufacturer.

D. Apply bituminous coating or other permanent separation materials on concealed panel surfaces where panels would otherwise be in direct contact with substrate materials that are noncompatible or could result in corrosion or deterioration of either material or finishes.

PART 3 - EXECUTION

3.1 GENERAL:

A. Installer shall examine all substrates and verify that they are acceptable, which will be acknowledged and accepted by their beginning work. Installer shall verify that all expansion joints, blocking, etc., are securely anchored into place, and that substrate is clean and free of all debris or other substance detrimental to the aluminum awnings /

canopy system work.

1. Notify the Contractor in writing of conditions requiring corrections, for proper completion of the Work. Do not proceed until unsatisfactory conditions have been satisfactorily completed.

3.2 PANEL SUPPORTS AND ANCHORAGE:

A. All panels, fascia/gutter, and other secondary structural panel support members and anchorage shall be installed in strict accordance with manufacturer's current written instructions and recommendations, and their Structural Engineer's reviewed Shop Drawings.

3.3 INSTALLATION:

A. General: Comply with manufacturer's current written instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal and structural movement.

1. Field cutting of panels and any other component by torch is not permitted.

B. Accessories: Install all components required for a complete aluminum awning / canopy, roof and vertical panel system, including in part, trim, copings, fascia/gutters, soffits, stops, mullions, corner units, closures, clips, seam covers, battens, flashings, sealants, gaskets, fillers, closure strips, and similar items.

1. Install water-tight flashing and counterflashings matching awning / canopy framing and finishes at all locations where awning / canopy system abuts buildings and other terminations at permanent construction.

C. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of walkway canopy panel systems and accessories. Provide types of gaskets, sealants, and fillers indicated or, if not otherwise indicated, types recommended by walkway canopy manufacturer.

1. Flash and seal panels to exclude weather.
2. Counter flash over otherwise exposed flashings with metal and finish to match adjacent metal.
3. Refer to other sections of these specifications for product and installation requirements applicable to indicated joint sealers.

D. Fastening and Anchoring: At E.I.F.S. and brick veneer siding locations, provide fasteners and anchorages that attach through the siding directly to framing members or blocking. Size penetrating connectors in a manner that allows no deflection of connectors under changing wind conditions. Provide spacers and washers as required to eliminate all

stressing of siding materials when fastened or anchored. Provide escutcheons for exposed wall penetrations. Install backer rod and sealant around each penetrating anchor. Coordinate blocking requirements for fastening and anchorage with framing contractor.

E. Installation Tolerances: Shim and align panel units within installed tolerance of 1/4-inch in 20'-0" on level/plumb/slope and location/line as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.4 CLEANING AND PROTECTION:

A. Damaged Units: Replace panels and other components of the work that have been damaged or have deteriorated beyond successful repair by means of finish touch-up or similar minor repair procedures, as determined solely by the Architect.

B. Cleaning: Remove temporary protective coverings and strippable films as soon as each panel is installed. Upon completion of panel installation, clean finished surfaces as recommended in writing by walkway canopy system manufacturer, and maintain in a clean condition during construction.

END OF ALUMINUM AWNINGS

SECTION 282300

IP BASED DIGITAL SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Comply with all requirements of Division 28 Section, Electronic Safety & Security.

1.2 SUMMARY

A. Section includes a video surveillance system consisting of cameras, digital video recorder, data transmission wiring, and a control station with its associated equipment. The Owner's security and access control systems network is existing to remain. All new access controls and security devices shall be 100% compatible with the Owner's existing security network.

1.3 DEFINITIONS

A. B/W: Black and white.

B. FTP: File transfer protocol.

C. IP: Internet protocol.

D. LAN: Local area network.

E. MPEG: Moving picture experts group.

F. NTSC: National Television System Committee.

G. PC: Personal computer.

H. RAID: Redundant array of independent disks.

I. TCP: Transmission control protocol - connects hosts on the Internet.

J. UPS: Uninterruptible power supply.

K. WAN: Wide area network.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, specifications and installation instructions for each type of device provided.

B. Shop Drawings: For video surveillance. Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Functional Block Diagram: Show single-line interconnections between components for signal transmission and control. Show cable types and sizes.
3. Dimensioned plan and elevations of equipment racks, control panels, and consoles. Show access and workspace requirements.
4. UPS: Sizing calculations.
5. Wiring Diagrams: For power, signal, and control wiring.

C. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation. Add pretesting record of each piece of equipment, listing name of person testing, date of test, set points of adjustments, name and description of the view of preset positions, description of alarms, and description of unit output responses to an alarm.

D. Field quality-control reports.

E. Warranty: Sample of special warranty.

1.5 O & M DATA SUBMITTALS

A. Operation and Maintenance Data: For cameras, power supplies, infrared illuminators, monitors, videotape recorders, digital video recorders, video switches, and control-station components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

1. Lists of spare parts and replacement components recommended to be stored at the site for ready access.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:

1. The Contractor and his/her subcontractors shall be an experienced firm regularly engaged in the layout and installation of security and surveillance systems of similar size and complexity as required for this installation. The Contractor shall have noted experience with such systems and be an authorized system dealer of the type being provided at time of bid and installation. The Contractor shall have successfully completed the layout, installation, testing and warranty of not less than five systems similar of the scope of this project for a minimum period of three years prior to the bid date, and shall have been regularly engaged in the business of Security Systems contracting continuously since. The Contractor shall have an existing permanent office located within 125 miles of the job site from which installation and warranty service operations will be performed.
2. The Contractor shall assign a project manager to oversee the installation of the requirements for this project. The project manager shall be thoroughly experienced in the installation and configuration of the Security and Surveillance equipment furnished for the project. The project manager shall attend all construction meetings, system commissioning, and all close-out and training meetings.
3. The project manager shall periodically visit the site and inspect the work in progress. Project manager site visits shall be made not less than once per month when the job is in active progress. The project manager shall prepare a field report for each site visit for submission to the Engineer.
4. The project manager shall sign off on all system test results.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NECA 1.

D. Comply with NFPA 70.

1.7 PROJECT CONDITIONS

A. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Control Station: Rated for continuous operation in ambient temperatures of 60 to 85 deg F and a relative humidity of 20 to 80 percent, noncondensing.
2. Interior, Controlled Environment: System components, except central-station control unit, installed in air-conditioned interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F dry bulb and 20 to 90 percent relative humidity, noncondensing. Use NEMA 250, Type 1 enclosures.
3. Interior, Uncontrolled Environment: System components installed in non-air-conditioned interior environments shall be rated for continuous operation in ambient temperatures of 0 to 122 deg F dry bulb and 20 to 90 percent relative humidity, noncondensing. Use NEMA 250, Type 3R enclosures.
4. Exterior Environment: System components installed in locations exposed to weather shall be rated for continuous operation in ambient temperatures of minus 30 to plus 122 deg F dry bulb and 20 to 90 percent relative humidity, condensing. Rate for continuous operation when exposed to rain as specified in NEMA 250, winds up to 85 mph (137 km/h) and snow cover up to 24 inches (610 mm) thick. Use NEMA 250, Type 3R enclosures.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of cameras, equipment related to camera operation, and control-station equipment that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Three years from date of Substantial Completion.

1.9 TOTAL SYSTEM RESPONSIBILITY

A. Any additional equipment and accessories required for the installation and operation of a complete and functional system shall be provided and the cost borne by the Contractor.

B. The Contractor shall have total system responsibility to assure a "turnkey" operational system including any necessary interfaces, power supplies, cabling, control interfaces, etc.

C. The Contractor shall remain the owner of all equipment provided under this contract and is responsible for all risk of loss or damage to the equipment from any source up to and including

D. . Provide component equipment that minimizes both preventive and corrective maintenance. Provide components from a single manufacturer or justify mixing manufacturer components and demonstrate compatibility in submittal information.

1.10 CAMERAS

A. Provide cameras of digital fixed, or panoramic type as identified on the drawings.

B. Day-Night Color B&W fixed, or panoramic cameras are to be used in all outdoor environments. Standard fixed, or panoramic cameras are to be used for all indoor applications except when backlighting issues are observed. Use Day-Night cameras or standard cameras with backlighting compensation for backlighting or high contrast applications.

C. Provide cameras that operate over a voltage range of 12 VDC Power over Ethernet (PoE) IEEE 802.3.

D. All cameras must be constructed to provide rigid support for electrical and optical systems so that unintentional changes in alignment or microphonic effects do not occur during operation, movement, or lens adjustments.

E. Video Frame Rate: 30 frames per second (fps)

F. Minimum essential requirements for cameras include the following:
   1. Sensitivity: Minimum Illumination: 00.08 foot-candles at F1.4 color mode 0.01 foot-candles at F1.4 in the B&W mode.
   2. Signal-To-Noise Ratio: Show a signal-to-noise ratio of not less than 50 decibels (dB) at Automatic Gain Control (AGC) "Off", weight "On."
   3. Resolution: Provide a minimum of 5 megapixel resolution. The imager must have a minimum of 2592 horizontal x 1944 picture in progressive scan format. Resolution is to be maintained over the specified input voltage and frequency range, and not vary from minimum specification over the specified operating temperature range.
   4. Synchronization: Provide cameras that have internal and line lock.

G. Low Light Level: Provide Day-Night cameras that have a B-W mode that may be automatically the date and time of final acceptance by the Owner. After the date of final acceptance, the Owner shall assume full ownership of the equipment.

PART 2 - PRODUCTS

2.1 SYSTEM REQUIREMENTS

1. Select system components that conform to the Open Network Video Interface Forum ONVIF specification. Provide compatible UL listed CCTV components to provide visual assessment of ESS alarms automatically upon alarm or upon SCC operator selection. Otherwise, the subsystem is to continuously display the coverage area. Display alphanumeric camera location ID on all monitors. Provide the number of alarm monitors as required. The scene from each camera must appear clear, crisp, and stable on the respective monitor during both daytime and nighttime operation engaged on low light level

and permit the use of an external infrared illuminator. Electronic removal of the color signal is not acceptable. The camera must have an infrared cut filter capable of being removed automatically upon low light threshold or manually.

2.2 Camera Lenses: Camera lenses are to be all glass with coated optics. Provide lens mount that is integrated with the cameras or compatible with the selected cameras. Provide lens with the camera that have a maximum f-stop opening of f/1.2 or the maximum available for the focal length specified. The lens is to have an auto-iris mechanism unless otherwise specified. Lenses having auto iris, manual iris, or zoom and focus functions are to be supplied with connectors, wiring, receiver and driver units, and controls as needed to operate the lens functions. Provide lenses with sufficient circle of illumination to cover the image sensor evenly. Lenses are not to be used on a camera with an image format larger than the lens is configured to cover. Provide lens with focal lengths as indicated or specified in the manufacturer's lens selection tables.

2.3 CAMERA HOUSING AND MOUNTS

A. The camera and lens are to be enclosed in a tamper resistant housing installed on a camera support. Any ancillary housing mounting hardware needed to install the housing at the camera location is to be provided as part of the housing. The camera support must be capable of supporting the mounted equipment and withstanding wind and ice loads normally encountered at the site.

B. Interior Dome Housing: The dome housing is to be capable of being mounted by pendant, pole, ceiling, surface, or corner as shown on the drawings. The lower dome is to be black opaque acrylic and have a light attenuation factor of not more than 1 f-stop. Provide housing with:

1. Wiring harnesses
2. Connectors
3. Heavy duty bearings
4. Permanent lubrication
5. Any other hardware and equipment as needed to provide a fully functional pan-tilt dome. Provide pan movement of 360 degrees and tilt movement of at least plus or minus 90 degrees. Pan speed must be at least 20 degrees per second and tilt speed be at least 10 degrees per second.

C. EXTERIOR DOME HOUSING:

1. Provide dome housing capable of being mounted by pendant, pole, ceiling, surface, or corner as shown on the drawings and constructed to be dust and watertight, and fully operational in 100 percent condensing humidity. Purge the housing of atmospheric air and pressurize with dry nitrogen. Provide a fill valve and overpressure valve with a pressure

indicator visible from the exterior. The housing is to be equipped with supplementary camera mounting blocks or supports as needed to position the specified camera and lens to maintain the proper optical centerline.

2. Provide all electrical and signal connections required for camera and lens operation. The housing is to provide the environment needed for camera operation. The lower dome is to be black opaque acrylic with a light attenuation factor of not more than 1 f-stop. Provide housing with:
   a. Wiring harnesses
   b. Connectors
   c. Heavy duty bearings
   d. Hardened steel gears
   e. Permanent lubrication
   f. Any other hardware and equipment as needed to provide a fully functional pan-tilt dome. Provide pan movement of 360 degrees and tilt movement of at least plus or minus 90 degrees. Pan speed must be at least 20 degrees per second and tilt speed be at least 10 degrees per second.

D. SYSTEM REQUIREMENTS

E. Surge Protection: Protect components from voltage surges originating external to equipment housing and entering through power, communication, signal, control, or sensing leads. Include surge protection for external wiring of each conductor's entry connection to components.

1. Minimum Protection for Power Connections 120 V and More: Auxiliary panel suppressors complying with requirements in Section 264313 "Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits."
2. Minimum Protection for Communication, Signal, Control, and Low-Voltage Power Connections: Comply with requirements in Section 264313 "Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits" as recommended by manufacturer for type of line being protected.

F. Tamper Protection: Tamper switches on enclosures, control units, pull boxes, junction boxes, cabinets, and other system components shall initiate a tamper-alarm signal when unit is opened or partially disassembled. Control-station, control-unit alarm display shall identify tamper alarms and indicate locations.

2.4 VIDEO ANALYTICS (VA)

A. Software: Provide capability range from basic activity detection to the search through databases to pre-empt serious incidents. The VA is to provide graphic identified movement identification,

user-selectable monitored areas, compensation for environmental movement, and other features specified when provided as a capability of the NVR. Provide the following features:

1. Basic Motion Detection:
    a. Adaptive Motion
    b. Abandoned Object
    c. Object Removal
    d. Camera Sabotage
    e. Directional Motion
    f. Object Counting
    g. Loitering Detection
    h. Stopped Vehicle
2. Embedded VA
3. Intelligent Video Analysis
    a. Provide camera capable of processing and analyzing video within the camera itself, with no extra hardware required.
    b. The camera is to be capable of detecting and sending alarms for abnormal events.
    c. The camera is to be configurable to analyze up to 10 different scenes for one or more of the following events:
        1) Line Crossing
        2) Loitering
        3) Idle Object
        4) Removed Object
        5) Conditional Change
        6) Trajectory Tracking
        7) Filters
    d. The camera is to allow users to set up to 10 separate profiles and switch profiles based on a day, night, or holiday schedules.
    e. The camera is to support scene tours that automatically reposition the camera to each scene for a specified duration.
    f. The camera is to incorporate an Alarm Rule Engine, enabling abnormal events that VA detects to prompt the camera to take one or more actions:
        1) Trigger a relay connected to an alarm siren, strobe, or both.
        2) Trigger a visual alert to be displayed on the operator's screen.
        3) Go to a specified scene (preset position).

2.5 COLOR VIDEO MONITORS

A. Provide monitors that:

1. Are rated for continuous operation and incorporate printed circuit board modular construction.
2. Have printed circuit modules that are easily replaceable.
3. Use solid-state devices for electronic circuits.
4. Are constructed to provide rigid support for electrical systems so that unintentional changes in alignment or microphonic effects will not occur during operation or movement.
5. Incorporate circuit safety margins of not less than 25 percent where possible, with respect to power dissipation ratings, voltage ratings, and current carrying capacity.
6. Have a diagonal viewing angle that nominally measures 42 inches for monitors, LED displays.
7. Provide adequate safeguards to protect personnel from exposure to line voltage during operation or adjustment.
8. Have at least the following essential requirements:
    a. Resolution for LED monitors to be 4k.
    b. Geometry: No point in the active raster is to deviate from its correct position by more than 2 percent of raster height.

B. Mounting and Identification
1. Mount monitors and other devices to facilitate easy replacement.
2. The printed circuit board functions and component numbers or markings are to be easily read.
3. Wall mount monitor in the security office.
4. Protect monitors from circuit overloads by fuse or fuses in the power source line. Mount power source line fuses in finger-operated extractor fuse posts. Fuse holders are to be located in a readily accessible position.

C. Video and Signal Input: Monitors are to operate with video input requiring a one HDMI nominal composite video signal switchable to either loop-through or internal 75-ohm terminating impedance. Signal input connectors must be HDMI type.

2.6 ANCILLARY EQUIPMENT

Equipment shall consist of the items specified below:

A. Video Date and Time Generator: The video time and date is to originate from either the camera, video, video recorder.

B. Camera Identifiers: Label video signal from each camera using alphanumeric identifiers. Camera alphanumeric identifiers may originate from either the camera or the video recorder.

C. Network Video Recorder (NVR)

1. Provide NVR with an integral software ESS-CCTV server function. Dedicated CCTV monitors and authorized computers networked to the NVR are to be capable of viewing recorded and live video from the network. The NVR is to be able to record and transmit video with up to 60 fps at maximum camera resolution. The NVR is to be rack mounted and be connected to the network infrastructure.
2. Provide NVR with the capability to de-warp live and recorded images.
3. The storage memory capacity of the NVR (including local recorders) is to be sufficient to store a minimum of 30 days of video at 30 fps, 2.1 megapixel resolution and be expandable for an increased capacity of 8 TB and be capable of including Redundant Array of Independent Disc (RAID) arrays 5.
4. The NVR must have the capacity to address and process up to 64 or dual-streaming cameras. The NVR must record all cameras onto a hard drive and allow remote network viewing via intranet browser. Hard drive capability must be sized to store all cameras recording 24 hours a day 7 days a week at 15 frames per second per camera for 4 weeks.
5. Video Recording Performance: The video recording performance is to be as follows:
    a. The NVR is to use modular hard disk media, with a digital format capacity of 250GB per module.
    b. Provide a 16-channel triplex video multiplexer capable of performing encoding, recording and multiscreen viewing modes simultaneously. Provide 24 channels of live, simultaneous video images in which all channels are refreshed at 30 frames per second.
    c. Provide a 10-100Base-T connection for record review and camera view and control that is compatible for a PC workstation equipped with latest Microsoft Windows Professional operating system software, Microsoft Internet Explorer version.
    d. PC workstation Viewing: Include direct access from the ESS PC workstations to each NVR via a Microsoft Internet Explorer Web Browser. All necessary descriptive bookmarks and shortcuts are to be prepared on each PC workstation to allow this direct access. All functions are to be accessible through HTML commands from a user's web browser interface. Pictures are to be available for attachment via a user-provided SMTP-based e-mail transport system and included capability for 16 users and 3 user access levels (admin, control and user).
    e. Include sampling at 720(H) by 480(V) and 320(H) by 240(V) (Pixel Memory) with 60 frames per second and 3-D scan conversion to enable jitter-free stabilized pictures in a single frame. Modes include:
        1) Emergency
        2) Event
        3) Schedule
        4) Manual Recording
    f. Each camera is to support individual Recording Rate and Image Quality settings for each mode (Emergency, Event, Schedule and Manual Recording). This array of Camera

Recording Rate and Image Quality settings by the Recording Modes is to form one of four Program Actions. The Program Action is to be assignable to a Time Table to form one of 16 Independent Recording Profiles. Allow each Recording Profile to be manually activated, activated via RS-232C interface, automatically activated by Time Table, or activated by separate alarm or emergency inputs.

g. Digital display on the monitor and also recording of the following information to included:
   1) Year
   2) Month
   3) Day
   4) Hour
   5) Minute
   6) Second
   7) Alphanumeric camera location ID up to 8 characters. The NVR is to feature video loss detection on all channels.

h. Pre-event recording: Buffer at least 20 seconds of pre-event pictures simultaneously for all individual camera channels.

i. Motion-based Recording: Advanced integrated VMD is to be used to detect a specific area, direction and motion duration for each camera channel, independently and simultaneously. Motion Search may be executed for a single camera channel for a selected area on the image.

j. Disk Partitioning: Provide within the NVR an automated disk management and a RTOS (real-time operating system) platform to include a minimum of 4.8 TB of digital video storage on a single partition.

k. The video recording system is to provide a choice of Physical Partitioning as RAID 5 or Disk Mirroring redundant array recording. Allow the operator to be able to partition the available recording areas in a Virtual Partition by Regular, Event, and Copy Partitions. Manually and Scheduled recorded video information is to be assigned to a Regular Recording Partition, which may be overwritten. Event and Emergency Recording Data is to be assignable to an Event Partition, where image overwriting is be prohibited. Any copied data is to be able to be assigned to the Copy Partition, which may be overwritten or saved as required.

l. Playback: Permit direct camera selection for recording playback of any of 24 video sources at the same time as multiscreen viewing and multiplexed camera encoding (triplex multiplexer capability).

m. Multiplexer Functions: Include an integral, programmable switcher with programmable dwell time and camera order that automatically switches multiple camera images to enable 16 multiscreen monitoring modes.

n. Outputs

1) Provide via RCA phone jacks four channels of audio connection, including audio loop through.
2) Provide via High Speed (480 Mbps) serial interface one External Storage connection.
3) Provide two independent Video Outputs assignable to Multiscreen .
4) Provide one Cascade output for connecting 3 additional digital video recorders for centralized control using a single video monitor.
5) Provide virtual camera number programming capability to support 64 camera channels on a single system.

o. All camera selection buttons are to have Tri-State Indication, corresponding to Recording, Viewing and Control functions on actual NVR hardware. PC emulation is not an acceptable alternative. Furnish the following indicators:
1) Alarm
2) Alarm Suspend
3) Operate
4) HDD1, Hard drive identifier
5) Timer and Error indicators
6) Camera Selection
7) Iris
8) Preset
9) Camera Automatic Mode
10) Pan-Tilt
11) Set
12) Jog Dial
13) Shuttle Dial
14) Setup-Esc
15) Record
16) Search
17) Play-Pause
18) Pan-Tilt Slow
19) Stop
20) Pan-Tilt Go to Last
21) Zoom-Focus
22) A-B
23) Repeat
24) Shift
25) Alarm Reset Buttons

p. Networking: All NVR recording, review, playback, camera control and setup are to be available via the internally mounted Network Interface. A 10-100Base-T connection for record review and camera view and control will be required on a personal

computer equipped with Internet Browser Software and an Ethernet 100Base-T connection. Permit direct camera selection for recording playback of any of 24 video sources at the same time as multiscreen viewing and multiplexed camera encoding (triplex multiplexer mode). Support a minimum of 8 simultaneous clients viewing and 2 simultaneous FTP sessions.

q. Power: The video recording equipment must have a power source of 120 VAC at 60 Hz.

D. NETWORK SWITCH:

Provide a network switch for CCTV system with 24 or 48 SFP Ethernet ports as indicated on the drawings. Allow dynamic port base security and rapid spanning tree protocol with VLAN assignments for specific users regardless of where the switch is connected. The switch will use AC input voltage nominal of 120 VAC at 60 Hz. The switch is to be less than 2 Rack Units (RU) and Layer 3 capable. The switch is to have the capability of commanding a self-healing ring configuration. 1000Base-LX SFP Fast Ethernet Interface Converter is to be a hot swappable device that plugs into a Gigabit fiber SFP uplink port on the switch. The switch is to be a fully managed power over Ethernet (PoE) to all ports. Provide switch capable of using a Layer 3 (routed) port to connect to a LAN gateway port for Internet and web base access. The Mean Time Between Failure (MTBF) must be greater than 210,000 hours.

E. CAMERA CONTROL:

Provide access to camera functions and control for all cameras via the multiplexer for all camera control, set-up and alarm functions, including preset sequence, digital motion detector mask set, and back light compensation set-up. Controllable camera functions are to be accessible via front panel controls or the optional system controller. These functions are to include:

1. Direct access of preset position
2. Zoom (near/far)
3. Focus (near/far)
4. Iris (open/close)
5. Pan (left/right)

F. Rack Mount CCTV Maintenance Laptop: Provide a CCTV Maintenance Laptop and 19" rack-mount draw-out shelf where indicated on the plans. The laptop shall be BAA/TAA compliant and shall be provided with a copy of the CCTV system video management software. The laptop shall have the following minimum requirements:

1. 1.8GHz Processor, 2MB Cache
2. 64-bit Windows Operating System
3. Graphics card as required to support the video management software.
4. 4GB memory, expandable to 16MB
5. 128GB Solid State Hard Drive

6. 15.6" HD, Anti-Glare, LED-Backlit, Non-touch display
7. 42Whr battery

2.7 SECURITY COMMAND CENTER

A. The SCC shall integrate all subsystems and communications, and provide operator control interface to the ESS system. The components are as follows:
   1. ESS Software
   2. Monitoring Display Software
   3. Graphical Map Software
   4. Printers
   5. Controls and Display Integration
   6. Enrollment Center Equipment

B. ESS SOFTWARE:
   1. Provide commercial off-the-shelf ESS software that utilizes a single database for the subsystem integrations provided under a single operating environment. The system is to archive all events in a database stored either on a local hard drive or a networked database server. The software has to support configuration and simultaneous monitoring of all subsystems.
   2. Allow the networked PC workstation configurations connected via a TCP/IP network. Administrative tasks including configuration, monitoring, schedules, report generation and graphic display are provided from any PC workstation on the network. All system programming data must be instantly accessible to every PC Workstation connected to the network. The system is to utilize a non-proprietary SQL-based, ODBC-compliant database, managed by Sybase Adaptive Server Anywhere, Microsoft SQL Server, or Oracle.
   3. Utilize a preemptive multi-tasking operating system, such as the latest Microsoft Windows Professional environment, that is multitasking, with many processes running at the same time without interference with each other and with higher priority tasks taking precedence over lower priority tasks.
   4. Provide capabilities to define visual exclusion areas.
   5. Alarm Call Up: Support responses to alarms entering the system with each alarm capable of initiating one or more of the following actions. Provide mode of system operation that requires an operator to acknowledge any alarm. While alarm is still active, the alarm cannot be cleared.
      a. Sending alarm commands to a CCTV system interface
      b. Triggering NVR event recording
      c. Activating output devices
      d. Playing PC audio files
      e. Controlling doors

f. Display graphical maps associated with the alarm device

6. PROGRAMMING:

Provide the capability of, but not limited to, the following programming and functionality:

a. Daylight Savings Time Adjustment: The ACU(s) and PCU(s) must not need to be connected to the ESS in order for the adjustment to occur.
b. Operator Privileges: Support an unlimited number of system operators, each with a unique login and password combination. Operators are to be assigned privileges based on the loops, commands, or programming features that are available to each individual operator.
c. Alarm Priorities: Provide the ability for each alarm device to be user configured to belong to one of 10,000 priority levels which are assigned to an alarm based on alarm importance. These priorities are to define which alarm events to display on individually specified ESS workstations.
d. Reports: Include integrated reporting capabilities as well as the ability to run Crystal Report templates.
e. User Interface: The ESS programming is to be menu-driven, with "wizards" to assist with software configuration, and include 'Help' information.
f. Messages: Permit the use of user-selected colors for event messages.
g. Graphics: Provide the capability to display a floor-plan graphic for card activity and alarm events as part of the ESS integration.
h. Device Status: Provide the capability to display the dynamic status of a user-selected list of devices, including doors, inputs, and outputs.
i. Diagnostics: Include diagnostic software tools that interface and query the hardware for information and to issue commands.
j. Mandatory Data Fields: Require any cardholder data field to be selected by the user as mandatory.
k. User Defined Data Fields: Provide 20 unassigned data fields for storing user-defined data that support user-defined labels, and are user-configurable as plain text fields or drop-down selection lists.
l. Archive Database: Include a connection to an archive database which stores purged events and deleted programming and which can be accessed for reporting.
m. Programmable Database Backup: Include the capability of performing user-scheduled database backups without the use of third-party backup software.
n. Programmable Database Purging: Include the capability of performing user-scheduled database purging, moving selected events to an archive database when the events have aged a user-specified number of days.
o. Database Importing: Include the capacity to import user data from an ODBC data source (Access, Excel, text).

p. Data Exporting: Include the capacity to export data from any table in the database to either a text file in any user-selected order.

q. Event Log Output: Include the capacity to send a continuous stream of user-selected types of event messages to a text file, serial port, or TCP/IP address.

r. Data Audit Trail: Record changes to programming, recording the date and time stamp of the change, the name of the operator making the change, and the nature of the change. This data audit is to be available in history for reporting.

C. ESS Monitor Display Software: ESS Monitor display software is to provide for text and graphic map displays that include zone and device status integrated into the display. Different colors are to be used for the various components and real time data. Colors must be uniform on all displays. Follow the color coding as follows.

1. FLASHING RED to alert an operator that a zone has gone into an alarm or that primary power has failed.
2. RED to alert an operator that a zone is in alarm and that the alarm has been acknowledged.
3. YELLOW to advise an operator that a zone is in access.
4. GREEN to indicate that a zone is secure or that power is on.

D. GRAPHICAL MAP SOFTWARE:

1. ESS graphical map software is to show the graphic and visual data of all subsystem devices. Use a 42 inches, LED flat screen display with messages displayed in the English language. Provide graphical maps showing a layout of all the protected facilities. Highlight zones corresponding to those monitored by the ESS on the graphical maps. Display status of each zone using graphical icons as required within each designated zone.
2. Provide capability for graphical maps to be linked together using a layered tree structure. For example, a top-level map might be a top view of the site and its buildings, the next level the individual buildings floor, followed by a map of the area on a floor containing the device in alarm. Allow for 3 layers of maps to be defined for any given ESS device. To speed an incident location, each map level contains a clearly visible indicator as to which sub map the operator should select next to find the device that is in alarm.
3. The ESS may also be configured to display a map automatically on a new alarm presentation, providing the operator with prompt visual indication that an alarm has occurred.
4. The status of access control readers, doors, auxiliary monitor points, and auxiliary outputs is to be able to be requested from any map by simply selecting the icon representing the device and its current state will be displayed. CCTV camera control, digital video review, alarm panel transactions and intercom requests are to be available for inclusion on the map with the associated management module installed.
5. Allow for SCC operators to change a current setting by pressing the right mouse button anywhere on the screen or on a specific system device icon. Pressing the right mouse button is to cause the appropriate command options list to appear for selection.

Confirmation is provided by reflecting the change in status on the display after a command is selected.

6. The display of intrusion or auxiliary door alarms may be automatically enabled or disabled by the use of timed commands, either by device or by a group of devices. This may be used, for example, to disable all door alarms on internal doors, during normal office hours.
7. Create maps using standard office tools allowing drawings to be imported in Jpeg, Bitmap, Windows metafile, PDF or DXF file formats to provide maximum flexibility.

E. PRINTERS:

1. Report Printer: Provide a laser text printer to generate reports that is a USB interface dry-type laser process printer. Provide a printer with the capability of holding a minimum of 500 pages. The unit must print a minimum of 30 pages per minute at 600 dpi resolution.
2. Alarm Printer: Provide an alarm printer interconnected to the SCC equipment with a minimum print rate of 30 characters per second to produce hard copy of system events. Printer meet requirements per paragraph REPORT PRINTER.
3. Badge Printer: Provide a dye-sublimation or resin thermal transfer type image printer for Badge Identification credentials that is capable of printing two sides, edge to edge, directly onto a white-unfinished 0.030 PVC, PVH or PVCH card at a rate of approximately 80 seconds per card.

F. Control and Display Integration: Integrate human engineer SCC controls so the entire SCC can be operated by a single or multiple operator(s). Integrate switching and monitoring components of the assessment subsystem with the SCC so that SCC operator(s) can effectively monitor, assess alarms and control the ESS. Method of system integration must be as a single console. Provide chassis, and modules required for console SCC configuration.

G. Enrollment Center Equipment: Provide enrollment stations to enroll personnel into, and disenroll personnel from, the system database. The enrollment equipment is to only be accessible to authorized entry control enrollment personnel. Provide credential cards for all personnel to be enrolled at the site plus an extra 25 percent for future use. The enrollment equipment is to include subsystem configuration controls and electronic diagnostic aids for subsystem setup and troubleshooting with the SCC. Provide a printer for the enrollment station which meets the requirements of paragraph "Report Printer".

1. Enrollment Center I.D. Production: Equip the enrollment center with a die-sublimation printer capable of printing directly to the access control or I.D. credential. Provide printer toner kits and other printing supplies to complete the initial enrollment by 200 percent.
2. Enrollment Center Software:
   a. Provide database management functions for the system, and allow an operator to change and modify the data entered in the system as needed. The enrollment station is not to have any alarm response or acknowledgment functions as a programmable

system function. Multiple, password-protected access levels are to be provided at the enrollment station. Database management and modification functions are to require a higher operator access level than personnel enrollment functions. Provide a means for disabling the enrollment station when it is unattended to prevent unauthorized use.

b. Provide a method to enter personnel identifying information into the entry control database files through enrollment stations to include a credential unit in use at the installation. In the case of personnel identity verification subsystems, this data is to include biometric data. Allow entry of this data into the system database files through the use of simple menu selections and data fields. The data field names is to be customized to suit user and site needs. All personnel identity verification subsystems selected for use with the system are to fully support the enrollment function and be compatible with the entry control database files.

2.8 BACKUP POWER

The system is to automatically switch back to the primary source upon primary power restoration. Detect and report failure of an on-line battery as a fault condition. Power products must be in accordance with Section 260530 "Basic Electrical Materials and Methods." Provide backup power to the primary power by backup batteries in each element or subsystem.

A. Batteries: Provide backup by dedicated batteries in remotely located system elements including individual sensors or control units. Batteries are to be an integral part of dispersed system elements when radio frequency (RF) operation is required. Batteries are to be capable of operation in any position and be protected against venting caustic chemicals or fumes within an equipment cabinet. Provide batteries capable of continuous operation for up to 8 hours without recharge or replacement.

2.9 SURGE SUPPRESSION DEVICES

A. Comply with requirements in Section 271300 "Backbone Cabling System."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine pathway elements intended for cables. Check raceways and other elements for compliance with space allocations, installation tolerance, hazards to camera installation, and other conditions affecting installation.

B. Examine roughing-in for LAN, WAN, and IP network before device installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 WIRING

A. Comply with requirements in Section 260530 "Basic Electrical Materials and Methods."

B. Wiring Method: Install cables in raceways unless otherwise indicated.

1. Except raceways are not required in accessible indoor ceiling spaces and attics.
2. Except raceways are not required in hollow gypsum board partitions.
3. Conceal raceways and wiring except in unfinished spaces.

C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

D. Splices, Taps, and Terminations: For power and control wiring, use numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

E. For LAN connection and fiber-optic and copper communication wiring, comply with Section 271300 "Communications Backbone Cabling" and Section 271500 "Communications Horizontal Cabling."

F. Grounding: Provide independent-signal circuit grounding recommended in writing by manufacturer.

3.3 VIDEO SURVEILLANCE SYSTEM INSTALLATION

A. Install cameras and infrared illuminators level and plumb.

B. Install cameras with 84-inch-minimum clear space below cameras and their mountings. Change type of mounting to achieve required clearance.

C. Set pan unit and pan-and-tilt unit stops to suit final camera position and to obtain the field of view required for camera. Connect all controls and alarms, and adjust.

D. Install power supplies and other auxiliary components at control stations unless otherwise indicated.

E. Install tamper switches on components indicated to receive tamper switches, arranged to detect unauthorized entry into system-component enclosures and mounted in self-protected, inconspicuous positions.

F. Identify system components, wiring, cabling, and terminals according to Section 260533 "Electrical Identification."

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

D. Tests and Inspections:

1. Inspection: Verify that units and controls are properly installed, connected, and labeled, and that interconnecting wires and terminals are identified.
2. Pretesting: Align and adjust system and pretest components, wiring, and functions to verify that they comply with specified requirements. Conduct tests at varying lighting levels, including day and night scenes as applicable. Prepare video-surveillance equipment for acceptance and operational testing as follows:

    a. Prepare equipment list described in "Informational Submittals" Article.
    b. Verify operation of auto-iris lenses.
    c. Set back-focus of fixed focal length lenses. At focus set to infinity, simulate nighttime lighting conditions by using a dark glass filter of a density that produces a clear image. Adjust until image is in focus with and without the filter.
    d. Set back-focus of zoom lenses. At focus set to infinity, simulate nighttime lighting conditions by using a dark glass filter of a density that produces a clear image. Additionally, set zoom to full wide angle and aim camera at an object 50 to 75 feet (17 to 23 m) away. Adjust until image is in focus from full wide angle to full telephoto, with the filter in place.
    e. Set and name all preset positions; consult Owner's personnel.
    f. Set sensitivity of motion detection.
    g. Connect and verify responses to alarms.

h. Verify operation of control-station equipment.

3. Test Schedule: Schedule tests after pretesting has been successfully completed and system has been in normal functional operation for at least 14 days. Provide a minimum of 10 days' notice of test schedule.
4. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation. Test equipment for proper operation in all functional modes.

E. Video surveillance system will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

3.5 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose. Tasks shall include, but are not limited to, the following:

1. Check cable connections.
2. Check proper operation of cameras and lenses. Verify operation of auto-iris lenses and adjust back-focus as needed.
3. Adjust all preset positions; consult Owner's personnel.
4. Recommend changes to cameras, lenses, and associated equipment to improve Owner's use of video surveillance system.
5. Provide a written report of adjustments and recommendations.

3.6 CLEANING

A. Clean installed items using methods and materials recommended in writing by manufacturer.

B. Clean video-surveillance-system components, including camera-housing windows, lenses, and monitor screens.

3.7 DEMONSTRATION

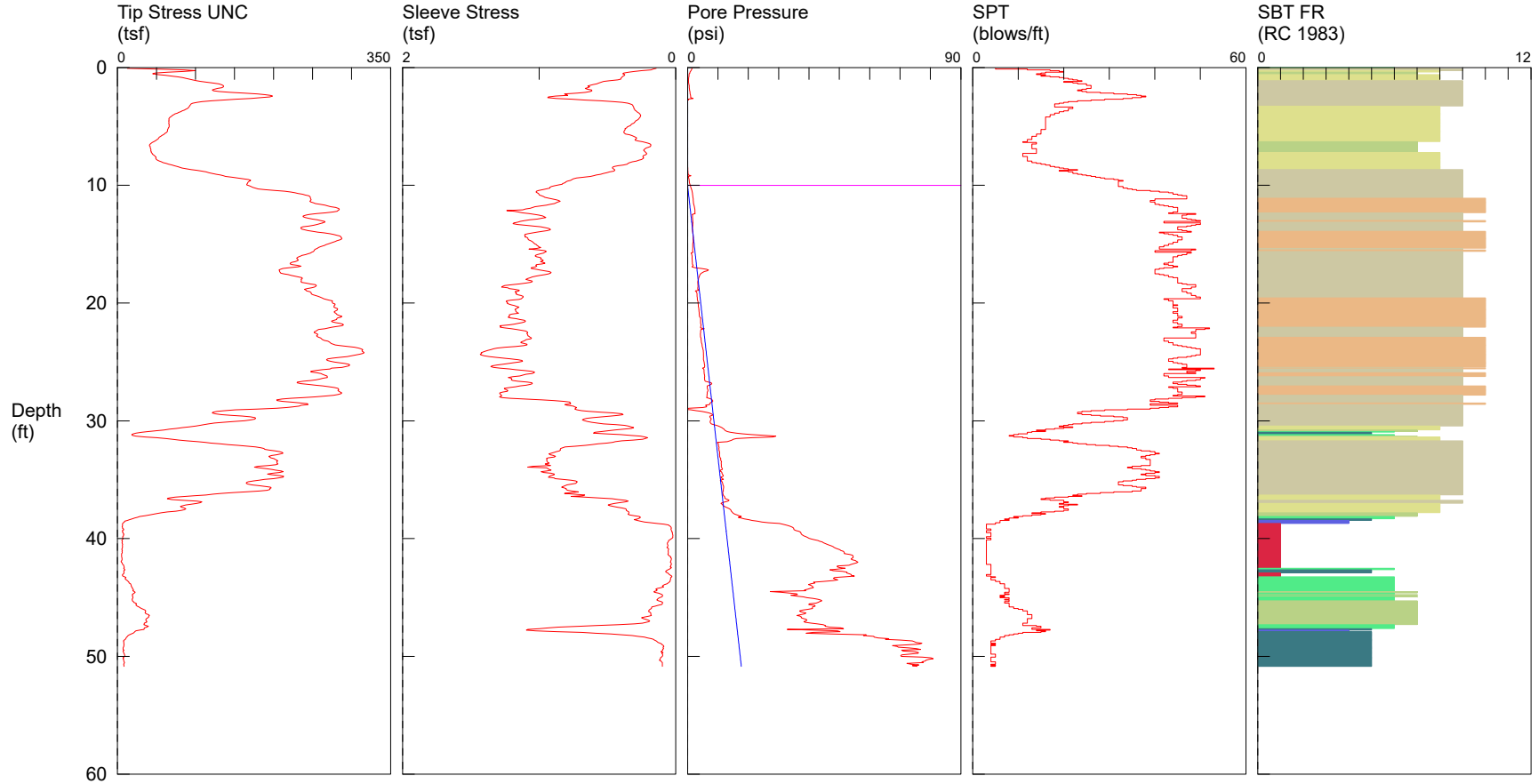
A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain video-surveillance equipment.

END OF SECTION

B-1

CPT Testing Done For: GMC
Proposed: Dauphin Island Sea Lab Dorms
CUSTOMER: GMC
LOCATION: Dauphin Island, AL
HOLE NUMBER: B-1

TEST DATE: 8/1/2024
OPERATOR: Bryant Volovecky
GPS (LAT,LON,ALT): 3014.8910N,08804.6360W,5.6



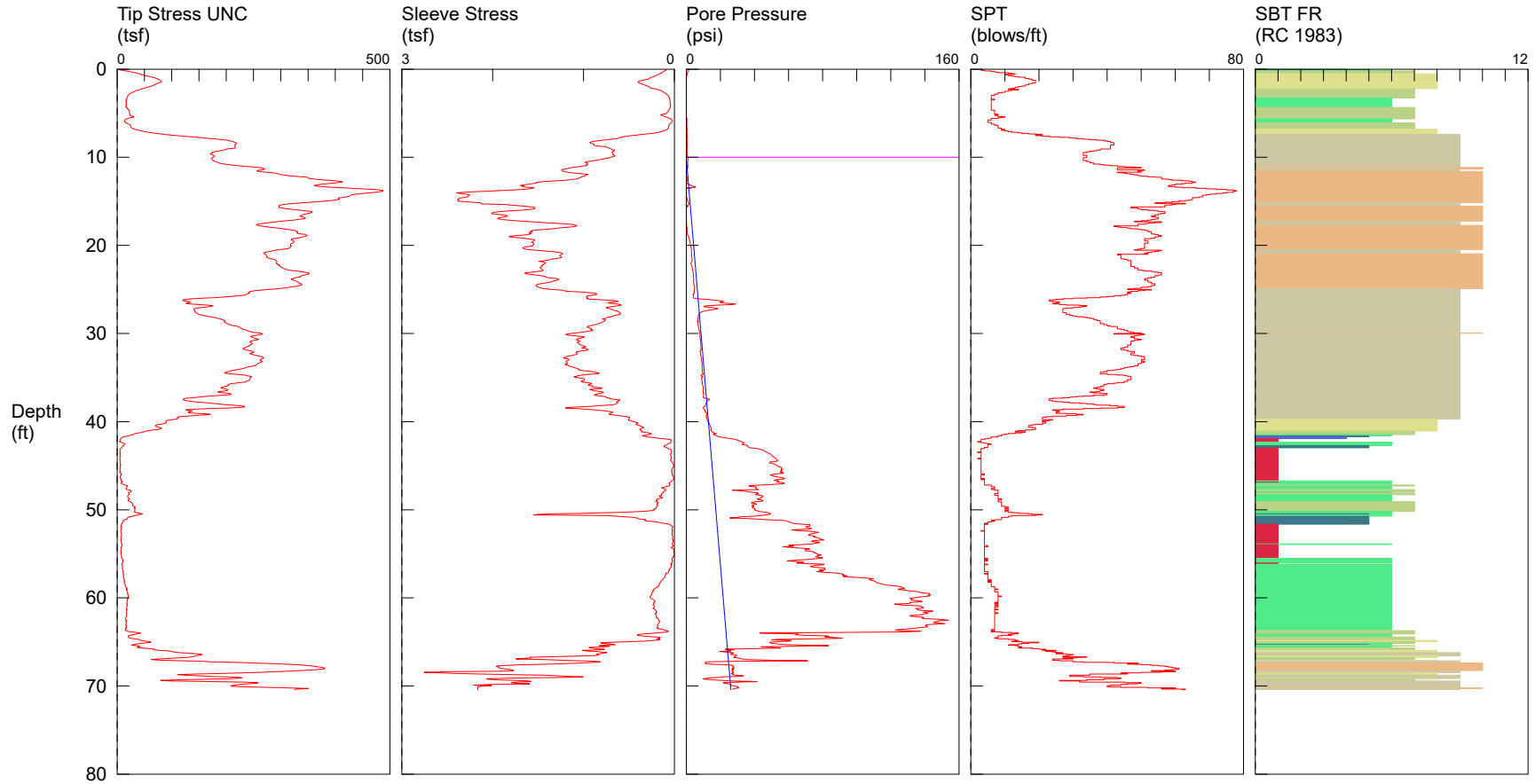
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

B-2

CPT Testing Done For: GMC
Proposed: Dauphin Island Sea Lab Dorms
CUSTOMER: GMC
LOCATION: Dauphin Island, AL
HOLE NUMBER: B-2

TEST DATE: 8/1/2024
OPERATOR: Bryant Volovecky
GPS (LAT,LON,ALT): 3014.8870N,08804.6020W,19.9



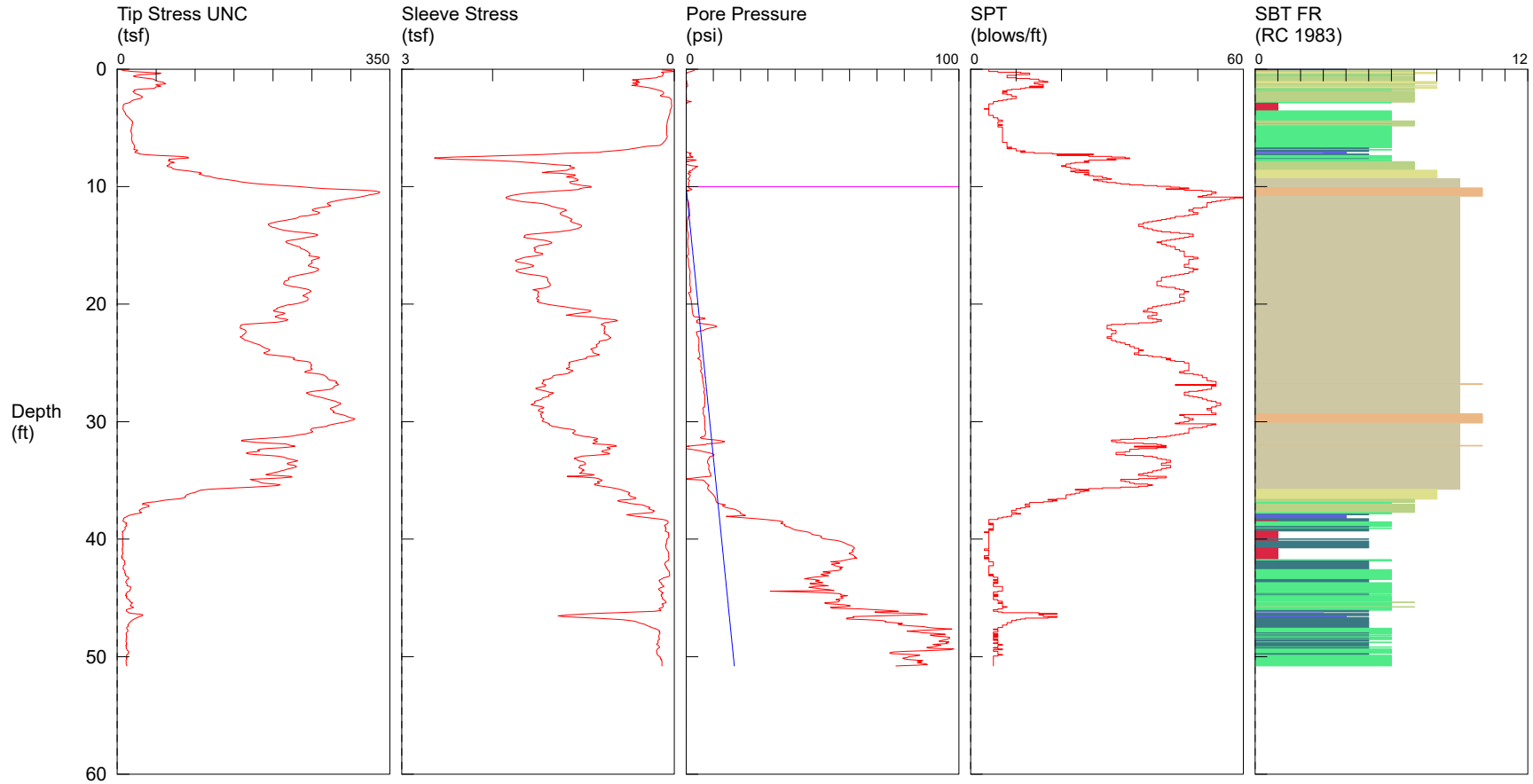
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

B-3

CPT Testing Done For: GMC
Proposed: Dauphin Island Sea Lab Dorms
CUSTOMER: GMC
LOCATION: Dauphin Island, AL
HOLE NUMBER: B-3

TEST DATE: 8/1/2024
OPERATOR: Bryant Volovecky
GPS (LAT,LON,ALT): 3014.9060N,08804.6040W,11.0



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983