



11400 Robinwood Drive • Hagerstown, MD 21742-6514

RFP HCC26-002 for Advanced Technology Center Renovation Project

Addendum 6, posted on October 22, 2025, consists of updates to the glazing system, bid due date, and interview date. Noelker and Hull's document coordinating with Addendum 6 is also attached.

Interview Dates:

Due to the changes in the bid due date, the interview date for this project will be on November 10, 2025 from 1:30-4:30 PM timeframe.

Upcoming Deadlines:

Proposal responses must be received by **October 29, 2025, at 1:00 PM**. Offerors shall reference the RFP for submission details. Please pay careful attention to the requirement to be registered on Bid Locker to submit a proposal for this project.

Additional key principal subcontractor information that the shortlisted GCs will be required to submit (3-5 project examples and resumes) must be sent to bids@hagerstowncc.edu within 2 business days from shortlist notification.

Respectfully submitted,



Alicia Cullop
Director of Procurement Services

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**NOELKER
AND HULL**
ASSOCIATES, INC.

ARCHITECTS

ADDENDUM NO. 6

Date: October 22, 2025

Project No.: 24901

Client: Hagerstown Community College

Project: Advanced Technology Center Renovation

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents, dated September 5, 2025, as noted below.

This Addendum consists of the attached revised Project Manual Sections 000100 and 088000, and revised Sheets A302, A303, A304, TA001, and T001.

CLARIFICATIONS

1. The translucent polycarbonate panel systems nested within the curtain wall framing system (at Lobby enclosure) have been removed from project scope. The polycarbonate panels have been replaced with insulated frit glass. Refer to spec and drawing revisions below for clarification.

CHANGES TO THE PROJECT MANUAL

1. Section 000100 – Table of Contents
 - A. Delete section in its entirety (from Addendum 5) and replace with attached new section.
2. Section 084503 – Translucent Wall Assemblies- Extech
 - A. Delete section in its entirety.
3. Section 088000 – Glazing
 - A. Delete section in its entirety and replace with attached new section.

CHANGES TO THE DRAWINGS

1. Sheet A302- Door Elevations and Details
 - A. Delete sheet in its entirety (from Addendum 5) and replace with attached revised sheet.
2. Sheet A303- Window Elevations
 - A. Delete sheet in its entirety (from Addendum 5) and replace with attached revised sheet.
3. Sheet A304- Window Elevations and Details
 - A. Delete sheet in its entirety and replace with attached revised sheet.
4. Sheet TA001- Audiovisual Notes and Abbreviations
 - A. Delete sheet in its entirety (from Addendum 5) and replace with attached revised sheet.
5. Sheet T001- Technology Notes, Abbreviations, and Legends
 - A. Delete sheet in its entirety (from Addendum 5) and replace with attached revised sheet.

SECTION 000110 - TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

Division 00 -- Procurement and Contracting Requirements

- 000110 - Table of Contents
- 000100 - HCC Request for Proposal Packet (to be provided by Owner)
- 000300 - AIA Document A201-2017 General Conditions to the Contract for Construction
- 000350 - Supplemental Conditions to AIA Document A201-2017
- 000500 - Prevailing Wage Rates (to be provided by Owner)
- 000600 - List of Drawing Sheets

SPECIFICATIONS

Division 01 -- General Requirements

- 011000 - Summary
 - HCC Alcohol, Tobacco, Opioids and other Drug Awareness Policy No. 8030, Revised June 18, 2024
- 012000 - Price and Payment Procedures
- 012100 - Allowances
- 012200 - Unit Prices
- 012300 - Alternates
- 012500 - Substitution Procedures
- 013000 - Administrative Requirements
- 013216 - Construction Progress Schedule
- 014000 - Quality Requirements
- 014216 - Definitions
- 014219 - Reference Standards
- 014533 - Code-Required Special Inspections
- 015000 - Temporary Facilities and Controls
- 015100 - Temporary Utilities
- 015213 - Field Offices and Sheds
- 015500 - Vehicular Access and Parking
- 015719 - Temporary Environmental Controls
- 015813 - Temporary Project Signage
- 016000 - Product Requirements
- 016116 - Volatile Organic Compound (VOC) Content Restrictions
 - 016116.01 - Accessory Material VOC Content Certifications Form
- 017000 - Execution and Closeout Requirements
- 017419 - Construction Waste Management and Disposal
- 017800 - Closeout Submittals

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017900 - Demonstration and Training

Division 02 -- Existing Conditions

024100 – Demolition

Asbestos Abatement Specification prepared by ECS Mid-Atlantic, LLC, dated August 19, 2025.

024110 - Selective Demolition- Site

Division 03 -- Concrete

030516 - Underslab Vapor Barrier

031000 - Concrete Forming and Accessories

032000 - Concrete Reinforcing

033000 - Cast-In-Place Concrete

033511 - Concrete Floor Finishes

Division 04 -- Masonry

040100 - Maintenance of Masonry

042000 - Unit Masonry

042200 - Concrete Unit Masonry- Landscaping

047200 - Cast Stone Masonry

Division 05 -- Metals

051200 - Structural Steel Framing

053100 - Steel Decking

054000 - Cold-Formed Metal Framing

054400 - Cold-Formed Metal Trusses

055000 - Metal Fabrications

055100 - Metal Stairs

055213 - Pipe and Tube Railings

055305 - Metal Gratings and Floor Plates

057500 - Decorative Formed Metal

Division 06 -- Wood, Plastics, and Composites

061000 - Rough Carpentry

062000 - Finish Carpentry

064100 - Architectural Wood Casework

068316 - Fiberglass Reinforced Paneling

Division 07 -- Thermal and Moisture Protection

070150.19 - Preparation for Re-Roofing

070553 - Fire and Smoke Assembly Identification

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071113 - Bituminous Dampproofing
071300 - Sheet Waterproofing
072100 - Thermal Insulation
072500 - Weather Barriers
072600 - Vapor Retarders
072700 - Air Barrier
074113 - Metal Roof Panels
074213.23 - Metal Composite Material Wall Panels
074249 – Sintered Ceramic Wall Panels
074400 - Faced Panels
075423 - Thermoplastic Polyolefin (TPO) Membrane Roofing
076200 - Sheet Metal Flashing and Trim
077100 - Roof Specialties
077123 - Manufactured Gutters and Downspouts
077200 - Roof Accessories
078400 - Firestopping
079200 - Joint Sealants
079513 - Expansion Joint Cover Assemblies

Division 08 -- Openings

081113 - Hollow Metal Doors and Frames
081416 - Flush Wood Doors
083100 - Access Doors and Panels
084313 - Aluminum-Framed Storefronts
084413 - Glazed Aluminum Curtain Walls
086300 - Metal-Framed Skylights
087100 - Door Hardware
088000 - Glazing
088300 - Mirrors
088813 - Fire-Rated Glazing
088900 - Building Integrated Photovoltaic (BIPV) Glazing
089100 - Louvers

Division 09 -- Finishes

090561 - Common Work Results for Flooring Preparation
092116 - Gypsum Board Assemblies
092216 - Non-Structural Metal Framing
093000 - Tiling
095100 - Acoustical Ceilings
095426 - Suspended Wood Ceilings
096500 - Resilient Flooring

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096623 - Resinous Matrix Terrazzo Flooring
096813 - Tile Carpeting
097800 - Interior Wall Paneling
098430 - Sound-Absorbing Wall and Ceiling Units
099113 - Exterior Painting
099123 - Interior Painting

Division 10 -- Specialties

10110 - Visual Display Units
101419 - Dimensional Letter Signage
101423 - Panel Signage
102113.19 - Plastic Toilet Compartments
102239 - Folding Panel Partitions
102600 - Wall and Door Protection
102800 - Toilet and Bath Accessories
104400 - Fire Protection Specialties

Division 11 -- Equipment

113013 - Residential Appliances
115313 - Laboratory Fume Hoods

Division 12 -- Furnishings

122400 - Window Shades
123553.19 - Wood Laboratory Casework
123600 - Countertops

Division 14 -- Conveying Equipment

142400 - Hydraulic Elevators

Division 21 -- Fire Suppression

210500 - Common Work Results for Fire Suppression
210523 - General-Duty Valves for Water-Based Fire-Suppression Piping
210529 - Hangers and Supports for Fire-Suppression Piping and Equipment
210553 - Identification for Fire-Suppression Piping and Equipment
211000 - Water-Based Fire-Suppression Systems

Division 22 -- Plumbing

220500 - Common Work Results for Plumbing
220523 - General Duty Valves for Plumbing Piping
220529 - Hangers and Supports for Plumbing, Piping, and Equipment
220548 - Vibration Controls for Plumbing Piping and Equipment

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220553 - Identification for Plumbing, Piping, and Equipment
220593 - Testing, Adjusting, and Balancing for Plumbing
220719 - Plumbing Piping Insulation
220800 - Commissioning of Plumbing & Domestic HW
221116 - Domestic Water Piping
221119 - Domestic Water Piping Specialties
221123.21 - Inline, Domestic-Water Pumps
221316 - Sanitary Waste and Vent Piping
221319 - Sanitary Waste Piping Specialties
221319.13 - Sanitary Drains
221414 - Storm Drainage Piping
221423 - Storm Drainage Piping Specialties
221429 - Sump Pumps
221513 - General-Service Compressed-Air Piping
221519 - General-Service Packaged Air Compressors and Receivers
223300 - Electric Domestic-Water Heaters
224200 - Commercial Plumbing Fixtures
224500 - Emergency Plumbing Fixtures
224700 - Drinking Fountains and Water Coolers

Division 23 -- Heating, Ventilating, and Air-Conditioning (HVAC)

230500 - Common Work Results for HVAC
230523 - General-Duty Valves for HVAC Piping
230529 - Hangers and Supports for HVAC Piping and Equipment
230530 - HVAC Roof Accessories
230548 - Vibration Controls for HVAC
230553 - Identification for HVAC Piping and Equipment
230593 - Testing, Adjusting, and Balancing for HVAC
230713 - Duct Insulation
230716 – HVAC Equipment Insulation
230719 - HVAC Piping Insulation
230800 - Commissioning of HVAC and HVAC Control Systems
230923 - Direct Digital Control (DDC) System for HVAC
230923.11 - Control Valves
230923.12 - Control Dampers
230923.14 - Flow Instruments
230923.16 - Gas Instruments
230923.17 - Level Instruments
230923.19 - Moisture Instruments
230923.22 - Position Instruments
230923.23 - Pressure Instruments

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230923.27 - Temperature Instruments
230923.43 - Weather Stations
232113 - Hydronic Piping
232116 - Hydronic Piping Specialties
232123 - Hydronic Pumps
232300 - Refrigerant Piping
232923 - Variable-Frequency Motor Controllers
233113 - Metal Ducts
233300 - Air Duct Accessories
233346 - Flexible Ducts
233400 - HVAC Fans
233600 - Air Terminal Units
233713.13 - Air Diffusers
233713.23 - Registers and Grilles
233723 - HVAC Gravity Ventilators
237433 - Dedicated Outdoor-Air Units
238126 - Split-System Air-Conditioners
238236 - Finned-Tube Radiation Heaters
238239.16 - Propeller Unit Heaters

Division 26 -- Electrical

260050 - Common Work Results for Electrical
260519 - Low-Voltage Electrical Power Conductors and Cables
260526 - Grounding and Bonding for Electrical Systems
260529 - Hangers and Supports for Electrical Systems
260533.13 - Conduits for Electrical Systems
260533.16 - Boxes and Covers for Electrical Systems
260544 - Sleeves and Sleeve Seals for Electrical Raceways and Cabling
260553 - Identification for Electrical Systems
260573 - Power Studies
260923 - Lighting Control Devices
262213 - Low-Voltage Distribution Transformers
262416 - Panelboards
262713 - Electricity Metering
262719 - Multi-Outlet Assemblies
262726 - Wiring Devices
262726.43 - Special Purpose Power Outlets Assemblies
262813 - Fuses
262816 - Enclosed Switches and Circuit Breakers
262820 - Elevator Shunt-Trip Fused Disconnect Switches
262913.03 - Manual and Magnetic Motor Controllers

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- 263100 - Building Integrated Photovoltaic Collectors
- 264113 - Lightning Protection for Structures
- 264313 - Surge Protective Devices for Low-Voltage Electrical Power Circuits
- 265000 - Lighting
- 265213 - Emergency and Exit Lighting

Division 27 -- Communications

- 270000 - General Communications Provisions
- 270500 - Common Work Results for Communications
- 271000 - Communications Equipment Room Fittings
- 275200 - Grounding and Bonding for Communications
- 275800 - Conduit and Backboxes for Communications Systems

Division 28 -- Electronic Safety and Security

- 280513 - Fire Alarm Cables and Conductors
- 282300 - Access Control Systems
- 284621 - Addressable Fire-Alarm System with One-Way Emergency Voice Alarm Communication System
- 284813 - Emergency Responder Communications Enhancement System (ERCES)
- 284816 - Two-Way Emergency Communications System for Rescue Assistance

Division 31 -- Earthwork

- 312200 - Site Grading
- 312500 - Sediment and Erosion Control

Division 32 -- Exterior Improvements

- 321313 - Concrete Paving
- 323300 - Site Furnishings
- 329000 - Landscaping

Appendix A

Hazardous Materials Report
Hagerstown Community College- Advanced Technology Center
ECS, LLC
March 11, 2024

END OF SECTION

**SECTION 088000
GLAZING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulating glass units.
- B. Glazing units.
- C. Plastic films.
- D. Laminated glass interlayers.
- E. Glass coatings for spandrel and ceramic frit glazing.
- F. Glazing compounds.

1.02 RELATED REQUIREMENTS

- A. Section 072500 - Weather Barriers.
- B. Section 072700 - Air Barriers.
- C. Section 084313 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.
- D. Section 084413 - Glazed Aluminum Curtain Walls: Glazing provided as part of wall assembly.
- E. Section 084500 - Translucent Wall and Roof Assemblies.
- F. Section 086300 - Metal Framed Skylights: Glazing furnished as part of skylight units.
- G. Section 088300 - Mirrors.
- H. Section 088813 - Fire-Rated Glazing.
- I. Section 088900 - Building Integrated Photovoltaic (BIPV) Glazing.
- J. Section 263100 - Building Integrated Photovoltaic Collectors.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- F. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- H. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.
- I. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- J. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.
- K. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- L. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- M. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

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- N. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.
- O. GANA (GM) - GANA Glazing Manual; 2022.
- P. GANA (SM) - GANA Sealant Manual; 2008.
- Q. GANA (LGRM) - Laminated Glazing Reference Manual; 2019.
- R. IGMA TB-3001 - Guidelines for Sloped Glazing; 2001.
- S. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (Reaffirmed 2016).
- T. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.
- U. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.
- V. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer's product data on all glazing types. Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Product Certificates: Signed by manufacturers of major components or parts. The BIPV glass, as a customized product, could be certified by families of product.
- E. Samples: Submit two samples 4 by 4 inch in size of glass units, except for BIPV glass.
- F. Certificate: Certify that products of this section meet or exceed specified requirements.
- G. Manufacturer's qualification statement.
- H. Installer's qualification statement.
- I. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), and IGMA TM-3000 for glazing installation methods. Maintain one copy on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
 - 1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.
 - a. Insulating Glass Certification Council (IGCC).
 - b. Safety Glazing Certification Council (SGCC).
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.

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- B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.
- C. Laminated Glass Units: Provide a five (5) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.
- D. BIPV Glass Units: See Section 088900.
- E. Plastic Film- Interior Application, Building Perimeter Glass (including skylights): Provide a five (5) year manufacturer warranty to include coverage for discoloration, cracking, or similar visible defects, including providing products to replace failed films.
- F. Plastic Film- Interior Application, Excluding Building Perimeter Glass: Provide a fifteen (15) year manufacturer warranty to include coverage for discoloration, cracking, or similar visible defects, including providing products to replace failed films.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Float Glass Manufacturers:
 - 1. Guardian Glass, LLC: www.guardianglass.com/#sle.
 - 2. **Pilkington North America Inc:** www.pilkington.com/na/#sle.
 - 3. Saint Gobain North America: www.saint-gobain.com/#sle.
 - 4. **Vitro Architectural Glass** (formerly PPG Glass): www.vitroglazings.com/#sle.
 - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Laminated Glass Manufacturers:
 - 1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
 - 2. Dreamwalls by Gardner Glass Products; Laminated Glass: www.dreamwalls.com/#sle.
 - 3. Tecnoglass; Laminated Glass: www.tecnoglass.com/#sle.
 - 4. Thompson I.G., LLC; Laminated Glass: www.thompsonig.com/#sle.
 - 5. Viracon, Architectural Glass segment of Apogee Enterprises, Inc: www.viracon.com/#sle.
 - 6. Substitutions: See Section 016000 - Product Requirements.
- C. Plastic Films Manufacturers:
 - 1. 3M Window Film (**for skylights only**):
solutions.3m.com/wps/portal/3M/en_US/Window_Film/Solutions/#sle.
 - 2. Refer to Finish Schedule on Drawing ID 001 for manufacturer and characteristics of films for interior glazing units.
 - 3. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Design Pressure: Calculated in accordance with ASCE 7.
 - 2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 4. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
 - 1. In conjunction with weather barrier related materials described in other sections, as follows:
 - a. Water-Resistive Barriers: See Section 072500.
 - b. Air Barriers: See Section 072700.
 - 2. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

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- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
 2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
 - a. Use heat-strengthened glass in lieu of annealed glass, where indicated, as required to meet structural or thermal performance.
 3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
 4. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
- B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class B or 16 CFR 1201 - Category I impact test requirements.
 2. Polyvinyl Butyral (PVB) Interlayer: 0.030 inch thick, minimum.

2.04 INSULATING GLASS UNITS

- A. Manufacturers:
1. Glass: Any of the manufacturers specified for float glass.
- B. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.
- C. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 3. Metal-Edge Spacers: Aluminum, bent and soldered corners.
 4. Spacer Color: Aluminum.
 5. Edge Seal:
 - a. Single-Sealed System: Provide silicone, polysulfide, or polyurethane sealant as seal applied around perimeter.
 - b. Color: Black.
 6. Purge interpane space with dry air, hermetically sealed, and fill with argon.
 7. Capillary Tubes: Provide tubes from air space for insulating glass units without inert type gas that have a change of altitude greater than 2500 feet between point of fabrication and point of installation to permit pressure equalization of air space.
 - a. Capillary Tubes: Tubes to remain open and be of length and material type in accordance with insulating glass fabricator's requirements.
- D. **Type G1 and Type G2-** Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
 2. Space between lites filled with argon.
 3. Outboard Lite: Annealed (Type G2) or fully tempered (Type G1) glass according to designation, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 4. Inboard Lite: Annealed (Type G2) or fully tempered (Type G1) glass according to designation float glass, 1/4 inch thick, minimum.

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- a. Tint: Clear.
- 5. Total Thickness: 1 inch.
- 6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.29, nominal.
- E. **Type G7, Types G12 and G13, and Type 14-** Insulating Glass Units: Spandrel (Type G7) and Ceramic Frit (Types G12 and G13, and Type 14) glazing.
 - 1. Applications: Exterior spandrel and ceramic frit glazing as indicated on drawings.
 - 2. Space between lites filled with argon.
 - 3. Outboard Lite: Annealed (Types G13) and fully tempered (Types G7, G12, and G14) float glass, 1/4 inch thick, minimum.
 - a. Glass Type: Same as Types G1 and G2.
 - b. Tint: Clear.
 - c. Coating: Same as on vision units, on #2 surface.
 - 4. Inboard Lite: Annealed (Type G13) and fully tempered (Types G7, G12, and G14) float glass, 1/4 inch thick.
 - a. Tint: Clear.
 - b. Opacifier- Spandrel (Type G7): Spandrel coating, on #4 surface.
 - 1) Coating Color: To be selected from manufacturer's full range of colors.
 - c. Opacifier- Ceramic Frit (Types G12 and G13): Ceramic frit, 1/8" holes (50% coverage), on #3 surface.
 - 1) Ceramic Frit Color: Warm Gray.
 - d. Opacifier- Ceramic Frit (Types G14): Ceramic frit, 1/8" holes (80% coverage), on #3 surface.
 - 1) Ceramic Frit Color: Warm Gray.
 - 5. Total Thickness: 1 inch.
 - 6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.29, nominal.
- F. Insulating Glass Units: Sloped glazing, laminated (**for skylights**); IGMA TB-3001.
 - 1. Applications: Exterior sloped laminated glazing at 15 degrees or more from vertical, including skylights.
 - 2. Space between lites filled with argon.
 - 3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: Self-cleaning type, on #1 surface.
 - 4. Laminated Inboard Lite, Outer Pane: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Gray.
 - 5. Laminated Inboard Lite, Inner Pane: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 6. Total Thickness: 1 inch.
 - 7. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.29, nominal.
 - 8. Visible Light Transmittance (VLT): 27% percent, nominal.
 - 9. Solar Heat Gain Coefficient (SHGC): 0.4, nominal.
- G. **Type G1-** Insulating Glass Units: Safety glazing.
 - 1. Applications:
 - a. Glazed lites in exterior doors.
 - b. Glazed sidelights and panels next to doors.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on drawings.
 - 2. Space between lites filled with argon.
 - 3. Glass Type: Same as other vision glazing except use fully tempered float glass for both outboard and inboard lites.
 - 4. Total Thickness: 1 inch.
 - 5. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.28, nominal.

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

- A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
1. Applications: Exterior insulating glass glazing unless otherwise indicated.
 2. Space between lites filled with air.
 3. Total Thickness: 1 inch.
 4. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.207, nominal.
 5. Visible Light Transmittance (VLT): 47 percent, nominal.
 6. Solar Heat Gain Coefficient (SHGC): 0.22, nominal.
 7. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 8. Spacer Color: Black.
 9. Edge Seal:
 10. Color: Black.
 11. Purge interpane space with dry air, hermetically sealed, and fill with argon.
 12. Basis of Design for **Type G8** (insulated self-cleaning tempered) and **Type G9** (insulated self-cleaning annealed) - Pilkington North America Inc: www.pilkington.com/na/#sle. Basis of Design - Pilkington North America Inc: www.pilkington.com/na/#sle.
 - a. Outboard Lite: Annealed (Type G9) and fully tempered (Type G8) float glass, 6mm thick, minimum.
 - 1) Low-E Coating: Pilkington Energy Advantage with coating on #2 surface.
 - 2) Self-Cleaning Coating: Pilkington Activ with coating on #1 surface.
 - 3) Glass: Pilkington Optifloat Clear.
 - b. Inboard Lite: Annealed (Type G9) and fully tempered (Type G8) float glass, 1/4 inch thick, minimum.
 13. Basis of Design for **Type G1** (insulated tempered) and **Type G2** (insulated annealed)- Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
 14. Outboard Lite: Annealed (Type G2) and fully tempered (Type G1) float glass, 1/4 inch thick, minimum.
 - a. Low-E Coating: Vitro Architectural Glass (formerly PPG Glass) Solarban 70 glass on #2 surface.
 15. Inboard Lite: Annealed (Type G2) and fully tempered (G1) float glass, 1/4 inch thick.
 - a. Glass: Clear.
 16. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of another acceptable manufacturer.
 17. Substitution Procedures: See Section 016000 - Product Requirements.

2.06 NON-INSULATED GLASS UNITS (INTERIOR)

- A. **Type G4-** Monolithic Interior Vision Glazing:
1. Applications: As scheduled.
 2. Glass Type: Annealed float glass.
 3. Tint: Clear.
 4. Thickness: 1/4 inch, nominal.
 5. Glazing Method: Dry glazing method, gasket glazing.
- B. **Type G3-** Monolithic Interior Safety Glazing: Non-fire-rated.
1. Glass Type: Fully tempered safety glass as specified.
 2. Tint: Clear.
 3. Thickness: 1/4 inch, nominal.
- C. **Types G15 and G16-** Sound Control Glazing: Laminated double insulating glass.
1. Applications: Locations as indicated on drawings.
 2. Tint: Clear.
 3. Sound Transmission Class (STC) Rating: Provide at least STC 48 rating, complying with ASTM E90 and ASTM E413.

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Advanced Technology Center Renovation

4. Overall Thickness: As required to meet STC rating as indicated.
5. Laminated Double Insulating Glass:
 - a. Outer Layer, Outboard Side: Tempered glass.
 - 1) Thickness: 3/16 inch.
 - b. Interlayer: Polyvinyl butyral (PVB), thickness as required to meet performance criteria.
 - c. Outer Layer, Inboard Side: Tempered glass.
 - 1) Thickness: 3/16 inch.
 - d. Air Space: 1/2 inch, filled with air.
 - e. Inner Layer, Outboard Side: Tempered glass.
 - 1) Thickness: 1/4 inch.
 - f. Interlayer: Polyvinyl butyral (PVB), thickness as required to meet performance criteria.
 - g. Inner Layer, Inboard Side: Tempered glass.
 - 1) Thickness: 1/4 inch.

2.07 PLASTIC FILMS

- A. Solar Control Plastic Film **for skylights**: Mylar type.
 1. Application: Applied on inside of insulated glazing units on long sides of skylights.
 2. Series Type: Deluxe.
 3. Color: Translucent, Frosted Crystal White.
 4. Thickness Without Liner: 0.00236 inch.
 5. Manufacturers:
 - a. Basis of Design: 3M Window Films, Dusted and Frosted Crystal Glass Finishes, Smooth Crystal White
solutions.3m.com/wps/portal/3M/en_US/Window_Film/Solutions/#sle.
 - b. Substitutions: See Section 016000 - Product Requirements.
- B. Decorative Plastic Film (indicated as **Type G6** for applicable interior glazing Types G3 and G4): Polyvinyl butyral (PVB) type.
 1. Application: Locations as indicated on drawings.
 2. Color: Refer to Interior Finish Schedule on Drawing ID001 for manufacturer and characteristics.
 3. Thickness Without Liner: 0.002 inch.

2.08 GLAZING COMPOUNDS

- A. Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

2.09 ACCESSORIES

- A. Setting Blocks: EPDM, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.
- C. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.
- D. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

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- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - PLASTIC FILM

- A. Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.
- B. Place without air bubbles, creases or visible distortion.
- C. Install film tight to perimeter of glass and carefully trim film with razor sharp knife. Provide 1/16 inch to 1/8 inch gap at perimeter of glazed panel unless otherwise required. Do not score the glass.

3.06 CLEANING

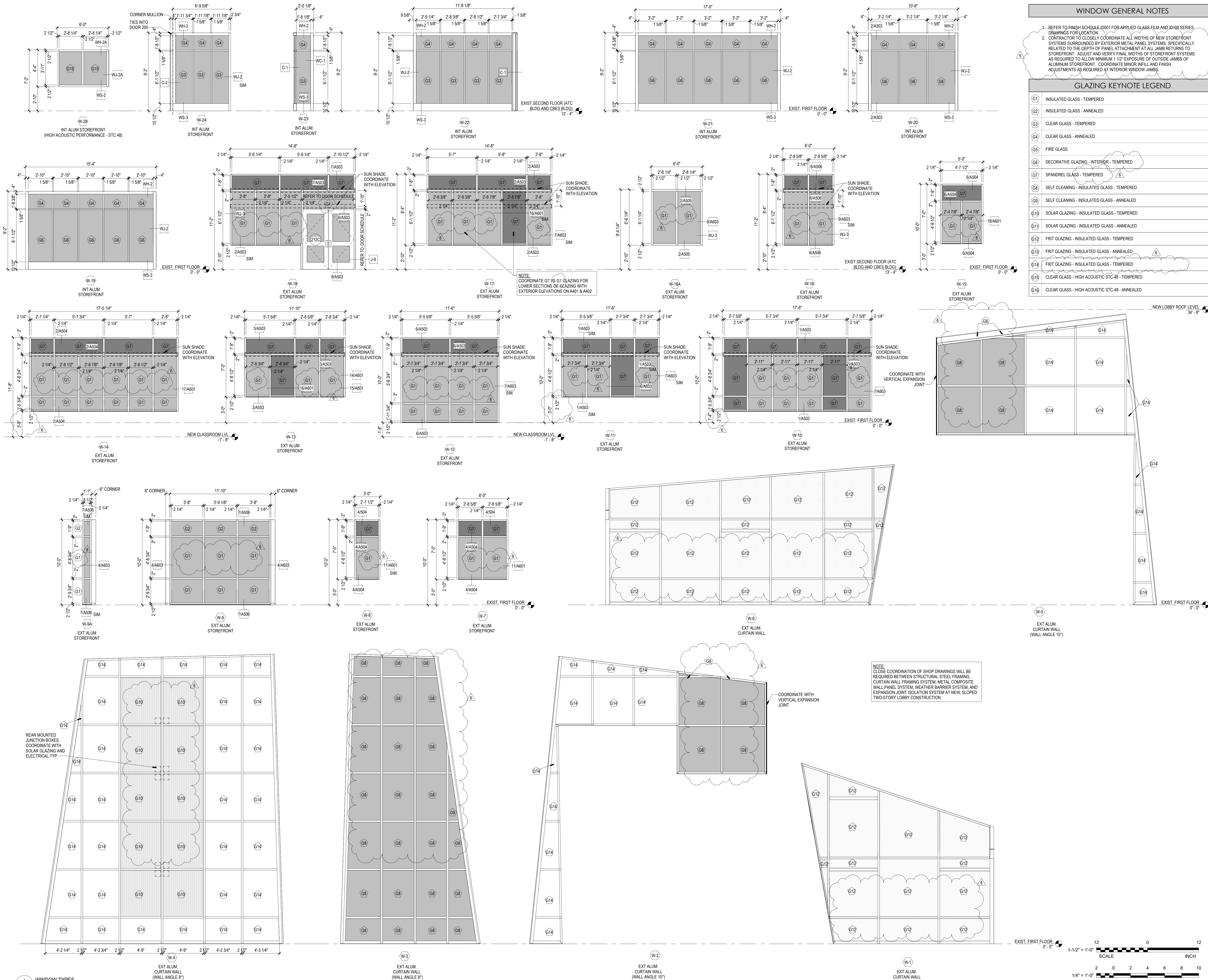
- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

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WINDOW GENERAL NOTES

1. REFER TO FINISH SCHEDULE (D001) FOR APPLIED GLASS FILM AND (D100) SERIES DRAWINGS FOR LOCATION.
2. CONTRACTOR TO CLOSELY COORDINATE ALL WIDTHS OF NEW STOREFRONT SYSTEMS SURROUNDED BY EXISTING METAL PANEL SYSTEMS, SPECIFICALLY RELATED TO THE DEPTH OF PANEL ATTACHMENT AT ALL JAMB RETURNS TO STOREFRONT. ADJUST AND VERIFY FINAL WIDTHS OF STOREFRONT SYSTEMS AS REQUIRED TO ALLOW MINIMUM 1 1/2" EXPOSURE OF OUTSIDE JAMBS OF ALUMINUM STOREFRONT. COORDINATE MINOR INFILL AND FINISH ADJUSTMENTS AS REQUIRED AT INTERIOR WINDOW JAMBS.

GLAZING KEYNOTE LEGEND

G1	INSULATED GLASS - TEMPERED
G2	INSULATED GLASS - ANNEALED
G3	CLEAR GLASS - TEMPERED
G4	CLEAR GLASS - ANNEALED
G5	FIRE GLASS
G6	DECORATIVE GLAZING - INTERIOR - TEMPERED
G7	SPANDREL GLASS - TEMPERED
G8	SELF-CLEANING - INSULATED GLASS - TEMPERED
G9	SELF-CLEANING - INSULATED GLASS - ANNEALED
G10	SOLAR GLAZING - INSULATED GLASS - TEMPERED
G11	SOLAR GLAZING - INSULATED GLASS - ANNEALED
G12	FRIT GLAZING - INSULATED GLASS - TEMPERED
G13	FRIT GLAZING - INSULATED GLASS - ANNEALED
G14	FRIT GLAZING - INSULATED GLASS - TEMPERED
G15	CLEAR GLASS - HIGH ACOUSTIC STC-48 - TEMPERED
G16	CLEAR GLASS - HIGH ACOUSTIC STC-48 - ANNEALED

PROJECT TEAM



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The Contract Documents for the indicated public improvement were prepared under my supervision and, to the best of my knowledge and belief, they comply with the relevant building codes of the State of Maryland.
Signature _____ Date _____
License # _____ Expiration Date _____

PROJECT INFORMATION

PROJECT TITLE

ADVANCED TECHNOLOGY CENTER RENOVATION

PROJECT ADDRESS

11400 ROBINWOOD DRIVE
HAGERSTOWN, MD 21742

PROJECT OWNER



KEY PLAN

ISSUED FOR

DESCRIPTION:	DATE:
DESIGN DEVELOPMENT SUBMISSION	09/20/2024
50% CONSTRUCTION DOCUMENTS	03/14/2025
95% CONSTRUCTION DOCUMENTS	05/02/2025
100% CONSTRUCTION DOCUMENTS	06/06/2025
PERMIT SUBMISSION	07/16/2025
BID SUBMISSION	09/05/2025
ADDENDUM #5	10/16/2025
ADDENDUM #6	10/22/2025

CAD DWG FILE:
DRAWN BY: NHA
CHK'D BY: NHA

JOB NUMBER: 24901 & DGS CC-02-MC23-482
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SHEET TITLE:

WINDOW ELEVATIONS

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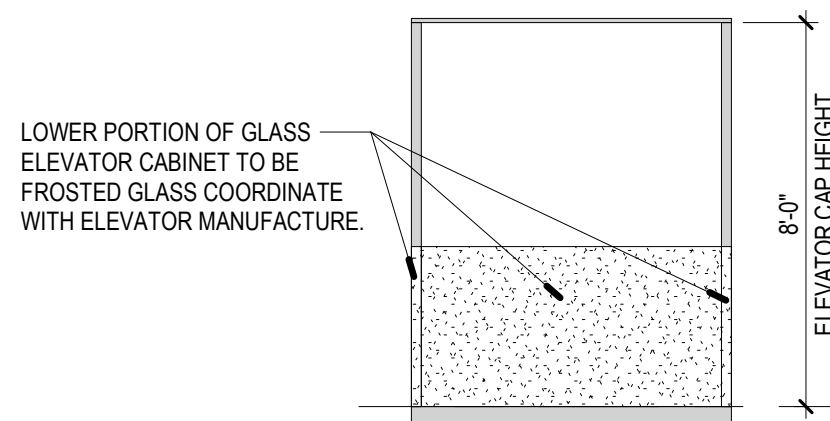
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SHEET 39 OF 181

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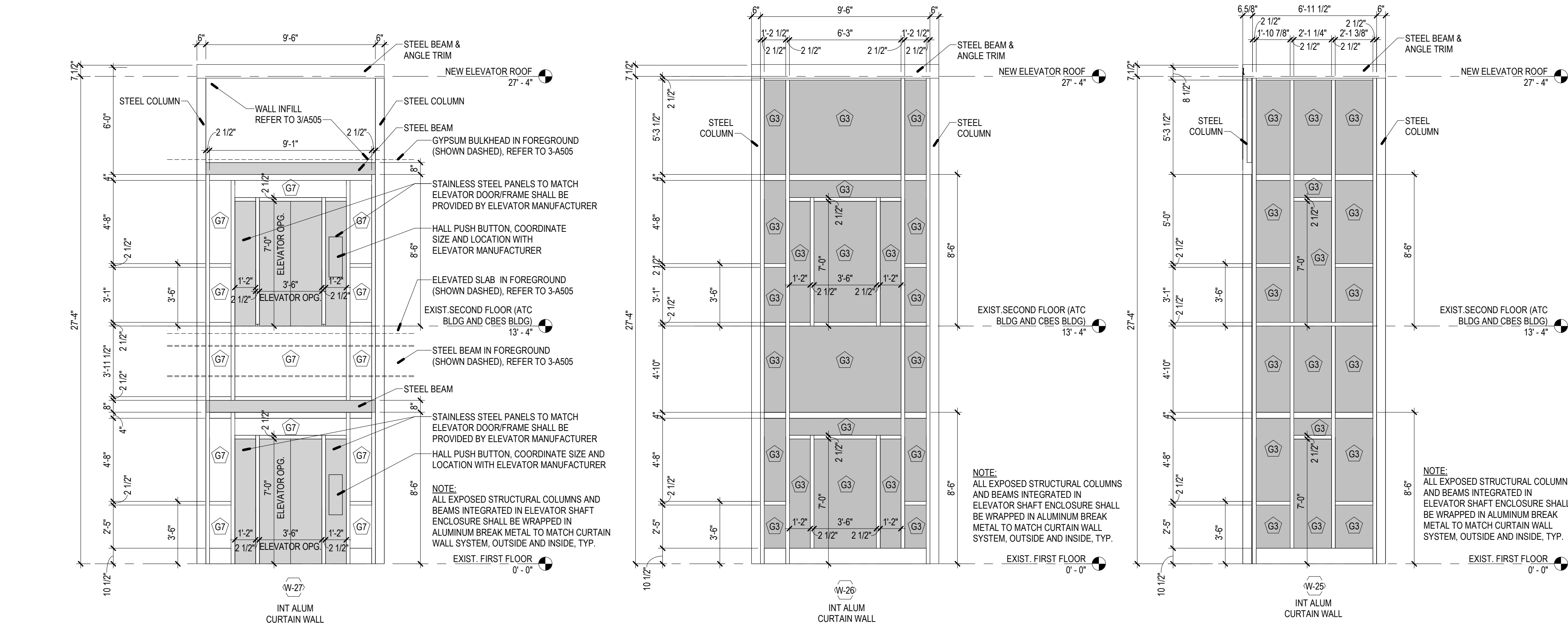
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3 DOOR DETAILS
A304 1 1/2" = 1'-0"



2 ELEVATOR CAB ELEVATION
A304 1/4" = 1'-0"

1 WINDOW ELEVATIONS
A304 1/4" = 1'-0"



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DRAWN BY: NHA
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ISSUE DATE: 09/05/2025
SHEET TITLE:

WINDOW ELEVATIONS AND DETAILS

SHEET NUMBER:

A304

SHEET 40 OF 181

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AUDIOVISUAL GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL ITEMS ARE NOT ENUMERATED IN THE DESIGN PACKAGE AND THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND ACCESSORIES NECESSARY TO MEET THE DESIGN INTENT.
2. CABLING SHALL BE TERMINATED IN TECHNOLOGY ROOMS AS NOTED IN T-SERIES DRAWINGS. KEY PLAN DIVISIONS ARE FOR ARCHITECTURAL REPRESENTATION AND DO NOT DICTATE CABLE ROUTINGS AND TERMINATIONS. UNLESS OTHERWISE NOTED, ALL HORIZONTAL TECHNOLOGY CABLES SHALL TERMINATE IN THE TECHNOLOGY ROOM WITHIN THE CLOSEST PROXIMITY ON THE SAME FLOOR AS THE OUTLET OR CABLE. WHEN PRESENT, CABLE ZONES ARE INDICATED ON THE CABLE ROUTING AND TERMINATION SCHEDULES. TERMINATE ALL CABLING IN TECHNOLOGY ROOMS AS DEFINED BY DIVISION LINES. UNLESS OTHERWISE NOTED, DIVISION LINES MAY BE TECHNOLOGY-SYSTEM SPECIFIC (E.G., TELECOMMUNICATIONS, AUDIOVISUAL, SECURITY, ETC.).
3. VERIFY DEVICE LOCATIONS IN THE FIELD WITH DUE REGARD TO AS-BUILT CONDITIONS BEFORE INSTALLATION. COORDINATE WORK WITH FIELD CONDITIONS AND OTHER TRADES IN ORDER TO MEET DESIGN INTENT. COORDINATE EXACT ROUTING OF CONDUIT AND PATHWAYS BASED ON FIELD CONDITIONS. WHERE GENERAL DESIGN INTENT CANNOT BE ACHIEVED, OBTAIN FORMAL APPROVAL OF ROUTING CHANGES FROM THE DESIGN PROFESSIONAL.
4. REFER TO SYMBOL LEGEND, SCHEDULES, AND DETAILS FOR ALL BOX AND CONDUIT REQUIREMENTS.
5. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR SHARED TECHNOLOGY AND ELECTRICAL FLOORBOXES AND POKE-THRU'S.
6. DEBURR ALL CONDUITS AND PROVIDE BUSHINGS AND PROVIDE 200-LBS. PULLSTRUNG PRIOR TO INSTALLING CABLE.
7. CONDUIT STUB-OUTS SHALL BE EXTENDED TO THE NEAREST ACCESSIBLE CEILING SPACE WITHIN THE ROOM IN WHICH THE DEVICE RESIDES UNLESS OTHERWISE NOTED. FOR ROOMS WITH HARD CEILING, CONDUIT SHALL BE ROUTED TO AN ADJOINING CORRIDOR IN COMMON WITH A ROOM DOOR UNLESS NOTED OTHERWISE. CONDUITS SHALL NOT PASS THROUGH OTHER ROOMS TO REACH A CORRIDOR UNLESS THE ROOM IS COMPLETELY SURROUNDED BY OTHER ROOMS OR SPACES (E.G., ELEVATORS AND INACCESSIBLE CHASES).
8. PROVIDE PULL BOXES AND JUNCTION BOXES IN ACCORDANCE WITH SPECIFIED STANDARDS AND LOCAL CODES. AT A MINIMUM, PROVIDE ONE (1) PULL BOX FOR EVERY 100 FEET OF STRAIGHT CONDUIT RUN, AND ONE (1) PULL BOX AFTER TWO (2) 90-DEGREE BENDS OR 180 DEGREES OF ACCUMULATED BEND.

PROVIDE ALL CABLE TRAY MATERIALS AS NEEDED FOR A COMPLETE, MANUFACTURER-APPROVED SYSTEM USING CABLE TRAY MANUFACTURERS' RECOMMENDATIONS AND PRACTICES. PROVIDE CABLE TRAY SYSTEMS TO BE USED TO PROVIDE PROTECTION AND PROTECTION FROM ALL CHANGES IN DIRECTION AND INTERSECTIONS. MAINTAIN A 1-FEET MINIMUM RADIUS IN CHANGES OF DIRECTION FOR ALL SWEEPS AND TURNS UNLESS OTHERWISE NOTED.
9. REFER TO LIFE SAFETY DRAWINGS FOR FIRE & SMOKE WALL LOCATIONS. CONDUIT PENETRATIONS SHALL BE PROPERLY FIRESTOPPED PER CODE. THE CABLE TRAY SHALL NOT PENETRATE FIRE & SMOKE WALLS. LISTED FIRESTOP ASSEMBLIES SHALL BE USED TO PENETRATE FIRE & SMOKE WALLS FOR CABLE TRAY PATHWAYS. SIZE THE PENETRATIONS FOR FULL CABLE TRAY CAPACITY.
11. PLACE CABLES WITHIN THE CABLE TRAY IN A RANDOM FASHION WITHOUT BUNDLING. CABLE TIES SHALL NOT BE USED. PROVIDE CABLE TRAY RADIUS DROP (WATERFALL) WHERE CABLES EXIT TRAY.
12. CABLES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE BY APPROVED J-HOOKS OR SLINGS WHEN NOT IN CONDUIT OR COMMON LOW-VOLTAGE CABLE TRAY, CABLES TRANSITIONING TO AND FROM CABLE TRAY, CONDUIT, SLEEVES, J-HOOKS OR OTHER SUPPORT MECHANISMS SHALL BE SUPPORTED WHEN THE TRANSITION SPANS MORE THAN 3 FEET.
13. PROVIDE PLENUM-RATED CABLE WHEN INSTALLED IN PLENUM SPACES.
14. PROVIDE BLANK PLATES FOR ALL UNUSED BACKBOXES.
15. FOR ALL CABLE PATHWAYS THROUGH WALL STRUCTURES, PROVIDE CONDUIT, SLEEVE, FIRESTOP ASSEMBLY, ETC., THROUGH THE WALL STRUCTURE. PATHWAY SIZING SHALL ADHERE TO THE REFERENCED STANDARDS AND FILL RATIO REQUIREMENTS WITHIN APPLICABLE CODE AND STANDARDS.
16. REFER TO SPECIFICATION SUBMITTAL REQUIREMENTS FOR DEVICE, FACEPLATE, AND OUTLET COLOR SAMPLES TO BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO ORDERING.
17. DISPLAY BACKBOXES DEFINED ON AUDIOVISUAL SCHEDULES SHALL SUPPORT THE ENTIRE WEIGHT OF THE FINISHED DISPLAY ASSEMBLY. BACKBOXES SHALL BE INSTALLED, FRAMED, AND STRUCTURALLY SECURED PER MANUFACTURER RECOMMENDATIONS OR AS REQUIRED BY THE AHP. ATTACH BACKBOXES TO FRAMING OR STRUCTURE. SYSTEMS SHALL BE PROPERLY SELECTED FOR SHEAR STRENGTH AND PULL-OUT STRENGTH TO SUPPORT THE MAXIMUM RATED WEIGHT AND MOMENT OF THE DISPLAY ASSEMBLY WHEN PULLED OUT FOR SERVICE.
18. ALL REFERENCES TO ELECTRICAL REQUIREMENTS ARE FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS. ALL REFERENCE TO COOLING UNITS ARE FOR REFERENCE ONLY. REFER TO MECHANICAL DRAWINGS FOR HVAC EQUIPMENT REQUIREMENTS.

5

	PROJECT TEAM  NOELKER AND HULL ASSOCIATES, INC. ARCHITECTS 6 NORTH EAST STREET, SUITE 300 FREDERICK, MD 21701-5880 P: 301.662.8611 F: 301.662.8632 NOELKERHULL.COM
 TRIAD ENGINEERING, INC.	TRIAD ENGINEERING, INC. 1075 D Sherman Ave Hagerstown, MD 21740 P: 301.797.6400 F: 301.797.2424
 Human & Rohde, Inc.	HUMAN & ROHDE, INC. Landscape Architects 512 Virginia Ave Towson, MD 21286 P: 410.825.3885 F: 410.825.3887
 ACE-P.A. Advanced Consulting Engineers P.A.	Advanced Consulting Engineers P.A. Structural Engineers 5235 Westview Drive Suite 100 Frederick, MD 21703 P: 301.268.6884
 HENRY ADAMS INC.	Henry Adams, LLC 600 Baltimore Ave Suite 400 Baltimore, MD 21204 P: 410.296.6500
	Wright Engineering, LLC Data / Communications 553 Ripple Stream Court Joppa, MD 21085 P: 410.877.6297 F: 866.635.0374
The Contract Documents for the indicated public improvement were prepared under my supervision and, to the best of my knowledge and belief, they comply with the relevant building code(s) of the State of Maryland. Signature  Date 07/16/2025 License # 22868 / Expiration Date 10/14/2026	
PROJECT INFORMATION PROJECT TITLE THE ADVANCED TECHNOLOGY CENTER RENOVATION PROJECT ADDRESS 11400 ROBINWOOD DRIVE HAGERSTOWN, MD 21742 PROJECT OWNER  HAGERSTOWN COMMUNITY COLLEGE  Maryland GENERAL SERVICES  SHEET INFORMATION KY PLAN	

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CHK'D BY: NHA

JOB NUMBER:	24901
ISSUE DATE:	10/22/2025
SHEET TITLE:	

AUDIOVISUAL NOTES AND ABBREVIATIONS

SHEET NUMBER:

TA001

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SHEET INDEX

SHEET NUMBER	SHEET NAME
T001	TECHNOLOGY NOTES ABBREVIATIONS AND LEGEND
T002	DEMOLITION PLAN - BASEMENT
T003	DEMOLITION PLAN - FIRST FLOOR
T004	DEMOLITION PLAN - SECOND FLOOR
T101	TELECOM PLAN - BASEMENT
T102	TELECOM PLAN - FIRST FLOOR
T103	TELECOM PLAN - SECOND FLOOR
T201	SECURITY PLAN - BASEMENT
T202	SECURITY PLAN - FIRST FLOOR
T203	SECURITY PLAN - SECOND FLOOR
T204	SECURITY PLAN - ROOF
T500	TECHNOLOGY DETAILS
T501	TECHNOLOGY DETAILS
T502	TECHNOLOGY DETAILS
T503	TECHNOLOGY DETAILS
T504	TECHNOLOGY DETAILS

TELECOM RESPONSIBILITY MATRIX

ITEM #	ITEM	FURNISHED BY	INSTALLED BY	NOTES
1	CONTAINMENT, CONDUIT, JUNCTION BOXES, WIREWAYS, PULL STRING AND OTHER ELECTRICAL (CONSTRUCTION-RELATED) ROUGH-IN WORK PERTAINING TO THE INSTALLATION OF AV SYSTEMS, EXCEPT AS NOTED BELOW	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
2	AV / TELECOM FLOOR BOXES	AV CONTRACTOR	GENERAL CONTRACTOR	TELECOM CONTRACTOR PROVIDES INSERTS AND FACEPLATES
3	J-HOOK PATHWAY FOR TELECOM SYSTEM CABLING	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
4	SNAKE TRAY AS REQUIRED FOR TELECOM SYSTEM CABLING	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
5	CONDUIT SLEEVES AS REQUIRED FOR TELECOM SYSTEM CABLING, NOT TO EXCEED 2-FEET	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
6	SPECIALTY BACK BOXES, INCLUDING BUT NOT LIMITED TO, MOUNT BOXES, AND ASSOCIATED TRIM RINGS AND ESCUTCHEONS	TELECOM CONTRACTOR	GENERAL CONTRACTOR	
7	AC POWER RECEPTACLES AND RELATED ELECTRICAL REQUIREMENTS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
8	CORE DRILLING, CUTTING AND CHANNELING OF FLOOR SLAB FOR FLOOR BOXES AND POKE THRU DEVICES	GENERAL CONTRACTOR	GENERAL CONTRACTOR	ALL POKE THRU DEVICES AND FLOOR BOX INSTALLATION
9	IT AND TELE/DATA AS REQUIRED FOR TELECOM SYSTEMS	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
10	ROOM CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, FRAMING WALLS, HANGING GYP BOARD, CARPET INSTALLATION, CEILING WORK AND DEMOUNTABLE PARTITIONS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
11	LOW VOLTAGE CABLING, PATCH PANELS, CABLES, PANELS, RACKS, AND OTHER RELATED COMPONENTS FOR A COMPLETE CABLING SYSTEM	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
12	LOW VOLTAGE TERMINATIONS, TESTING AND LABELING	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
13	FIBER OPTIC CABLING, ENCLOSURES, SPLICING AND TERMINATIONS	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
14	PLYWOOD BACKBOARDS FOR TELECOM EQUIPMENT ROOMS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
15	TESTING AND EVALUATION OF TELECOM SYSTEMS	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
16	TELECOM CONDUITS AND PULLSTRINGS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
17	TELECOM BACK BOXES	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
18	FACEPLATES FOR WALL AND FLOOR BOXES PERTAINING TO THE INSTALLATION OF TELECOM SYSTEMS	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
19	LADDER RACK IN TELECOM EQUIPMENT ROOMS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
20	FIRESTOPPING	ALL	ALL	EACH CONTRACTOR RESPONSIBLE FOR FIRESTOPPING PENETRATIONS REQUIRED BY RELATED WORK
21	TELECOM PATCH CABLES OF APPROPRIATE LENGTH	TELECOM CONTRACTOR	TELECOM CONTRACTOR	
22	HOISTING, RIGGING, SCAFFOLDING AS REQUIRED TO INSTALL AV SCOPE OF WORK	TELECOM CONTRACTOR	TELECOM CONTRACTOR	

SECURITY RESPONSIBILITY MATRIX

ITEM #	ITEM	FURNISHED BY	INSTALLED BY	NOTES
1	CONTAINMENT, CONDUIT, JUNCTION BOXES, WIREWAYS, PULL STRING AND OTHER ELECTRICAL (CONSTRUCTION-RELATED) ROUGH-IN WORK PERTAINING TO THE INSTALLATION OF OWNERS SECURITY SYSTEMS, EXCEPT AS NOTED BELOW	GENERAL CONTRACTOR	GENERAL CONTRACTOR	ACCESS CONTROL SYSTEM SHALL BE PROVIDED BY THE GENERAL CONTRACTOR UNDER DIV 08
2	J-HOOK SECURITY FOR TELECOM SYSTEM CABLING	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
3	SNAKE TRAY AS REQUIRED FOR SECURITY SYSTEM CABLING	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
4	CONDUIT SLEEVES AS REQUIRED FOR SECURITY SYSTEM CABLING, NOT TO EXCEED 2-FEET	GENERAL CONTRACTOR	GENERAL CONTRACTOR	COORDINATE ALL LOCATIONS WITH OWNERS SECURITY CONTRACTOR
5	SPECIALTY BACK BOXES, INCLUDING BUT NOT LIMITED TO, MOUNT BOXES, AND ASSOCIATED TRIM RINGS AND ESCUTCHEONS	OWNER'S SECURITY CONTRACTOR	GENERAL CONTRACTOR	
6	AC POWER RECEPTACLES AND RELATED ELECTRICAL REQUIREMENTS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
7	CEILING SPEAKERS (MASS NOTIFICATION SYSTEM)	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	HOLES IN CEILING TO BE CUT BY GENERAL CONTRACTOR
8	IT AND TELE/DATA AS REQUIRED FOR TELECOM SYSTEMS	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
9	ROOM CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, FRAMING WALLS, HANGING GYP BOARD, CARPET INSTALLATION, CEILING WORK AND DEMOUNTABLE PARTITIONS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
10	LOW VOLTAGE CABLING, PATCH PANELS, CABLES, PANELS, RACKS, AND OTHER RELATED COMPONENTS FOR A COMPLETE CABLING SYSTEM	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	EXCEPT FOR DIV 08 ACCESS CONTROL SYSTEM, WHICH SHALL BE PROVIDED BY GENERAL CONTRACTOR
11	LOW VOLTAGE TERMINATIONS, TESTING AND LABELING	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
12	CAMERAS, MOUNTS, BRACKETS, AND ACCESSORIES	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
13	PLYWOOD BACKBOARDS FOR SECURITY EQUIPMENT IN EQUIPMENT ROOMS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
14	TESTING AND EVALUATION OF CCTV AND MASS NOTIFICATION SYSTEMS	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	OWNER AND/OR OWNERS REPRESENTATIVE TO PERFORM FINAL COMMISSIONING AND ACCEPTANCE
15	PATHWAYS, CONDUITS, SLEEVES AND PULLSTRINGS FOR OWNERS SECURITY SYSTEMS (CCTV & MASS NOTIFICATION)	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
16	BACK BOXES FOR OWNERS SECURITY SYSTEMS (CCTV & MASS NOTIFICATION)	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
17	LED MESSAGE DISPLAYS FOR MASS NOTIFICATION SYSTEM AND MOUNTING BRACKET	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	INCLUDES ASSOCIATED DATA OUTLET AND CABLING
18	POWER FOR WALL SECURITY EQUIPMENT IN TELECOM EQUIPMENT ROOMS	GENERAL CONTRACTOR	GENERAL CONTRACTOR	
19	FIRESTOPPING	ALL	ALL	EACH CONTRACTOR RESPONSIBLE FOR FIRESTOPPING PENETRATIONS REQUIRED BY RELATED WORK
20	IP PATCH CABLES OF APPROPRIATE LENGTH	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
21	HOISTING, RIGGING, SCAFFOLDING AS REQUIRED TO INSTALL AV SCOPE OF WORK	OWNER'S SECURITY CONTRACTOR	OWNER'S SECURITY CONTRACTOR	
22	ACCESS CONTROL SCOPE OF WORK - CARDREADERS, POWER SUPPLIES, ELECTRIC LOCKS, REED DOOR CONTACTS, LOW VOLTAGE CABLING AND ALL OTHER COMPONENTS FOR A COMPLETE ACCESS CONTROL SYSTEM.	GENERAL CONTRACTOR - DIV 08 CONTRACTOR	GENERAL CONTRACTOR - DIV 08 CONTRACTOR	

TECHNOLOGY ABBREVIATIONS & NOTATIONS

TECHNOLOGY LEGEND	
TECHNOLOGY LEGEND: NOTE: ALL MOUNTING HEIGHTS AND LOCATIONS OF EQUIPMENT SHALL BE COORDINATED IN THE FIELD BY THE CONTRACTOR PRIOR TO ROUGH-IN.	
DATA DATA OUTLET: SUBSCRIPT DENOTES QUANTITY, M.H. 18" AFF. TELEPHONE OUTLET: SUBSCRIPT DENOTES QUANTITY, M.H. 18" AFF. DATA OUTLET AS DEFINED ABOVE. ADDITIONAL SUBSCRIPT "O" INDICATES A DIRECT CONNECTION MODULAR PLUG FOR THE AV DEVICE. ADDITIONAL SUBSCRIPT "S" INDICATES A SURFACE-MOUNTED JACK. MOUNT WITHIN AUDIOVISUAL BACK BOX AS DEFINED ON TA-002. LADDER TYPE CABLE TRAY AND CLEARANCE SPACE (6" CLEAR ABOVE AND ONE SIDE) REFER TO DETAIL. EQUIPMENT RACK, CABINET OR AS INDICATED EQUIPMENT PANEL JUNCTION BOX: CEILING, WALL MOUNTED CONDUIT, CONDUIT SLEEVE - 2" EMT, UON. WAP WIRELESS ACCESS POINT OUTLET AND TWO CAT6 CABLES	
SECURITY CCTV CAMERA, # INDICATES CAMERA NUMBER CARD READER DOOR CONTACT GLASS BREAK DETECTOR SECURITY ALARM KEYPAD - MOUNT 48" AFF	
MISCELLANEOUS: DENOTES REFERENCE TO DRAWING NOTE DENOTES REFERENCE TO REVISIONS TO DRAWING	
TECHNOLOGY GENERAL NOTES	
1	CABLING SHALL BE TERMINATED IN TECHNOLOGY ROOMS AS NOTED IN T-SERIES DRAWINGS. KEY PLAN DIVISIONS ARE FOR ARCHITECTURAL REPRESENTATION AND DO NOT DICTATE CABLE ROUTINGS AND TERMINATIONS.
2	THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL ITEMS ARE NOT ENUMERATED IN THE DESIGN PACKAGE AND THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND ACCESSORIES REQUIRED TO MEET THE DESIGN INTENT.
3	VERIFY DEVICE LOCATIONS IN THE FIELD WITH DUE REGARD TO AS-BUILT CONDITIONS BEFORE INSTALLATION. COORDINATE WORK WITH FIELD CONDITIONS AND OTHER TRADES IN ORDER TO MEET DESIGN INTENT.
4	DEBURR ALL CONDUIT AND PROVIDE BUSHINGS AND 200LB PULLSTRING PRIOR TO INSTALLING CABLE.
5	CONDUIT BENDS SHALL BE SWEEPS TO MAINTAIN PROPER CABLE BEND RADIUS.
6	CONDUIT STUB-OUTS SHALL BE EXTENDED TO NEAREST ACCESSIBLE CEILING SPACE WITHIN ROOM IN WHICH THE DEVICE RESIDES UNLESS OTHERWISE NOTED. FOR ROOMS WITH HARD CEILINGS, CONDUIT SHALL BE ROUTED TO ADJOINING CORRIDOR IN COMMON WITH A ROOM DOOR UNLESS NOTED OTHERWISE. CONDUITS SHALL NOT PASS THROUGH OTHER ROOMS TO REACH A CORRIDOR, UNLESS THE ROOM IS COMPLETELY SURROUNDED BY OTHER ROOMS OR SPACES (E.G., ELEVATORS AND INACCESSIBLE CHASES).
7	PROVIDE PULL BOXES AND JUNCTION BOXES IN ACCORDANCE WITH SPECIFIED STANDARDS AND LOCAL CODES. AT A MINIMUM, PROVIDE ONE (1) PULL BOX FOR EVERY 100 FEET OF STRAIGHT CONDUIT RUN, AND ONE (1) PULL BOX AFTER TWO (2) 90-DEGREE BENDS.
8	COORDINATE EXACT ROUTING OF CONDUIT AND PATHWAYS BASED ON FIELD CONDITIONS. WHERE GENERAL DESIGN INTENT CANNOT BE ACHIEVED, OBTAIN FORMAL APPROVAL OF ROUTING CHANGES FROM OWNER'S REPRESENTATIVE.
9	PLACE CABLES WITHIN CABLE TRAY IN A RANDOM FASHION WITHOUT BUNDLING. CABLE TIES SHALL NOT BE USED.
10	PROVIDE CABLE TRAY RADIUS DROP (WATERFALL) WHERE CABLES EXIT TRAY.
11	CABLES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE BY APPROVED J-HOOKS OR SLINGS WHEN NOT IN CONDUIT OR COMMON LOW VOLTAGE CABLE TRAY. CABLES TRANSITIONING TO AND FROM CABLE TRAY, CONDUIT, SLEEVES, J-HOOKS OR OTHER SUPPORT MECHANISM SHALL BE SUPPORTED WHEN THE TRANSITION SPANS MORE THAN 3 FEET.
12	PROVIDE PLENUM RATED CABLE WHEN INSTALLED IN PLENUM SPACE.
13	PROVIDE BLANK PLATES FOR ALL UNUSED BOXES.
14	ALL CABLING PASSING THROUGH WALL STRUCTURE SHALL BE SUPPORTED WITH CONDUIT, SLEEVE, FIRESTOP ASSEMBLY, ETC. AS REQUIRED THROUGH THE WALL STRUCTURE. PATHWAY SIZING SHALL ADHERE TO THE REFERENCED STANDARDS AND FILL RATIO REQUIREMENTS. PROVIDE CONDUIT, SLEEVES, FIRESTOP ASSEMBLIES, ETC. FOR ALL CABLE PENETRATING WALLS IN ACCORDANCE WITH THE REFERENCED STANDARDS IN THE SPECIFICATIONS.
15	SUBMIT DEVICE, FACEPLATE AND OUTLET COLOR SAMPLES TO OWNER'S REPRESENTATIVE PRIOR TO ORDER.
16	REFER TO LIFE SAFETY DRAWINGS FOR FIRE & SMOKE WALL LOCATIONS. CONDUIT PENETRATIONS SHALL BE PROPERLY FIRESTOPPED PER CODE. CABLE TRAY SHALL NOT PENETRATE FIRE & SMOKE WALLS. LISTED FIRESTOP ASSEMBLIES SHALL BE USED TO PENETRATE FIRE & SMOKE WALLS FOR CABLE TRAY PATHWAYS.
17	PROVIDE ALL CABLE TRAY MATERIALS AS NEEDED FOR A COMPLETE, MANUFACTURER-APPROVED SYSTEM USING CABLE TRAY MANUFACTURERS' MATERIALS AND PARTS WHEN AVAILABLE FROM THE MANUFACTURER, AND AS INTENDED. PROVIDE SWEEPS AND T-SECTIONS FOR ALL CHANGES IN DIRECTION AND INTERSECTIONS. MAINTAIN A 1 FOOT MINIMUM RADIUS IN CHANGES OF DIRECTION FOR ALL SWEEPS AND TEES.
18	UNLESS OTHERWISE NOTED, ALL HORIZONTAL TECHNOLOGY CABLE SHALL TERMINATE IN THE TECHNOLOGY ROOM WITHIN CLOSEST PROXIMITY ON THE SAME FLOOR AS THE OUTLET OR DEVICE.
19	REFER TO SYMBOL LEGEND, SCHEDULES AND DETAILS FOR ALL BOX AND CONDUIT REQUIREMENTS.
20	REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR SHARED TECHNOLOGY AND ELECTRICAL FLOOR BOXES AND POKETHRUS.
21	CABLE ZONES REPRESENT THE DIVISION LINE FOR CABLE TERMINATIONS BETWEEN COMM ROOMS. TERMINATE ALL TECHNOLOGY CABLING IN COMM ROOMS AS DEFINED BY DIVISION LINES, UNLESS OTHERWISE NOTED.

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The Contract Documents for the indicated public improvement were prepared under my supervision and, to the best of my knowledge and belief, they comply with the relevant building codes of the State of Maryland.
Signature _____ Date 07 / 16 / 2025
License # 22868 / Expiration Date 10 / 14 / 2026

PROJECT INFORMATION

PROJECT TITLE

THE ADVANCED TECHNOLOGY CENTER RENOVATION

PROJECT ADDRESS

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HAGERSTOWN, MD 21742

PROJECT OWNER

HAGERSTOWN COMMUNITY COLLEGE

Maryland

DEPARTMENT OF GENERAL SERVICES

CITY OF HAGERSTOWN

SHEET INFORMATION

KEY PLAN

ISSUED FOR	
DESCRIPTION:	DATE:
DESIGN DEVELOPMENT SUBMISSION	09/20/2024
50% CONSTRUCTION DOCUMENTS	03/14/2025
95% CONSTRUCTION DOCUMENTS	05/02/2025
100% CONSTRUCTION DOCUMENTS	06/05/2025
PERMIT SUBMISSION	07/16/2025
BID SUBMISSION	09/05/2025
ADDENDUM 5	10/16/2025
ADDENDUM 6	10/22/2025

CAD DWG FILE:
DRAWN BY: NHA
CHKD BY: NHA

JOB NUMBER: 24901
ISSUE DATE: 10/22/2025
SHEET TITLE:

TECHNOLOGY NOTES ABBREVIATIONS AND LEGEND

SHEET NUMBER: T001
SHEET 166 OF 181
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