

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

BPA NO.

1. CONTRACT ID CODE

PAGE 1 OF 2 PAGES

2. AMENDMENT/MODIFICATION NUMBER  
00043. EFFECTIVE DATE  
09/20/2023

4. REQUISITION/PURCHASE REQ. NUMBER

5. PROJECT NUMBER (if applicable)  
595-6686. ISSUED BY  
CODE 36C776  
Department of Veterans Affairs  
Program Contracting Activity Central  
6100 Oak Tree Blvd, Suite 490  
Independence OH 441317. ADMINISTERED BY (If other than Item 6)  
CODE 36C776  
Department of Veterans Affairs  
Program Contracting Activity Central  
6100 Oak Tree Blvd, Suite 490  
Independence OH 441318. NAME AND ADDRESS OF CONTRACTOR (Number, street, county, State and ZIP Code)  
To all Offerors/Bidders

(X)

9A. AMENDMENT OF SOLICITATION NUMBER

36C77623R0122

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NUMBER

10B. DATED (SEE ITEM 13)

CODE

FACILITY CODE

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS** The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE

 A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: D. OTHER (Specify type of modification and authority)**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this amendment is as follows:

1) Issue responses to RFI's date 7/31/2023.  
All other terms and conditions remain the same.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Samantha Mihaila  
Contracting Officer

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA

16C. DATE SIGNED

(Signature of person authorized to sign)

(Signature of Contracting Officer)

## **Minor-Construct New Entryway Bldg. 17 Lebanon, PA**

See attached document: Attachment 1- Technical Questions-Lebanon.

End of Document

**SOLICITATION # 36C77623R0122**  
**PROJECT NAME: Minor Construct New Entry-Lebanon, PA**  
**TECHNICAL QUESTIONS AND VA RESPONSE TRACKING SHEET**

ITEM NO.	DATE QUESTION RECEIVED	DATE QUESTION ANSWERED	QUESTION	GOVERNMENT RESPONSE
1.	07/13/2023	09/20/2023	Regarding the elevator, this is a non-proprietary application? Meaning, there is no special tool or software to maintain the elevator?	Yes
2.	07/13/2023	09/20/2023	Regarding Brand Names, for Example, the metal roof/wall panels, may an Alternate be priced and if so, is there any paperwork that needs to be submitted with the Bid.	Provide product with submittal indicating substitution for specified basis of design product
3.	07/13/2023	09/20/2023	Regarding the Specifications, will a Finish Schedule be issued in the Specifications? The current Specification Section 09.06.00 references Drawing A-131, this Drawing is not withing the Drawing Set and there is not a Schedule for Finishes within the Specifications.	Drawing reference should be to AI-101. Finish Schedule is provided on this sheet.
4.	07/13/2023	09/20/2023	In Volume 1, under 14 24 00 on page 782 of specs, there is no description of the elevator equipment as the table is blank. Is there information that was supposed to be included?	Car inside dims: 5'-8 5/16" x 9'-0 3/4" 4'-6" door opening Duty: 5000# Speed: 100 FPM Service Type: Hospital
5.	07/13/2023	09/20/2023	On page 791, 2.2.A lists Otis HydroFit 5010R as basis of design. I do not believe that this elevator meets the VA design standards. There is not a dedicated elevator machine room shown on the drawings. Please advise.	The model is machine-roomless

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6.	07/13/2023	09/20/2023	On page 794, 2.7.A does not include a description of the controller to be 'non-proprietary'. Non-proprietary equipment is typical for VA project. Please advise	The VA intends to use non-proprietary equipment for this project. Controller is described as microprocessor control system with absolute position/speed feedback to control dispatching, signal functions, door operation, pump motor, and hydraulic valve control.
7.	07/14/2023	09/20/2023	Would the VA consider poured-in-place Terrazzo in lieu of tile?	No.
8.	07/14/2023	09/20/2023	Regarding the Specifications, unable to locate Specification Section 08.44.13, please advise.	Section 08.44.13 will be issued in the addendum.
9.	07/14/2023	09/20/2023	The solicitation document does not show an amount or percent for the bid bond. Will this amount be the standard amount of 20%, with a not to exceed of \$3,000,000?	The bid bond will be 20%, not to exceed \$3,000,000.
10.	07/21/2023	09/20/2023	Price/Cost Schedule, 0004, which two (2) dormers are to be removed, large, small, one (1) each?	Remove 2 small dormers above reception 105
11.	07/24/2023	09/20/2023	The finish schedule shows both TCF-1 and TT-2 for the base of room #102. Please confirm what base is to be used?	As listed on the Finish Schedule located on AI-101. TCF-1 is the flooring finish and TT-2 is the base finish.

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12.	07/24/2023	09/20/2023	Is there to be a Schluter Transition between all tile ceramic floor and luxury vinyl flooring everywhere or just at the doorways? The VINpro schluter is what has been specified, but this will not work at the curved areas (The Vinpro will not bend). Can Schluter Schiene be used at the curved areas?	Schluter Schiene can be used at the curved areas as long as brushed finish is still utilized.
13.	07/24/2023	09/20/2023	The door specs call for a YKK 35H door, but also calls for thermally broken. 35H is a heavy wall door and is 1-3/4", where the thermally broken door is 2-3/8" regular wall thickness. Please confirm which is to be used?	The 35h YKK 1 3/4 door is correct.
14.	07/24/2023	09/20/2023	Specs say that for the storefront we are to provide a full range of colors both anodized and painted. Is this really what you want, considering everything at the VA is clear anodized?	Provide clear anodized.
15.	07/24/2023	09/20/2023	The wheelchair niche 102G & 102F call for TT-1 Terrazzo Tile 4'2" Wainscot. The tiles are 2' x 2'. When you run them diagonally the tile will be 2'11" point to point . So the elevation #4 on A-503 will not work as drawn. They are 16" tiles on elevation. Please advise if the height is correct. The tile size drawn on the Finish floor plan is correct.	Overall height to be adjusted to allow 2 full tile heights on the diagonal to accommodate overall pattern show in elevation.
16.	07/25/2023	09/20/2023	Regarding the Deconstruction of the Temporary Entrance, please confirm, all the associated exterior work(concrete, railings, electric) including infilling where the temporary door was located, shall be restored to its original condition after the Addition is complete?	Confirmed. Once we are finished with the construction of the entrance and it can be used as the primary means of entrance, the temporary will need to be put back to its original condition on the interior and exterior.

ITEM NO.	DATE QUESTION RECEIVED	DATE QUESTION ANSWERED	QUESTION	GOVERNMENT RESPONSE
17.	07/25/2023	09/20/2023	Regarding the Deconstruction of the Temporary Entrance, Rooms T101, T102 and T103 shall be restored to its original condition after the Addition is complete?	Confirmed. Once we are finished with the construction of the entrance and it can be used as the primary means of entrance, the temporary will need to be put back to its original condition on the interior and exterior.
18.	07/27/2023	09/20/2023	Do the canopy roof and columns receive spray fireproofing?	The exterior canopy steel does not require spray applied fireproofing.
19.	07/27/2023	09/20/2023	Please confirm the area that can be used for the General Contractor for laydown and stockpile material.	Construction laydown and stock pile areas will be within the constraints of the limits of disturbance noted on Sheet C-103
20.	07/27/2023	09/20/2023	Regarding Blast Requirements in the Specifications, will this be required? Over the years this requirement has been in the Specifications but, is later removed once the Project has been awarded.	No, per the design, the screening lobby is a separate lobby that is independent of the main building and therefore exempt.
21.	07/27/2023	09/20/2023	Who is the current controls contractor for the building BAS system?	Our current vendor is Conexus, they service the Distech Controls we are installing.
22.	07/27/2023	09/20/2023	RTU-1&2 require vibration isolation bases, do the roof exhaust fans require vibration isolation?	Roof mounted exhaust fan roof curbs do not require vibration isolation.
23.	07/27/2023	09/20/2023	May manufacture's equipment other than those listed in the equipment schedules be submitted for approval as an equal after the project is awarded?	The equipment listed on sheet M301 is the basis of design equipment and may be substituted with products that meet or exceed the specs. There are no sole sourced justifications or authorizations for mechanical equipment on this project.
24.	07/27/2023	09/20/2023	Please confirm this project does not require seismic restraints for the mechanical and electrical work.	Confirm. Project does not require seismic restraints for mechanical and electrical work.
25.	07/27/2023	09/20/2023	Please confirm duct cleaning by mechanical methods is not required if the duct is protected during construction.	Duct cleaning will not be required if the duct is fully protected during construction. However, if it is discovered to be uncovered, even once, cleaning will be required at the GC cost.

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26.	07/27/2023	09/20/2023	Are any COVID or like protocols required?	No
27.	07/27/2023	09/20/2023	Are there any domestic material requirements?	Please refer to the FAR - Subpart 25.2 - Buy American-Construction Materials
28.	07/27/2023	09/20/2023	Item 0006, on drawing E-101 the only transformer on this drawing shows a conduit running inside the building to a closet. There is no duct bank shown coming from the transformer around the primary care building. Clarification is needed.	The VA to confirm that the electrical contractor on the Primary Care Project installed a conduit under the Primary Care Addition.
29.	07/27/2023	09/20/2023	Item 0007, there are lighting fixtures shown under the canopy on drawing E-201, are these lights included in the base bid or are these the lights to be installed under item 7 when the translucent panels are removed? Clarification is needed	The light fixtures are in both the base bid and the alternate.
30.	07/27/2023	09/20/2023	Price/Cost Schedule Item Number 0005 – Alternate No. 2. Should this alternate be a deduct to install (1) elevator? Please clarify what is required for the electrical portion of this alternate.	All electrical work in the shaft would be a deduct, including feeders back to the panel boards.
31.	07/27/2023	09/20/2023	Price/Cost Schedule Item Number 0006 – Alternate No. 3. Please clarify which manholes / conduits are part of this alternate	Sheet E101 manholes MH-3, MH-8, MH-4, MH-9 and corresponding duct banks are part of the alternate.
32.	07/27/2023	09/20/2023	Price/Cost Schedule Item Number 0007 – Alternate No. 4. Please clarify which light fixtures are part of the alternate and which light fixtures are part of the base bid.	The lighting the canopy is both the base bid and the alternate.
33.	07/27/2023	09/20/2023	Drawing E101 – Is manhole MH-8 the existing manhole by the Primary Care MV switchgear or is this a new manhole?	MH-8 is not existing and will be a new manhole.

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34.	07/27/2023	09/20/2023	Drawing E301 – Behind the main reception desk there is a symbol with a P next to it. Nothing is shown on the legend for this symbol. Is this for a panic button? If so, is Siemens to tie it into the hospital wide panic alert system?	<i>This a panic button. A specification will be issued in the addendum.</i>
35.	07/27/2023	09/20/2023	Drawing E301 – This print shows the new temporary entrance. Access control is shown on the door. Does the LVMC require any CCTV cameras to cover the outside / inside of the temporary door?	Please provide a camera observing the new temporary entrance to include the ramp and stairs areas.
36.	07/27/2023	09/20/2023	Drawing A601 door schedule – Doors 101A-B-C-D are automatic sliding doors. Drawing E301 shows electric strikes and door contacts. Sliding doors don't use electric strikes or door contacts. Please advise as to a solution. Recommend automatic door contractor to provide locking device in door with door position switches which security contractor can tie into.	Delete card reader, electric strikes, and door contacts on E301. Door hardware spec is correct.
37.	07/27/2023	09/20/2023	Drawing A601 door schedule – Temporary doors T101A are automatic swing doors. Drawing E301 shows electric strikes and door contacts. Automatic swing doors don't use electric strikes or door contacts. Please advise as to a solution. Recommend automatic door contractor to provide locking device in door with door position switches which security contractor can tie into.	Delete card reader, electric strikes, and door contacts on E301. Door hardware spec is correct.
38.	07/27/2023	09/20/2023	Drawing E401 lighting fixture schedule – The lighting schedule shows a type LT exterior wall pack. There are no type LT light fixtures shown on the floor plans. Please clarify.	Light fixture type 'LT' is no longer a part of the project.
39.	07/27/2023	09/20/2023	Is MC cable acceptable for in-wall rough-ins and above drywall ceilings?	No. All electrical rough in's must be in conduits



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40.	07/27/2023	09/20/2023	Can light fixtures be daisy chained with MC cable?	Connect lighting fixtures to conduit runs with maximum 1.8 M (6 feet) of flexible metal conduit extending from a junction box to the fixture. As per specs 26.05.33-9
41.	07/27/2023	09/20/2023	Drawing E201 Vestibule T101 there are (2) light fixtures marked type TR, but they are also noted as existing to remain. Please clarify that these are new light fixtures and not existing to remain.	Vestibule T101 – these are new light fixtures.
42.	07/27/2023	09/20/2023	Drawing E201 Lighting plan keynote 8 mentions a “new fixture J”. What is a fixture J? This is not listed on the fixture schedule.	Delete the letter ‘J’ from the note. There is no type ‘J’ light fixture in the project.
43.	07/27/2023	09/20/2023	Drawing E301 shows SP-1 & SP-2 fed from a duplex receptacle, however on drawing E401 mechanical equipment wiring schedule it shows a 30amp manual motor switch. Please clarify if the 30amp manual motor switch is required.	Delete motor rated switch for sump pumps.
44.	07/27/2023	09/20/2023	Drawing E401 mechanical equipment wiring schedule shows the EC is responsible for purchasing the disconnect switches for the exhaust fans. However, M301 exhaust fan schedule notes that the MC is to provide the disconnect with the exhaust fans.	The disconnect switch should be the responsibility of the EC to purchase and install.
45.	07/27/2023	09/20/2023	Will VAMC provide us with the existing coordination / arc flash study to add the new panels to the study?	VAMC will provide what information they have available.
46.	07/27/2023	09/20/2023	Will VAMC be providing the wireless access points?	The VA’s FITS department will have a separate contract after construction is complete to install AP’s. The general contractor will install conduit and or trays to approximate locations. Coordinate with COR
47.	07/27/2023	09/20/2023	Drawing E302 shows power to an exterior clock. Who furnishes and installs the clock?	The general contractor

ITEM NO.	DATE QUESTION RECEIVED	DATE QUESTION ANSWERED	QUESTION	GOVERNMENT RESPONSE
48.	07/27/2023	09/20/2023	Can security cabling be open cable, or does it have to be in conduit?	All cables must be in conduit

**SECTION 08 44 13**  
**GLAZED ALUMINUM CURTAIN WALLS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

- A. This section specifies glazed aluminum curtain wall system.
  - 1. Thermally isolated, pressure equalized on interior.
  - 2. Type: Unit and Mullion system to include following:
    - a. Glass Glass Spandrel Panels.
    - b. Integral reinforcing.
    - c. Closures, trim, subsills and flashings.
    - d. Column covers.
    - e. Fasteners, anchors, and related reinforcement.

**1.2 RELATED WORK:**

- A. Sustainable Design Requirements: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- B. Structural Steel: Section 05 12 00, STRUCTURAL STEEL FRAMING.
- C. Miscellaneous Metal Members: Section 05 50 00, METAL FABRICATIONS.
- D. Firestopping between Curtain Wall and Structure: Section 07 84 00, FIRESTOPPING.
  - 1. Sheet Metal Flashing and Trim: Section 07 60 00, FLASHING AND SHEET METAL.
- E. Joint Sealants: Section 07 92 00, JOINT SEALANTS.
- F. Aluminum and Glass Entry Doors and Storefront Construction: Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS.
- G.
- H. Glazing: Section 08 80 00, GLAZING.
- I. Louvers and Wall Vents: Section 08 90 00, LOUVERS AND VENTS.

**1.3 QUALITY ASSURANCE:**

- A. Qualifications:
  - 1. Approval by Contracting Officer Representative (COR) is required of products or service of proposed manufacturer, suppliers and installers, and will be based upon submission by Contractor of certification that:
    - a. Manufacturers Qualifications: Manufacturer with five (5) years continuous documented experience in design, fabrication, and

installation of glazed aluminum curtain wall systems of similar type and for projects of equivalent size.

- b. Installer: Manufacturer approved in writing who has continuously installed glazed aluminum curtain walls systems of similar type and for projects of equivalent size for previous five (5) years.
- c. Manufacturer is to provide technical field representation at project site, as a minimum, at start of project, during middle, towards end of project, and during field testing of field mockup panel.
- d. Manufacturers Professional Engineer Qualifications: A Professional Engineer who is legally qualified to practice in state where Project is located and who is experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of glazed aluminum curtain walls that are similar to those indicated for this Project in material, design, and extent.
- e. Testing Laboratory: Contractor is to retain AAMA accredited commercial testing laboratory to perform tests specified. Submit information regarding testing laboratory's facilities and qualifications of technical personnel to perform testing specified in this section.
- f. Product Options: Information on construction documents establishes requirements for aesthetic effects and performance characteristics of glazed aluminum curtain wall system. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, one another, and adjoining construction. Performance characteristics are indicated by criteria subject to verification by one (1) or more methods including preconstruction testing, field testing, or in-service performance.
  - 1) Do not modify intended aesthetic effects. If modifications are proposed, submit comprehensive explanatory data for review.
- g. Qualification of Welders:

- 1) Welding is to be performed by certified welders qualified in accordance with AWS D1.2/D1.2M, using procedures, materials, and equipment of the type required for this work.

B. Mockup:

1. Construct, at job site, full size typical wall unit which incorporates horizontal and vertical joints, framing, window units, panels, glazing, sealants, and other accessories as detailed and specified. Mock-up wall unit location, size and design are to be as indicated on construction documents. Orient mockup to be facing full sun when constructed.
2. Performance Test
  - a. Conduct performance test of mockup after approval of visual aspects has been obtained. Testing is to be performed on mockup according to requirements in "Field Quality Control" Article.
  - b. Refer to Performance Requirements and Field Quality Control Articles, this section, for testing requirements.
3. Approved Mock-up
  - a. After completion and approval of performance test results of job site mockup, as directed by COR, approved mock-up panel is to be used as minimum standard of comparison for entire curtain wall system.

C. Pre-Installation Conference

1. Prior to starting installation of glazed curtain wall system schedule conference with COR to demonstrate the following:
  - a. Clear understanding of construction documents.
  - b. Onsite inspection and acceptance of structural and pertinent structural details relating to curtain wall system.
  - c. Coordination of work of various trades involved. Conference is to be attended by Contractor; personnel directly responsible for installation of curtain wall system, flashing and sheet metal work, firestopping system and curtain wall manufacturer and their technical field representatives. Conflicts are to be resolved and confirmed in writing.

**1.4 SUBMITTALS:**

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Sustainable Design Submittals, as described below:
  - 1. Volatile organic compounds per volume as specified in PART 2 - PRODUCTS.
- C. Manufacturer's Literature and Product Data:
  - 1. Manufacturer's standard details and fabrication methods.
  - 2. Data on finishing, components, and accessories.
  - 3. Instructions: Submit descriptive literature, detail specifications, performance test data and instructions for installation, and adjustments.
  - 4. Recommendations for maintenance and cleaning of exterior surfaces.
- D. Shop Drawings:
  - 1. Show elevations of glazed curtain wall system at 1:48 (1/4 inch) scale, metal gages, details of construction, methods of anchorage, flashing and coping details, glazing details, firestopping assemblies at edge of slabs and details of installation. Show interfaces and relationships to work of other trades and continuity with adjacent thermal, weather, air and vapor barriers.
  - 2. Submit for curtain wall system, accessories , and mock-up . Tentative approval of drawings is to be received before fabrication of mock-up. Final approval of drawings is to be deferred pending approval of mock-up and accessories.
  - 3. Operation and Maintenance Manuals
    - a. Submit cleaning and maintenance instructions.
- E. Samples:
  - 1. Submit pairs of samples of each specified color and finish on 305 mm (12-inch) long section by width of each tubular, or extruded shape section or 305 mm by 305 mm (12-inch by 12-inch) wide sections of sheet shapes.
  - 2. Submit corner section of framing members showing fasteners, panels, glazing methods, glazing materials, and weather-stripping. Submit one (1) sample minimum 305 mm by 305 mm (12 inches by 12 inches). In lieu of submitting separate samples for corner section,

intermediate section, and panel, one (1) composite sample incorporating all components and features listed may be submitted.

3. Where normal color variations are anticipated, include two (2) or more units of each sample indicating extreme limits of color variations.

F. Glass:

1. Specified in Section 08 80 00, GLAZING.

G. Quality Assurance Submittals:

1. Design Data:

- a. Submit structural and thermal calculations for complete wall assembly. Structural calculations and design shop drawings signed and sealed by a Professional Engineer (PE).

2. Factory Test Reports:

- a. Test Reports: Submit certified test reports, for each of following listed tests, from a qualified independent testing laboratory showing that glazed aluminum curtain wall system assembly has been tested in accordance with specified test procedures and complies with performance characteristics as indicated by manufacturer's testing procedures. Submit factory tests required except that where a curtain wall system or component of similar type, size, and design as specified for this project has been previously tested within last year, under conditions specified herein, resulting test reports may be submitted in lieu of listed testing. Submit appropriate testing reports for specific tests indicated below:

- 1) Deflection and structural tests.
- 2) Water penetration tests.
- 3) Air infiltration tests.
- 4) Delamination tests.
- 5) Thermal conductance tests.
- 6) Sound transmission loss test.

H. Manufacturer's Certificates:

1. Submit Certificates of Compliance, with specification requirements, for the following:
  - a. Metal extrusions.

- b. Metal accessories.
  - c. Statement(s) that aluminum has been given specified thickness of anodizing or organic coating finish.
  - d. Statement(s) indicating manufacturers and installers conform with qualifications as specified.
  - e. Submit list (minimum of five (5)) of equivalent project size installations for both manufacturer and installer.
- I. Manufacturer's Field Reports:
- 1. Submit field reports of manufacturer's field representative observations of curtain wall installation indicating observations made during inspection at beginning of project, during middle of installation and at conclusion of project.
- J. Welders: Submit welders qualifications as specified.
- K. Testing Laboratory: Submit Testing Laboratory qualifications.

**1.5 DELIVERY, STORAGE AND HANDLING:**

- A. Refer to AAMA CW 10 for care and handling of architectural aluminum from shop to site.
- B. Prior to packaging for shipment from factory, mark wall components to correspond with shop and erection drawings and their placement location and erection sequence.
- C. Prior to shipment from factory, place knocked-down lineal curtain wall members in cardboard containers and cover finished surfaces of members with protective covering of adhesive paper, waterproof tape, or strippable plastic. Do not cover metal surfaces that will be in contact with sealants after installation.
- D. Inspect materials delivered to site for damage; unload and store with ventilation, free from heavy dust, not subject to combustion products or sources of water, and to permit easy access for inspection and handling. Sealing and caulking compounds, including handling, is to be in accordance with requirements of Section 07 92 00, JOINT SEALANTS.

**1.6 PROJECT CONDITIONS:**

- A. Field Measurements: Where glazed aluminum curtain wall systems are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying Work.



**1.7 APPLICABLE PUBLICATIONS:**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referred to in text by basic designation only.
- B. American Architectural Manufacturers Association (AAMA):
  - 501.8-14 .....Test Method for Determination of Resistance of Human Impact of Window Systems Intended for Use in Psychiatric Applications
  - MCWM-1-89 .....Metal Curtain Wall Manual
  - CW 10-12 .....Care and Handling of Architectural Aluminum from Shop to Site
  - CW 11-85 .....Design Windloads for Buildings and Boundary Layer Wind Tunnel Testing
  - CW 13-85 .....Structural Sealant Glazing Systems (A Design Guide)
  - TIR A11-04 .....Maximum Allowable Deflection of Framing Systems for Building Cladding Components of Design Wind Loads
  - 501-05 .....Methods of Test for Exterior Walls
  - 503-08 .....Field Testing of Metal Storefronts, Curtain walls and Sloped Glazing Systems
  - 2605-13 .....High Performance Organic Coatings on Architectural Extrusions and Panels
- C. American Society of Civil Engineers (ASCE):
  - ASCE 7-10 .....Minimum Design Loads for Buildings and Other Structures
- D. ASTM International (ASTM):
  - A36/A36M-12 .....Structural Steel
  - A123/A123M-13 .....Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
  - A193/A193M-14a .....Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service
  - A307-14 .....Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
  - B209-14 .....Aluminum and Aluminum Alloy Sheet and Plate
  - B209M-14 .....Aluminum and Aluminum Alloy Sheet and Plate (Metric)

- B211-12 .....Aluminum and Aluminum Alloy Bar, Rod, Wire
- B211M-12 .....Aluminum and Aluminum Alloy Bar, Rod, Wire  
(Metric)
- B221-14 .....Aluminum and Aluminum Alloy Extruded Bars, Rods,  
Wire, Shapes and Tubes
- B221M-13 .....Aluminum and Aluminum Alloy Extruded Bars, Rods,  
Wire, Shapes and Tubes (Metric)
- B316/B316M-10 .....Aluminum and Aluminum Alloy Rivet and Cold-  
Heading, Wire, and Rods
- C578-14a .....Rigid Cellular Polystyrene Thermal Insulation
- C612-14 .....Mineral Fiber Block and Board Thermal Insulation
- C920-14a .....Elastomeric Joint Sealants
- C794-10 .....Standard Test Method for Adhesion-In-Peel of  
Elastomeric Joint Sealants.
- C1193-13 .....Guide for Use of Joint Sealants
- C1363-11 .....Thermal Performance of Building Materials and  
Envelope Assemblies by Means of a Hot Box  
Apparatus
- C1521-13 .....Practice for Evaluating Adhesion of Installed  
Weatherproofing
- D1037-12 .....Evaluating the Properties of Wood-Base Fibers  
and Particle Panel Materials
- E84-14 .....Surface Burning Characteristics of Building  
Materials
- E330/E330M-14 .....Structural Performance of Exterior Windows,  
Curtain Walls, and Doors by Uniform Static Air  
Pressure Difference
- E331-00 (R2009) .....Water Penetration of Exterior Windows, Curtain  
Walls, and Doors By Uniform Static Air Pressure  
Difference
- E413-10 .....Classification for Rating Sound Insulation
- E783-02 (R2010) .....Test Method for Field Measurement of Air Leakage  
Through Installed Exterior Windows and Doors
- E1105-00 (R2008) .....Field Determination of Water Penetration of  
Installed Exterior Windows, Curtain Walls, and

Doors By Uniform or Cyclic Static Air Pressure  
Differences

- E. American Welding Society, Inc. (AWS):  
D1.2/D.1.2M-06 (R2014) ..Structural Welding Code-Aluminum
- F. Military Specifications (MIL):  
MIL-C-18480 .....(Rev. B) Coating Compound, Bituminous Solvent,  
Coal Tar Base
- G. National Association of Architectural Metal Manufacturers (NAAMM):  
500 Series (2006) .....Metal Finishes Manual
- H. Society for Protective Coatings (SSPC)  
Paint 25-97 (2004) .....Zinc Oxide, Alkyd, Linseed Oil Primer for Use  
Over Hand Cleaned Steel Type 1 and Type II  
Paint 20-82 (2019) .....Zinc-Rich Coating, Type I-Inorganic, and Type  
II-Organic.
- I. U.S. Veterans Administration (VA):  
PSDSD - Physical Security Design Standards Data Definitions.  
Physical Security Design Manual for VA Facilities (VAPSDG); Mission  
Critical Facilities  
Architectural Design Manual for VA Facilities (VASDM)
- J. Environmental Protection Agency (EPA):  
40 CFR 59(2014) .....National Volatile Organic Compound Emission  
Standards for Consumer and Commercial Products

**1.8 WARRANTY:**

- A. Construction Warranty: Comply with FAR clause 52.246-21, "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their glazed aluminum curtain wall system for a minimum of five (5) years from date of installation and final acceptance by the Government. Submit manufacturer warranty.

**PART 2 - PRODUCTS**

**2.1 SYSTEM DESCRIPTION:**

- 1. Design Requirements: Basis of Design: 750 OGP by YKK AP America.Curtain Wall System: Tubular aluminum sections Tubular aluminum sections with thermal break condition self-supporting supplementary support framing, factory prefinished, vision glass, glass ; related flashings, anchorage and attachment devices.

2. System Assembly: Shop unitized assembly.
  3. Maximum wall framing member deflection, in a direction normal to plane of wall: 1/175 of its clear span or 20 mm (3/4 inch), whichever is less, when designed in accordance with requirements of AAMA TIR A11 and tested in accordance with ASTM E330/E330M.
  4. Maximum wall framing member deflection when a plastered gypsum wallboard surface is affected: 1/360 of span.
  5. Maximum Framing Member Permanent Deformation: 0.2 percent of its clear span when tested in accordance with ASTM E330/E330M for a minimum test period of 10 seconds at 1.5 times design wind pressures indicated as part of structural drawing wind load requirements.
- B. No glass breakage, or damage to fasteners, hardware or accessories is permitted due to deformation design requirements indicated.
- a. Provide system complete with framing, mullions, trim, fasteners, anchors, accessories, concealed auxiliary members, and attachment devices for securing wall to structure as specified or indicated. Unless noted otherwise, comply with AAMA MCWM-1.
  - b. Obtain all components of curtain wall system, including framing entrances from single manufacturer.
  - c. Fully coordinate system accessories directly incorporated and adjacent to contiguous related work and ensure materials compatibility, deflection limitations, thermal movements, and clearances and tolerances as indicated or specified. Coordinate continuity with adjacent thermal, weather, air and vapor barriers.
  - d. Provide system with adequate allowances for expansion and contraction of components and fastenings to prevent buckling damage, joint seal failure, glass breakage, undue stress on fastenings or other detrimental effects. For design purposes, base provisions for thermal movement on assumed ambient temperature range of from -18 degrees C to 49 degrees C (0 degrees F to 120 degrees F).
  - e. Provide wall system to accommodate tolerances in building frame and other contiguous work as indicated or specified.

- C. Calculations: Submit professionally prepared calculations to indicate how design requirements for structural loading, thermal, and other performance criteria have been satisfied.

**2.2 PERFORMANCE REQUIREMENTS:**

- A. Delegated Design: Engage a qualified Professional Engineer, to design glazed aluminum curtain walls.
- B. Conform with system performance requirements specified.
- C. Provide curtain wall components tested in accordance with requirements below and meeting performance requirements specified:
1. System Design: Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall as calculated in accordance with code. as calculated in accordance with ASCE 7. to a design pressure of kPa, ( 100 lb./sq. ft.) as measured in accordance with ASTM E330/E330M.
  2. Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with ASCE/SEI 7-16 code. Provide with the following tolerances.
    - a. Phase I: 3 stroke cycles using .005 x the story height - no damage or failure.
    - b. Phase II: 3 stroke cycles using .010 x the story height - no damage or failure.
  3. Water Penetration:
    - a. No water penetration is to occur when wall is tested in accordance with ASTM E331 at a differential static test pressure of 20 percent of inward acting design wind pressure as indicated on structural drawings, but not less than 479 Pa (10 psf).
    - b. Make provision in wall construction for adequate drainage to outside of water leakage or condensation that occurs within outer face of wall. Leave drainage and weep openings in members and wall open during test.
  4. Air Infiltration: Test glazed aluminum curtain wall system according to AAMA 503, which requires testing according to ASTM E783.
    - a. Static-Air-Differential: 75 Pa (1.57 lbf/sq. ft.) minimum.

- b. Air Leakage: 0.03 L/s per sq. m (0.06 cfm/sq. ft.) of surface maximum.
5. Deflections Test: ASTM E330/E330M, Procedure B:
    - a. No member is to deflect in a direction parallel to plane of wall, when carrying its full design load, more than an amount which will reduce edge cover or glass bite below 75 percent of design dimension. No member after deflection under full design load, is to have a clearance between itself and top of panel, glass, sash, or other part immediately below it less than 3 mm (1/8 inch); clearance between member and an operable window or door is to be minimum 1.5 mm (1/16 inch).
  6. Delamination Test:
    - a. Adhesively bonded metal-faced panels are to show no evidence of delamination, warpage or other deterioration or damage when subjected to the six "Accelerated Aging Cycles" specified in ASTM D1037.
  7. Thermal Conductance Tests: ASTM C1363.
    - a. The thermal transmittance of opaque panels are not to exceed a U-value, Btu/hr./sq. ft./ degree F, as required and indicated on construction documents for exterior wall system, when tested in accordance with ASTM C1363. Average calculated thermal transmittance of complete wall assembly including panels, windows, and all other components are not to exceed a U-value of
  8. Sound Attenuation Through Wall System (Exterior to Interior):
    - a. STC 50, measured in accordance with ASTM E413.
  9. Physical Security Mission Critical Facilities:
    - a. Provide glazed aluminum curtain walls designed to meet or exceed the design and construction standards as provided in the Physical Security Design Manual for VA Facilities: Mission Critical Facilities.
      - 1) Blast Resistance: Design level vehicle threat (W1) located at the standoff distance, but not greater than GP2.

**2.3 MATERIALS:**

- A. Extruded Aluminum Framing Members: ASTM B221M (B221); 6063-T5 extruded aluminum for non-structural components or 6063-T6 extruded aluminum for structural members; temper and alloy as recommended by manufacturer.
- B. Sheet Aluminum: ASTM B209M (B209); 6065-T5 temper and alloy as recommended by manufacturer.
  - 1. Formed flashing and closures: Minimum 1.58 mm (0.062 inch) thick aluminum, in finish as selected.
  - 2. Extruded sill members: Minimum 1.58 mm (0.062 inch) thick aluminum, in finish as selected.
- C. Steel Sections: ASTM A36/A36M.
- D. Primer: TS TT-P-645; red, for shop application and field touch-up.
- E. Fasteners:
  - 1. For Exterior Cap Retainers: ASTM A193/A193M B8 300 series, stainless steel screws.
  - 2. For Framework Connections: ASTM B211M (B211) 2024-T4 aluminum, ASTM A193/A193M B8 300 series, stainless steel, and ASTM B316 aluminum rivets, as required by connection.
  - 3. For Anchoring Glazed Aluminum Curtain Wall to Support Structure: ASTM A307 zinc plated steel fasteners.
- F. Shims: Metal or plastic.
- G. Joint Sealants and Accessories:
  - 1. In accordance with requirements specified in Section 07 92 00, JOINT SEALANTS.
  - 2. Structural Flush Glazed Joints: High performance silicone sealant applied in accordance with manufacturer's recommendations.
  - 3. Non-structural Flush Glazed Joints and Weather Seal Joints: Silicone sealants applied in accordance with manufacturer's recommendations.
  - 4. Sealants used inside the weatherproofing system are to have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, (EPA Method 24).
  - 5. Structural silicone sealant performance requirements: ASTM C920.
    - a. Hardness: Type A, 30 durometer.
    - b. Ultimate Tensile Strength: 1172 kPa (170 psi).
    - c. Tensile at 150% Elongation (of original bench mark distance): 55 kPa (80 psi).

- d. Joint Movement Capability after 14 Day Cure: +/- 50%.
  - e. Peel Strength Aluminum, After 21 Day Cure: 599 g/mm  
(34 pounds per inch).
  - 6. Structural silicone is not be used to support dead weight of vertical glass or panels.
  - 7. Comply with recommendations of sealant manufacturer for specific sealant selections.
  - 8. Provide only sealants that have been tested per ASTM C794 to exhibit adequate adhesion to samples of glass and metal equivalent to those required for project.
  - 9. Exposed Metal to Metal Joints: Silicone sealant selected from manufacturer's standard colors.
- H. Glazing Materials:
- 1. As specified under Section 08 80 00, GLAZING.
  - 2. Glazing Gaskets:
    - a. Exterior: Continuous EPDM gaskets at each glass and spandrel panel.
    - b. Interior: Continuous, closed cell PVC foam sealant tape, sealed at corners.
  - 3. Glass Sizes and Clearances:
    - a. Accommodate up to 25 mm (1 inch) glazing.
    - b. Sizes indicated are nominal. Verify actual sizes required by measuring frames. Coordinate dimensions for glass and glass holding members to meet applicable minimum clearances as recommended by glass manufacturer. Do not nip glass to remove flares or to reduce oversized dimensions. All cutting is to occur in factory.
  - 4. Glass Setting Materials:
    - a. Provide head bead and drive wedge required for glass installation to suit curtain wall system in accordance with manufacture's recommendations.
- I.
- J. Firestopping: Refer to Section 07 84 00, FIRESTOPPING for requirements.

**2.4 FABRICATION:**

- A. Curtain wall components are to be of materials and thickness indicated in construction documents. Details indicated are representative of required design and profiles. Maintain sightlines. Unless specifically



indicated or specified otherwise, methods of fabrication and assembly are to be at discretion of curtain wall manufacturer. Perform fitting and assembling of components in shop to maximum extent practicable. Anchorage devices are to permit adjustment in three directions. No exposed fasteners are permitted.

- B. Joints: Joints exceeding +1.5 mm (+1/16") are to be mechanically fastened.
- C. Ventilation and Drainage: Direct water leakage to exterior by means of concealed drainage system and weeps. Flashings and other materials used internally are to be nonstaining, noncorrosive, and nonbleeding.
- D. Protection and Treatment of Metals:
  - 1. Remove from metal surfaces lubricants used in fabrication and clean off other extraneous material before leaving shop.
  - 2. Provide protection against galvanic action wherever dissimilar metals are in contact, except in case of aluminum in permanent contact with galvanized steel, zinc, stainless steel, or relatively small areas of white bronze. Paint contact surfaces with one coat bituminous paint conforming to MIL-C-18480 or apply appropriate caulking material or nonabsorptive, noncorrosive, and nonstaining tape or gasket between contact surfaces.
- E. Metal sills and Closures: Fabricate accessories, spandrel panels, trim closures of sizes and shapes indicated from similar materials and finish as specified for wall system.
- F. Concealed Interior Mullion Reinforcing: ASTM A36/A36M steel shapes as required for strength and mullion size limitations, hot dip galvanized after fabrication in accordance with ASTM A123/A123M.

## 2.5 METAL FINISHES:

- A. In accordance with NAAMM AMP500 series.
  - a. To be selected from manufacturers full range.
- B. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - 1. Two-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat.
- C.

**PART 3 - EXECUTION**

**3.1 EXAMINATION:**

- A. Prior to installation of glazed curtain wall system, arrange for representative(s) of manufacturer to examine structure and substrate to determine that they are properly prepared, and ready to receive glazed curtain wall work included herein.
- B. Verifying Conditions and Adjacent Surfaces: After establishment of lines and grades and prior to system installation examine supporting structural elements. Verify governing dimensions, including floor elevations, floor to floor heights, minimum clearances between curtain wall and structural frames, and other permissible dimensional tolerances in building frame.

**3.2 PREPARATION:**

- A. Take field dimensions and examine condition of substrates, supports, and other conditions under which work of this section is to be performed to verify that work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Contact between aluminum and dissimilar metals are to receive a protective coating of bituminous paint for prevention of electrolytic action and corrosion.

**3.3 INSTALLATION:**

- A. Install and erect glazed curtain wall system and all components in accordance with written directions of curtain wall manufacturer. Match profiles, sizes, and spacing indicated on approved shop drawings.
- B. Bench Marks and Reference Points: Establish and permanently mark bench marks for elevations and building line offsets for alignment at convenient points on each floor level. Should any error or discrepancy be discovered in location of marks, stop erection work in that area until discrepancies have been corrected.
- C. Ensure that drainage system operates properly in accord with AAMA 501 procedures.
- D. Do not proceed with structural silicone work when metal temperature is below 0 degrees C (32 degrees F).
- E. Isolate between aluminum and dissimilar metals with protective coating or plastic strip to prevent electrolytic corrosion.
- F. Install glazed aluminum curtain wall system so as to maintain a virtually flat face cap, with no visible bowing.

- G. Install entire system so that fasteners are not visible.
- H. Tolerances:
1. Maximum variation from plane or location shown on approved shop drawings: 3 mm per 3657 mm (1/8 inch per 12 feet) of length up to not more than 13 mm (1/2 inch) in any total length.
  2. Maximum offset from true alignment between two (2) identical members abutting end to end in line: 0.8 mm (1/32 inch).
  3. Sealant Space Between Curtain Wall Mullion and Adjacent Construction: Maximum of 19 mm (3/4 inch) and minimum of 6 mm (1/4 inch).
- I. Joint Sealants:
1. Joint Sealants: Are to be in accordance with requirements of Section 07 92 00, JOINT SEALANTS.
  2. Surfaces to be primed and sealed are to be clean, dry to touch, free from frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter. Enclose joints on three sides. Clean out grooves to proper depth. Joint dimensions are to conform to approved detail drawings with a tolerance of plus 3 mm (1/8 inch). Do not apply compound unless ambient temperature is between 5 and 35 degrees C (40 and 90 degrees F). Clean out loose particles and mortar just before sealing. Remove protective coatings or coverings from surfaces in contact with sealants before applying sealants or tapes. Solvents used to remove coatings are to be of type that leave no residue on metals.
  3. Match approved sample. Force compound into grooves with sufficient pressure to fill grooves solidly. Sealing compound is to be uniformly smooth and free of wrinkles and, unless indicated otherwise, is to be tooled and left sufficiently convex to result in a flush joint when dry. Do not trim edges of sealing material after joints are tooled. Mix only amount of multi-component sealant which can be installed within four (4) hours, but at no time is this amount exceed 19 liters (5 gallons).
  4. Apply primer to masonry, concrete, wood, and other surfaces as recommended by sealant manufacturer. Do not apply primer to surfaces which will be exposed after sealant work is completed.
  5. Tightly pack backing in bottom of joints which are over 13 mm (1/2 inch) in depth with specified backing material to depth

indicated in construction documents. Roll backing material of hose or rod stock into joints to prevent lengthwise stretching.

6. Install bond preventive material at back or bottom of joint cavities in which no backstop material is required, covering full width and length of joint cavities.
7. Remove compound smears from surfaces of materials adjacent to sealed joints as work progresses. Use masking tape on each side of joint where texture of adjacent material will be difficult to clean. Remove masking tape immediately after filling joint. Scrape off fresh compound from adjacent surfaces immediately and rub clean with solvent approved by sealant and curtain wall manufacturers. Upon completion of sealing, remove remaining smears, stains, and other soiling, and leave work in clean neat condition.

J. Glass:

1. Refer to Section 08 80 00, GLAZING, and drawings for glass types. Install in accordance with manufacturer's recommendations as modified herein.
2. Before installing glass, inspect sash and frames to receive glass for defects such as dimensional variations, glass clearances, open joints, or other conditions that will prevent satisfactory glass installation. Do not proceed with installation until defects have been corrected.
3. Clean sealing surfaces at perimeter of glass and sealing surfaces of rebates and stop beads before applying glazing compound, sealing compound, glazing tape, or gaskets.
4. Use only approved solvents and cleaning agents recommended by compound or gasket manufacturer and by curtain wall manufacturer.
5. Provide sashes designed for outside glazing.
6. Provide continuous snap in glazing beads to suit glass as specified.
7. Insulating and tempered glass, and glass of other types that exceed 2540 mm (100 united inches) in size: Provide void space at head and jamb to allow glass to expand or move without exuding sealant. Provide perimeter frames and ventilator sections with glazing rebates for unobstructed glazing surface 19 mm (3/4 inch) in height. Glazing rebate surfaces must be sloped to shed water.

8. Provide adequate means to weep incidental water and condensation away from sealed edges of insulated glass units and out of wall system. Provide weeping of lock-strip gaskets in accordance with recommendation of glass manufacturer.

K. Metal Copings:

1. Refer to Section 07 60 00, FLASHING AND SHEET METAL for requirements of metal copings when they are not a part of glazed curtain wall system work.
2. Coordinate curtain wall installation with metal coping detail on construction documents. Provide watertight seal to meet criteria set forth in this section regarding air and water penetration.

**3.4 ADJUSTING:**

- A. Adjust weather-stripping to make even contact with surfaces.

**3.5 CLEANING:**

- A. Install curtain wall frame and associated metal to avoid soiling or smudging finish.
- B. Clean metal surfaces promptly after installation, exercising care to avoid damage to coatings.
- C. Remove excess glazing and sealant compounds, dirt, and other substances.
- D. Follow recommendations of manufacturer in selection of cleaning agents. Do not use cleaning agents containing ammonia or other compounds that might damage finished metal surfaces.
- E. Replace cracked, broken, and defective glass with new glass at no additional cost to Government. Just prior to final acceptance of curtain wall system clean glass surfaces on both sides, remove labels, paint spots, compounds, and other defacements, and clean metal fixed panels. Remove and replace components that cannot be cleaned successfully.

**3.6 FIELD QUALITY CONTROL:**

- A. Testing Agency: Engage an AAMA accredited commercial qualified independent testing and inspecting agency to perform field quality-control tests specified, and to prepare test reports: Submit

information regarding testing laboratory's facilities and qualifications of technical personnel to COR for approval.

- B. Conduct field check test for water leakage on designated wall areas after erection to comply with AAMA MCWM-1. Conduct test on two (2) wall areas, two (2) bays wide by two (2) stories high where directed. Conduct test and take necessary remedial action as directed by COR.
- C. Test Specimen:
  - 1. Test specimen is to include curtain wall assembly and construction. Test chamber is to be affixed to exterior side of test specimen and test is to be conducted using positive static air pressure.
  - 2. Test specimens are to be selected by COR after curtain wall system has been installed in accordance with construction documents.
- D. Sealant Adhesion Tests: Test installed sealant, in presence of sealant manufacturer's field representative, in a minimum of two (2) areas and as follows:
  - 1. Test structural silicone sealant according to field adhesion test method described in AAMA CW 13.
  - 2. Test weatherseal sealant adhesion to joint substrates according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
- E. Air Infiltration: Test glazed aluminum curtain wall system according to AAMA 503, which requires testing according to ASTM E783 and to values indicated below, whichever is more stringent.
  - 1. Field air leakage testing is not required for continuous curtain wall systems.
  - 2. Static-Air-Pressure Differential: 75 Pa (1.57 lbf/sq. ft.) minimum.
  - 3. Air Leakage: 0.03 L/s per sq. m (0.06 cfm/sq. ft.) of surface maximum.
- F. Water Penetration: Test glazed aluminum curtain wall system for compliance with requirements according to AAMA 503, which requires testing according to ASTM E1105.
  - 1. Uniform Static-Air-Pressure Difference: 20 percent of positive design wind load, but not less than 479 Pa (10 psf). No uncontrolled water is to be present.
- G. Retesting:
  - 1. Should system fail field test, system may be modified or repaired, and retested.

2. Should system fail second field test, system may be additionally modified or repaired, and retested.
3. All modifications and repairs made to tested areas are to be recorded, and same modifications and repairs made to all system and adjacent construction on project.
4. Should second test fail, COR may require testing of additional areas of the curtain wall.

H. Rejection:

1. Failure of any of specimens to meet test requirements of third test is cause for rejection of wall system and adjacent construction on project.

I.

**3.7 PROTECTION:**

- A. After installation, protect windows, and other exposed surfaces from disfiguration, contamination, contact with harmful materials, and from other construction hazards that will interfere with their operation, or damage their appearance or finish. Protection methods are to be in accordance with recommendations of product manufacturers or of respective trade association. Remove paper or tape factory applied protection immediately after installation. Clean surfaces of mortar, plaster, paint, smears of sealants, and other foreign matter to present neat appearance and prevent fouling of operation. In addition, wash with a stiff fiber brush, soap and water, and thoroughly rinse. Where surfaces become stained or discolored, clean or restore finish in accordance with recommendations of product manufacturer or respective trade association.

- - - END - - -

## ELECTRICAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BRANCH CIRCUITS TO DEVICES OR EQUIPMENT - SHORT TICKS INDICATE HOTS - LONG TICK INDICATES NEUTRAL - NO TICK MARKS INDICATES ONE HOT AND ONE NEUTRAL		DASHED GREY LINES AROUND EQUIPMENT INDICATE NEC REQUIRED CLEARANCES
	INCLUDE A GROUND CONDUCTOR IN ALL CONDUITS AND RACEWAYS PER NEC REQUIREMENTS. GROUND CONDUCTORS ARE NOT INDICATED WITH TICK MARKS.		KEYED NOTE REFER TO KEYNOTE SCHEDULE ON DRAWING
	SOLID HATCHING OVER LIGHTING FIXTURES INDICATES FIXTURE SHALL BE POWERED VIA LIFE SAFETY CIRCUIT AND RELAYED VIA UL524 LISTED DEVICE FOR LIFE BRIGHTNESS DURING FIRE ALARM OR NORMAL POWER LOSS.		EXIT SIGN, WALL MOUNTED CHEVRONS AS INDICATED ON DRAWINGS
	REFER TO LIGHTING FIXTURE SCHEDULE FOR ASSOCIATED SYMBOL FOR EACH FIXTURE TYPE.		EXIT SIGN, FLAG MOUNTED FACES AND CHEVRONS AS INDICATED ON DRAWINGS
	PANELBOARD REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION		EXIT SIGN, CEILING MOUNTED FACES, CHEVRONS, AND ORIENTATION AS INDICATED ON DRAWINGS
	SAFETY DISCONNECT SWITCH (NON-FUSED) NUMBER OF POLES AND FRAME SIZE AS INDICATED		SINGLE POLE SWITCH
	1-PHASE MOTOR EQUIPMENT TAG AS INDICATED		TWO POLE, SINGLE POLE SWITCH
	DUPLEX WALL RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE		3-WAY SWITCH
	DUPLEX WALL RECEPTACLE ALL OUTLETS SWITCHED VIA LOCAL OCCUPANCY SENSING NEMA 5-20R UNLESS NOTED OTHERWISE		4-WAY SWITCH
	DUPLEX WALL RECEPTACLE WITH ISOLATED GROUND NEMA 5-20R UNLESS NOTED OTHERWISE		KEYED SWITCH
	DUPLEX FLOOR RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE		TIMER SWITCH
	DUPLEX FLOOR RECEPTACLE ALL OUTLETS SWITCHED VIA LOCAL OCCUPANCY SENSING NEMA 5-20R UNLESS NOTED OTHERWISE		DIMMER SWITCH
	DUPLEX FLOOR RECEPTACLE WITH ISOLATED GROUND NEMA 5-20R UNLESS NOTED OTHERWISE		MOMENTARY CONTACT SWITCH
	SECURITY GLASS BREAK SENSOR		OCCUPANCY SENSING SWITCH (AUTOMATIC-ON, AUTOMATIC-OFF)
	SECURITY MOTION DETECTOR		VACANCY SENSING SWITCH (MANUAL-ON, AUTOMATIC-OFF)
	PUSH BUTTON - DOOR OPERATOR		OCCUPANCY SENSING SWITCH WITH DIMMING CONTROL (AUTOMATIC-ON, AUTOMATIC-OFF)
	SECURITY EQUIPMENT CONTROL PANEL		VACANCY SENSING SWITCH WITH DIMMING CONTROL AND AUTOMATIC (MANUAL-ON, AUTOMATIC-OFF)
	RETRACTABLE CORD REEL (RCR), AND ADJACENT DUPLEX OUTLET		WALL DATA OUTLET TYPE AND CONFIGURATION AS NOTED ON DRAWINGS
	ELECTRIC STRIKE		WIRELESS ACCESS POINT
	SECURITY CARD READER		VACANCY SENSOR (AUTOMATIC-ON, AUTOMATIC-OFF)
	SECURITY DOOR CONTACT		LIGHT LEVEL SENSOR
	SECURITY CAMERA		

## ELECTRICAL ABBREVIATIONS LIST

1P	1 POLE (2P, 3P, 4P, ETC.)	GA	GAUGE	PP	POWER POLE
A	AMPERE	GAL	GALLON	PR	PAIR
AC	ABOVE COUNTER OR AIR CONDITIONER	GALV	GALVANIZED	PRI	PRIMARY
ACLG	ABOVE CEILING	GC	GENERAL CONTRACTOR	PROJ	PROJECTION
ADD	AUTOMATIC DOOR OPERATOR	GEN	GENERATOR	PRV	POWER ROOF VENTILATOR
AF	AMP FRAME	GFI	GROUND FAULT CIRCUIT INTERRUPTER	PT	POTENTIAL TRANSFORMER
AFT	ABOVE FINISHED FLOOR	GFP	GROUND FAULT PROTECTOR	PVC	POLYVINYL CHLORIDE (CONDUIT)
AFG	ABOVE FINISHED GRADE	GND	GROUNDING	PHR	PURIFIED WATER
AFI	ARC FAULT CIRCUIT INTERRUPTER	GNS	GALVANIZED RIGID STEEL (CONDUIT)	QUAN	QUANTITY
AHU	AIR HANDLING UNIT	GYP BD	Gypsum BOARD	RCPT	RECEPTACLE
AL	ALTERNATE	HCA	HANDS-OFF AUTOMATIC SWITCH	REQD	REQUIRED
ALT	ALTERNATE	HORIZ	HORIZONTAL	ROOM	ROOM
AMP	AMPERE	HP	HIGH POWER FACTOR	RSC	RIGID STEEL CONDUIT
AMPFL	AMPLIFIER	HPT	HEIGHT	RTU	ROOF TOP UNIT
ANNUN	ANNUNCIATOR	HTR	HEATER	SEC	SECONDARY
APPROX	APPROXIMATELY	HTG	HEATING	SHT	SHEET
ADJSTAT	ADJUST	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	SIMLAR	SIMILAR
ARCH	ARCHITECT, ARCHITECTURAL	IC	AIR CONDITIONING	SIN	SOLID NEUTRAL
AS	AMP SWITCH	IG	ISOLATED GROUND	SPEC	SPECIFICATION
AUXILIARY	AUXILIARY	INCAND	INCANDESCENT	SPRKR	SPRINKLER
ATS	AUTOMATIC TRANSFER SWITCH	IR	INFRARED	SSW	SELECTOR SWITCH
AUTO	AUTOMATIC	IW	INTERLOCK WITH	SS	STAINLESS STEEL
AV	AUDIO VISUAL	JBOX	JUNCTION BOX	STA	STANDARD
AWG	AMERICAN WIRE GAUGE	KV	KILOVOLT	STMT	START/STOP PUSHBUTTONS
BDR	BOARD	KVA	KILOVOLT-AMPERE	STD	STANDARD
BLDG	BUILDING	KVAR	KILOVOLT-AMPERE REACTIVE	SURF	SURFACE MOUNTED
BMS	BUILDING MANAGEMENT SYSTEM	KWH	KILOWATT HOUR	SW	SWITCH
CAB	CABINET	LOC	LOCATE OR LOCATION	SWBD	SWITCHBOARDS
CAT	CATALOG	LT	LIGHT	SYM	SYMMETRICAL
CATV	CABLE TELEVISION	LV	LOW VOLTAGE	SYS	SYSTEM
CB	CIRCUIT BREAKER	LVG	LOW VOLTAGE	TEL	TELEPHONE
CCTV	CLOSED CIRCUIT TELEVISION	LVG	LOW VOLTAGE	TERM	TERMINAL
CKT	CIRCUIT	LVG	LOW VOLTAGE	T-LCK	TWIST LOCK
CLG	CEILING	LVG	LOW VOLTAGE	TR	TAMPER RESISTANT
COMB	COMBINATION	MAX	MAXIMUM	T-STAT	THERMOSTAT
COMP	COMPRESSOR	MAG-S	MAGNETIC STARTER	TTC	TELEPHONE TERMINAL CABINET
CONN	CONNECTION	MC	MOMENTARY CONTACT	TV	TELEVISION
CONSTR	CONSTRUCTION	MC	MECHANICAL CONTRACTOR	TYTC	TELEVISION TERMINAL CABINET
CONT	CONTRIBUTION OR CONTINUOUS	MCB	MAIN CIRCUIT BREAKER	TYP	TYPICAL
CONTR	CONTRACTOR	MCC	MOTOR CONTROL CENTER	UC	UNDER COUNTER
CONV	CONVERTOR	MDC	MAIN DISTRIBUTION CENTER	UE	UNDERGROUND ELECTRICAL
CP	CIRCULATING PUMP	MDP	MAIN DISTRIBUTION PANEL	UG	UNDERGROUND
CRT	CATHODE RAY TUBE	MFR	MANUFACTURER	UH	UNIT HEATER
CT	CURRENT TRANSFORMER	MH	MANHOLE	UT	UNDERGROUND TELEPHONE
CTR	CENTER	MIN	MINIMUM	UTIL	UTILITY
CU	COPPER	MISC	MISCELLANEOUS	UV	UNIT VENTILATOR OR ULTRAVIOLET
D	DIAMETER	MLO	MAIN LOSS ONLY	V	VOLT
DCP	DOMESTIC WATER CIRCULATING PUMP	MMS	MANUAL MOTOR STARTER	VA	VOLT-AMPERES
DET	DETAIL	MOK	MULTI-OUTLET ASSEMBLY	VDT	VIDEO DISPLAY TERMINAL
DISC	DISCONNECT	MSP	MOTOR STARTER PANELBOARD	VERT	VERTICAL
DIST	DISTRIBUTION	MSSD	MAIN SWITCHBOARD	VFD	VARIABLE FREQUENCY DRIVE
DN	DOWN	MOUNT	MOUNT	VOL	VOLUME
DPR	DAMPER	MTR	MOTOR, MOTORIZED	W	WATT
DS	SAFETY DISCONNECT SWITCH	N.C.	NORMALLY CLOSED	W/	WITH
DT	DOUBLE THROW	NEC	NATIONAL ELECTRICAL CODE	WG	WIRE GUARD
DWG	DRAWING	NEMA	NATIONAL ELECTRICAL	WH	WATER HEATER
EC	ELECTRICAL CONTRACTOR	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	WIO	WITHOUT
ELEC	ELECTRICAL	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	W/	WITH
ELEV	ELEVATOR	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	W/	WITHOUT
EM	EMERGENCY	NIC	NOT IN CONTRACT	WTR	WATER
EMS	ENERGY MANAGEMENT SYSTEM	NL	NIGHT LIGHT	XFR	TRANSFER
EMT	ELECTRICAL METALLIC TUBING	N.O.	NORMALLY OPEN	@	AT
EP	ELECTRIC PNEUMATIC EQUIPMENT	NTS	NOT TO SCALE	*	FEET
EQ	EQUIPMENT	OL	OVERLOAD	#	NUMBER
EWC	ELECTRIC WATER COOLER	OL	OVERLOADS	C	CIRCUIT LINE
EXIST	EXISTING	PA	PUBLIC ADDRESS	P	PLATE
EXH	EXHAUST	PB	PULL BOX OR PUSHBUTTON		
EXP	EXPLOSION PROOF	PE	PNEUMATIC ELECTRIC		
FOU	FAN COIL UNIT	PEB	PEDESTAL		
FIXT	FIXTURE	PF	POWER FACTOR		
FLR	FLOOR	PH	PHASE		
FU	FUSE	PIV	POST INDICATING VALVE		
FUDS	FUSED SAFETY DISCONNECT SWITCH	PNL	PANEL		

## ELECTRICAL GENERAL NOTES

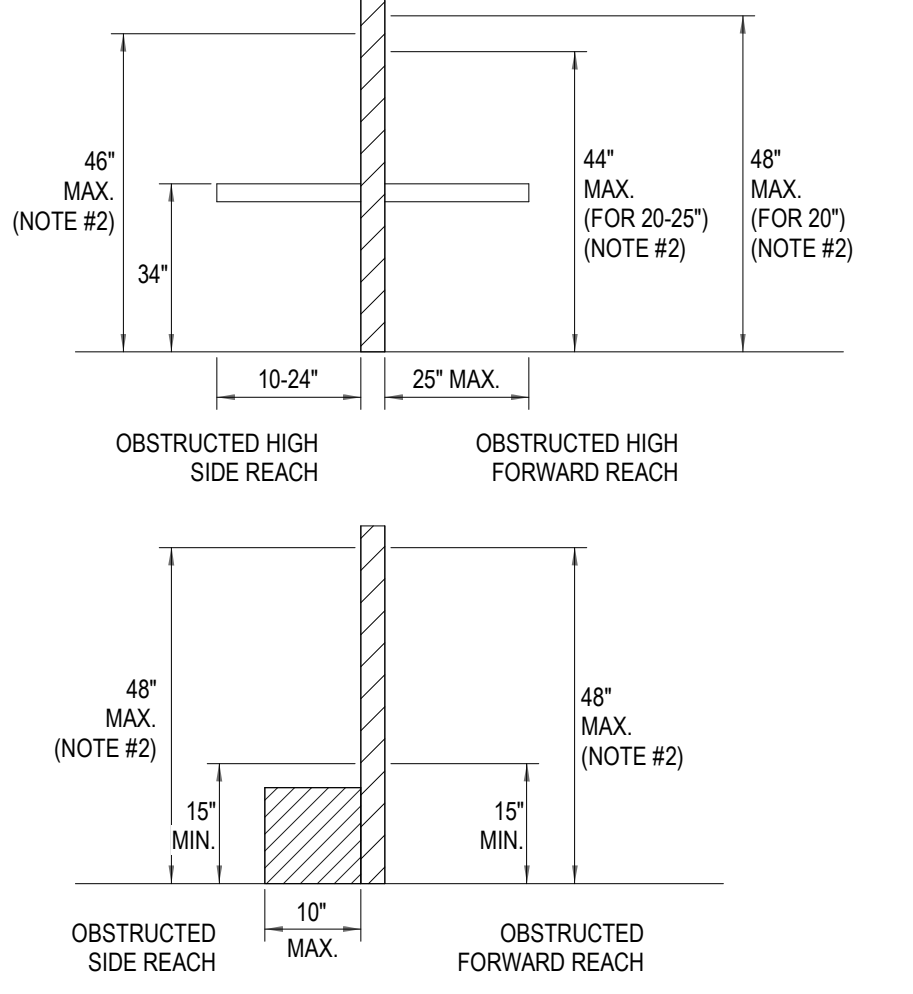
- THE FOLLOWING GENERAL NOTES AS LISTED BELOW SHALL APPLY TO ALL ELECTRICAL REQUIREMENTS AS INDICATED ON ALL E SERIES CONTRACT DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE ENTIRE DOCUMENT SET I.E. IF WORK IS SHOWN ON OTHER DRAWINGS AS "BY CONTRACTOR" THE CONTRACTOR IS RESPONSIBLE FOR THAT WORK.
- DRAWINGS FOR THIS WORK ARE DIAGRAMMATIC AND INTENDED TO CONVEY THE EXTENT, GENERAL ARRANGEMENT AND LOCATIONS OF THE WORK. BECAUSE OF THE SCALE OF THE DRAWINGS, CERTAIN BASIC ITEMS SUCH AS ACCESS PANELS, CONDUITS, CABINET SIZES, PENETRATION SLEEVES, PULL BOXES, BACKBOXES AND JUNCTION BOXES MAY NOT BE SHOWN, INCLUDE ALL ITEMS WHERE REQUIRED BY CODE, MANUFACTURER AND RELATED SPECIFICATION SECTIONS FOR THE PROPER INSTALLATION OF ALL WORK.
- DUE TO SCALE OF THE DRAWINGS, ALL ELECTRICAL DEVICE SYMBOLS ARE SHOWN ON DRAWINGS AS CLOSE AS POSSIBLE TO THEIR INTENDED LOCATION. CONTRACTOR SHALL COORDINATE IN THE FIELD THE PROPER INSTALLATION OF ALL EQUIPMENT, DEVICES, CONTROLS AND CONDUITS. REFER TO RELATED SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.
- COORDINATE WITH ALL TRADES AND SYSTEM INTEGRATORS ANY CONDITIONS RELATED TO THE INSTALLATION OF ALL SYSTEMS. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE TRADES ALL INSTALLATION REQUIREMENTS IMPACTING THE PLACEMENT OF ALL SYSTEM COMPONENTS TO THE SATISFACTION OF ALL CONCERNED TRADES.
- COORDINATE EXACT LOCATION(S) OF ALL DATA AND TELEPHONE OUTLETS, ELECTRICAL RECEPTACLES WITH THE ARCHITECTURAL PLANS, FURNITURE PLANS AND ALL AFFECTED TRADES PRIOR TO INSTALLATION.
- ALL CONDUITS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH NFPA 70 AND PROJECT SPECIFICATIONS. ALL CONDUITS SHALL BE A MINIMUM OF 1/2" UNLESS OTHERWISE NOTED.
- PROVIDE ALL EQUIPMENT CLEARANCES IN ACCORDANCE WITH NEC REQUIREMENTS. ARRANGE EQUIPMENT TO FACILITATE UNRESTRICTED ACCESS FOR MAINTENANCE AND SERVICE AROUND ALL EQUIPMENT, COMPONENTS AND/OR CABLE TERMINATIONS.
- WHERE EQUIPMENT AND/OR JUNCTION BOXES ARE INSTALLED ABOVE FINISHED CEILING, THE CONTRACTOR SHALL PROVIDE ACCESS HATCHES LISTED FOR THE INTENDED APPLICATION. ACCESS HATCHES SHALL BE LOCATED SO THAT SERVICE ACCESS TO THE EQUIPMENT AND/OR JUNCTION BOXES IS UNIMPEDED.
- ALL PENETRATIONS OF WALLS AND/OR FLOORS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE ASTM AND NFPA REQUIREMENTS. REFER TO RELATED SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION. INSTALLATION OF FIRE-STOPS SHALL BE PERFORMED BY AN APPLICATOR/INSTALLER QUALIFIED AND TRAINED BY THE MANUFACTURER. INSTALLATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH MANUFACTURER'S DETAILED INSTALLATION PROCEDURES.
- ALL EQUIPMENT ENCLOSURES LOCATED OUTSIDE OR IN ALL AREAS WITH HIGH MOISTURE OR A RELATIVE HUMIDITY OF 75% OR GREATER SHALL BE NEMA 4X STAINLESS STEEL AND RATED FOR THAT APPLICATION.
- ALL INTERIOR AND/OR EXTERIOR COMPONENTS, DEVICES OR SYSTEMS EQUIPMENT EXPOSED TO THE GENERAL POPULATION SHALL BE INSTALLED IN SECURED EQUIPMENT ENCLOSURES WITH TAMPER SWITCHES AND INSTALLED IN SUCH A MANNER THAT RESISTS TAMPERING AND/OR REMOVAL WITHOUT THE USE OF SPECIALIZED TOOLS.
- FOR EQUIPMENT INSTALLATIONS REQUIRING COORDINATION WITH OTHER TRADES THE CONTRACTOR SHALL PROVIDE ALL TEMPLATES, BACKBOXES AND EQUIPMENT ANCHOR BOLTS FOR MOUNTING OR FLUSH MOUNTING PREPARATION, (E.G. PEDESTALS OR OTHER DEVICES REQUIRING MOUNTING ON WALLS, CONCRETE PADS OR OTHER MATERIALS). COORDINATE DELIVERY OF TEMPLATES AND EQUIPMENT WITH ALL AFFECTED CONTRACTORS.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS OR INSTRUCTIONS FOR CONSTRUCTION SAFETY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY WORKMAN'S OR TRANSPORT'S SAFETY, OR FOR THE ADEQUACY OF EQUIPMENT, BUILDING COMPONENTS, WORK AIDS, OR ANY NECESSITY TO WORK ON ENERGIZED ELECTRICAL COMPONENTS. FURTHER, NO SUPERINTENDENCE IS INCLUDED OR IMPLIED.
- ALL SYSTEMS AND EQUIPMENT SHALL BE INSTALLED AND WIRED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
- THE CONTRACTOR SHALL COORDINATE CONDUIT ROUTING PLAN AND ELEVATION WITH THE LIGHTING (NEW AND EXISTING), CEILING ELEVATION, STRUCTURE, DUCTWORK, PIPING, ETC. REQUIRED FOR THE COMPLETION OF THE PROJECT. PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL SECURE AND PROTECT THE BUILDING AND/OR WORK AREA WITH FIRE RETARDANT TEMPORARY PLYWOOD PARTITIONS (WITH LOCKING DOORS), ETC. CLOSE ALL EXISTING OPENINGS AS REQUIRED. COORDINATE THIS WORK WITH THE OWNERS REPRESENTATIVE PRIOR TO STARTING. IF TEMPORARY PARTITIONS IMPEDE THE FLOW OF EGRESS TO REQUIRED EGRESS DOORS AND STAIRS, THE CONTRACTOR SHALL PROVIDE EXIST SIGNS, AND SIGNAGE INDICATING SUCH.
- THE CONTRACTOR SHALL CAULK ALL JOINTS BETWEEN METAL FRAMES AND EXISTING CONDITIONS. THIS APPLIES TO BOTH INTERIOR AND EXTERIOR INSTALLATIONS.
- THE DIMENSIONS SHOWN ON THE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO PERFORMING ANY WORK.
- THE CONTRACTOR SHALL INSTALL ALL CONDUITS CONCEALED UNLESS NOTED OTHERWISE. EXPOSED CONDUIT SHALL ONLY BE INSTALLED IN CHASES, EXPOSED CEILING AREAS, JANITOR CLOSETS, AND MECHANICAL/ELECTRICAL ROOMS.
- THE CONTRACTOR SHALL REVIEW THE WORK REQUIRED WITH THE APPLICABLE UTILITY COMPANIES SERVING THE PROJECT. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE INDIVIDUAL UTILITY COMPANIES.
- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER PRIOR TO STARTING ALL PHASES OF THE PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER WHAT WORK, IF ANY, HAS TO BE COMPLETED DURING SECOND OR THIRD SHIFT.
- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY POWER CONNECTIONS TO KEEP AREAS UP AND OPERATIONAL DURING THE CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THESE REQUIREMENTS WITH THE OWNER.
- THE VERBIAGE ON THE DRAWINGS INDICATING TYPES OF MATERIALS TO BE ENCOUNTERED IS INTENDED TO AID THE ELECTRICAL CONTRACTOR IN UNDERSTANDING THE VARIOUS CONDITIONS LIKELY TO BE ENCOUNTERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES OF MATERIALS REQUIRED TO COMPLETE THE PROJECT.
- THE LOCATIONS OF EXISTING UTILITIES, STRUCTURE AND OTHER CONDITIONS SHOWN ON THE PLANS ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO BEGINNING ANY WORK.
- FURNISH AND INSTALL ALL REQUIRED INTENTS AND SLEEVES. ALL CONDUITS SHALL HAVE SLEEVES INSTALLED. ALL SLEEVES INSTALLED THROUGH EXTERIOR WALLS SHALL HAVE LINK SEALS INSTALLED.
- THE CONTRACTOR SHALL MAINTAIN THE BUILDING IN WEATHERTIGHT AND WATERPROOF CONDITION THROUGHOUT THE DURATION OF THEIR WORK. DO NOT LEAVE HOLES THROUGH WALLS AND/OR ROOFS OPEN TO THE ELEMENTS WHEN THE WORK IS OCCURRING IN THOSE AREAS.
- THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL, FLAGMEN, SIGNAGE, ETC. WHEN DOING WORK THAT INTERFERES WITH PUBLIC RIGHT-OF-WAY.
- THE CONTRACTOR SHALL CONTACT THE NATIONAL 911-CALL BEFORE YOU DIG SYSTEM PRIOR TO PERFORMING ANY UNDERGROUND INSTALLATION WORK. THE CONTRACTOR SHALL HAVE ALL UTILITIES VERIFIED IN AND AROUND THE EXCAVATION AREA.
- THE CONTRACTOR SHALL GENERATE A DETAILED METHOD OF PROCEDURE (MOP) DOCUMENT INDICATING HOW HE/SHE INTENDS TO PERFORM EACH STEP IN THE PROJECT. THIS MOP SHALL BE PRESENTED TO THE OWNER AND ENGINEER PRIOR TO STARTING THE PROJECT. FOR SIGN OFF, THE MOP MAY BE REVISED BASED ON CHANGES IN THE PROJECT CONSTRUCTION, ETC. AT ALL POINTS IN THE PROJECT THE OWNER SHALL BE MADE AWARE OF CHANGES TO THE MOP, AND A REVISED MOP SHALL BE PRESENTED TO THE OWNER AND ENGINEER FOR SIGN OFF.
- PROVIDE ALL JUNCTION BOXES, PULL BOXES AND OTHER PULL POINTS AS REQUIRED TO MEET THE MAXIMUM NUMBER OF BENDS PER NEC REQUIREMENTS. NOT ALL CONDUITS, PULL BOXES AND OTHER RACEWAY ITEMS ARE INDICATED ON THE DOCUMENTS. THE CONTRACTOR SHALL PROVIDE A COMPLETE RACEWAY SYSTEM MEETING THE REQUIREMENTS OUTLINED IN THE DRAWINGS AND SPECIFICATIONS.
- DISTRIBUTION EQUIPMENT SHALL BE AIC RATED, AND ANY CIRCUIT BREAKERS SELECTED AND SET BASED ON THE OUTCOME OF THE CONTRACTORS OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY. STUDY SHALL INCLUDE ALL ELEMENTS OF THE EXISTING AND NEW DISTRIBUTION SYSTEM REQUIRED TO ACCURATELY SIZE AND RATE THE NEW EQUIPMENT ADDED AS PART OF THIS PROJECT.
- ARC FLASH LABELS SHALL BE PROVIDED TO ALL NEW EQUIPMENT BASED ON THE OUTCOME OF THE CONTRACTORS ARC FLASH STUDY. ANY EQUIPMENT MODIFIED AS PART OF THIS PROJECT SHALL ALSO BE INCLUDED IN THE ARC FLASH STUDY, AND BE LABELLED AS REQUIRED.
- THESE DRAWINGS DO NOT INDICATE ALL CONDUITS INTERCONNECTING EQUIPMENT, AND WHERE CONDUITS ARE INDICATED, THE ROUTING IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR THE ROUTING AND INSTALLATION OF ALL CONDUIT IN COORDINATION WITH OTHER TRADES AND EXISTING CONDITIONS.
- PROVIDE ALL JUNCTION BOXES AND OTHER PULL POINTS AS REQUIRED FOR EASE OF PULLING AND A CODE COMPLIANT INSTALLATION. ALL JUNCTION BOXES AND OTHER PULL POINTS SHALL BE ACCESSIBLE.
- MULTIWIRE BRANCH CIRCUITS ARE NOT PERMITTED. ALL SINGLE POLE BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL. SHARING OF NEUTRALS IS PROHIBITED. ALL CIRCUITS SHALL CONTAIN AN INDIVIDUAL GROUND WIRE. USE OF THE CONDUIT SYSTEM FOR THE GROUND PATH IS PROHIBITED.
- MULTIPLE SMALL 20A/1P BRANCH CIRCUITS MAY SHARE A SINGLE CONDUIT PROVIDED THE CONTRACTOR UPSIZES THE WIRES, INCLUDING THE GROUND, AND CONDUIT AS REQUIRED PER NEC.
- THE COMPLETE BRANCH WIRING SYSTEM IS NOT SHOWN ON THE DRAWINGS. AN ABBREVIATED FORMAT IS USED TO INDICATE WHICH FIXTURES/DEVICES ARE CONNECTED TO A COMMON CIRCUIT OR SWITCH. THIS IS PROVIDED AS A GUIDE TO THE CONTRACTOR TO ILLUSTRATE CIRCUITS AND CONTROL INTENT. ACTUAL WIRING MAY BE DIFFER DUE TO FIELD CONDITIONS.
- COLOR CODING OF WIRES SHALL BE AS PER NEC.
- CONTRACTOR SHALL MAKE AN ALLOWANCE FOR AND PROVIDE ADDITIONAL EXIT SIGNAGE AS PER THE AHJ'S REQUIREMENTS AND REQUESTS.
- PROVIDE 120V 20A 5-20R RECEPTACLE AT ALL FAN COIL UNITS FOR CONDENSATE PUMP POWER AND HOT WATER RECIRCULATING PUMPS, WHETHER SHOWN ON PLANS OR NOT. RECEPTACLE IS TO BE CONNECTED TO NEAREST 120V RECEPTACLE CIRCUIT.
- PROVIDE 120V CONNECTION TO ALL MOTORIZED DAMPERS INDICATED ON MECHANICAL PLANS, WHETHER SHOWN ON DIVISION 26 DRAWINGS OR NOT. FIRE-SMOKE DAMPER CIRCUITS ARE TO BE PROVIDED FROM EMERGENCY LIFE SAFETY BRANCH PANEL. MOTORIZED DAMPERS WITHIN THE SAME AREA CAN BE CIRCUITED TO THE SAME CIRCUIT (I.E., DEDICATED CIRCUIT IS NOT REQUIRED).
- DURING THE BIDDING PROCESS, THE ELECTRICAL CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS OF ALL OTHER TRADES (ARCHITECTURAL, SITE/LANDSCAPING, HVAC, PLUMBING, AND SPECIALTY TRADES). ALL ITEMS REQUIRING POWER INDICATED ON THESE DRAWINGS BUT NOT INDICATED ON THE ELECTRICAL DRAWINGS SHALL BE CONSIDERED A PART OF THE ELECTRICAL CONTRACTOR'S WORK. THIS WORK SHALL BE INSTALLED AS PER NEC REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.

## STANDARD MOUNTING HEIGHTS

CEILING	RECESSED LIGHTING FIXTURES, CEILING MOUNTED RECEPTACLES, INDICATING LIGHTS, ETC.
7'-0" A.F.F.	WALL MOUNTED LIGHTS IN STAIRS, MECH ROOMS, ETC.
6'-6" A.F.F.	TOP MOST PORTION OF OPERATING HANDLE OF DISCONNECT SWITCHES / CIRCUIT BREAKERS
6'-0" A.F.F.	TOP OF PANELBOARDS (48"-0" TALL)
3'-8" A.F.F.	WALL SWITCHES, THERMOSTATS, CONTROL DEVICES, TO CENTER OF BOX
3'-6" A.F.F.	ABOVE COUNTER DEVICES, GFI RECEPTACLES IN RESTROOMS
1'-6" A.F.F.	RECEPTACLES, FURNITURE FEEDS
0'-0"	IN FLOOR JUNCTION BOXES FLUSH TO FINISHED FLOOR (FF)

- IN MASONRY CONSTRUCTION THE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO THE NEAREST BLOCK OR BRICK COURSING.
- THE ABOVE MOUNTING ELEVATIONS ARE TO CENTER OF DEVICE AND SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWINGS AND/OR SPECIFICATIONS.
- COORDINATE THE INSTALLATION AND MOUNTING ELEVATIONS OF ALL EQUIPMENT, DEVICES, CONTROLS AND APPURTENANCES WITH ARCHITECT AND ALL AFFECTED TRADES PRIOR TO INSTALLATION. DOCUMENT ALL MOUNTING ELEVATIONS FOR ALL EQUIPMENT, DEVICES, CONTROLS AND APPURTENANCES AT THE TIME OF SHOP DRAWING SUBMITTAL.

## ADA INSTALLATION GUIDELINES



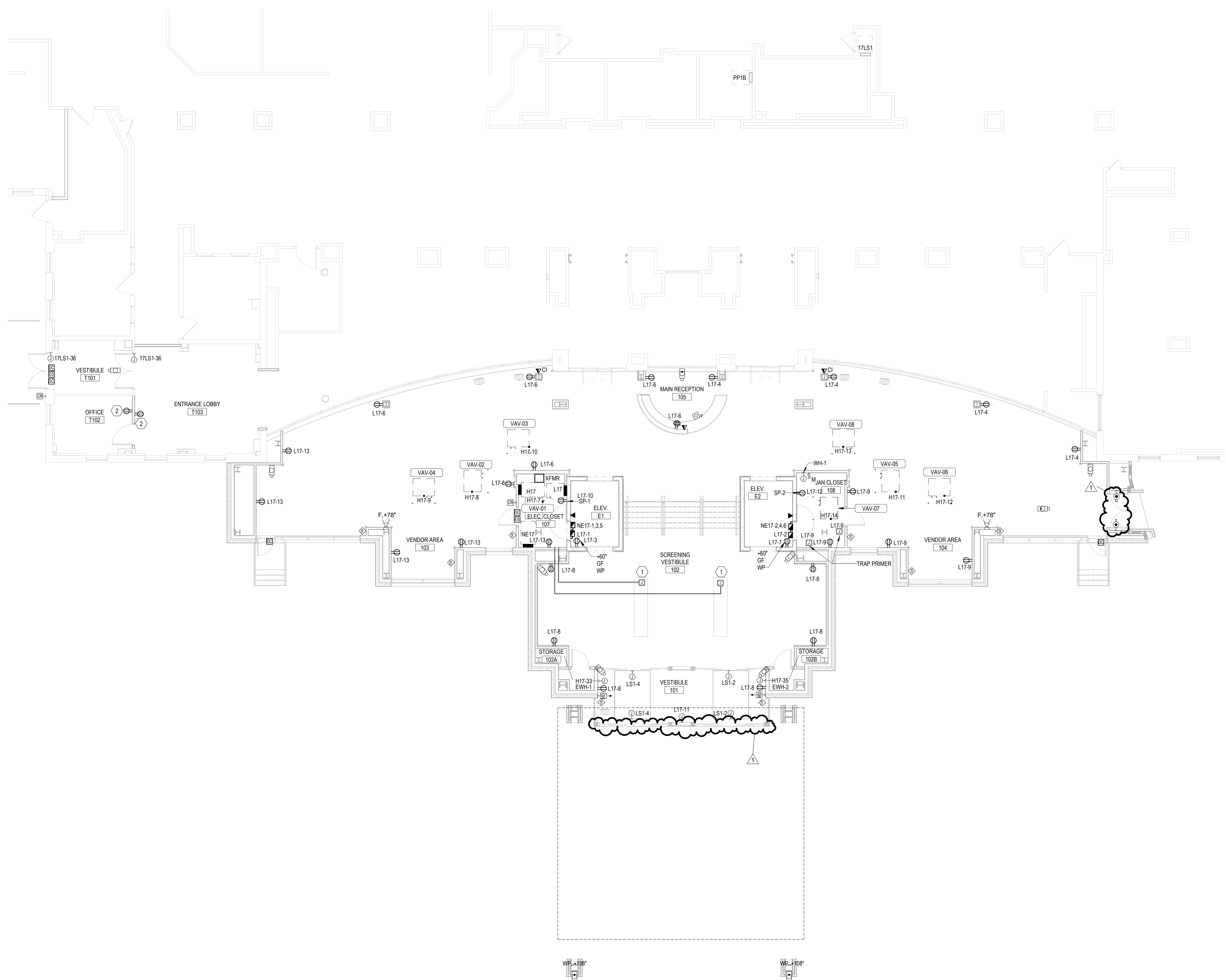
- NOTES:
- THESE GUIDELINES SHALL BE USED FOR THE INSTALLATION OF THE FOLLOWING DEVICES: WALL SWITCHES; CONTROL SWITCHES; VISUAL DISPLAY TOUCH PANELS.
  - NOTE THAT THIS HEIGHT IS TO THE TOP-MOST PART OF THE DEVICE. THAT AN OCCUPANT REQUIRES ACCESS TO.

## TELECOMMUNICATIONS GENERAL NOTES

- THE FOLLOWING GENERAL NOTES AS LISTED BELOW SHALL APPLY TO ALL COMMUNICATIONS SYSTEM REQUIREMENTS AS INDICATED ON ALL E SERIES CONTRACT DRAWINGS.
- DRAWINGS FOR THIS WORK ARE DIAGRAMMATIC AND INTENDED TO CONVEY THE EXTENT, GENERAL ARRANGEMENT AND LOCATIONS OF THE WORK. BECAUSE OF THE SCALE OF THE DRAWINGS, CERTAIN BASIC ITEMS SUCH AS ACCESS PANELS, CONDUITS, CABINET SIZES, PENETRATION SLEEVES, PULL BOXES, BACKBOXES AND JUNCTION BOXES MAY NOT BE SHOWN, INCLUDE ALL ITEMS WHERE REQUIRED BY CODE, MANUFACTURER AND RELATED SPECIFICATION SECTIONS FOR THE PROPER INSTALLATION OF ALL WORK.
- DUE TO SCALE OF THE DRAWINGS, ALL COMMUNICATIONS DEVICE SYMBOLS ARE SHOWN ON DRAWINGS AS CLOSE AS POSSIBLE TO THEIR INTENDED LOCATION. CONTRACTOR SHALL COORDINATE IN THE FIELD THE PROPER INSTALLATION OF ALL EQUIPMENT, DEVICES, CONTROLS AND CABLES. REFER TO RELATED SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.
- COORDINATE WITH ALL TRADES AND SYSTEM INTEGRATORS ANY CONDITIONS RELATED TO THE INSTALLATION OF ALL SYSTEMS. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE TRADE ALL INSTALLATION REQUIREMENTS IMPACTING THE PLACEMENT OF ALL SYSTEM COMPONENTS TO THE SATISFACTION OF ALL CONCERNED TRADES.
- COORDINATE EXACT LOCATION OF ALL DESK OR COUNTER MOUNTED EQUIPMENT WITH OWNER AND ARCHITECT AND ALL AFFECTED TRADES PRIOR TO THE INSTALLATION OF ANY EQUIPMENT AND/OR CABLING.
- COORDINATE EXACT LOCATION(S) OF ALL CEILING MOUNTED CABLE, CONDUITS, EQUIPMENT AND/OR DEVICES WITH ALL ARCHITECTURAL PLANS, REFLECTED CEILING PLANS AND ALL AFFECTED TRADES PRIOR TO INSTALLATION.
- COORDINATE EXACT LOCATION(S) OF ALL DATA AND TELEPHONE OUTLETS, ELECTRICAL RECEPTACLES WITH THE ARCHITECTURAL PLANS, FURNITURE PLANS AND ALL AFFECTED TRADES PRIOR TO INSTALLATION.
- ALL HORIZONTAL CATEGORY 6 UTP CABLE SHALL BE BUNDLED AND ROUTED THROUGH THE FACILITY AND SHALL TERMINATE AT THE NEAREST MD/IDF EQUIPMENT RACKS. ALL HORIZONTAL CABLE BUNDLES SHALL NOT CONTAIN ANY AC CONDUCTING CABLING. ALL HORIZONTAL CABLE DROPS SHALL NOT EXCEED 294" FROM PATCH PANEL TO OUTLET TERMINATION AND SHALL BE TESTED AND CERTIFIED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. REFER TO RELATED SPECIFICATIONS SECTIONS FOR ADDITIONAL INFORMATION.
- ALL FIBER OPTIC BACKBONE CABLING SHALL BE ROUTED THROUGH THE FACILITY VIA DEDICATED CONDUITS AND VERTICAL PIPES CHASES INSTALLED IN PROTECTIVE INNERDUCT CONDUIT SYSTEM AND SHALL TERMINATE AT ALL APPROPRIATE MD/IDF EQUIPMENT RACKS. THE CONTRACTOR SHALL COORDINATE ALL EQUIPMENT, RACK SPACE REQUIREMENTS, WITH THE APPROPRIATE SYSTEM INTEGRATORS AND ARCHITECT. ALL FIBER OPTIC CABLING SHALL BE TESTED AND CERTIFIED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. REFER TO RELATED SPECIFICATIONS SECTIONS FOR ADDITIONAL INFORMATION.
- ALL CONDUITS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH NFPA 70 AND PROJECT SPECIFICATIONS. ALL CONDUITS SHALL BE A MINIMUM OF 1/2" UNLESS OTHERWISE NOTED.
- ALL SYSTEM WIRING, CONDUITS AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AND BY ALL IEEE, EIA, NEC AND MANUFACTURER'S REQUIREMENTS. ALL WIRING SHALL COMPLY WITH ALL STATE AND LOCAL ELECTRICAL CODES AND SHALL TEST FREE FROM ALL GROUNDS, SHORTS AND STRAY VOLTAGES AND EMI.
- PROVIDE ALL EQUIPMENT CLEARANCES IN ACCORDANCE WITH NEC REQUIREMENTS. ARRANGE EQUIPMENT TO FACILITATE UNRESTRICTED ACCESS FOR MAINTENANCE AND SERVICE AROUND ALL EQUIPMENT, COMPONENTS AND/OR CABLE TERMINATIONS.
- PROPERLY GROUND ALL EQUIPMENT, RACKS, CABINETS, CONDUITS AND CABLE SHIELDS IN ACCORDANCE WITH ALL REQUIREMENTS OF THE NFPA 70 AND EQUIPMENT MANUFACTURER. ALL EQUIPMENT AND COMMUNICATIONS CIRCUITS SHALL BE PROPERLY SURGE PROTECTED AND GROUNDING TO MINIMIZE DAMAGE DUE TO LIGHTNING STRIKES, SNEAK CURRENTS AND OTHER TRANSIENT VOLTAGE SPIKES. ALL SURGE PROTECTION AND GROUNDINGS SHALL BE IN ACCORDANCE WITH ALL REQUIREMENTS OF THE EQUIPMENT MANUFACTURER, NEC, IEEE, AND TIA/EIA.
- WHERE EQUIPMENT AND/OR JUNCTION BOXES ARE INSTALLED ABOVE FINISHED CEILING, THE CONTRACTOR SHALL PROVIDE ACCESS HATCHES LISTED FOR THE INTENDED APPLICATION. ACCESS HATCHES SHALL BE LOCATED SO THAT SERVICE ACCESS TO THE EQUIPMENT AND/OR JUNCTION BOXES IS UNIMPEDED.
- ALL PENETRATIONS OF WALLS AND/OR FLOORS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE ASTM AND NFPA REQUIREMENTS. REFER TO RELATED SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION. INSTALLATION OF FIRE-STOPS SHALL BE PERFORMED BY AN APPLICATOR/INSTALLER QUALIFIED AND TRAINED BY THE MANUFACTURER. INSTALLATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH MANUFACTURER'S DETAILED INSTALLATION PROCEDURES.
- PROVIDE THE PROPER INTERFACES TO BUILDING FIRE ALARM, INTRUSION ALARM AND BUILDING AUTOMATION SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE LIFE SAFETY CODES AND MANUFACTURER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. COORDINATE WITH THE FIRE ALARM SYSTEM PROVIDER FOR ALL REQUIRED SYSTEM INTEGRATION REQUIREMENTS.
- ALL EQUIPMENT ENCLOSURES LOCATED OUTSIDE OR IN ALL AREAS WITH HIGH MOISTURE OR A RELATIVE HUMIDITY OF 75% OR GREATER SHALL BE NEMA 4X STAINLESS STEEL AND RATED FOR THAT APPLICATION.
- ALL DEVICES, COMPONENTS OR EQUIPMENT INSTALLED ON THE EXTERIOR OF THE FACILITY SHALL BE PROVIDED IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS TO ENSURE THE PROPER OPERATION WHEN EXPOSED TO THE ENVIRONMENTAL CONDITIONS AND/OR AVERAGE ANNUAL LOWEST TEMPERATURE THAT CAN BE ANTICIPATED FOR THE GEOGRAPHIC REGION OF THE FACILITY.
- ALL INTERIOR AND/OR EXTERIOR COMPONENTS, DEVICES OR SYSTEMS EQUIPMENT EXPOSED TO THE GENERAL POPULATION SHALL BE INSTALLED IN SECURED EQUIPMENT ENCLOSURES WITH TAMPER SWITCHES AND INSTALLED IN SUCH A MANNER THAT RESISTS TAMPERING AND/OR REMOVAL WITHOUT THE USE OF SPECIALIZED TOOLS.
- FOR EQUIPMENT INSTALLATIONS REQUIRING COORDINATION WITH OTHER TRADES THE CONTRACTOR SHALL PROVIDE ALL TEMPLATES, BACKBOXES AND EQUIPMENT ANCHOR BOLTS FOR MOUNTING OR FLUSH MOUNTING PREPARATION, (E.G. PEDESTALS OR OTHER DEVICES REQUIRING MOUNTING ON WALLS, CONCRETE PADS OR OTHER MATERIALS). COORDINATE DELIVERY OF TEMPLATES AND EQUIPMENT WITH ALL AFFECTED CONTRACTORS.
- ALL COMMUNICATIONS EQUIPMENT MUST HAVE TRANSIENT SURGE PROTECTION TO COMPLY WITH UL AND NFPA 70 REQUIREMENTS. WHERE ANY CIRCUITS LEAVE THE BUILDING, ADDITIONAL TRANSIENT PROTECTION MUST BE PROVIDED FOR EACH CIRCUIT. ALL TRANSIENT PROTECTION DEVICES MUST BE UL LISTED UNDER STANDARD #497B (ISOLATED LOOP PROTECTORS).
- REFER TO ALL RELATED CONTRACT DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND/OR REQUIREMENTS RELATED TO THE INSTALLATION, PROGRAMMING, TESTING, COMMISSIONING AND CERTIFICATION OF ALL COMMUNICATIONS SYSTEMS.

<b>Consultant</b> <b>WOODS · PEACOCK</b> <small>ENGINEERING CONSULTANTS</small>		<b>Architect/Engineer of Record</b>  <b>AE WORKS.</b> AE Works LTD. 418 Beaver Street Sewickley, PA 15143 Phone: 412-287-7333 www.aeworks.com		<b>Stamp</b>  <b>OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT</b> Approved: _____ U.S. Department of Veterans Affairs		<b>Drawing Title</b> <b>ELECTRICAL SYMBOLS AND ABBREVIATIONS</b>		<b>Phase</b> <b>BID DOCUMENTS</b>		<b>Project Title</b>	
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**POWER PLAN GENERAL NOTES**

- 1 FINAL LOCATION OF ALL EQUIPMENT SHALL BE DETERMINED IN THE FIELD AND SHALL BE INSTALLED AS DIRECTED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE. WHERE STRUCTURAL OPENINGS ARE NOT AVAILABLE, THE CONTRACTOR SHALL CORE DRILL WALLS AND FLOORS AS REQUIRED TO PERMIT PASSAGE OF CONDUITS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A MARKED-UP PLAN WITH LOCATION PENETRATIONS FOR REVIEW AND APPROVAL OF THE STRUCTURAL ENGINEER BEFORE ROUGH-IN BEGINS.
- 2 RECEPTACLES FOR ALL EQUIPMENT SHALL BE COMPLETE WITH PLUGS FOR THIS EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL VERIFY NEMA CONFIGURATIONS OF PLUGS AND RECEPTACLES FOR EQUIPMENT IN THE SPACE.
- 3 DURING THE BIDDING PROCESS, THE ELECTRICAL CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS OF ALL OTHER TRADES (ARCHITECTURAL, HVAC, PLUMBING AND SPECIALTY TRADES). ALL ITEMS REQUIRING POWER INDICATED ON THESE DRAWINGS BUT NOT INDICATED ON THE ELECTRICAL DRAWINGS SHALL BE CONSIDERED A PART OF THE ELECTRICAL CONTRACTOR'S WORK. THIS WORK SHALL BE INSTALLED AS PER NEC REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
- 4 THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MAKE ALL FEEDER RUNS CONTINUOUS (NO CABLE BREAKS). IF SPLINGING CABLES IN BOXES BECOMES NECESSARY, USE O.Z.G. TYPE "XW" CABLE TAPS, OR APPROVED EQUAL, AND TAPE EACH TAP IN APPROVED MANNER.
- 5 THE MECHANICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES, VFD'S, OR COMBINATION STARTERS FOR ALL OF THEIR UNITS. THE ELECTRICAL CONTRACTOR SHALL RECEIVE THESE ITEMS FROM THE MECHANICAL CONTRACTOR FOR INSTALLATION BY THE ELECTRICAL CONTRACTOR.
- 6 PERFORM GROUND PENETRATING RADAR (GPR) SCANNING OF FLOORS/WALLS PRIOR TO MAKING ANY PENETRATIONS OR CORE DRILLING.
- 7 REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL EQUIPMENT.
- 8 PROVIDE CONDUIT AND WIRING AS REQUIRED TO MEET CIRCUITING SHOWN TO CONFORM TO NEC REQUIREMENTS.
- 9 PROVIDE EQUIPMENT GROUND CONDUCTOR IN ALL RACEWAYS. REFER TO PANELBOARD SCHEDULES.
- 10 REFER TO EQUIPMENT CONNECTION SCHEDULE FOR ELECTRICAL REQUIREMENTS AND CIRCUIT DESIGNATIONS.
- 11 ROUTE CONDUIT HIGH AGAINST STRUCTURE AND OFFSET UP BETWEEN JOISTS WHERE NECESSARY TO AVOID DUCT WORK AND HVAC SYSTEM.
- 12 VERIFY AND COORDINATE EXACT ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT WITH MANUFACTURER'S RECOMMENDATIONS PRIOR TO INSTALLATION OF EQUIPMENT.
- 13 PROVIDE TAMPER RESISTANT RECEPTACLES IN WAITING ROOMS, LOUNGES, AND LOBBY AREAS.

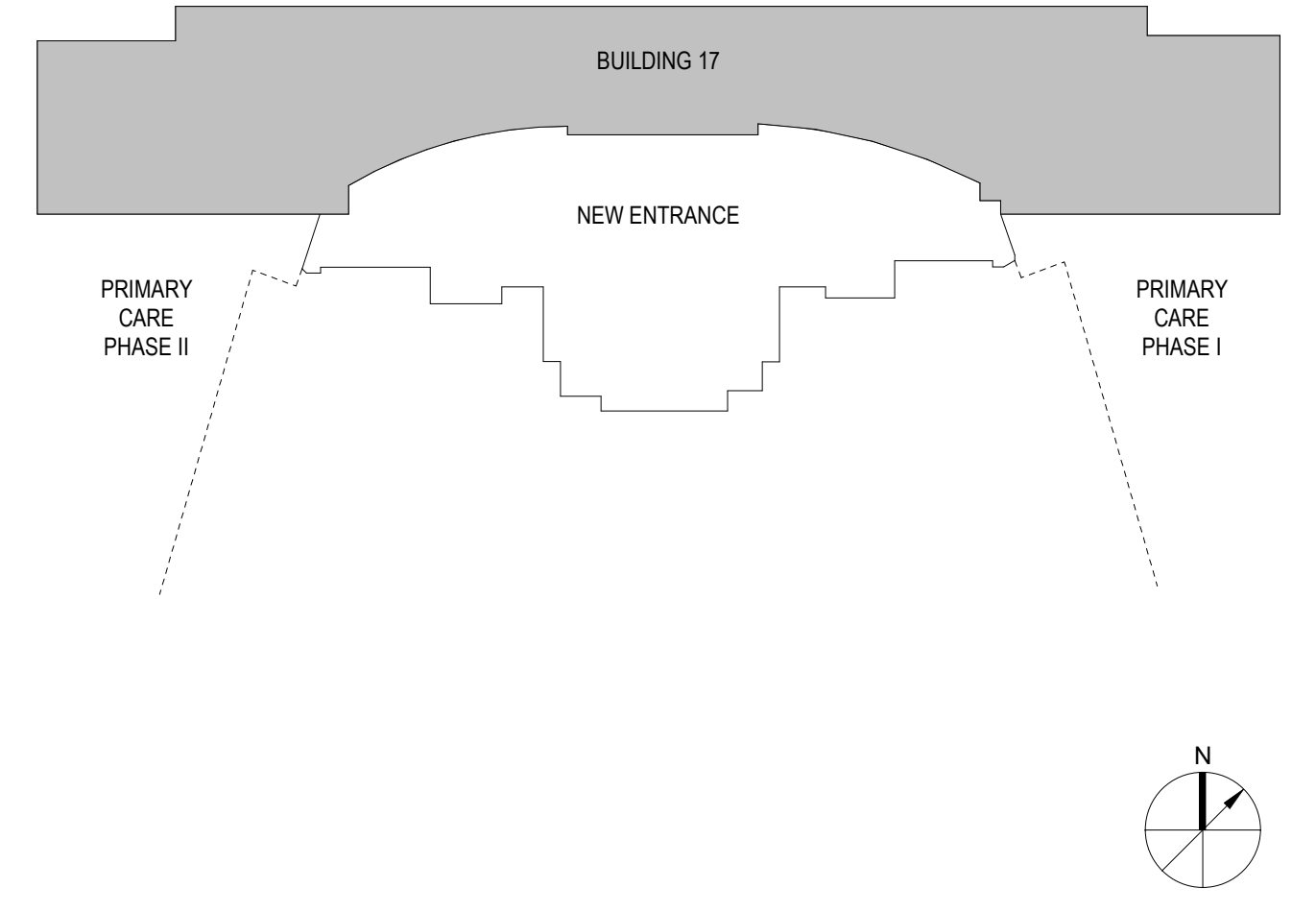
**POWER PLAN KEYNOTES**

- 1 TWO GANG RECESSED FLOOR BOX - LEGRAND OMINBOX CAST IRON (2) - 1" CONDUITS TO ELECTRIC CLOSET 107. PROVIDE AND INSTALL BLANK COVER PLATE - FLUSH WITH FLOOR.
- 2 CONNECT TO ADJACENT RECEPTACLE CIRCUIT.

**TEMPORARY ENTRANCE NOTES**

- 1 THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING ALL EXISTING CONDITIONS MODIFIED BY THE TEMPORARY ENTRANCE WORK FOR THE PURPOSE OF RECONSTRUCTION OF ALL EXISTING CONDITIONS AT THE END OF THE PROJECT. THIS INCLUDES DECONSTRUCTION OF ALL TEMPORARY ENTRANCE WORK, RESTORATION OF ALL EXISTING EXTERIOR SITE CONDITIONS, RECONSTRUCTION OF ALL EXISTING ROOMS, SYSTEMS, AND INFILL OF EXTERIOR WALL CONSTRUCTION.
- 2 THE TEMPORARY ENTRANCES MUST BE COMPLETED BEFORE CONSTRUCTION ON THE NEW ENTRYWAY MAY BEGIN. MAINTAIN ACCESS TO TEMPORARY ENTRANCE AND ALL OTHER EGRESS POINTS FROM BUILDING 17 AND THE PRIMARY CARE BUILDING AT ALL TIMES.

1 GROUND FLOOR POWER PLAN  
E301 1/8" = 1'-0"



#	Revisions	Date
1	REVISED DOORS	

Consultant  
**WOODS · PEACOCK**  
 ENGINEERING CONSULTANTS  
**KOFFEL ASSOCIATES** Fire Protection ENGINEERS  
**Pennoni**

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Stamp

OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT  
**VA** U.S. Department of Veterans Affairs

Drawing Title  
 GROUND FLOOR POWER AND SYSTEMS PLAN  
 Approved:

Phase  
 BID DOCUMENTS  
 Sprinkler Status  
 FULLY SPRINKLERED

Project Title  
 NEW ENTRYWAY FOR BUILDING 17  
 Location  
 1700 S LINCOLN AVENUE LEBANON, PA 17042  
 Issue Date  
 10.26.2022

Project Number  
 595-668  
 Building Number  
 17  
 Drawing Number  
**E301**