



Addendum No.: 2

Date Of Addendum: May 14, 2020

CT DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

**Willard Diloreto Parking Garage
Paul Manafort Sr. Drive
New Britain, CT
CF – RC – 402**

Original Bid Due Date / Time:	June 17, 2020	1:00 PM
Revised Bid Due Date / Time:	June 24, 2020	1:00 PM

Previous Addendums: Addendum #1 dated 4/24/2020

TO: Prospective Bid Proposers:

This Addendum forms part of the “Contract Documents” and modifies or clarifies the original “Contract Documents” for this Project dated February 7, 2020. Prospective Bid Proposers **shall** acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form.

Failure to acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form shall subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

Item 1:

The following revised dates shall apply:

- New Virtual Pre-Bid Meeting Date – May 27th at 10:00 am.
- Cut off date for questions – June 12th at 3:30 pm. Questions will be answered by Addendum issued June 17th.
- New Bid Opening Date – June 24th at 1:00 pm.

The virtual Pre-Bid Meeting is not mandatory but **strongly encouraged**. It is the intent to record the meeting and make the recording available to bidders, but no bidder should rely upon the availability of such recording in lieu of attending the virtual Pre-Bid Meeting. Note: If joining from a smart phone, download the Microsoft Teams App.

Below is a link to the Microsoft Teams platform that will be used:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_OGYwZDgyZmEtNDViZi00YTNIjLTK4ZGQY2YwYTVmMjYxMjhm%40thread.v2/0?context=%7b%22Tid%22%3a%22118b7cfa-a3dd-48b9-b026-31ff69bb738b%22%2c%22Oid%22%3a%229812aef1-4100-42c6-9c12-fa8fb820be16%22%7d

Item 2:

Questions:

#1 - Footing schedule is in conflict with details, schedule indicates M1,2,3 as 24" in depth, vs. drawing S106,107,108 indicate 36". The correct depth is required.

RESPONSE: The correct depth is 36" as per the details on drawings S106, S107 and S108. The Footing Schedule on drawing S101 has been revised. See attached revised drawing S101.

#2 - Please confirm 6" curb height due to conflict on drawing S108 that indicate M3 Mat Slab elevation is 155.0 and details indicate 158.5 for the curb.

RESPONSE: The wall/curbs at Stair #3 foundation have been removed. The precast walls and columns will bear directly on the top of footing at elevation 158.00'. See attached revised drawings A402, A405, A407, S101, S102 and S108.



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#3 - Spec section for the CCSU Logo on the glass pedestrian bridge is missing. Should the film be included in the glass contractor spec?

RESPONSE: The window logo decal will be part of the Signage scope of Work. See revised specification section 10 40 00 –Signs, Graphics and Supports for CCSU logo requirements.

#4 - The spec for the CW-89000 list Vistawall as acceptable manufacture, but not in Specification 085113. Should Vistawall be listed in both sections?

RESPONSE: See revised specification section 08 51-00. Vistawall has been added as an accepted manufacturer.

#5 - Are there time constraints for and schedule for erection of the bridge? Is it to be done off hours and are there any restrictions?

RESPONSE: Work on the Pedestrian Bridge that will require the closing of Paul Manafort Senior Drive is to be scheduled for off hours.

#6 - Ref drawing CS 101 and logistics coordination requirements for bridge erection and foundation of existing buildings and retaining walls. Are there limits, depths, or utilities that can be indicated or provided to determine crane and staging requirements?

RESPONSE: Contractor will be required to submit a proposed crane location plan including loading calculations to the Structural Engineer and Geotechnical Engineer for review and approval.

#7 - Ref 1/A901 Willard -Diloretto bridge connection location. Will this contract be required to relocate existing systems, for example lighting, fire alarm, HVAC, fire protection etc. that may be present, but not indicated in the interior space?

RESPONSE: See drawing A900 for Demolition Scope of Work at the Willard Diloretto Hall. There are no utility relocations required. See F103 for automatic sprinkler work at Willard Diloretto Hall.

#8 - Ref CE 101 and location of onsite field office location. Has a location been determined for the onsite supervision office trailer? The office will need power available.

RESPONSE: The Contractor is to present a proposed plan for the Field Office location within the Limits of Work line. Utility requirements for the Field Office are defined in specification section 01 50 00 Temporary Facilities and Controls. See attached revised specification section 01 50 00-3.3.3 with revised Field Office Computer information.

#9 - Missing spec for the auto operators.

RESPONSE: See attached added specification section 08 71 13 Automatic Door Openers.

All questions must be **written** (not **verbal** or by **phone**) and emailed to the consulting Architect/Engineer (DESMAN - Thomas J. Basile, Email: tbasile@desman.com) with copies sent to the DAS/CS Project Manager (Stephen Burke, Email: Stephen.Burke@ct.gov) and Construction Manager JACOBS -Candy Glass, Email: Candy.Glass@jacobs.com

End of Addendum No. 2

Mellanee Walton

Mellanee Walton, Associate Fiscal Administrative Officer
State of Connecticut
Department of Administrative Services, Construction Services
Office of Legal Affairs, Policy, and Procurement
450 Columbus Boulevard, Suite 1302
Hartford, CT 06103

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 00 General Conditions of the Contract for Construction for Design-Bid-Build and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for identification badges, parking stickers, construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. **Temporary water service and distribution.**
 - 2. **Temporary electric power and lighting services.**
 - 3. **Temporary telephone service and data.**
 - 4. **Temporary sanitary facilities, including drinking water.**
 - 5. **Storm and sanitary sewer.**
 - 6. **Storm water pollution control.**
- C. Support facilities include, but are not limited to, the following:
 - 1. **Field offices – Contractor, Subcontractor, Owner, and Construction Administrator.**
 - 2. **Storage and fabrication sheds.**
 - 3. **Temporary roads and paving.**
 - 4. **Dewatering facilities and drains.**
 - 5. **Temporary enclosures.**
 - 6. **Temporary project identification signs.**
 - 7. **Temporary exterior lighting.**
 - 8. **Collection and disposal of waste and cleaning.**
 - 9. **Temporary Environmental Controls.**
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. **Temporary fire protection.**
 - 2. **Permanent fire protection.**
 - 3. **Security for site and Agency.**
 - 4. **Barricades, warning signs, and lights.**

5. **Enclosure fence.**
6. **Security enclosure and lockup.**
7. **Protection.**
8. **Environmental protection.**
9. **Traffic ways.**
10. **Identification badges for Contractor's personnel & parking stickers.**

1.3 SUBMITTALS

- A. **Temporary Utilities:** Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. **Implementation and Termination Schedule:** Within **twenty-one (21)** days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

1.4 QUALITY ASSURANCE

- A. **Regulations:** Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 1. **Building and fire code requirements.**
 2. **Health and safety regulations.**
 3. **Utility company regulations.**
 4. **Police, fire department, and rescue squad rules.**
 5. **Environmental protection regulations.**
 6. **Americans with Disabilities Act.**
- B. **Standards:** OSHA. Comply with NFPA 241 "Standard for Safeguarding Construction, Alteration, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA 200 "Recommended Practice for Installing and Maintaining Temporary Electric Power at Construction Sites."
 1. **Electrical Service:** Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- C. **Inspections:** Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. **Temporary Utilities:** Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, the Construction Administrator will direct the change over from use of temporary service to use of permanent service.
- B. **Conditions of Use:** Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **General:** Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. **Lumber and Plywood:** Comply with requirements in Division 06 Section 06 10 00 "Rough Carpentry."
 - 1. For signs and directory boards, provide 3/4-inch exterior grade, Grade A-B Fir plywood. Mount sign on preservative treated Fir posts.
 - a. Project sign shall be 4' x 8' painted and supported on 4-inch x 4-inch posts, of a design to be provided by the Owner via the Construction Administrator.
 - 2. **Vision Barriers:** Provide minimum 1/2-inch thick exterior plywood.
 - 3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch thick exterior plywood.
- C. **Paint:** Comply with requirements of Division 09 Section 09 91 00 "Painting."
 - 1. For sign and directory boards applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer unless otherwise indicated.
- D. **Tarpaulins:** Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- E. **Water:** Provide potable water approved by local health authorities.
- F. **Enclosure Fencing:** Provide 0.120-inch thick, galvanized 2-inch chain link fabric fencing six (6) feet high galvanized steel pipe posts, 1-1/2 inches knuckle both bottom and top I.D. for line posts and 2-1/2 inches I.D. for corner posts.

2.2 EQUIPMENT

- A. **General:** Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
 - 1. The Contractor shall furnish tools, apparatus and appliances, hoists and/or cranes and power for same, scaffolding, runways, ladders, temporary supports and bracing and similar work or material necessary to insure convenience and safety in the execution of the Contract except where this is otherwise specified in any Specification Section. All such items shall meet the approval of the Owner but responsibility for design, strength and safety shall remain with the Contractor. All such items shall comply with Federal OSHA regulations and applicable codes, statutes, rules and regulations, including compliance with the requirements of the current edition of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors (AGC) and the standards of the State Labor Department.
 - 2. Staging, exterior and interior, required for the execution of this Contract, shall be furnished, erected, relocated if necessary and removed by the Contractor. Staging shall be maintained in a safe condition without charge to and for the use of all trades as needed.
- B. **Water Hoses:** Provide 3/4-inch, heavy-duty, abrasion-resistant, flexible rubber hoses with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge and backflow preventers.
- C. **Electrical Outlets:** Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. **Electrical Power Cords:** Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single

lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

- E. **Lamps and Light Fixtures:** Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. **Heating Units:** Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- G. **Temporary Field Offices:** Provide prefabricated or mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. **Temporary Toilet Units:** The Agency will allow the toilets located within the project site for Contractor use. If others are needed, provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. **Fire Extinguishers:** Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. **Storm Water Pollution Control:**
 - 1. The **Architect/Engineer** shall electronically register the Connecticut Department of Energy and Environmental Protection's (DEEP) "General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities" (DEEP-WPED-GP-015) and Stormwater Pollution Control Plan (SPCP) through the **DEEP ezFile Portal**.
 - 2. Once under contract, and prior to construction activities, the Contractor shall assume responsibility for storm water pollution control and conform to the General Permit obligations and requirements. The Contractor shall sign, and cause to be signed by each appropriate Subcontractor, the "Contractor Certification Statement" section of the SPCP and the DEEP "License Transfer Form" (DEEP-APP-006), as directed by the Architect/Engineer. The signed Certification Statement and License Transfer Form shall be attached to the "on-site" SPCP and submitted to the DEEP by the Architect/Engineer.
 - 3. The Owner shall be responsible for the General Permit registration fee and License Transfer notification fee.
 - 4. The Contractor shall retain an updated copy of the SPCP at the construction site from the date construction is initiated at the site until the date construction at the site is completed.
 - 5. The Contractor shall conform to the SPCP or use another plan, prepared at the Contractor's expense, which has been approved by the Owner and the DEEP *prior to construction activities*. The Contractor shall be responsible for implementing, maintaining, and updating the SPCP,

including, but not limited to, performing regular inspections, conducting and reporting all stormwater monitoring activities, retaining records for the required period of time, and performing **all** post-construction measures and inspections.

6. The Contractor shall ensure all post-construction measures are installed, cleaned, and functioning and the site has been stabilized for at least **three (3) months** following the cessation of construction activities in order for the project to be considered complete. A site is considered stabilized when there is no active erosion or sedimentation present and no disturbed areas remain exposed for **all phases**. Once the site has been stabilized for at least three (3) months, the Contractor shall have the site inspected by a Qualified Inspector to confirm final stabilization. If stabilized, the Contractor shall submit a Notice of Termination (DEP-PED-NOT-015) to the DEEP in order to terminate the Construction Stormwater General Permit.
7. The Contractor shall submit a final copy of the SPCP, the Notice of Termination, and all inspection records to the Architect/Engineer and DAS/CS Project Manager at completion of all post-construction measures.
8. The Contractor shall retain copies of the SPCP and all reports required by the General Permit, and records of all data used to complete the registration for the General Permit, for a period of at least five (5) years from the date that the project is complete. Inspection records must be retained as part of the SPCP for a period of five (5) years after the date of inspection.
9. For sites involving total soil disturbance of less than one (1) acre, the Contractor shall be responsible for sediment and erosion control and utilize best management practices as identified in the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control" (DEEP Bulletin 34), as amended, and any sediment and erosion control plans prepared for the project.

3.2 TEMPORARY UTILITY INSTALLATION

- A. **General:** Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
 4. **Use Charges:** If cost or use charges for temporary facilities are specified by this section to be borne by the Owner the cost or use charges for temporary facilities will be borne not longer than **thirty (30)** days after final acceptance of the project.
- B. **Temporary Water Service and Distribution:**
 1. Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
 - a. **Sterilization:** Sterilize temporary water piping prior to use.
 2. Connect to existing facilities, through an approved backflow prevention device; extend branch piping with outlets so that water is available by use of hoses. Owner will pay for water used. The Contractor shall not waste water or use faulty equipment. The Contractor shall provide, at his own expense, all connections, extensions and other apparatus required for use of such services. Upon completion of the Contract, the Contractor shall disconnect temporary extensions and return utility to its original condition.
- C. **Temporary Electric Power and Lighting Services:**
 1. Power and lighting may be taken from the power company's nearest pole with temporary poles, if needed, to extend the line to project. If permanent power lines have been installed before beginning project, then temporary lines can be brought in from the last pole.

2. Provide service required for construction with branch wiring and distribution boxes located to provide power and lighting by construction-type extension cords. Meter shall be provided and installed by the Contractor.
 3. The Contractor shall pay all costs of temporary power and light.
 4. **Power Distribution System:** Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
 5. **Temporary Lighting:** When overhead floor or roof deck has been installed, provide temporary lighting with local switching. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
 1. installation of materials and systems.
- D. Temporary Telephone Service and Data:** Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first aid station. Contractor shall provide telephone service in his office and separate telephone service in the DAS/CS Office and Construction Administrator's Office, if provided. It is preferred that the Contractor use a cellular phone. Basic service and local calls will be paid for by the Contractor. Toll calls will be paid for by the respective users.
1. **Separate Telephone Lines:** Provide additional telephone lines for the following:
 - a. Where an office has more than **two (2)** occupants, install a telephone for each additional occupant or pair of occupants.
 - b. Provide dedicated telephone lines for a separate fax machine in both the Contractor's office and the DAS/CS / CA office.
 2. At each telephone, post a list of important telephone numbers.
- E. Temporary Sanitary Facilities, Including Drinking Water:** Temporary sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, wash basins with water, soap and paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material. The Contractor shall maintain the facilities in a sanitary condition.
 2. **Toilets:** The Contractor shall install self-contained chemical toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Provide separate facilities for male and female personnel.
 3. **Water Coolers:** Where power is accessible, provide electric hot/cold water coolers to maintain dispensed cold water temperature at 45 to 55 degrees F. Provide bottled water service and cup supplies and maintain in a clean sanitary condition.
- F. Storm and Sanitary Sewer:** If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully.
1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
 2. Connect temporary sewers to the municipal system, as directed by sewer department officials.
 3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- G. Storm Water Pollution Control:** Provide earthen embankments and similar barriers in and around excavations and sub-grade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Locate field offices, storage sheds, and other temporary construction and support facilities in designated area as shown on the Contract Documents. The location of the trailers on the Drawings is diagrammatic in nature. Final placement of the trailers is to be approved by the Construction Administrator.

1. Maintain support facilities until Final Completion. Remove prior to Final Completion with permission from the Owner.

B. Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep all offices clean and orderly, sweep weekly and remove rubbish on a daily basis. Furnish and equip offices as follows:

1. The Contractor shall provide an office for their own use and a method to contact them by e-mail and telephone at any point and time.

2. **Owner and Construction Administrator’s Field Offices / Equipment:** The Contractor shall provide a field office for the Owner and Construction Administrator. The field office shall be **one (1) single wide trailer 12’ x 60’**. The trailer shall have to be in “new condition” as determined by the Construction Administrator. **The trailer shall have a minimum of two (2) offices, each with a minimum of 150 square feet each, and a main meeting area.** The trailers shall have ample natural light, heating of sufficient capacity to maintain 70 degrees (F) in winter and air conditioning of sufficient capacity to maintain 75 degrees (F) in summer. The operational noise level of the supplied HVAC systems shall be low enough so as not to impede the conducting of meetings. The Contractor shall provide a 5-lb. ABC fire extinguisher and an OSHA- approved first aid kit. The Contractor shall provide the following furniture, and equipment which will remain his property. The furniture may be used but shall be in good condition as judged by the Owner and Construction Administrator.

2.1	The Contractor shall provide a lockable chemical toilet(s) with toilet tissue for the owners’ use. The Contractor shall maintain the facility in a sanitary condition. (See Section 01 52 19 Temporary Sanitary Facilities).
2.2	Two (2) Lockable, double-pedestal, office desks, each with an executive chair.
2.3	Two (2) Plan tables.
2.4	Two (2) Plan racks.
2.5	Ten (10) Conference chairs and a conference table (approx. 5 feet x 12 feet).
2.6	Two (2) Side tables (approx. 3 feet x 5 feet).
2.7	Two (2) Wall mounted, cork display boards (4 foot x 6 foot).
2.8	Two (2) Wall mounted, white, wipe-off board, with markers (3 foot x 4 foot).
2.9	Four (4) File cabinets (lockable four drawer letter size).
2.10	Two (2) Bookshelves each with 10 linear feet x 12 inch wide shelving.
2.11	Two (2) Large capacity waste receptacles.
2.12	One (1) Plain paper, Fax Machine with dedicated telephone line approved by Owner.
2.13	Two (2) Telephones with telephone lines and voice mail.
2.14	Two (2) Telephones lines (dedicated to computer use) with high-speed Internet connection (minimum of DSL or cable modem service).

3. Field Office Computers

The Contractor shall provide **TWO (2)** Field Office Computers for the Department’s exclusive use for each field office specified. The Contractor shall provide laptop computers and shall coordinate the system specifications and requirements with DAS prior to acquisition. At the completion of the project, the two (2) Field Office Computers are to be turned over to the Owner (DAS) who will take permanent ownership.

4. Computer Software:

The Contractor shall provide software for the computer system in accordance with the minimum requirements listed below.

4.1	Operating System Software:	
4.2	Productivity Software:	
4.3	Security Software:	
4.4	All software shall include the most current updates and patches at the time the computer system is provided to the Owner. The Construction Manager shall provide for installation of updates and patches for the operating system, productivity and security software during the term of use of the computer system by the Owner. Updates and patches shall be provided by an automatic update method.	
4.5	The Owner may install and maintain proprietary software on the computer in order to run the Owner's construction management programs.	

5. Miscellaneous Computer Requirements

The initial condition of the computer system shall be nearly pristine. All owner installed e-mail accounts, games, spyware, online services, applications, network or other profiles previously set up on the system shall be removed prior to placement in the field office. If the system was provided for a previous DAS/CS contract, all software not specified shall be removed prior to placement in the current field office.

- 5.1** The Contractor shall provide an uninterruptible power supply (UPS), and full time surge suppression for each field office computer system specified in this Section.
- 5.2** The Contractor shall provide all cables, connections and software required to connect the field office computer system to the printer and the scanner.
- 5.3** When more than one computer system is specified for a field office, the Contractor shall provide either an Ethernet or wireless office network to allow all computer systems in the field office to access the field office internet service, the printer and the scanner.
- 5.4** The Contractor shall provide appropriate dust covers for all field office desktop computer systems.
- 5.5** The Contractor shall provide all manuals necessary for operation of the computer system and software with the system and shall include all documentation normally furnished with the equipment and software when purchased.
- 5.6** The Owner will be utilizing the computer system to run or access Owner provided construction management software applications. These applications are known to run on Intel and AMD compatible equipment when using the Windows **10** operating system. If the Owner experiences problems running these applications due to hardware or software compatibility, the Contractor shall replace the equipment to ensure compatibility to the satisfaction of the Owner within **five (5)** business days.
- 5.7** The computer system shall be maintained in good working order. If a portion of the system becomes defective, inoperable, damaged, or stolen, that portion shall be repaired or replaced within **five (5)** business days after the Contractor is notified by the Owner. If the computer system and related accessories are not maintained by the Design-Builder as required, the Owner may withhold partial payments until the computer system is operational to the Owner's satisfaction.

6. Field Office Internet Service:

The Contractor shall provide broadband internet service for the field office. Broadband internet service shall be capable of a minimum average upload speed of **100 mps** unless otherwise approved by the Owner.

- 7.** When the Contractor supplies the trailer(s) they shall equip each trailer with a water cooler for hot and cold water.

- C. Storage and Fabrication Sheds:** Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
1. Storage sheds for tools, materials and equipment shall be weathertight with heat, lighting and ventilation for products requiring controlled conditions.
 2. Remove temporary materials, equipment services and construction before Substantial Completion.
 3. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to specified or original condition.
- D. Temporary Roads and Paving:** Construct and maintain temporary roads and paving to support the indicated loading adequately and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Construction Administrator and Architect.
1. Provide paving for pedestrian access and parking for field offices.
 2. Paving: Comply with Division 32 Section 32 12 16 "Asphalt Paving" for construction and maintenance of temporary paving.
 3. Coordinate temporary paving development with sub-grade grading, compaction, installation and stabilization of sub-base and installation of base and finish courses of permanent paving.
 4. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
 5. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration, and supervision.
- E. Dewatering Facilities and Drains:** For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 31 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.
- F. Temporary Enclosures:** Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25-sq ft or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 4. Where temporary enclosure exceeds 100-sq ft in area, use UL-labeled, fire-retardant-treated material for framing and main sheathing.
- G. Temporary Lifts, Hoists and Elevator Use:**
1. Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
 2. Refer to Division 14 Sections for elevators.
- H. Temporary Project Identification Signs:** Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.

1. **Project Sign:** Engage an experienced sign painter to apply graphics. Comply with details to be furnished by the Construction Administrator.
 - a. **Temporary Tripod Frame:** For groundbreaking ceremonies only, provide a temporary tripod for the sign illustrated and described below. Make the tripod of 12 ft long 2" x 4"s (Stud Grade), beveled and bolted at the top. Provide approximately 5-ft between legs at grade. Provide a 6-ft long, 2" x 4" seat for the sign; locate 5-ft above grade and nail in place. Nail sign at four (4) places where edges intersect tripod legs. Drive a 24" long, pointed 2" x 4" stake into the earth next to each leg and nail to legs.
 - b. **Project Sign:** The Contractor shall contact the Construction Administrator for the proper wording for the project sign. Fabricate sign of 3/4" Exterior Grade A-B Fir plywood. Mount sign on preservative treated Fir posts. The Owner shall provide design, color selection and illustration of the Project Sign. Paint both sides and all edges of sign and the posts with two (2) coats of exterior, white, alkyd primer. Paint the border and letters with "bulletin" (sign) paint. Letter sizes, colors and related information are given on the illustration below. A self-adhesive decal of the State seal will be furnished at the Contract signing. Erect the sign within two (2) weeks after execution of the Contract and remove the sign within one (1) week after completion of the project.
 - c. **Project Sign Detail:** Sign letter sizes, fonts, colors and related information are shown in the illustration available for download from the DAS website (www.ct.gov/das) > Doing Business With The State > State Building Construction > Publications and Forms > DAS Construction Services Library > 3000 Series - Design Phase Forms.
- I. **Temporary Exterior Lighting:** Install exterior yard and sign lights so signs are visible when Work is being performed.
- J. **Collection and Disposal of Waste and Cleaning:**
 1. Collect waste within the contract limit line from construction areas daily. Provide separate containers for proper waste recycling. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80 degrees F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
 2. Maintain areas under Contractor's control free of waste materials, debris and rubbish. Maintain in a clean and orderly condition.
 3. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces before closing the space.
 4. Periodically clean interior areas before start of surface finishing and continue cleaning on an as-needed basis.
 5. Control cleaning operations so that dust and other particulates will not adhere to wet or newly coated surfaces.
- K. **Temporary Environmental Controls:** Contractor is to provide the following controls.
 1. Rodent and Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at materials.
 2. Dust Control (construction and demolition).
 3. Noise Control.
 4. Erosion and Sediment Control.
 5. Pollution Control.
 6. Traffic Control.

- L. **Stairs:** Until permanent stairs are available, provide temporary stairs where ladders are not adequate. Cover finished permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION (listed in Paragraph 1.2 D)

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Owner.
- B. **Temporary Fire Protection:** Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Provide and locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 - 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
 - 5. The Contractor, during construction, shall be responsible for loss or damage by fire to the work of the Contract until completion. Any fire used within the structure for working purposes shall be extinguished when not in use. Bitumen or tar shall be melted on the ground only. No flammable material shall be stored in the structure in excess of amounts allowed by the authorities. No gasoline shall be stored in or close to the building at any time. The Contractor shall assign a responsible employee to be in charge of fire protection measures.
 - 6. If an EPDM or other single-ply roof is included in the work that requires cleaning of mating surfaces of laps with gasoline, limit amount of gasoline on roof to two (2) gallons which shall be in UL listed containers. Also provide one 30 B:C fire extinguisher within 75 feet of any point on the roof.
- C. **Permanent Fire Protection:** At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. **Security for Site and Agency:**
 - 1. Provide security program and facilities to protect work, existing facilities and the Owner and Agency's operations from unauthorized entry, vandalism and theft. Coordinate with the Owner's and Agency's security program.
 - 2. The Contractor shall be solely responsible for damage, loss or liability due to theft or vandalism.
- E. **Barricades, Warning Signs, and Lights:** Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
 - 1. Provide covered walkways as required by governing authorities for public rights-of-way and for public access to existing buildings.
 - 2. Provide temporary, insulated, weathertight closures at openings to the exterior to provide acceptable working conditions and protection for materials, to allow for temporary heating and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.
 - 3. Barriers and enclosures shall be in conformance with code requirements. Do not block egress from occupied buildings unless necessary to further the work of the Contract. In this case, secure the Owners approval of an alternate egress plan.

4. See also General Conditions Article 19, "Protection of the Work, Persons and Property".
- F. Enclosure Fences:** Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated on the Construction Documents, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.
1. Provide chain link construction fencing with posts set in a compacted mixture of gravel and earth. Use existing fence to the extent possible.
- G. Security Enclosure and Lockup:** Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Provide keys to the Construction Administrator.
1. **Storage:** Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- H. Protection:**
1. Protect buildings, equipment, furnishings, grounds and plantings from damage. Any damage shall be repaired or otherwise made good at no expense to the Owner.
 2. Provide protective coverings and barricades to prevent damage. The Contractor shall be held responsible for, and must make good at his own expense, any water or other type of damage due to improper coverings. Protect the public and building personnel from injury.
 3. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
 4. Provide protective coverings for walls, projections, jambs, sills and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects and storage. Prohibit traffic and storage on waterproofed and roofed surfaces and on lawn and landscaped areas.
 5. Provide temporary partitions and ceilings to separate work areas from Agency-occupied areas to prevent penetration of dust and moisture into Agency-occupied areas and equipment. Erect framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces.
 6. See also General Conditions Article 19, "Protection of the Work, Persons and Property".
- I. Environmental Protection:** Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result.
- J. Traffic Ways:**
1. The Contractor may use on-site paved roads and parking areas but shall not encumber same or their access. Public highways shall not be blocked by standing trucks, parked cars, material storage, construction operations or in any other manner.
 2. Public roads and existing paved roads, drives and parking areas on Owner's property shall be kept free from scrap or debris due to construction operations and any damage to their surface caused by the Contractor shall be repaired by him at his own expense.
 3. If the work of the Contract affects public use of any street, road, highway or thoroughfare, the Contractor shall confer with the police authority having jurisdiction to determine if and how many police are needed for public safety in addition to any barriers and signals that may be needed. All traffic control for this Project shall be coordinated with the CCSU Police Department (860) 832-02375/ Lt. Chris Cervoni. The Contractor will be responsible for payment of any needed police services.
 4. Access to **project site main gate** located on **Paul Manafort Sr. Drive** will not obstruct traffic during peak periods when the faculty and students are arriving and being dismissed. No access to the Gate will be allowed:

Monday – Thurs.	7:30	a.m.	–	9:30	a.m.
Monday – Thurs.	2:30	p.m.	–	3:30	p.m.

This time period is subject to change at the discretion of the Construction Administrator to coincide with the **College** Schedule.

K. Identification Badges for Contractor's Personnel, Visitors and Parking Stickers:

1. The Contractor will provide each person working or visiting at the site with an identification badge, bearing the name of the Contractor and a number. As badges are assigned, a record shall be kept by the Contractor and given to the Construction Administrator and Agency Administrator. Update and correct the records of all badges issued on a semi-monthly basis.
2. Badges are to be worn on outer garment where visible at all times while at the construction site, return them to the Contractor's field office at the end of each day and pick them up there each morning.
3. All vehicles parking in the Contractor's parking lot and those used around the site require an ID sticker. They will be issued by the Agency. Each contractor shall apply for parking stickers through the Construction Administrator no more than semi-monthly and shall keep record of all stickers issued.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision:** Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance:** Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal:** Unless the Architect/CA requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
 3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION 01 50 00

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. The extent of each type of aluminum entrance assembly is shown on the drawings and includes but is not limited to the following:
 - 1. Window assemblies in stair and elevator towers.
 - 2. Entrance Doors.
 - 3. Solid extruded aluminum frames at punched window openings.

- B. Drawings are diagrammatic; details shown are intended to establish aesthetic intent, such as basic dimensions of the module and sight lines, jointing and profiles of members. Engineer the system within these aesthetic parameters and for meeting specified performance criteria.

1.2 QUALITY ASSURANCE

- A. Standards: Comply with the requirements and recommendations in applicable specifications and standards by NAAMM, AAMA and AA, including the terminology definitions, and specifically including the "Entrance Manual" by NAAMM, except to the extent more stringent requirements are indicated.

- B. Wind Loading: Fabricate exterior door and frame units to withstand a wind pressure loading of 30 lbs. per sq. ft. on the gross area of the frames, doors, panels and glass, acting inward and also acting outward.

- C. Performance and testing: Except as otherwise indicated, comply with the air infiltration tests, water resistance tests and applicable load tests specified in ANSI/AAMA 101-85 for performance class C.
 - 1. Testing: wherever manufacturer's standard window units comply with the requirements and have been tested in accordance with the specified tests, provide certification by the manufacturer of compliance with such test; otherwise perform the required tests through a recognized testing laboratory or agency and provide certified test results.
 - 2. Structural Performance: Provide unites with no failure or permanent deflection for a positive (inward) and negative (outward) test pressure of 30 lbs/sq. ft.
 - 3. Thermal Movement: Furnish for expansion and contraction of component materials and thermal movements resulting from an ambient temperature differential of 120° F, which may result in a metal surface temperature range of 180° within framing.
 - 4. Air Infiltration: Provide units with an air infiltration rate of not more than 0.06 cfm/ft. of operable sash joint for an inward test pressure of 1.57 lbs/ft.
 - 5. Water Penetration: Provide unites with no water penetration as defined in the test method at an inward test pressure of 6.24 lbs/sq.ft.
 - 6. Condensation Resistance: Where window units are indicated to be of "thermal-break construction", provide unites which have been tested for thermal performance in accordance with AAMA 1502 showing a condensation resistance factor (CRF) of 45.
 - 7. Thermal Transmittance: Provide window units which have a "U"-value maximum of .065 BTU/hour/sq. ft./deg. F at 15 mph exterior wind velocity.

1.3 SUBMITTALS

- A. Manufacturer's Data:

1. Submit manufacturer's data, recommendations and standard details for aluminum doors and frames, including fabrication, finishing, hardware, accessories and other components of the work.
 2. Furnish certified test reports by an approved testing laboratory showing the frames as shown and specified have been previously tested and have met or exceeded all the specified performance requirements.
- B. Shop Drawings: Submit shop drawings for the fabrication and installation of aluminum doors and frames, and associated components of the work. Include wall elevations and half-size detail sections of every typical composite member. Show anchors, joint system, expansion provisions and other components not included in manufacturer's standard data. Include glazing details.
1. Show section moduli and moment of inertia of wind load bearing members, and calculations of stresses and deflections for performance under design loading. Furnish material properties and other information demonstrating structural analysis including computations prepared, signed and sealed by a licensed Professional Engineer in the State of the project.
 2. Include setting drawings, templates, and directions for installation of anchorages to be installed by other trades.
- C. Samples: Submit samples of each required aluminum finish, on 6 inch long extrusions or 4 inch square sheets, of the alloys to be used for the work. Where normal color and texture variations are to be expected, include two or more units in each sample, to show the range of such variations. Samples will be reviewed by Architect for color and texture only.

1.4 JOB CONDITIONS

- A. Field Measurements: Where possible, check actual window openings in construction work by accurate field measurement before fabrication, show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress as directed by the Contractor to avoid delay of work. Where necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit of window units.

PART 2 - PRODUCTS

2.1 MATERIALS AND ACCESSORIES

- A. Aluminum: Provide alloy and temper as recommended by manufacturer for strength, corrosion resistance, application of required finish and control of color, but not less than 22,000 psi ultimate tensile strength. Provide main extrusions of not less than 0.125-inch wall thickness, except as otherwise indicated.
1. Provide extruded glazing stops and other applied trim extrusions with minimum wall thickness of 0.062 inch.
 2. Provide aluminum sheets of not less than 0.062-inch thickness, except as otherwise indicated.
- B. Fasteners: Aluminum, non-magnetic stainless steel or other non-corrosive metal fasteners guaranteed by the manufacturer to be compatible with the doors, frames, stops, panels, hardware, anchors and other items being fastened. For exposed fasteners, provide Phillips flat-head screws with finish matching the item fastened.
1. Do not use exposed fasteners except where unavoidable for the assembly of units, or for the application of hardware. Provide only concealed screws in glazing stops.
 2. Steel Reinforcement and Brackets: Manufacturer's standard formed or fabricated steel units, of shapes, plates or bars; with 2.0 ounce hot-dip zinc coating complying with ASTM A123-78, applied after fabrication.
- D. Inserts: For required anchorage into concrete or masonry work, furnish inserts of cast iron, malleable iron or 12

gage steel hot-dip galvanized after fabrication.

- E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.
- F. Bituminous Coatings: Cold-applied asphalt mastic complying with SSPC-PAINT 12, compounded for 30-mil thickness per coat.
- G. Weatherstripping: Provide manufacturer's standard replaceable stripping of wool, polypropylene or nylon woven pile, with nylon fabric and aluminum strip backing, complying with AAMA 701.1.
- H. Sealants and Gaskets: Provide sealants and gaskets in the fabrication, assembly and installation of the work, which are recommended and guaranteed by the manufacturer to remain permanently elastic, non-shrinking, non-migrating and weatherproof for the life of the building.
- I. Glazing Gaskets: For glazing factory-installed glass and for gaskets which are factory-installed in a "captive" assembly of glazing stops, provide manufacturer's standard stripping of molded neoprene complying with ASTM D2000-77, Designation 2BC415 to 3BC620, or molded closed-cell neoprene complying with ASTM C509, Grade 4.
- J. Glazing Materials: Refer to "Glass and Glazing" section for gaskets and sealants required for the installation of glass at the project site.

2.2 HARDWARE

- A. Provide manufacturer's standard hardware for entrance doors as follows:
 - 1. Concealed Overhead Closers: Hydraulic and spring power control with adjustable closing and latching speed; shock-absorbing dead stop at 108 degrees; equal to Kawneer Sam II.
 - 2. Pivots: Cast aluminum offset pivots with stainless steel pin and vertical screw adjustment.
 - 3. Flush Bolts: Provide manufacturers standard flush bolts in top and bottom of inactive leaf of double doors.
 - 4. Push/Pulls: Aluminum push bars with 3 1/2" x 11" push pad similar to Kawneer Style V. Aluminum pulls 3 1/2" x 10" similar to Kawneer Style T.
 - 5. Locks and Latches:
 - a. Exit door at grade: Exit device equal to Kawneer Dor-o-matic 1990 with concealed lock rods. Provide "T" pull handle on exterior side of door.
 - 6. Cylinders specified under the Finish Hardware Section.
Locks: Deadlock equal to Adams - Rite MS 18-50A.
 - 7. Finish: Exposed parts of hardware shall match finish of aluminum doors and frames.
- B. Cut, reinforce, drill, and tap frames and doors as required to receive hardware. Comply with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.
- C. Coordinate hardware with requirements for Hardware Section 08 70 00 and the hardware contractor.
- D. All hardware shall comply with the requirements of the regulations for public building accommodations for physical and handicapped persons of the governmental authority having jurisdiction.

2.3 FABRICATION

- A. General:

1. Sizes and Profiles: The required sizes for door and frame units, and the profile requirements are shown on the drawings.
 - a. The details shown are based upon standard details by one or more manufacturers. It is intended that similar details by other manufacturers will be acceptable, provided they comply with the specified requirements.
 2. Coordination of Fabrication: Wherever possible, check the actual frame openings in the construction work by accurate field measurement before fabrication, and show recorded measurements on final shop drawings. However, coordinate fabrication schedule with construction progress as directed by Contractor and avoid delays of the work.
 3. Prefabrication: Except as otherwise indicated, provide each continuous unit of framework, doors, side lights, transom panels, hardware, and all accessory items, as a "packaged entrance" unit. Complete the fabrication, assembly, finishing, application of hardware and all other work, before shipment to the project site, to the greatest extent possible. Disassemble only to the extent necessary for shipment and installation.
 4. Complete the cutting, fitting, forming, drilling and grinding of all metal work prior to cleaning, finishing, treatment and application of coatings. Remove arises from cut edges and ease edges and corners to a radius of approximately 1/64 inch.
 5. Weld by methods recommended by the manufacturer and AWS to avoid discoloration at welds. Grind exposed welds smooth and restore mechanical finish.
 6. Maintain continuity of line and accurate relation of plans and angles. Provide secure attachment and support at mechanical joints, with hairline fit of contacting members.
 7. Reinforce the work as necessary for performance requirements, and for support to the structure. Separate dissimilar metals with bituminous paint or preformed separators which will prevent corrosion. Separate metal surfaces at moving joints with non-metallic separators to prevent "freeze-up" of joints.
 8. Make provisions to weep penetrating water and condensation to the exterior.
- B. Stile-and-Rail Type Aluminum Doors:
1. Provide tubular frame members, fabricated with mechanical joints of heavy inserted reinforcing plates and concealed tie-rods or j-bolts, in accordance with manufacturer's standard fabrication methods; or fabricate with structurally welded joints, at manufacturer's option.
 2. Style of Doors: Except as otherwise shown or scheduled, provide door units 1-3/4 inches thick and of the indicated type, as described in the NAAMM "Entrance Manual".
 - a. Stile, tubular, medium stile, nominal 4-1/2 inches.
 3. Glazing: Fabricate doors to facilitate replacement of glass without disassembly of door stiles and rails. Provide snap-on extruded aluminum glazing stops, with exterior stops anchored for non-removal. Equip stops with captive glazing gaskets.
- C. Aluminum Frames:
1. Fabricate tubular and channel frame assemblies, as shown, with either welded or mechanical joints in accordance with manufacturer's standards, with concealed fasteners wherever possible.
 2. Reinforce internally with steel channel shapes as shown, or as necessary to support the required loads.
 3. Provide the type and profile of glazing system shown, to receive the glazing materials indicated.

4. Fabricate frame assemblies for exterior walls with flashing and weep holes to drain penetrating moisture to exterior. Provide anchorage and alignment brackets for support of assembly from the building structure. Allow for thermal expansion of exterior units.
- D. Manufacturer's offering aluminum assemblies to comply with the requirements include the following or approved equal:
1. Kawneer Company, Inc.
 2. Arch/Amarlite
 3. EFCO Corp.
 4. Tubelite - Div. of Conalco.
 5. Vistawall Architectural Products.

2.4 ALUMINUM FINISHES

- A. General: After fabrication of doors and frames, prepare the aluminum surfaces for finishing in accordance with the aluminum producer's recommendations and standards of the finisher or processor. Process all components of each assembly simultaneously to attain uniformity of color.
- B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
1. Finish: Clear anodized (Class 1)

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's specifications and recommendations for the installation of aluminum doors and frames.
- B. Set units plumb, level and true to line, without warp or rack of frames, doors or panels. Anchor securely in place. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- C. Set sill members and other members in a bed of compound as shown, or with joint fillers or gaskets as shown to provide weathertight construction.
- D. Clean aluminum surfaces promptly after installation of frames, doors, glass and glazing material. Remove excess glazing and sealant compounds, dirt and other substances.
- E. Provide all protective treatment and other precautions required through the remainder of the construction period, to ensure that doors and frames will be without damage or deterioration (other than normal weathering) at the time of acceptance.

END OF SECTION 05 51 13

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following types of automatic door operators:
 - 1. Exterior and interior, automatic door operators, low energy, with visible header mounting.
 - 2. Automatic door operators shall be configured for doors as follows:
 - a. Simultaneous pairs, with single operator.

1.3 REFERENCES

- A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- B. Underwriters Laboratories (UL):
 - 1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
 - 2. UL 10C – Positive Pressure Fire Tests of Door Assemblies
- C. American National Standards Institute (ANSI)/Builders' Hardware Manufacturers Association (BHMA):
 - 1. ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors.
 - 2. ANSI/BHMA A156.19: Standard for Power Assist and Low Energy Power Operated Doors.
- D. American Society for Testing and Materials (ASTM):
 - 1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- E. American Association of Automatic Door Manufacturers (AAADM):
- F. National Fire Protection Association (NFPA):
 - 1. NFPA 101 – Life Safety Code.
 - 2. NFPA 70 – National Electric Code.
- G. International Code Council (ICC):
 - 1. IBC: International Building Code
- H. Building Officials and Code Administrators International (BOCA), 1999:
- I. International Standards Organization (ISO):
 - 1. ISO 9001 - Standard for Manufacturing Quality Management Systems
 - 2. ISO 14025 – Environmental Labels and Declarations -- Type III Environmental Declarations -- Principles and Procedures
 - 3. ISO14040 – Environmental Management -- Life Cycle Assessment -- Principles and Framework
 - 4. ISO 14044 – Environmental Management -- Life Cycle Assessment -- Requirements and Guidelines
 - 5. ISO 21930 – Sustainability in Buildings and Civil Engineering Works -- Core Rules For Environmental Product Declarations Of Construction Products And Services
- J. National Association of Architectural Metal Manufacturers (NAAMM):
 - 1. Metal Finishes Manual for Architectural and Metal Products.

- K. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
 - 2. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.
- L. United Nations Central Product Classification (UNCPC):
 - 1. UNCPC 4212 - Product Category Rules for Preparing an Environmental Product Declaration for Power-Operated Pedestrian Doors and Revolving Doors

1.4 DEFINITIONS

- A. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.
- B. Knowing act: Consciously initiating the opening of a power operated door using acceptable methods including wall mounted switches such as push plates and controlled access devices such as keypads, card readers and key switches.

1.5 PERFORMANCE REQUIREMENTS

- A. General: Provide automatic door operators capable of withstanding loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Operating Range: Minus 30 deg F (Minus 34 deg C) to 130 deg F (54 deg C).
- C. Opening-Force Requirements for Egress Doors: In the event power failure to the operator, swinging automatic entrance doors shall open with a manual force, not to exceed 30 lbf (133 N) to set door in motion, and not more than 15 lbf to fully open the door. Forces shall be applied at 1" (25 mm) from the latch edge of the door.

1.6 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 submittal procedures.
- B. Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work. Indicate wiring for electrical supply.
- C. Color Samples for selection of factory-applied color finishes.
- D. Closeout Submittals: Provide the following with project close-out documents.
 - 1. Owner's Manual.
 - 2. Warranties.
- E. Reports: Based on evaluation performed by a qualified agency, for automatic door operators.
 - 1. Environmental Product Declaration.
 - 2. Evaluation Report for compliance with IBC.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative, with certificate issued by AAADM, who is trained for installation and maintenance of units required for this Project.
- B. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility certified under ISO 9001.
- C. Manufacturer shall have in place a national service dispatch center providing 24 hours a day, 7 days a week, emergency call back service.
- D. Certifications: Automatic door operators shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:
 - 1. ANSI/BHMA A156.10 and A156.19.

2. NFPA 101.
 3. UL 325 Listed.
 4. UL 10C Listed.
 5. IBC 2018.
 6. BOCA.
- E. Environmental Product Declaration (EPD): EPD for automatic door operators shall be certified by the manufacturer to comply with the following:
1. Prepared under Product Category Rule (PCR) UNCPC 4212.
 2. Conform to ISO standards 14025, 14040, 14044, 21930
 3. Life Cycle Assessment Basis: Cradle to Gate, minimum.
- F. Source Limitations: Obtain automatic door operators through one source from a single manufacturer.
- G. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of swinging doors equipped with automatic door operators and are based on the specific system indicated. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- H. Power Operated Door Standard: ANSI/BHMA A156.19.
- I. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- J. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for swinging automatic entrance doors serving as a required means of egress.

1.8 PROJECT CONDITIONS

- A. Field Measurements: General Contractor shall verify openings to receive automatic door operators by field measurements before fabrication and indicate measurements on Shop Drawings.
- B. Mounting Surfaces: General Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.
- C. Other trades: General Contractor Advise of any inadequate conditions or equipment.

1.9 COORDINATION

- A. Templates: Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing automatic door operators to comply with indicated requirements.
- B. Electrical System Roughing-in: Coordinate layout and installation of automatic door operators with connections to, power supplies, remote activation devices, and electric door latching hardware.
- C. System Integration: Integrate automatic door operators with other systems as required for a complete working installation. Where required for proper operation, provide a time delay relay to signal automatic door operator to activate only after electric lock system is released.

1.10 WARRANTY

- A. Automatic door operators shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.
- B. During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.

- C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

PART 2 - PRODUCTS

2.1 AUTOMATIC DOOR OPERATORS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include but are not limited to the following:
 - 1. Basis of Design: Stanley Access Technologies; M-Force™ Series automatic door operator.
 - 2. ASSA ABLOY
 - 3. Dash Door & Glass (Dor-O-Matic)

2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - 1. Headers: 6063-T6.
 - 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 - 3. Sheet and Plate: ASTM B 209.

2.3 COMPONENTS

- A. Header Case: Header case shall not exceed 6" (152 mm) square in section and shall be fabricated from extruded aluminum with structurally integrated end caps, designed to conceal door operators and controls. The operator shall be sealed against dust, dirt, and corrosion within the header case. Access to the operator and electronic control box shall be provided by a full-length removable cover, edge rabbetted to the header to ensure a flush fit. Removable cover shall be secured to prevent unauthorized access.
- B. Door Arms: A combination of door arms and linkage shall provide positive control of door through entire swing; units shall permit use of butt hung, center pivot, and offset pivot-hung doors.
- C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.
- D. Signage: Provide signage in accordance with ANSI/BHMA A156.19.

2.4 SWINGING DOOR OPERATORS

- A. General: Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated.
- B. Electromechanical Operators: Self-contained unit powered by a minimum 3/16 horsepower, permanent-magnet DC motor; through a high torque reduction gear system.
 - 1. Operation: Power opening and spring closing.
 - 2. Operator Type: Low energy; readily convertible to full energy; no tools required to change type.
 - 3. Handing: Non-handed; no tools required to change handing.
 - 4. Capacity: Rated for door panels weighing up to 700 lb (318 kg).
 - 5. Mounting: Visible
 - 6. Features:
 - a. Adjustable opening and closing speeds.
 - b. Adjustable opening and closing force.
 - c. Adjustable back-check.
 - d. Adjustable hold-open time between 0 and 30 seconds.

- e. Reverse on obstruction.
 - f. Time delay for electric lock integration.
 - g. Force compensation and closed loop speed control with active braking and acceleration.
 - h. Power Close.
 - i. Slam Protection.
 - j. Power Assist.
 - k. Lock Release.
 - l. Stall Sensor Ignore.
 - m. Electronic Coordination.
 - n. Optional Switch to open/Switch to close operation.
 - o. Optional push to activate operation.
 - p. Fire alarm interface, configurable to safely open or close doors on signal from fire alarm system.
- C. Field Adjustable Spring Closing Operation: The operator shall close the door by spring energy employing the motor, as a dynamic brake to provide closing speed control. The closing spring shall be a helical compression spring, adjustable for positive closing action. The spring shall be adjustable, without removing the operator from the header, to accommodate a wide range of field conditions.
- D. Independent Adjustable Closing and Latching Speed Control: The operator shall employ a rheostat module to allow for independent field adjustment of closing and latching speeds using the motor as a dynamic brake.
- E. Field Adjustable Open Stop: The operator shall provide a field adjustable open stop to accommodate opening angles from 80 to 135 degrees without the need for additional components.
- F. Consistent Cycle: The operator shall deliver an even, consistent open manual push force across the entire transition from door fully closed to door fully open. Additionally, the force shall be field adjustable to accommodate a wide range of on-site conditions.
- G. Quiet Performance: The operator shall be designed to output audible noise ratios less than or equal to 50dba.
- H. Manual Use: The operator shall function as a manual door closer in the direction of swing with or without electrical power. The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door fully open.
- I. Electrical service to door operators shall be provided under Division 26 Electrical. Minimum service to be 120 VAC, 5 amps.

2.5 ELECTRICAL CONTROLS

- A. Electrical Control System: Electrical control system shall include a microprocessor controller and a high-resolution position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed.
1. The high-resolution encoder shall have a resolution of not less than 1024 counts per revolution. Systems utilizing external magnets and magnetic switches are not acceptable.
 2. Electrical control system shall include a 24 VDC auxiliary output rated at 1 amp.
- B. Performance Data: The microprocessor shall collect, and store performance data as follows:
1. Counter: A non-resettable counter to track operating cycles.
 2. Event Reporting: Unit shall include non-volatile event and error recording including number of occurrences of events and errors, and cycle count of most recent events and errors.
 3. LED Display: Display presenting the current operating state of the controller.
- C. Controller Protection: The microprocessor controller shall incorporate the following features to ensure trouble free operation:
1. Automatic Reset Upon Power Up.
 2. Main Fuse Protection.
 3. Electronic Surge Protection.
 4. Internal Power Supply Protection.

5. Resettable sensor supply fuse protection.
 6. Motor Protection, over-current protection.
- D. Power Close: When enabled, engages the operator to close a door that does not close completely at the end of a cycle.
- E. Force Compensation: Utilizing the closed loop speed control, the operator shall maintain constant opening and closing speeds when subjected to excessive outside forces, such as positive or negative stack pressures.
- F. Slam Protection: The operators speed control system prevents door from slamming at the full open or full closed position.
- G. Power Assist: Operator mode that lowers opening forces when the door is used manually. Power assist is active only while pushing or pulling the door. The door will close when an opening force is no longer applied.
- H. Lock Release: On doors with electric locking, operator shall include a closing function to release tension on a latch mechanism prior to opening the door.
- I. Stall Sensor Ignore: Adjustable setting to disable swing side safety sensors at a specific angle.
- J. Electronic Coordination: On pairs of doors, allows independent timing of opening and closing of each leaf as required for astragal coordination.
- K. Soft Start/Stop: A "soft-start" "soft-stop" motor driving circuit shall be provided for smooth normal opening and recycling.
- L. Obstruction Recycle: Provide system to recycle the swinging panels when an obstruction is encountered during the closing cycle.
- M. Programmable Controller: Microprocessor controller shall be field programmable.
 1. The following parameters may be adjusted:
 - a. Operating speeds and forces as required to meet specified ANSI/BHMA standard.
 - b. Adjustable and variable features specified.
 2. Manual programming shall be available through local interface which has a two-digit display with a selection control including three push buttons.
- N. Emergency Breakout Switch: A cam actuated emergency breakout switch shall be provided to disconnect power to the motor when an in-swinging door is manually pushed in the emergency out direction. The operator will then automatically reset, and power will be resumed.
- O. Control Switch: Automatic door operators shall be equipped with a three-position function switch to control the operation of the door. Control switch shall provide three modes of operation, Automatic, Off, and Hold-Open.
- P. Power Switch: Automatic door operators shall be equipped with a two position On/Off switch to control power to the door.

2.6 ACTIVATION DEVICES

- A. Push Plates: Provide 4 ½ inch (114 mm) square push plates with UL recognized SPDT switch. Face plates and mounting studs shall be stainless steel. Face plates shall be engraved with the international symbol for accessibility and "Push To Open". Push plates shall be wall or stanchion mounted in single or double gang electrical boxes and hardwired to door operator controls.

2.7 ALUMINUM FINISHES

- A. General: Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.

- B. Class II, Clear Anodic Finish: AA-M12C22A31 Mechanical Finish: as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.40 mils minimum complying with AAMA 611-98, and the following:
 - 1. AAMA 607.1
 - 2. Applicator must be fully compliant with all applicable environmental regulations and permits, including wastewater and heavy metal discharge.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of swinging automatic entrance doors. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Do not install damaged components. Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints.
- B. Mounting: Install automatic door operators/headers plumb and true in alignment with established lines and grades. Anchor securely in place.
 - 1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
 - 2. Set headers, arms and linkages level and true to location with anchorage for permanent support.
- C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.

3.3 FIELD QUALITY CONTROL

- A. Testing Services: Factory Trained Installer shall test and inspect each swinging automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

3.4 ADJUSTING

- A. Adjust door operators, controls, and hardware for smooth and safe operation, for tight closure, and complying with requirements in ANSI/BHMA A156.19 by AAADM Certified Technician.

3.5 CLEANING AND PROTECTION

- A. Clean surfaces promptly after installation. Remove excess sealant compounds, dirt, and other substances. Repair damaged finish to match original finish.

END OF SECTION 08 71 13

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Furnish and install traffic and graphic signs including all necessary incidental items at the locations shown and in accordance with the details indicated on the drawings and specified herein.
- B. The extent of each type of sign is shown on the drawings and includes the following:
 - 1. Reflective traffic and directional signs with silk-screened text.
 - 2. Painted graphic signs with reflective letters and numbers.
 - 3. Clearance bar with painted finish.
 - 4. Vinyl Logo- (Opaque Window Decal) applied to exterior of Pedestrian Bridge glass. Two (2) required.

1.2 QUALITY ASSURANCE

- A. Manufacturer's Instructions:
The assembly, erection, and installation of each type of sign or graphic shall be accomplished in strict accordance with signage manufacturer's instructions.
- B. Electrical service and connections for illuminated signs are specified in Division 26. Provide lighting fixtures and electrical components which are UL-labeled and listed.

1.3 SUBMITTALS

- A. Manufacturer's Data:
Submit copies of manufacturer's specifications, anchor details, and installation instruction for products used in signs and graphics.
- B. Shop Drawings:
Submit shop drawings indicating dimensions and layout of signs and graphics. Include plans, elevations, and details of sections and connections. Show anchorage and accessory items.
- C. Samples:
For each type of finish material specified, submit two samples of color and finish of exposed materials and accessories required. Architects review of samples will be for color and texture only.

1.4 JOB CONDITIONS

- A. Examine premises and site to determine conditions affecting this work. No representation is made that all conditions are indicated on the drawings. Take field measurements where necessary to assure proper fit of components.
- B. Check locations of signs with actual field conditions to assure that signs are not obstructed from view by structural or other elements for the purpose they are intended to serve. Advise Architect of any difficulties prior to installation.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Sign Blanks: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B-209 for 5005-H15.
 - 1. Minimum thickness: 0.125 inches thick for traffic signs, 0.080 inches thick for graphic signs.
- B. Aluminum Sheet: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B-209 for 5005-H15.
- C. Aluminum Extrusions: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B-221 for 6063-T5.
- D. Reflective Sheeting and Letters: Equal to 3M Company "Scotchlite" reflective sheeting engineer grade, Series, 3200. Colors as indicated on the drawings.
- E. Paint Finish: Acrylic Polyurethane paint system with epoxy primer as manufactured by Matthews Paint Company or approved equal.
- F. Typeface Standards: The standard typefaces for use throughout the signage system, unless otherwise specified in the drawings, shall be Helvetica Medium.
- G. Anchors and Fasteners:
 - 1. General: aluminum, non-magnetic stainless steel or other non-corrosive metal fasteners which are compatible with the items being fastened. Use concealed fasteners wherever possible, and tamper-proof fasteners on exposed surfaces with finish to match the item fastened.
 - 2. Concrete inserts: threaded or wedge type, galvanized ferrous castings, either malleable iron ASTM A47-77 or cast steel ASTM A27-77. Provide bolts, washers, and shims as required; hot-dip galvanized, ASTM A153-54.
- H. Opaque Window Decal: 4'-0" diameter, 3 mil. vinyl, opaque window decal with CCSU Logo.

2.2 FABRICATION

- A. General: The fabrication of aluminum sign blanks including cutting to size and shape and the punching of mounting holes shall be completed prior to metal degreasing and the application of reflective sheeting or painting. Aluminum sign blanks shall be free of buckles, warps, dents, cockles, burrs and defects resulting from fabrication.
- B. Traffic Signs: Non-reflective copy shall be applied by the silkscreen process in a manner specified by the reflective sheeting manufacturer. The silk screening of all copy, on encapsulated lens reflective sheeting shall be accomplished prior to the application of the reflective sheeting to the finished aluminum sign blank. Encapsulated lens reflective sheeting shall be of the pressure sensitive adhesive type and shall be applied in a manner specified by the reflective sheeting manufacturer.

1. Silk screening shall be of the highest quality, with sharp lines; no sawtooths or uneven ink coverage. Screens shall be photographically produced.
- C. Graphic Signs (Floor designation): Prepare aluminum surface by removing all grease and dirt and applying a phosphate activated metal pretreatment.
 1. Apply one coat of an epoxy primer and two coats of the acrylic polyurethane top coat in accordance with the paint manufacturers instructions.
 2. Apply die-cut pressure sensitive letters to well cured paint surface. Properly align letters and furbish to avoid air bubbles and peeling.
- D. Headache Bar: Suspended aluminum tube of size shown on drawings, with welded end caps. Clearance copy to be typeface, white reflective pressure-sensitive vinyl, equal to 3M-3290 applied over painted finish. Suspension rods, links and fittings to be No. 4 satin finish stainless steel.

PART 3 – EXECUTION

3.1 GENERAL

- A. Signs shall be free from sharp edges, burrs and other defects. Sawed edges shall be smooth and properly finishes.
- B. Exposed sign and graphic surfaces shall be free of glue, fingerprints, dirt, grease or any other imperfections upon completion of installation.

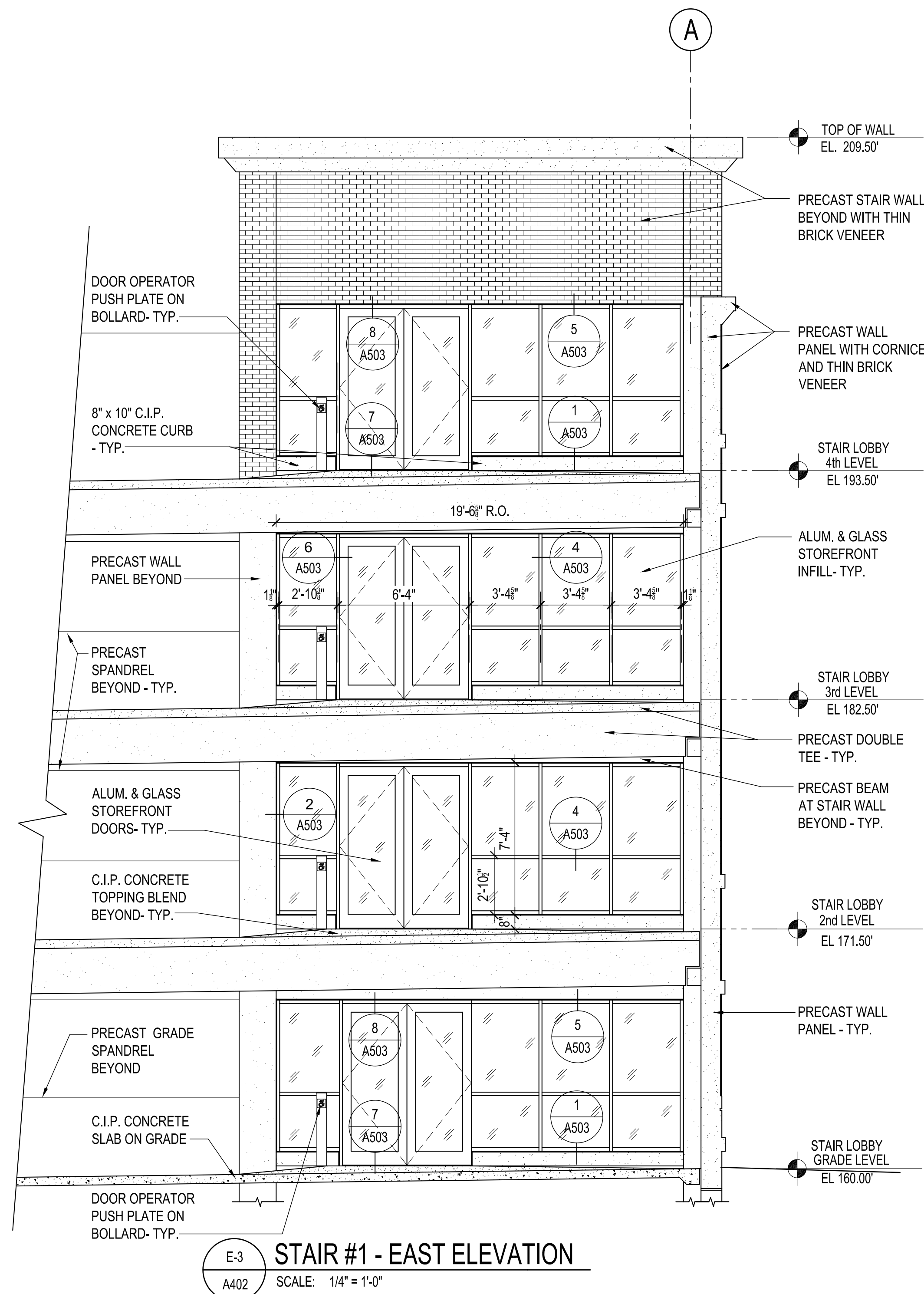
3.2 INSTALLATION

- A. Provide anchorage devices and fasteners where necessary for securing signs; including threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors as required.
- B. Locate sign units and accessories where shown or scheduled, using mounting methods of type described and in compliance with manufacturer's instructions, unless otherwise indicated.
- C. Install sign units level, plumb and at height indicated, with sign surfaces free from distortion or other defects of appearance.
- D. All signs and supports mounted on concrete shall have faying surfaces coated to prevent corrosion due to cathodic action.
- E. Touch up of finish surfaces damaged during installation shall be done with materials furnished by manufacturer and used according to direction from manufacturer.

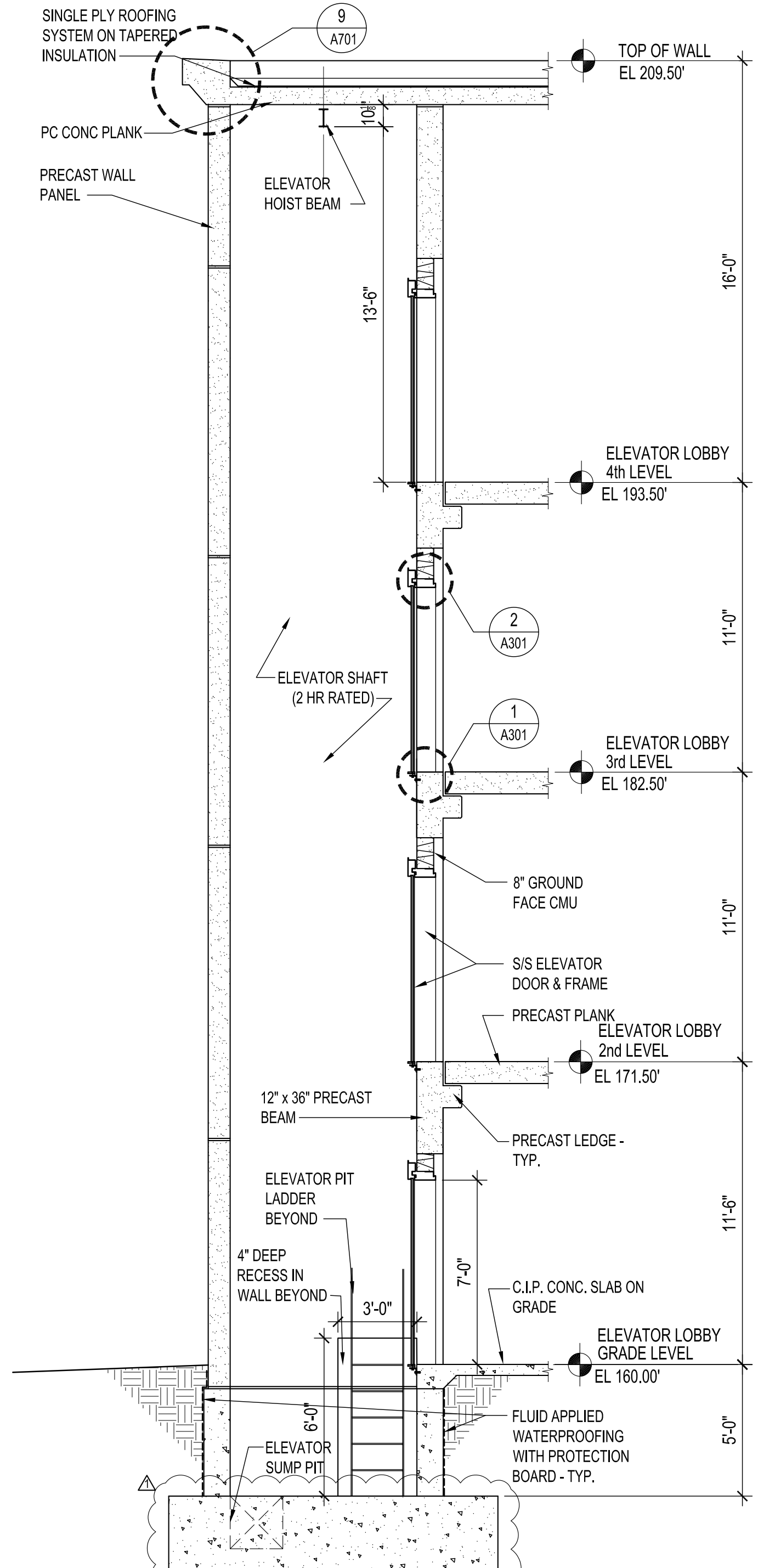
3.3 CLEANING AND PROTECTION

- A. Remove any excess adhesives or other surface blemishes. Restore or replace signs damaged during installation, as directed by the Architect.
- B. Provide all procedures required for protection of installed signs from damage or deterioration until acceptance of the work.

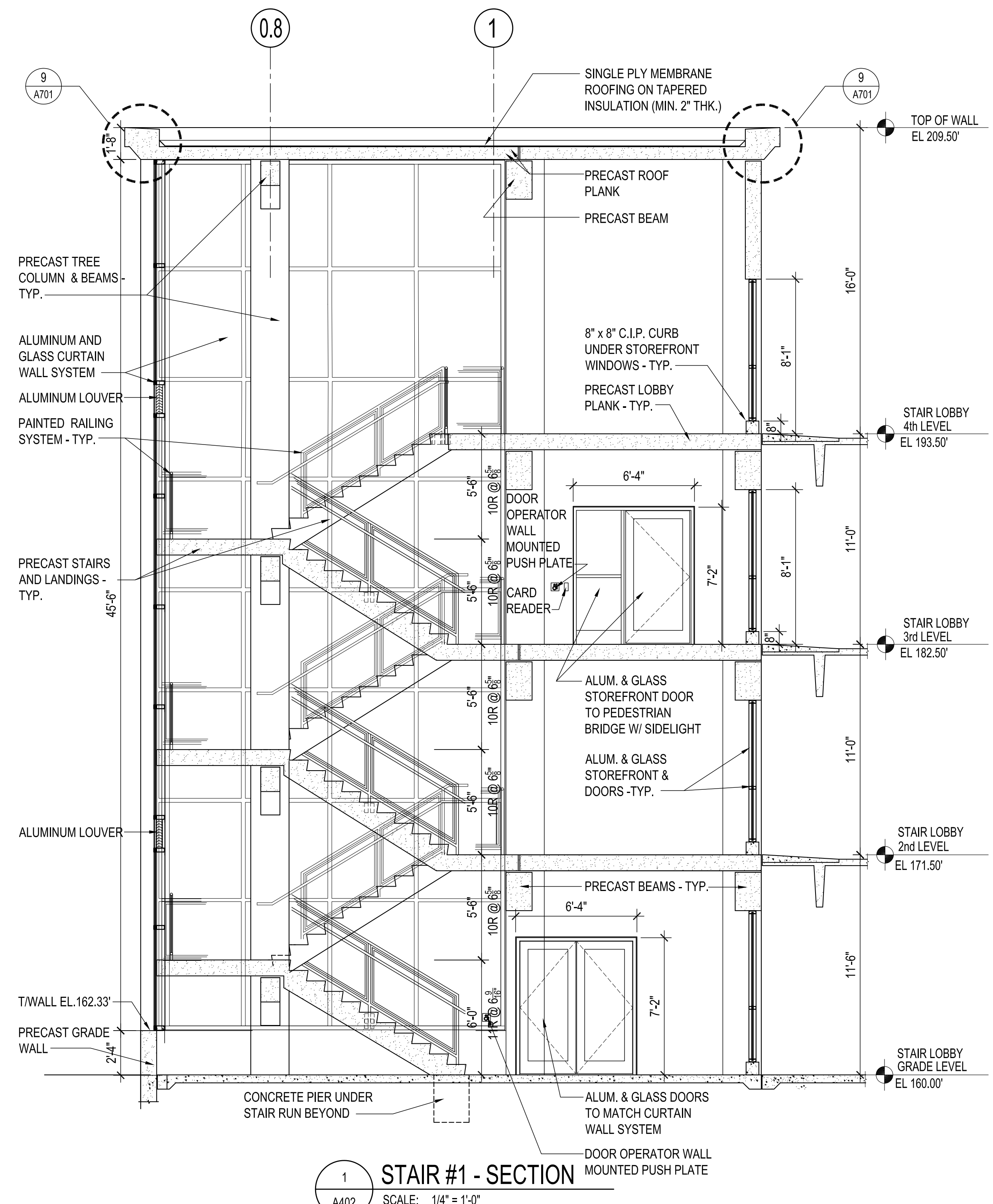
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E-3 STAIR #1 - EAST ELEVATION
A402 SCALE: 1/4" = 1'-0"

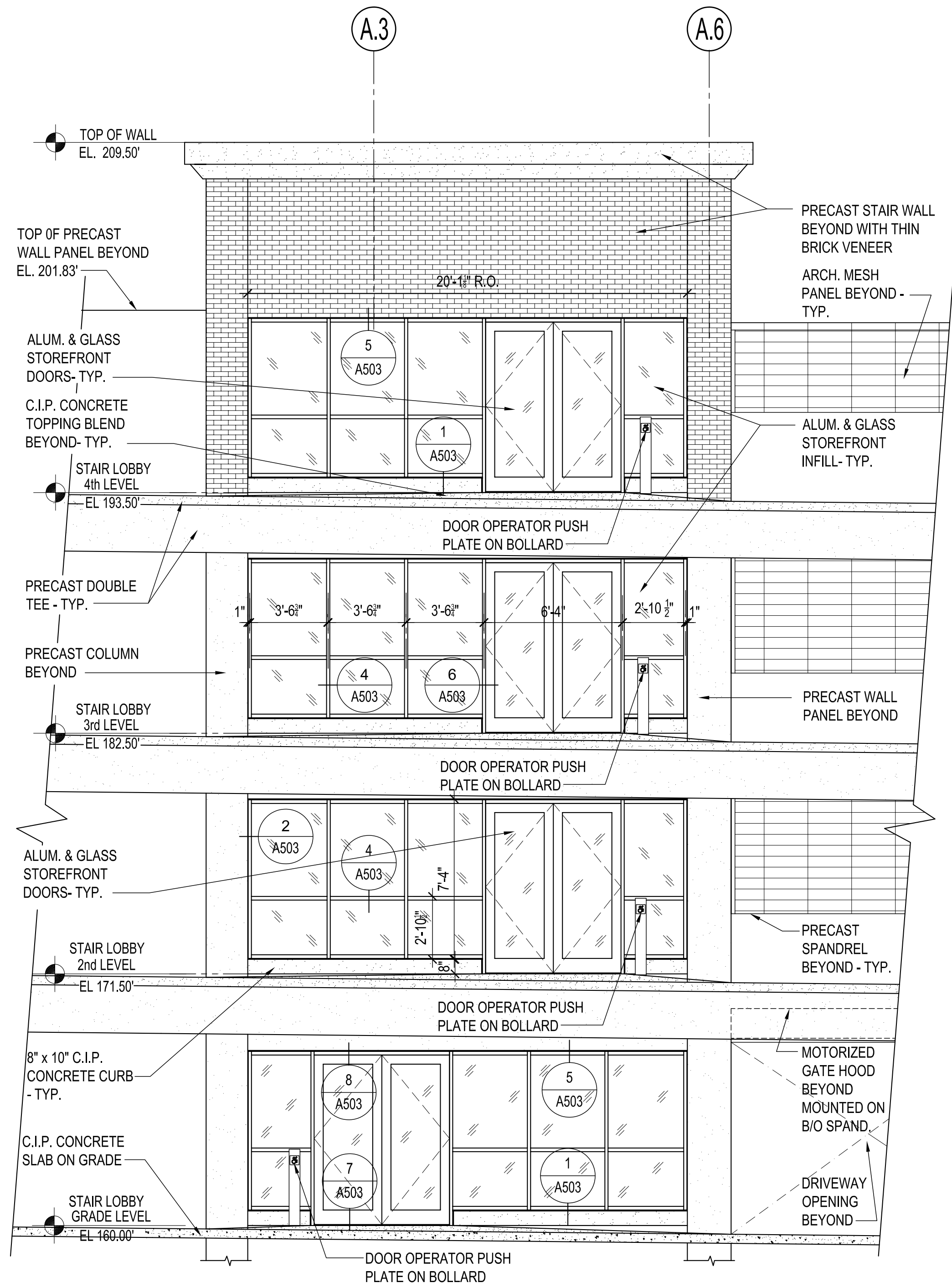


2 SECTION THRU ELEVATOR SHAFT
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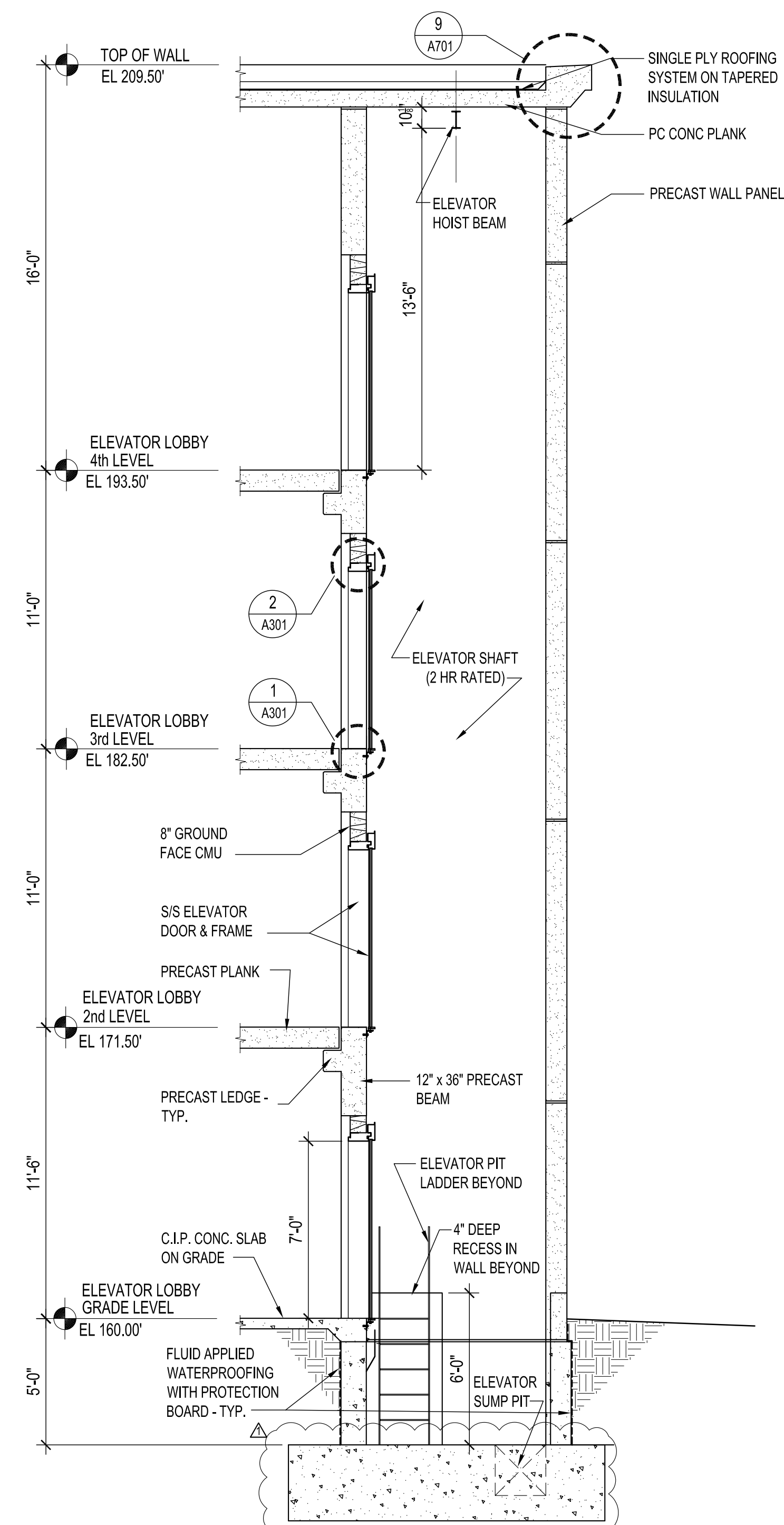


1 STAIR #1 - SECTION
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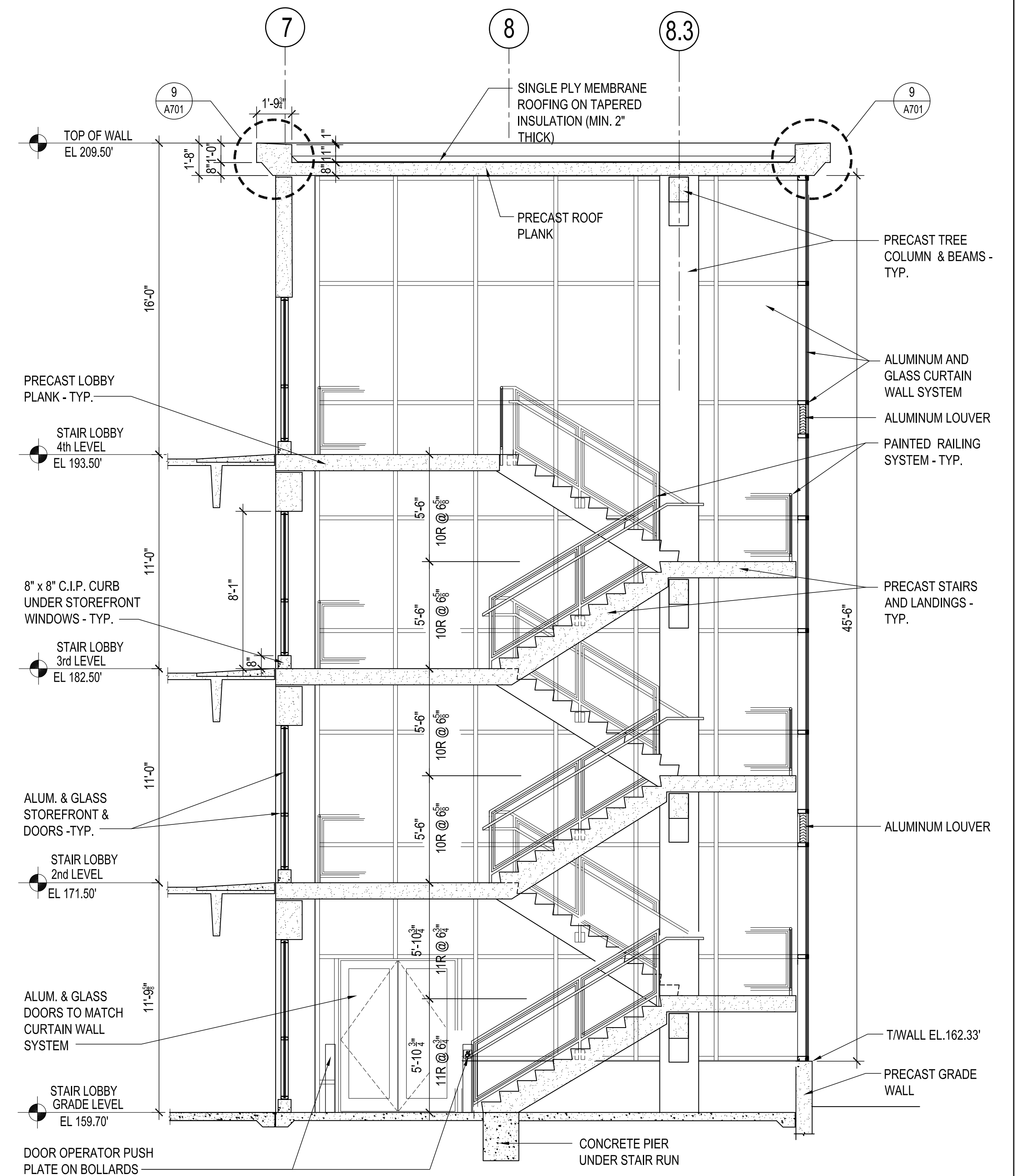
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	06/15/20	ADDENDUM NO. 2		scale AS NOTED
			project	drawn by
			WILLARD DILORETO PARKING GARAGE NEW BRITAIN, CONNECTICUT	AAA
				approved by
				NLG
				drawing no.
				A402
CAD no. xxxxxxxxx.dwg		project no. CF-RC-402		



E-3 **STAIR #2 - WEST ELEVATION**
A405 SCALE: 1/4" = 1'-0"

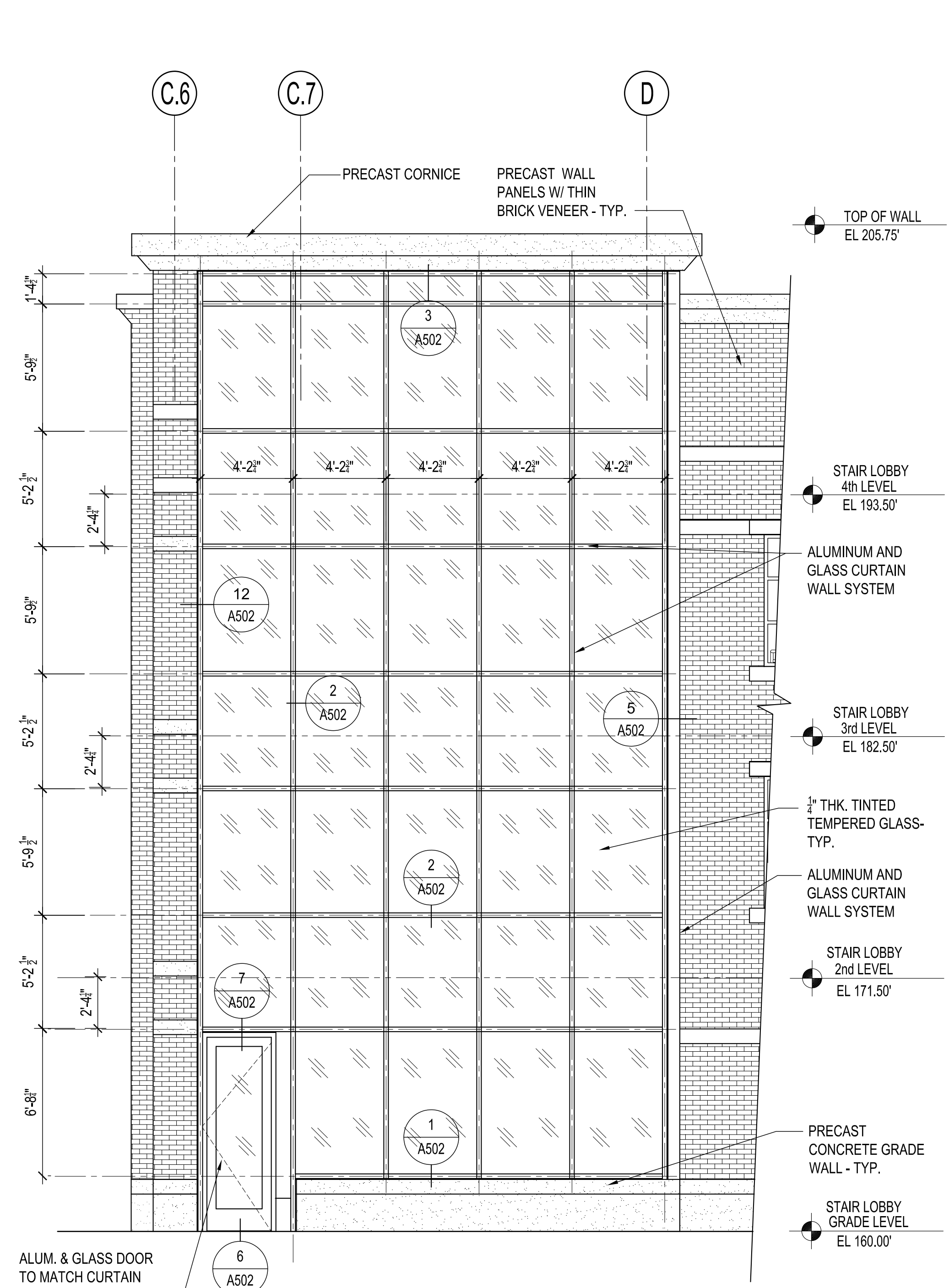


3 **SECTION THRU ELEVATOR SHAFT**
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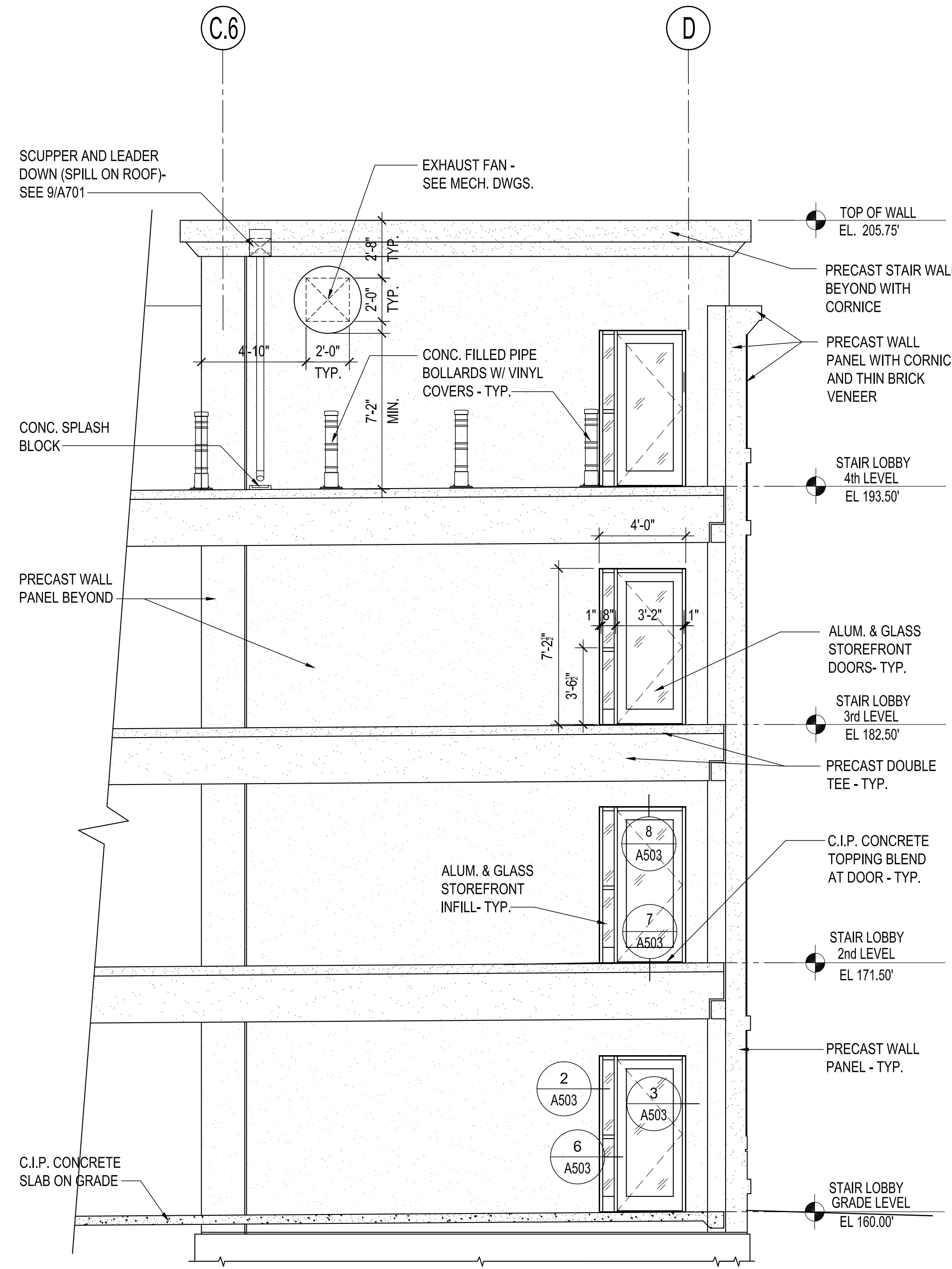


2 **STAIR #2 - SECTION**
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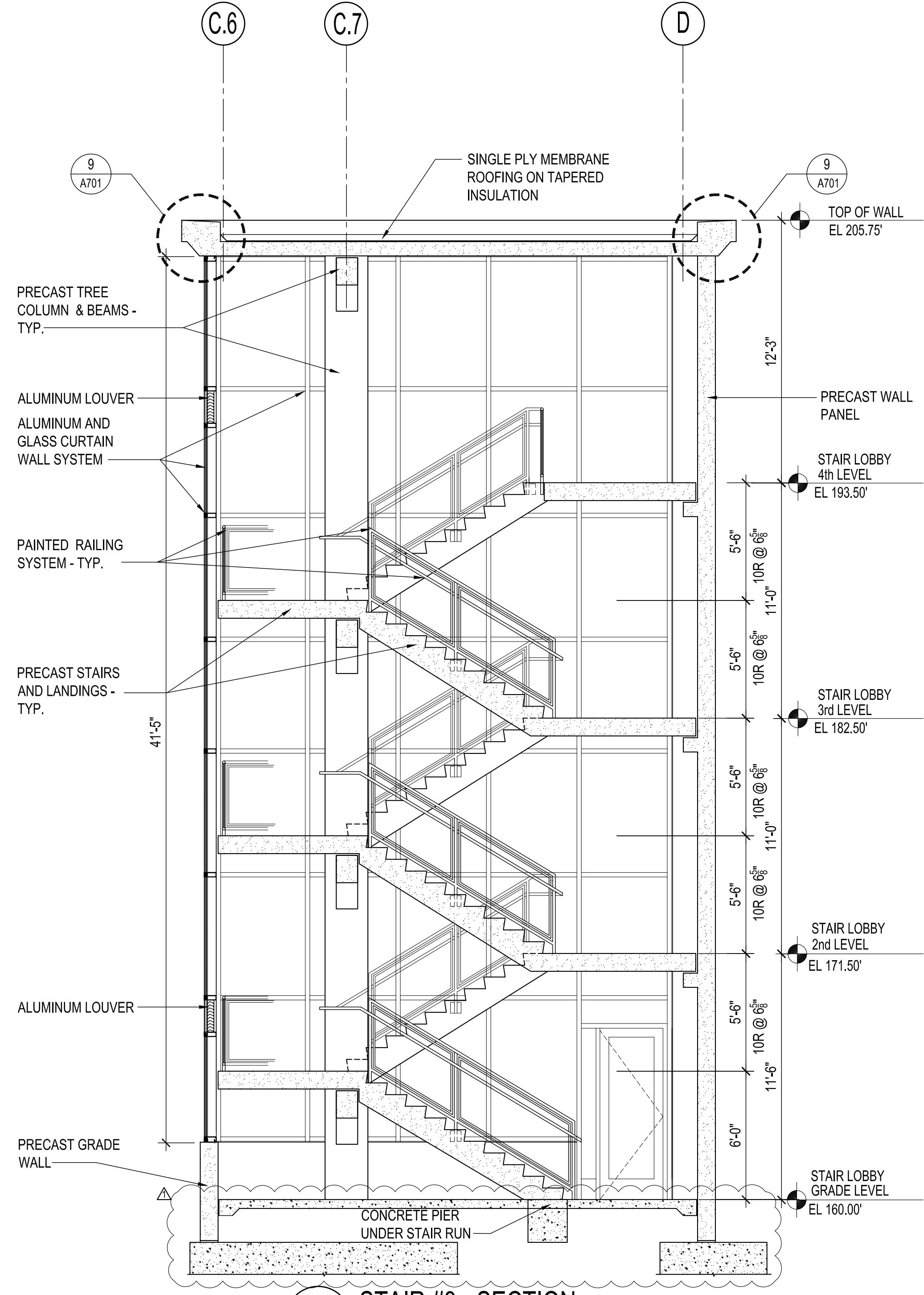
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	05/15/20	ADDENDUM NO. 2		scale AS NOTED
project			drawn by	
WILLARD DILORETO PARKING GARAGE NEW BRITAIN, CONNECTICUT			approved by	AAA
CAD no. xxxxxxxxx.dwg			project no.	NLG
				drawing no. A405



E-1 STAIR #3 - EAST ELEVATION
 SCALE: 1/4" = 1'-0"
 A407

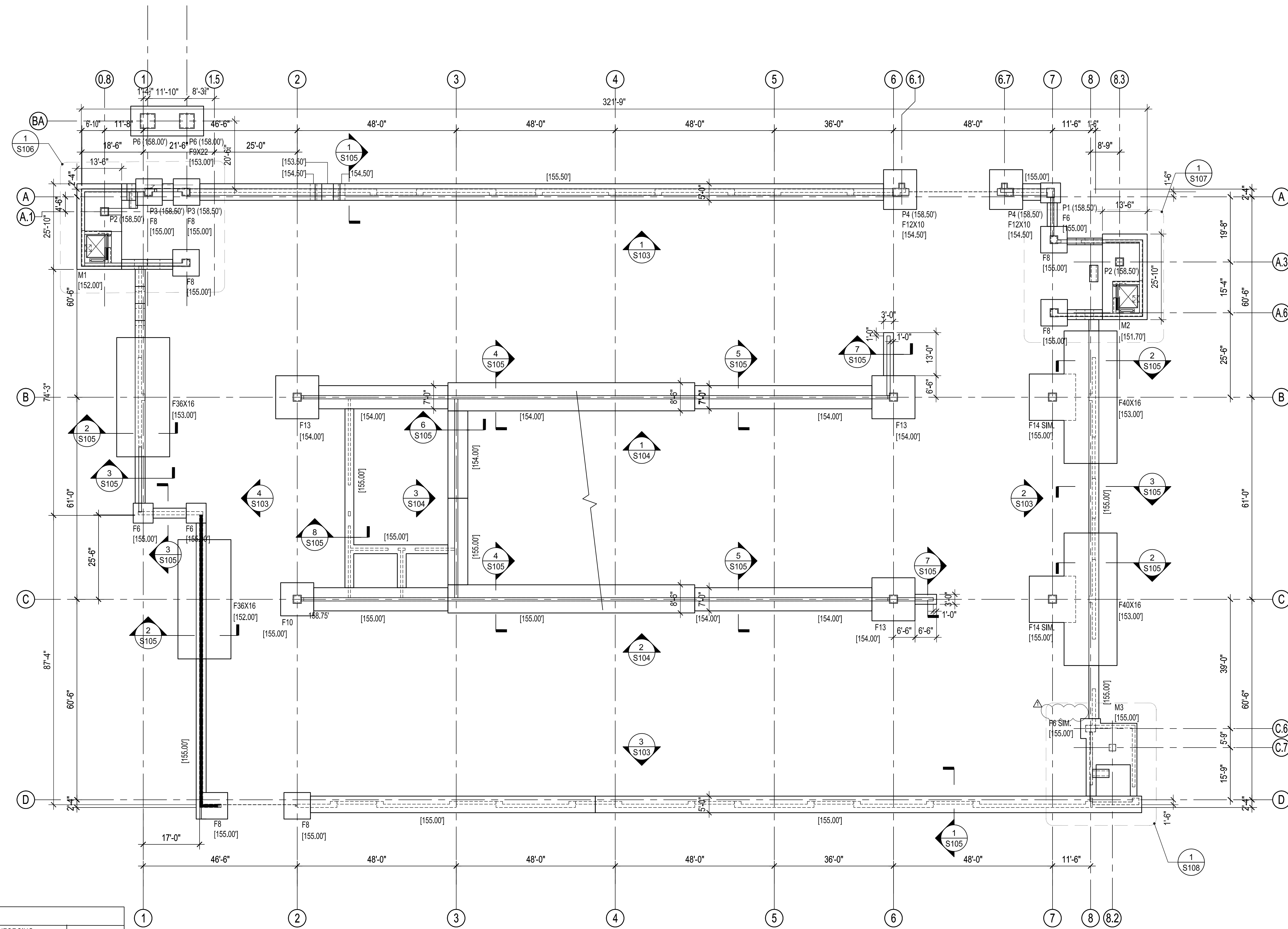


E-2 STAIR #3 - WEST ELEVATION
 SCALE: 1/4" = 1'-0"
 A407



1 STAIR #3 - SECTION
 SCALE: 1/4" = 1'-0"
 A407

drawing title		STAIR No. 3 - SECTIONS & ELEVATION		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
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REVISIONS		description		DESMAN	
02/07/20		BID DOCUMENTS		175 CAPITAL BOULEVARD, SUITE 402	
06/15/20		ADDENDUM NO. 2		ROCKY HILL, CONNECTICUT 06067	
project		approved by		date	
WILLARD DILORETO		AAA		06/27/2019	
NEW BRITAIN, CONNECTICUT		NLG		scale	
drawing no.		drawing no.		AS NOTED	
CAD no.		project no.		A407	
xxxxxxxxx.dwg		CF-RC-402			



FOOTING SCHEDULE								
MARK	SIZE			BOTTOM REINFORCING		TOP REINFORCING		REMARKS
	A-LONG FT-IN	B-SHORT FT-IN	D IN	'A' BARS	'B' BARS	'A' BARS	'B' BARS	
F6	6'-0"	6'-0"	18"	7-#6	7-#6			
F8	8'-0"	8'-0"	18"	10-#7	10-#7			
F10	10'-0"	10'-0"	24"	13-#7	13-#7			
F13	13'-0"	13'-0"	36"	14-#9	14-#9			
F14	14'-0"	14'-0"	36"	15-#9	15-#9			
M1			36"	#8@12"	#8@12"	#8@12"	#8@12"	
M2			36"	#8@12"	#8@12"	#8@12"	#8@12"	
M3			36"	#8@12"	#8@12"	#8@12"	#8@12"	
F36X16	36'-0"	16'-0"	36"	17-#9	37-#9	17-#7	37-#7	
F40X16	40'-0"	16'-0"	36"	17-#10	41-#9	17-#9	41-#8	

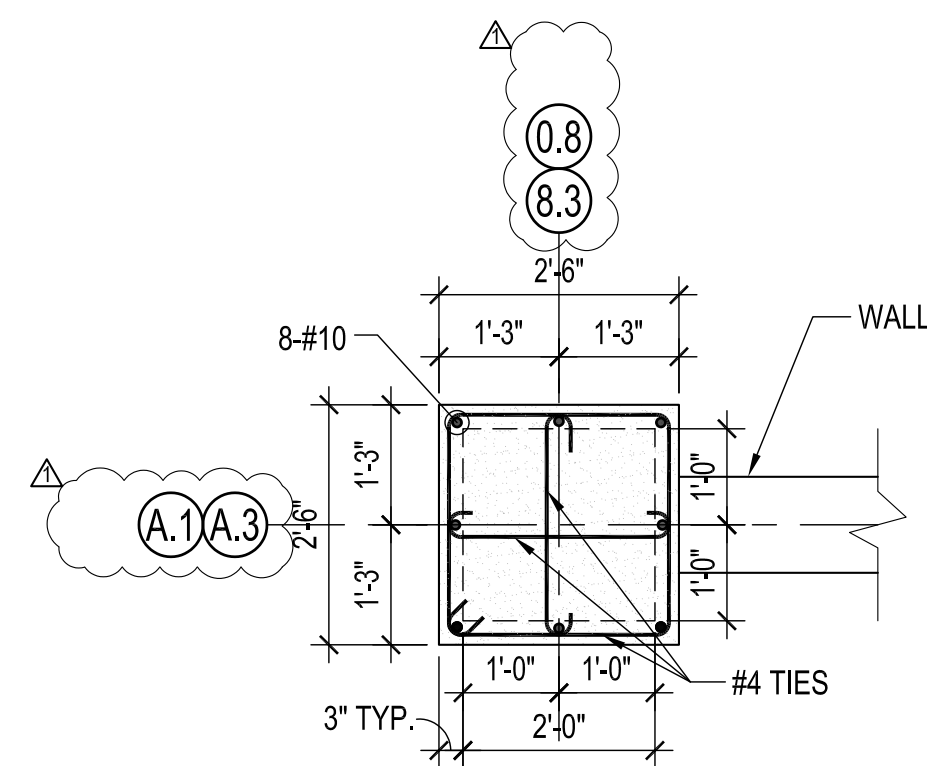
1
S101
FOUNDATION PLAN
 SCALE: 1/16" = 1'-0"

- NOTES:**
1. GARAGE FOOTINGS ARE TO BE 4,000 PSI CONCRETE U.N.O. AND ARE TO BEAR ON GROUND IMPROVEMENT BY USE OF AGGREGATE PIERS, AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
 2. SEE CONCRETE NOTES ON S001.
 3. REFER TO ENLARGED PLANS FOR SIZE AND LOCATION OF STAIR FOOTINGS AND PIERS.
 4. MINIMUM DEPTH OF FOOTINGS SHALL BE 3'-6" BELOW FINAL GRADE FOR FROST.
 5. CANOPY AND MASONRY WALL FOOTINGS SHALL BEAR ON 4 KSF STRUCTURAL FILL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
 6. REFER TO DRAWING S102 FOR VARIOUS PIER PLAN DETAILS.
 7. REFER TO DRAWING S102 FOR VARIOUS COLUMN TYPE DETAILS.
 8. PROVIDE SLAB-ON-GRADE (S.O.G.), SEE TYPICAL DETAILS ALL AREAS (U.O.N.).
 9. SEE S201 FOR SLAB-ON-GRADE PLAN WITH ELEVATIONS.
 10. FOR ALL PARTITION WALL LOCATIONS, SEE ARCHITECTURAL PLANS.

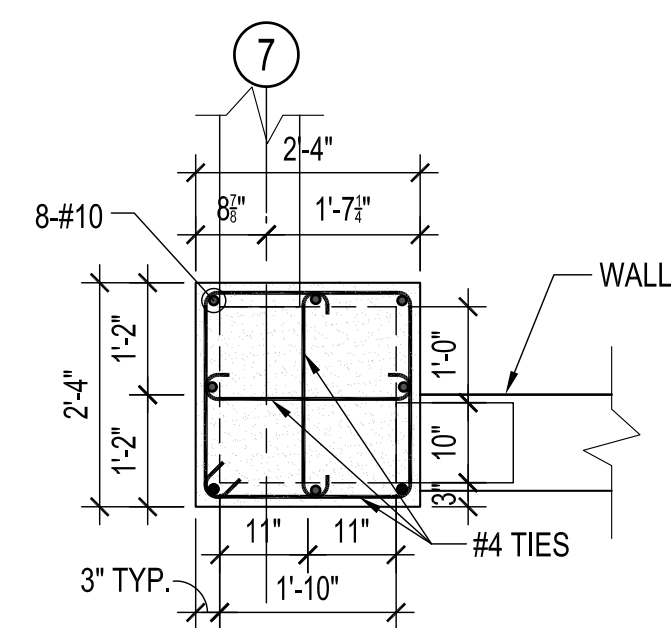
LEGEND:

F# DENOTES FOOTING TYPE
 P# DENOTES PIER TYPE
 (XXX.XX) DENOTES TOP OF WALL, GRADE BEAM OR PIER ELEVATION
 [XXX.XX] DENOTES BOTTOM OF FOOTING OR MAT ELEVATION
 SW-X DENOTES PRECAST SHEARWALL ABOVE
 S.F. DENOTES STEPPED FOOTING (SEE TYPICAL DETAIL ON S003)

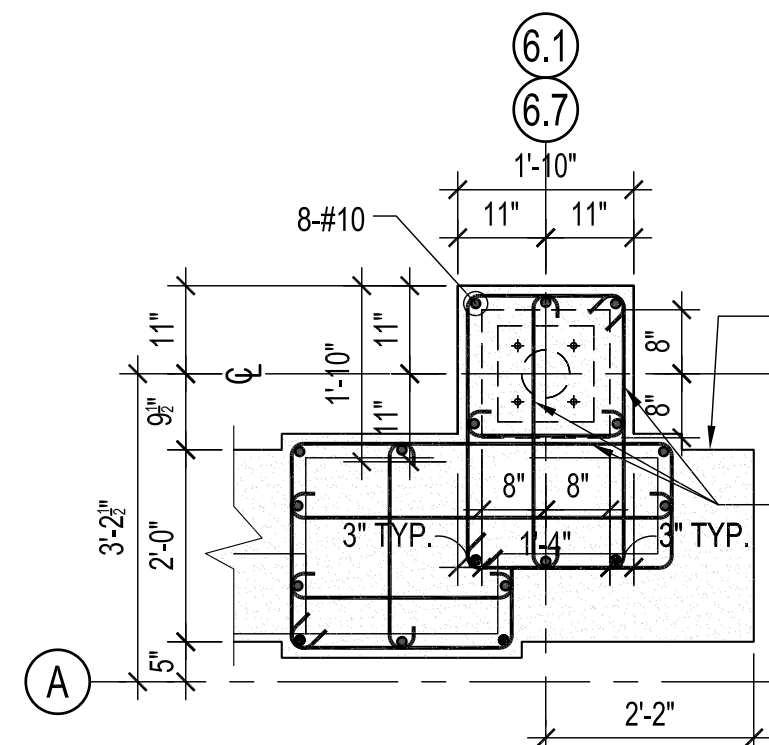
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	06/15/20	ADDENDUM NO. 2	scale AS NOTED	
project WILLARD DILORETO PARKING GARAGE NEW BRITAIN, CONNECTICUT			drawn by AAA	
CAD no. xxxxxxxxx.dwg			approved by NLG	
project no. CF-RC-402			drawing no. S101	



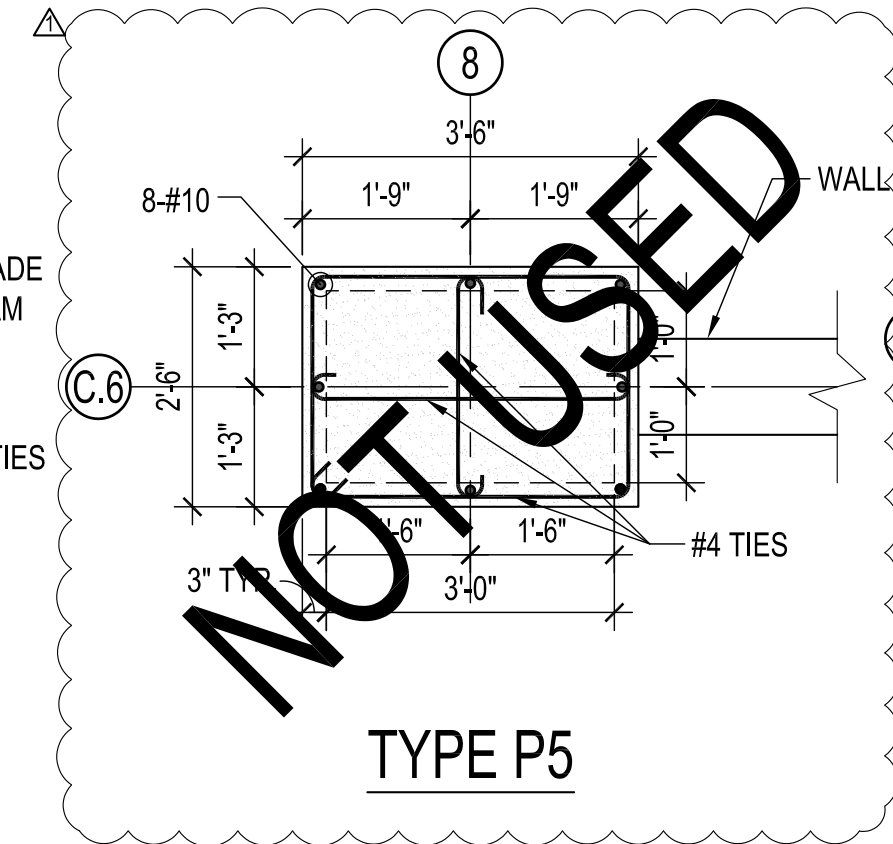
TYPE P1



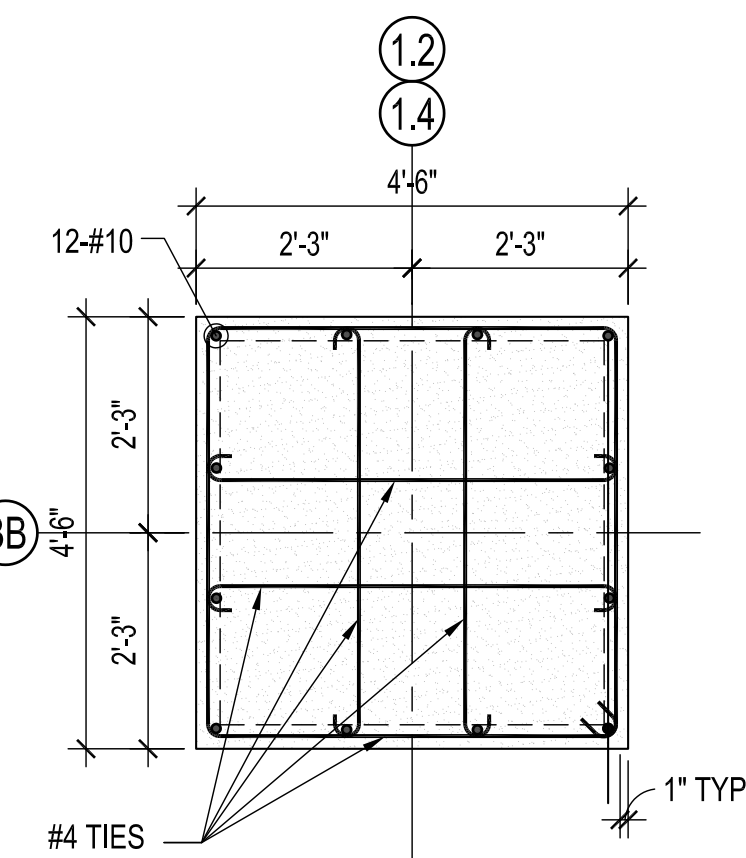
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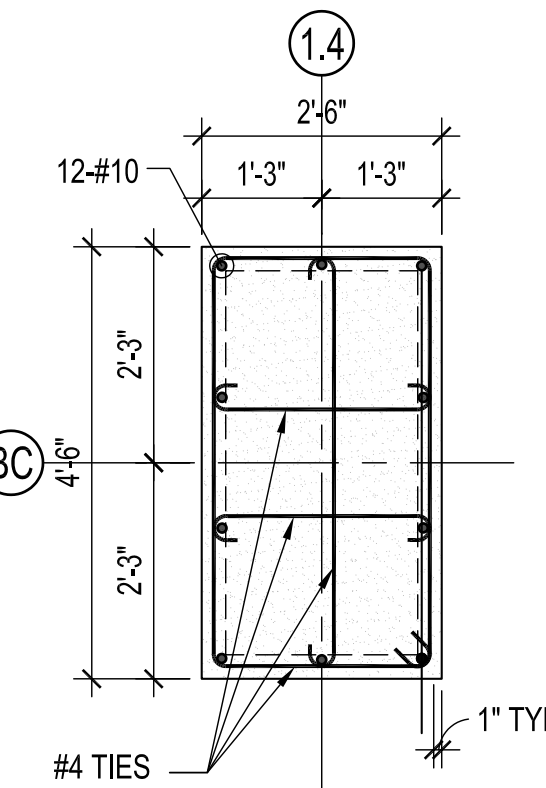
TYPE P3



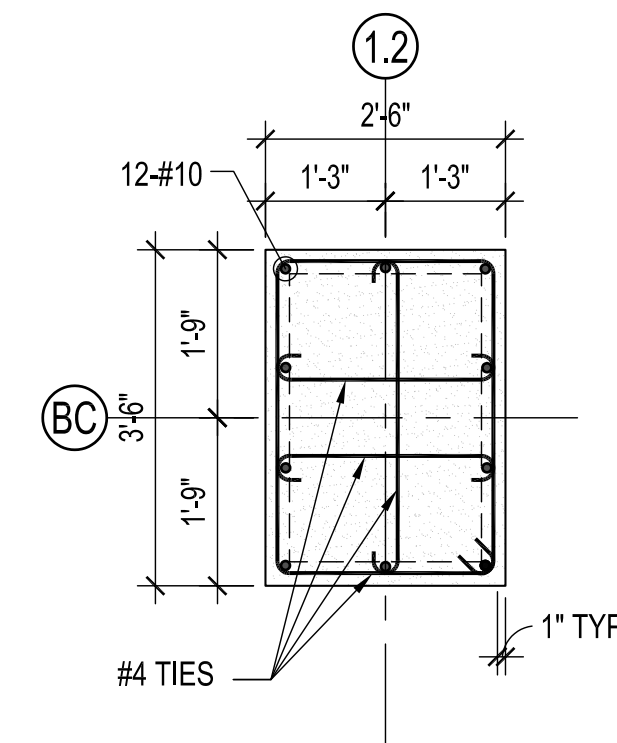
TYPE P4



TYPE P5



TYPE P6

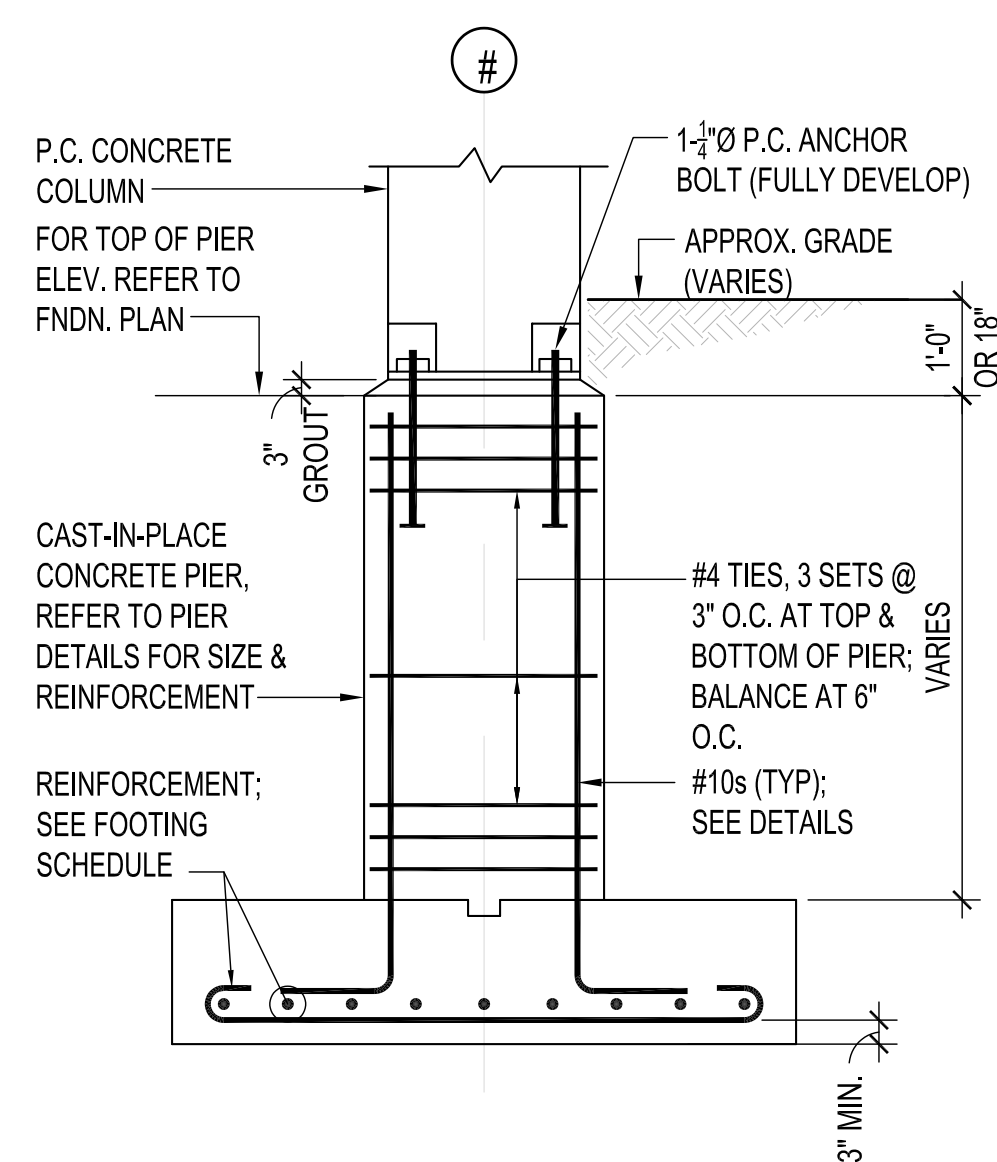


TYPE P7

1
S102

PIERS DETAILS

SCALE: 1/2" = 1'-0"

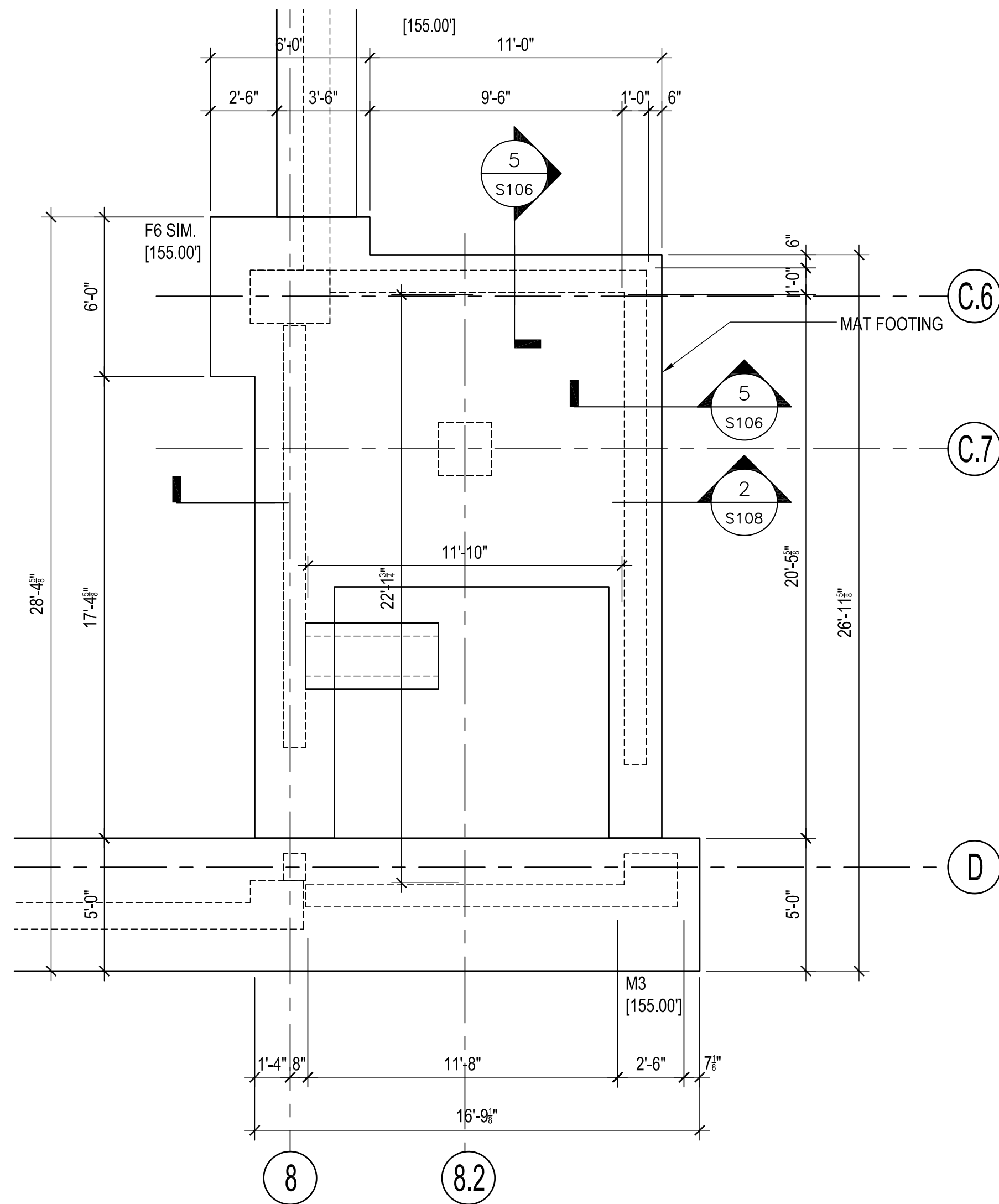


2
S102

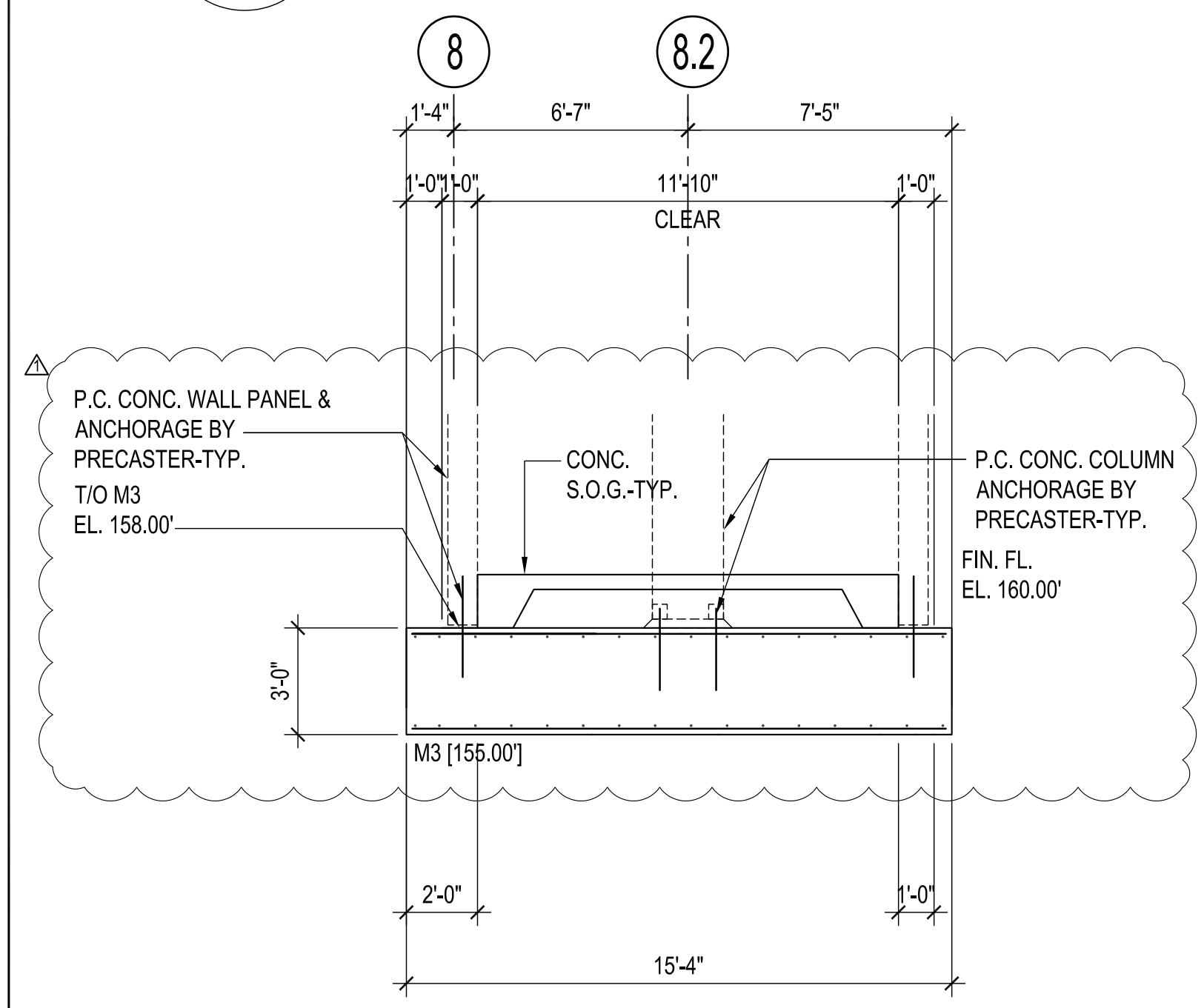
PIER DETAIL

SCALE: 1/2" = 1'-0"

drawing title			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES		
PIER DETAILS					
REVISIONS					
mark	date	description	drawing prepared by	date	scale
	02/07/20	BID DOCUMENTS	DESMAN 175 CAPITAL BOULEVARD, SUITE 402 ROCKY HILL, CONNECTICUT 06067	06/27/2019	AS NOTED
	05/15/20	ADDENDUM NO. 2		project	drawn by
			WILLARD DILORETO PARKING GARAGE NEW BRITAIN, CONNECTICUT	AAA	NLG
			CAD no. xxxxxxxxx.dwg	project no. CF-RC-402	drawing no. S102



1
S108 **STAIR NO.3 FOUNDATION PLAN**
SCALE: 1/4" = 1'-0"



2
S108 **STAIR NO.3 SECTION (E-W)**
SCALE: 1/4" = 1'-0"

drawing title			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
STAIR NO.3 FOUNDATION PLAN				
REVISIONS				
mark	date	description	drawing prepared by	date
	02/07/20	BID DOCUMENTS	DESMAN 175 CAPITAL BOULEVARD, SUITE 402 ROCKY HILL, CONNECTICUT 06067	06/27/2019
	06/15/20	ADDENDUM NO. 2		scale AS NOTED
			project	drawn by
			WILLARD DILORETO PARKING GARAGE NEW BRITAIN, CONNECTICUT	AAA
				approved by
				NLG
				drawing no.
				S108
CAD no. xxxxxxxx.dwg		project no. CF-RC-402		