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PURCHASING DEPARTMENT

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TO: All Bidders

FROM: City of Cambridge

DATE: June 05, 2023

RE: File No. 11001 – Haggerty School Plaza Renovation and Caulking- Addendum No. 1

This addendum is comprised of the following:

- 1. Questions and Answers**
- 2. Pre-bid sign in sheet (Attached)**
- 3. Revised Drawing Sheets: A-101 and A-303 (Attached)**

The following questions were asked and answered:

Question 1.: Who will replace landscaping in planting beds each side of plaza?

Answer: The General Contractor shall be responsible to clean any debris from planting beds. The owner will replace plants if required.

Question 2.: Who is responsible to protect catch basin inlet in planting beds each side of plaza.

Answer: The General Contractor shall be responsible to provide silt screen at start of work and remove at completion of work to protect each catch basin inlet.

Question 3: Is there no masonry filed sub-bids for this project? Please Advise.

Answer: Correct. The General Contractor must be DCAMM certified in the categories of: General Building Construction and Masonry.

Question 4: Specification section 034500 – Precast Concrete seems to be missing from the manual. Please issue and clarify reinforcement requirements for precast.

Answer: Please see Specification Section 034500-Architectural Precast Concrete attached.

All other details remain the same.

Elizabeth Unger
Purchasing Agent

Addendum No. 1



Haggerty School

Cambridge, MA

Pre-Bid Site Visit

Plaza Renovation

05-31-23

Print name

Company

Email Address/Contact Info

1. Frank Geary

CPSD

fgeary@cpsd.us

2. ANDY NGUYEN

RSI

ANGUYEN@CONTRACTINGSPECIALISTS.COM

3. Bill Hamme

HKT Architects

whammer@hktarchitects.com

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

SECTION 034500 - ARCHITECTURAL PRECAST CONCRETE
(PART OF SECTION FILE SUB-BID SECTION 043200)

Part 1 - GENERAL

1.01 SCOPE OF WORK

- A. All work in this section shall be made part of Section 043200 by reference and shall be part of the Masonry file sub-bidder.
- B. The work includes furnishing all labor, materials, equipment and supervision to supply and install in accordance with the Drawings and Specifications, all items listed, but not limited to supply and installation of pre-cast concrete stairs, capstones and panels, etc. at various locations in accordance with project drawings.

1.02 DESIGN REQUIREMENTS

- A. The precast concrete fabricator shall design and engineer the architectural precast concrete units to perform structurally as intended and conform to the requirements specified.
 - 1. Architectural precast concrete dimensions on the Drawings are shown for design intent only. Types, sizes and locations of actual loose steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other miscellaneous steel shapes for securing precast units to surrounding and adjacent members shall be designed and provided by the architectural precast concrete fabricator.

1.03 SUBMITTALS

- A. General:
 - 1. Subcontractor's qualifications.
 - 2. Submit an "Installation Schedule" which shows the sequence of placement on the structure.
 - 3. Submit water absorption and freeze-thaw resistance test reports for units to be exposed to weather.
 - 4. Submit MSDS sheets and manufacturer's Spec data sheets for each product, solvent, or related chemicals to be used on site.
 - 5. Submit a copy of the proposed warranty language for each system or product below.
- B. Shop Drawings
 - 1. Submit shop drawings prepared and stamped by a structural engineer registered in Massachusetts, showing complete information for fabrication and installation of architectural precast concrete units. Indicate member dimensions and cross-sections; fabrication tolerances, size and type of reinforcement, including special reinforcement and lifting devices necessary for handling and erection.
 - a. Include erection procedure for precast units, sequence of erection, and required handling equipment.
 - b. Show layout, dimensions, and identification of each precast unit corresponding to sequence and procedure of installation.

- c. Indicate welded connections by AWS standard symbols. Detail inserts, connections, and joints, including accessories.
- d. Show caulked joints, including expansion joints ("soft" type) and grouted joints ("rigid" type).
- e. Show location and details of anchorage devices that are to be embedded in other construction.

C. Samples

1. Samples for verification purposes: Submit two samples approximately 12 inches by 2 inches thick to illustrate quality, color, and texture of surface finishes. Approved samples shall be retained at the site and the manufacturer's place of fabrication for use as a "Control Sample".
2. Mock-Up samples: Furnish full size samples to be built into construction specified. The installed sample when approved may remain as part of final construction. The installation of the sample unit will demonstrate the method of installation and final appearance of the unit.

- D. Structural Performance Certification: Submit the certificate of a structural engineer registered in Massachusetts stating that the architectural precast concrete units have been designed and engineered to perform structurally as intended and conform to the requirements specified.

1.04 QUALITY CONTROL AND QUALITY ASSURANCE

A. General

1. The Contractors and its site superintendent shall have at least (5) years experience supervising the installation of similar precast units.
2. The fabricator shall have a minimum of 5 years of experience in the fabrication of architectural precast concrete units, similar to members required on the project. Fabricator shall have sufficient production capacity to produce, transport, and deliver required units without causing delay in the work.
 - a. Fabricator must be a member producer of Precast Concrete Institute (PCI) or participate in its plant certification program.
3. The erector shall have a minimum of 3 years experience in the erection of architectural precast units similar to units required for this project.
4. Design modifications may be made only as necessary to meet field conditions and to ensure proper fitting of the work and only as acceptable to the Designer. Maintain general design concept shown without increasing or decreasing sizes of members or altering profiles and alignment shown.

B. Precast Units

1. The Contractor shall repair or replace all precast units which exhibit cracks, spalls, freeze/thaw damage or any other deterioration such as anchorage failure due to installed or product failure, at no additional cost to Owner, within the life of the warranty.

1.05 GUARANTEE

- A. Guarantee all work under this section in a document stating that if, within twenty years after the Date of Substantial completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the contractor a written acceptance of such condition. Also, the Contractor shall bear all costs incurred by the Owner, including reasonable

attorney's fees, to enforce compliance with the obligations of this guarantee. The obligation of these Guarantees shall run directly to the Owner, and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this contract.

1.06 WARRANTY

- A. Provide a twenty (20) year material warranty by the fabricator and five (5) year warranty by the erector, the form of which is equivalent to the standard industry warranty and acceptable to the Owner.

1.07 TECHNICAL SUPPORT

- A. The Contractor shall arrange with the fabricator or manufacturer to have the services of a competent field representative at the work site prior to any installation of units to instruct the work crews, in the proper installation procedures. (S)he shall remain at the job site after work commences and continue to instruct until (s)he, the Contractor, and the Owner are satisfied that the crew has mastered the technique of installing the precast units successfully.
 - 1. The manufacturer's field representative must be fully qualified to perform the work and shall be subject to the approval of the Owner.
 - 2. The Contractor shall be completely responsible for the expense of the services of the required manufacturer's field representative, and the contract price shall include full compensation for all costs in connection therewith.

1.08 GENERAL PROCEDURES

- A. Fabricator and Contractor are required to confirm that all materials used in accordance with this Section conform to local, state, and federal environmental and worker's safety laws and regulations. Contractor shall submit certified letter documenting that he has reviewed requirements and that the materials submitted for application conform to the above requirements.
- B. Deliver precast concrete units to project site in such quantities and at such times as to assure continuity of installation. Store units at project site under cover and protected from the weather to prevent cracking, distortion, warping, staining or other physical damage and so that markings are visible. Lift and support units only at designated lifting or supporting points as shown on final shop drawings.

Part 2 PRODUCTS

2.01 FORMWORK

- A. Provide forms and form facing materials of metal, plastic, wood, or other acceptable material that is non-reactive with concrete and will produce required finish surfaces.
- B. Unless forms from plant-manufactured prestressed units are stripped prior to detensioning, design forms so that stresses are not induced in precast units due to deformation of concrete under prestress or to movement during detensioning.

2.02 REINFORCING MATERIALS

- A. Galvanized Reinforcing Bars: ASTM A&67, Class I (3.0 oz. zinc psf), hot dipped galvanized after fabrication and bending.

- B. Stainless steel dowels top anchor the precast stairs to the upper and lower foundation walls as shown on the drawings.
- C. Steel wire: ASTM A82, plain, cold drawn, steel.
- D. Welded Deformed Steel Wire Fabric: ASTM A497.
- E. Supports for Reinforcement: Provided supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing.
 - 1. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provided supports with legs that are plastic-protected (CRSI, Class 1) or stainless steel-protected (CRSI, Class 2)

2.03 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I or Type III.
 - 1. Use only one brand and type throughout the whole project.
 - 2. Use white Portland cement to match control sample.
- B. Coarse Aggregate: ASTM C33; hard, durable, selected, and graded; free of material that causes staining or reacting with cement.
 - 1. Use aggregate from same source as those used in Designer's control sample.
- C. Fine Aggregate for Facing Mixes: ASTM C33; manufactured sand of same material as coarse aggregate, unless otherwise acceptable to Designer.
- D. Water: Drinkable, free from foreign materials in amounts harmful to concrete and embedded steel.
- E. Air-Entraining Admixture: ASTM C260.
- F. Water-Reducing Admixture: ASTM C494, Type as selected by Fabricator and containing not more than 0.1 percent chloride ions.

2.04 CONNECTION MATERIALS

- A. Stainless Steel Shapes: AISI Type 302/304.
- B. Anchor Bolts: ASTM A307, low-carbon steel bolts, regular hexagon nuts and carbon steel washers.
- C. Finish of Steel Materials: Hot-dip galvanized after fabrication, ASTM A153; inserts cast into precast units hot-dip galvanized, cadmium plated or stainless steel.
- D. Electrodes for Welding: Comply with AWS Code.

2.05 GROUT MATERIALS

- A. Cement Grout: Portland cement and clean, natural sand, ASTM C404. Mix at ratio of 1.0 part cement to 3 parts sand, by volume, with minimum water required for placement and hydration.

2.06 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes for each type of concrete required.
- B. Design mixes may be prepared by independent testing facility or by qualified precast manufacturing plant personnel, at precast manufacturer's option.
- C. Proportion mixes by either laboratory trial batch or field experience methods, using materials to be employed on the project for each type of concrete required, complying with ACI 318.
- D. Mix: Standard-weight concrete consisting of specified Portland cement, aggregates, admixtures, and water to produce the following properties:
 - 1. Compressive Strength: 5000 psi minimum at 28 days.
 - 2. Total Air Content: Not less than 4 percent nor more than 6 percent.
 - 3. Water Absorption: Not to exceed 5 to 6 percent by weight, except between 3 to 4 percent for sloping surfaces (sills), for improved weathering staining resistance.
- E. Submit written reports to Engineer for approval of proposed mix for each type of concrete at least 15 days prior to start of precast unit production. Do not begin concrete production until Engineer has reviewed mixes and evaluations.
- F. Adjustment to Concrete Mixes: Mix design adjustments may be requested when characteristics of materials, job conditions, weather, test results, or other circumstances warrant. Laboratory test data for revised mix designs and strength results must be submitted to and accepted by Designer before using in the work.
- G. Admixtures: Use air-entraining admixture in strict compliance with manufacturer's directions. Admixtures to increase cement dispersion or provide increased workability for low-slump concrete may be used, subject to Designer's acceptance.
- H. Use amounts as recommend by admixture manufacturer for climatic conditions prevailing at time of placing. Adjust quantities of admixtures as required to maintain quality control.

2.07 FABRICATION

- A. Fabricate precast concrete units complying with manufacturing and testing procedures, quality control recommendation, and following dimensional tolerances, unless otherwise indicated.
- B. Forms: Accurately construct forms mortar-tight and of sufficient strength to withstand pressures due to concrete placing operations, temperature changes, and, when prestressed, pretensioning and detensioning operations. Maintain formwork to provide completed precast concrete units of shapes, lines, and dimensions indicated, within specified fabrication tolerances.
- C. Dimensional tolerances of Finished Units: Overall height and width measured at face adjacent to mold at time of casting:
 - 1. 10 feet or less: Plus or minus 1/8 inch.
 - 2. 10 feet to 20 feet: Plus 18 inch, minus 3/16 inch.
 - 3. 20 feet to 30 feet: Plus 1/8 inch, minus 1/4 inch.
 - 4. Each additional 10 feet: Plus or minus 1/16 inch per 10 feet.
 - 5. Angular deviation of plan of side mold: 1/32 inch per 3 inches depth or 1/16 inch total, whichever is greater.

6. Out of square (difference in length of two diagonal measurements): 1/8 inch per 6 feet or 1/4 inch total, whichever is greater.
 7. Thickness: Minus 1/8 inch, plus 1/4 inch.
 8. Tolerances of other dimensions not otherwise indicated: Numerically greater of plus or minus 1/16 inch per 10 feet, or plus or minus 1/8 inch.
- D. Position Tolerances: For cast-in items, measured from datum line locations as shown on reviewed shop drawings:
1. Anchors and inserts: Within 3/8 inch of centerline location.
 2. Blockouts and reinforcements: Within 1/4 inch of position shown on shop drawings, where such positions have structural implications or affect concrete cover; otherwise, within plus or minus 1/2 inch.
- E. Fabricate units straight, smooth, and true to size and shape, with exposed edges and corners precise and square, unless otherwise indicated.
1. Precast units that are warped, cracked, broken, spalled, stained, or otherwise defective will not be acceptable.
- F. Expansion Joints: Free of grout, mortar, or other obstructions to expansive movement, with expansion joint filler where indicated.
1. Sills: Midpoint between millions, with expansion filler strip.
 2. Headers: Every joint between units, unless otherwise indicated.
- G. Cast-In Items: Provide reglets, slots, holes, and other accessories in units to receive, cramps, dowels, reglets, waterstops, flashings, and other similar work as indicated.
1. Provide inserts and anchorages cast into units, for attachment of loose hardware as required.
- H. Anchorages: Provide loose steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other miscellaneous steel shapes not provided by other trades, necessary for securing precast units to supporting and adjacent members.
- I. Surface Finish: Fabricate precast units and provide exposed surface finishes as follows:
1. Smooth Surface Finish: Provide smooth surface finish free of pockets, sand streaks, and honeycomb, with uniform color and texture as follows:
 - a. Provide PCI No. 134 SB-M or other color, as approved by the Architect; recipe as follows:
 - 1) Cement: White
 - 2) Fine Aggregate: Crushed white marble.
 - 3) Coarse aggregate: 75 percent 5/8 inch to 9/32 inch white marble and 25 percent 5/8 inch to 9/32 inch yellow marble.

Part 3 EXECUTION

3.01 INSTALLATION

- A. Deliver anchorage items to be embedded in other construction before start of such work. Provide setting diagrams, templates, instructions, and directions for approval before

installation.

- B. Do not install precast units until concrete has attained its design compressive strength.
- C. Install precast concrete units plumb, level and in alignment within PCI MNL-117 and specified limits of erection tolerances. Provide temporary supports and bracing as required to maintain position, stability, and alignment as members are being permanently connected.
 - 1. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
- D. Accessories: Install clips, hangers, and other accessories required for erection of precast units to supporting members and backup materials.
- E. Anchor units in final position as indicated on approved Shop Drawings. Remove temporary shims, wedges, and spacers as soon as possible after anchoring and grouting are completed.
- F. Cleaning: Clean exposed facings to remove dirt and stains on units after erection and completion of joint treatments. Wash and rinse in accordance with precast manufacturer's recommendations. Protect other work from damage due to cleaning operations. Do not use cleaning materials or processes that could change the character of exposed concrete finishes.

3.02 ERECTION TOLERANCES

- A. Warpage: Fabricate and install wall panels so that each unit after erection complies with following dimensional requirements:
 - 1. Bowing (concave or convex) of any part of a flat surface not to exceed length of bow/360, with a maximum of 3.4 inch up to 30 feet.
 - 2. Maximum warpage of one corner out of plane of other three, the greater of 1/16 inch per foot distance from nearest adjacent corner, or 1/8 inch.

END OF SECTION

Revision Schedule		
Number	Revision	Date
1	A-101 and A-303	06/01/23

Registrations

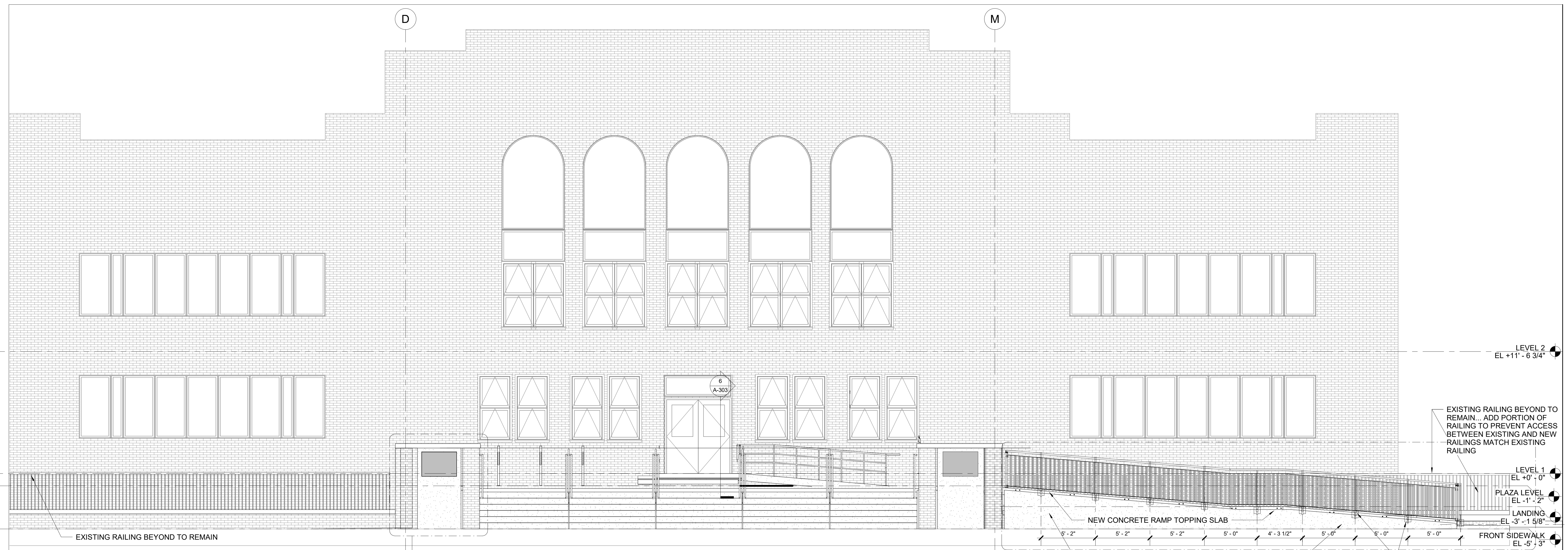
Consultants

Project
HAGGERTY SCHOOL WATERPROOFING REPAIRS
110 Cushing Street Cambridge, MA

Drawing Title
FIRST FLOOR PLAN & ELEVATION

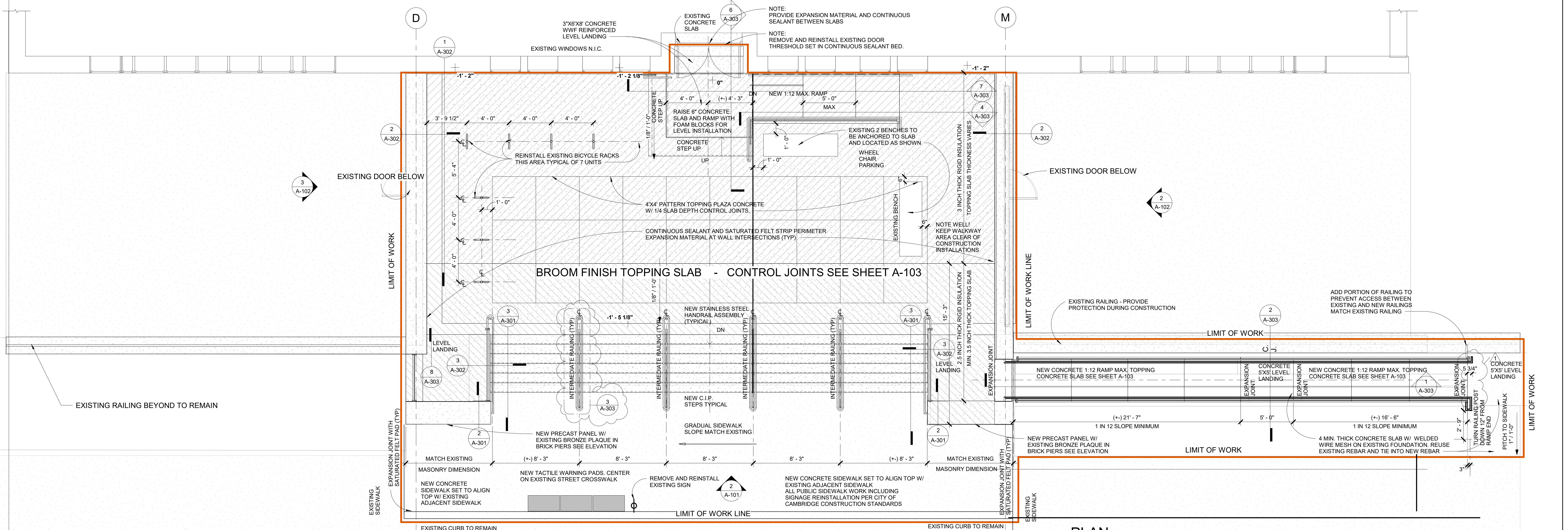
Author
Drawn by
Date
22215
Job number
BID SET
Drawing set
Drawing number

A-101



ELEV EAST

1/4" = 1'-0"



PLAN LEVEL 1

1/4" = 1'-0"

1



Revision Schedule		
Number	Revision	Date
1	A-101 and A-303	06/01/23

Registrations

Consultants

Project
HAGGERTY SCHOOL WATERPROOFING REPAIRS
110 Cushing Street Cambridge, MA

Drawing Title
DETAIL SECTIONS

ARW	WH
Drawn by	Checked by
04/18/23	
Date	
22215	
Job number	
BID SET	
Drawing Set	

Drawing number
A-303

DET SLAB MTD. RAIL DETAIL

3/4" = 1'-0"

DET EXT'G DOOR THRESHOLD DETAIL

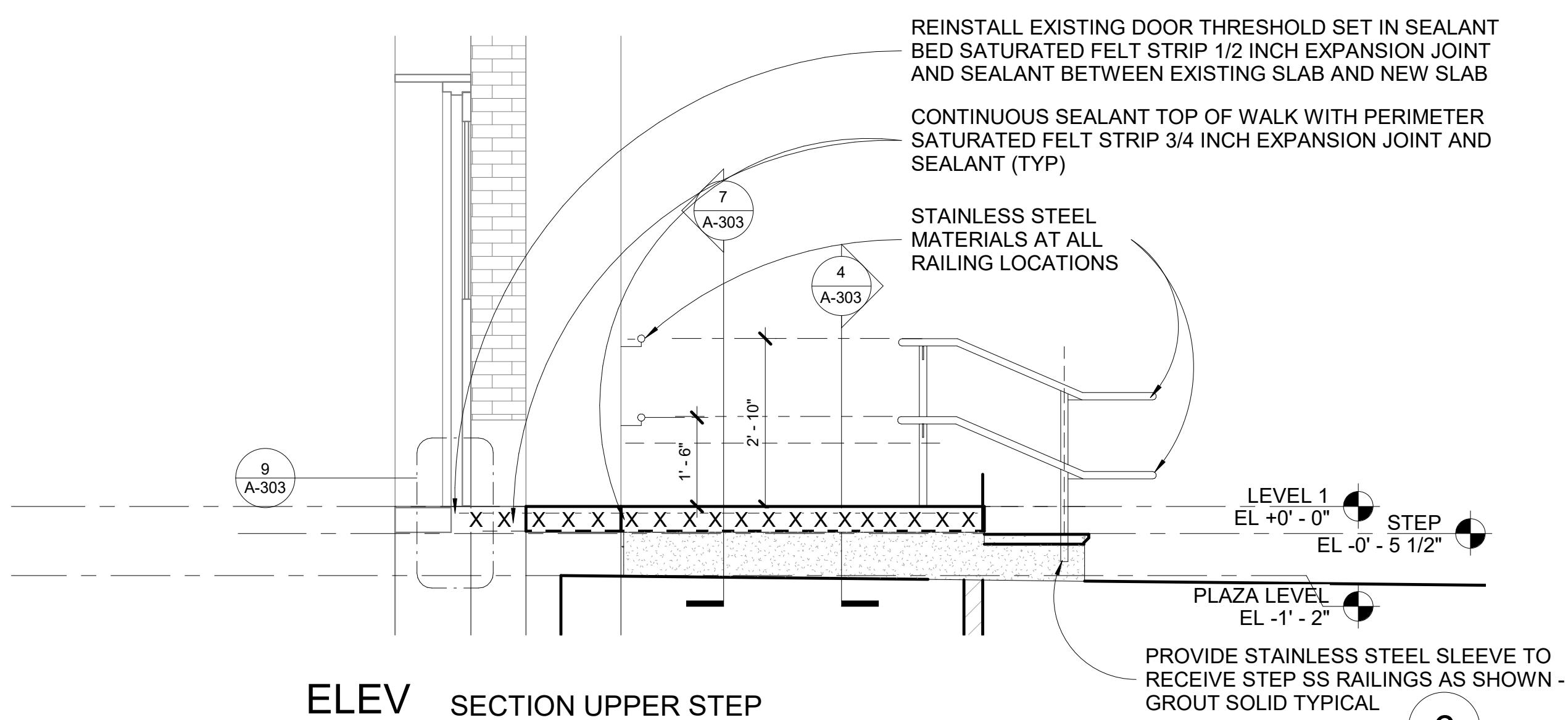
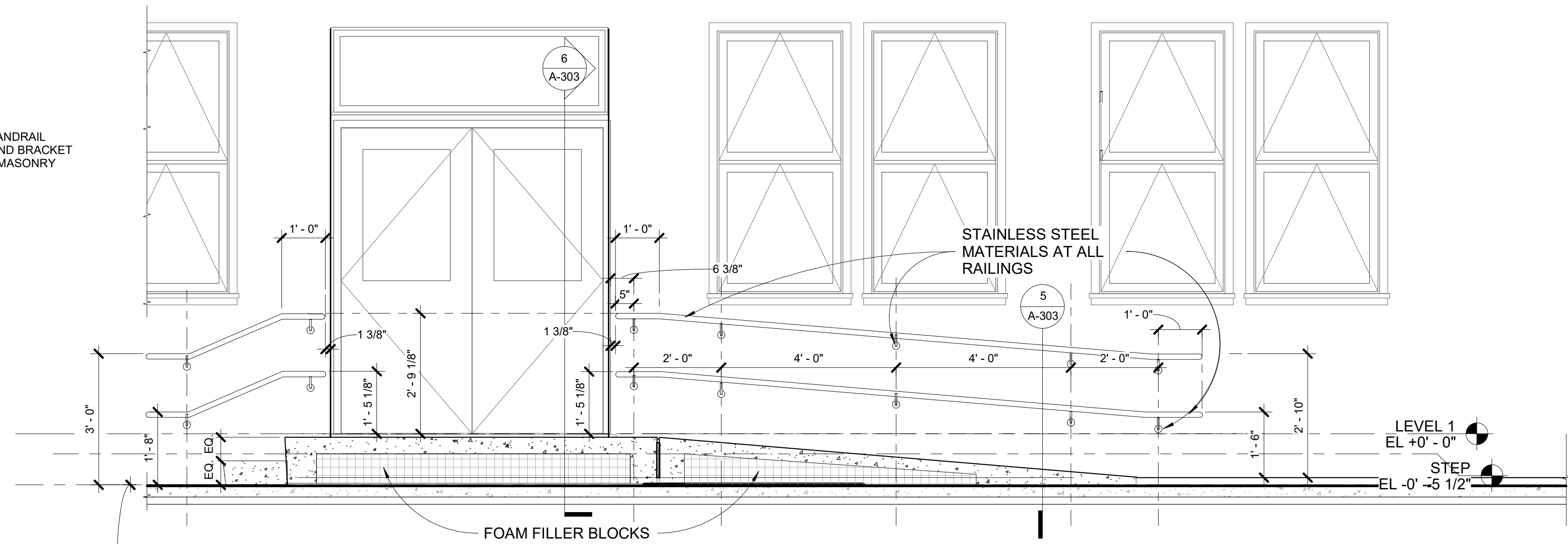
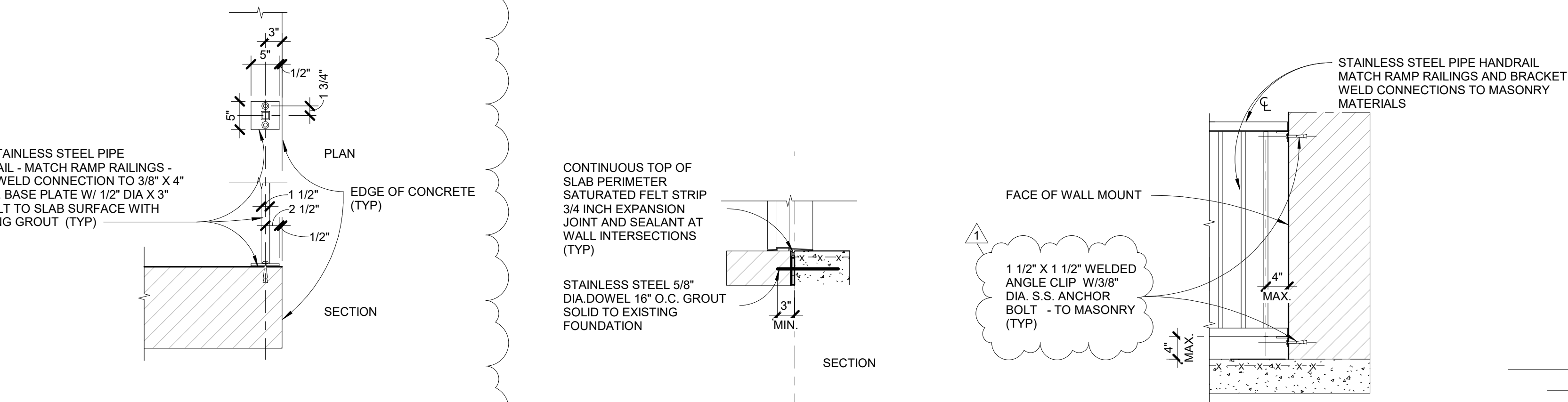
3/4" = 1'-0"

DET WALL MTD. RAIL DETAIL

3/4" = 1'-0"

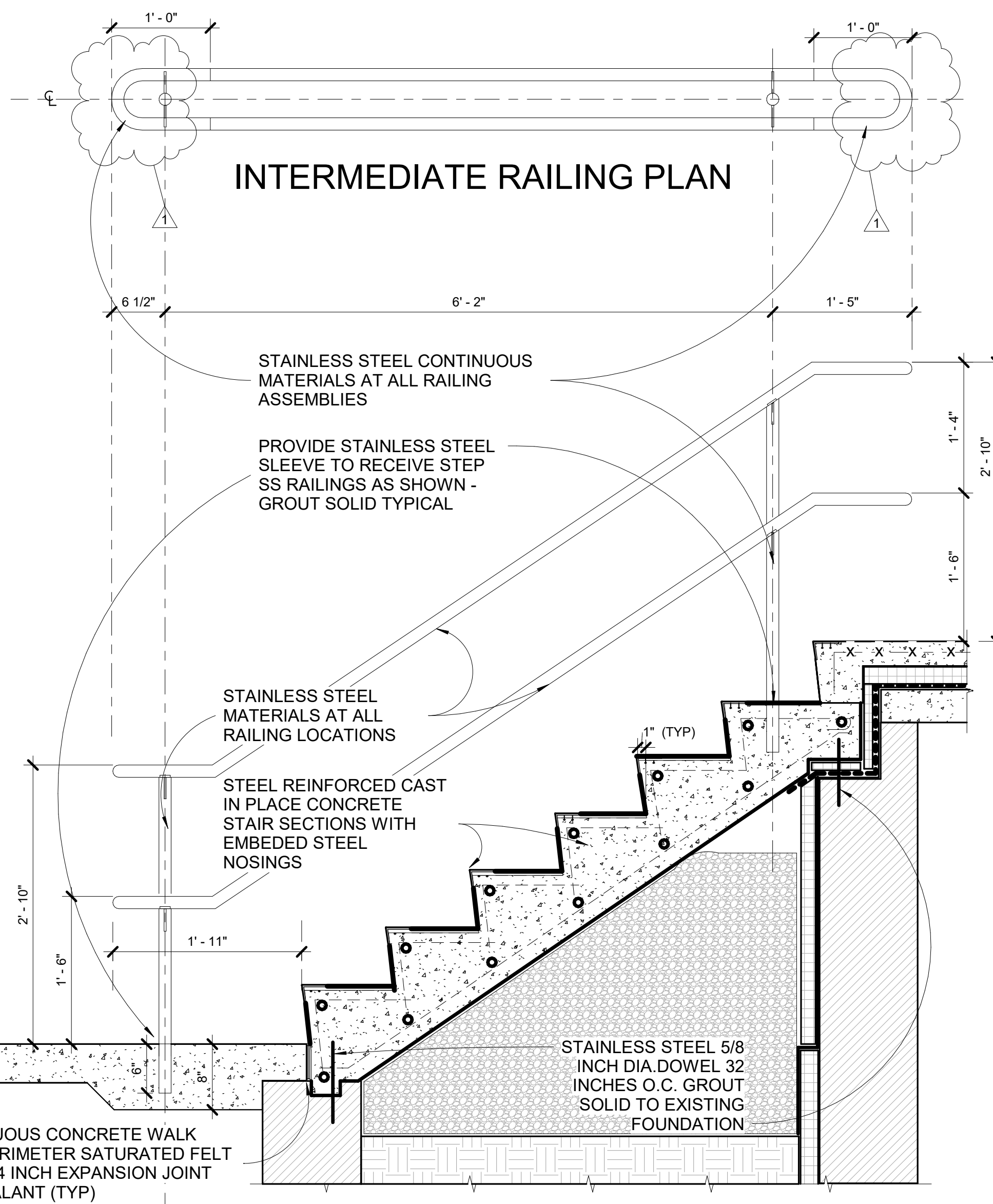
ELEV SECTION UPPER RAMP EAST VIEW

1/2" = 1'-0"



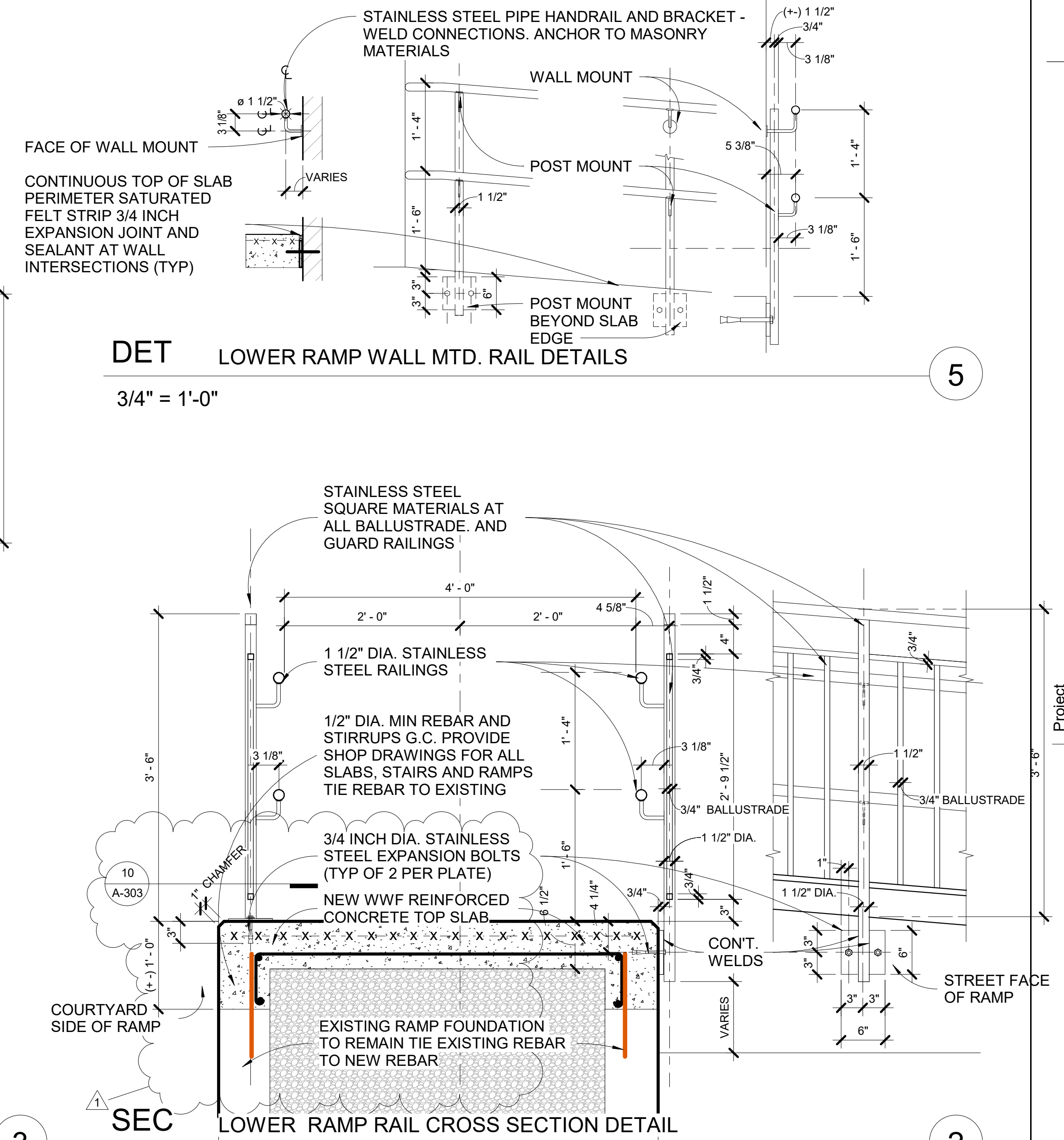
ELEV SECTION UPPER STEP

1/2" = 1'-0"



SEC TYP. SIDEWALK STEPS INTERMEDIATE RAIL DETAILS

1" = 1'-0"

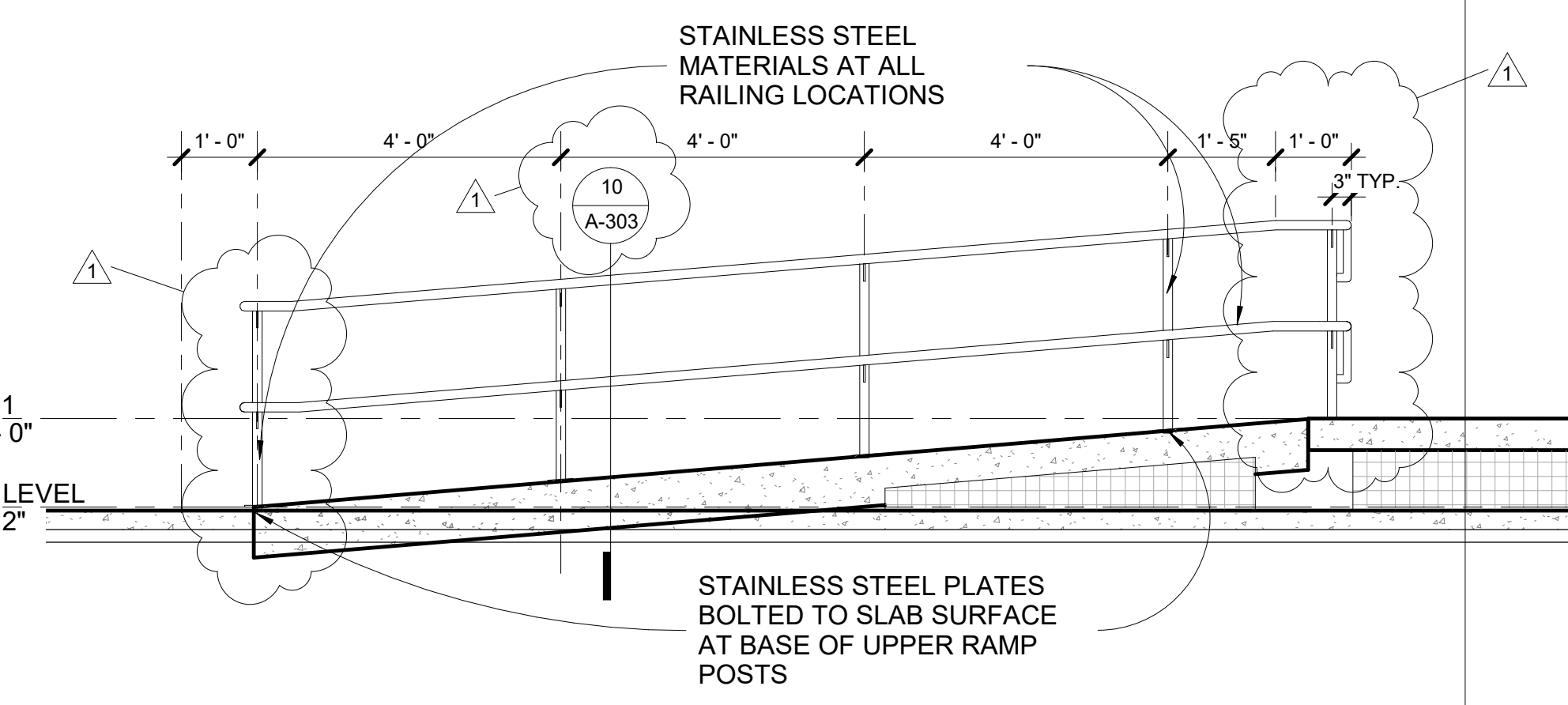


DET LOWER RAMP WALL MTD. RAIL DETAILS

3/4" = 1'-0"

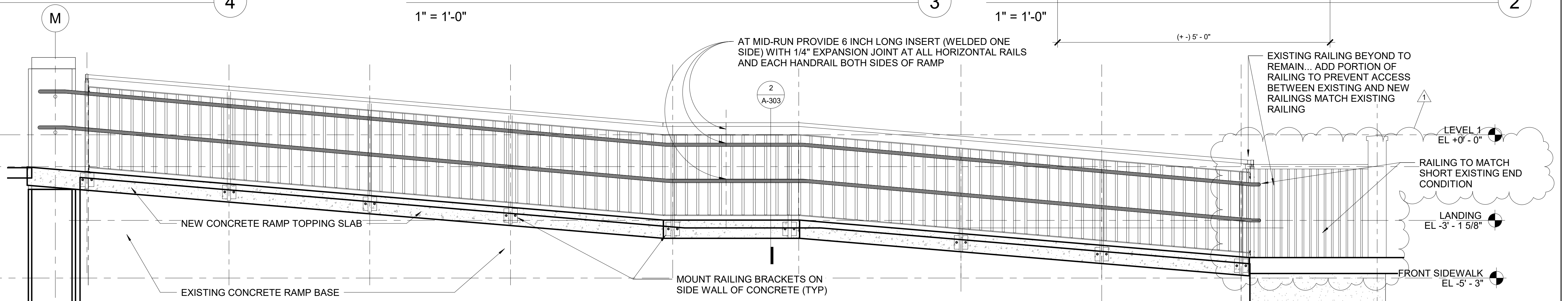
SEC LOWER RAMP RAIL CROSS SECTION DETAIL

1" = 1'-0"



ELEV SECTION UPPER RAMP WEST VIEW

1/2" = 1'-0"



SEC SECTION LOWER RAMP

1/2" = 1'-0"