

DEPARTMENT OF PUBLIC WORKS  
 AND ENVIRONMENTAL SERVICES  
**BUILDING DESIGN AND CONSTRUCTION DIVISION**  
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COUNTY OF FAIRFAX  
 VIRGINIA

**ADDENDUM NO. 2**

**HERNDON STATION METRO GARAGE  
 CONTRACT NO. CN16100006  
 PROJECT NO. TF-000020-001**

This addendum consists of total (53) pages, including sketches, specification and clarifications as noted below.

This addendum is supplementary to the contract documents for the Herndon Station Metro Garage in Herndon, Virginia.

All revisions, additions or deletions included herein as Addendum No. 2 shall become a part of the Contract Documents as if originally called for in the Drawings, Specifications and Form of Bid.

**Contents of Addendum No.2:**

	<u>DOCUMENT</u>	<u>DESCRIPTION</u>
	<b>FRONT END</b>	
2.1	Section B: Page B-15 & B-16	<u>Revise Allowance item H, K, L and add item M:</u> Item H: Change title to <u>Security System</u> and Revise amount from \$25,000 to \$30,000 to include CCTV's monitor and CPU. Item L: ADD Payment shall be as described in General Notes Allowances Item No. 7. Item K: Revise cost per linear foot from \$9.00 to \$10.00 for Addition and Credit, Item M: Add Existing Garage Remediation Item allowance in the amount of \$800,000.

2.1 (con t'd)	Page B-18 & B-19	<p>Revise item 6 paragraph 4 to read:  <b>Contractor shall provide notice of anticipated time impacts for utility-related work at least 30-days in advance of above referenced time impacts.</b> Documented time impacts caused by any of the aforementioned utility service providers that <b>result in</b> a negative impact on the Contract Time and are proven to be beyond the Contractor's control shall be evaluated by the Owner upon receipt of timely <b>request for time extension, via PCO process, no later than 20 calendar days after the event that caused the delay.</b> If deemed by the Owner to be justified, a non-compensable Contract Time extension equal to the aforementioned delay shall be the Contractor's sole relief.</p> <p>Revise item 7 to include:  <b>L. Partnering</b>  <b>M. Existing Garage Remediation</b></p>
2.2	Section E	<p>Revise Item 5. Schedule of Values paragraph 2:          The following General Requirements items and associated minimum values must be included in the base bid and reflected as such in the Schedule of Values <b>per Phase</b> and Cost Loaded Schedule <b>per Phase</b> of the project:</p>
<b>SPECIFICATIONS</b>		
2.3	Table of Contents	<p>Delete section 107620 Flexible Delineator Posts          Added new sections 321243 Firelane Paver and 323310 Timber Guardrail</p>
2.4	Section 042000 Concrete Unit Masonry	Deleted paragraph 3.6 Masonry Fill
2.5	Section 051213 Architecturally Exposed Steel Framing	Revised paragraph 1.5-B-1.
2.6	Section 054000 Architectural Expanded Mesh Panels	Paragraph 2.3-A revised to read APEX 01.
2.7	Section 074456 Mineral Fiber Reinforced Cementitious Panels	Paragraph 2.1-A revised to allow comparable products from other manufacturers to be submitted for AE's review and Owner's approval.
2.8	Section 084412 Glazed Aluminum Curtain Wall	<p>Deleted paragraph 1.5-A Preconstruction Laboratory Mockup Test Submittals          Deleted paragraph 1.5-C Product Test Reports          Deleted paragraph 2.1-H Windborne Debris Impact Resistance</p>

2.9	Section 088000 Glazing	Deleted paragraph 2.2-D Windborne Debris Impact Resistance Add paragraph 3.8-B to provide Glass Type GL-3 Add paragraph 3.8-C to provide Glass Type GL-4 Add paragraph 3.8-D to provide Glass Type GL-5
2.10	Section 089600 Point Supported Laminated Glass Systems	Deleted paragraph 2.3-A-4
2.11	Section 092900 Gypsum Board	Revised paragraph 3.6-D-2 to Level 4 finish for all walls and ceilings.
2.12	Section 093013 Ceramic Tiling	Deleted reference to Thinset in paragraph 2.6: ANSI A108.17
2.13	Section 096519 Resilient Tile Flooring	Paragraphs 2.2-A and 2.3-A revised to allow comparable products from other manufacturers to be submitted for AE's review and Owner's approval.
2.14	Section 122113 Horizontal Louver Blinds	Paragraph 1.2 Summary revised to indicate offices to receive blinds.
2.15	Section 280700 Closed circuit TV	Paragraph 3.2-A-6 added to provide a monitor and CPU as specified by FMD Security.
2.16	Section 321243 Firelane Paver	Added new specification for Firelane Paver
2.17	Section 323310 Timber Guardrail	Added new specification section for Timber Guardrail
	<b>DRAWINGS</b>	
2.18	A-1.8	Detail 2: Section reference call out added to Roof Plan
2.19	A-2.1	Detail 1: Revised spandrel material note
2.20	A-2.9	Details 1, 2, 3: Revised note for aluminum mesh material
2.21	A-3.6	Detail 3; Revise spandrel note.
2.22	A-4.1	Detail 1-8: North side stair risers shifted 11" to the east side to miss the precast beam support under the stair landing Detail 2: Dimensions clarification
2.23	A-4.2	Detail 1: Revised precast concrete panel and the roof Detail 2: Clarify elevations at the elevator lobby on P7 level Detail 7: Added Stair A roof section
2.24	A-5.2	Detail 1 and 2; Revise coping material
2.25	A-5.3	Detail 2; Revise coping material
2.26	A-5.7	Detail 8; Revise coping material
2.27	A-5.8	Details 3 and 7; Revise coping material
2.28	A-6.4	Detail 8; revise ladder notes
2.29	A-6.6	Glass Type clarification
2.30	SEC-1	Revised note #8 to include Monitor/CPU as equipment that requires UPS and Backup Generator. Added note #12 to install CCTV Monitor and CPU.

Herndon Station Metro Garage  
Contract Number: CN16100006 Project Number: TF-000020-001  
Addendum No. 2

2.31	PK-2.12 & PK-2.13	All references to Sign Type NS 45 shall be revised to read Sign Type NS 31. One (1) such reference is found in Sheet PK-2.12 and five (5) are found on Sheet PK-2.13.
	<b>RFIs</b>	
2.31	Pre-Bid RFIs	Contractor submitted RFIs with Owner/Architect/Engineer responses for Contractor's review and use in preparing base bid, (9) pages. Responses provided are for clarification purpose only. In case of conflict or inconsistency between the responses and Contract Documents, the Contract Documents shall govern.

END OF ADDENDUM No. 2

Bidders are required to acknowledge receipt of all addenda on Page B-2 of the Form of Bid, Section B. Failure to indicate receipt of any addenda may be cause for rejection of Bid.

COUNTY OF FAIRFAX, VIRGINIA

By: Carey F. Needham  
Carey F. Needham, Director  
Building Design and Construction Division

Dated: 7-29-16

#### H. Security System

The Contractor shall include in the Lump Sum Bid allowance of \$30,000 for security system hardware upgrades and/or programming changes as well as CCTV's monitor & CPU, and UPS selected by the Owner beyond that identified in the Contract Documents. Payment shall be as described in General Notes to Allowances Item No. 7.

#### I. Contaminated Soil Removal

The Contractor shall include in the Lump Sum Base Bid, an allowance of \$36,000 (at a unit price of \$60.00 per ton) for excavation and disposal of unexpected contaminated soils. If the actual allowance quantity used (based on Owner's verification and approval) is above/below the allowance, then the following unit prices shall be used for addition/credit to the Contract Sum:

##### 1. Contaminated Soil Removal

Addition: \$60.00 for each ton above the allowance.

Credit: \$60.00 for each ton below the allowance.

#### J. Backfill with Borrow Soil

The Contractor shall include in the Lump Sum Base Bid, an allowance of \$25,000 (a unit price of \$25.00 per yard) for replacement of contaminated soil removed per item H. above the cubic yards of borrow soil, in place and compacted, to meet contract requirements as directed by the Owner prior to placement. The Unit of Measurement is one cubic yard of compacted backfill, in ground.

If the actual quantity of placed and compacted backfill, in ground, is above/below the allowance, the following unit prices shall be used for corresponding addition/credit to the Contract Sum.

##### 1. Backfill with Borrow Soil

Addition: \$25.00 per C. Y.

Credit: \$25.00 per C. Y.

#### K. PARC Cabling

The Contractor shall include in the Lump Sum Base Bid, an allowance of \$75,000 (a unit price of \$9.00 per linear foot) for PARC's equipment cabling for (6) cashier booths run that extend from the hand hole (near the pavilion area within MWAA's scope) to the IT Room (head end equipment location for MWAA) at Herndon South Metro Station located in the middle of the Dulles toll road, to meet contract requirements. The Unit of Measurement is one linear feet, in ground. Note that all cabling have to be home run from the cashier booth toward the kiosk at the Dulles Metro Station located in the middle of the toll road. Contractor shall include all

cablings outside MWAA's scope within the base bid. MWAA is responsible to provide the conduit path for this cabling, Contractor to coordinate during construction. See Specification Section 111233 for cabling requirements and Drawing for additional information.

If the actual quantity of placed in ground, is above/below the allowance, the following unit prices shall be used for corresponding addition/credit to the Contract Sum.

1. PARC cabling

Addition: \$10.00 per L. F.

Credit: \$10.00 per L. F.

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L. Partnering

The Contractor shall include in the Lump Sum Base Bid, an allowance of \$50,000 for cost incurred as a result of Partnering Meeting/ Sessions as required by Contract Documents. See Division 1 for requirements. Payment shall be as described in General Notes to Allowances Item No. 7.

M. Existing Garage Remediation

The Contractor shall include in the Lump Sum Base Bid, an allowance of \$800,000 for providing labor and material for items noted on drawing AS-1.1 (plan notes within the existing garage outline) at the existing garage including, but not limited to, remediation and wash down. Outline of scope is currently generally defined on the above referenced plan notes. Detailed scope will be coordinated between the General Contractor and Owner after Notice-to-Proceed. The General Contractor shall then provide a detailed cost proposal that shall be reviewed and approved by the Owner prior to commencement of work. Payment shall be processed via this allowance and as described in General Notes to Allowances Item No. 7. Any and all other work on the existing garage that is otherwise shown or listed in the Contract Documents shall be included as part of the Base Bid and shall not be included in this allowance.

END OF PAGE -

Contractor's Scope of Work. Payment for all utility services including but not limited to field-work, furnishing of administrative deliverables and engineering by the respective utility providers shall be through the use of the Contract Utility Services allowance shown herewith and upon submission and Owner approval of bona-fide and verifiable utility company invoices for work previously authorized by the Owner. Such authorization shall be available only through Owner review of plans and estimates developed by the respective utility providers and furnished by the Contractor before commencement of related work. The Contractor shall ensure coordination between the utility provider's plans and the Contract Drawings and notify the Owner of any technical discrepancies in a timely fashion. The Contractor shall be allowed to include a ten percent (10%) markup for overhead & profit (included in the Utility Services Allowance total of \$250,000) for all Owner-approved payments.

Work qualifying for reimbursement through the Utility Services Allowance shall be limited to those work task items performed by utility providers (or their designated subcontractors) only. Utility service consumption by the Contractor provided field offices (trailers) shall be paid for by the Contractor including all related necessary site work and connections to the field office. Moreover, utility services and consumption to the Contractor's field office and on-site work locations are subject to all provisions of Contract Specification Division 1 General Requirements, meaning that the Contractor shall install and pay for utility services and consumption used to prosecute Contract Work for the duration of the Project until the award of Substantial Completion.

Utility rough-in work including but not limited to duct banks, equipment pads, underground conduit, as well as, pipes and fittings for electric, gas, telephone, cable and water utilities does not qualify as compensable via the Utility Services Allowance since such Work is considered in full and incorporated into the Lump Sum Contract Bid calculation.

Contractor shall provide notice of anticipated time impacts for utility-related work at least 30-days in advance of above referenced time impacts. Documented time impacts caused by any of the aforementioned utility service providers that result in a negative impact on the Contract Time and are proven to be beyond the Contractor's control shall be evaluated by the Owner upon receipt of timely request for time extension, via PCO process, no later than 20 calendar days after the event that caused the delay. If deemed by the Owner to be justified, a non-compensable Contract Time extension equal to the aforementioned delay shall be the Contractor's sole relief.

7. - Payment administration for the following allowances is addressed in this General Note:

E. Additional Code Compliance and Fire Marshall Requirements

G. Signage

H. Security System Upgrades

L. Partnering

M. Existing Garage Remediation

Contractor shall submit a single bona-fide, verifiable and detailed estimate for completing a requested or necessary task including all related trade work and coordination from the related vendor(s)/subcontractor(s) for written Owner authorization. The Contractor shall not commence with the Work until an authorization request is approved by the Owner. The Contractor shall investigate field conditions and system capabilities to ensure feasibility of incorporating the requested Work into the receiving assembly or program code prior to transmitting an Allowance authorization request. A single ten percent (10%) markup for overhead & profit (included in the respective Allowance amount totals) shall be allowed for all Owner-approved work under these allowances.

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3. FIRE ALARM AUTO DIALER

- A. Contractor shall provide, install and make operable a U.L. approved Automatic Telephone Dialer acceptable to authority having jurisdiction and capable of sending out pre-programmed taped message on two separate telephone lines.
- B. Contractor shall provide the necessary connections, hardware and programming.
- C. Coordinate with Owner the connection to the County's central monitoring station. Provide 30 days notice prior to the need for monitoring services.

4. ELECTRONIC PAYMENT PROCESS

Contractor payments will be accomplished electronically. Payment applications are to be forwarded for review and approval in an electronic format acceptable to the County and compatible with current County software such as Microsoft Excel. Electronic signatures will be generated through Owner-provided software, and will be utilized by the Contractor, Architect, and Owner to approve and process pay requests. The Contractor will also forward one hard copy of the payment application with the required Notary seal affixed. Payments will be directly deposited into the Contractor's account at his financial institution.

5. SCHEDULE OF VALUES

This section is a continuation of Contract Section A-20, Detailed Bid Breakdown, noting the following requirement:

The following General Requirements items and associated minimum values must be included in the base bid and reflected as such in the Schedule of Values per Phase and Cost Loaded Schedule per Phase of the project:

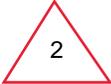
- A. Items to be paid lump-sum upon acceptance of all related Work by Owner:
  - Operation & Maintenance Manuals (O&M) = \$15,000;
  - Building System Training, including elevators, security, and MEP components = \$30,000;
  - Project Record as-Builts = \$15,000;
  - Site As-Built Drawings = \$25,000;
  - HVAC, Lighting, Security System, and PARCS Commissioning = \$50,000;
  - Final Completion Constructware Documentation "Snapshot" = \$10,000;
  - Punch List Completion = 2% of base contract amount.

## **DIVISION 09 – FINISHES**

092216 Non-Structural Metal Framing  
092900 Gypsum Board  
093013 Ceramic Tiling  
095123 Acoustical Tile Ceilings  
096513 Resilient Base and Accessories  
096519 Resilient Tile Flooring  
096536 Static-Control Resilient Flooring  
099113 Exterior Painting  
099120 Pavement Marking  
099123 Interior Painting  
099713 High Performance Steel Coatings

## **DIVISION 10 – SPECIALTIES**

101400 Signage  
102800 Toilet and Bath Accessories  
104413 Fire Protection Cabinets  
104416 Fire Extinguishers  
~~107620 Flexible Delineator Posts~~



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## **DIVISION 11 – EQUIPMENT**

111233 Parking Access and Revenue Control System  
116810 Bike Storage Racks

## **DIVISION 12 – FURNISHINGS**

122113 Horizontal Louver Blinds

## **DIVISION 13 – SPECIAL CONSTRUCTION**

133423 Fabricated Structures (Cashier Booth)  
137150 CCTV Warning Signage

## **DIVISION 14 - CONVEYING EQUIPMENT**

142100 Electric Traction Elevators

## **DIVISION 32 - EXTERIOR IMPROVEMENTS**

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- 321216 Asphalt Paving
  - 321243 Firelane Paver
  - 321313 Concrete Pavement
  - 321373 Concrete Paving Joint Sealants
  - 323113 Chain Link Fences and Gates
  - 323310 Timber Guardrail
  - 329100 Seeding, Sodding and Topsoil
  - 329300 Exterior Planting
  - 330500 Common Work Results for Utilities

## **DIVISION 33 - UTILITIES**

- 334100 Storm Utility Drainage Piping

- G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- H. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
  - 1. Install compressible filler in joint between top of partition and underside of structure above.

### 3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
  - 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
  - 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
  - 3. Bed webs in mortar in grouted masonry, including starting course on footings.
  - 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
- B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Set cast-stone trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.
  - 1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
  - 2. Wet joint surfaces thoroughly before applying mortar.
  - 3. Rake out mortar joints for pointing with sealant.
- D. Rake out mortar joints at pre-faced CMUs to a uniform depth of 1/4 inch and point with epoxy mortar to comply with epoxy-mortar manufacturer's written instructions.
- E. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- F. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.
- G. Cut joints flush where indicated to receive waterproofing unless otherwise indicated.

### ~~3.6 MASONRY-CELL FILL~~

- ~~A. Pour lightweight aggregate fill into cavities to fill void spaces. Maintain inspection ports to show presence of fill at extremities of each pour area. Close the ports after filling has been confirmed. Limit the fall of fill to one story high, but not more than 20 feet.~~

### 3.7 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
1. Installer shall participate in the AISC Quality Certification Program and be designated an AISC-Certified Erector, Category **CSE**.
- B. Fabricator Qualifications: A fabricator experienced in fabricating architecturally exposed structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.
- 2
1. Fabricator shall participate in the AISC Quality Certification Program and be designated an AISC-Certified Plant, Category STD or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC 172).
- C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement **P2** or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."
- D. Preinstallation Conference: Conduct conference at Project site

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Use special care in handling to prevent twisting, warping, nicking, and other damage. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

## 1.7 PROJECT CONDITIONS

- A. Field Measurements: Where AESS is indicated to fit against other construction, verify actual dimensions by field measurements before fabrication.

## 1.8 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.

## PART 2 - PRODUCTS

### 2.1 BOLTS, CONNECTORS, AND ANCHORS

- A. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, round-head assemblies, consisting of steel structural bolts with splined ends, heavy-hex carbon-steel nuts, and hardened carbon-steel washers.

1. Warranty Period: One year from date of Substantial Completion.
- A. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
  1. Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Warranty Period: **20** years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design architectural expanded mesh infill panels and sub-frame.
  1. Infill panels shall resist wind loads.
  2. Infill panels shall accommodate vertical motion or deflection of the precast concrete structure.
- A. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:
  1. Temperature Change: **120 deg F**, ambient; **180 deg F**, material surfaces.
  2. Thermal Cycling: No buckling; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.
    - a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of **180 deg F**.
    - b. Low Exterior Ambient-Air Temperature: **0 deg F**.

### 2.2 MANUFACTURERS

- A. Basis-of-Design Product for Architectural Expanded Mesh:

Expanded Meshes and attachment brackets are produced and distributed by Alabama Metal Industries Corporation, AMICO; 1080 Corporate Dr., Burlington, Ontario L7L 5R6; Attn: Phil Shevchenko; Telephone 800/663-4474 or email pshevchenko@gibraltar1.com .

### 2.3 MATERIALS

- A. Mesh Description: AMICO APEX 01 Aluminum
- B. Mesh Description: AMICO APEX 03 Aluminum

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PART 2 - PRODUCTS

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2.1 MANUFACTURERS

- A. Basis-of-Design Product: **Cembonit by AFC Cladding Fiber Cement Panels by American Fiber Cement Corp.** Subject to compliance with requirements, comparable products from other manufacturers may be submitted for AE's review and Owner's approval.
- B. Color: **Granite**

2.2 THROUGH COLOR HIGH DENSITY FIBER CEMENT PANELS

- A. Application: Exterior.
- B. Thickness: 5/16 inch (8 mm).
- C. Finish: Through-colored, muted, matte finish with a unique weather-proof treatment which makes it resistant to staining and surface dirt.
- D. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.
1. Density Dry: 1500 kg/m<sup>3</sup>.
  2. Bending strength at with grain: 32.0 MPa.
  3. Bending strength at across grain: 22.0 MPa.
  4. Modulus of elasticity at with grain: greater than 16 GPa.
  5. Modulus of elasticity at across grain: greater than 14 GPa.
  6. Hygric movement wet-dry-wet (max), mean: 2.60 mm/m.
  7. Durability classification (EN 12467): Category A.
  8. Strength classification (EN 12467): Class 4.
  9. Fire reaction (EN 13501-1): A2-s1-d0.
  10. Warm water test: Ok.
  11. Soak dry test: Ok.
  12. Freeze thaw test: greater than 100 cycles.
  13. Thermal conductivity e: 0.4 W/mK.

2.3 MISCELLANEOUS CLADDING MATERIALS

- A. Steel Sheet Components, General: Complying with ASTM C 645 requirements for metal and with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
- B. Subgirts: C- or Z-shaped sections fabricated from 0.0598-inch bare steel thickness, shop-painted, cold-formed, metallic-coated steel sheet.
- C. Zee Clips: 0.079-inch bare steel thickness, cold-formed, galvanized steel sheet.
- D. Base or Sill Angles
1. 0.079-inch bare steel thickness, cold-formed, galvanized steel sheet.
  2. Aluminum sill, color to match curtain wall as shown on drawings.
- E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

- D. Fabrication Sample: Of each vertical-to-horizontal intersection of assemblies, made from 12-inch lengths of full-size components and showing details of the following:
  - 1. Joinery, including concealed welds.
  - 2. Anchorage.
  - 3. Expansion provisions.
  - 4. Glazing.
  - 5. Flashing and drainage.
- E. Delegated-Design Submittal: For glazed aluminum curtain walls indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

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~~A. Preconstruction Laboratory Mockup Testing Submittals:~~

- ~~1. Testing Program: Developed specifically for Project.~~
- ~~2. Test Reports: Prepared by a qualified preconstruction testing agency for each mockup test.~~
- ~~3. Record Drawings: As built drawings of preconstruction laboratory mockups showing changes made during preconstruction laboratory mockup testing.~~

B. Qualification Data: For Installer **and field testing agency.**

~~C. Product Test Reports: For glazed aluminum curtain walls, for tests performed by **manufacturer and witnessed by a qualified testing agency.**~~

- D. Quality-Control Program: Developed specifically for Project, including fabrication and installation, according to recommendations in ASTM C 1401. Include periodic quality-control reports.
- E. Source quality-control reports.
- F. Field quality-control reports.
- G. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For glazed aluminum curtain walls to include in maintenance manuals.
- B. Maintenance Data for Structural Sealant: For structural-sealant-glazed curtain walls to include in maintenance manuals. Include ASTM C 1401 recommendations for post-installation-phase quality-control program.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.

~~H. Windborne Debris Impact Resistance: Pass missile impact and cyclic pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996 for **Wind Zone 1**.~~

- ~~1. Large Missile Test: For glazed openings located within 30 feet of grade.~~
- ~~2. Small Missile Test: For glazed openings located more than 30 feet above grade.~~

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I. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
2. Thermal Cycling: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.
  - a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of **180 deg F**.
  - b. Low Exterior Ambient-Air Temperature: **0 deg F**.

J. Structural-Sealant Joints:

1. Designed to carry gravity loads of glazing.
2. Designed to produce tensile or shear stress of less than 20 psi.

K. Structural Sealant: Capable of withstanding tensile and shear stresses imposed by structural-sealant-glazed curtain walls without failing adhesively or cohesively. When tested for preconstruction adhesion and compatibility, cohesive failure of sealant shall occur before adhesive failure.

1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.

## 2.2 MANUFACTURERS

A. Basis-of-Design Product: Kawneer 1600 Curtain Wall by the Kawneer Company Inc.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Kawneer North America; an Alcoa company.
2. Oldcastle, Inc.
3. YKK AP America Inc.

C. Source Limitations: Obtain all components of curtain wall system, including framing and accessories, from single manufacturer.

## 2.3 FRAMING

A. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

2

4. Thickness of Patterned Glass: Base design of patterned glass on thickness at thinnest part of the glass.
5. Maximum Lateral Deflection: For glass supported on all four edges, limit center-of-glass deflection at design wind pressure to not more than 1/50 times the short-side length or 1 inch, whichever is less.
6. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.

~~D. Windborne-Debris Impact Resistance: Exterior glazing shall comply with **basic** protection testing requirements in ASTM E 1996 for **Wind Zone 1** when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on Project and shall be installed in same manner as glazing indicated for use on Project.~~

- ~~1. Large Missile Test: For glazing located within 30 feet of grade.~~
- ~~2. Small Missile Test: For glazing located more than 30 feet above grade.~~

- E. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
- F. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. For monolithic-glass lites, properties are based on units with lites **6 mm thick**.
  2. For laminated-glass lites, properties are based on products of construction indicated.
  3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
  4. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
  5. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

### 2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: "**Laminated Glazing Reference Manual**" and "Glazing Manual."
  2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of **the SGCC or another certification agency acceptable to authorities having jurisdiction**. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IgCC.
- D. Thickness: Where glass thickness is indicated, it is a minimum. **Provide glass that complies with performance requirements and is not less than the thickness indicated.**
1. Minimum Glass Thickness for Exterior Lites: **6 mm**.

- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
  - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

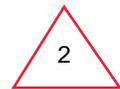
### 3.8 INSULATING GLASS SCHEDULE

- A. Glass Type **GL-1**: Clear insulating glass for use in stair towers.
  - 1. Basis-of-Design Product: **Viracon; VE1-2M**.
  - 2. Overall Unit Thickness: **1 inch**.
  - 3. Minimum Thickness of Each Glass Lite: **6 mm**.
  - 4. Outdoor Lite: **Heat-strengthened** float glass.
  - 5. Interspace Content: **Air**.
  - 6. Indoor Lite: **Fully tempered** float glass.
  - 7. Safety glazing required.

- B. Glass Type **GL-3**: Clear insulating glass with mirror coating for use in offices.
  - 1. Basis-of-Design Product: **Viracon; VS1-08**.
  - 2. Overall Unit Thickness: **1 inch**.
  - 3. Minimum Thickness of Each Glass Lite: **6 mm**.
  - 4. Outdoor Lite: **Fully tempered** float glass.
  - 5. Interspace Content: **Air**.
  - 6. Indoor Lite: **Fully tempered** float glass.
  - 7. Safety glazing required.

- C. Glass Type **GL-4**: Clear insulating glass for use in stair towers.
  - 1. Basis-of-Design Product: **Viracon; VE1-2M**.
  - 2. Overall Unit Thickness: **1 inch**.
  - 3. Minimum Thickness of Each Glass Lite: **6 mm**.
  - 4. Outdoor Lite: **Heat-strengthened** float glass.
  - 5. Interspace Content: **Air**.
  - 6. Indoor Lite: **Fully tempered** float glass.
  - 7. Safety glazing required.

- D. Glass Type **GL-5**: Clear insulating glass for use in stair towers.
  - 1. Basis-of-Design Product: **Viracon; VE1-2M**.
  - 2. Overall Unit Thickness: **1 inch**.
  - 3. Minimum Thickness of Each Glass Lite: **6 mm**.
  - 4. Outdoor Lite: **Fully tempered** float glass.
  - 5. Interspace Content: **Air**.



- 
6. Indoor Lite: **Fully tempered** float glass.
  7. Safety glazing required.



2

### 3.9 INSULATING-LAMINATED-GLASS SCHEDULE

A. Glass Type **GL-2**: Clear insulating laminated glass for use in elevator hoistway.

1. Basis-of-Design Product: **Viracon; VE1-2M**.
2. Overall Unit Thickness: **1-3/16 inch**.
3. Minimum Thickness of Outdoor Lite: **6 mm**.
4. Outdoor Lite: **Heat-strengthened** float glass.
5. Interspace Content: **Air**.
6. Indoor Lite: Clear laminated glass with two plies of **fully tempered** float glass.
  - a. Minimum Thickness of Each Glass Ply: **3 mm**.
  - b. Interlayer Thickness: **0.030 inch**.
7. Safety glazing required.

END OF SECTION 088000

- C. The 3D articulated fixing scheme of the Rotule System is designed to prevent high stress concentrations in the holes in the glass using 20 degrees of articulation in all directions. This allows the fittings to compensate for bending of the glass when subjected to negative and positive wind loading, seismic loads, thermal movement construction tolerance and live load and dead load movements.

## 2.3 MATERIALS

### A. Laminated Glass:

1. Laminated shall match the appearance of the glazing used in the curtain wall. See section 088000 Glazing for curtain wall glazing.
2. Laminated glass shall be of sufficient thickness and strength to meet the loading and deflection specifications made herein.
3. Interlayer shall be a minimum .060". Interlayer may be either PVB or cast resin, provided PVB is specifically approved by its manufacturer as allowed for exposed edge conditions. Patterns and visual affects may be achieved by combinations of resin, sandblasting, and / or ceramic frit, but must be approved by Owner and Architect prior to execution of Work. Any sandblasted glass faces will be sealed and oriented toward the interlayer.
4. ~~All components of the laminate system shall be compatible with silicone sealant to be used at glass joints. Provide written approval from sealant manufacturer indicating compatibility.~~
5. All tempered glass shall be horizontally tempered to eliminate tong marks.
6. All edges, notches and holes in tempered glass will be ground and polished as required by Architect. All such fabrication and finishing shall be completed prior to tempering and shall comply with the following:
- Dimensional tolerance on panel sizes will be  $\pm 1/16"$  of the theoretical dimension required.
  - Squareness of panels (difference in diagonal dimensions for rectangular panels) will be  $\pm 1/8"$ . Positional tolerances for all holes will be  $\pm 1/64"$  from a single datum point.
7. Finish: Glass pattern and / or translucence will meet, as nearly as possible, that shown in the Project drawings, and requires the approval of the Owner and / or Architect.

### B. Fittings

- Fixed bolt fittings shall be predominately manufactured from stainless steel Grade 316.
- The glass wall system designer shall demonstrate to the Architect's satisfaction that the stresses induced in the glass by these fittings are compatible with the strength of the glass and meets the performance criteria of this Section.
- The finish of all fittings will be Electro-polished or brushed stainless steel.
- Spider fittings shall be designed to meet system requirements. The design will incorporate the spider connections.
  - Spiders are constructed of 8mm (3/8") 316 stainless steel plate material with a brush finish.
  - The three configurations required are a 4 point, a 2 point 90 degree, and a 1 point 90 degree attachments.
- The spider fittings shall incorporate oversize holes or slots which will provide the capability to allow for the glass fabrication tolerances and the full range of movements shown below.
  - Thermal movements of the wall system occurring as a result of differential coefficients of thermal expansion of the wall components within the range specified. The components used with the system shall withstand noiselessly all

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels **vertically (parallel to framing)** unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
  - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

### 3.4 APPLYING TILE BACKING PANELS

- A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at **locations indicated to receive tile**. Install with 1/4-inch gap where panels abut other construction or penetrations.
- B. Cementitious Backer Units: ANSI A108.11, at **locations indicated to receive tile**.
- C. Water-Resistant Backing Board: Install where indicated with 1/4-inch gap where panels abut other construction or penetrations.

### 3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Interior Trim: Install in the following locations:
  1. Cornerbead: Use at outside corners.

### 3.6 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, **rounded or beveled edges**, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
  1. Level 2: **Panels that are substrate for tile.**

2. Level 4: All walls and ceilings.

- a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

2

4. Wall Tile – **CTW-2**: Keystones, D208, Suede Gray Speckled, Non-abrasive.

B. Subject to compliance with requirements, comparable products from other manufacturers may be provided.

## 2.4 THRESHOLDS

A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.

1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.

## 2.5 WATERPROOF AND CRACK ISOLATION MEMBRANE

A. General: Manufacturer's standard product that complies with ANSI A118.10, and ANSI A118.12 for high performance, and is recommended by the manufacturer for the applications indicated. Include reinforcement and accessories recommended by manufacturer.

B. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.

## 2.6 SETTING MATERIALS

~~Portland Cement Mortar (Thinset) Installation Materials: ANSI A108.17.~~

~~1. Cleavage Membrane: Asphalt felt, ASTM D 226/D 226M, Type I (No. 15); or polyethylene sheeting, ASTM D 4397, 4.0 mils thick.~~

~~2. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex additive manufacturer for use with field-mixed portland cement and aggregate mortar bed.~~

A. Modified Dry-Set Mortar (Thinset): ANSI A118.4.

1. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

## 2.7 GROUT MATERIALS

A. Water-Cleanable Epoxy Grout: ANSI A118.3.

## 2.8 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Vapor-Retarder Membrane: Polyethylene sheeting, ASTM D 4397, 4.0 mils thick.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
  - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

### 2.2 RUBBER FLOOR TILE – ELEVATOR FLOORING

2

- A. Basis of Design Product: 996 Vantage by Roppe Corporation, USA. Subject to compliance with requirements, comparable products from other manufacturers may be submitted for AE's review and Owner's approval.
- B. Tile Standard: ASTM F 1344, **Class I-A, homogeneous rubber tile, solid color.**
- C. Hardness: **Manufacturer's standard hardness**, measured using Shore, Type A durometer per ASTM D 2240.
- D. Wearing Surface: **Molded pattern.**
  - 1. Molded-Pattern Figure: **Raised discs.**
- E. Thickness: **0.125 inch.**
- F. Size: **12 by 12 inches** or **24 by 24 inches.**
- G. Seaming Method: Standard
- H. Colors and Patterns: **#174 Smoke.**

### 2.3 VINYL COMPOSITION FLOOR TILE – OFFICE FLOORING <VCT-1>

2

- A. **Basis-of-Design Product:** Subject to compliance with requirements, provide **ChromaSpin by Armstrong World Industries, Inc.** Subject to compliance with requirements, comparable products from other manufacturers may be submitted for AE's review and Owner's approval.
- B. Tile Standard: ASTM F 1066, **Class 2, through-pattern** tile.
- C. Wearing Surface: **Smooth.**
- D. Thickness: **0.125 inch.**
- E. Size: 12 by 12 inches.
- F. Colors and Patterns: **54807 Primer White.**

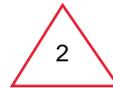
**SECTION 122113  
LOUVER BLINDS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY



A. Section Includes:

- 1. Horizontal louver blinds with **aluminum** slats for use in WMATA and FCDOT Offices (window types K and L).

B. Related Requirements:

- 1. Section 061053 "Miscellaneous Rough Carpentry" for wood blocking and grounds for mounting horizontal louver blinds and accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For horizontal louver blinds, include fabrication and installation details.
- C. Samples: For each exposed product and for each color and texture specified, 12 inches long.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For horizontal louver blinds to include in maintenance manuals.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver horizontal louver blinds in factory packages, marked with manufacturer, product name, and location of installation using same designations indicated on Drawings.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Do not install horizontal louver blinds until construction and wet-work and finish work in spaces, including painting, is complete and dry and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Field Measurements: Where horizontal louver blinds are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate

is responsible for having all work meet requirements of the governing ordinances.

- D. Ensure each camera and components are factory tested to assure smooth operation, sequencing and electrical connection integrity under simulated field conditions.
- E. Installer to coordinate with Contractor before construction to ensure proper location, size, and routing of conduit stub-ups, lines, mounting, and any other connectivity requirements, for optimum operation of the devices.
- F. Contractor to vet CCTV configuration with County IT Director prior to requisition, e.g., dedicated network, bandwidth, etc.

### 3.2 INSTALLATION

#### A. General

- 1. Installation of all cameras shall include mounting brackets and/or camera housing fully compatible with the camera provided.
  - 2. All cameras shall be either ceiling or wall mounted, as appropriate for the application.
    - a. Ceiling domes shall include a 4S adapter plate to mount the camclosure to a 4-square electrical box.
    - b. Exterior mounts shall include a pendant housing and wall mount.
    - c. All camera installations shall be securely attached to a mounting surface. Use lead shields on solid masonry, toggle bolts for hollow masonry, and machine bolts for steel. All anchoring devices shall be rated to support not less than 5 times the total equipment weight.
    - d. See Note #11 on SEC-1 regarding the mounting of 180/270/360 cameras.
  - 3. Install CCTV system in accordance with manufacturers printed instructions, current at the time of installation, and this specification.
  - 4. Stack two additional 24-port Switch 'A's in IT Closet #114; these will form the core. Into these switches, attach the cameras according to the CCTV System Summary, along with the NVR connections. Stack two Switch 'A's in FC IT Closet 113, splitting loads as depicted in the CCTV System Summary Chart on Sheet SEC-1. Provide 10Gbps uplinks via the SPF+ port, with one link from the upper switch in the stack and one link from the bottom switch in the stack connecting to the upper and lower switches in the core stack, respectively. This will form a Distributed Multi-Link Trunk Group (DMLT).
  - 5. Two 8-port Switch 'B's will be installed in IT Closet 120, with cameras attached as per the schedule. Each of these switches will be connected back to the core via dual SFP uplink ports, with one connection established with the upper switch and the other connection established with the lower switch. This will form a separate DMLT group.
  - 6. Install CCTV monitor, CPU and UPS.
- B. Fully assemble and test each camera and component installed through minimum four (4) hours operation and adjust for operation as required for smooth operation.
  - C. Train owner's personnel in the operation and general maintenance of the CCTV system.

2

**SECTION 321243  
FIRE LANE PAVER**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Provide all labor, materials, tools and equipment as required to install fire lane pavers all areas called for on the construction drawings.

**1.2 DESCRIPTION**

- A. The work includes, but is not limited to, the provision of all material, services, labor, and equipment necessary to construct the following:
  - 1. Sub-base
  - 2. Fire lane paver
  - 3. Fill Material
  - 4. Sodding

**1.3 RELATED SECTIONS**

- A. Section 329100 – Sodding and Topsoil

**1.4 SUBMITTALS**

- A. Submit copies of the soil testing and a cut sheet on the fire lane paver to the Project Officer.
  - 1. Fire Lane Paver: Provide sample and cut sheet of fire lane paver.

**1.5 QUALITY ASSURANCE**

- A. Manufacturers:
  - 1. Acceptable Manufacturers:
    - a. TrueGrid: (832) 723-0236
    - b. Contech: (800) 338-1122
    - c. Presto Geo-Systems (920) 738-1328
  - 2. Acceptable Model: TrueGrid PRO Grass-Fill Heavy Load Fire Lane (or equivalent).
  - 3. Installer Qualifications: Fire Lane Pavers shall be installed by a Licensed Contractor with a minimum of three (3) year's experience in installation of fire lane pavers.

**PART 2 - PRODUCT**

## 2.1 GENERAL

- A. All materials shall conform as stipulated below, unless otherwise approved in writing by the Owner.
- B. Specified materials to be applied in amounts stipulated in the construction drawings and installed per manufacturer's instructions.

## 2.2 FIRE LANE PAVER

- A. Fire lane paver shall have the following capabilities and characteristics:
  - 1. Injection-molded, highly durable, plastic grid structure with heavy load capacity for emergency vehicles and apparatus.
  - 2. Grid size shall be 16" x 16" by 1-8" in height (1.72 sq/ft). Each sheet shall contain nine (9) grids per layer (4' x 4' sheet) that can be reconfigured as needed.
  - 3. Cell width shall be 3-3/16"
  - 4. Compressive strength: 6,880 psi pre fill minimum
  - 5. Porosity: 90%
  - 6. Color: Black with UV Stabilizer
  - 7. Temperature Range: Dimensionally stable for -58 to 194-degrees F
  - 8. Environmental Compatibility: Non-toxic; harmless to plants, animals, and microorganisms

2.3 SUB BASE: Per manufacturer's recommendations

## 2.4 FILL MATERIAL:

- A. Soil Mix: Per Specification 329100 Sodding and Topsoil.
- B. Soil testing: Comply with soil testing/samples per Specification 329100 Sodding and Topsoil.

## 2.5 SODDING

- A. Sod Selection: Per Specification 329100 Sodding and Topsoil.
- B. Sample: Comply with sod sampling per Specification 329100 Sodding and Topsoil.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Per Manufacturer's recommendations
  - a. Examine sub-grade course conditions. Do not install fire lane pavers until unsatisfactory conditions are corrected. Improperly compacted trenches, debris, and improper gradients should be avoided.
  - b. Place base course material over prepared sub base to grades shown on plans.
  - c. Comply with manufacturer's recommended depths and lifts.

3.2 INSTALLATION

- A. Paver: Per Manufacturer's recommendations
- B. Sodding:
  - a. Use 0.5" thick (soil thickness) rolled sod. Sod shall be per Section 329100 – Sodding and Topsoil
  - b. Protect sodded areas from any traffic, other than emergency vehicles, for a period of 3-4 weeks, or until root system has been established.

3.3 FIELD QUALITY CONTROL

- A. Inspect and replace any fire lane paver that is damaged during shipping or during installation.
- B. Remove all excess materials, debris, and equipment from site upon completion of install.

3.4 MAINTENANCE

- A. Follow normal turf establishment and maintenance procedures per Section 329100 – Sodding and Topsoil
- B. Snow Removal: Keep edged plow blade a minimum of 1" above fire lane paver surface to avoid damage to cells.
- C. Submit any Manufacturer's maintenance procedures to Owner.

3.4 GUARANTEE

- A. Fire Lane Paver Warranty: Fire lane paver shall extend for a period of five (5) years following date of shipment. Submit manufacturer's certificate of warranty to Owner.
- B. The Contractor shall be responsible for mowing all sodded areas and maintaining them in a healthy, vigorous condition at his own expense until all contracted work is completed and accepted by Landscape Architect or Owner.
- C. The Contractor shall, at his own expense, replace any sod which has died or been damaged during the establishment period.
- D. Ten percent of the total cost of sod will be withheld from final payment until final approval is given by Landscape Architect or Owner.

3.5 ACCEPTANCE

- A. Paver areas with sodding shall be accepted provided all requirements, including maintenance, have been complied with and sod is well established in a healthy, vigorous growing condition.
- B. Upon acceptance at Final Completion, the Owner shall assume all lawn maintenance responsibilities.

END OF SECTION 329100

**SECTION 323310  
TIMBER GUARDRAIL**

**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 providing all labor, materials, tools and equipment necessary for furnishing and installing guardrail as shown on the Drawings.
- B. Related Sections include the following.
  - 1. Division 31 Section "Earth Moving".

**PART 2 - PRODUCTS**

**2.1 RAIL**

- A. Rail elements shall conform to AASHTO M 168.
  - 1. Fabricate the timber rail, blockouts, and posts from dry, well seasoned, and dressed rough sawn Douglas fir, southern pine, or other species having a stress grade of at least 1,500 pounds per square inch.
  - 2. Season and dry all structural timber and lumber before fabrication. Do not use material that is twisted, curved, or otherwise distorted.
  - 3. Do not use boxed-heart pieces of Douglas fir or redwood in outside stringers, floor beams, caps, posts, sills, or rail posts. Boxed-heart pieces are defined as timber so sawed that, at any point in the length of a sawed piece, the pith lies entirely inside the four faces.
  - 4. Incise all wood and make all dimensional cuts and holes in the wood before pressure treatment. Treat the wood and mark each piece of treated timber according to AASHTO M 133.
  - 5. Treat the timber rail, blockout elements, and posts according to AASHTO M 133.
  - 6. Fabricate the steel backing elements from 3/8-inch structural steel conforming to ASTM A 242.
  - 7. Furnish an inspection certification from an agency accredited by the American Lumber Standards Committee for the species and grade. Mark all pieces with the inspection service, grade designation, species, and inspector identity.

**2.2 POST**

- A. Posts - For steel-backed timber rail posts:
  - 1. Furnish 10-inch by 12-inch posts conforming to Section A.

2. Post lengths will be specified on the plans and details.
- B. Guardrail Hardware - Conform to the AASHTO-AGC-ARTBA A Guide to Standardized Highway Barrier Hardware.
1. For angles, channels, wide flanges, and plates not contained in the above standard, conform to ASTM A 36. For structural tubing for short steel posts, conform to ASTM A 500 or ASTM A 513, grade 1008.
  2. Galvanize soil plates and structural tubing according to
  3. AASHTO M 111. Do not punch, drill, cut, or weld the metal after galvanizing. Do not punch, drill, cut, or weld the metal after galvanizing.

### PART 3 – EXECUTION

#### 3.1 CONSTRUCTION

A. Posts

1. Guardrail posts shall be set plumb. The posts shall be backfilled with suitable soils and compacted to 95 percent. Any damage to the posts, and adjacent slopes resulting from post driving shall be repaired at the Contractor's expense. Punch or drill pilot holes no more than 1/2 inch larger than the post dimensions. Drive the posts into the pilot holes and set the posts plumb. Backfill and compact around the posts with acceptable material.

B. Rail Elements

1. Equally space bolts along the front face of the timber rail to match the holes in the steel backing. Align timber guardrail along the top and front edges of the rail.
2. Field cut timber rails to produce a close fit at joints. Treat field cuts with 2 coats of chromated copper arsenate.

END OF SECTION 323310



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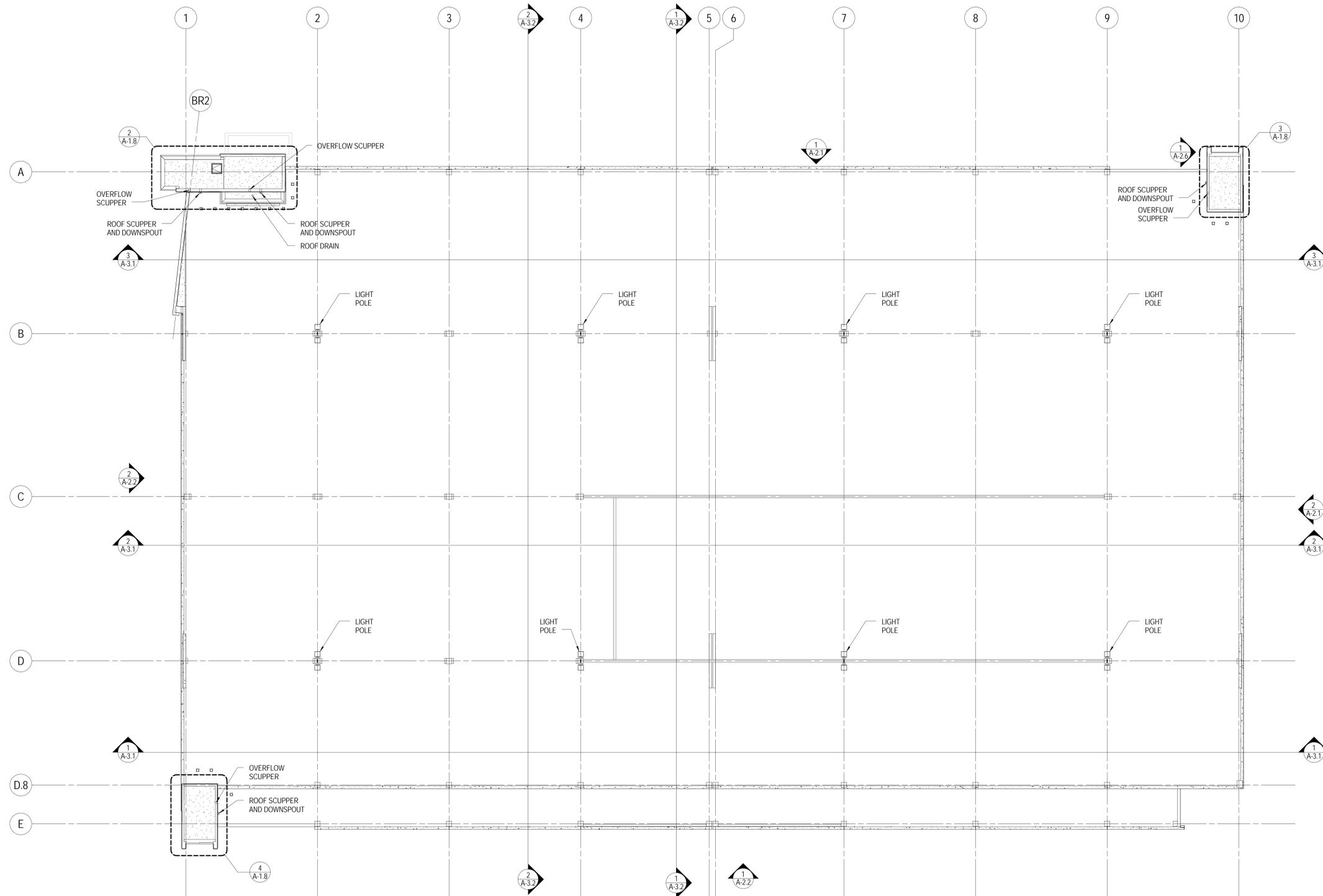
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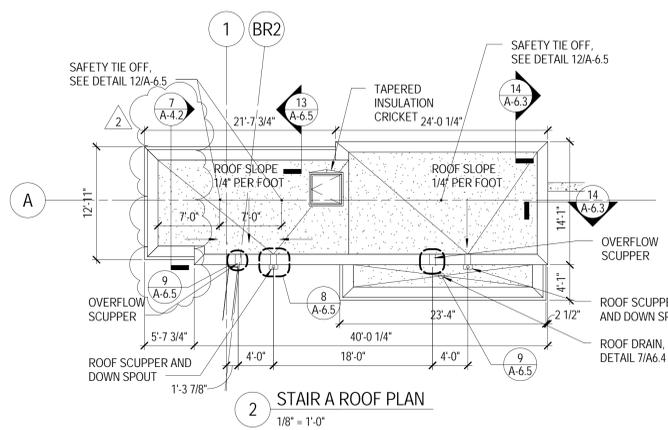
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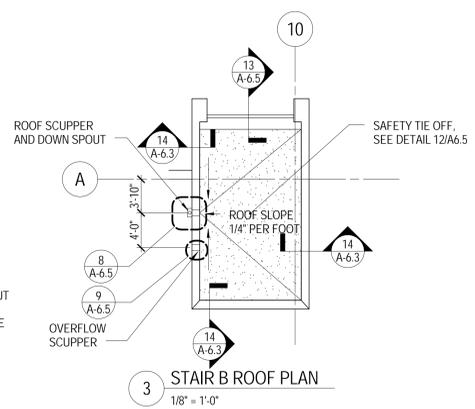
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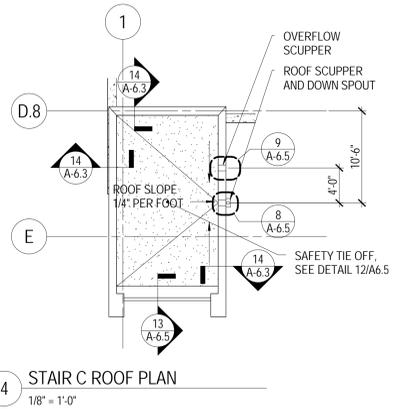
1 FLOOR PLAN - ROOF  
1/16" = 1'-0"



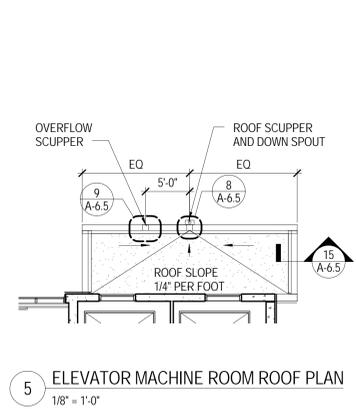
2 STAIR A ROOF PLAN  
1/8" = 1'-0"



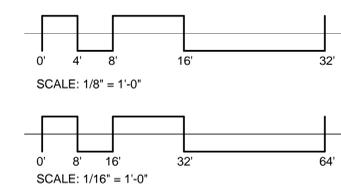
3 STAIR B ROOF PLAN  
1/8" = 1'-0"



4 STAIR C ROOF PLAN  
1/8" = 1'-0"



5 ELEVATOR MACHINE ROOM ROOF PLAN  
1/8" = 1'-0"



7/25/2016 11:42:00 AM C:\Users\hgreen\Documents\Revit\Local Files\A18-Herndon Metro Garage\2016\06\00\_00.dwg\A18-1.8.rvt



44 Canal Center Plaza, Suite 100  
Alexandria, Virginia 22314  
Telephone 703.836.7766

STRUCTURAL, FUNCTIONAL & MEP ENGINEER

**WALKER**  
PARKING CONSULTANTS  
565 East Swedesford Road  
Suite 300  
Wayne, PA 19087  
610.995.0260 Ph  
610.995.0261 Fax

CIVIL AND LANDSCAPE ENGINEER

**Gordon**  
4501 Doby Drive  
Chantilly, VA 20151  
Phone: 703-263-1900  
www.gordon.us.com

**COUNTY OF FAIRFAX**  
**HERNDON STATION METRO GARAGE**

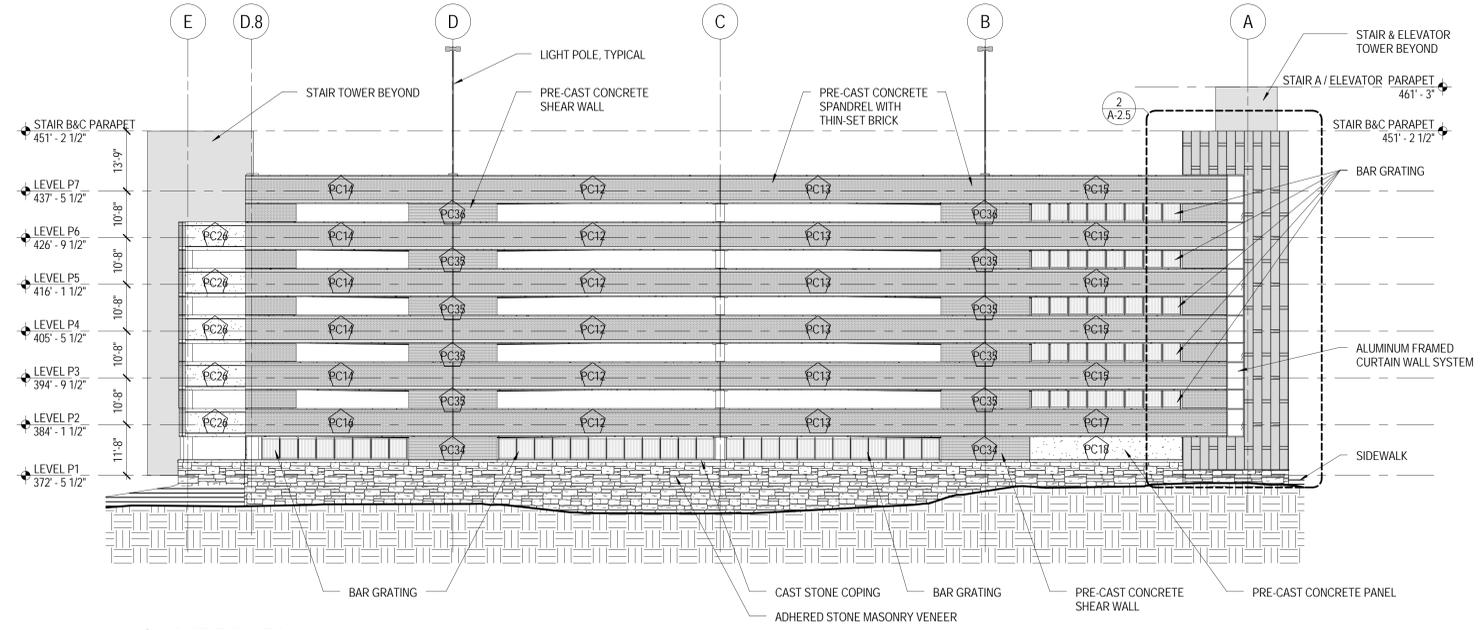


**SYMBOL LEGEND**

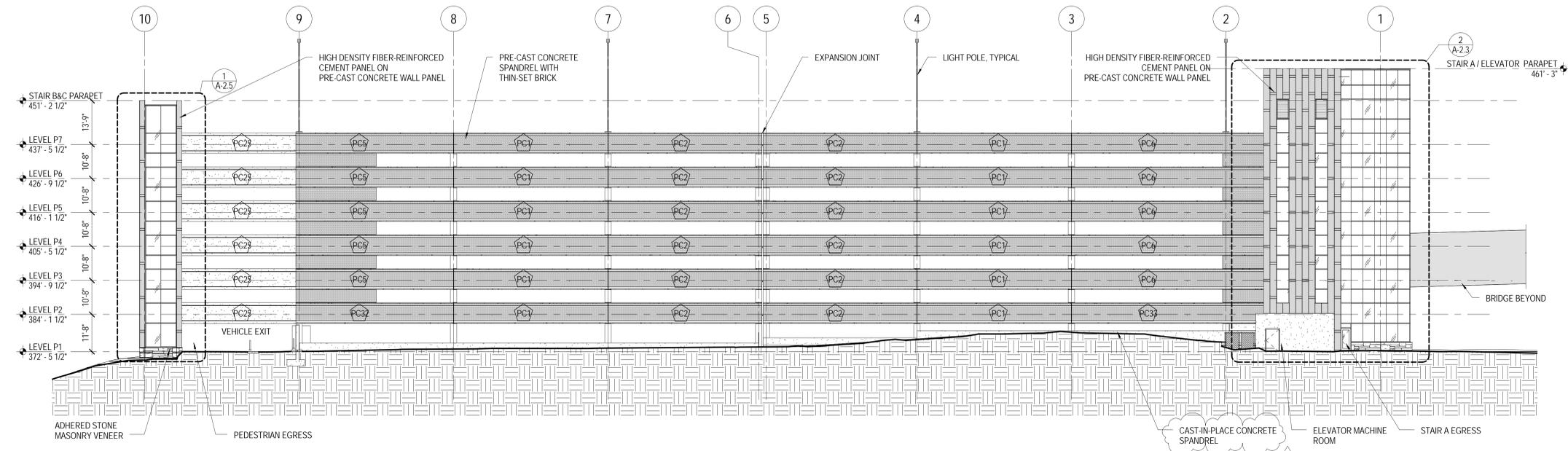
◡ PRECAST CONCRETE PANEL TYPE

**GENERAL NOTES**

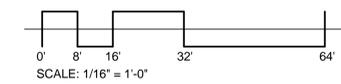
- SEE A-7.X SERIES FOR PRECAST PANEL DETAILS
- SEE A-6.7 FOR SOUTH & WEST ELEVATIONS EXPANDED METAL MESH DETAILS
- SEE A-6.11 FOR EAST ELEVATION BAR GRATING DETAILS



2 EAST ELEVATION  
1/16" = 1'-0"



1 NORTH ELEVATION  
1/16" = 1'-0"



NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

HGA NO: 3209-006-00

**BUILDING ELEVATIONS**

DATE: JUNE 3, 2016

BID SET

**A-2.1**

7/26/2016 11:30:01 PM C:\Users\hgreen\Documents\Revit\Local Files\A-15-Herndon New Garage\2016\06\03.dwg\img1\PC7261.rvt

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

ISSUANCE HISTORY - THIS SHEET

HGA NO: 3209-006-00

**INTERIOR  
ELEVATIONS**

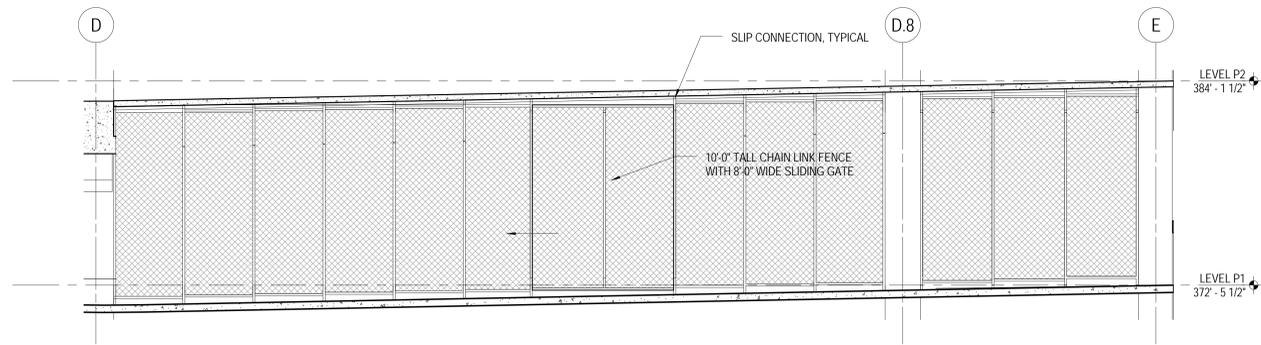
DATE: JUNE 3, 2016

**BID SET**

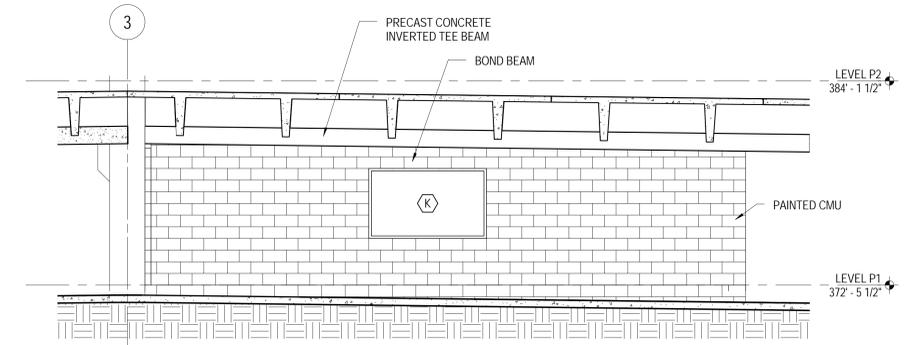
**A-2.9**

**SYMBOL LEGEND**

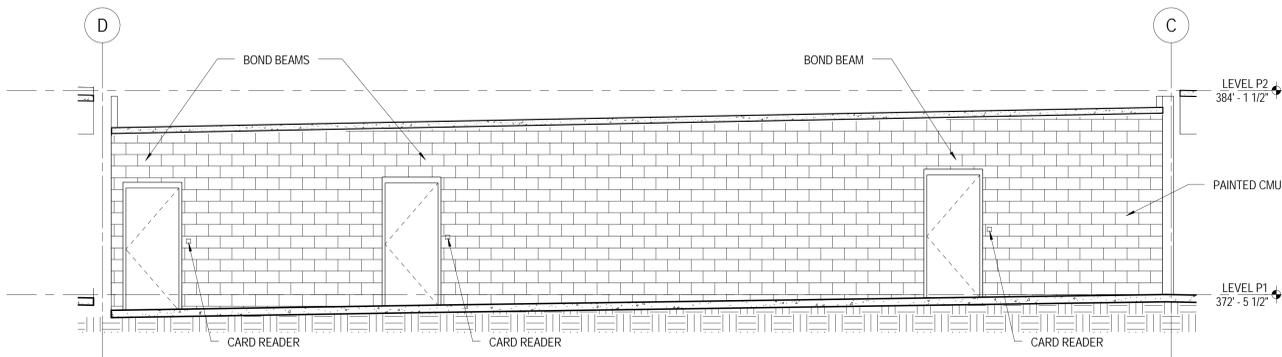
WINDOW TYPE



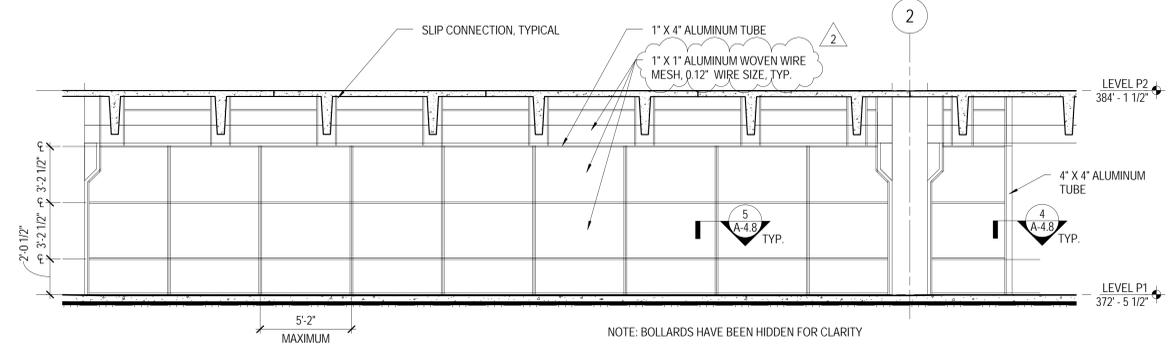
**8 ELEVATION - MAINTENANCE EQUIPMENT AREA**  
1/4" = 1'-0"



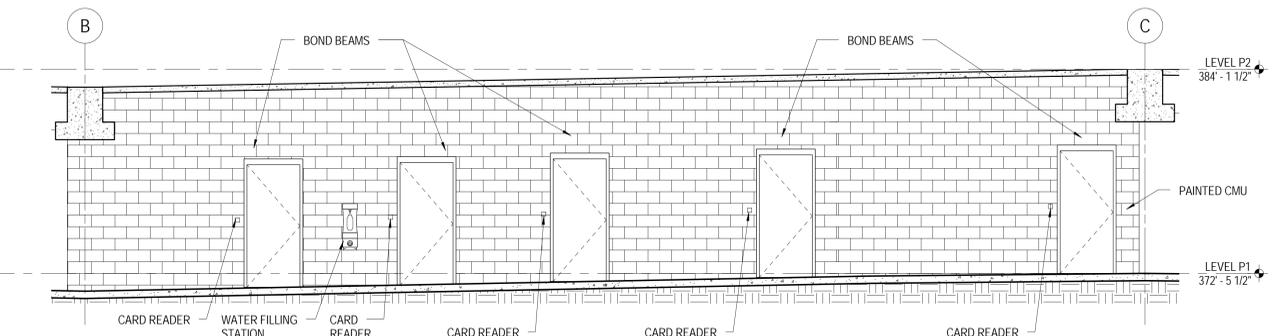
**4 LEVEL P1 SUPPORT SPACES**  
1/4" = 1'-0"



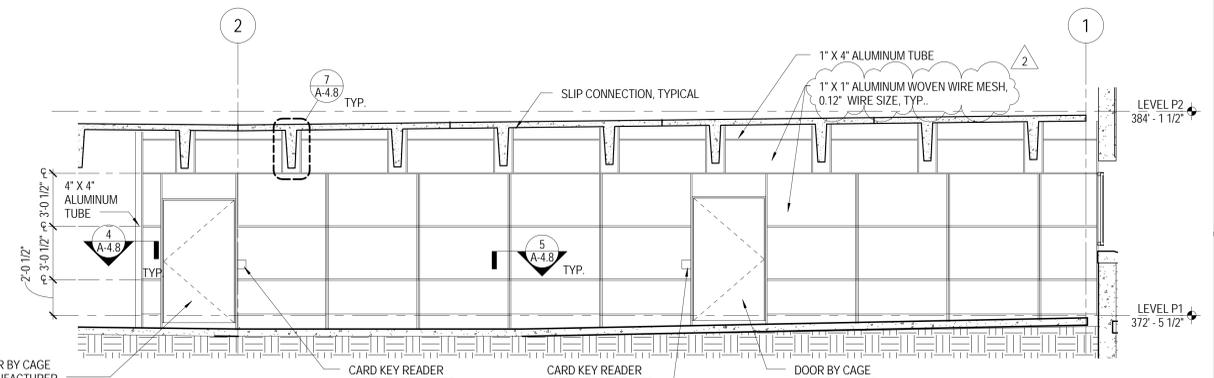
**7 ELEVATION - P1 SUPPORT SPACES - EAST**  
1/4" = 1'-0"



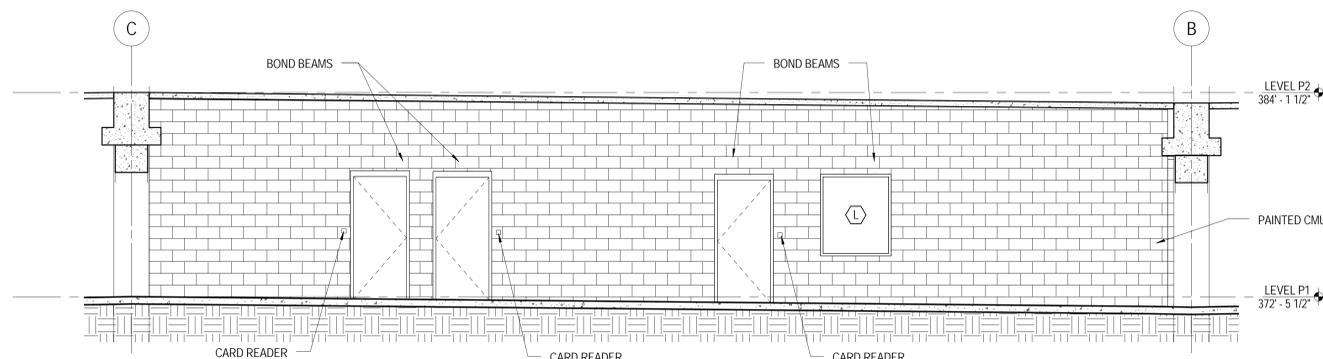
**3 ELEVATION - SECURE BIKE STORAGE**  
1/4" = 1'-0"



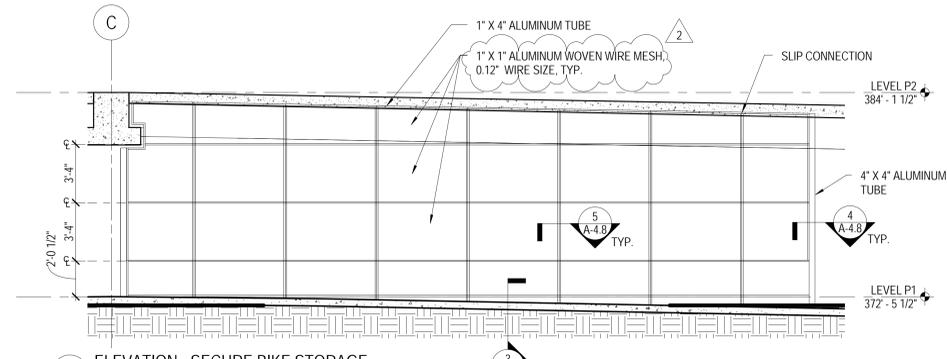
**6 LEVEL P1 SUPPORT SPACES**  
1/4" = 1'-0"  
NOTE: SEE A.2.8 FOR ACCESSORY SCHEDULE AND MOUNTING HEIGHTS.



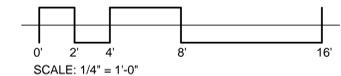
**2 ELEVATION - SECURE BIKE STORAGE**  
1/4" = 1'-0"



**5 LEVEL P1 SUPPORT SPACES**  
1/4" = 1'-0"



**1 ELEVATION - SECURE BIKE STORAGE**  
1/4" = 1'-0"





NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

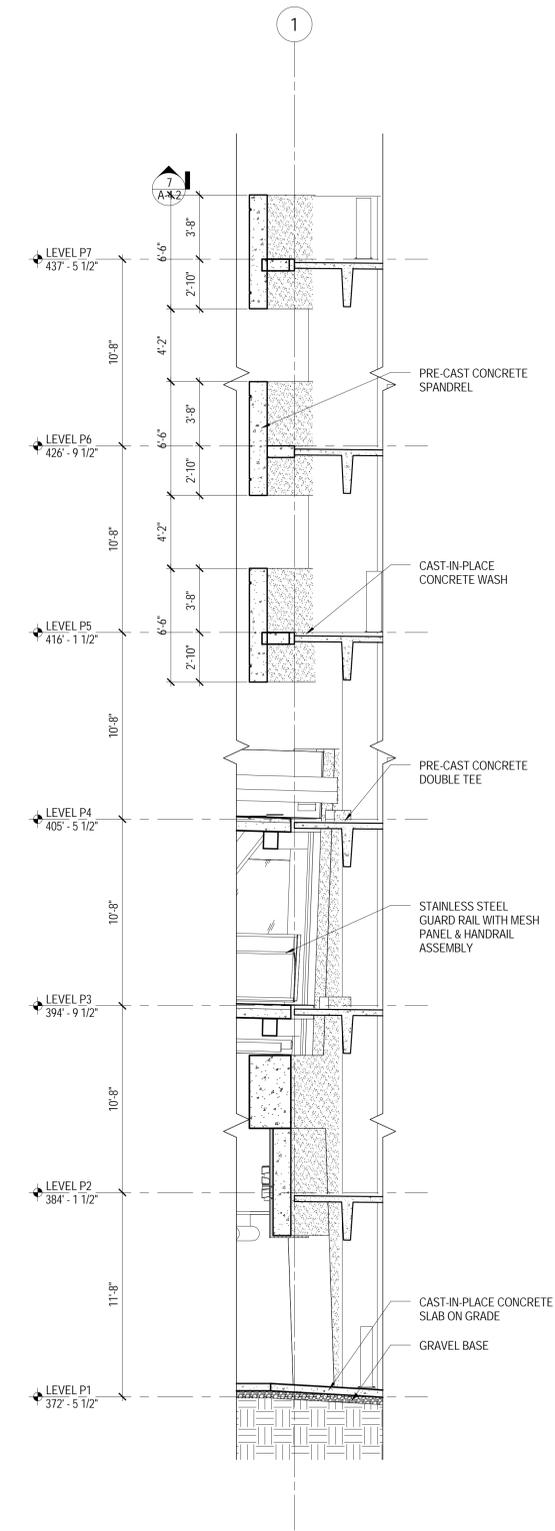
HGA NO: 3209-006-00

WALL SECTIONS

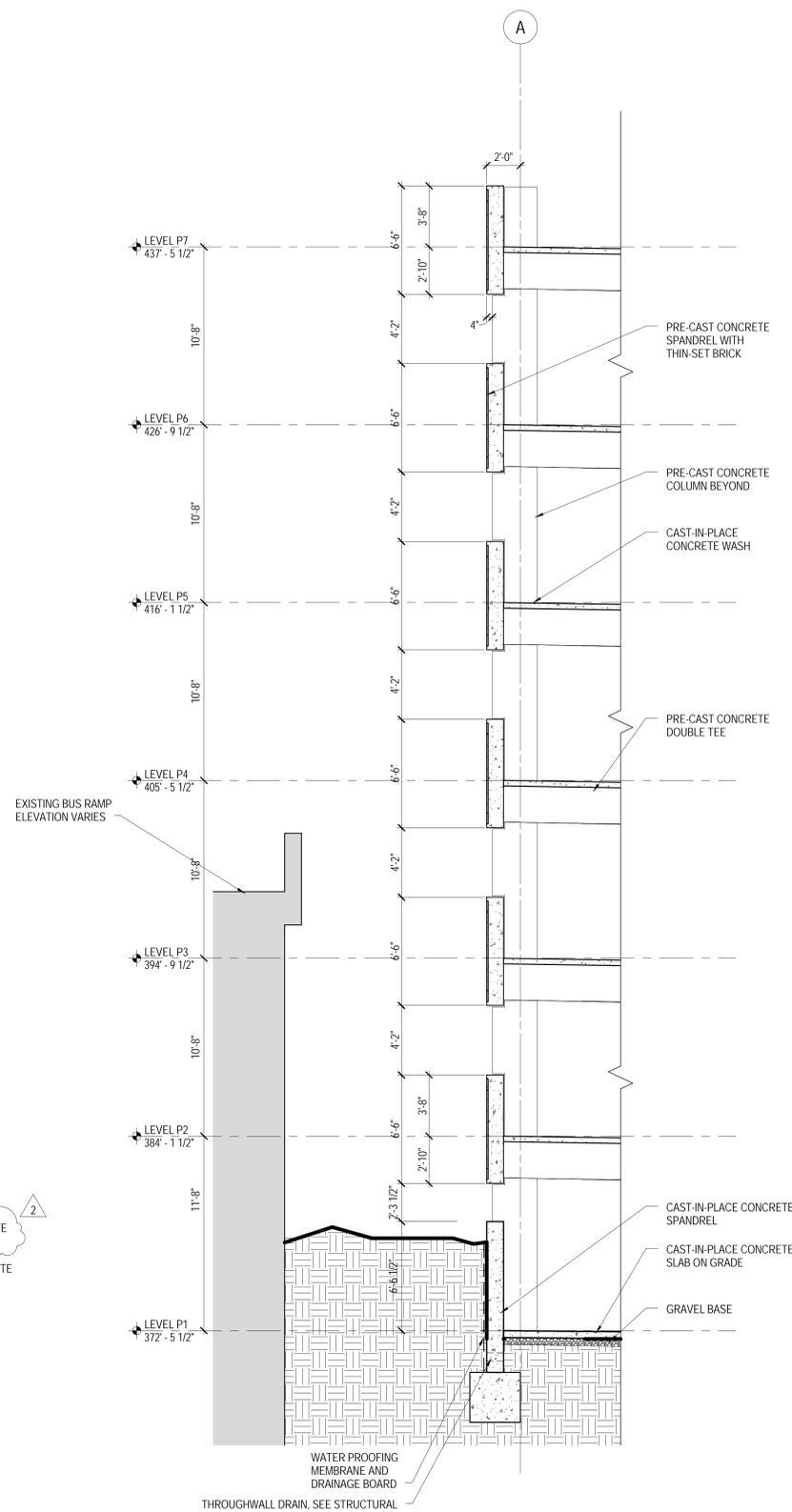
DATE: JUNE 3, 2016

BID SET

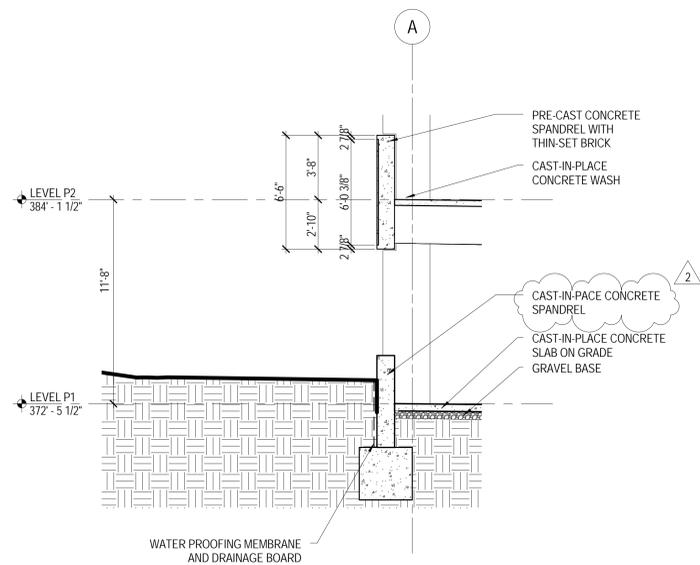
A-3.6



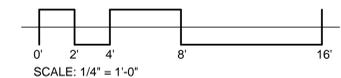
1 WALL SECTION  
1/4" = 1'-0"



2 WALL SECTION  
1/4" = 1'-0"



3 WALL SECTION  
1/4" = 1'-0"



NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

ISSUANCE HISTORY - THIS SHEET

HGA NO: 3209-006-00

**STAIR A PLANS**

DATE: JUNE 3, 2016

**BID SET**

**A-4.1**

**GENERAL NOTES**

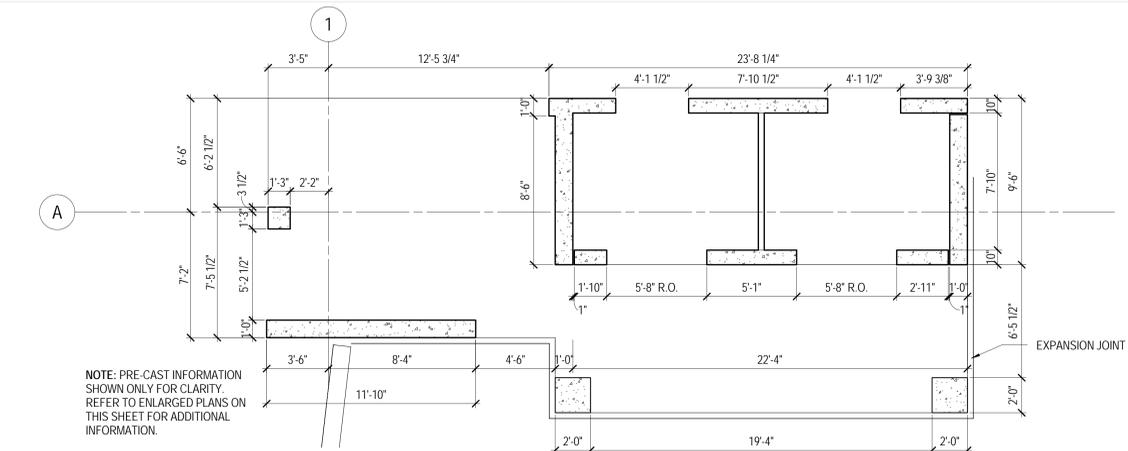
- SEE SHEET A-6.5 FOR CURTAIN WALL DETAILS.
- SEE SHEET A-6.2 FOR PARTITION TYPES.
- SEE SHEET A-6.1 FOR LOUVER TYPES.

**SYMBOL LEGEND**

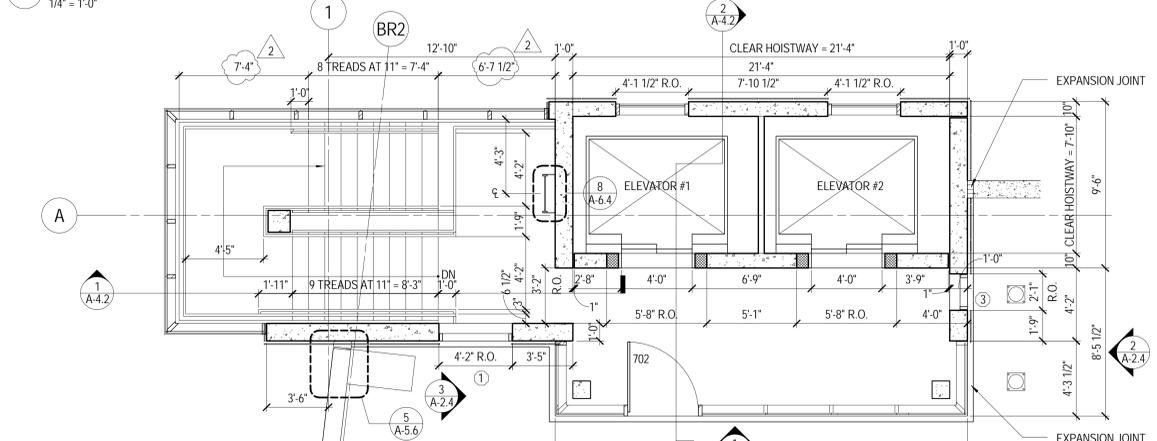
- LOUVER TYPE

BOLLARD, TYPICAL. SEE SHEET PK-1.10 FOR DETAILS.

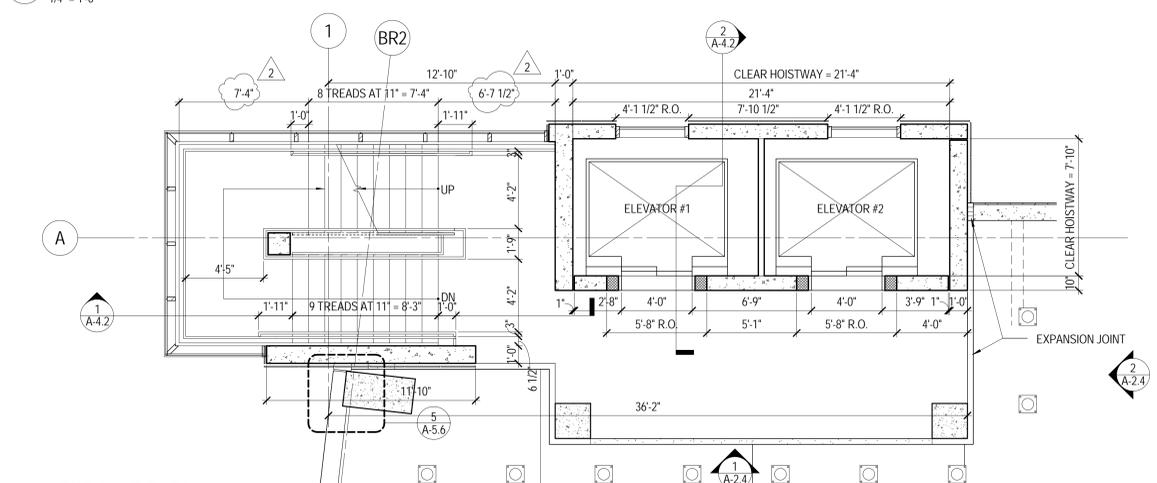
SCALE: 1/4" = 1'-0"



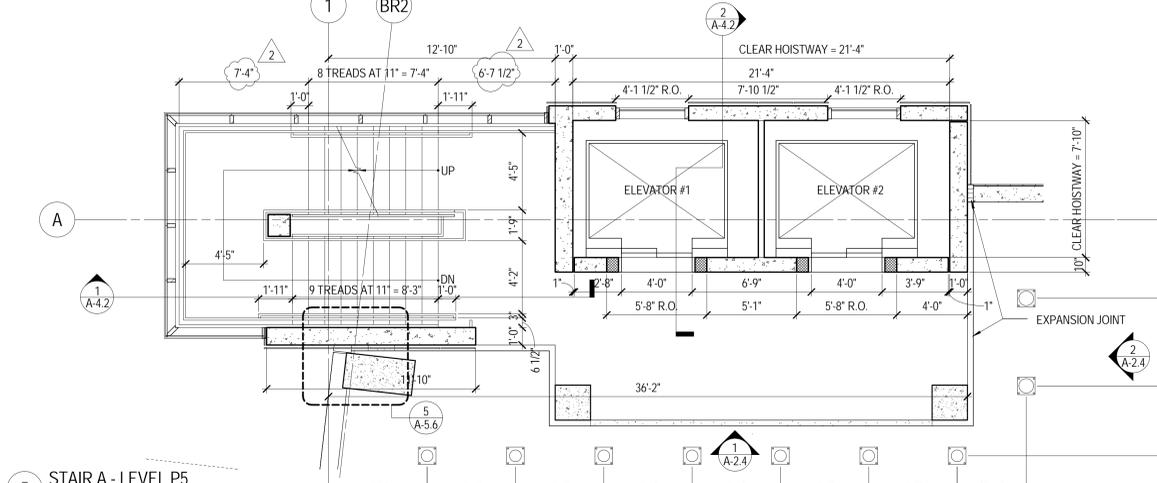
8 STAIR A - TYPICAL PRE-CAST CONCRETE LAYOUT  
1/4" = 1'-0"



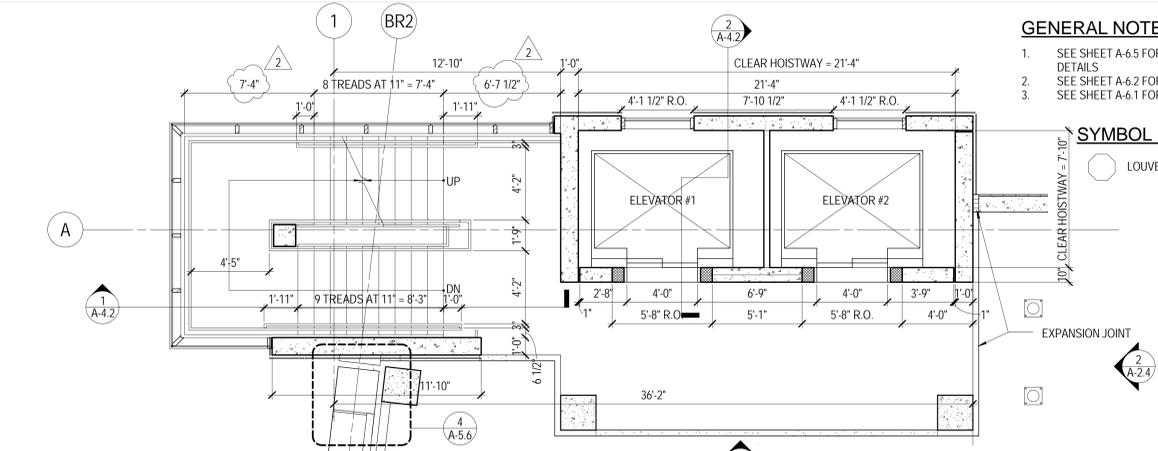
7 STAIR A - LEVEL P7  
1/4" = 1'-0"



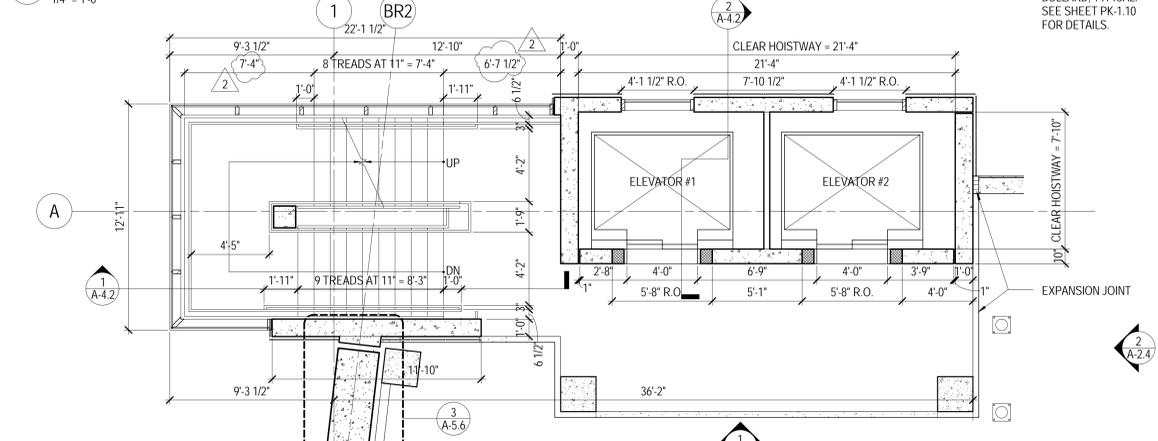
6 STAIR A - LEVEL P6  
1/4" = 1'-0"



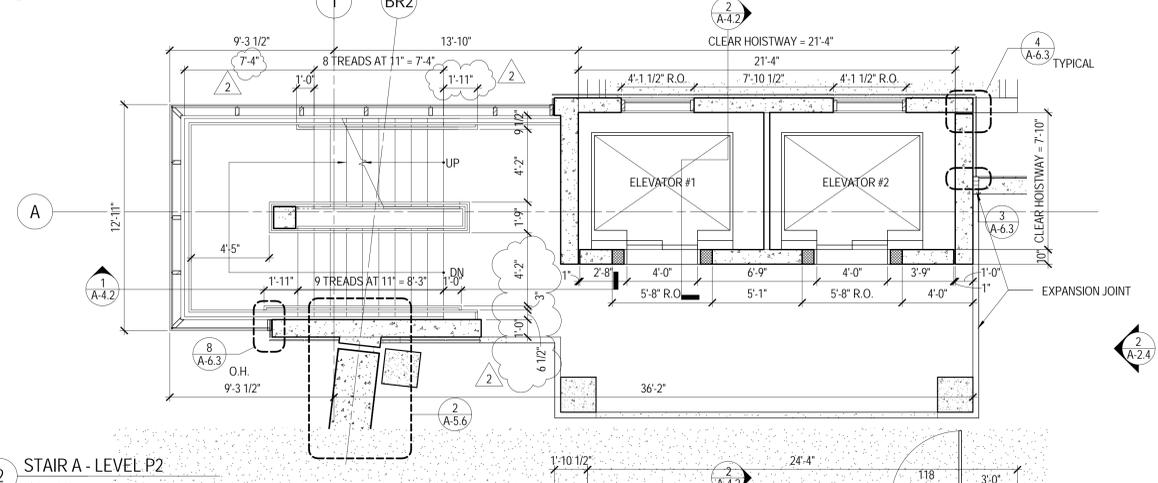
5 STAIR A - LEVEL P5  
1/4" = 1'-0"



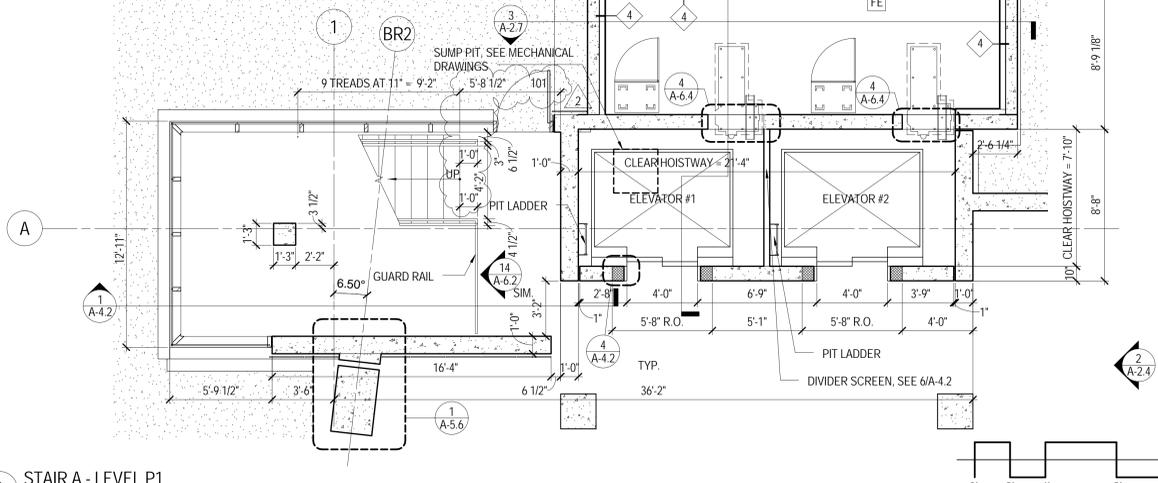
4 STAIR A - LEVEL P4  
1/4" = 1'-0"



3 STAIR A - LEVEL P3  
1/4" = 1'-0"



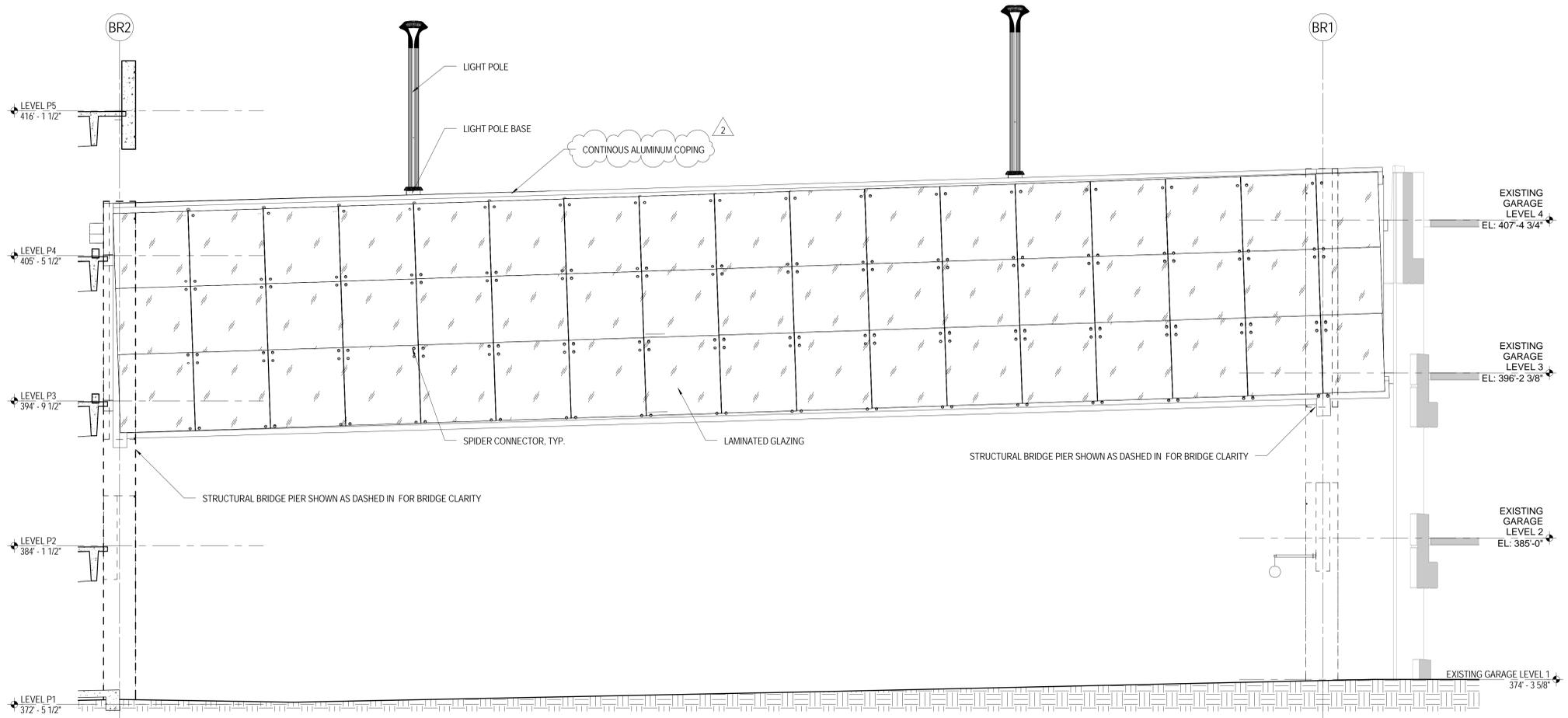
2 STAIR A - LEVEL P2  
1/4" = 1'-0"



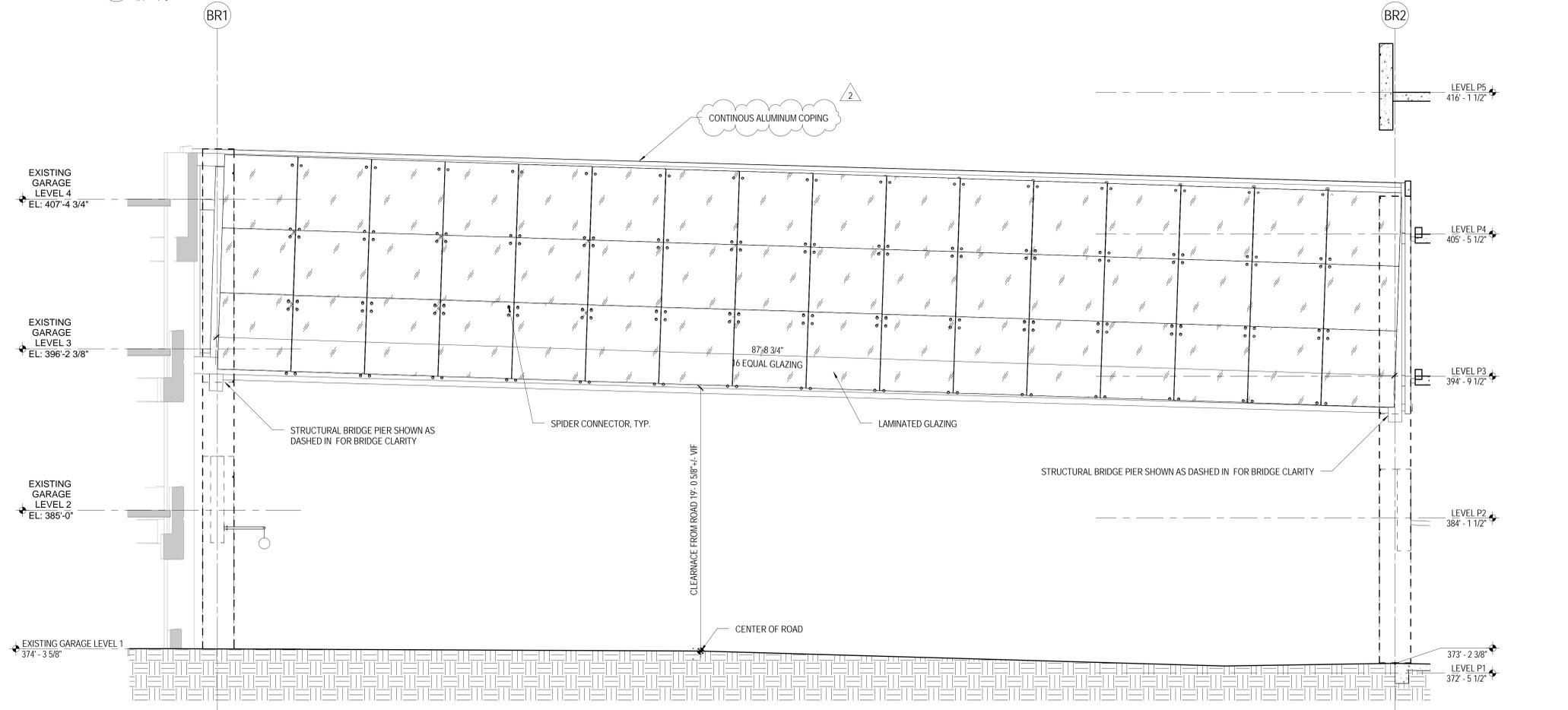
1 STAIR A - LEVEL P1  
1/4" = 1'-0"

7/26/2016 11:42:29 AM C:\Users\hgreen\Documents\Revit Local Files\A4\5-Herndon New Garage\2016\06\03.dwg (plotted) 2/27/16

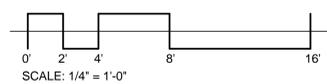




2 NORTH ELEVATION - BRIDGE  
1/4" = 1'-0"



1 SOUTH ELEVATION - BRIDGE  
1/4" = 1'-0"



NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

HGA NO: 3209-006-00

BRIDGE ELEVATIONS

DATE: JUNE 3, 2016

BID SET

**A-5.2**

7/26/2016 2:52:31 PM C:\Users\abrahamson\Documents\Revit\Local Files\A-5-Herndon\_Metro\_Garage\3209-006-00.dwg\A-5.2.rvt

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

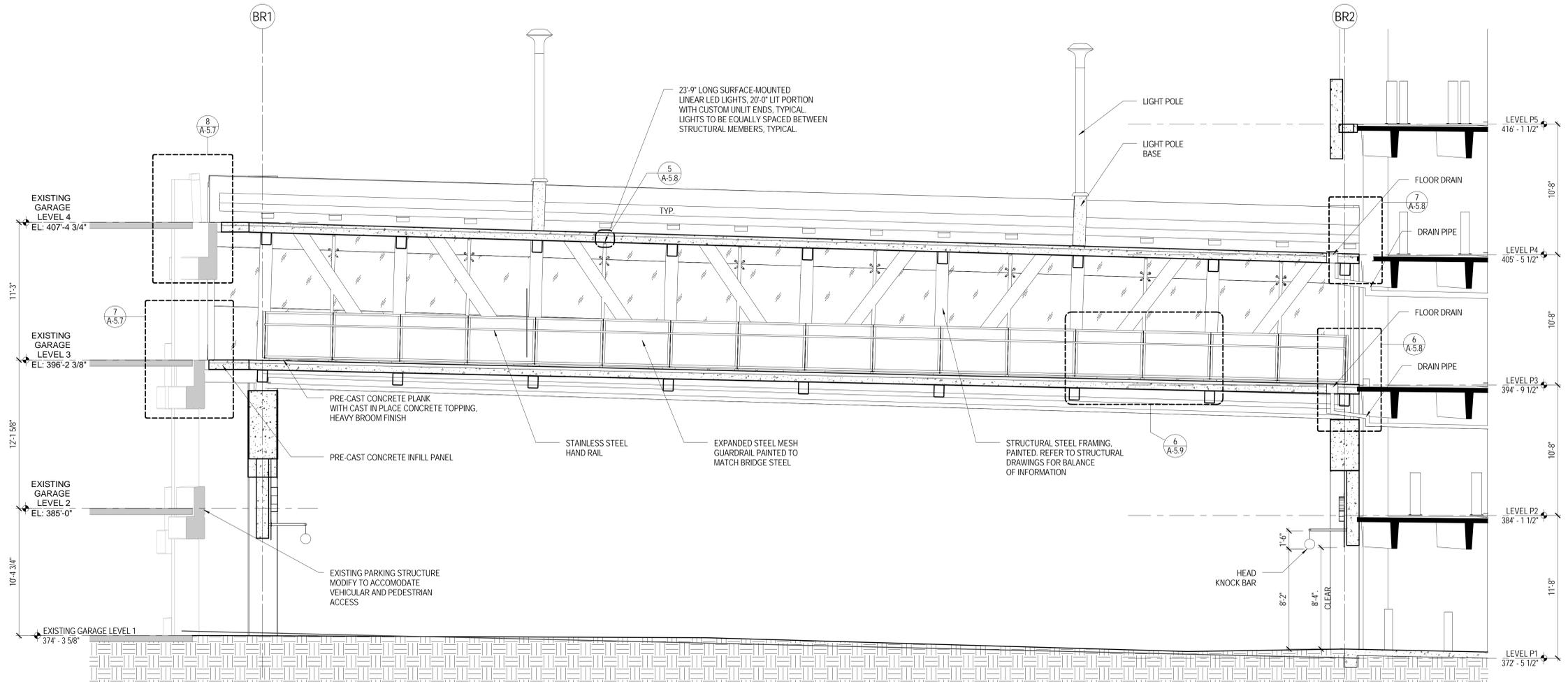
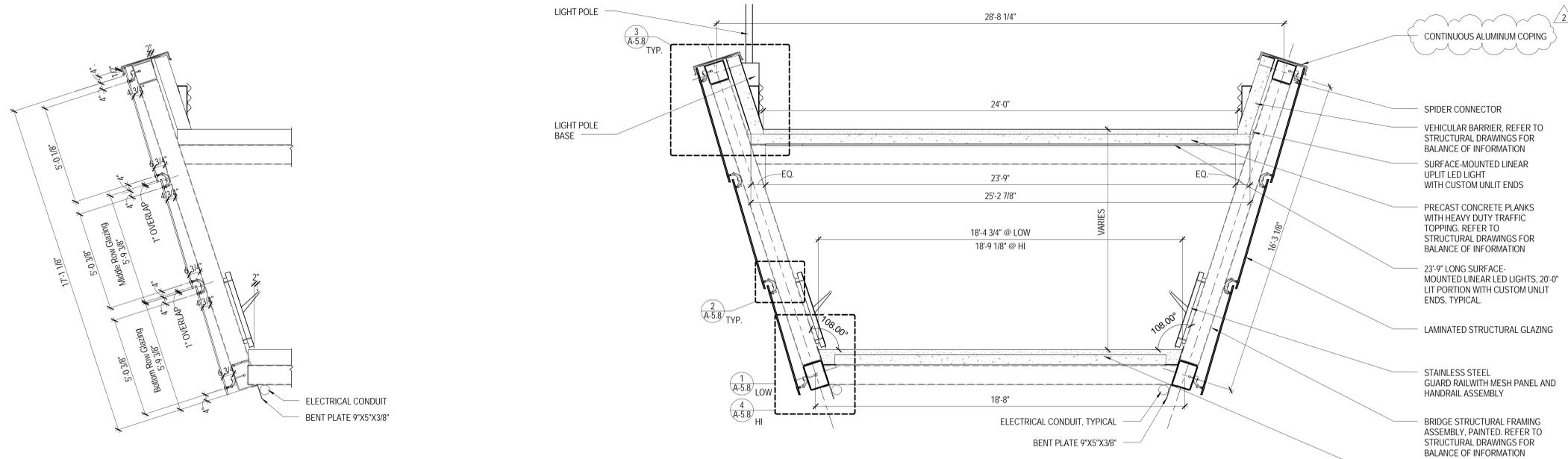
HGA NO: 3209-006-00

**BRIDGE SECTIONS**

DATE: JUNE 3, 2016

BID SET

**A-5.3**



NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

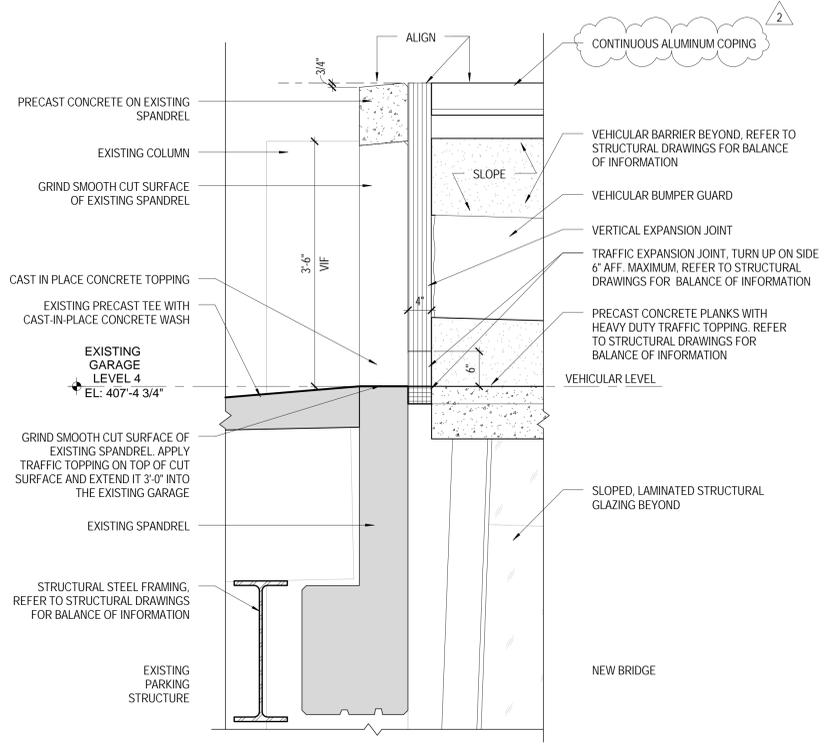
HGA NO: 3209-006-00

**EXISTING  
GARAGE -  
BRIDGE DETAILS**

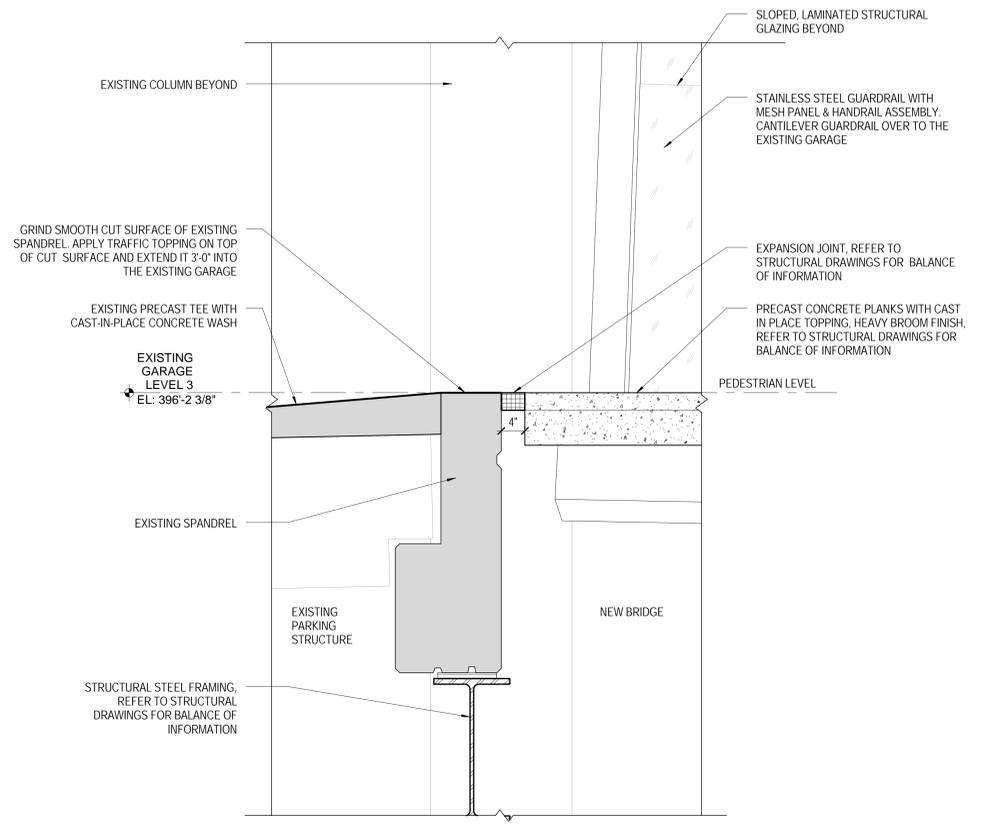
DATE: JUNE 3, 2016

BID SET

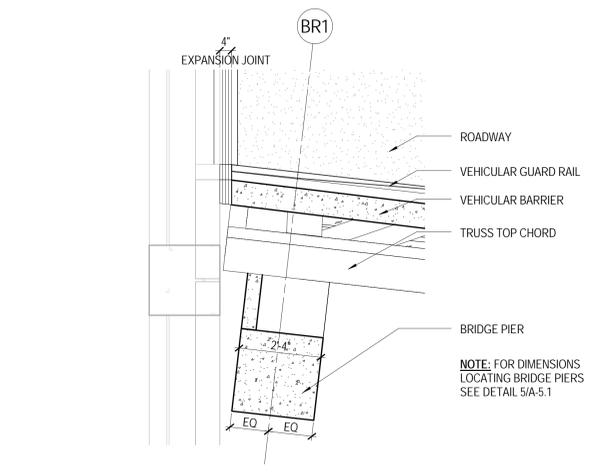
**A-5.7**



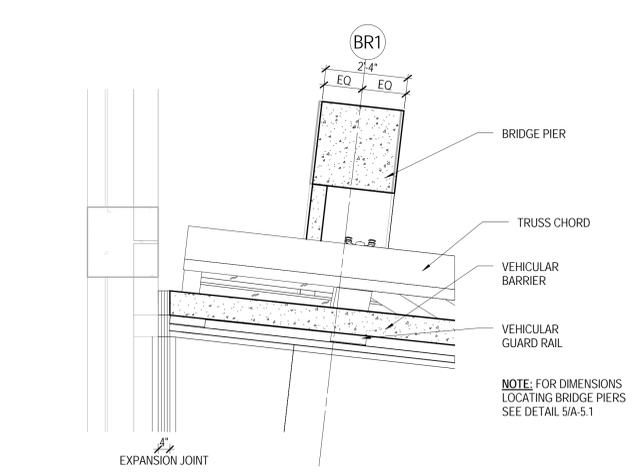
8 SECTION DETAIL - BRIDGE TO EXISTING GARAGE P4 LEVEL  
1" = 1'-0"



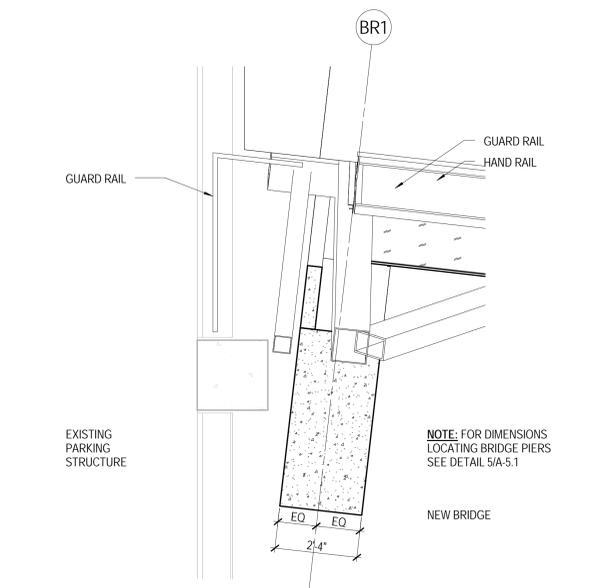
7 SECTION DETAIL - BRIDGE TO EXISTING GARAGE P3 LEVEL  
1" = 1'-0"



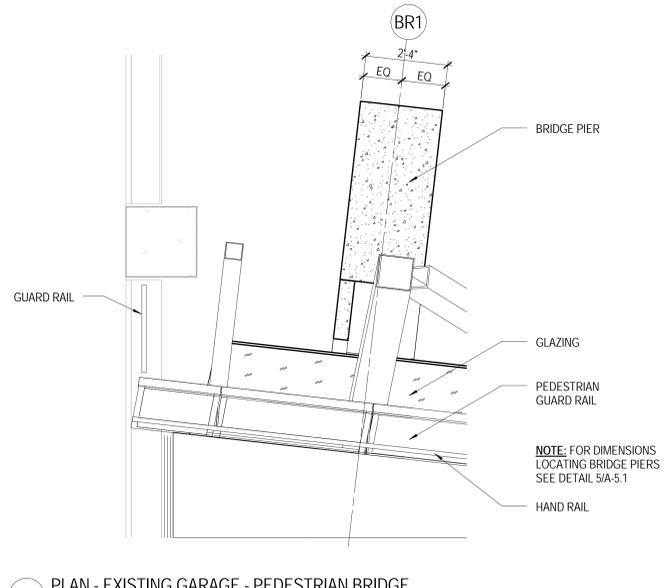
6 PLAN - EXISTING GARAGE - VEHICULAR BRIDGE  
1/2" = 1'-0"



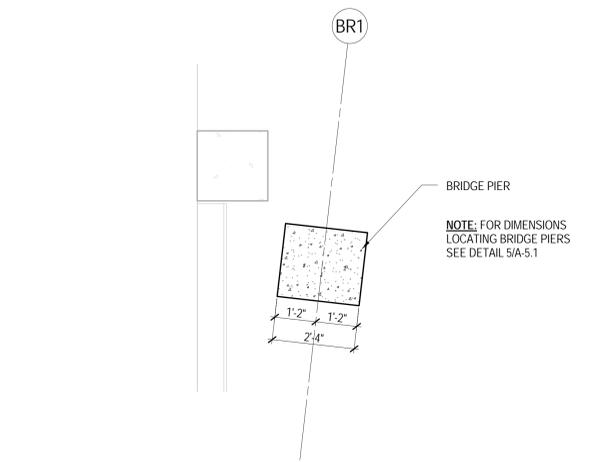
3 PLAN - EXISTING GARAGE - VEHICULAR BRIDGE  
1/2" = 1'-0"



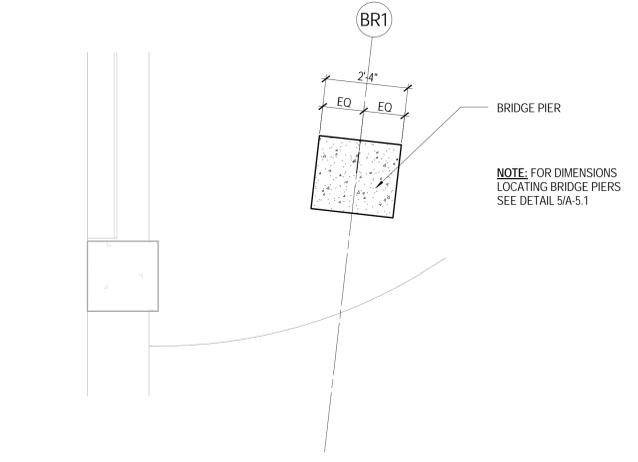
5 PLAN - EXISTING GARAGE - PEDESTRIAN BRIDGE  
1/2" = 1'-0"



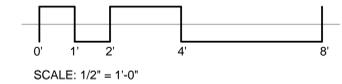
2 PLAN - EXISTING GARAGE - PEDESTRIAN BRIDGE  
1/2" = 1'-0"



4 PLAN - EXISTING GARAGE - VEHICLE ENTRY  
1/2" = 1'-0"



1 PLAN - EXISTING GARAGE - VEHICLE ENTRY  
1/2" = 1'-0"



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

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

ISSUANCE HISTORY - THIS SHEET

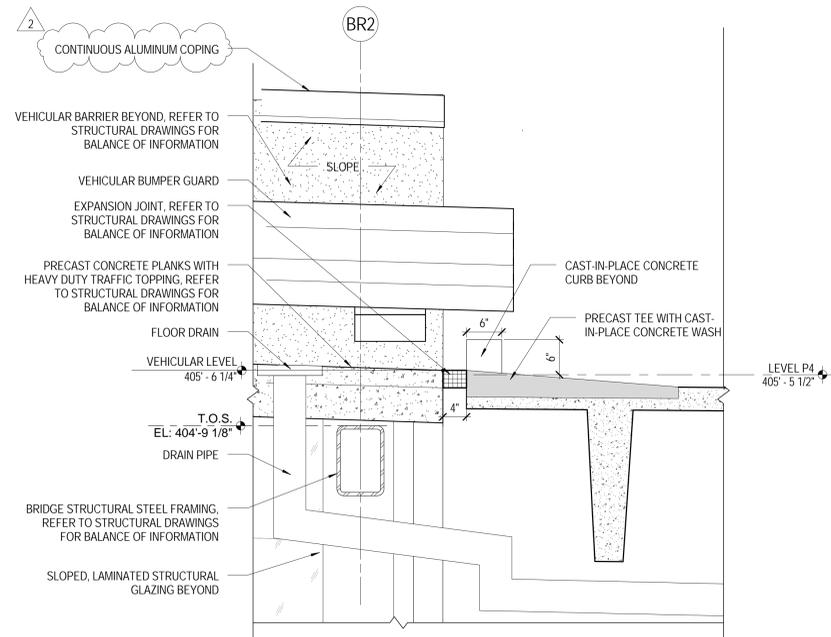
HGA NO: 3209-006-00

**BRIDGE DETAILS**

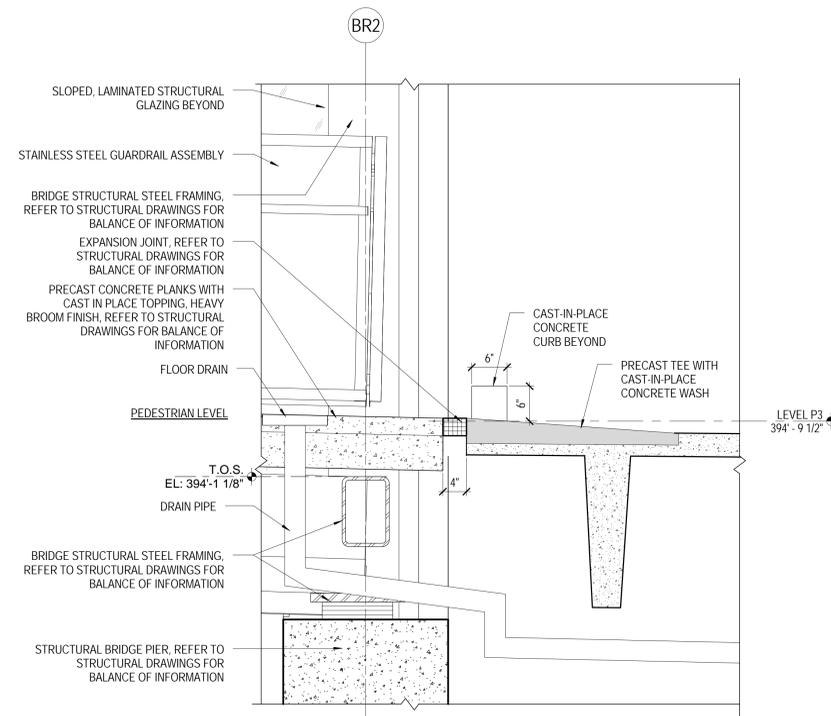
DATE: JUNE 3, 2016

BID SET

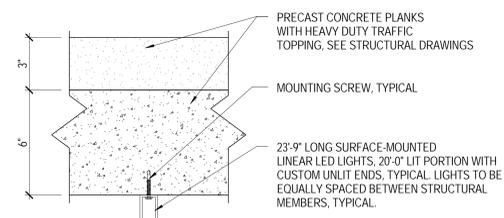
**A-5.8**



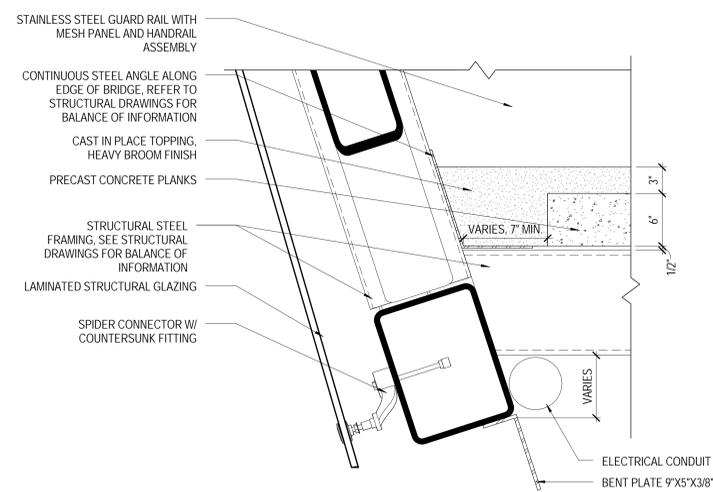
7 SECTION DETAIL - BRIDGE TO GARAGE P4 LEVEL  
1" = 1'-0"



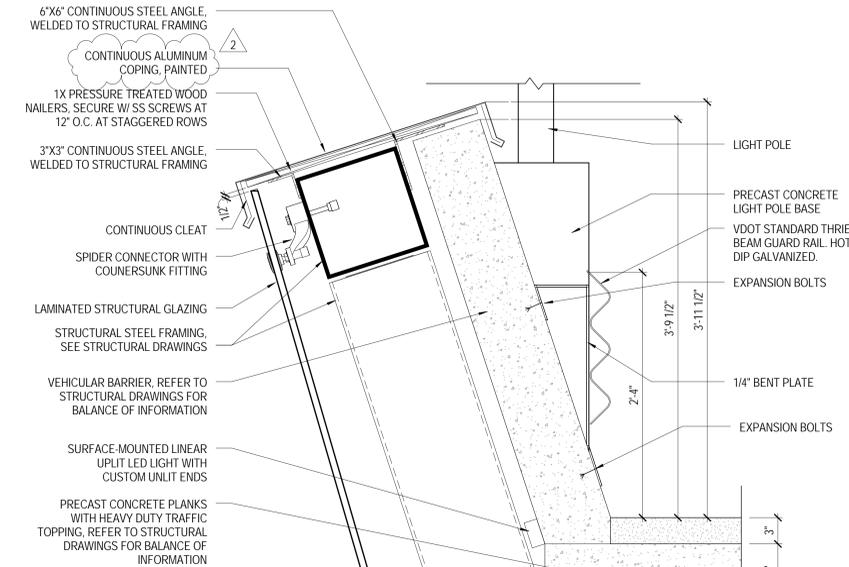
6 SECTION DETAIL - BRIDGE TO GARAGE P3 LEVEL  
1" = 1'-0"



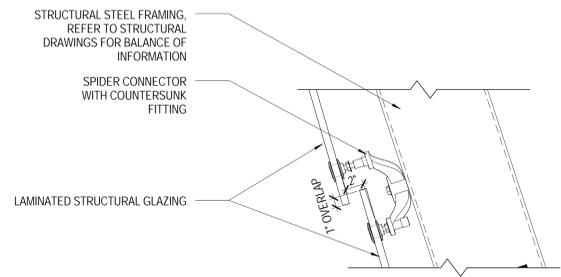
5 LED FIXTURE MOUNTING DETAIL  
3" = 1'-0"



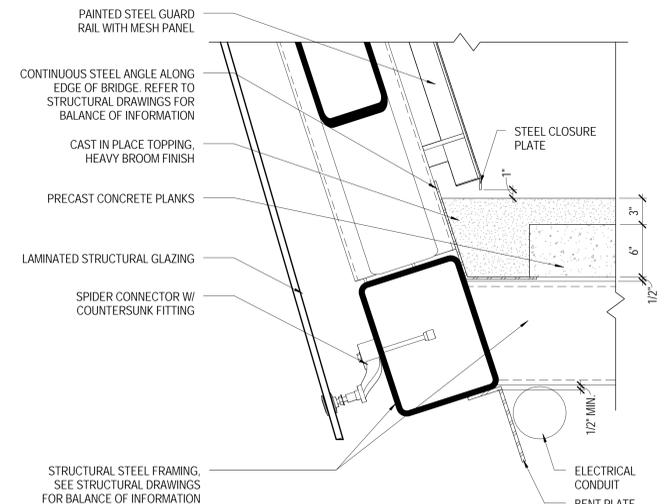
4 BRIDGE BOTTOM EDGE DETAIL - HIGH  
1 1/2" = 1'-0"



3 BRIDGE CAP DETAIL  
1 1/2" = 1'-0"



2 LAMINATED GLAZING OVERLAP DETAIL  
1 1/2" = 1'-0"



1 BRIDGE BOTTOM EDGE DETAIL - LOW  
1 1/2" = 1'-0"

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	07-25-16

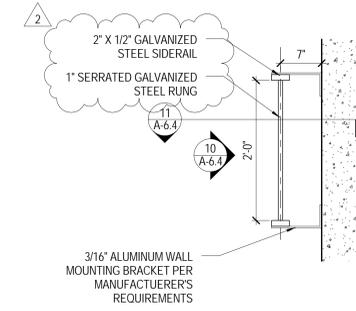
HGA NO: 3209-006-00

**ENLARGED DETAILS**

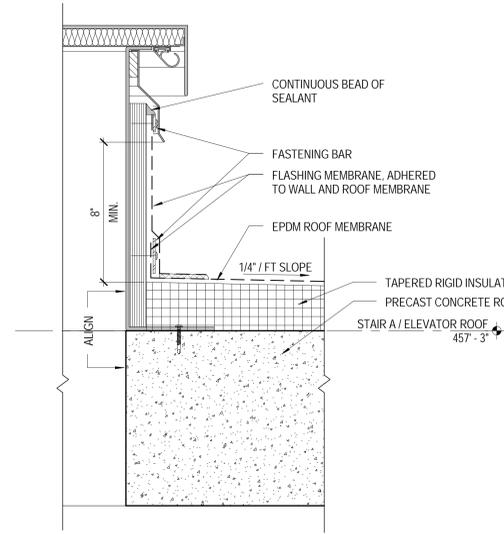
DATE: JUNE 3, 2016

BID SET

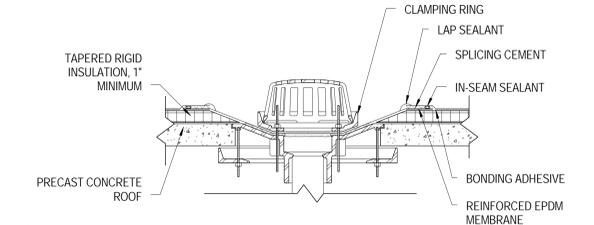
**A-6.4**



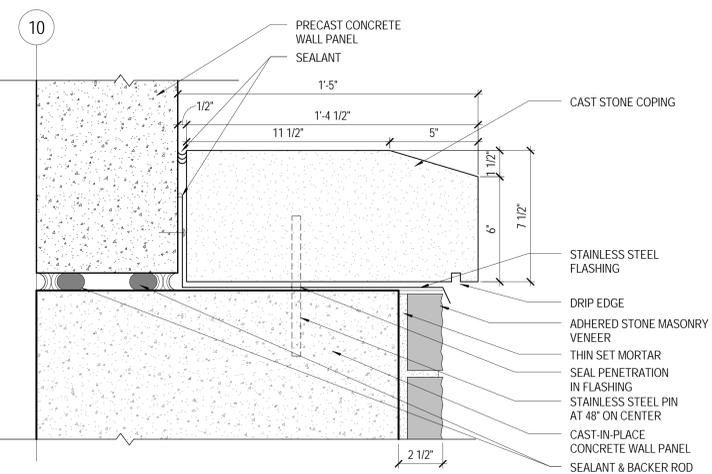
8 STAIR A - FIXED LADDER - PLAN  
1" = 1'-0"



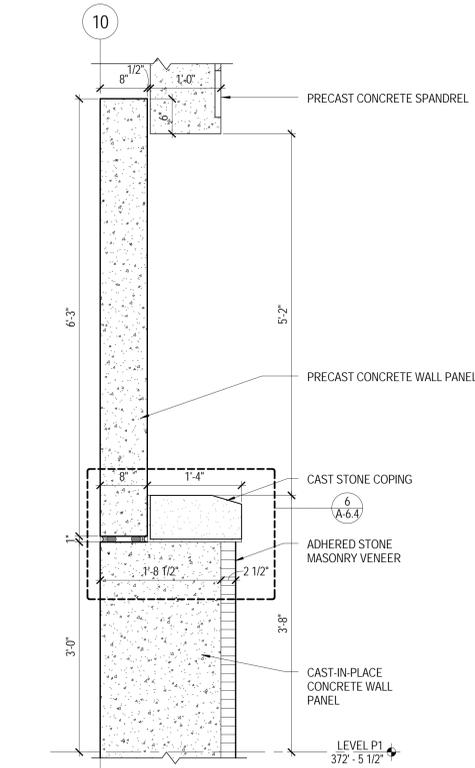
9 ROOF HATCH DETAIL  
3" = 1'-0"



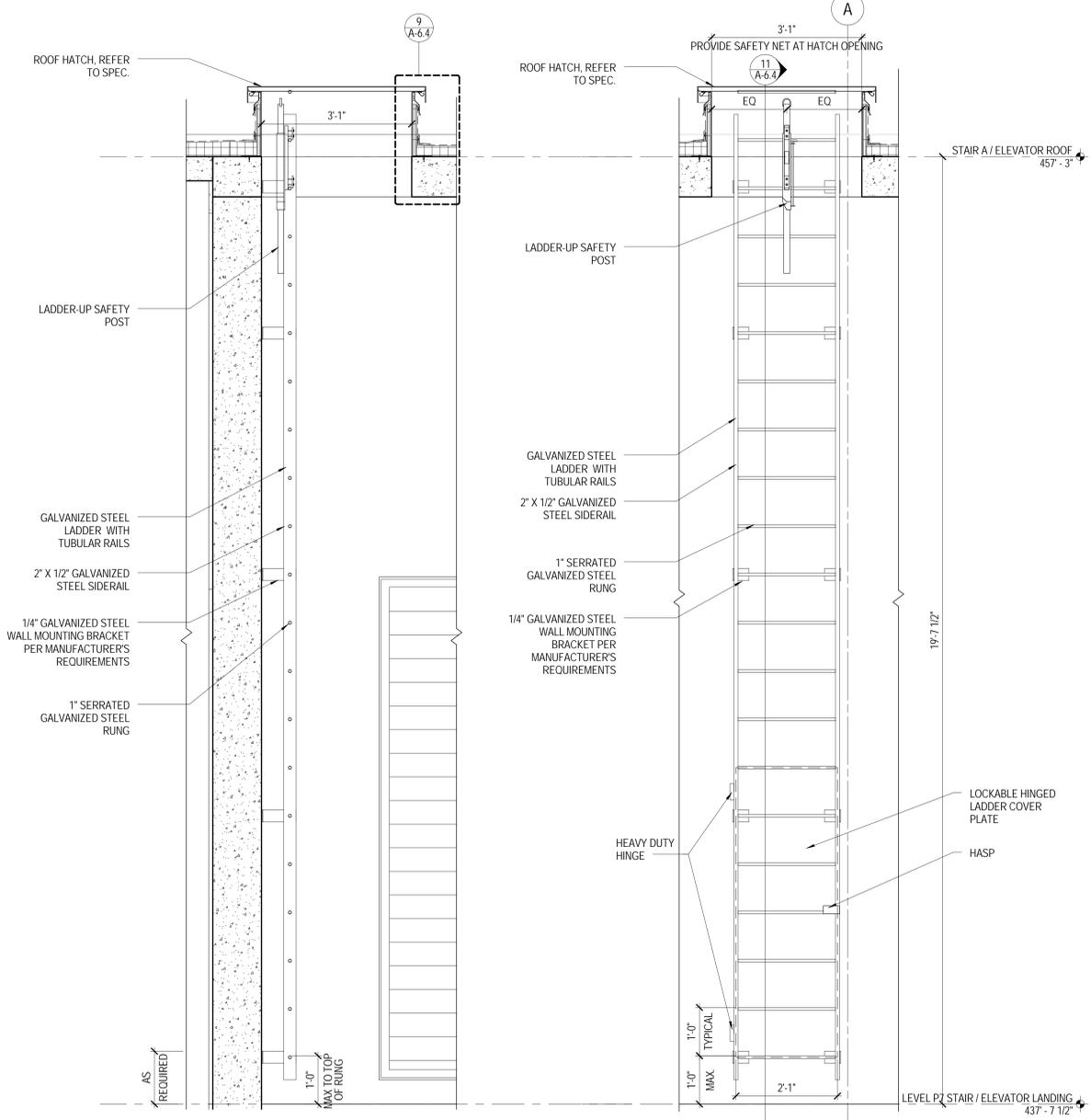
7 ROOF DRAIN DETAIL  
NTS



6 STONE CAP AT IT CLOSET WALL  
3" = 1'-0"

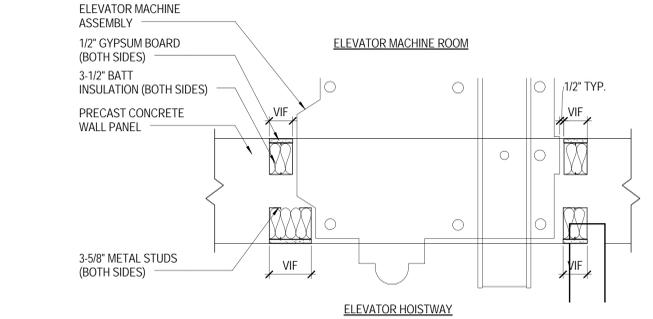


5 PRECAST CONCRETE WALL PANEL AT IT CLOSET  
1" = 1'-0"

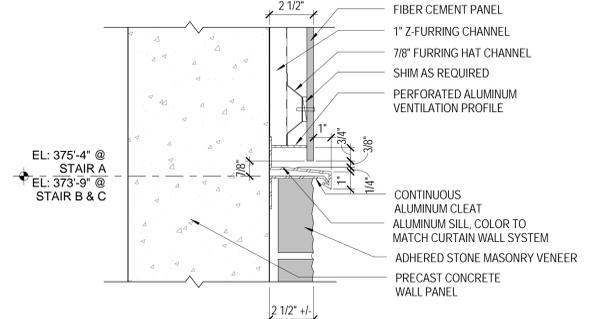


11 SECTION THROUGH ROOF HATCH  
3/4" = 1'-0"

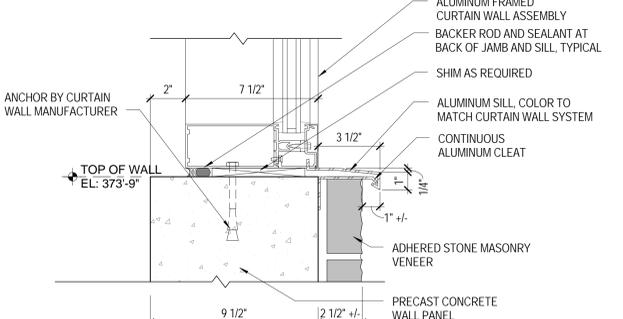
10 SECTION THROUGH ROOF HATCH  
3/4" = 1'-0"



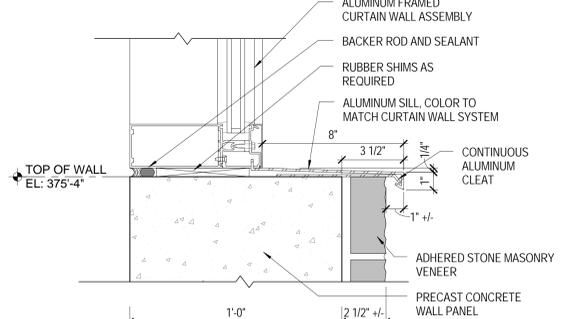
4 GYPSUM BOARD INFILL AT ELEVATOR MACHINE ROOM - PLAN  
1 1/2" = 1'-0"



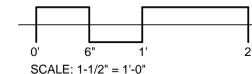
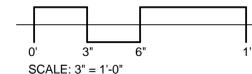
3 FIBER CEMENT PANEL / STONE VENEER SILL DETAIL  
3" = 1'-0"



2 CURTAIN WALL / STONE VENEER SILL DETAIL - STAIR B & C  
3" = 1'-0"



1 CURTAIN WALL / STONE VENEER SILL DETAIL - STAIR A  
3" = 1'-0"







Pre-Bid RFIs

1. **Question:** Specification Section 312000-3, Paragraph 1.07 indicates a Geotechnical Engineering report is available upon request, please advise if there is a report available for this project and provide access if so.

**Response:** The County has forwarded this information to the prequalified bidders on 7/11/16.
  
2. **Question** Striping & Pavement Marking:  
Is it the correct understanding that striping and pavement marking details shown on the sign location plans and elsewhere are not in the Sign Contractor's Scope ? It is usual and customary that these items are not in the Sign Contractor's Scope. This is a separate specialty. We as a Sign Contractor do not do this type of work.

**Response** All striping and pavement markings (unless specifically indicated otherwise in the contract documents) are required and shall be part of the General Contractor scope of work. The General Contractor shall determine the division of scope between his sub-contractors.
  
3. **Question** Traffic Regulatory Signs/on Sheet 12A:  
These Signs are to be post-mounted on the exterior grounds of the building. Whose scope of work do you want these signs to be in?

**Response** All signage (unless specifically indicated otherwise in the contract documents) are required and shall be part of the General Contractors scope of work. The General Contractor shall determine the division of scope between his sub-contractors.
  
4. **Question** Please confirm the wall footings for the project noted in the schedule on S-1.00 can be earth formed as we are not finding a requirement that they have to be formed.

**Response** Earth forming the wall footers to the required dimensions is permissible as long as it is done accurately and does not contaminate the CIP foundation concrete.
  
5. **Question** Please confirm the grade beams for the project noted in the schedule on S-1.00 can be earth formed as we are not finding a requirement that they have to be formed.

**Response** Earth forming the grade beams to the required dimensions is not permissible.
  
6. **Question** Dwg. E-1.7 indicates 8 locations with 2each type F2 fixtures. Please confirm there are 8 poles with two fixtures for each pole.

**Response** Confirmed, there are 8 light poles with two F2 light fixtures on each pole.
  
7. **Question** Existing Garage – Is not located on the E-series drawings. There are 2 new panels and 4 new light fixtures to be installed. We cannot find these items on the floor plans other than the details on Dwg. E-4.05.

**Response** The floor plans on E-4.05 include the existing column grids that reference the rooms location back to the PK-2.01 Existing Garage Floor Plan.

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8. **Question** Electric Heat - Dwg E-0.1 indicates Electric Heaters are in the Mechanical Equipment Schedules. Spec. Sect. 260500 1.4.F. states EC to provide a submittal for electric heaters. Who provides the electrical heaters?
- Response** For the electric heaters, the General Contractor shall determine the division of scope for the sub-contractors.
9. **Question** Dwg. E-1.1 Sheet Note 19 and EV Parking Spaces/Panel Schedule CC. Sheet Note 19 states we are to provide provisions for 9 (nine) Future EV Charging Stations. Panel Schedule CC on Dwg E-6.4 indicates there are 20ea 40A circuits for 'car chargers.' Where are these charging stations located? Where are we to run the additional 11 'car charging' circuits?
- Response** E-1.1 has the (9) EV Stations that apply only to Level P1; while E-1.3 has the other (11) EV STATIONS FOR LEVEL P3. REFER TO STRIPING PLANS PK-1.1 and PK-1.3 FOR EV CHARGING LOCATIONS.
10. **Question** Are we to capture the secondary conductors from MDP to CT cabinet and then from CT cabinet to Utility Transformer?
- Response** Yes.
11. **Question** In Spec Section 260923-2, it is calling out to have extra material for a "pilot light." What are they referring to? 1 extra for every 1 installed?
- Response** No, one for every 10.
12. **Question** 3. Drawing E-4.02 shows a Panel M, where is panel M located or footage to carry for ckts?
- Response** In existing electrical room (see Response 9 for existing electrical room location).
13. **Question** Please confirm the location of panel "MECH" and the associated transformer "TR-3"
- Response** Install in new garage, Room 109.
14. **Question** Please provide a specification for water distribution as shown on northwest corner of Civil Drawing 13A of 61.
- Response** Spec 221113 "Facility Water Distribution Piping" is included in the Bid Set
15. **Question** Please provide a specification for sanitary utilities as shown on northwest corner of Civil Drawing 13A of 61.
- Response** Spec 221313 "Facility Sanitary Sewers" is included in the Bid Set

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16. **Question** Please clarify if exposed piping will need to be color coded or if banding will be acceptable.
- Response** Banding is acceptable, except all standpipe assemblies that shall be painted red.
17. **Question** Can you provide a spec for the emergency phones shown in the stairwells?
- Response** The emergency phones were removed per Addendum 1.
18. **Question** Structural Drawings S-1.00 and 3/S-5.01: Drawing S-1.00 indicates the “approximate drilled pier length (for bidding purposes only),” please confirm the given lengths on S-1.00 is as noted from 3/S-5.01 “Length of Pier” where the top of the pier starts approximately 4 inches from the bottom of the footing/grade beam. We ask this question because the pier drillers will most likely be starting from the building pad subgrade, which will actually be above the top of the pier and the top of the footing grade beam. Please advise.
- Response** Correct; see 3/S-5.01 which defines the drilled pier length for bidding purposes only.
19. **Question** Specification Section 034100 and A-7.1 note the types of thin brick; however, some of them differ from the specification to the drawing. Please advise which one to use for bidding purposes.
- Response** A-7.1 is correct for bidding purposes.
20. **Question** AS-1.1 notes to wash down “all floor surfaces and soffits” for the entire garage footprint. Please clarify the term “soffits,” is this referring to the underside of all the double T’s? Please advise.
- Response** Correct, the soffit is the overhead portion of the level above.
21. **Question** Please confirm if termite control is required on the project
- Response** Termite control is not required for project.
22. **Question** Note 8 on S-1.10 says that a 1” wash should be installed at all columns. Can this wash be poured as part of the slab on grade?
- Response** An integral, monolithic wash at the SOG is what is called for on the plan.
23. **Question** Page E-10, Item 9 says Elkay no substitutions; however, Page B-21 220500 does not indicate this is sole source. Please clarify.
- Response** E-10 is correct, no substitutions.

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24. **Question** Civil Drawing 54 of 61 bottom right detail along with VDOT Note 4 on civil drawing 2 of 61 say that not open cutting is allowed and all utilities must be bored or jacked; however, Standard Fairfax County Construction Note 14 on Civil Drawing 3 of 61 indicates that utility crossings of pavement shall be open cut and patched per VDOT standards. Please confirm open cut and patching is allowed.
- Response** The VDOT notes on Sheet 2 are standard VDOT notes. Utilities may be open cut, provided that an open cut permit is approved by VDOT.
25. **Question** Structural Drawing Sheet S-1.00, Note #17 states that Datum El. 0'-0" = 369'-5 1/2", then on Sheet S-4.10 another Datum of 0'-0" = 372'-5 1/2" is given. Are we to use both of these datums or is one elevation incorrect?
- Response** Both are correct. 369'-5 1/2" is datum for foundation plan and 372'-5 1/2" is datum for ground tier plan.
26. **Question** On Structural Drawing Sheet S-5.10 in the "Drilled Pier Schedule" most of the caisson reinforcing is shown to extend full length of concrete shaft. If caissons during drilling production go deeper than plan, will the cage reinforcing have to be lengthened?
- Response** YES
27. **Question** Structural Drawing S-4.50, Note #1 states that the Bridge Caissons require "Permanent Casings." Please detail the type, the length, and the wall thickness of the permanent casing required at these caisson locations
- Response** Provide same casing as temporary casings. Refer to Spec 316324.
28. **Question** Please clarify the distance from center of caisson to face of existing garage for the two caissons shown in Detail 4 on Sheet S-4.50 for the bridge caissons.
- Response** Dimensions are shown off of the existing Garage Column Grid on 4/S-4.50. All dimensions shall be verified in field per detail.
29. **Question** There are 7-DP3 (36" dia.) caissons shown on the Foundation Drawing S-1.00, but the caisson reinforcing schedule shown on Sheet S-5.01 does not detail a cage for a DP3 size caisson shaft. Please provide cage detail for a DP3 size caisson.
- Response** Bid DP3.5 for these.
30. **Question** Is the required 1 caisson diameter socket included in the given lengths of caisson provided at each on the structural foundation drawing, or do we have to add the proposed socket length to the given shaft length to cover the total concrete volume required?
- Response** Yes, it is included.

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31. **Question** Without a boring at every caisson location, please clarify Note 2 on S501 regarding sockets below boring rig auger refusal
- Response** Refer to Note II.E.2 on S-0.20
32. **Question** Please provide the wage scale to be included.
- Response** There are no wage scales. This is a County funded project.
33. **Question** Will alternate phasing plans be acceptable so long as work by others are incorporated per specified phasing plans?
- Response** Alternate phasing will be considered and may be approved as long as it meets the schedule and operational requirements of the project and the site. Refer to Specification Section 011400.
34. **Question** Will all funds be made accessible as needed? If not, has the owner prepared a cash flow diagram?
- Response** All funds will be available as needed.
35. **Question** Per Specifications Section 071900 1.2B indicates the four (4) locations for the water repellent to be applied. Per Sheet A-6.2 on the finish schedule on indicates the floor sealer to be applied only at the Equipment, Mechanical, and Electrical Closets. Assuming Contractor to follow the specifications, the scope of work would follow to include floor sealer at all stair treads and landings, entire P1 Floor and raised islands. Please clarify with scope is to be taken into consideration, as indicated by specifications or finish schedule?
- Response** The specification is to be followed, but that will include the areas noted on A-6.2. The list included in this RFI question is not complete – see the specification for all locations where sealer is required.
36. **Question** Please clarify the scope of work of the traffic coating, it is unclear as what is being mentioned per Keynote 1 on Sheet S-1.20? Is contractor to consider the traffic coating on cast-in place wash areas per each level or the entire deck per each level?
- Response** No. Refer to the plan locations noted with Keynote #1 on the plans with associated hatch (typical all sheets).
37. **Question** On Page 3 of the specs under "i" it states that sign contractor is responsible for design and installation of necessary electrical service from panel boards to signs. Is that correct or will the Electrical Contractor install cable and make the final connection to the sign?
- Response** General Contractor shall coordinate the allocation of work between the various trades.

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38. **Question** On the Sign Schedules all of the overhead Directional Signs have the Sign Mount Detail as being 3/PK-3.20, which is a cantilever steel frame mount. Is that correct or may Detail 2 be used where possible?
- Response** No. Provide mounts per the schedule as shown.
39. **Question** Is the signage on Sheet A-6.8 part of this bid even though it is not listed on in PK 3.00 or 3.01?
- Response** Yes, all signage in the architectural drawings, including A6.8 is in the General Contractors scope of work.
40. **Question** Please verify that Traffic Controller, Changeable Message, and Dynamic Message Signs are not part of Signage even though they are listed in the specs and shown on Detail 14 PK-3.10 and mounting detail 7 PK-3.20. Details of the Space availability show-up under the PARCS Details PK-5.00 thru 5.11. The mounting frame for this is shown on PK-320 Detail 8. Detail 7 on that page has the mounting frame for Traffic Controller Sign.
- Response** All of these signs and the associated components for a complete assembly (unless specifically indicated otherwise in the contract documents) are required and shall be part of the General Contractors scope of work. The General Contractor shall determine the division of scope between his sub-contractors.
41. **Question** Will the entire Herndon Monroe Garage be shut down entirely once the new deck is complete? If not, how many phases will there be?
- Response** The existing garage shut down will only be allowed in the last phase and only to allow for remediation work in the existing garage. Note that the pedestrian passage way on Level 3 of the existing garage must remain open during metro hours in order to provide pedestrian access to the metro walkway.
42. **Question** Specification Section 051213 Architecturally Exposed Structural Steel Framing – please confirm it is the intent to have the Bridge AESS as several subcontractors have indicated this requirement will add significant cost due to AESS tolerances and they typically would not see this requirement on a structure such as this bridge. One descent AISC subcontractor withdrew from bidding due to this requirement for the bridge.
- Response** Given the high pedestrian usage at close proximity to the exposed steel, the AESS bridge steel is required.
43. **Question** The specifications note LEED in a few locations such as LEED submittals for structural steel and a LEED representative in 013100. Please confirm this is not a LEED project and no LEED requirements apply.
- Response** Confirmed, this project does not have LEED requirements.

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44. **Question** Does the garage exit pavement require UD-4 under curb?
- Response** No UD-4 required under garage exit pavement.
45. **Question** Does the new curb along bus loop require UD-4? Under curb?
- Response** New curb along bus loop does not require UD-4.
46. **Question** We have seen a Creston System denoted for controlling the lights on the new bridge. We have not located on the drawings or specifications lighting controls related to the new parking deck or site lighting. Please advise the requirements for lighting controls for the new parking deck and site
- Response** See Sheet E-6.3 for garage lighting control. The light fixtures use motion sensors and daylight sensors.
47. **Question** I would like to ask that iZone Imaging be approved as an acceptable alternate material for all signage that is currently specified under Vandal-Resistant Signs (VR-Signs). Pannier and Lexan are currently listed on 101400 - 11. Please consider this request for the following reasons:
- Like Pannier we have an IDIQ with the National Park Service and are considered as an approved material for projects that require a durable graphic surface for signage.
  - iZone Imaging has a 10-year warranty against fading, peeling, and is graffiti resistant.
  - CHPL is a solid plastic material with a digitally printed subsurface image that does not have a glue line.
  - We manufacture iZone Imaging's CHPL by layering a digital print and melamine overlays, with a core of phenolic resin-impregnated kraft paper and a balanced backer sheet. The assembly is then pressed at high heat and pressure for an extended period of time. While still under pressure it is allowed to cool. As the melamine resin flows, it permeates the digital print and all the materials are consolidated into a single panel of thermoset plastic.
- Response** Per 101400 2.2 I, 1. b, "Laminated Or Encapsulated products will not be acceptable." The proposed product appears to not meet these criteria and, therefore, is not acceptable.
48. **Question** Spec Section 089600 – Point Supported Laminated Glass Systems is calling out the PVB inner layer to be a min of .060” with two (2) pieces of tempered glass and flat polished edges. Is the PVB inner layer to be clear and translucent?
- Response** Yes, inner layer to be clear and translucent.

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49. **Question** "Hose Testing" is called out in Structural Sealant Glazed Curtain Walls, Section 084423, is this to be done in the same area as the Glazed Aluminum Curtain Wall "hose testing"?
- Response** Yes, the same area.
50. **Question** The garage structure's earthquake design category is designated as Category 'A' on Drawing S-0.20. Note #11 on M-0.1 states to "provide earthquake bracing and supports as required by NFPA." Please confirm that no seismic bracing is required with a Category 'A' designation.
- Response** Confirmed, seismic bracing is not required.
51. **Question** Please confirm that a wet sprinkler system is not required in the core office area.
- Response** Confirmed, wet sprinkler system is not required.
52. **Question** Please confirm how many new booths are required and where they are located . we have not located same on the architectural plans
- Response** The new booth quantity and plan locations for both the existing and new garages are readily found on the PK floor plans and the PK-5.10 & PK-5.11 drawings.
53. **Question** Are new concrete islands required at all locations
- Response** Yes. Refer to the plans for balance of information.
54. **Question** Drawing AS 1.1 denotes a new sidewalk along Sunrise; however, the Civil Drawings do not show this sidewalk, please advise.
- Response** The new walk path along the widened Sunrise Valley is work of MWAA/CRC and is shown on the architectural for reference only. However, if this walkway is in place prior to the General Contractor's utility tie-in work (per civil drawings), then selected portion of walkway would be damaged and disturbed, and the General Contractor will be required to repair the affected area to the same completed state as it was at the start of this work.
55. **Question** Drawing AS1.1 calls for "fenced area "along the north face of the garage. We have not located any details or specs to bid this work, please advise?
- Response** Fencing shown north of the garage is black vinyl coated, 6' high fencing sim. To property line fence per Spec 323113.

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56. **Question** Drawing AS1.1 denotes “chain link fence” along the eastern side of the project; is this a partial layout of the construction fencing shown on various Civil Drawings or is this a new chain link fence. If it is new, what are the requirements and specifications for this work?
- Response** Eastern property line fence is permanent black vinyl coated, 6' high fencing per Spec 323113.
57. **Question** Drawing 51 A of 61, is all of the new landscape along Sunrise to be included in the bid or is this by MWAA?
- Response** All new landscaping indicated in the civil drawings is included in the bid (general contractors scope of work), including 51A OF 61.
58. **Question** Generator fencing, various drawings denote a new fence surrounding the generator, can details and specs be provide to bid work?
- Response** Fencing shown around generator is black vinyl coated, 6' high fencing similar to the property line fence per Spec 323113
59. **Question** A. Drawing PK 3.10, Detail 14 “Traffic Controller signs“
1. There seems to be confusion relative to what specification this falls under. This sign type is not on the sign Schedule I.
  2. The locations cannot be found on the existing or new parking deck plans. We have located electric circuits for these signs on the electrical floor plans.
- Response**
1. Traffic control signage is part of the Signage Spec, 101400 2.2K.
  2. Shown on PK-5.10 & PK-5.11 for plan location. No response necessary.
60. **Question** E. Electrical drawing E.14 Level P4 @ new bridge.
1. The drawing has a note that reads one inch conduit from ceiling junction box down to ticket booth. We don't see a ticket booth called for at this location. Not sure this conduit is required?
- Response** Conduit shall be routed as necessary thru multiple floors to the level P1 ticket booth.