

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

MBTA CONTRACT NO. S53CN01

HARVARD STATION BUSWAY

TUNNELS REHABILITATION

ADDENDUM NO. 3

All firms submitting bids for the above project shall amend the original bid documents as follows.

The items set forth herein, whether deletions, additions, or substitutions, are to be included in and form a part of the Bid submitted.

THIS ADDENDUM NO. 3 MUST BE ENTERED IN THE SPACE PROVIDED ON PAGE 00410-3 OF THE FORM FOR BID.

February 11, 2019

By: Steve Poflak
General Manager of the MBTA

NOTICE TO BIDDERS

No Change

INSTRUCTION TO BIDDERS

No Change

BID FORM AND SUPPLEMENTS

No Change

CONSTRUCTION SPECIFICATIONS

1. 09900 Painting
 - a. **Delete** the existing section in its entirety and replace with the updated section. Revised section is included as pages 6-16 of this Addendum#3.

CONSTRUCTION DRAWINGS

1. Sheet A-06
 - a. **Revise** note 1 by adding:” at the station side and as specified in painting section 09900 for platform ceiling. “to the end of the note.

RESPONSES TO PROSPECTIVE BIDDERS QUESTIONS

Question 1: Sheet E-45 shows the luminaire schedule for this job. Fixture types LS1 & LS6 are specified as Holophane’s TNLED luminaire. When this project was designed the TNLED luminaire was Holophane’s only tunnel solution. We have since added a 2nd tunnel luminaire (TNLED MED) while also improving the efficiency of our 1st generation TNLED luminaire. In order to get the most efficient product I would suggest the MBTA and/or WSP review the following data and *select the current best product for the application and change the catalog numbers on the plans accordingly*. The information is as follows:

Type LS1

- Specified Holophane Tunnel Pass LED (2nd file attached) catalog number TNLED 6 4K 1 AS WCR DGRA L
- This luminaire delivers 25,470 lumens at 239W

The current TNLED MED luminaire (3rd file attached) may provide a suitable alternative to the specified TNLED luminaire. This luminaire is smaller as compared to the TNLED luminaire and lower in cost.

- Catalog number TNLED MED PK7 40K MVOLT WCR DGRA L
- Per the page (4) the TNLED MED spec sheet, the TNLED MED PK7 luminaire delivers 24,176 lumens at 203W

The old TNLED luminaire is undergoing a chip set upgrade and will be released later this month as the TNLED2. The performance package for the new TNLED2 will be as follows:

- Catalog number TNLED2 PK1 40K MVOLT WCR DGRA L
- This luminaire will deliver 25,000+ lumens at 212W
- I can provide photometric files for the TNLED2 luminaire

Type LS6

- Specified catalog number is TNLED 3 4K 1 AS WCR DGRA L delivers 13,276 lumens at 120W
- Catalog number TNLED MED PK4 40K MVOLT WCR DGRA L delivers 14,244 lumens at 125W

Answer: *The alternate luminaires are acceptable to be used.*

Question 2: Spec. Section 09861-Anti Graffiti Coatings- Kindly provide drawings which would accurately show the extent/limits for the application of Anti Graffiti coatings on the subject project. To date the drawings presently show no extent/limits for the product application.

Answer: *Is the intent to provide the coating on platform walls, doors and windows from the floor up to the ceiling. Additionally, this coating should be applied to the North Boat section walls.*

Question 3: Drawing S-02 Notes 316 & #17 Tunnel Column Repair- Which Spec. section has the contractual obligation to perform Prep SSPC-SP#3 and apply Zinc Rich Coating?

Answer: *See specification section 03930.*

Question 4: Drawing S-05-Elec. Rm. B202 & Storage Rm B203-Note #2 "Contractor shall clean and paint the walls, ceilings and floors." Provide thorough coating systems for the preparation and coating of the existing walls, ceiling and floors in these rooms.

Answer: *The paint intended for the walls, ceilings and floors will be specified in specification section 09900. See this revised section attached in this addendum# 3.*

Question 5: Drawing S-06-Front Room B 208 & Pump Station Inner Room B208- Note #2" Contractor shall clean and paint walls, ceilings and floor" Provide thorough coating systems for the preparation and coating of the existing walls, ceiling and floors in these rooms.

Answer: *The paint intended for the walls, ceilings and floors will be specified in specification section 09900. See this revised section attached in this addendum# 3.*

Question 6: Drawing S-07- RoomsB206 & B207-Note #2 "Contractor shall clean and paint walls, ceilings and floors" Provide thorough coating systems for the preparation and coating of the existing walls, ceilings and floors in these rooms.

Answer: *The paint intended for the walls, ceilings and floors will be specified in specification section 09900. See this revised section attached in this addendum# 3.*

Question 7: Drawing A-05 & Drawing A-06 Spec. Section 09900 Provide a thorough coating system for the preparation and painting of cement plaster ceilings.

Answer: *The paint intended for the plaster ceilings in the platforms will be specified in specification section 09900. See this revised section attached in this addendum# 3.*

Question 8: Is it your intent under Spec. Section 09900 Painting to prepare and paint the entire existing concrete ceilings of both the Upper and Lower Bus Tunnels? The Paint Schedule per Spec Section 09900 specifies One Coat of Tnemec Series 156 Enviro-Crete at 4.0 to 8 mils DFT. Is this correct you are only specifying a single coat?

Answer: *Contractor to provide the specified thickness. One coat may be sufficient if the required DFT thickness is achieved. Roller or brush application may require multiple coats to obtain recommended film thickness. Any old paint should be removed and SSPC-SP13/NACE 6 needs to be followed for surface cleaning and preparation.*

Question 9: Is it your intent under Spec. Section 09900 to perform any preparation and painting work on the tunnel walls. If yes provide a complete and thorough Coating Systems for the performance of this work including preparation means and methods.

Answer: *No paint is intended for the tunnel walls.*

Question 10: Spec. Section 09900 Paint Schedule "Exterior Masonry and Concrete to be Painted (to be used for the lower platform columns)-Specified to receive one coat of Tnemec Glaze Series 280 Enviro Crete at 4.0 to 8 mils DFT. Is this correct you are only specifying a single coat?(Note: Tnemec Glaze Series 280 is not the product Enviro-Crete)

Answer: *Contractor to provide the specified thickness. One coat may be sufficient if the required DFT thickness is achieved. Per manufacturer's data, 4.0 to 8.0 mils can be achieved in one coat. Any old paint should be removed and SSPC-SP13/NACE 6 needs to be followed for surface cleaning and preparation. If a second coat is required, contractor shall follow drying time between coats as recommended by the paint manufacturer. You are correct, Tnemec Glaze Series 280 is not Enviro-Crete. Please see correction in revised specification.*

Question 11: Provide a coating system for the field finishing of new hollow metal doors and frames.

Answer: *See revised specification section 09900.*

Question 12: Drawing A-03 Restoration of Stained Glass Panels. Is it your intent under Spec. Section 09900 to perform the painting work referenced on these drawings? If yes provide a complete specification for the performance of this work including materials and the ways and means.

Answer: *No painting is intended to be performed on the art mural.*

Question 13: Please define the repair scope for the concrete work on the existing tunnel ceiling.

Answer: The documents require the contractor to repair leaks and spalls and to paint the tunnel ceilings.

Question 14: Specification Section 08111 specifies both Exterior and Interior Doors (sections 2.3 B and C) and Exterior and Interior Frames (sections 2.4 B and C). Please explain which doors and frames are to be supplied for this project.

Answer: Exterior doors and frames should be supplied for all locations shown in the contract documents.

PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A.** Work Included: This Section specifies the following items.
1. Field painting of exposed interior items and surfaces specifically the lower tunnel platform columns and the upper and lower tunnel ceiling.
 2. Field painting of exposed exterior items and surfaces, specifically the north portal boat wall railings.
 3. Surface preparation for painting.
- B.** Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 02577 - PAVEMENT MARKING: Traffic-marking paint.
 2. Section 05100 - STRUCTURAL STEEL: Shop priming structural steel.
 3. Section 05500 - MISCELLANEOUS METAL: Shop priming ferrous metal.
 4. Section 08111 - STEEL DOORS AND FRAMES: Factory priming steel doors and frames.
 5. Section 09260 - GYPSUM BOARD ASSEMBLIES: Surface preparation of gypsum board.

1.2 DEFINITIONS AND EXTENT

- A.** General: Standard coating terms defined in ASTM D 16 apply to this Section.
1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
 3. Semi-gloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
 4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.
- B.** This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- C.** Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned,

paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Engineer will select from standard colors and finishes available.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.

D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1. Prefinished items include, but are not limited to the following factory-finished components:

- a. Finished mechanical and electrical equipment.
- b. Light fixtures.
- c. Metal pan ceilings.
- d. Aluminum & glass sliding doors.
- e. Aluminum glazed storefront units.

2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:

- a. Furred areas.
- b. Ceiling plenums.
- c. Utility tunnels.
- d. Pipe spaces.
- e. Duct shafts.

3. Finished metal surfaces include the following:

- a. Anodized aluminum.
- b. Stainless steel.
- c. Chromium plate.
- d. Copper and copper alloys.
- e. Bronze and brass.

4. Operating parts include moving parts of operating equipment and the following:

- a. Valve and damper operators.
- b. Linkages.
- c. Sensing devices.
- d. Motor and fan shafts.

5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.3 SUBMITTALS

- A.** Product Data: For each paint system indicated, include block fillers and primers.

1. **Material List:** An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 2. **Manufacturer's Information:** Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Samples for Verification:** For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
 2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
 3. Submit two eight inch by 12 inch Samples for each type of finish coating for Engineer's review of color and texture only.
- C. Qualification Data:** For Applicator.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications:** A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations:** Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
- C. Mockups:** Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in Painting and Decorating Contractors of America PDCA P5. Duplicate finish of approved sample Submittals.
1. Engineer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
 - a. **Wall Surfaces:** Provide samples on at least 100 sq. ft.
 - b. **Small Areas and Items:** Engineer will designate items or areas required.
 2. Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface.
 - a. After finishes are accepted, Engineer will use the room or surface to evaluate coating systems of a similar nature.
 3. Final approval of colors will be from benchmark samples.

1.5 DELIVERY, STORAGE, AND HANDLING

- A.** Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.

- B.** Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F and a maximum ambient temperature of 95 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.6 PROJECT CONDITIONS

- A.** Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.

- B.** Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.

- C.** Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 PAINT MATERIALS, GENERAL

- A.** Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

- B.** Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A.** Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
 1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
- B.** Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 1. Notify Engineer about anticipated problems when using the materials specified over substrates primed by others.

3.2 PREPARATION

- A.** General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B.** Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C.** Surface Preparation: Clean and prepare surfaces to be painted per manufacturer's written instructions for each particular substrate condition and as specified.
 1. Provide barrier coats or tie-coats over incompatible primers or remove and reprime.
 2. Cementitious Materials: Prepare concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted according SSPC-SP13/NACE 6. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as

required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation to remove.

- a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
 - b. Determine pH of surfaces using pH indicating papers and distilled water and perform moisture vapor transmission testing for concrete floors in accordance with ASTM F 1869 and moisture tests on concrete walls in accordance with ASTM D 4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method. For masonry walls, use a moisture meter approved by the coating manufacturer. Follow the selected and approved coating manufacturers recommendations for acceptable pH values, moisture vapor transmission values (in lbs. of moisture per 24 hours per 1,000 SF), and moisture meter values (for masonry). If these values are not acceptable, do not paint surfaces until moisture levels are acceptable or additional surface preparation has been performed and the pH values measured are acceptable
 - c. Clean concrete floors to be painted with shot blast equipment.
3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
- a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
 - c. If transparent finish is required, backprime with spar varnish.
 - d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with The Society for Protective Coating's (SSPC) recommendations.
- a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3, SSPC-SP 10/NACE No. 2
 - b. Treat existing painted surfaces with surface preparation methods recommended by coating manufacturer and in accordance with the coating schedule.
5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods. Use Oakite Cleaner LTS or equal for pretreatment of any non-primed galvanized metal before finish painting.

D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Blend material before application to produce a mixture of uniform density. Blend as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.
- E.** Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

- A.** General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
 5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
 7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 9. Sand lightly between each succeeding enamel or varnish coat.
- B.** Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer over metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under

moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

- C.** Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 3. Spray Equipment: Use airless or conventional spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D.** Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E.** Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F.** Mechanical items to be painted include, but are not limited to, the following:
1. Uninsulated metal piping.
 2. Uninsulated plastic piping.
 3. Pipe hangers and supports.
 4. Tanks that do not have factory-applied final finishes.
 5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
 6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
 7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
- G.** Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
 2. Panelboards.
 3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
- H.** Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- I.** Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- J.** Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

- K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
 - 1. Provide satin finish for final coats.
- L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
 - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Engineer.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
 - 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in Painting and Decorating Contractors of America PDCA P1.

3.6 PAINT SCHEDULE

- A. Schedule: Provide products and number of coats specified. Use of manufacturer's proprietary product names to designate colors, materials, generic class, standard of quality and performance criteria and is not intended to imply that products named are required to be used to the exclusion of equivalent performing products of other manufacturers.
- B. Exterior Paint Schedule:

Existing Exterior Painted Steel for Sandblasting and Finish (to be used for the North portal boat wall railing)

Surface Preparation: SSPC-SP 10 Near-White Metal Blast

Color for railing: to match existing railing.

- | | |
|----------|--|
| System A | 1. International Interzinc 52 Zinc Primer |
| | 2. International Intergard 345 Epoxy Intermediate |
| | 3. International Interthane 990HS Polyurethane Topcoat |

- | | |
|----------|---|
| System B | <ol style="list-style-type: none"> 1. PPG Amercoat 68HS Zinc Primer 2. PPG Amerlock 400 Epoxy Intermediate 3. PPG Amercoat 450H Polyurethane Topcoat |
| System C | <ol style="list-style-type: none"> 1. Sherwin Williams Zinc Clad IIIHS Zinc Primer 2. Sherwin Williams Macropoxy 646 Intermediate 3. Sherwin Williams Hi-Solids Polyurethane Topcoat |
| System D | <ol style="list-style-type: none"> 1. Tnemec Series 90G-1K97 Zinc Primer 2. Tnemec Series 161 Epoxy Intermediate 3. Tnemec Series 73 Endurashield Polyurethane Topcoat |

Or Approved Equal

Steel Doors and Frames (to be used for all H.M. doors and frames):

Color for doors and frames: FS26314 (as possible)

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|----------|--|
| System A | <ol style="list-style-type: none"> 1. Primer (Shop applied): Carboline Carbozinc 859, 5.0 mils DFT. 2. Epoxy Carboline Carboguard 888 (Gray), 5.0 mils DFT 3. Carboline Carbothane 134 HG, 3.0 mils DFT |
| System B | <ol style="list-style-type: none"> 1. Primer (Shop applied): PPG PMC Amercoat 68 HS, 5.0 mils DFT. 2. Epoxy PPG PMC Amercoat 399 (Gray), 6.0 mils DFT 3. PPG PMC Amercoat 450H, 3.0 mils DFT |
| System C | <ol style="list-style-type: none"> 1. Primer (Shop applied): SW Zinc Clad III HS, 5.0 mils DFT. 2. Epoxy SW Macropoxy 646 (Gray), 6.0 mils DFT 3. SW Acrolon 218 B65-600, 4.0 mils DFT |

Or Approved Equal

Exterior Masonry and Concrete to be Painted (to be used for the tunnel ceiling, room ceiling and lower level platform ceiling at sliding doors):

Color for ceiling:

Tunnel – Federal Standard (FS) 36134

Platform entry doors – FS 36495

Rooms – FS 26622

- | | |
|----------|--|
| System A | <ol style="list-style-type: none"> 1. Tnemec Series 156 Enviro-Crete at 4.0 to 8 mils DFT |
|----------|--|

Or Approved Equal

Exterior Masonry and Concrete to be Painted (to be used for the lower platform columns and room walls):

Color for walls and columns:
Platform columns – FS 36373
Room walls – FS 26622

- System A 1. Tnemec, Tneme Glaze Series 280 at 4.0 to 8 mils DFT
Or Approved Equal

Concrete Floors to be Painted (to be used for the room floors):

Color for room floors: FS26314 (as possible)

- System A 1. Primer: Epoxy PPG MegaSeal HSPC 99 12700, 6.0 to 10.0 mils.
2. Epoxy PPG MegaSeal SL 99 12614 (Haze Gray), 30 mils DFT
- System B 1. Primer: Epoxy SW ArmorSeal 33, 7.0 to 9.0 mils.
2. SW Epoxy ArmorSeal 650 SL/RC, 30 mils DFT, Haze Gray
Or Approved Equal

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. No separate measurement or payment will be made for PAINTING items, but all costs in connection therewith shall be Lump Sum price for BUSWAY IMPROVEMENTS except as otherwise noted. All preparation and incidental work necessary to accomplish the complete installation including all parts, components, assemblies, factory painting, etc. will be considered incidental to the Lump Sum price.

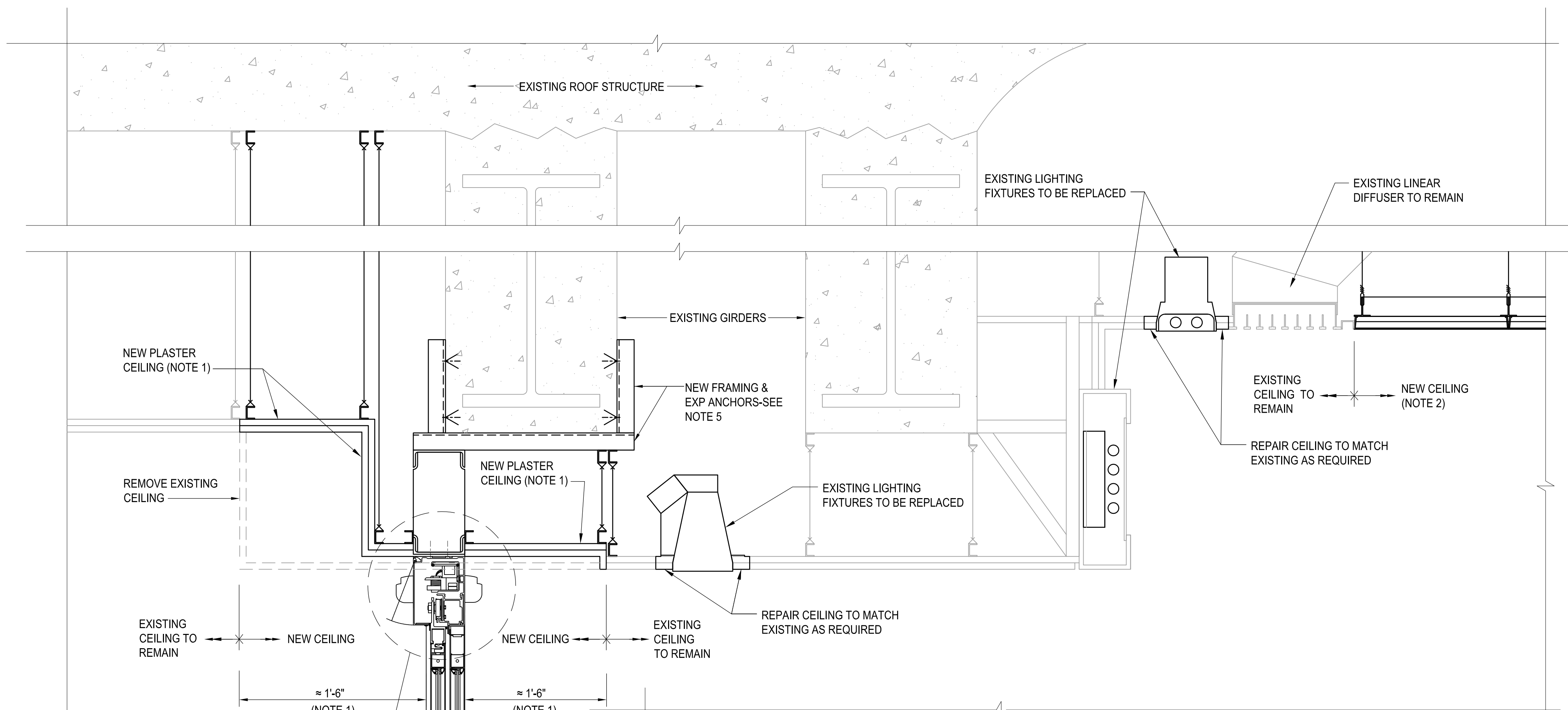
4.2 PAYMENT

- A. Payment for PAINTING will be made at the Contract lump sum prices for the quantities determined as specified above.

4.3 PAYMENT ITEMS

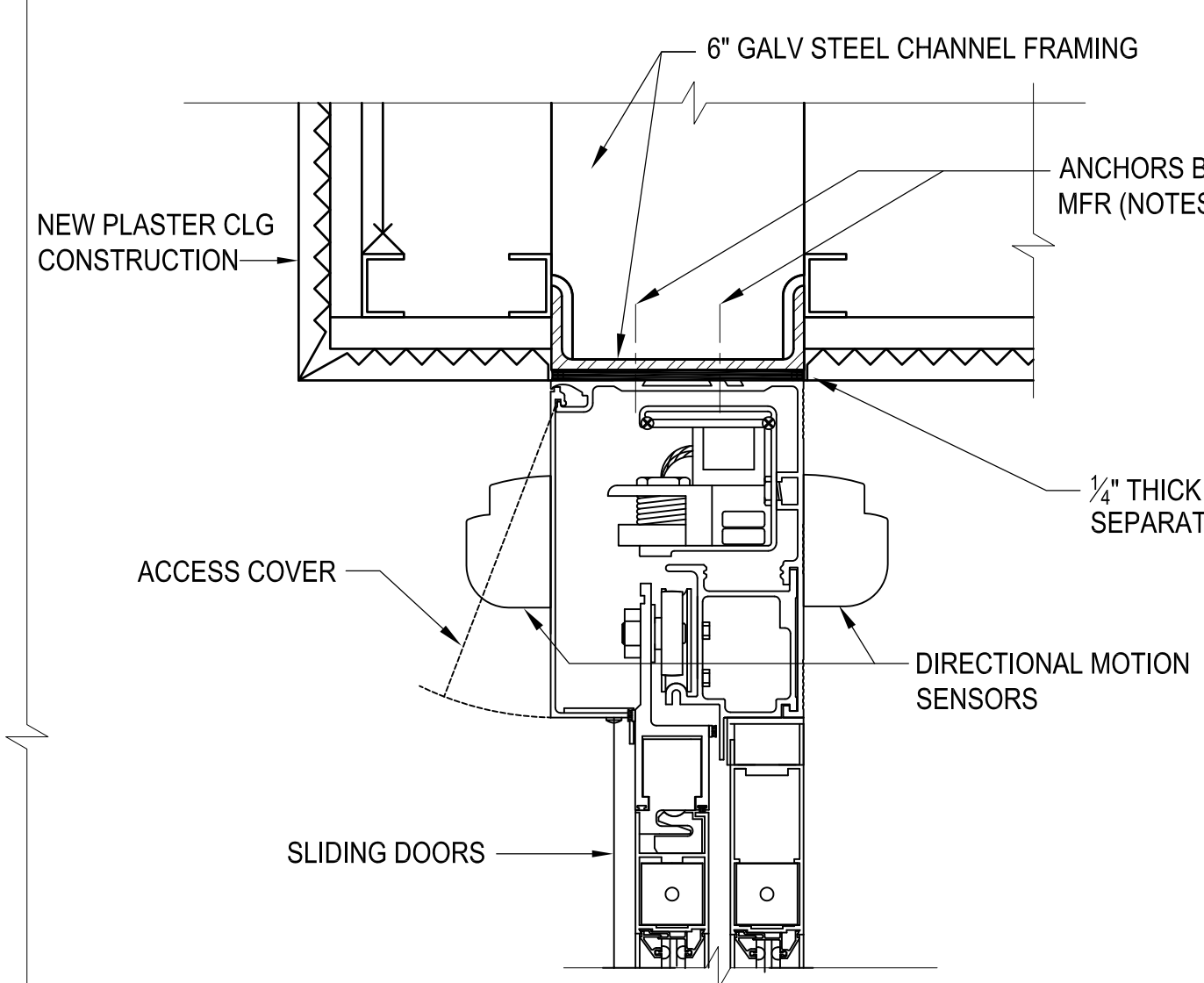
ITEM NO.	DESCRIPTION	UNIT
0130.159	BUSWAY IMPROVEMENTS	LS

END OF SECTION

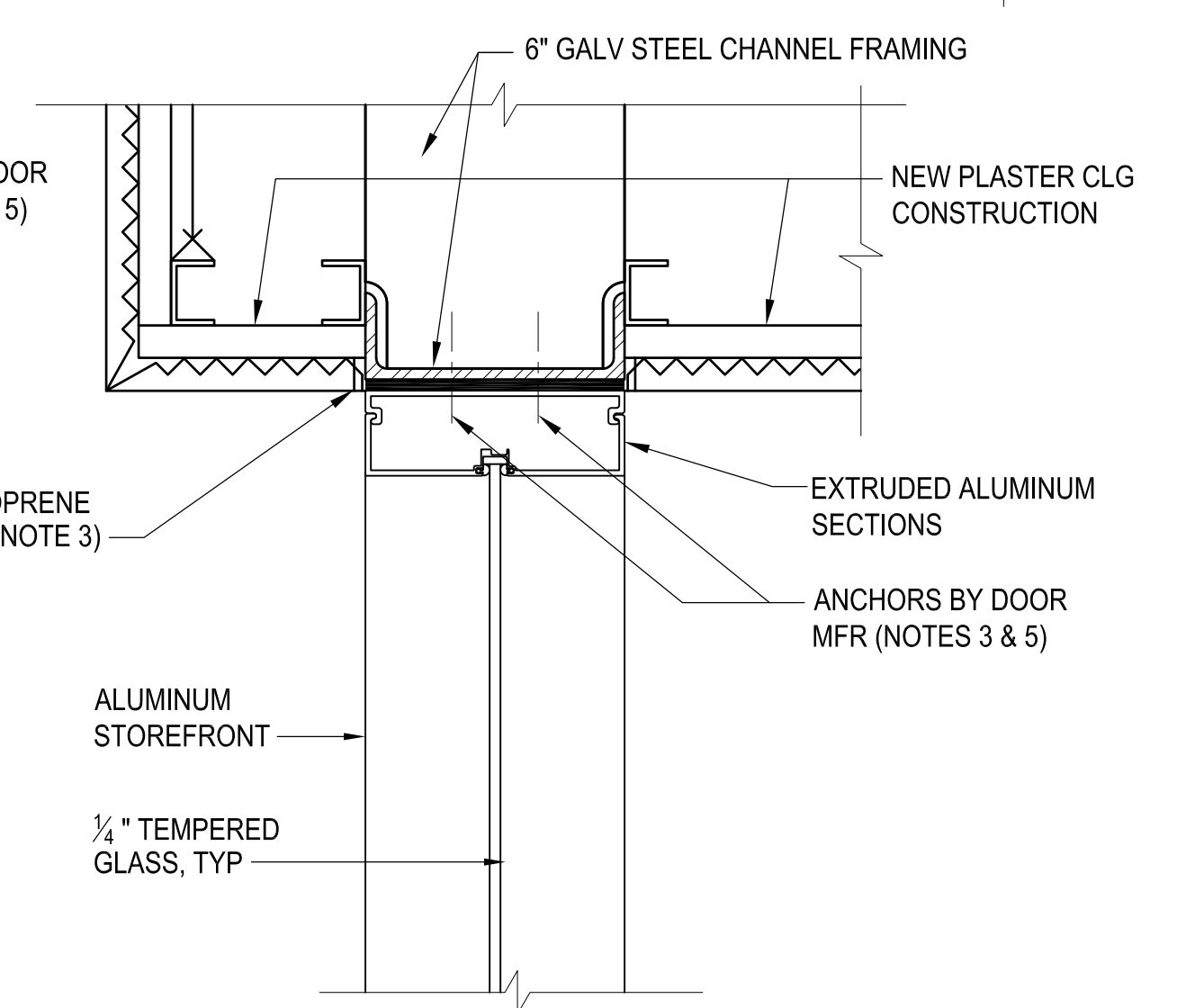


- NOTES:
1. THE AMOUNT OF EXISTING CEILING REMOVAL SHALL BE LIMITED TO THAT WHICH IS NECESSARY TO INSTALL SLIDING DOORS AND STOREFRONT. NEW SUSPENDED PLASTER CEILING SHALL MATCH THE EXISTING PLASTER CEILING IN METHOD OF CONSTRUCTION, FINISH AND COLOR AT THE STATION SIDE AND AS SPECIFIED IN PAINTING SECTION 09900 FOR PLATFORM CEILING.
 2. FOR SCOPE OF EXISTING CEILING DEMOLITION, SEE SHEET A-12. FOR SCOPE OF NEW CEILING INSTALLATION, SEE SHEET A-13.
 3. PROVIDE NEOPRENE OR OTHER SEPARATION BETWEEN ALUMINUM STOREFRONT SECTIONS AND STEEL SUPPORT MEMBERS AND BOLTS.
 4. GRAPHIC REPRESENTATION OF EXISTING CEILING CONSTRUCTION IS APPROXIMATE. CONTRACTOR SHALL INVESTIGATE FIELD CONDITIONS TO DETERMINE IF THE DESIGN INTENT IS CONSISTENT WITH EXISTING CONSTRUCTION PRIOR TO BEGINNING INSTALLATION OF NEW WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
 5. EXISTING STRUCTURE IS SHOWN AS APPROXIMATION. CONTRACTOR SHALL CONDUCT FIELD INSPECTIONS TO ASCERTAIN LATENT FIELD CONDITIONS AFFECTING NEW WORK. NEW FASTENERS SHALL BE BY DOOR MANUFACTURER. SHOP DRAWINGS OF DOORS AND FASTENERS SHALL BE STAMPED BY A MASSACHUSETTS LICENSED ENGINEER.

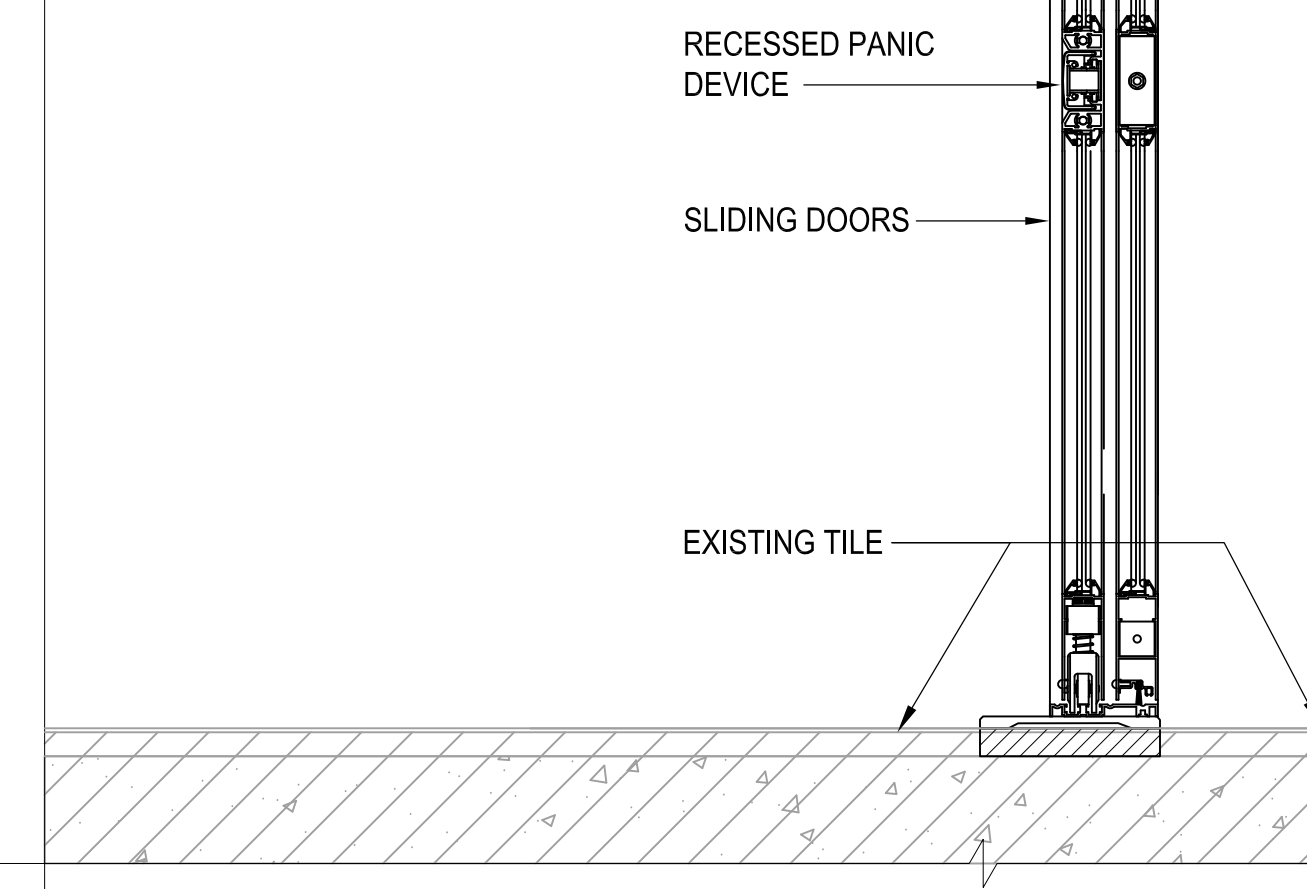
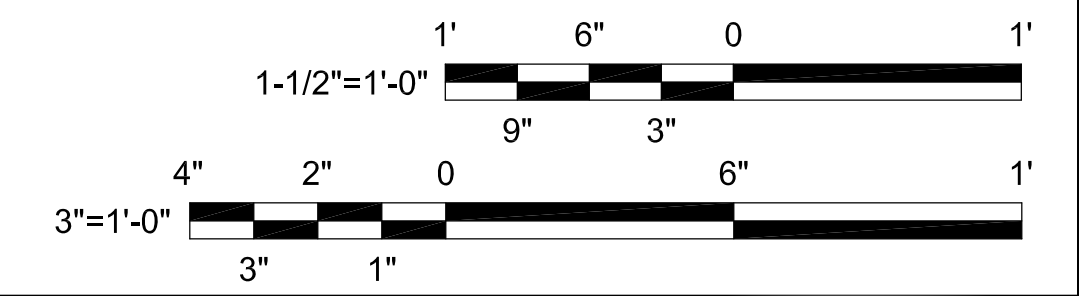
B - AT SLIDERS
C - AT STOREFRONT



DETAIL
AT SLIDING DOOR CONDITION -
UPPER LEVEL
SCALE: 3" = 1'-0"



DETAIL
AT STOREFRONT CONDITION -
UPPER LEVEL
SCALE: 3" = 1'-0"



DETAIL - UPPER LEVEL
SCALE: 1 1/2" = 1'-0"

	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY HARVARD STATION BUSWAY TUNNEL DESIGN MBTA CONTRACT NO. S53CN01	
	ARCHITECTURAL SLIDING DOOR DETAILS 2	
WSP USA Inc. 75 ARLINGTON ST. BOSTON, MA 02116 TEL: 617-426-7330 APPROVED BY: <i>Sabri Usman</i> Nov. 30, 2018	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY APPROVED BY:	PROJECT MANAGER: DATE: PROJECT MANAGER: DATE:
1 2/11/19 ADDENDUM 3 GBS AD SQ ISSUE DATE DESCRIPTION BY CHK APP	HORIZ. SCALE: N/A DESIGN BY: JKL DRAWN BY: GS CHKD. BY: KM VERT. SCALE: N/A DATE: NOV. 30, 2018	PLAN NO. -- SHEET A-06 ISSUE 1

1	2/11/19	ADDENDUM 3	GBS	AD	SQ
SCALE: AS NOTED					