

COLD SPRING SCHOOL DISTRICT  
COLD SPRING ELEMENTARY SCHOOL MODERNIZATION  
DSA No. 03-113015, File No. 42-11  
PMSM No. 09014.01  
May 14, 2010



## A D D E N D U M T H R E E

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Issued By: PMSM ARCHITECTS  
1004 East Main Street  
Santa Maria, California 93454

To all bidders submitting proposals for the above captioned project. This Addendum is hereby included in the Contract Documents to the same extent as though it were originally included therein.

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### **DIVISION 1 DISTRICT GENERAL CONDITIONS**

**Item #1:** Document 00310 Bid Proposal:

Document 00310 page 2 is revised as attached. The Project line item for the lump sum base bid was revised from "...at four campuses..." to read, "...project".

**Item #2:** Document 00510 Agreement Form:

Document 00510 page 1 is revised as attached. The date noted as 2003 has been revised to read 2010. There no alternates in this project.

### **SPECIFICATIONS**

**Item #1:** Specification Section 01330:

The color schedule is added to Section 01330 as part of this project.

**Item #2:** Specification Section 05271:

Section 05721 is revised in its entirety.

**Item #3:** Specification Section 07620:

Section 07620 Sheet Metal Flashings and Trim is added to the specifications in its entirety.

**Item #4:** Specification Section 09650 :

Section 09650 Resilient Linoleum Tile is added to the specifications in its entirety.

**Item #5:** Specification Section 09651 :

Section 09651 Resilient Floor Tile is deleted in its entirety.

**DRAWINGS**

**Item #1:** DRAWINGS, SHEET A-101:

Keynotes and Legend are revised per change drawing A-101, Delta 3, dated 5/14/10.

**Item #2:** DRAWINGS, SHEET A-110:

Revise details 1&2/A-110 per change drawing A-110 Delta 3, dated 5/14/10 (partial detail view).

**Item #3:** DRAWINGS, SHEET A-111:

Revise detail 4/A-111 per change drawing A-111 Delta 3, dated 5/14/10.

**Item #4:** DRAWINGS, SHEET A-202:

Revise keynotes, demolition general notes and Remodel Floor Plans per change drawing A-202 Delta 3, dated 5/14/10 (partial exhibit).

**Item #5:** DRAWINGS, SHEET A-211:

Revise keynotes, demolition general notes, legend, and Reflected Ceiling Plans per change drawing A-211 Delta 3, dated 5/14/10 (partial exhibits).

**Item #6:** DRAWINGS, SHEET A-501:

Revise detail 6/A-501, and add details 8/A-510 per change drawing A-501 Delta 3, dated 5/14/10. Detail 8 shall be used for conditions where (e) joists conflict with toilet installation or where unblocked sheathing is caused by installation of toilet or other utility installations in the floor. Bid price to allow for this installation as encountered in the field.

**Item #6:** DRAWINGS, SHEET A-502:

Add details 6&7/A-502 per change drawing A-502 Delta 3, dated 5/14/10. These tile accent details apply to all restrooms receiving new tile as part of this project on all walls receiving tile. Contractor shall tile all window sills and jambs within the height callouts of the tile finishes in all restrooms. Where applicable, tile shall be installed behind accessories that are installed at staff restrooms that extend above 4'-8" tile height.

**Item #7:** DRAWINGS, SHEET A-801:

Revise Schedule per change drawing A-801 Delta 3, dated 5/14/10 (partial exhibit).

**Item #8:** DRAWINGS, SHEET A-921:

Revise details 5 & 14/A-921, add detail 15/A-921 per change drawing A-921 Delta 3, dated 5/14/10.

**Item #9:** DRAWINGS, SHEET A-923:

Revise detail 8/A-932 and add detail 13/A-923 per change drawing A-923 Delta 3, dated 5/14/10.

**Item #10:** DRAWINGS, SHEET A-931:

Revise details 8, 15 & 16/A-931 per change drawing A-931 Delta 3, dated 5/14/10

**Item #11:** DRAWINGS, SHEET MP-201:

Revise drawing MP-201 per change drawing MP-201 Delta 3, dated 5/14/10

**Item #12:** DRAWINGS, SHEET MP-401:

Add detail 7/MP-401 per change drawing MP-401 Delta 3, dated 5/14/10

**Item #13:** DRAWINGS, SHEET E-201:

Revise electrical plans per change drawing E-201 Delta 3, dated 5/14/10. Provide blocking similar to 8/A-501 for support of floor sheathing. The exact location of the floor box to be coordinated in the field prior to cutting and installation. Replace subfloor to match existing.

**Item #14:** DRAWINGS, SHEET E-211:

Revise electrical plans per change drawing E-211 Delta 3, dated 5/14/10. Sawcut and patch the concrete slab per detail 2/A-112. The exact location of the floor box to be coordinated in the field prior to cutting and installation

**Item #15:** DRAWINGS, SHEET E-221:

Revise electrical plans per change drawing E-221 Delta 3, dated 5/14/10. Sawcut and patch the concrete slab per detail 2/A-112. The exact location of the floor box to be coordinated in the field prior to cutting and installation

**Item #16:** DRAWINGS, SHEET E-241:

Revise electrical plans per change drawing E-241 Delta 3, dated 5/14/10. The exact location of the ceiling boxes to be coordinated in the field prior to cutting and installation.

Attachments:

Page 2 of 00310 BID PROPOSAL  
Page 1 of 00510 AGREEMENT FORM  
Color Schedule dated 5/14/10  
Specification Section 05271 dated 5/14/10 (8 ½" x 11) (12 pages)  
Specification Section 07620 dated 5/14/10 (8 ½" x 11) (11 pages)  
Specification Section 09650 dated 5/14/10 (8 ½" x 11) (7 pages)  
Change Drawing A-101 Delta 3, dated 5/14/10, (8 ½"x11") (2 sheets)  
Change Drawing A-110 Delta 3, dated 5/14/10, (8 ½"x11") (2 sheets)  
Change Drawing A-111 Delta 3, dated 5/14/10, (8 ½"x11") (1 sheet)  
Change Drawing A-202 Delta 3, dated 5/14/10, (8 ½"x11") (1 sheet)  
Change Drawing A-203 Delta 3, dated 5/14/10, (8 ½"x11") (1 sheet)  
Change Drawing A-211 Delta 3, dated 5/14/10, (8 ½"x11") (4 sheets)  
Change Drawing A-501 Delta 3, dated 5/7/10, (8 ½"x11") (2 sheets)  
Change Drawing A-502 Delta 3, dated 5/7/10, (8 ½"x11") (2 sheets)  
Change Drawing A-801 Delta 3, dated 5/14/10, (8 ½"x11") (1 sheet)  
Change Drawing A-921 Delta 3, dated 5/14/10, (11"x17") (1 sheet)  
Change Drawing A-921 Delta 3, dated 5/14/10, (8-1/2" x11") (2 sheets)  
Change Drawing A-923 Delta 3, dated 5/14/10, (8-1/2" x11") (1 sheet)  
Change Drawing A-923 Delta 3, dated 5/14/10, (11x17") (1 sheet)  
Change Drawing A-931 Delta 3, dated 5/14/10, (8-1/2" x11") (3 sheets)  
Change Drawing MP-201 Delta 3, dated 5/14/10, (11x17") (1 sheet)  
Change Drawing MP-401 Delta 3, dated 5/14/10, (8-1/2" x11") (1 sheet)  
Change Drawing E-201 Delta 3, dated 5/14/10, (8-1/2" x11") (1 sheet)  
Change Drawing E-211 Delta 3, dated 5/14/10, (8-1/2" x11") (2 sheets)  
Change Drawing E-221 Delta 3, dated 5/14/10, (8-1/2" x11") (12 sheet)  
Change Drawing E-241 Delta 3, dated 5/14/10, (8-1/2" x11") (2 sheets)

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Anthony Palazzo, AIA      C-29150

## COLOR SCHEDULE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" and for list of submittals and time requirements for scheduled performance of related construction activities.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
- D. Provide color submittals for individual rooms as an entire package so that the Architect may review current color palette in its entirety. Color samples will not be approved until all colors are submitted.

### PART 2- COLOR SCHEDULE

#### 2.1 CLASSROOM COLORS

- A. Carpet- Shaw Contract  
Pattern- Simplicity Tile 59344  
Color- Stealing Beauty 40500
- B. Resilient Flooring- Marmoleum composite 3120 Rosato
- C. Casework- Wilsonart Laminate Kensington Maple
- D. Countertops- Wilson Laminate Evening Tigris
- E. Wall Paint Color- Paperwhite SW 7105
- F. Window/Door/other Trim- SW001 White
- G. Vinyl Tack board fabric- Koroseal Linden Type 2. Color Dorset 4821-04
- H. Roller Shades- Mechoshade 1002 Beige
- I. Cove base/reducer strip- From manufacturer's standard colors
- J. Ceiling Tiles- 12x12 Armstrong Fine Fissure 741
- K. Translucent Ceiling Tiles in Grid- Infusions From Manufacturers Standard colors
- L. Solid Ceiling Tiles in Grid- Armstrong Optima Open Plan 3250

#### 2.2 BOYS RESTROOM COLORS

- A. Wall field tile- Dal Tile Semigloss Almond 0135
- B. Wall Accent #1- Dal Tile Keystone 2x2 Waterfall D169
- C. Wall Accent #2- Dal Tile Keystone 2x2 Cypress D452
- D. Wall Accent Liner- Dal Tile 1x6 Flat liner Suede Gray 0162

## COLOR SCHEDULE AND PROCEDURES

- E. Wall cove base- Dal tile semigloss Almond 0135
- F. Floor tile- Dal Tile Keystone Shapes 2 Octagon 1 dot. Octagon- Suede Gray D182 Dot-Waterfall 0169
- G. Wall Grout- From Manufacturer's standard colors
- H. Floor Grout- From Manufacturer's standard Colors
- I. Toilet Partitions- Comtec Linen
- J. Wall Paint- SW6218 Tradewind
- K. Ceiling Paint- Paperwhite SW 7105

### 2.3 GIRLS RESTROOM AND STAFF RESTROOM COLORS

- A. Wall field tile- Dal Tile Semigloss Almond 0135
- B. Wall Accent #1- Dal Tile Keystone 2x2 Cornsilk D160
- C. Wall Accent #2- Dal Tile Keystone 2x2 Garden Spot D141
- D. Wall Accent Liner- Dal Tile 1x6 Flat liner Cityline Kohl 0171
- E. Wall cove base- Dal tile semigloss Almond 0135
- F. Floor tile- Dal Tile Keystone Shapes 2 Octagon 1 dot. Octagon- Garden Spot D141 Dot- Cornsilk D160
- G. Wall Grout- From Manufacturer's standard colors
- H. Floor Grout- From Manufacturer's standard Colors
- I. Toilet Partitions- Comtec Parchment
- J. Wall paint- SW6693 Lily
- K. Ceiling paint- Paperwhite SW 7105

### 2.4 EXTERIOR COLORS

- A. Concrete porch and steps at north side Building 100- Scoffield Addmixture #5059 Sorento Red
- B. Concrete at walkway South side building 100- Natural
- C. Ornamental Railings- From Manufacturer's standard colors
- D. Exterior Stucco- Finish and color to match existing
- E. Exterior Doors and Trim- Finish and color to match existing
- F. Gutters- Finish per specification. Bronze color from manufacturer's standard colors
- G. Downspouts- Finish per specifications. Color to match wall.

END OF COLOR SCHEDULE

## SECTION 05721 - ORNAMENTAL RAILINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Steel and iron ornamental railings.
  - 2. Trench grate covers
- B. Related Sections include the following:
  - 1. Division 6 Section **Carpentry** for wood blocking for anchoring railings.

#### 1.3 DEFINITIONS

- A. Railings: Guards, handrails, and similar devices used for protection of occupants at open-sided floor areas, pedestrian guidance and support, visual separation, or wall protection.
- B. Exterior: Defined as the following:
  - 1. Areas, locations, and surfaces that are unprotected, or exposed to environmental elements.
  - 2. Areas, locations and surfaces within uncontrolled environments.
  - 3. Areas, locations and surfaces of unconditioned spaces, including belowgrade/underground, partially-exposed, or "covered" parking areas.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
  - 1. Steel: 72 percent of minimum yield strength.
- B. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
  - 1. Handrails:
    - a. Uniform load of 50 lbf/ ft. applied in any direction.
    - b. Concentrated load of 200 lbf applied in any direction.
    - c. Uniform and concentrated loads need not be assumed to act concurrently.
  - 2. Top Rails of Guards:
    - a. Uniform load of 50 lbf/ ft. applied in any direction.

- b. Concentrated load of 200 lbf applied in any direction.
  - c. Uniform and concentrated loads need not be assumed to act concurrently.
- C. Thermal Movements: Provide exterior railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
- 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

## 1.5 SUBMITTALS

- A. Product Data: For the following:
- 1. Manufacturer's product lines of railings assembled from standard components.
  - 2. Grout, anchoring cement, and paint products.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Initial Selection: For products involving selection of color, texture, or design, **including mechanical finishes**.
- D. Samples for Verification: For each type of exposed finish required.
- 1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters.
  - 2. Each type of glass required.
  - 3. Fittings and brackets.
  - 4. Welded connections.
  - 5. Assembled Samples of railing systems, made from full-size components, including top rail, post, handrail, and infill. Show method of finishing members at intersections. Samples need not be full height.
- E. Welding certificates.
- F. Qualification Data: For **testing agency and engineer**.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according ASTM E 894 and ASTM E 935.

## 1.6 QUALITY ASSURANCE

- A. Reference Standards:
- 1. 2007 Building Standards Administrative Code, Part 1, CBSC.



2. 2007 California Building Code (CBC), Part 2, CBSC (2006 IBC & California Amendments).
3. 2007 California Electrical Code (CEC), Part 3, CBSC (2005 National Electrical Code & California Amendments).
4. 2007 California Mechanical Code (CMC), Part 4, CBSC (2006 Uniform Mechanical Code & California Amendments).
5. 2007 California Plumbing Code (CPC), Part 5, CBSC (2006 Uniform Plumbing Code & California Amendments).
6. 2007 California Energy Code, Part 6, CBSC.
7. 2007 California Historical Building Code, Part 8, CBSC.
8. 2007 California Fire Code, Part 9, CBSC (2006 International Fire Code & California Amendments).
9. 2007 California referenced Standards, Part 12 CBSC.
10. Title 8 C.C.R. Chapter 4, Sub-Ch. 6 – Elevator Safety Orders.
11. Title 19 C.C.R., Public Safety, SFM Regulations.
12. Americans with Disabilities Act (ADA), Title II or Title III.

- B. Source Limitations: Obtain each type of railing through one source from a single manufacturer.
- C. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including structural analysis, preconstruction testing, field testing, and in-service performance.
- D. Product Options: Drawings indicate size, profiles, and dimensional requirements of railings and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."
1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- E. Welding: Qualify procedures and personnel according to the following:
1. AWS D1.1, "Structural Welding Code--Steel."

## 1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.
1. Provide allowance for trimming, adding required blocking, and fitting at site.

## 1.8 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items

with integral anchors, that are to be embedded in concrete or masonry. Also indicate substrate and blocking. Deliver such items to Project site in time for installation.

- B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

## 1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of ornamental railings that fails in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures.
    - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 2. Warranty Period: 2 years from project closeout
- B. Installer's Warranty: 1 year from project closeout

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Steel and Iron Ornamental Railings:
  - 1. King Architectural Metals.
  - 2. Olin Wrought Iron
  - 3. Blum, Julius & Co., Inc.
  - 4. Local ornamental iron fabricators.
  - 5. Or equal.

### 2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails, unless otherwise indicated.
  - 1. Provide either formed- or cast-metal brackets with predrilled hole for exposed bolt anchorage or Provide formed-steel brackets with predrilled hole for bolted anchorage and with snap-on cover that matches rail finish and conceals bracket base and bolt head or Provide extruded-aluminum brackets with interlocking pieces that conceal anchorage. Locate set screws on bottom of bracket.

## 2.3 STEEL AND IRON

- A. Tubing: **ASTM A 513, Type 5 mandrel drawn.**
- B. Bars: Hot-rolled, carbon steel complying with ASTM A 29, Grade 1010.
- C. Plates, Shapes, and Bars: ASTM A36.
- D. Castings: Either gray or malleable iron, unless otherwise indicated.
  - 1. Gray Iron: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.
  - 2. Malleable Iron: ASTM A 47.

## 2.4 FASTENERS

- A. General: Provide the following:
  - 1. Galvanized Steel Components: Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
  - 2. Dissimilar Metals: Type **304** or **316** stainless-steel fasteners.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated **and capable of withstanding design loads.**
- C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work, unless **otherwise indicated** or **exposed fasteners are the standard fastening method for railings indicated.**
  - 1. Provide **Phillips** flat-head machine screws for exposed fasteners, unless otherwise indicated.
- D. Anchors: Provide wedge anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

## 2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that are appropriate in industry standard and as noted below
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
  - 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Benjamin Moore & Co.; Epoxy Zinc-Rich Primer CM18/19.
    - b. Carboline Company; Carbozinc 621.
    - c. ICI Devoe Coatings; Catha-Coat 313.

- d. International Coatings Limited; Interzinc 315 Epoxy Zinc-Rich Primer.
  - e. PPG Architectural Finishes, Inc.; Aquapon Zinc-Rich Primer 97-670.
  - f. Sherwin-Williams Company (The); Corothane I GalvaPac Zinc Primer.
  - g. Tnemec Company, Inc.; Tneme-Zinc 90-97.
  - h. Or equal.
- D. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated, and complying with SSPC-Paint 5.
- E. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- F. High-Performance Coating for Steel, Intermediate Coat: High-build urethane or epoxy coating recommended by manufacturer for application over specified zinc-rich primer under specified polyurethane enamel.
- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Products: Subject to compliance with requirements, provide one of the following:
    - a. Benjamin Moore & Co.; M73/M75 Aliphatic Acrylic Urethane Semi-Gloss.
    - b. Carboline Company; Carboguard 890 2-Component Epoxy.
    - c. ICI Devoe Coatings; Devthane378 Aliphatic Urethane Semi-Gloss Enamel.
    - d. International Coatings Limited; Interthane 870.
    - e. PPG Architectural Finishes, Inc.; Aquapon 97-130 Epoxy.
    - f. Sherwin-Williams Company (The); Macropoxy HS High Solids Epoxy.
    - g. Tnemec Company, Inc.; Series 27 Hi-Build Epoxy.
    - h. Or equal.
- G. High-Performance Coating for Steel, Topcoat: High-build, semigloss polyurethane enamel.
- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Benjamin Moore & Co.; M73/M75 Aliphatic Acrylic Urethane Semi-Gloss.
    - b. Carboline Company; Carbothane 133 HB Aliphatic Polyurethane.
    - c. ICI Devoe Coatings; Devthane378 Aliphatic Urethane Semi-Gloss Enamel.
    - d. International Coatings Limited; Interthane 870.
    - e. PPG Architectural Finishes, Inc.; Aquapon 95-612 Semi-Gloss Polyurethane.
    - f. Sherwin-Williams Company (The); Corothane II Satin B65-200 Series.
    - g. Tnemec Company, Inc.; Series 1075 Endura-Shield.
    - h. Or equal.
- H. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- I. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- J. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.

1. Water-Resistant Product: **At exterior locations and where indicated** provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

## 2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, **but not less than that required to support structural loads of 250 lbs point load.**
- B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Make up wire-rope assemblies in the shop to field-measured dimensions with fittings machine swaged. Minimize amount of turnbuckle take-up used for dimensional adjustment so maximum amount is available for tensioning wire ropes. Tag wire-rope assemblies and fittings to identify installation locations and orientations for coordinated installation.
- D. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- E. Form work true to line and level with accurate angles and surfaces.
- F. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- G. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
  1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove flux immediately.
  4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Form changes in direction as follows:
  1. As detailed.
  2. By bending
  3. By flush bends
  4. By radius bends of radius indicated
  5. By bending to smallest radius that will not result in distortion of railing member.
- J. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire

bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

- K. Close exposed ends of hollow railing members with prefabricated end fittings.
- L. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns, unless clearance between end of rail and wall is 1/4 inch or less.
- M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.
  - 1. At brackets and fittings fastened to plaster or gypsum board partitions, provide fillers made from crush-resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate. Provide 3x6 blocking minimum at each support attached to existing framing with simpson a35 or equal at each end
- N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- O. For railing posts set in concrete, provide steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with steel plate forming bottom closure.

## 2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. All exposed steel to be shop primed and painted UON

## 2.8 STEEL AND IRON FINISHES.

- A. Galvanized Railings:
  - 1. Hot-dip galvanize **exterior** steel and iron railings, including hardware, after fabrication.
  - 2. Comply with ASTM A 123 for hot-dip galvanized railings.
  - 3. Comply with ASTM A 153 for hot-dip galvanized hardware.
- B. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- C. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.
- D. For nongalvanized steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors to be embedded in exterior concrete or masonry.

- E. Preparation for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate process.
- F. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed railings:
  - 1. Exterior Railings (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- G. Apply shop primer to prepared surfaces of railings, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
  - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
- H. Painted Finish: Comply with Division 9 painting Sections.
- I. High-Performance Coating Finish WERE NOTED: Apply intermediate and finish coats to surfaces of railings primed with zinc-rich primer. Comply with coating manufacturer's written directions and with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
  - 1. Apply intermediate coat at spreading rate recommended by manufacturer to achieve a dry film thickness of 3.0 to 8.0 mils for epoxy intermediate coats and 1.5 to 4.0 mils for aliphatic urethane intermediate coats.
  - 2. Apply topcoat at spreading rate recommended by manufacturer to achieve a dry film thickness of 1.5 to 4.0 mils.
  - 3. Match approved Samples for color, texture, and coverage. Remove and refinish, or recoat work that does not comply with specified requirements.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine plaster and gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already done.

### 3.2 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints. At walls and other locations ensure there is no gap that could provide a pinching hazard.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
  - 1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.

2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
  3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

### 3.3 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.

### 3.4 ANCHORING POSTS

- A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with **nonshrink, nonmetallic grout or anchoring cement**, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with **nonshrink, nonmetallic grout or anchoring cement**, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Cover anchorage joint with flange of same metal as post, **welded to post after placing anchoring material**
- D. Where no flange or escutcheon is to be provided, leave anchorage joint exposed; wipe off surplus anchoring material; and leave 1/8-inch buildup, sloped away from post.
- E. Anchor steel posts to steel with flanges, angle or floor type as required by conditions, welded to posts and bolted to metal supporting members.
- F. Anchor posts to metal surfaces with flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
1. For aluminum railings, attach posts as indicated using fittings designed and engineered for this purpose.
  2. For steel railings, weld flanges to posts and bolt to metal-supporting surfaces.



### 3.5 ANCHORING RAILING ENDS

- A. Anchor railing ends to concrete, plaster, and masonry with **brackets on underside of rails connected to railing ends** and anchored to wall construction with anchors and bolts.

### 3.6 ATTACHING HANDRAILS TO WALLS

- A. Attach handrails to walls with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface.
- B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- C. Secure wall brackets to building construction as follows:
  1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
  2. For hollow masonry anchorage, use toggle bolts.
  3. For wood stud partitions, use hanger or lag bolts set into wood backing between studs. Coordinate with carpentry work to locate backing members.
  4. Use fillers to transfer load in plaster or gypsum board installations thru plaster and gypsum board into structural material.

### 3.7 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports. Payment for these services will be made **from the Testing and Inspecting Allowance, as authorized by Change Orders**
- B. Extent and Testing Methodology: Testing agency will randomly select completed railing assemblies for testing that are representative of different railing designs and conditions in the completed Work. Railings will be tested according to ASTM E 894 and ASTM E 935 for compliance with performance requirements.
- C. Remove and replace railings where test results indicate that they do not comply with specified requirements unless they can be repaired in a manner satisfactory to Architect and will comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

### 3.8 CLEANING

- A. Clean aluminum and stainless steel by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry.
- B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

- C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 painting Sections.
- D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

### 3.9 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in field to shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05721

## SECTION 07620 - SHEET METAL FLASHING AND TRIM

### 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. Section Includes:
  - 1. Sheet metal flashing and trim not specifically specified in other sections.
  - 2. Gutters and Downspouts
- B. Related Sections:
  - 1. Division 5 Section "Architectural Joint Systems" for manufactured sheet metal expansion-joint covers.
  - 2. Division 6 Section 06100 Rough Carpentry for wood nailers, curbs, and blocking.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
- B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
  - 1. Identification of material, thickness, weight, and finish for each item and location in Project.
  - 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
  - 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
  - 4. Details of termination points and assemblies, including fixed points.

5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
7. Details of special conditions.
8. Details of connections to adjoining work.

## 1.5 QUALITY ASSURANCE

### A. Reference Standards:

1. 2007 Building Standards Administrative Code, Part 1, CBSC.
2. 2007 California Building Code (CBC), Part 2, CBSC (2006 IBC & California Amendments).
3. 2007 California Electrical Code (CEC), Part 3, CBSC (2005 National Electrical Code & California Amendments).
4. 2007 California Mechanical Code (CMC), Part 4, CBSC (2006 Uniform Mechanical Code & California Amendments).
5. 2007 California Plumbing Code (CPC), Part 5, CBSC (2006 Uniform Plumbing Code & California Amendments).
6. 2007 California Energy Code, Part 6, CBSC.
7. 2007 California Historical Building Code, Part 8, CBSC.
8. 2007 California Fire Code, Part 9, CBSC (2006 International Fire Code & California Amendments).
9. 2007 California referenced Standards, Part 12 CBSC.
10. Title 8 C.C.R. Chapter 4, Sub-Ch. 6 – Elevator Safety Orders.
11. Title 19 C.C.R., Public Safety, SFM Regulations.
12. Americans with Disabilities Act (ADA), Title II or Title III.

B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

C. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

## 1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of sheet metal flashing and trim that fails in materials or workmanship within specified warranty period.
  - a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- 2. Warranty Period: 2 years.
- B. Installer's Warranty: 1 year.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Galvanized Sheet Metal Flashing and Trim:
  - 1. Fry Reglet Corporation.
  - 2. Heckmann Building Products Inc.
  - 3. Hickman, W. P. Company.
  - 4. Hohmann & Barnard, Inc.; STF Sawtooth Flashing.
  - 5. Or equal.

### 2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
  - 1. Factory Prime Coating: Where painting after installation is indicated, pretreat with white or light-colored, factory-applied, baked-on epoxy primer coat; minimum dry film thickness of 0.2 mil.
  - 2.
  - 3. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
    - a. Color: Medium bronze
    - b. Color Range: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
  - 4. Exposed Coil-Coated Finishes:
    - a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - b. Three-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

- c. Four-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat and clear coats. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
- d. Mica Fluoropolymer: AAMA 620. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
- e. Metallic Fluoropolymer: AAMA 620. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
- f. FEVE Fluoropolymer: AAMA 620. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  
- g. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.
- h. Plastisol: Epoxy primer and vinyl plastisol topcoat; with a dry film thickness of not less than 0.2 mil for primer and 3.8 mils for topcoat.
5. Color: As selected by Architect from manufacturer's full range.
6. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
7. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653, G90 coating designation; structural quality.
8. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792, Class AZ50 coating designation, Grade 40; structural quality.
9. Surface: Smooth
10. Exposed Coil-Coated Finish:
  - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - b. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - c. Four-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat and clear coats. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - d. Mica Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

- e. Metallic Fluoropolymer: AAMA 621. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - f. FEVE Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - g. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.
  - h. Plastisol: Epoxy primer and vinyl plastisol topcoat; with a dry film thickness of not less than 0.2 mil for primer and 3.8 mils for topcoat.
- 11. Color: As selected by Architect from manufacturer's full range.
  - 12. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
- C. Zinc Sheet: Zinc, 99 percent pure, alloyed with a maximum of 1 percent copper and titanium; with manufacturer's standard factory-applied, flexible, protective back coating.
- 1. Finish: Preweathered black

### 2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
- 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
    - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
    - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
    - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
  - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
  - 3. Fasteners for Galvanized Steel Sheet: Hot-dip galvanized steel according to ASTM A 153 or ASTM F 2329 or Series 300 stainless steel.
  - 4. Fasteners for Zinc Sheet: Hot-dip galvanized steel according to ASTM A 153 or ASTM F 2329 or Series 300 stainless steel.
- C. Solder:
- 1. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.

2. For Zinc: ASTM B 32, 40 percent tin and 60 percent lead with low antimony, as recommended by manufacturer.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

#### 2.4 MANUFACTURED SHEET METAL FLASHING AND TRIM

- A. Reglets: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with interlocking counterflashing on exterior face, of same metal as reglet.
  1. Material: Galvanized steel, minimum 0.022 inch thick.
    - 1) Drip edge with 2" lap on edge

#### 2.5 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
  1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
  2. Obtain field measurements for accurate fit before shop fabrication.
  3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
  4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."
- C. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.



- D. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
- H. Do not use graphite pencils to mark metal surfaces.

## 2.6 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters.
  - 1. Gutter Style: As indicated on Drawings
  - 2. Expansion Joints: Butt type with cover plate
  - 3. Accessories: Continuous removable leaf screen with sheet metal frame and hardware cloth screen
  - 4. Gutters with Girth up to 15 Inches: Fabricate from the following materials:
    - a. Aluminum: 0.032 inch
    - b. Galvanized Steel: 0.022 inch
    - c. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch
    - d. Zinc: 0.032 inch
  - 5. Gutters with Girth 16 to 20 Inches: Fabricate from the following materials:
    - a. Aluminum: 0.040 inch.
    - b. Galvanized Steel: 0.028 inch
    - c. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch
    - d. Zinc: 0.039 inch
  - 6. Gutters with Girth 21 to 25 Inches: Fabricate from the following materials:
    - a. Aluminum: 0.050 inch
    - b. Galvanized Steel: 0.034 inch
    - c. Aluminum-Zinc Alloy-Coated Steel: 0.034 inch
    - d. Zinc: 0.048 inch
  - 7. Gutters with Girth 26 to 30 Inches: Fabricate from the following materials:
    - a. Aluminum: 0.063 inch
    - b. Galvanized Steel: 0.040 inch
    - c. Aluminum-Zinc Alloy-Coated Steel: 0.040 inch

- B. Downspouts: Fabricate round downspouts complete with radius or mitered elbows as indicated in plans. Furnish with metal hangers, from same material as downspouts, and anchors. Use decorative downspout clips as noted in plans. Use material as noted in plans and provide separation between dissimilar metals as occurs.
- C. Conductor Heads: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and shape indicated complete with outlet tubes exterior flange trim, and built-in overflows. Fabricate from the following materials:
  - 1. Aluminum: 0.032 inch
  - 2. Galvanized Steel: 0.028 inch
  - 3. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch
  - 4. Zinc: 0.032 inch

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
  - 1. Verify compliance with requirements for installation tolerances of substrates.
  - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system. Where noted in the plans provide blocking for solid anchorage to substrates.
  - 1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
  - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
  - 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
  - 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
  - 5. Install sealant tape where indicated.
  - 6. Torch cutting of sheet metal flashing and trim is not permitted.

7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Coat back side of uncoated aluminum sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
  2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 12 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing not less than 3/4 inch for wood screws(verify screw does not extend beyond finish of exposed eaves)
- E. Seal joints as shown and as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
  2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder [metallic-coated steel] [and] [aluminum] sheet.
  2. Pre-tinning is not required for [zinc-tin alloy-coated stainless steel] [and] [zinc-tin alloy-coated copper].
  3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
  4. Stainless-Steel Soldering: Tin edges of uncoated sheets using solder recommended for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.
  5. Copper Soldering: Tin edges of uncoated copper sheets using solder for copper.
- G. Rivets: Rivet joints in uncoated aluminum and zinc where indicated and where necessary for strength.

### 3.3 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets, straps, or twisted straps spaced not more than 32 inches apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
  - 1. Fasten gutter spacers to front and back of gutter.
  - 2. Loosely lock straps to front gutter bead and anchor to roof deck.
  - 3. Anchor and loosely lock back edge of gutter to continuous cleat, eave or apron flashing
  - 4. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 32 inches apart.
  - 5. Anchor gutter with spikes and ferrules spaced not more than 32 inches apart
  - 6. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet  
Install expansion-joint caps.
  - 7. Install continuous gutter screens on gutters with noncorrosive fasteners, removable for cleaning gutters.
  - 8. Install felt underlayment layer in built-in gutter trough and extend to drip edge at eaves and under felt underlayment on roof sheathing. Lap sides a minimum of 2 inches over underlying course. Lap ends a minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with roofing nails. Install slip sheet over felt underlayment.
  - 9. Anchor and loosely lock back edge of gutter to continuous cleat, eave, or apron flashing.
  - 10. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 32 inches apart.
  - 11. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart.  
Install expansion-joint caps.
- C. Downspouts: Join sections with 1-1/2-inch telescoping joints.
  - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers as noted in plans and securely fasten thru wall finish into blocking.
  - 2. All downspouts shall tie to sub drain systems
  - 3. Connect downspouts to underground drainage system indicated.
- D. Conductor Heads: Anchor securely to wall with elevation of conductor head rim 1 inch below gutter discharge.

### 3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.

### 3.5 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

### 3.6 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07620

## SECTION 09650 RESILIENT LINOLEUM TILE FLOORING

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section Includes: Resilient linoleum tile flooring.
  - 1. Homogeneous linoleum floor tile, full spread adhesive method installation, Topshield™ finish
  - 2. Homogeneous linoleum floor tile, full spread adhesive method and seamless installation, Topshield™ finish
  
- B. Related Sections: Section(s) related to this section include:
  - 1. Concrete: Refer to Division 3 Concrete Sections for cast-in-place concrete, concrete toppings, and cementitious underlayments.
  - 2. Wood Subflooring: Refer to Division 6 Carpentry Section for wood subflooring and wood underlayment.
  - 3. Resilient Flooring Accessories: Refer to Division 9 Finishes Sections for resilient wall bases, reducer strips, metal edge strips and other resilient flooring accessories.

#### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM E 648 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source.
  - 2. ASTM E 662 Test Method for Specific Density of Smoke Generated by Solid Materials. ASTM F 710 Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
  - 4. ASTM F 970 Test Method for Static Load Limit.
  
- B. National Fire Protection Association (NFPA):
  - 1. NFPA 253 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source.
  - 2. NFPA 258 Test Method for Specific Density of Smoke Generated by Solid Materials.

#### 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.

#### 1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with "Conditions of the Contract" and Division 1 Submittal Procedures Section.

- B. Product Data: Submit product data, including manufacturer's SPEC-DATA product sheet, for specified products.
- C. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors, patterns and textures.
- D. Samples: Submit selection and verification samples for finishes, colors, and textures.
- E. Quality Assurance Submittals: Submit the following:
  - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
  - 2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria, and physical requirements.
  - 3. Manufacturer's Instructions: Manufacturer's installation instructions.
- F. Closeout Submittals: Submit the following:
  - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
  - 2. Warranty: Warranty documents specified herein.

#### 1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
- B. Regulatory Requirements:
  - 1. Fire Performance Characteristics: Provide resilient linoleum tile flooring with the following fire performance characteristics as determined by testing products in accordance with ASTM method indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction:
    - a. Critical Radiant Flux: Class 1 Rating per NFPA 253 (ASTM 648) (0.45 watts/cm<sup>2</sup> or greater).
    - b. Smoke Density: Less than 450 per NFPA 258 (ASTM E 662).
  - 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
  - 3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.
- D. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

1. Material should be stored in areas that are fully enclosed, weathertight with the permanent HVAC system set at a uniform temperature of at least 68 degrees F (20 degrees C) for 48 hrs. prior to, during and after installation.

#### 1.07 PROJECT CONDITIONS

A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, Areas to receive flooring should be clean, fully enclosed and weathertight with the permanent HVAC system operational and set at a minimum of 68o F (20o C) for a minimum of 7 days prior to, during, and 7 days after the installation. The flooring material should be conditioned in the same manner for at least 48 hours prior to the installation. Maximum temperature should not exceed 100 degrees F after installation. Areas to receive flooring shall be adequately lighted to allow for proper inspection of the substrate, installation and seaming of the flooring, and for final inspection.

B. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.

1. Temperature Conditions: 68 degrees F (20 degrees C) for 7 days prior to, during and after installation.

C. Existing Conditions: Verify that existing wood and concrete substrate surfaces are suitable for application. Provide required preparation for proper installation. Installer shall provide skim coating over existing concrete floors per the manufacturer's recommendations.

D. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

#### 1.08 SEQUENCING AND SCHEDULING

A. Finishing Operations: Install tile flooring after finishing operations, including painting and ceiling operations, have been completed.

B. Concrete Curing: Do not install tile flooring over concrete substrates until substrates have cured and are dry to bond with adhesive as determined by resilient flooring manufacturer's recommended bond, moisture test, and pH test.



## 1.09 WARRANTY

A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1. Warranty Period: Five (5) year limited warranty commencing on Date of Substantial Completion.

## 1.10 MAINTENANCE

A. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section.

1. Quantity: Furnish quantity of flooring units equal to 5% of amount installed.
2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.

## PART 2 PRODUCTS

### 2.01 RESILIENT LINOLEUM TILE FLOORING

A. Manufacturer: Forbo Flooring, Inc.

1. Contact: Humboldt Industrial Park, P.O. Box 667, Hazleton, PA 18202; Telephone: 800 842 7839, 570 459 0771; Fax: 570 450 0258.

B. Product(s): Marmoleum Composition Tile (MCT) Linoleum Tile and Linoleum Tile Adhesive.

1. Description: Homogeneous tile of primarily natural materials consisting of linseed oil, wood flour, and rosin binders, mixed and calendered onto a polyester backing. Pattern and color shall extend throughout total thickness of tile material.
2. Size: approx. 13" x 13" (33.3 cm x 33.3 cm)
3. Gauge: 0.080" (2.0 mm).
4. Backing: Polyester backing.
5. Pattern(s) and Color(s): As selected by Architect from manufacturers standard patterns and colors.
6. Adhesive: Forbo Flooring, Inc., T 940 adhesive.  
Heat Welding Rod: Forbo Flooring, Inc., Marmoweld color-matched welding rod.  
Topshield™ finish

C. Product Criteria Forms: Refer to Product Criteria Forms as an attachment to this section.

1. Product Forms: Subject to compliance with specified requirements, provide products specified in each Product Data Sheet at end of this section.

### 2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: Provide substitutions per Division 1 Substitution requirements.

## 2.03 RELATED MATERIALS

- A. Related Materials: Refer to other sections for related materials as follows:
1. Underlayment and Patching Compound: Refer to Division 3 Concrete Sections for portland cement-based underlayments and patching compounds. Provide underlayments at wood and concrete floor conditions recommended by manufacturer
  2. Resilient Flooring Accessories: Refer to Division 9 Finishes Sections for resilient flooring accessories.
  3. Expansion Joint Covers: Refer to other specification section for expansion joint covers to be used with resilient flooring.

## 2.04 SOURCE QUALITY

- A. Source Quality: Obtain flooring product materials from a single manufacturer.

## PART 3 EXECUTION

### 3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product carton instructions for installation.

### 3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions (which are existing or have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.

- B. Material Inspection: In accordance with manufacturer's installation requirements, visually inspect materials prior to installation. Material with visual defects shall not be installed. Labor costs required to replace material installed with visual defects shall be the responsibility of the installation contractor.

### 3.03 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

- B. Surface Preparation:

1. General: Prepare floor substrate in accordance with manufacturer's instructions.
2. Floor Substrate: Prepare floor substrate to be smooth, rigid, flat, permanently dry, clean and free of foreign materials such as dust, paint, grease, oils, solvent, curing and hardening compounds, sealers, asphalt and old adhesive residue.
3. Concrete Floor Substrate: Concrete floor substrate shall have a minimum compressive strength of 3500 psi. Refer to Division 3 Concrete sections for patching and repairing crack materials, and leveling compounds with portland cement-based compounds. Installer shall provide these products as part of this installation.
  - a. Reference Standard: Comply with ASTM F 710 Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.

- C. Concrete Moisture Testing: Conduct moisture tests on all concrete floors regardless of the age, grade level or the presence of existing flooring. Conduct calcium chloride tests in accordance with ASTM F 1869. Measure the internal relative humidity of the concrete slab in accordance with ASTM F 2170. One test of each type should be conducted for every 1,000 sq. ft. of flooring. For projects less than 3,000 sq. ft., a minimum of three tests of each type should be conducted. The tests should be conducted around the perimeter of the room, at columns, and where moisture may be evident. Concrete moisture vapor emissions must not exceed 5.0 lbs. per 1,000 sq. ft. in 24 hrs. Concrete internal relative humidity must not exceed 75%. A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor or End User. If any test result exceeds these limitations, the installation must not proceed until the problem has been corrected.
- D. Concrete pH Test: Perform pH tests on concrete floors regardless of the age or grade level. If the pH is greater than 10, it must be neutralized prior to beginning the installation.
- E. Wood Subfloor Substrate: Prepare wood subfloor substrate to be rigid, double construction with a one inch minimum thickness, free from harmful movement and have at least 18 inches of well ventilated air space below. Forbo floor coverings should not be installed over wooden subfloors built on sleepers over on or below grade concrete floors without first making sure that adequate precautions have been taken to ensure the structural integrity of the system, and to prevent moisture migration from the concrete slab.
  - a. Refer to Division 6 Carpentry sections for wood subfloor construction.

### 3.04 INSTALLATION

- A. Full Spread Adhesive Method Installation: Install tile flooring with full spread adhesive method from established area center marks, in order for tile at opposite edges of area to be of equal width. Avoid using cut tile widths at perimeter less than four inches of tile width. Install tiles square with room axis. Lay tile material into wet adhesive, as recommended by tile manufacturer.
  - 1. Full Spread Adhesive Method, Seamless Flooring Installation: Rout out seams and heat weld together with complementary colored heat welding rod in accordance with flooring manufacturer's recommendations.
  - 2. Adhesive Material Installation: Use trowel as recommended by flooring manufacturer for specific type of adhesive. Spread at a rate of approximately 150 sq. ft./gal. as recommended by flooring manufacturer.
- B. Installation Techniques:
  - 1. Quarter turn tiles.
  - 2. Where demountable partitions and other items are indicated for installation on top of finished flooring, install flooring before these items are installed.
  - 3. Scribe, cut, fit flooring to butt tightly to vertical surfaces, permanent fixtures and built-in furniture, including pipes, outlets, edgings, thresholds, nosings, and cabinets.
  - 4. Extend flooring into toe spaces, door reveals, closets, and similar openings.
  - 5. Install flooring on covers for telephone and electrical ducts, and similar items occurring within finish floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on covers.
  - 6. Do not install resilient flooring over expansion joints. Use expansion joint covers manufactured for use with resilient flooring. Refer to other specifications sections for expansion joint covers.

7. Adhere resilient flooring to flooring substrate without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed flooring installation.
    - a. Use adhesive applied to substrate in compliance with flooring manufacturer's recommendations, including those for trowel notching, adhesive mixing, and adhesive open and working times.
  8. Roll resilient flooring as required by flooring manufacturer.
- C. Finish Flooring Patterns: As selected by Architect.

### 3.05 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Upon Owner's request and with at least 72 hours notice, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.
  1. Site Visits: 1

### 3.06 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.
  1. Remove visible adhesive and other surface blemishes using cleaning methods recommended by tile floor manufacturer.
  2. Sweep and vacuum floor after installation.
  3. Do not wash floor until after time period recommended by flooring manufacturer.
  4. Damp-mop flooring to remove black marks and soil.

### 3.07 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of Substantial Completion.

### 3.08 INITIAL MAINTENANCE PROCEDURES

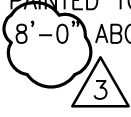
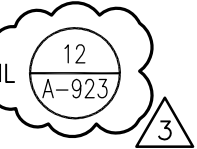
- A. General: Include in Contract Sum Amount cost for initial maintenance procedures, and execute procedures after flooring installation as recommended by flooring manufacturer.

B. Drying Room Yellowing: Expose installed linoleum to either natural or artificial light to allow "drying room yellowing" (the film is a natural occurrence of the oxidation of the linseed oil in linoleum products) on installed linoleum flooring to disappear prior to initiating temporary protection procedures.

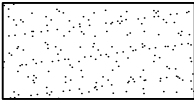
END OF SECTION

# KEYNOTES

- 07.04 6" HALF ROUND 0.040" ALUMINUM GUTTER, KYNAR FINISH. REFER TO DETAIL
- 07.05 3" DIA. SHEET METAL DOWN SPOUT. FIELD PAINTED TO MATCH (E) COLOR.  
PROVIDE STEEL PIPE SCHEDULE 40 UP TO 8'-0" ABOVE FINISH FLOOR.



# LEGEND (ENLARGED SITE PLAN)



4" THICK CONC. WALKWAY W/ #3 REBARS AT 24" O.C. FA. WAY.  
W/ SCOFFIELD COLOR ADDMIXTURE #5059 SORRENTO RED.  
PROVIDE SAMPLES FOR SELECTIONS.



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FAX 805 925 2490



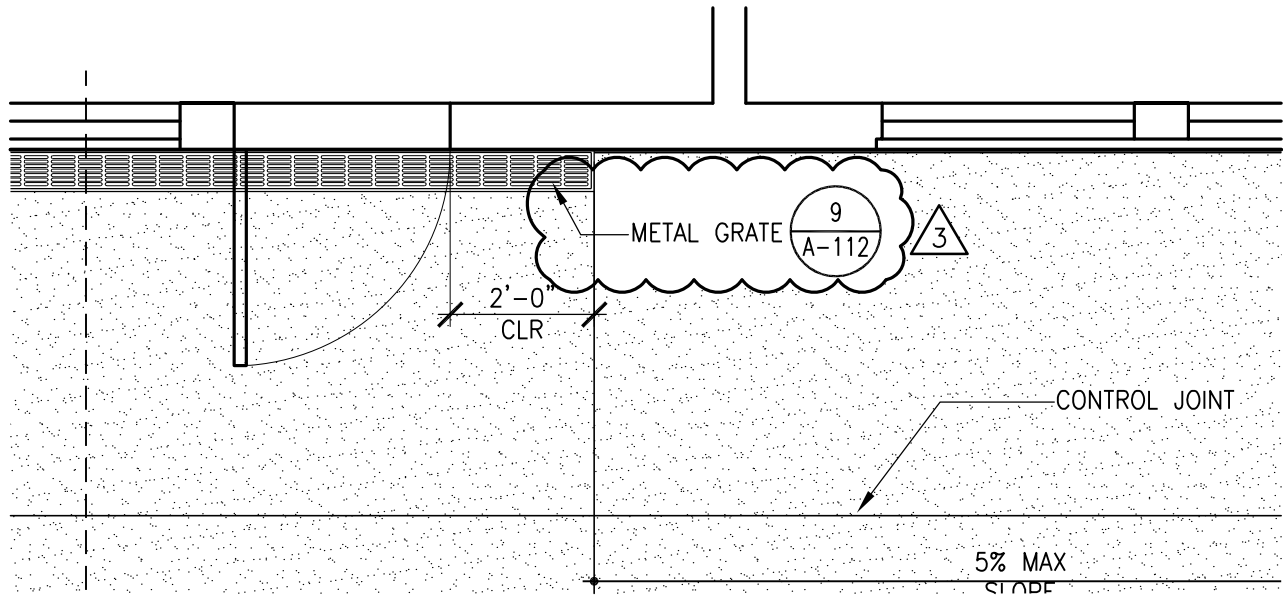
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COLD SPRINGS ELEMENTARY  
MODERNIZATION**

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ADDENDUM NO. 3  
PMSM JOB NO. 09014.01  
DATE 5/14/10 BY FC

DRAWING NO.

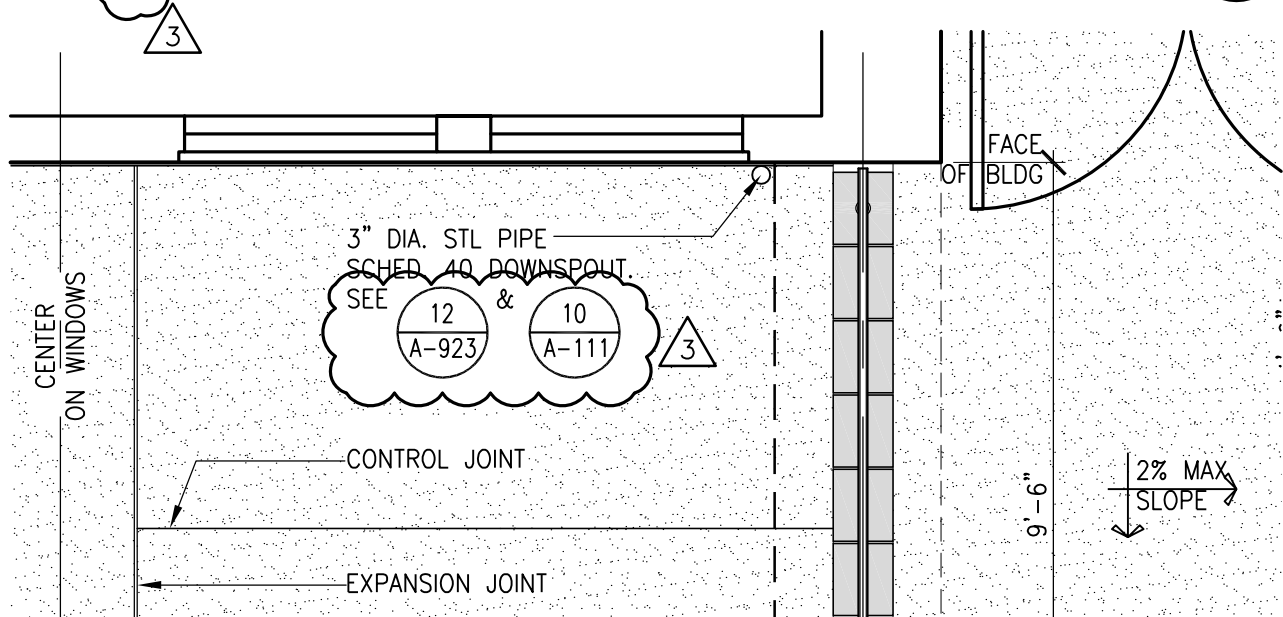
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## WALKWAY ENLARGEMENT

SCALE:  $\frac{3}{8}'' = 1'-0''$



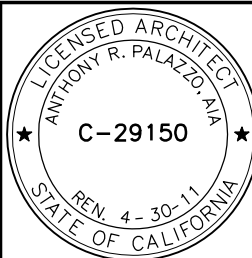
## WALKWAY ENLARGEMENT

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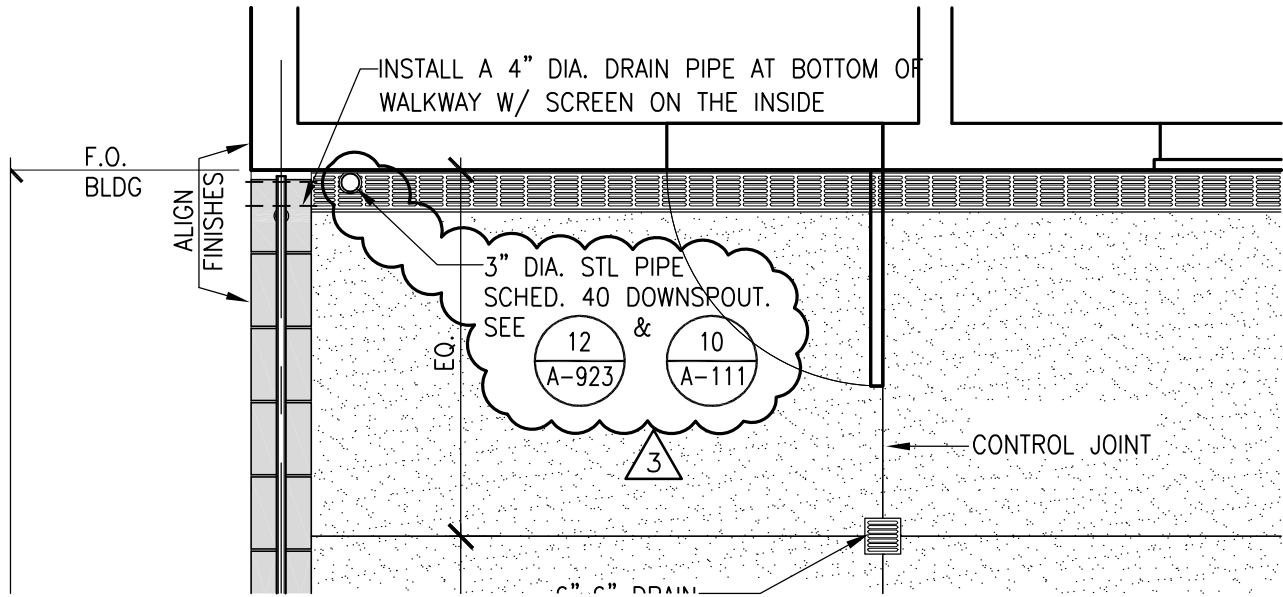
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PMSM JOB NO. 09014.01  
DATE 5/14/10 BY FC

DRAWING NO.

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**A-110**

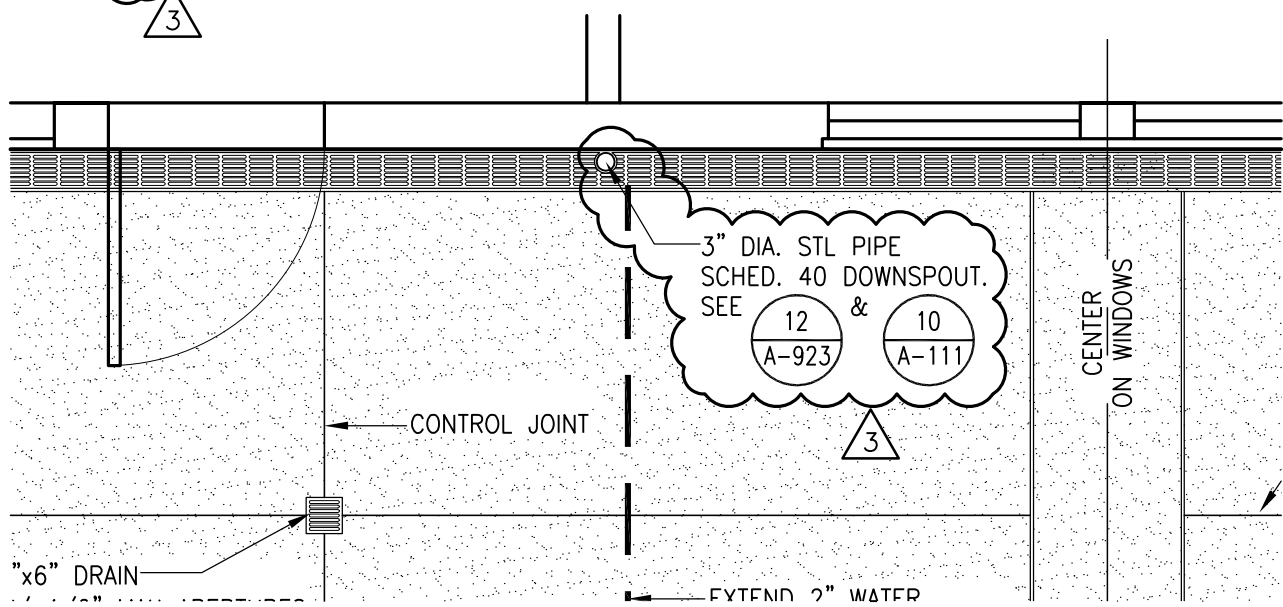
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## WALKWAY ENLARGEMENT

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2



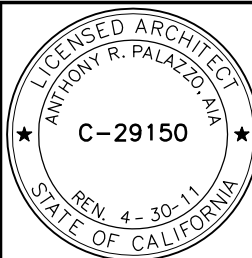
## WALKWAY ENLARGEMENT

SCALE:  $\frac{3}{8}'' = 1'-0''$

2

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FOOTING BELOW  
EXTERIOR PLASTER

8x8x16  
PRECISION CMU  
SOLID GROUTED

(4) #4 VER.  
REBAR PLACED AS  
SHOWN. ALTERNATE  
HOOK AT FOOTING

#4 REBAR @ 8"  
O.C.

SOLID GROUT

1'-11 5/8"  
SQ.

PLAN

PAVING AS  
OCCURS

PAVING AS  
OCCURS

2" STARTED WALL

#4 VERTICAL  
ALTERNATE HOOK AT  
FOOTING

(4) #5 CONT.  
REBAR



1'-0"

1'-0"  
MIN

1'-4"

4'-0"  
SQR.

BASE

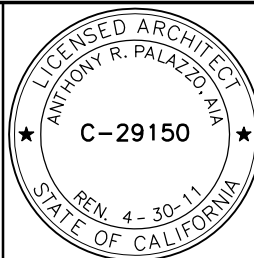
SECTION AT CMU COLUMN

SCALE: 1" = 1'-0"

4

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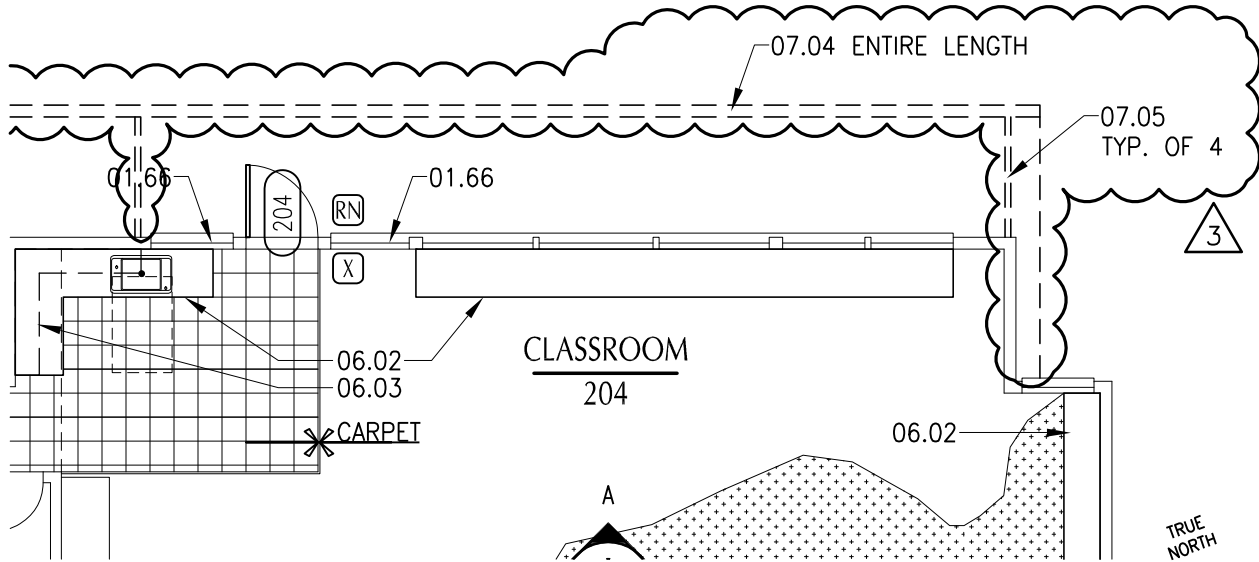
# KEYNOTES

- 06.06 RECEPTION DESK
- 06.10 PLASTIC LAMINATE COUNTERTOP
- 07.04 REMOVE (E) GUTTER & REPLACE WITH 6" HALF ROUND 0.040" ALUMINUM GUTTER. KYNAR FINISH. REFER TO DETAIL 13/A-923.
- 07.05 REMOVE (E) DOWNSPOUT & REPLACE WITH 3" DIA. SHEET METAL DOWNSPOUT. FIELD PAINTED TO MATCH (E) COLOR. CONNECT TO (E) STORM DRAIN SYSTEM.
- 08.02 FLUSH WOOD DOOR



# DEMOLITION GENERAL NOTES

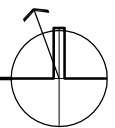
- 4. FURNITURE SHOULD BE REMOVED BY THE DISTRICT PRIOR TO THE START OF CONSTRUCTION.
- 5. REMOVE ALL CEILING AND FLOOR FINISHES AND PREPARE FOR INSTALLATION OF NEW FINISHES.
- 6. DEMOLITION OF VCT FLOORING IN ROOMS 201, 202 AND 204 IS NOT A PART OF THIS CONTRACT.



# BUILDING 200 REMODEL FLOOR PLAN

SCALE: 1/8" = 1'-0"

PARTIAL EXHIBIT



PROJECT  
NORTH

ARCHITECTS

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A-202

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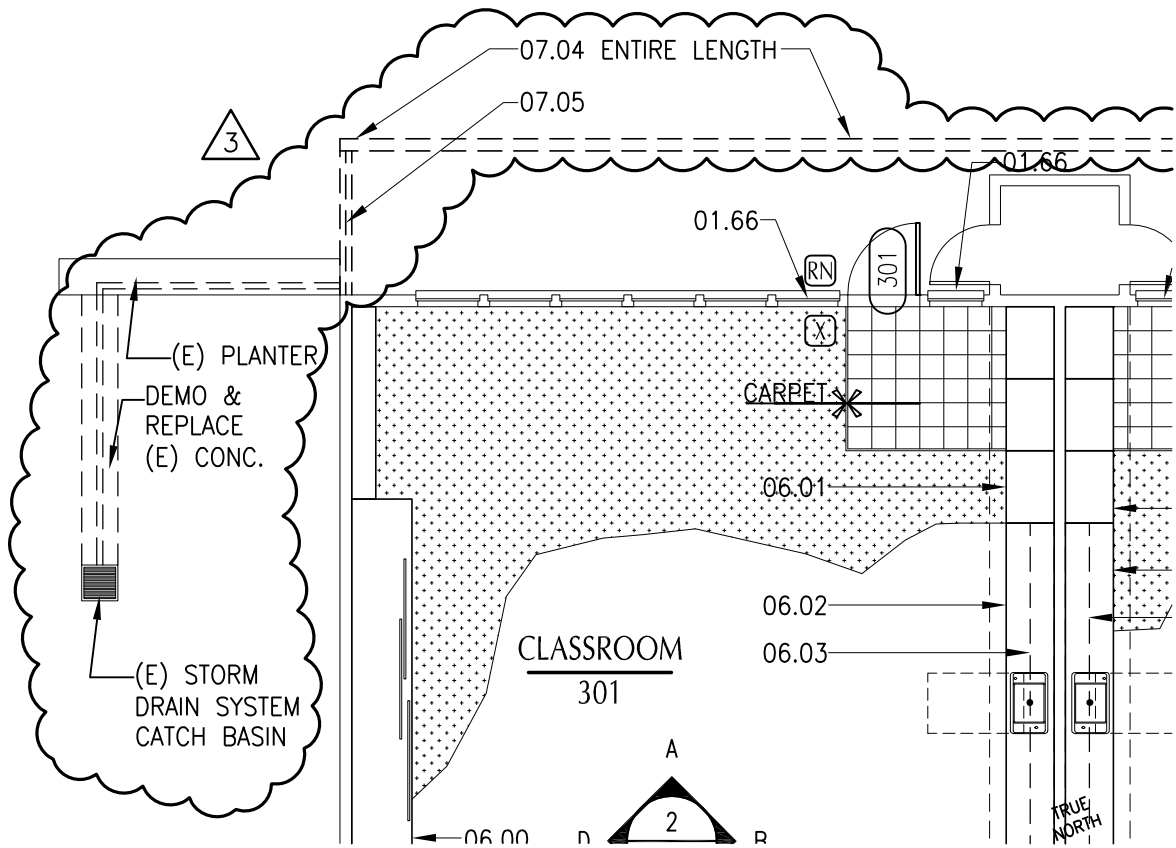
# KEYNOTES

- 06.06 RECEPTION DESK
- 06.10 PLASTIC LAMINATE COUNTERTOP

07.04 REMOVE (E) GUTTER & REPLACE WITH 6" HALF ROUND 0.040" ALUMINUM GUTTER. KYNAR FINISH. REFER TO DETAIL 13/A-923.

07.05 REMOVE (E) DOWNSPOUT & REPLACE WITH 3" DIA. SHEET METAL DOWNSPOUT. FIELD PAINTED TO MATCH (E) COLOR. CONNECT TO (E) STORM DRAIN SYSTEM.

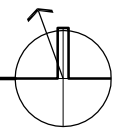
- 08.02 FLUSH WOOD DOOR



## BUILDING 300 REMODEL FLOOR PLAN

SCALE: 1/8" = 1'-0"

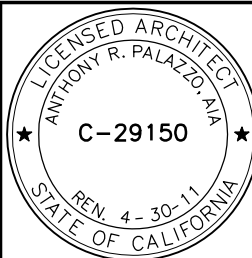
PARTIAL EXHIBIT



PROJECT  
NORTH

**ARCHITECTS**

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**A-203**

**PMSM**

# KEYNOTES

- 01.04 (E) MECHANICAL VENTS TO REMAIN. FLUSH OUT WITH NEW FINSHES, PREP AND PAINT.
- 01.06 (E) ATTIC ACCESS TO REMAIN. FLUSH OUT WITH NEW FINISHES.

11.02 OVERHEAD PROJECTOR, OWNER FURNISHED CONTRACTOR INSTALLED CONTRACTOR TO COORDINATE ALL MOUNTING EQUIPMENT WITH THE DISTRICT'S STANDARD PROJECT MANUFACTURER TO INCLUDE BUT NOT LIMITED TO; PROJECTOR HEIGHT, WEIGHT, DISTANCE FROM SCREEN AND LOCATION IN ROOM. WHERE POSSIBLE, CONTRACTOR TO CENTER THE TELESCOPING PROJECTOR MOUNT IN A CEILING TILE.

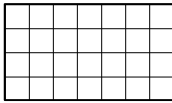


# GENERAL NOTES

1. PROVIDE PROJECTOR MOUNT AT CLASSROOMS 501, 503, 512 & 514 SIMILAR TO 5/A-921.



# LEGEND



1'x1' ARMSTRONG FINE FISSURE #741 ACOUSTIC TILE. NAIL ON. PATCH AND REPAIR GYP. BD. SUBSTRATE TO PROVIDE SMOOTH SURFACE WHERE OCCURS.



**ARCHITECTS**

1004 EAST MAIN STREET  
SANTA MARIA, CA 93454  
TEL 805 925 2421  
FAX 805 925 2490



**COLD SPRING SCHOOL DISTRICT  
COLD SPRINGS ELEMENTARY  
MODERNIZATION**

REFERENCE NO. \_\_\_\_\_  
DSA NO. 03-113015  
ADDENDUM NO. 3  
PMSM JOB NO. 09014.01  
DATE 5/14/10 BY FC

DRAWING NO.

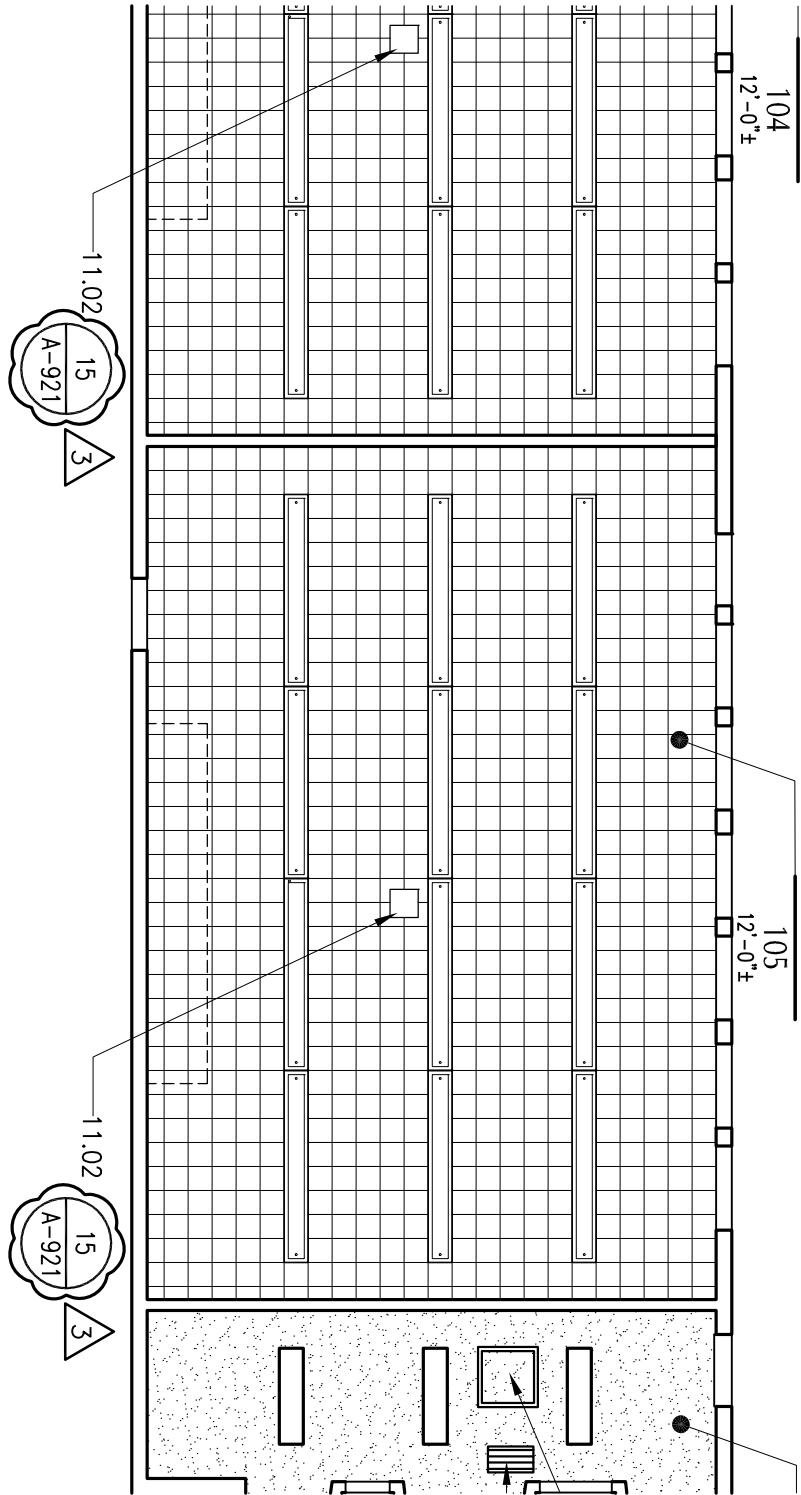


**A-211**

**PMSM**

CLASSROOM  
104  
12'-0"±

CLASSROOM  
105  
12'-0"±

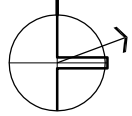


# REFLECTED CEILING PLAN BUILDING 100

SCALE: 1/8" = 1'-0"

## PARTIAL EXHIBIT

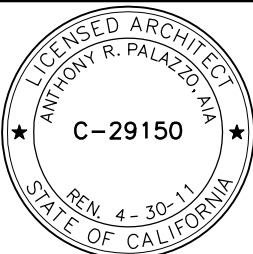
PROJECT  
NORTH



### COLD SPRING SCHOOL DISTRICT COLD SPRINGS ELEMENTARY MODERNIZATION

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DATE	5/14/10 BY FC

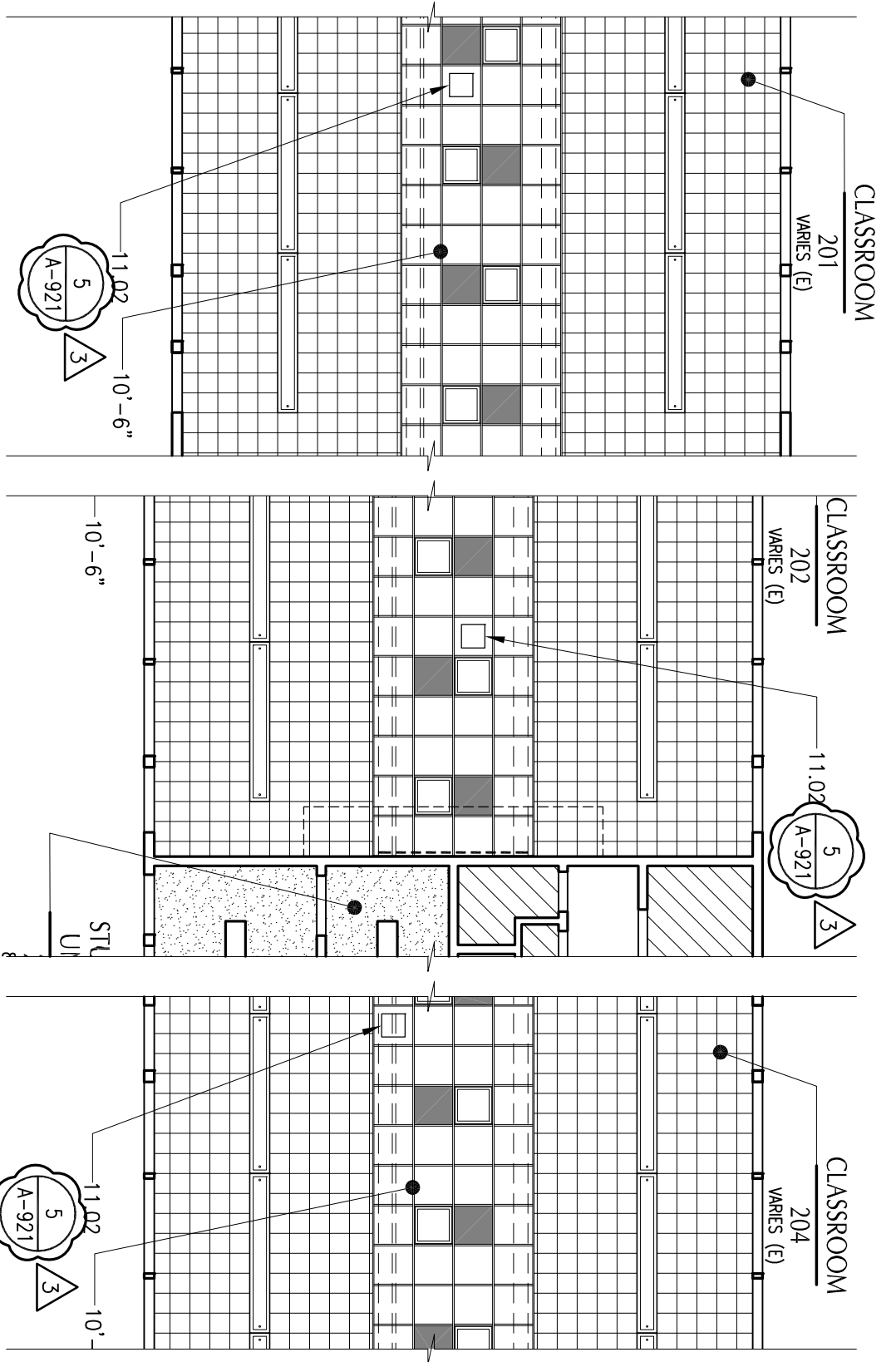
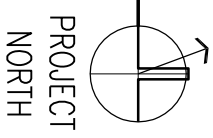
DRAWING NO.

3  
**A-211**



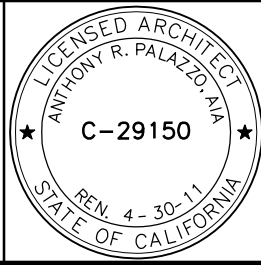
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 SCALE: 1/8" = 1'-0"

PARTIAL EXHIBIT




ARCHITECTS

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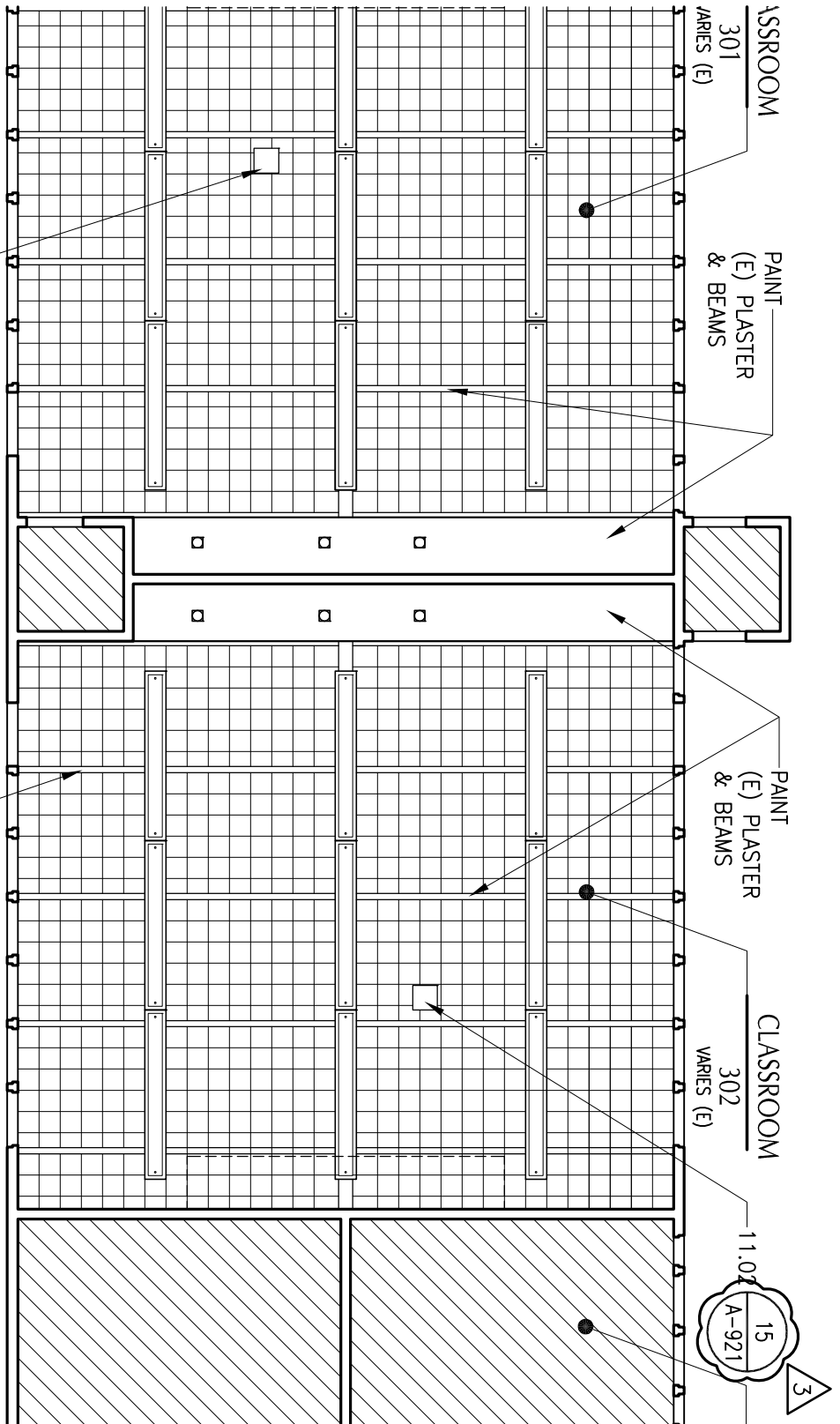


COLD SPRING SCHOOL DISTRICT  
 COLD SPRINGS ELEMENTARY  
 MODERNIZATION

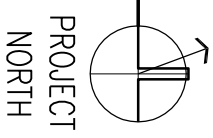
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 DSA NO. 03-113015  
 ADDENDUM NO. 3  
 PMSM JOB NO. 09014.01  
 DATE 5/14/10 BY FC

DRAWING NO.  
  
**A-211**





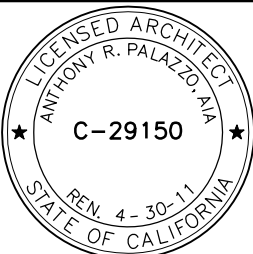
REFLECTED CEILING PLAN BUILDING 300  
 SCALE: 1/8" = 1'-0"  
 PARTIAL EXHIBIT



COLD SPRING SCHOOL DISTRICT  
 COLD SPRINGS ELEMENTARY  
 MODERNIZATION

ARCHITECTS

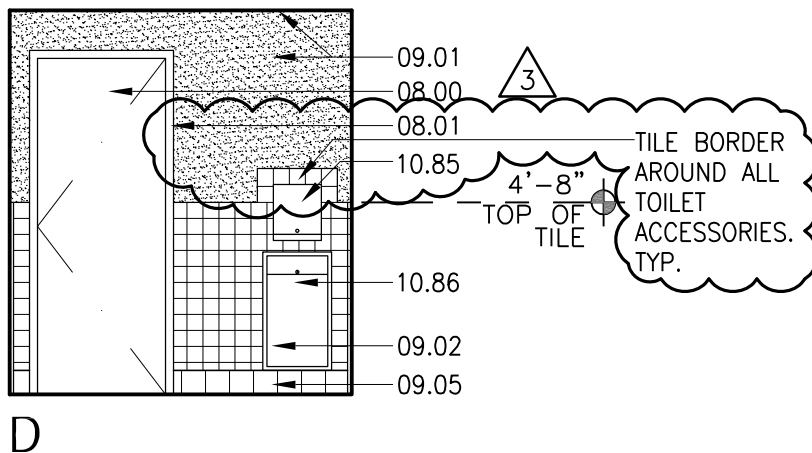
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REFERENCE NO. \_\_\_\_\_  
 DSA NO. 03-113015  
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 3  
 A-211





# UNISEX STAFF RESTROOM

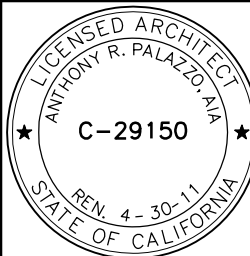
ROOM 103

1/4" = 1'-0"

6

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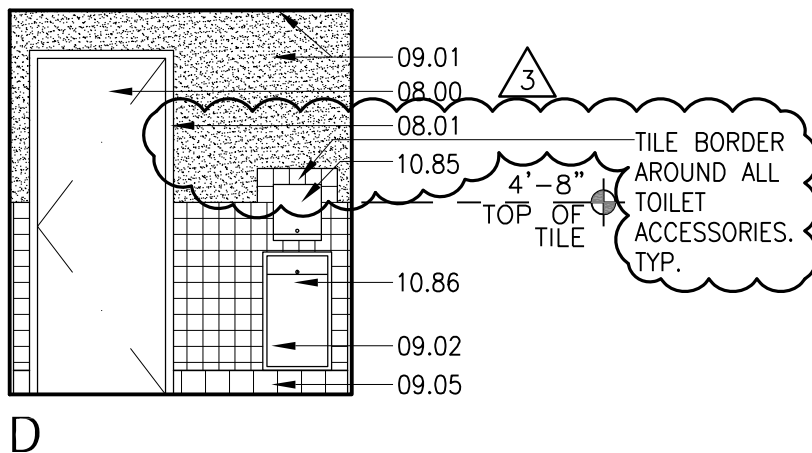
**COLD SPRING SCHOOL DISTRICT  
COLD SPRINGS ELEMENTARY  
MODERNIZATION**

REFERENCE NO. \_\_\_\_\_  
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ADDENDUM NO. 3  
PMSM JOB NO. 09014.01  
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DRAWING NO.

3  
**A-501**

**PMSM**



# UNISEX STAFF RESTROOM

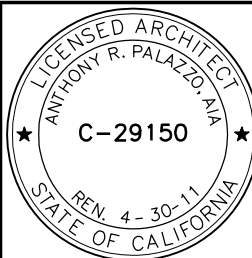
ROOM 103

1/4" = 1'-0"

6

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COLD SPRINGS ELEMENTARY  
MODERNIZATION**

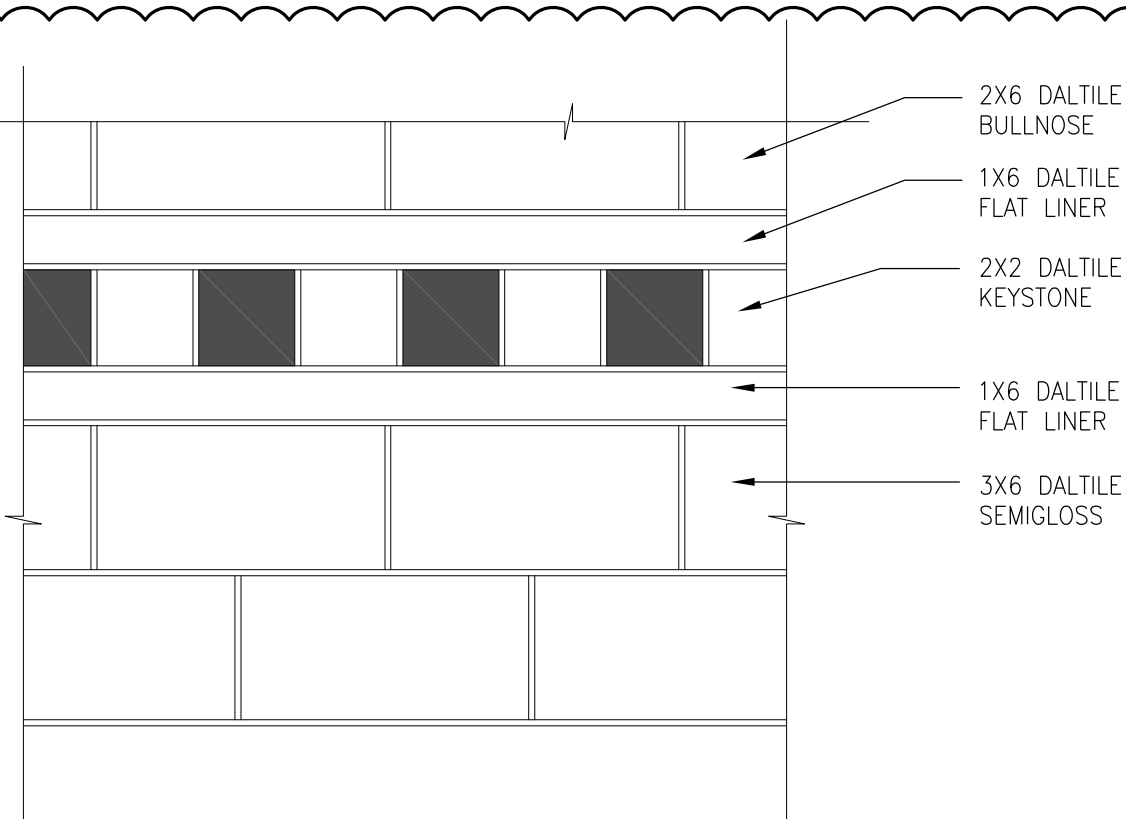
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DSA NO. 03-113015  
ADDENDUM NO. 3  
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DATE 5/14/10 BY FC

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3  
**A-501**

**PMSM**





2X6 DALTILE  
BULLNOSE

1X6 DALTILE  
FLAT LINER

2X2 DALTILE  
KEYSTONE

1X6 DALTILE  
FLAT LINER

3X6 DALTILE  
SEMIGLOSS

# TILE ELEVATION DETAIL

SCALE: 3" = 1'-0"

3  
6

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COLD SPRINGS ELEMENTARY  
MODERNIZATION**

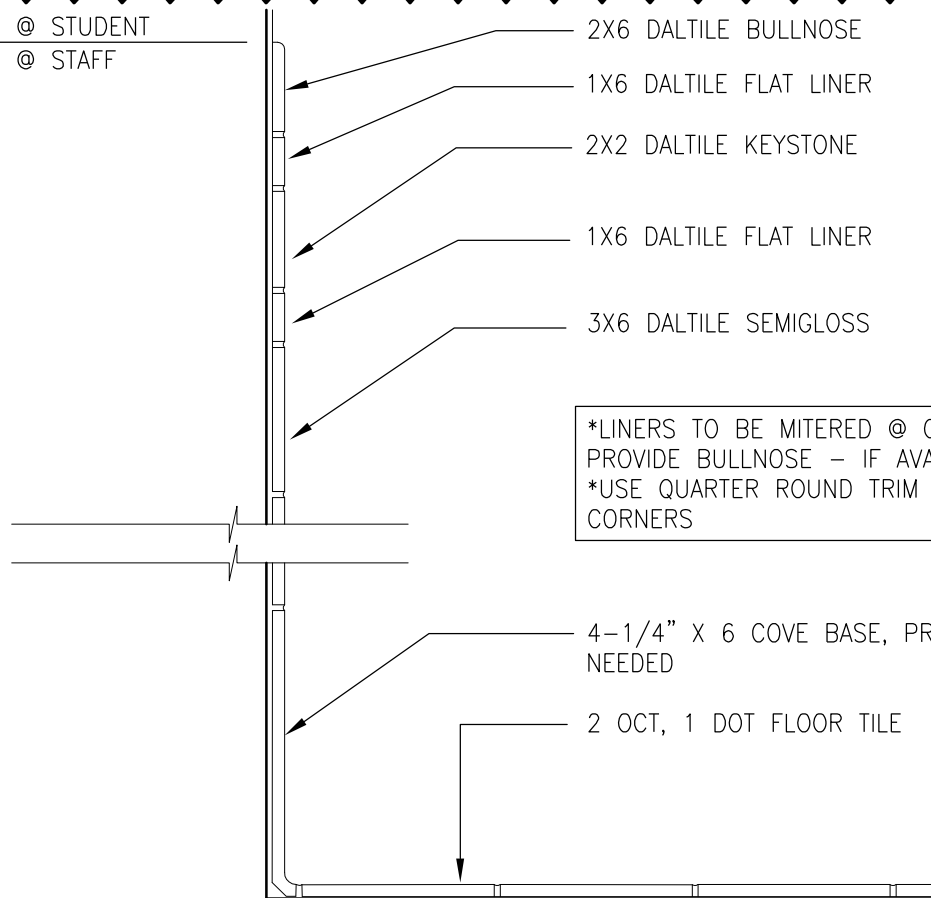
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 DSA NO. 03-113015  
 ADDENDUM NO. 3  
 PMSM JOB NO. 09014.01  
 DATE 5/14/10 BY FC

DRAWING NO.

3  
**A-502**

**PMSM**

7'-2" @ STUDENT  
4'-8" @ STAFF



\*LINERS TO BE MITERED @ OUTSIDE CORNER OR PROVIDE BULLNOSE - IF AVAILABLE  
\*USE QUARTER ROUND TRIM AT OUTSIDE WALL CORNERS

4-1/4" X 6 COVE BASE, PROVIDE OUTSIDE CORNER AS NEEDED  
2 OCT, 1 DOT FLOOR TILE

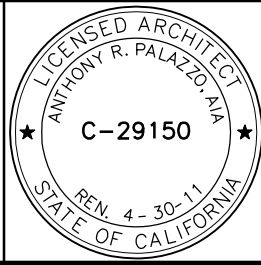
**TILE DETAIL**

SCALE: 3" = 1'-0"

3  
7

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COLD SPRINGS ELEMENTARY  
MODERNIZATION**

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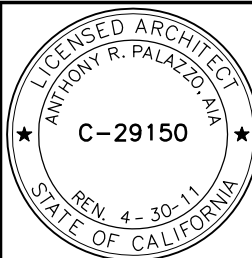
DRAWING NO. **A-502**  
3

**PMSM**

DETAILS			SIGNAGE PER 3/A-922		3	NOTES
JAMB	SILL DETAIL # OR UNDERCUT CRITERIA-UC	HARDWARE GROUP	PUSH SIDE	PULL SIDE		
3/A-801	C	08	G, WG	--		
3/A-801	C	09	X	MW,UG		
3/A-801	C	06	--	--		
	B	01	X	RN		

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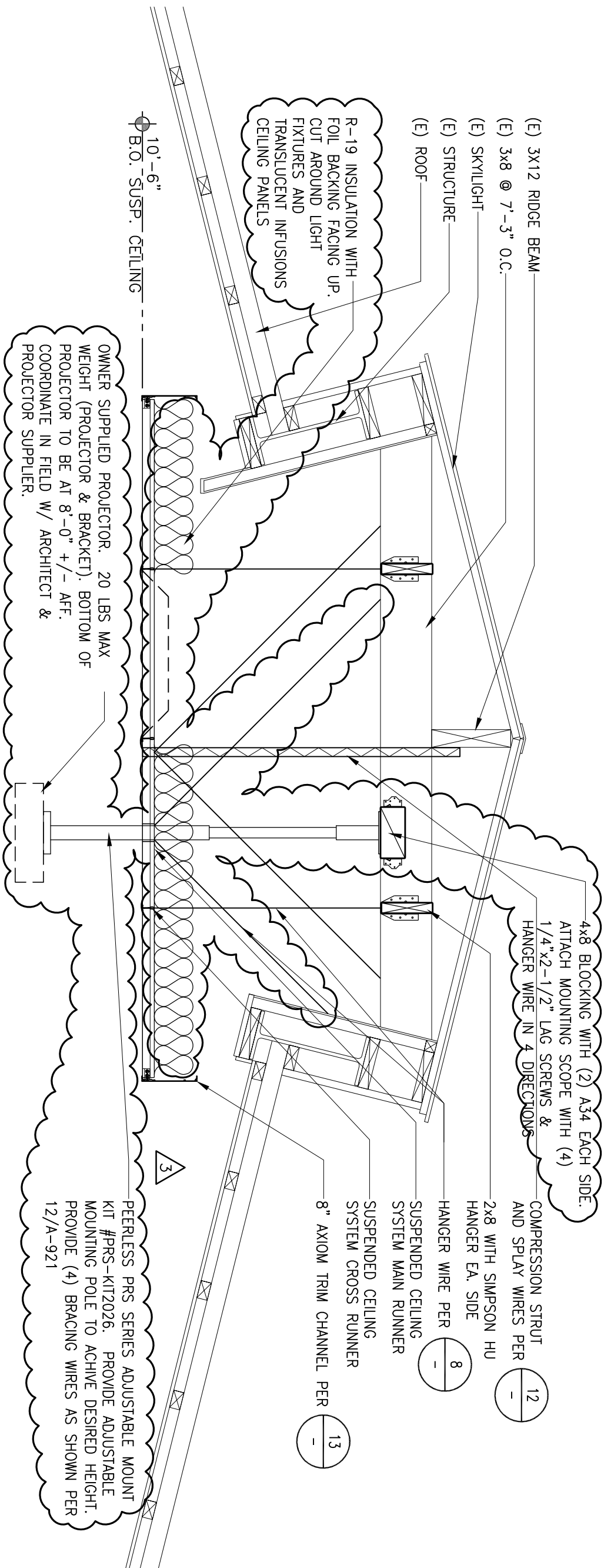
**COLD SPRING SCHOOL DISTRICT  
COLD SPRINGS ELEMENTARY  
MODERNIZATION**

REFERENCE NO. \_\_\_\_\_  
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ADDENDUM NO. 3  
PMSM JOB NO. 09014.01  
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DRAWING NO.

3  
**A-801**

**PMSM**



SUSPENDED CEILING AT (E) SKYLIGHT

SCALE:  $\frac{3}{4}'' = 1'-0''$

3

5

COLD SPRING SCHOOL DISTRICT  
COLD SPRING ELEMENTARY  
MODERNIZATION

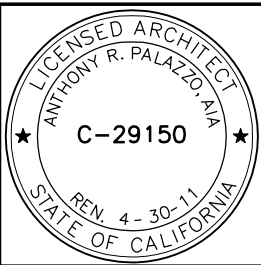
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DSA NO.	3
ADDENDUM NO.	09014.01
PMSM JOB NO.	5/14/10
DATE	BY FC

DRAWING NO.

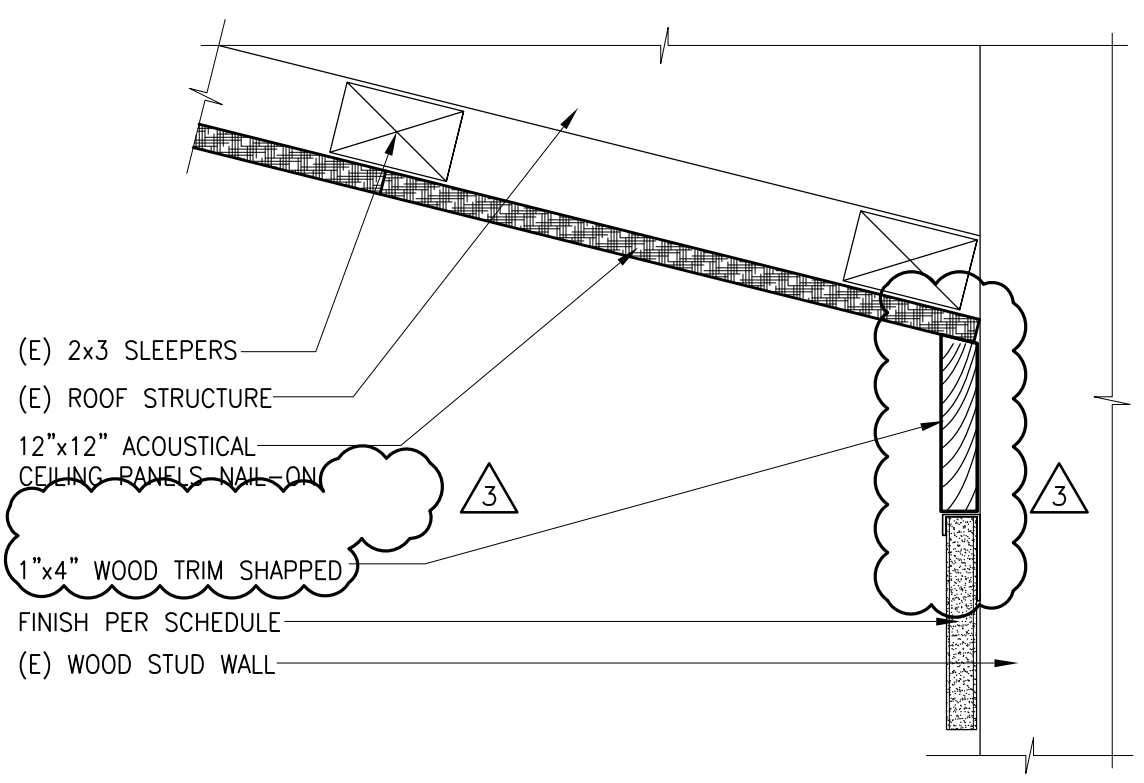
3  
A-921

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PMSM



- (E) 2x3 SLEEPERS
- (E) ROOF STRUCTURE
- 12"x12" ACOUSTICAL  
CEILING PANELS NAIL-ON
- 1"x4" WOOD TRIM SHAPPED
- FINISH PER SCHEDULE
- (E) WOOD STUD WALL

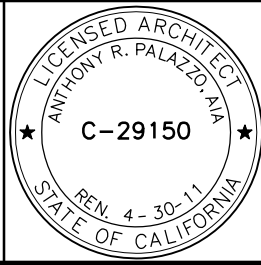
## DETAIL

SCALE: 3" = 1'-0"

14

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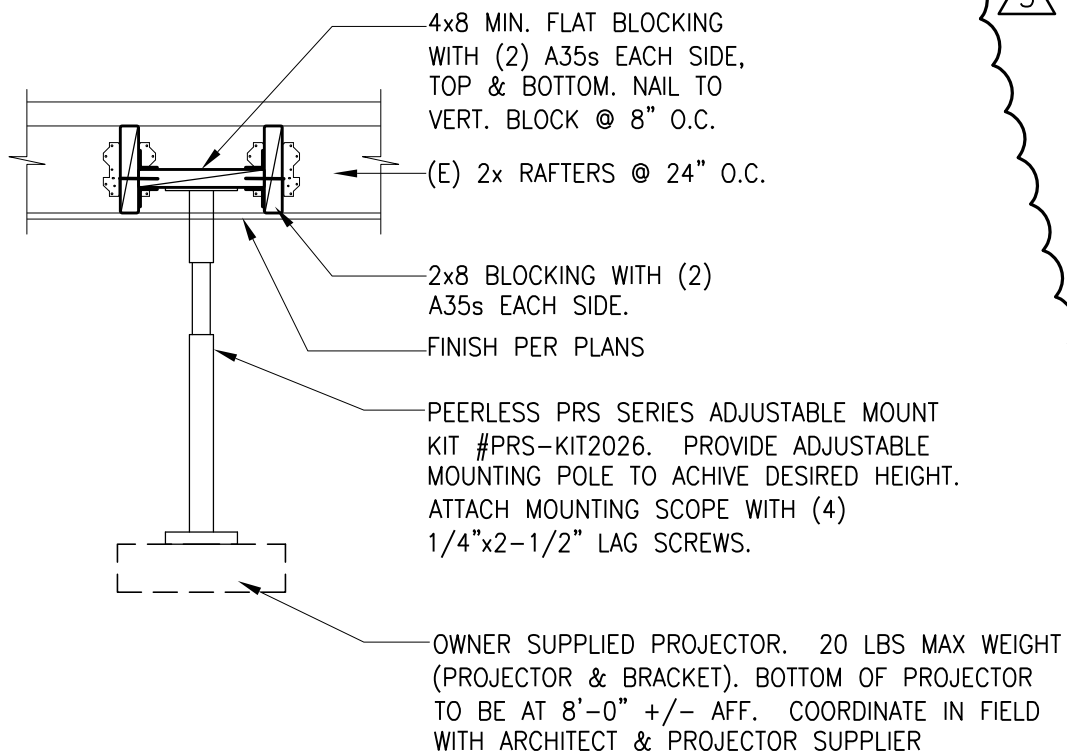


**COLD SPRING SCHOOL DISTRICT  
COLD SPRINGS ELEMENTARY  
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 3  
**A-921**

**PMSM**



3

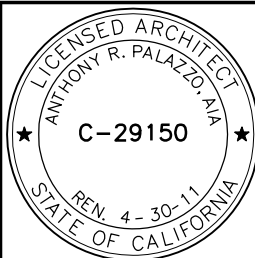
# PROJECTOR MOUNT

15

SCALE: 3/4" = 1'-0"

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DRAWING NO.

3  
**A-921**

**PMSM**

WATER PROOF MEMBRANE  
PER ASNI A118.10.12" UP WALL

CERAMIC TILE

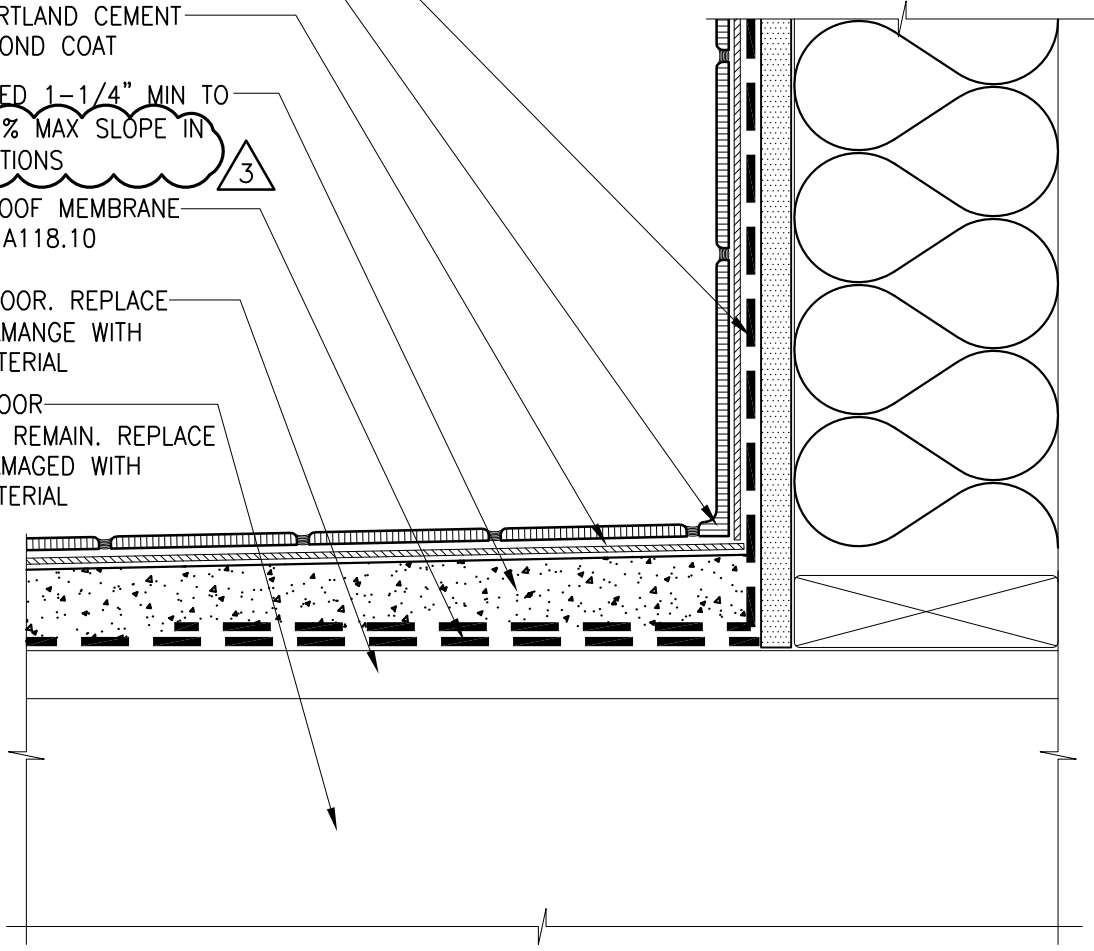
LATEX-PORTLAND CEMENT  
MORTAR BOND COAT

MORTAR BED 1-1/4" MIN TO  
2" MAX 2% MAX SLOPE IN  
ALL DIRECTIONS

WATER PROOF MEMBRANE  
PER ASNI A118.10

(E) SUBFLOOR. REPLACE  
WHERE DAMANGE WITH  
EQUAL MATERIAL

(E) 2x FLOOR  
JOISTS TO REMAIN. REPLACE  
WHERE DAMAGED WITH  
EQUAL MATERIAL



SILL (A)

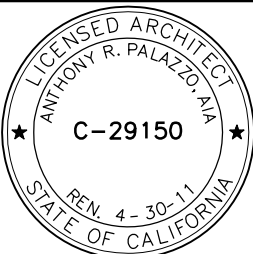
# DETAIL

SCALE: 3" = 1'-0"

8


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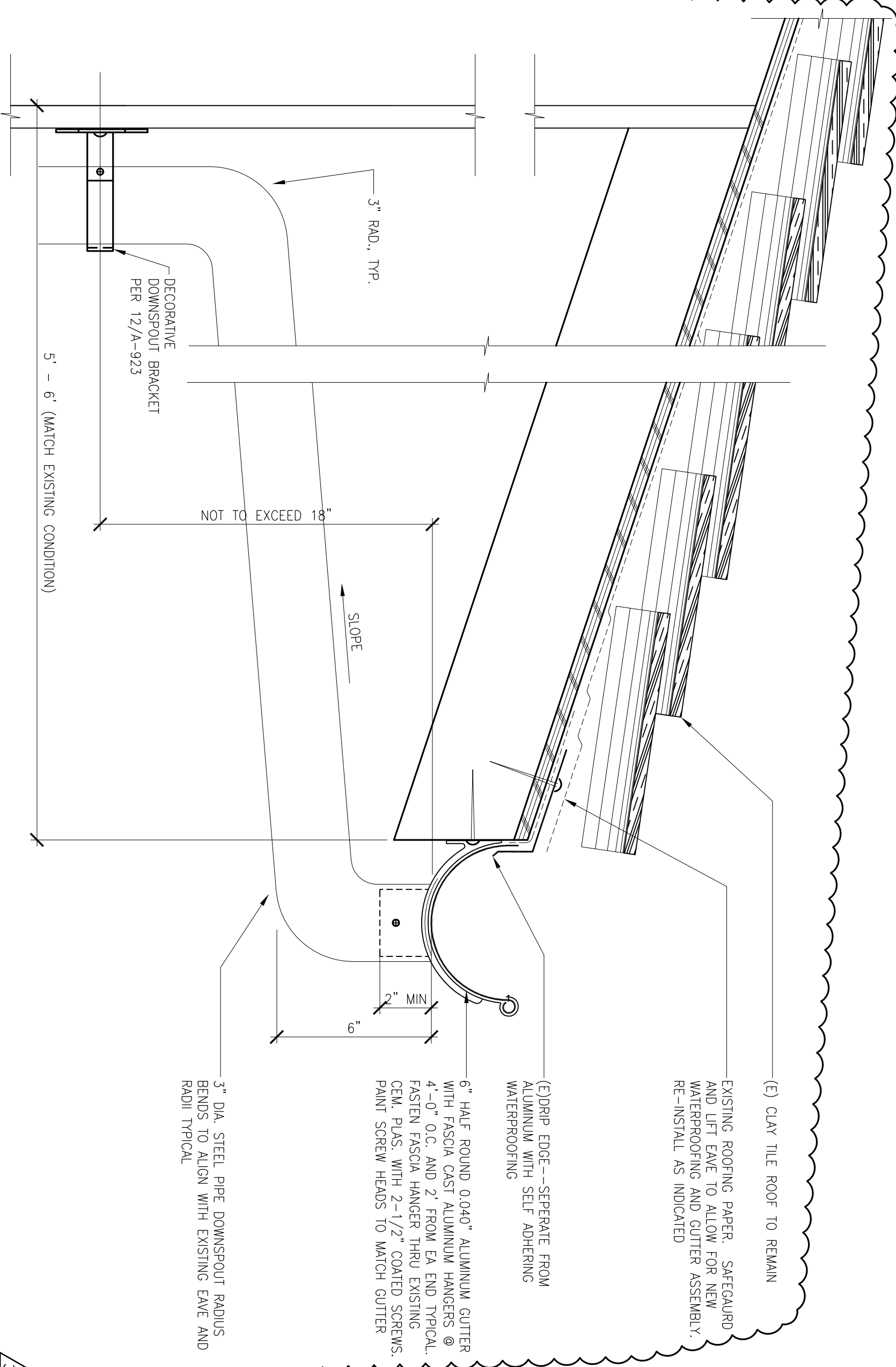


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DRAWING NO.   
**A-923**

**PMSM**



**NEW TOP HUNGER GUTTER @ WOOD RAFTER EAVE**

SCALE: 3" = 1'-0"

13

3

(E) CLAY TILE ROOF TO REMAIN

EXISTING ROOFING PAPER, SAFEGAURD AND LIFT EAVE TO ALLOW FOR NEW WATERPROOFING AND GUTTER ASSEMBLY. RE-INSTALL AS INDICATED

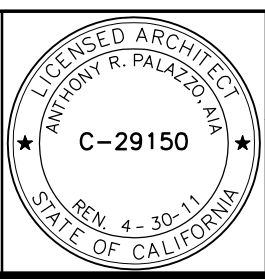
(E) DRIP EDGE--SEPERATE FROM ALUMINUM WITH SELF ADHERING WATERPROOFING

6" HALF ROUND 0.040" ALUMINUM GUTTER WITH FASCIA CAST ALUMINUM HANGERS @ 4'-0" O.C. AND 2' FROM EA END TYPICAL. FASTEN FASCIA HANGER THRU EXISTING CEM. PLAS. WITH 2-1/2" COATED SCREWS. PAINT SCREW HEADS TO MATCH GUTTER

3" DIA. STEEL PIPE DOWNSPOUT RADIUS BENDS TO ALIGN WITH EXISTING EAVE AND RADI TYPICAL

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**COLD SPRING SCHOOL DISTRICT  
COLD SPRING ELEMENTARY  
MODERNIZATION**

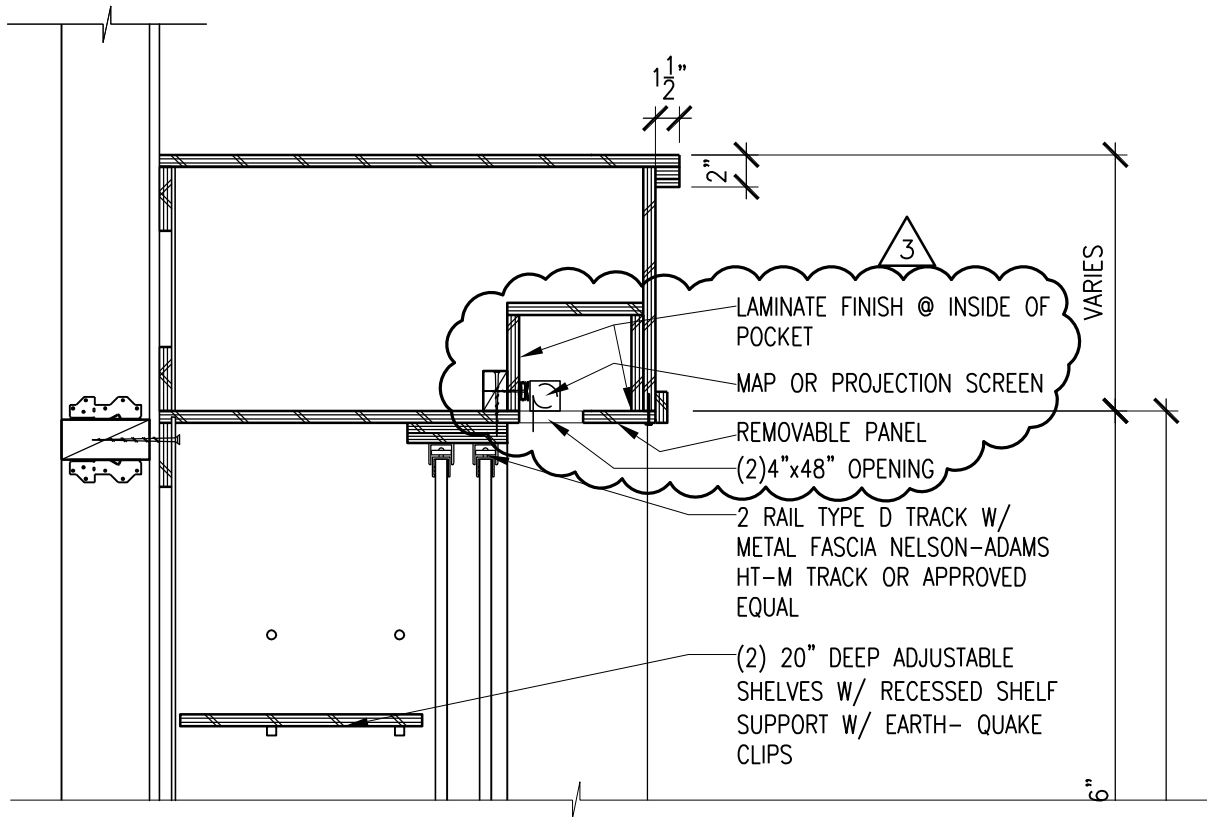
REFERENCE NO.	03-113015
DSA NO.	3
ADDENDUM NO.	09014.01
PMSM JOB NO.	5/14/10
DATE	BY RA

DRAWING NO.

3  
**A-923**

**PMSM**





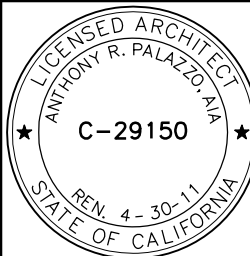
# TEACHING WALL SECTION

SCALE: 1" = 1'-0"

8

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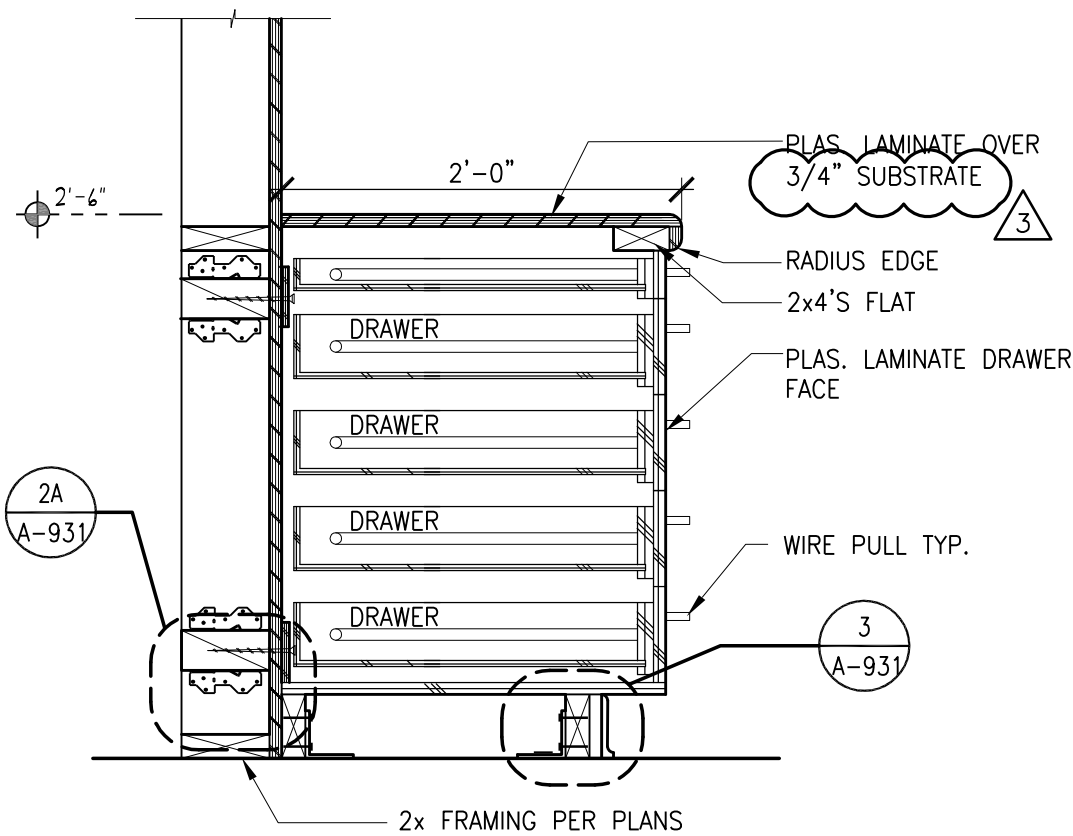


**COLD SPRING SCHOOL DISTRICT  
 COLD SPRINGS ELEMENTARY  
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 ADDENDUM NO. 3  
 PMSM JOB NO. 09014.01  
 DATE 5/14/10 BY FC

DRAWING NO. **A-931**  
 3

**PMSM**



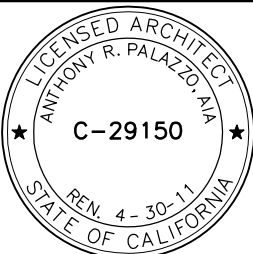
# DESK DRAWER SECTION

SCALE: 1" = 1'-0"

15

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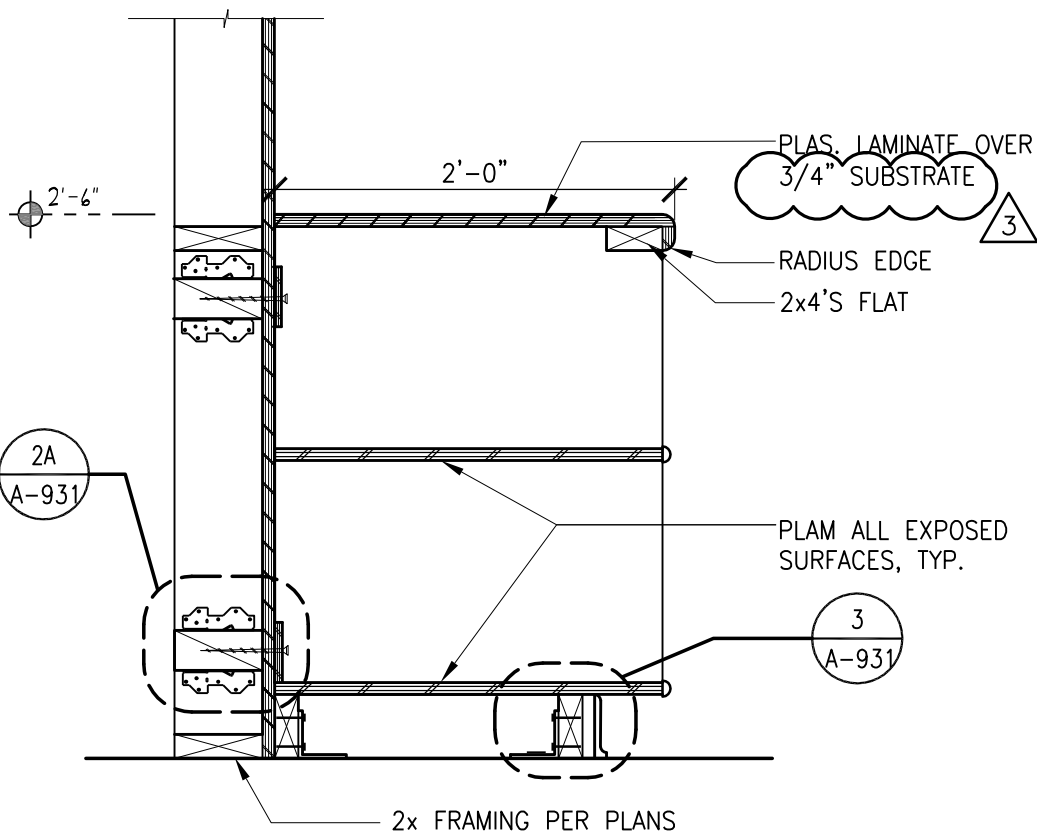


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**A-931**

**PMSM**



# LOWER SHELVES SECTION

SCALE: 1" = 1'-0"

16

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**COLD SPRING SCHOOL DISTRICT  
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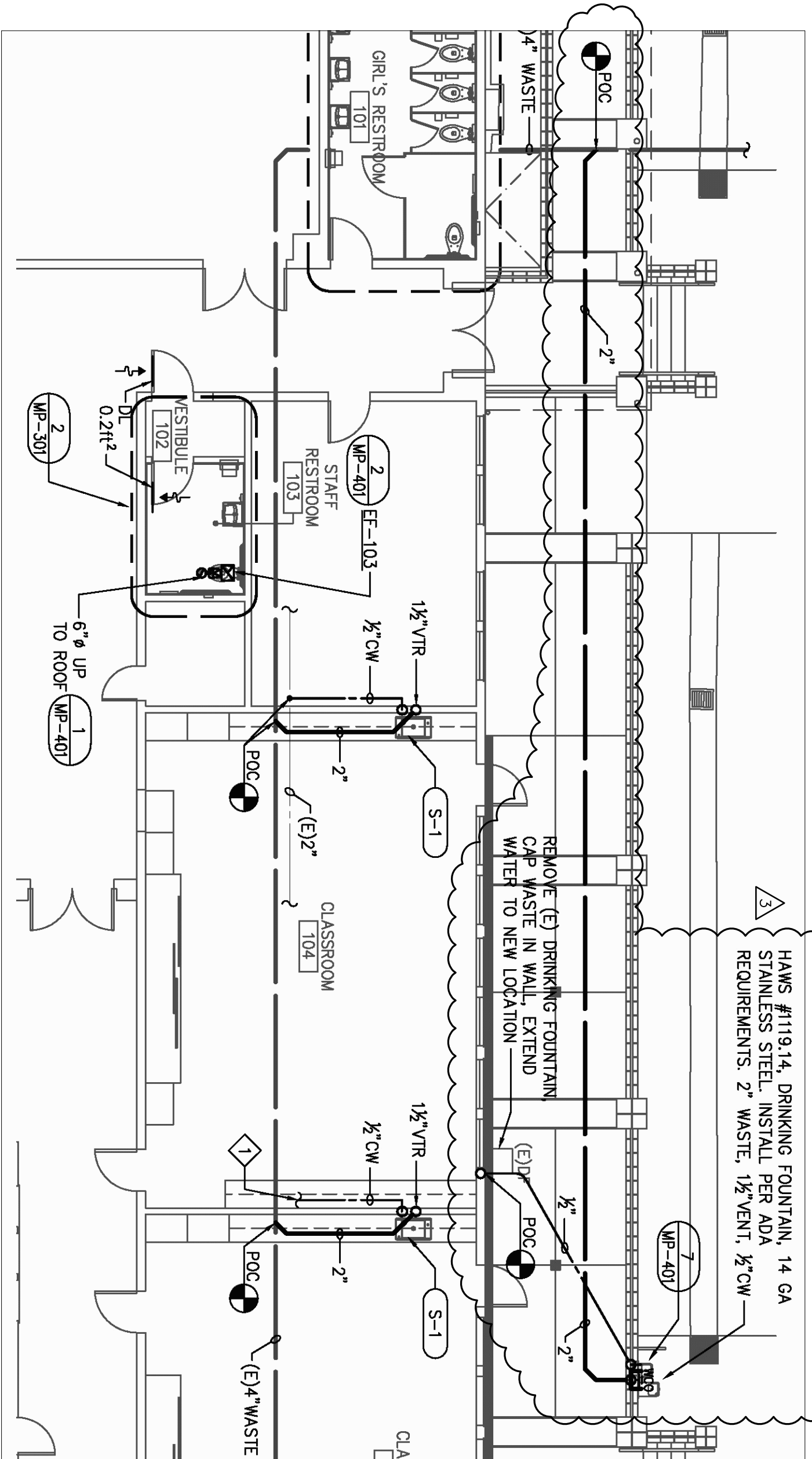
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 ADDENDUM NO. 3  
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DRAWING NO.

3

**A-931**

**PMSM**

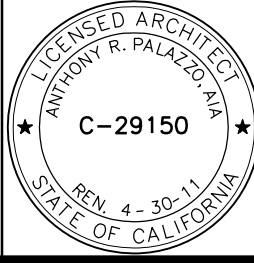


3  
 HAW #1119.14, DRINKING FOUNTAIN, 14 GA STAINLESS STEEL. INSTALL PER ADA REQUIREMENTS. 2" WASTE, 1/2" VENT, 1/2" CW

REMOVE (E) DRINKING FOUNTAIN CAP WASTE IN WALL, EXTEND WATER TO NEW LOCATION

ARCHITECTS

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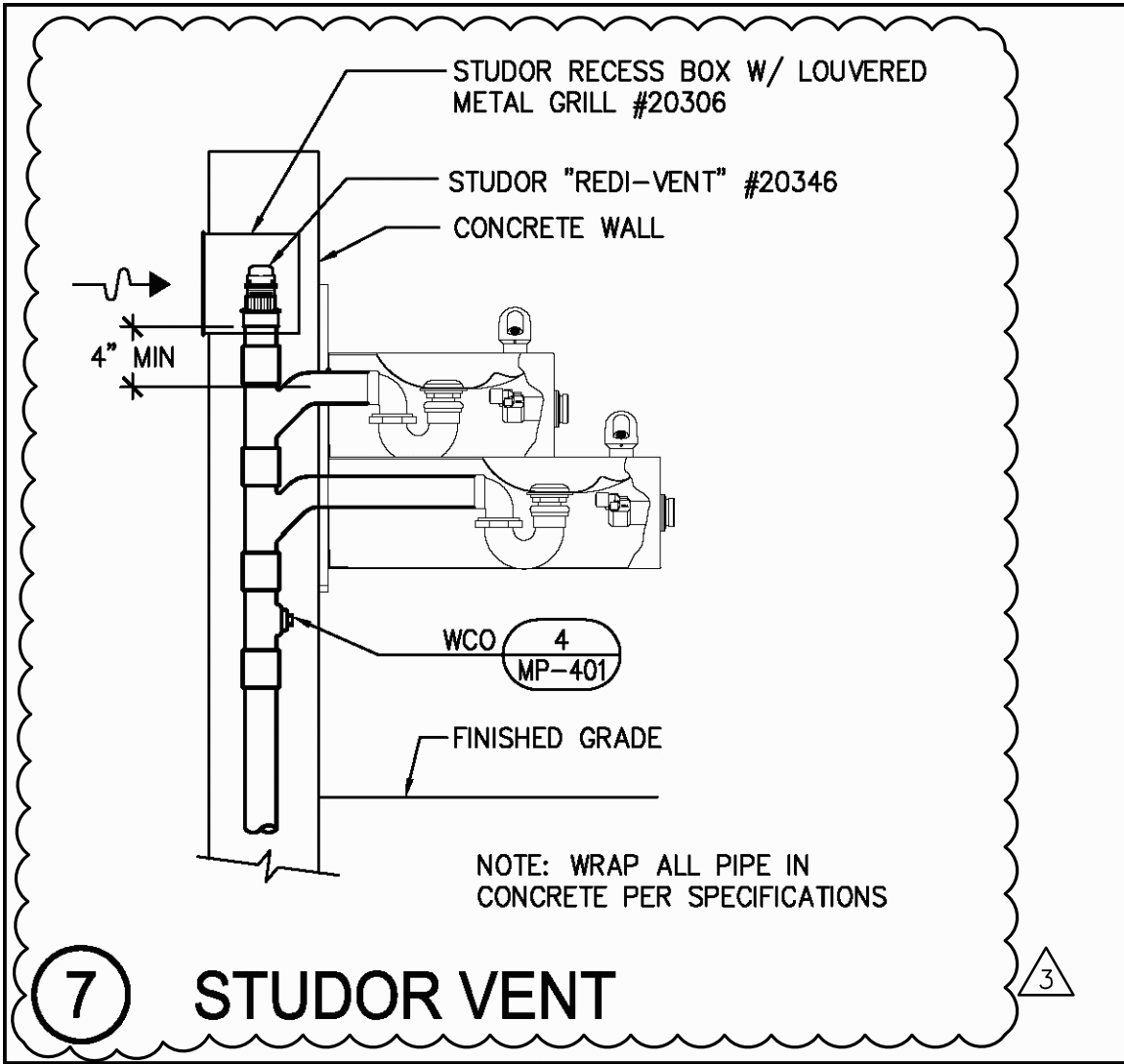
COLD SPRING SCHOOL DISTRICT  
 COLD SPRING ELEMENTARY  
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REFERENCE NO.	03-113015
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PMSM JOB NO.	5/14/10
DATE	BY

DRAWING NO.

3  
 MP-201





ARCHITECTS

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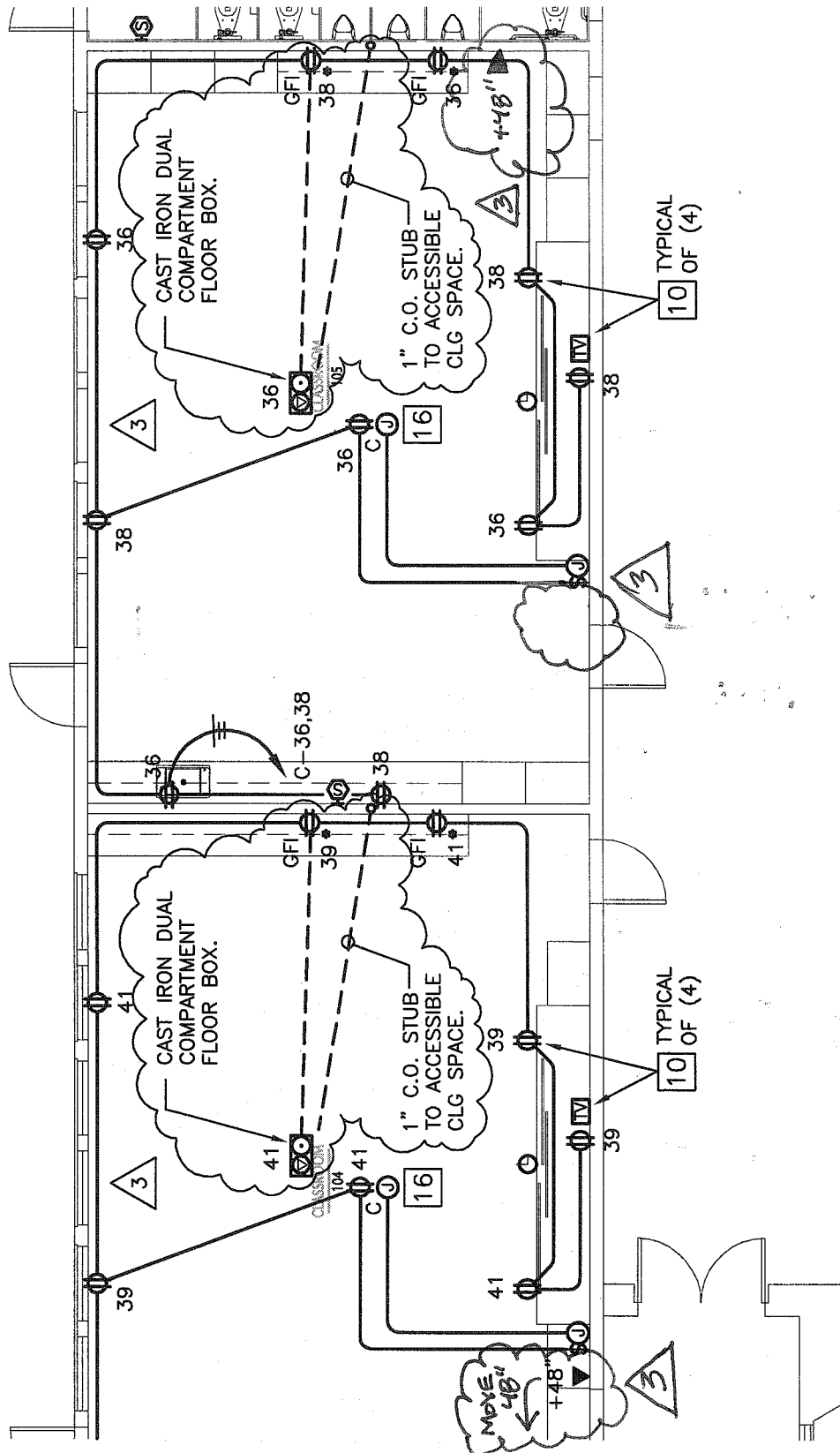
COLD SPRING SCHOOL DISTRICT  
COLD SPRINGS ELEMENTARY  
MODERNIZATION

REFERENCE NO. \_\_\_\_\_  
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DRAWING NO.

3  
 MP-401

PMSM



ARCHITECTS

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PMSM



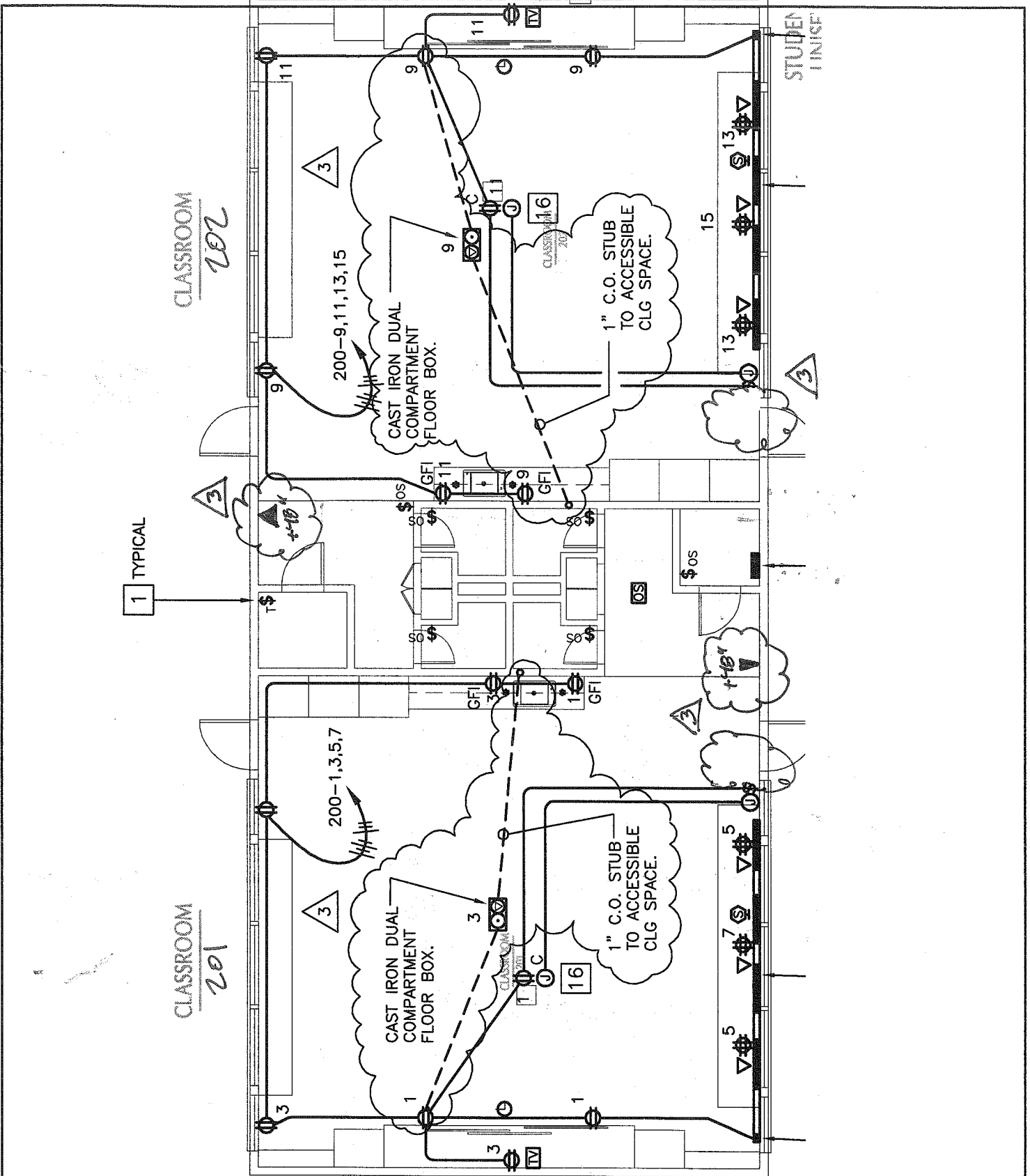
COLD SPRING SCHOOL DISTRICT  
 COLD SPRING ELEMENTARY  
 MODERNIZATION

REFERENCE NO.	03-113015
DSA NO.	3
ADDENDUM NO.	3
PMSM JOB NO.	09014.01
DATE	05/14/10 BY

DRAWING NO.

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E-201



ARCHITECTS

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PMSM

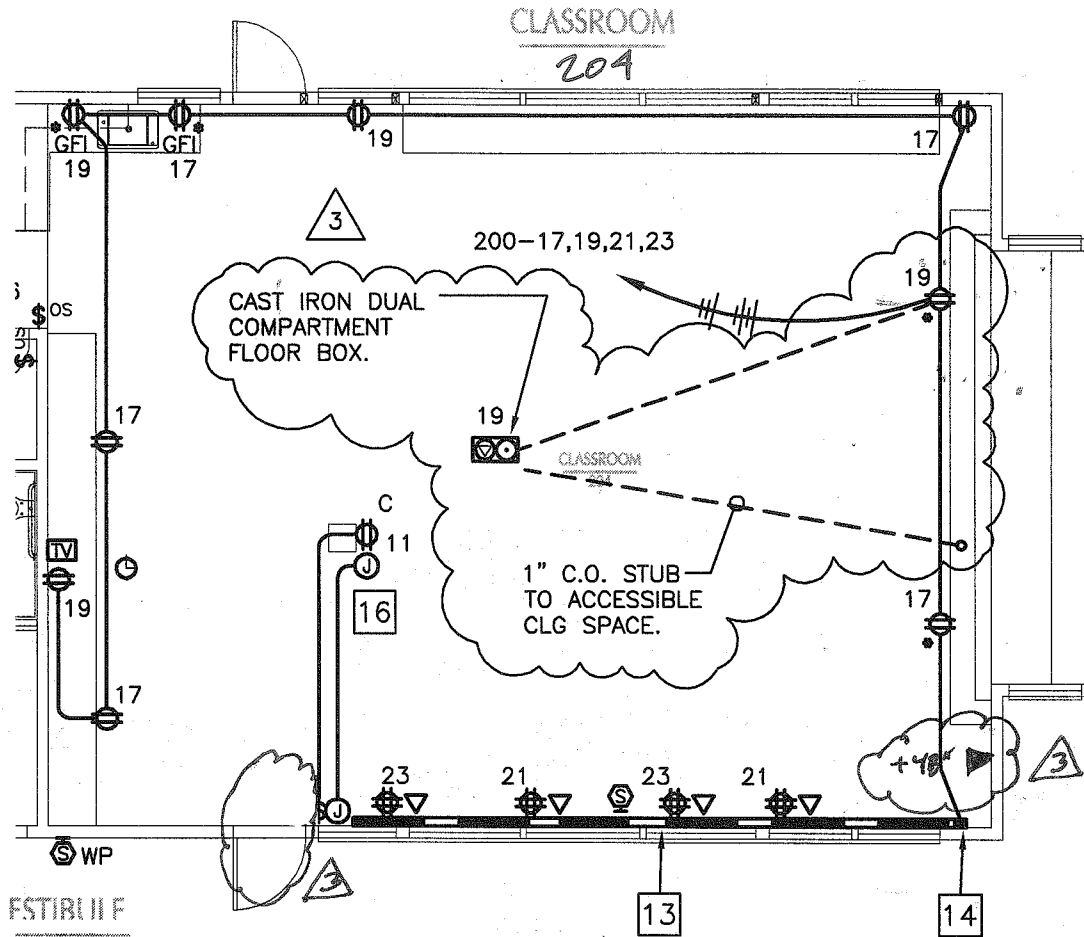


COLD SPRING SCHOOL DISTRICT  
 COLD SPRING ELEMENTARY  
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3  
**E-211**



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**COLD SPRING SCHOOL DISTRICT  
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REFERENCE NO. \_\_\_\_\_  
DSA NO. 03-113015  
ADDENDUM NO. 3  
PMSM JOB NO. 09014.01  
DATE 05/14/10 BY \_\_\_\_\_

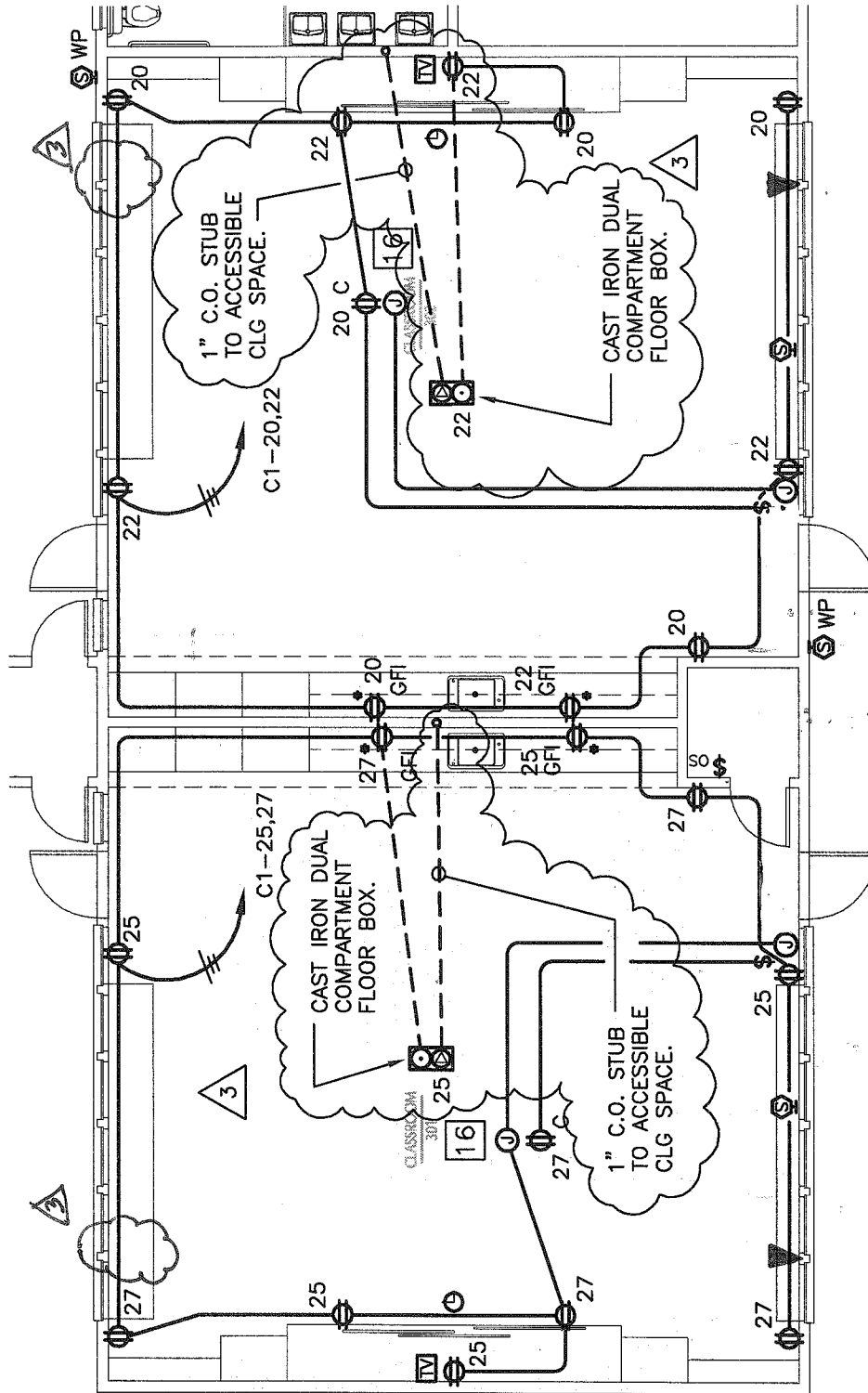
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**E-211**

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**ARCHITECTS**

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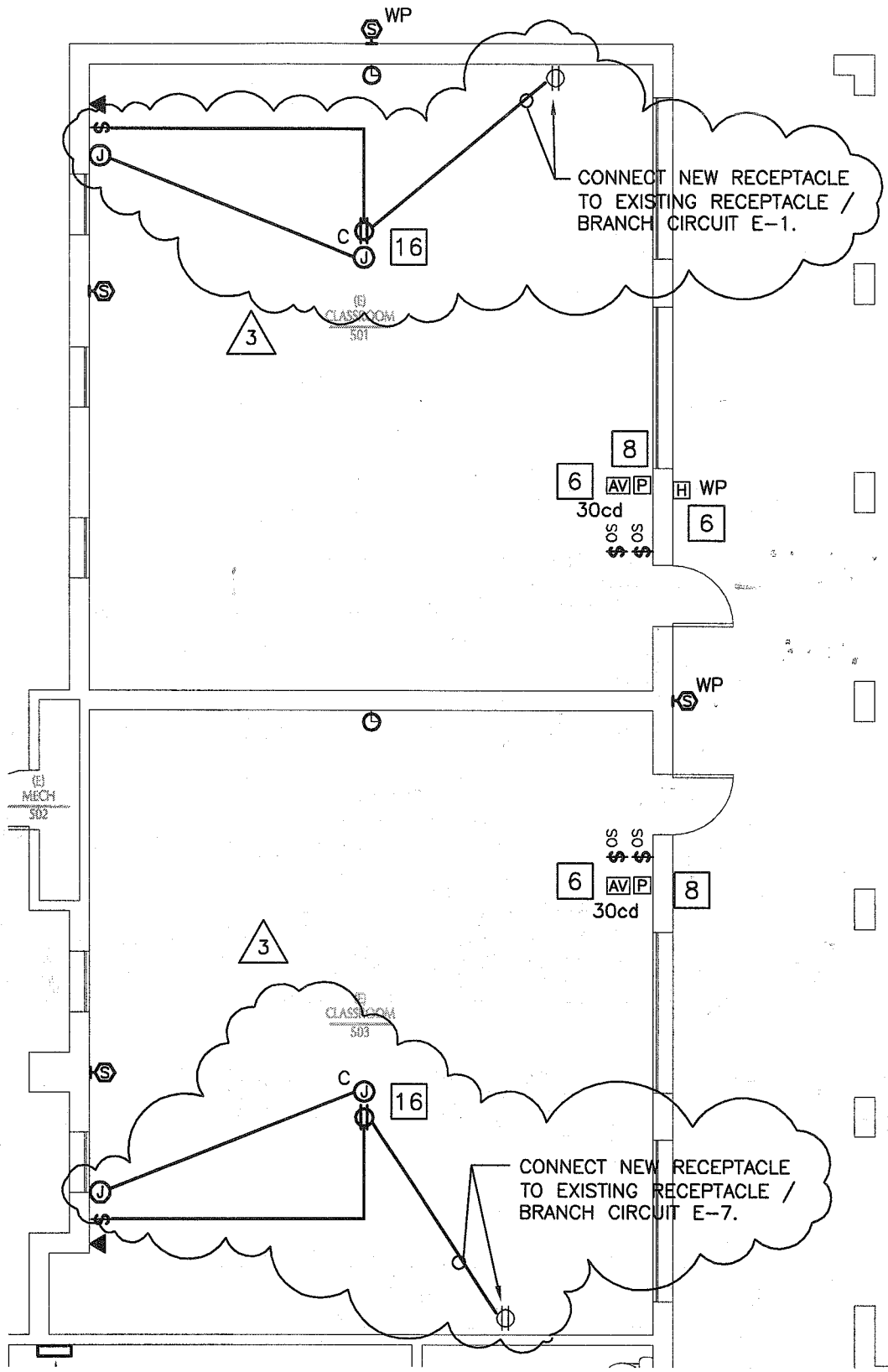
**PMSM**



**COLD SPRING SCHOOL DISTRICT  
 COLD SPRING ELEMENTARY  
 MODERNIZATION**

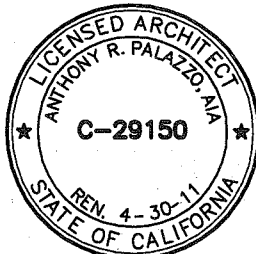
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 MODERNIZATION

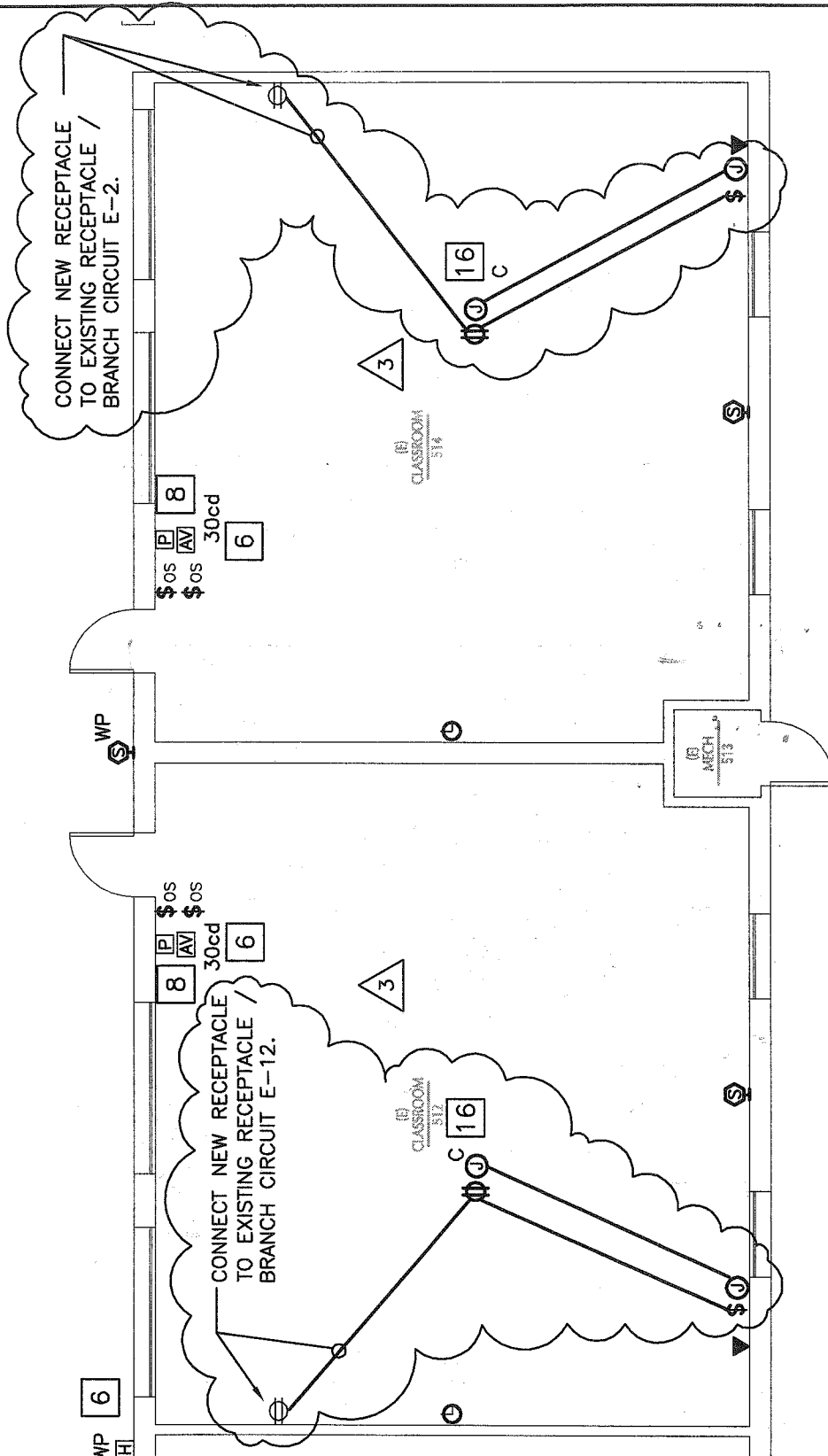
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 ADDENDUM NO. 3  
 PMSM JOB NO. 09014.01  
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E-241

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 MODERNIZATION**

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 ADDENDUM NO. 3  
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DRAWING NO.   
**E-241**