

ADDENDUM 2



City of El Segundo

**Public Works Department
Stephanie Katsouleas, Director**

October 22, 2010

FILE COPY

**ADDENDUM NO. 2
to
THE CONTRACT DOCUMENTS, SPECIFICATIONS AND PLANS
for
CONSTRUCTION OF A NEW BEACH BATHROOM FACILITY
AND LIFEGUARD STATION AT EL SEGUNDO BEACH
PROJECT NO.: PW 10-09**

ATTENTION BIDDERS:

The following additions, modifications, and clarifications to the specifications shall be included in, and become a part of any contract which may be executed for the above project in the City of El Segundo:

- 1. Replace or add the applicable pages in the Special Provisions Section dated 10/22/2010.**
- 2. Replace or add the revised sheets in the plans dated 10/22/2010.**

As evidence that the BIDDER has read this Addendum, the BIDDER must acknowledge same in the space provided below and submit this Addendum with the Bid Proposal. Failure to acknowledge this Addendum may cause rejection of bid.

(signature)

(date)

SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Rod electrodes.
 - 2. Active electrodes.
 - 3. Wire.
 - 4. Grounding well components.
 - 5. Mechanical connectors.
 - 6. Exothermic connections.

- B. Related Sections:
 - 1. Section 03 20 00 - Concrete Reinforcing: Bonding or welding bars when reinforcing steel is used for electrodes.

1.02 REFERENCES

- A. Institute of Electrical and Electronics Engineers:
 - 1. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
 - 2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.

- B. International Electrical Testing Association:
 - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

- C. National Fire Protection Association:
 - 1. NFPA 70 - National Electrical Code.

1.03 SYSTEM DESCRIPTION

- A. Grounding systems use the following elements as grounding electrodes:
 - 1. Metal underground water pipe.
 - 2. Metal building frame.
 - 3. Concrete-encased electrode.
 - 4. Rod electrode.
 - 5. Plate electrode.

1.04 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms maximum.

1.05 SUBMITTALS

- A. Section 01 30 00 - Administrative Requirements: Submittal Procedures.
- B. Product Data: Submit data on grounding electrodes and connections.
- C. Test Reports: Indicate overall resistance to ground and resistance of each electrode.
- D. Manufacturer's Installation Instructions: Submit for active electrodes.

1.06 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of components and grounding electrodes.

1.07 QUALITY ASSURANCE

- A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.
- B. Perform Work in accordance with CEC.
- C. Maintain 2 copies of each document on site.

1.08 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.
- B. Installer Company specializing in performing work of this section with minimum 3 years documented experience.

1.09 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

- C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.
- D. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

1.11 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.
- B. Complete grounding and bonding of building reinforcing steel prior to concrete placement.

PART 2 PRODUCTS

2.01 ROD ELECTRODES

- A. Product Description:
 - 1. Material: Copper-clad steel.
 - 2. Diameter: 3/4 inch.
 - 3. Length: 10 feet.
- B. Connector: Connector for exothermic welded connection.

2.02 ACTIVE ELECTRODES

- A. Manufacturers:
 - 1. Erico, Inc.
 - 2. O-Z Gedney Co.
 - 3. Thomas & Betts, Electrical.
 - 4. Substitutions: Section 01 60 00 - Product Requirements.
- B. Product Description:
 - 1. Material: Metallic-salt-filled copper-tube electrode.
 - 2. Shape: As indicated on Drawings.
 - 3. Length: 10 feet.
 - 4. Connector: Connector for exothermic welded connection.

2.03 WIRE

- A. Material: Stranded copper.
- B. Foundation Electrodes: 4 AWG or as noted.
- C. Grounding Electrode Conductor: Copper conductor bare, size to meet CEC requirements.
- D. Bonding Conductor: Copper conductor bare.

2.04 GROUNDING WELL COMPONENTS

- A. Well Pipe: 8 inches NPS by 24 inches long concrete pipe with belled end.
- B. Well Cover: Cast iron with legend "GROUND" embossed on cover.

2.05 MECHANICAL CONNECTORS

- A. Manufacturers:
 - 1. Erico, Inc.
 - 2. ILSCO Corporation.
 - 3. O-Z Gedney Co.
 - 4. Thomas & Betts, Electrical.
 - 5. Substitutions: Section 01 60 00 - Product Requirements.
- B. Description: Bronze connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.06 EXOTHERMIC CONNECTIONS

- A. Manufacturers:
 - 1. Copperweld, Inc.
 - 2. ILSCO Corporation.
 - 3. O-Z Gedney Co.
 - 4. Thomas & Betts, Electrical.
 - 5. Substitutions: Section 01 60 00 - Product Requirements.
- B. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify final backfill and compaction has been completed before driving rod electrodes.

3.02 PREPARATION

- A. Remove surface contaminants at connection points.

3.03 INSTALLATION

- A. Install rod electrodes at locations as indicated on Drawings. Install additional rod electrodes to achieve specified resistance to ground.

- B. Install grounding and bonding conductors concealed from view.
- C. Install grounding well pipe with cover at each rod location. Install well pipe top flush with finished grade.
- D. Install grounding electrode conductor and connect to ufer grounding as indicated on Drawings.
- E. Bond together metal siding not attached to grounded structure; and bond to ground.
- F. Equipment Grounding Conductor: Install separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- G. Permanently attach equipment and grounding conductors prior to energizing equipment.
- H. Install continuous grounding using underground cold water system and building steel as grounding electrode. Where water piping is not available, install artificial station ground by means of driven rods or buried electrodes.
- I. Permanently ground entire light and power system in accordance with CEC, including service equipment, distribution panels, lighting panelboards, switch and starter enclosures, motor frames, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.
- J. Accomplish grounding of electrical system by using insulated grounding conductor installed with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with CEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment.
- K. Ground electrical system using continuous metal raceway system enclosing circuit conductors in accordance with CEC. Ground conduits by means of grounding bushings on terminations at panelboards with installed conductor to grounding bus. Bonding shall apply at each end and to all intervening ferrous raceways between cabinet or equipment. Bonding conductor size shall be same as, or larger than the enclosed grounding electrode conductor.

3.04 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements and 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Grounding and Bonding: Perform inspections and tests listed in NETA ATS, Section 7.13.

- D. Perform ground resistance testing in accordance with IEEE 142.
- E. Perform leakage current tests in accordance with NFPA 99.
- F. Perform continuity testing in accordance with IEEE 142.
- G. When improper grounding is found on receptacles, check receptacles in entire project and correct. Perform retest.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCE

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

The work of this Section includes providing PVC coated chain link fencing with HDPE privacy slats, barbed wire and appurtenances. Height shall be as shown on the contract drawings.

1.2 STANDARD SPECIFICATIONS

Except as otherwise indicated in this Section of the Specifications, the Contractor shall comply with the Standard Specifications for Public Works Construction, 2009 Edition.

1.3 SPECIFICATIONS AND STANDARDS

Except as otherwise indicted, the current editions of the following apply to the work of this Section.

- A. ASTM A 90 Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles
- B. ASTM A 392 Specifications for Zinc-Coated Steel Chain Link Fence Fabric

1.4 FACTORY TESTING

Wire fabric shall be factory tested for weight of zinc coating in accordance with method specific in ASTM A 90.

PART 2 – PRODUCT

2.1 GENERAL

Material for chain link fencing, gates and appurtenances shall conform to the requirements of SSPWC, Subsection 206-6 and as indicated herein.

2.2 POSTS AND RAILS

- A. Materials for posts, rail and braces shall be Class 1 complying with SSPWC Subsection 206-6.2.
- B. Material shall be coated with polyvinyl chloride (PVC) in accordance with Subsection 210-5 of the SSPWC. Color shall be green.

2.3 WIRE FABRIC

Chain link fabric shall be polyvinyl chloride, (PVC) coated fabric conforming to Subsection 206-6.3.2 of the SSPWC. Color shall be green.

2.4 FOOTINGS

Concrete for post footings shall conform to Subsection 201-1 of SSPWC, Class 560-C-3250 concrete.

2.5 PRIVACY SLATS

Privacy slats shall be winged type, self-locking, made from high density polyethylene. Slats shall be installed vertically and shall be forest green in color.

2.6 BARBED WIRE

Barbed wire shall conform to Subsection 206-6.7 of the SSPWC, except for the following:

- A. Two (2) rows of barbed wire shall be provided, placed at a 45 degree angle inward and outward to the fence, matching the existing condition
- B. Three (3) strands of barbed wire shall be strung on each inward and outward facing arm.

PART 3 – EXECUTION

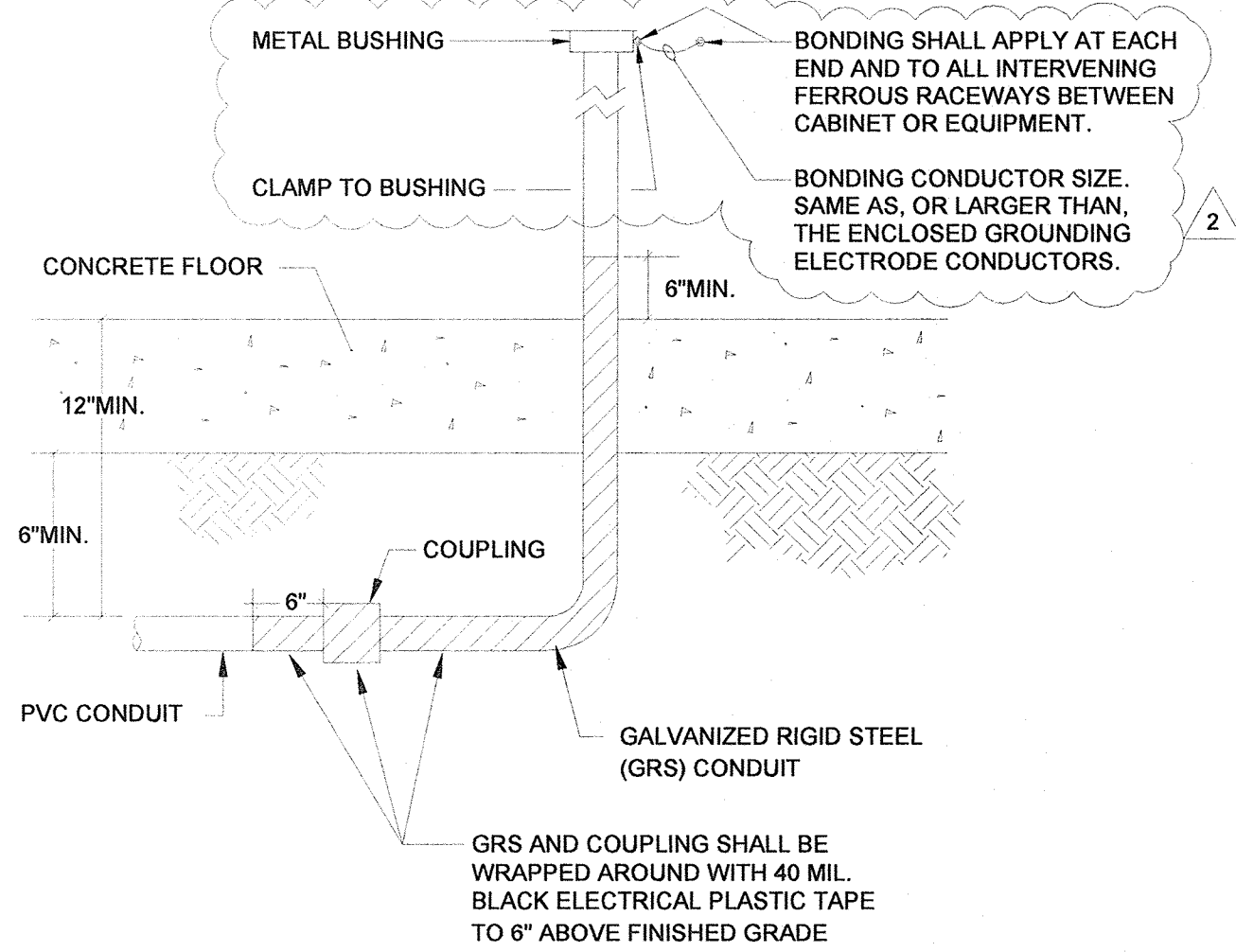
3.1 INSTALLATION OF FENCING

- A. Chain link fence shall be installed in accordance with Section 304-03 of the SSPWC.
- B. All earth, brush or other obstructions which interfere with the proper alignment of construction of fences shall be removed.
- C. Line posts shall be spaced at not more than 10-foot intervals measured from center-to-center of the post and generally parallel to the ground slope. Posts shall be set plumb and shall be centered in concrete foundation.
- D. Gate post shall be provided with concrete foundation.
- E. Changes in the fence lines, where the horizontal angle is 15 degrees or more, shall be considered as corners, and corner posts shall be installed.
- F. Corner, end and gate posts shall be braced to the nearest line post. Corner and end posts shall be diagonally braced. Bracing of gate posts shall be horizontal braces with truss rods. Line posts shall be braced horizontally and trusses in both directions with truss rods at 1,000 feet maximum intervals.
- G. Chain link fabric shall be taut and shall be attached to posts, stretcher bars, and wires with galvanized fabric bands or tie wires at a maximum spacing of 12 inches on posts and 18 inches on the rails and tension wires. The tension wires shall be

stretched tight with turnbuckles at the end and corner posts. The bottom tension wire shall be installed on a straight grade between posts.

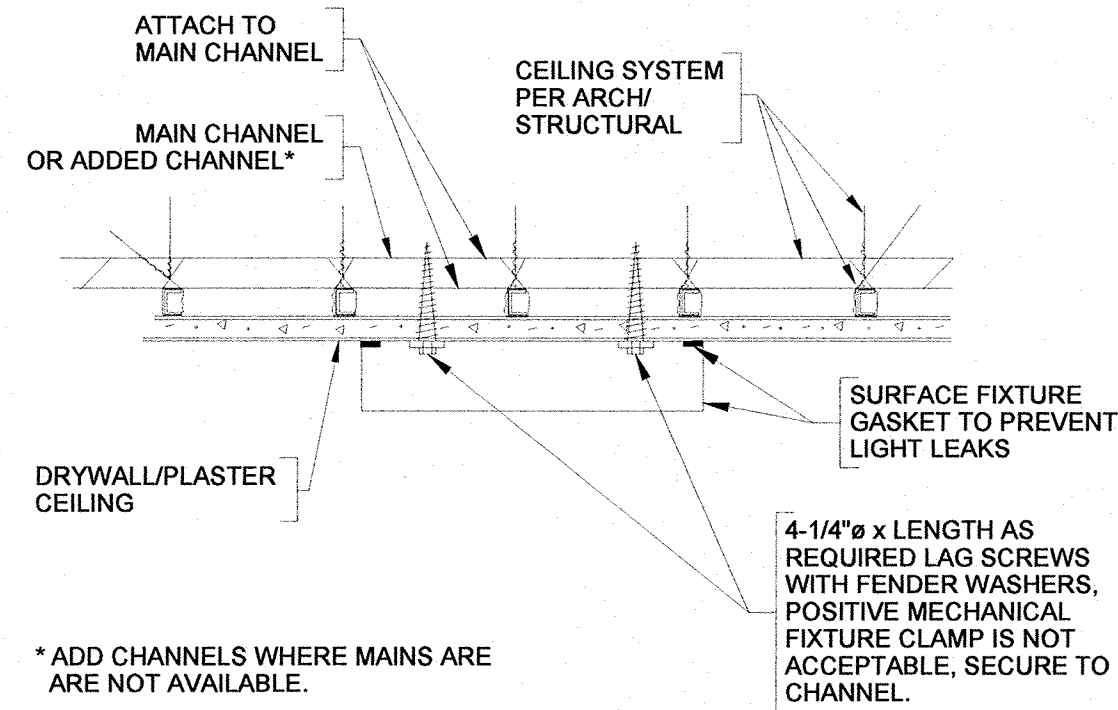
- H. The fabric shall be fastened to the end, corner, and gate posts with stretcher bars and stretcher bar bands spaced at approximately 12 inches.
- I. Install privacy slats vertically, in accordance with the manufacturer's instructions.

END OF SECTION



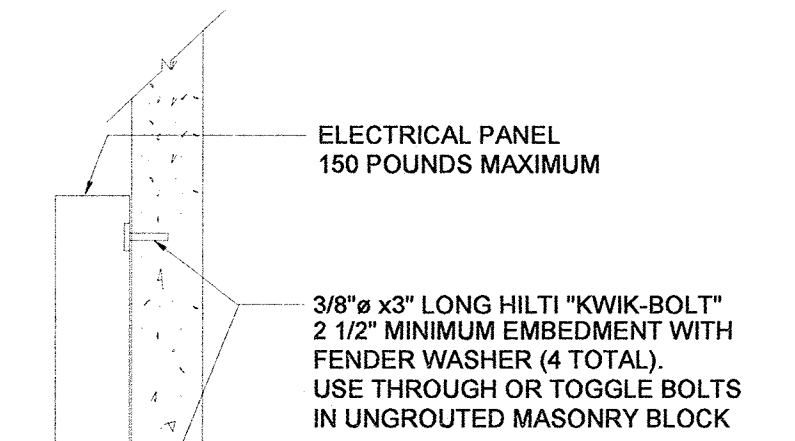
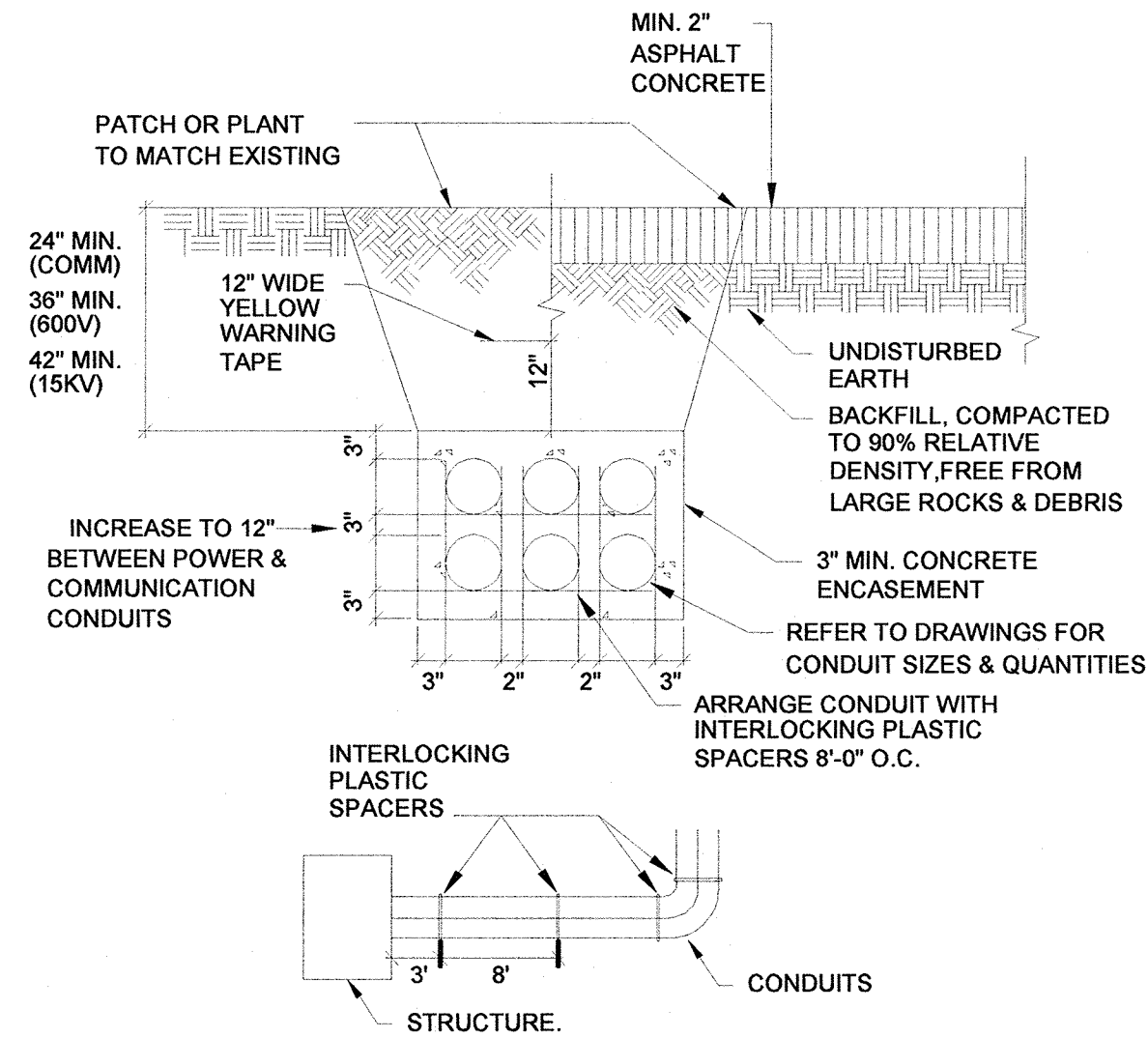
CONDUIT INSTALLED BELOW CONCRETE INSIDE BUILDING DETAIL

NTS - 7



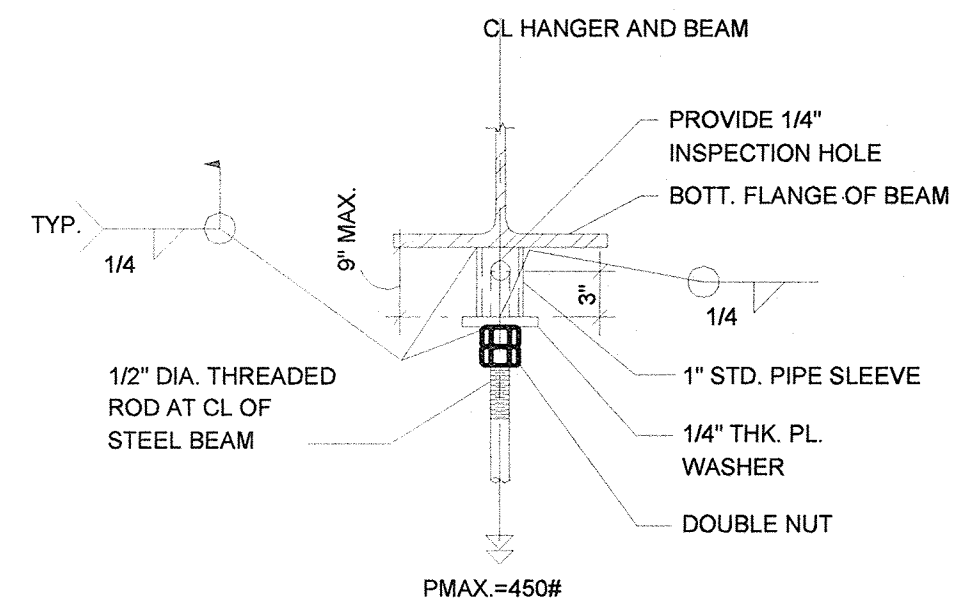
* ADD CHANNELS WHERE MAINS ARE NOT AVAILABLE.

NOTE:
REFER TO GENERAL NOTE #36 SHEET E0.1.
* COORDINATE ALL CEILING LOCATIONS WITH CEILING CONTRACTOR & REFLECTED CEILING PLAN.



SURFACE MOUNTED PANEL DETAIL

NTS 1



HANGER ATTACHMENT DETAIL

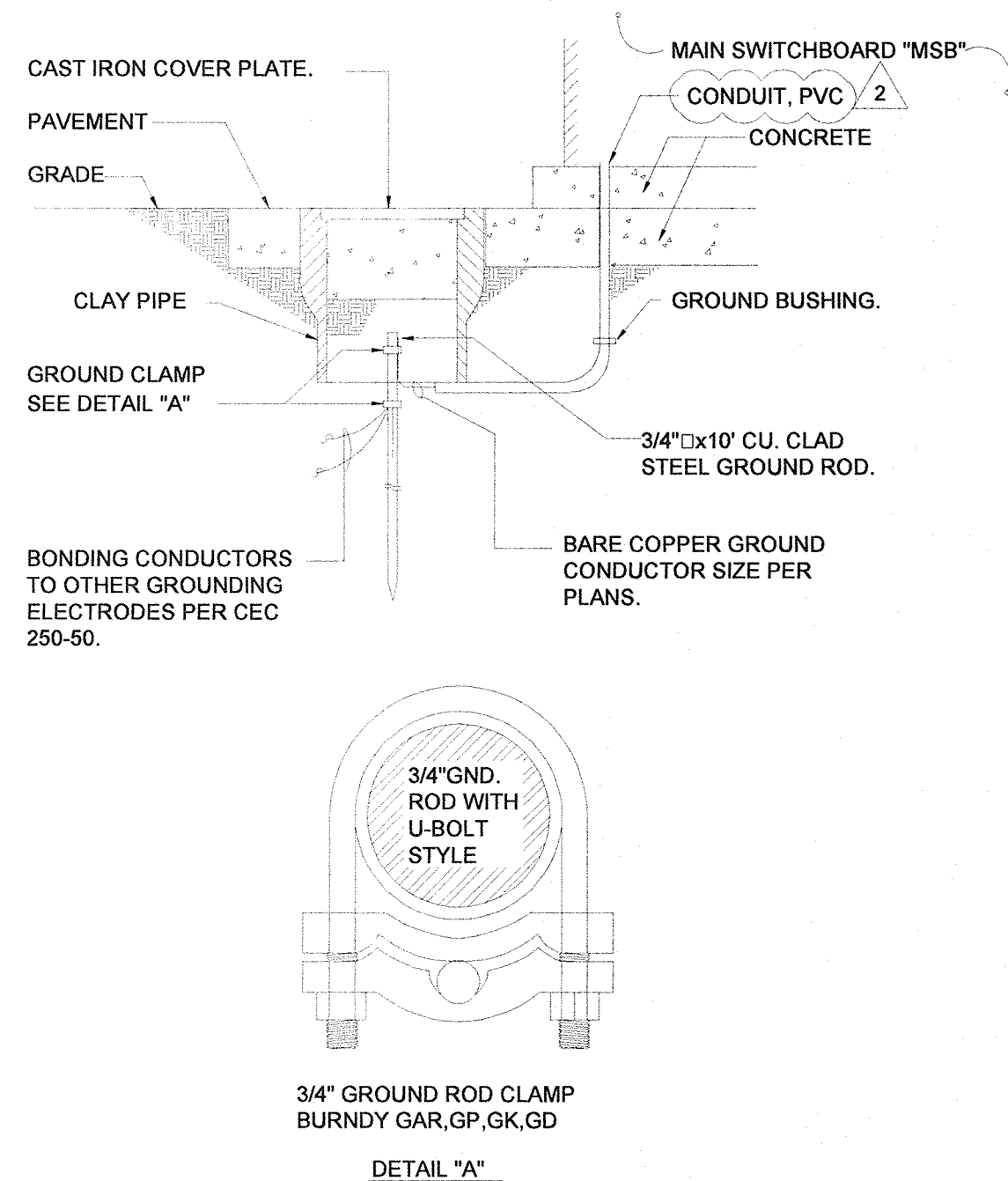
NTS - 8

SURFACE MOUNTED LIGHT FIXTURE DETAIL

NTS - 5

UNDERGROUND MULTI-CONDUIT PLACEMENT DETAIL

NTS 3

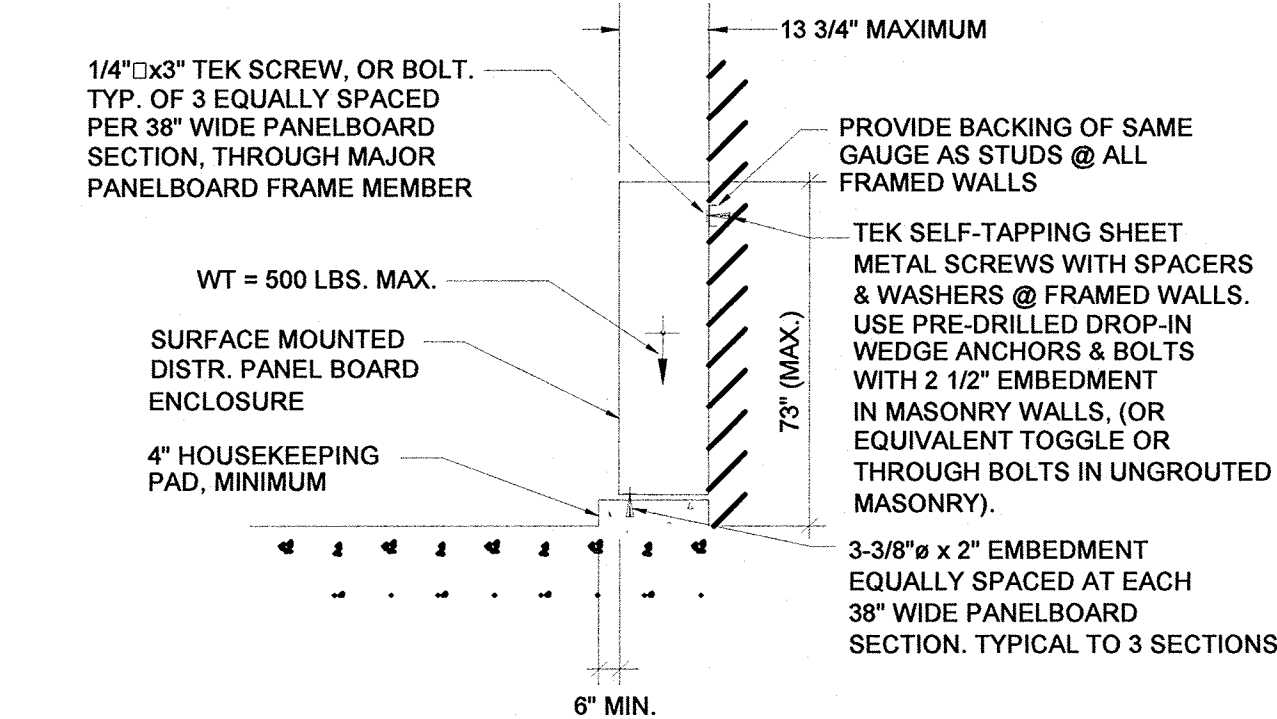
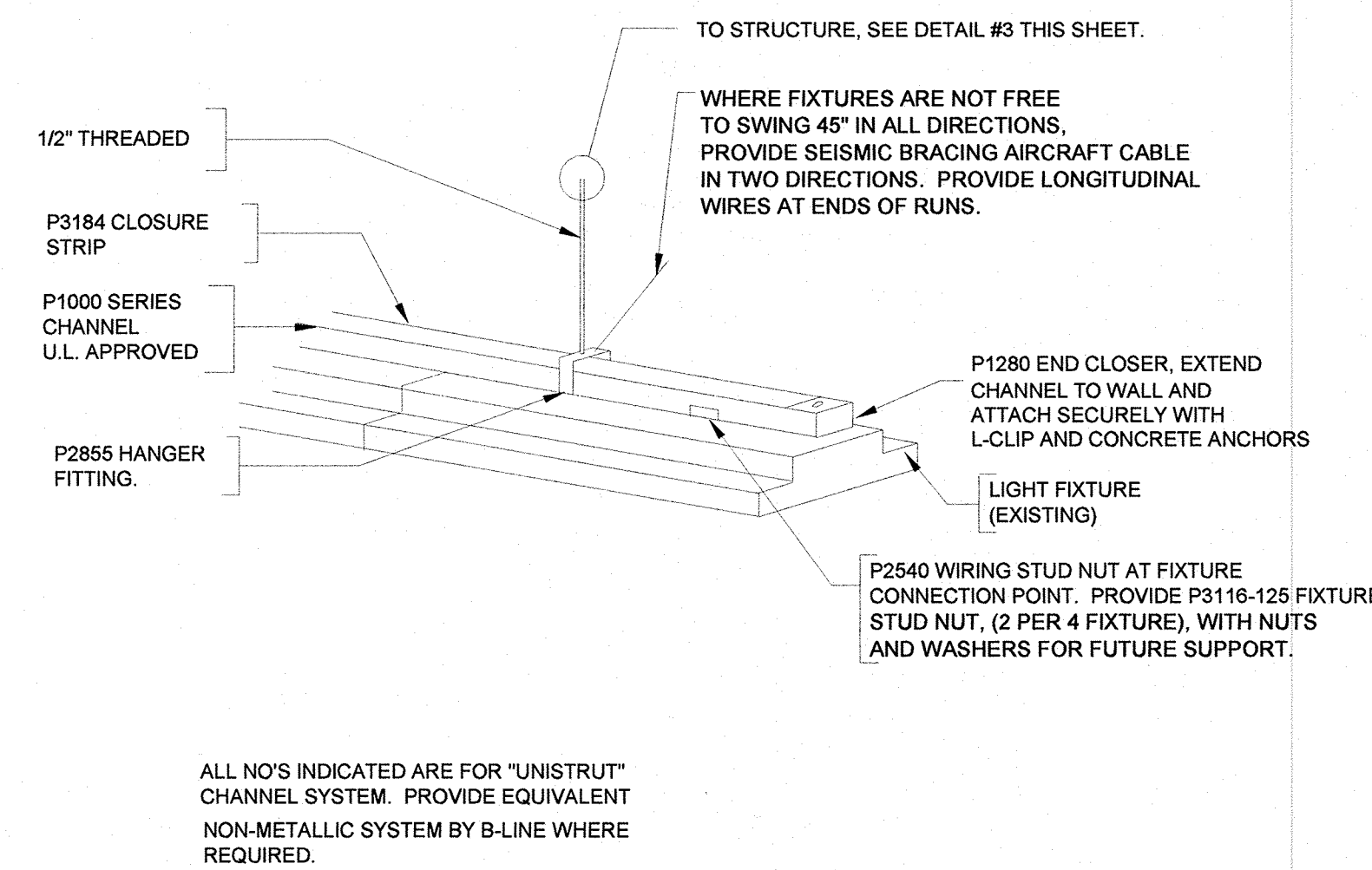


GROUND ROD DETAIL

NTS - 9

PENDANT MTD. IND. FLUOR. SUPPORT DET.

NTS - 6

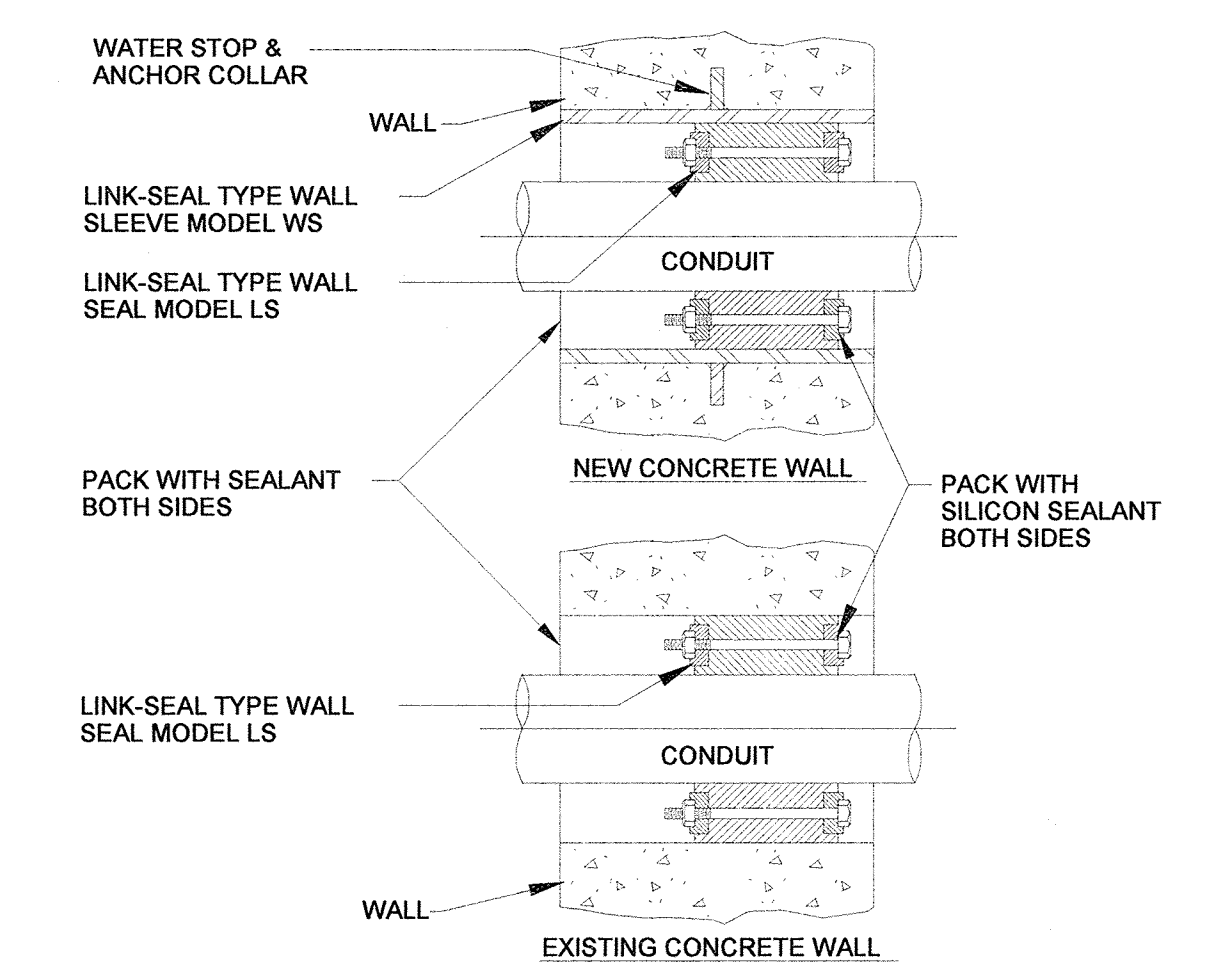


SWITCHBOARD ANCHORAGE DETAIL

NTS 4

CONDUIT PENETRATION THRU CONCRETE WALL DETAIL

NTS 2



ADDENDUM NO. 2
OCTOBER 22, 2010

PROJECT ADDRESS:
EL SEGUNDO, CA

T M A D
TAYLOR & GAINES

• STRUCTURAL
• MECHANICAL
• ELECTRICAL
• CIVIL

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CITY OF EL SEGUNDO
CALIFORNIA ENGINEERING DIVISION

EL SEGUNDO LS
DETAILS

E-0.6
10/06/2010

SHEET _____ OF _____
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