



ARCHITECTURE • ENGINEERING • INTERIOR DESIGN

ADDENDUM

PROJECT: University of South Dakota
Patterson Hall
Mechanical / Electrical Infrastructure Upgrades
Vermillion, South Dakota

ADDENDUM NUMBER

AD-2

ISSUED BY:

Matt Metcalf, Architect
Chandler Sanders, Interior Designer
Jeff Kulhanek, Mechanical Engineer
Kori Hickle, Electrical Engineer

PROJECT #: DDI No. 14-0185 / OSE No. R0614--15X

DATE ISSUED: Thursday, January 29, 2015

This addendum is issued by the Architect to all known bidders before receipt of proposals, for the purpose of explaining, interpreting, or modifying the original plans and specifications. When enumerated by the bidder upon the proposal sheet, the information or instructions given hereon will be equally binding upon all parties as if included in the original plans and specifications.

BIDDER MUST ENTER THE NUMBER OF THIS ADDENDUM ON HIS PROPOSAL SHEET

THE FOLLOWING ITEMS ARE APPLICABLE TO THE SPECIFICATIONS:

AD-2, ITEM 1:

In reference to the Pre-bid Meeting held on January 27, 2015, attached please find the sign-in sheet.

THE FOLLOWING ITEMS ARE APPLICABLE TO THE SPECIFICATIONS:

AD-2, ITEM 2:

In reference to specifications, the following manufacturers and products are approved subject to compliance with specifications, schedules and approval of shop drawing submittals:

- | | |
|---|--------------------|
| 223500 - Domestic-Water Heat Exchangers | Cemline |
| 223100 – Water Softeners | Water Control Corp |
| 224000 – Plumbing Fixtures | Zurn |
| 230593 - Testing, Adjusting, and Balancing for HVAC | ReCom, Inc. |
| 232113 – Expansion Tank | Armstrong |
| 232123 – Hydronic Pumps | Armstrong |
| 232500 – HVAC Water Treatment | Neptune |
| 238239.16 – Propeller Unit Heaters | Sigma, Rittling |
| 262923 - VFD's | Yaskawa |

AD-2, ITEM 3:

In reference to **Section 012300 – Alternates**, Revise paragraph 3.1.K.1 as follows: "Uninterruptible power system provided by owner and installed by electrical contractor as indicated per Drawings."

AD-2, ITEM 4:

In reference to **Section 093000 - Tile**, entire section is attached.

AD-2, ITEM 5:

In reference to **Section 095113 - Acoustical Ceiling Tile**, revise paragraph 2.3.A to read " Match type and size of existing acoustical ceiling tiles located in the corridor just outside Classroom 120."

AD-2, ITEM 6:

In reference to **Section 095113 - Acoustical Ceiling Tile**. Add paragraph 2.6, as follows:

" 2.6. ACOUSTICAL PANELS (LAP-2) Where indicated on Reflected Ceiling Plans

1. Manufacturers: Subject to compliance with requirements provide products by one of the following:
 - a. Armstrong World Industries, Inc; Ceramaguard Fine Fissured 607
 - b. CertainTeed Corp.
 - c. USG Interiors, Inc.; Subsidiary of USG Corporation.
2. Classification: Type XX (high density ceramic-like composition with scrubbable finish. Patter C E.
3. Color: White.
4. LR: Not less than .82.
5. NRC: Not less than .55, Type E-400 mounting according to ASTM E 795.
6. CAC: Not less than 38.
7. Edge/Joint Detail: Square Lay-in.
8. Thickness: 5/8 inch.
9. Modular Size: 24 by 24 inches."

AD-2, ITEM 7:

In reference to **Section 102113 - Toilet Compartments**, revise paragraph 2.2.D.2 to read "Panel Color and Finish: Charcoal Gray with orange peel finish."

AD-2, ITEM 8:

In reference to **Section 142100 - Hydraulic Elevators**, entire section is attached.

AD-2, ITEM 9:

In reference to **Section 260100 – Electrical General Requirements**, Paragraph 1.1.D, delete in its entirety.

AD-2, ITEM 10:

In reference to **Section 260100 – Electrical General Requirements**, Paragraph 1.3.B, delete in its entirety.

AD-2, ITEM 11:

In reference to Section 260100 – Electrical General Requirements, Paragraph 1.6.E, delete 'Section 024116 – Structure Demolition'.

AD-2, ITEM 12:

In reference to Section 260100 – Electrical General Requirements, Paragraph 1.6.F, delete 'Section 024116 – Structure Demolition'.

AD-2, ITEM 13:

In reference to Section 260533 – Raceways and Boxes for Electrical Systems, Paragraph 2.1.I.2.b, change setscrew to compression.

AD-2, ITEM 14:

In reference to Section 260533 – Raceways and Boxes for Electrical Systems, Paragraph 3.1.C.3., change setscrew to compression.

AD-2, ITEM 15:

In reference to Section 260923 – Lighting Control Devices, Paragraph 1.2, add subparagraph B reading "Submit CAD-generated lighting plans prepared by manufacturer showing proper product, location and orientation of each sensor and location and quantity of power packs."

AD-2, ITEM 16:

In reference to Section 260923 – Lighting Control Devices, Paragraph 3.1.A, revise to read "Locations and quantities of sensors shown on the drawings are diagrammatic and indicate only the area provided with detection. It shall be the manufacturer and contractor's responsibility to locate and aim sensors in the correct location required for complete and proper volumetric coverage within the range of the coverage(s) of controlled areas per the manufacturer's recommendations. Rooms shall have 90% to 100% coverage to completely cover the controlled area. Sensors shall be located such that detection does not extend beyond the corresponding area. The manufacturer and contractor shall provide additional sensors, power packs, and miscellaneous equipment as required to properly and completely cover the respective controlled area. Where there are multiple switches or zones of control in the room or area, a separate relay/power pack shall be provided for each switch leg or zone of control to maintain the control functions shown."

AD-2, ITEM 17:

In reference to Section 270528 – Pathways for Communications Systems, Paragraph 3.1.B, change 3/4" to 1".

AD-2, ITEM 18:

In reference to Section 271500 – Communications Horizontal Cabling, Paragraph 2.5.A, revise to read 'Panduit shall be used for cable management.'

AD-2, ITEM 19:

In reference to Section 271500 – Communications Horizontal Cabling, Paragraph 3.2.B.10, change '10-foot (3-m-)' to '30-foot'.

AD-2, ITEM 20:

In reference to Section 283111 – Digital, Addressable Fire Alarm System, Paragraph 2.1.A, add subparagraph 3 reading “3. Silent Knight Faranhyt”.

THE FOLLOWING ITEMS ARE APPLICABLE TO THE DRAWINGS:

AD-2, ITEM 21:

In reference to G-101, First Floor Phasing Plan and G-102, Second Floor Phasing Plan, reverse the time frames for completing the work in the restrooms. Second Floor Rest rooms will need to be under construction between 4/13/2015 and 5/31/2015. First Floor Rest Rooms will need to be under construction between 6/1/2015 and 7/15/2015. If needed, work in the First Floor Rest Room ceilings can be performed during USD’s spring break with limited work at other times subject to coordination with Users.

AD-2, ITEM 22:

In reference to Sheet C-101, see attached Supplemental Drawing C-101.1 for additional notes regarding start of exterior utility work.

AD-2, ITEM 23:

In reference to Sheet A-104 and A-105. Delete keynote #2 on the plans that have a hexagon around the keynote.

AD-2, ITEM 24:

In reference to Sheet A-602. refer to the Materials List, as a matter of clarification, Contactor shall install TT-1 flooring inside the elevator cab. Coordinate requirements with elevator supplier.

AD-2, ITEM 25:

In reference to Sheet P-104, refer to attached Supplemental Drawing P-104.1 for additional general notes.

AD-2, ITEM 26:

In reference to Sheet P-105, refer to attached Supplemental Drawing P-105.1 for an additional general note, floor plan update and rerouting of piping in Mechanical 133 to avoid the panels.

AD-2, ITEM 27:

In reference to Sheet P-106, refer to attached Supplemental Drawing P-106.1 for an additional general note and changes to the fire sprinkler work in Mechanical Room 230.

AD-2, ITEM 28:

In reference to Sheet M-001, refer to attached Supplemental Drawing M-001.1, for additional general note.

AD-2, ITEM 29:

In reference to sheet M-104, the incoming steam pressure to the building is 90 PSI and downstream pressure is 10 PSI.

AD-2, ITEM 30:

In reference to Sheet M-105, refer to attached Supplemental Drawing M-105.1, for relocation of transfer grille in Electrical 125A.

AD-2, ITEM 31:

In reference to Sheet M-105, refer to attached Supplemental Drawing M-105.2, for rerouting of ductwork on FCU-135.

AD-2, ITEM 32:

In reference to all Electrical Sheets: no conduit shall be routed through existing structural beams.

AD-2, ITEM 33:

In reference to Sheet E-101, remove electrical connections to pump module in existing chiller. See mechanical drawings for additional information. Existing VFDs to be turned over to owner.

AD-2, ITEM 34:

In reference to Sheets E-103 and E-104, corridor lighting shall be controlled by occupancy sensors only. Night light/emergency lighting is on 24/7.

AD-2, ITEM 35:

In reference to Sheets E-103 and E-104, office lighting control shall be 'auto-on at 50%' and 'auto-off'.

AD-2, ITEM 36:

In reference to Sheets E-103 and E-104, classroom lighting control shall be 'manual-on' and 'auto-off'.

AD-2, ITEM 37:

In reference to Sheet E-105, Room 112, change keynote symbol '40' to '25'. Add keynote '21' to receptacle on south wall.

AD-2, ITEM 38:

In reference to Sheet E-105, Room 130, delete panel 'LDP1'.

AD-2, ITEM 39:

In reference to Sheet E-105, refer to keynote 23, add 'Fiber shall be minimum OM3. Connectors to be LC.'

AD-2, ITEM 40:

In reference to Sheet E-105, add keynote '25' reading "Provide Wiremold series 5400 surface raceway with devices indicated. Provide accessories as required for a complete installation."

AD-2, ITEM 41:

In reference to Sheet E-105, existing AHU-1 located in room 203 to be re-fed from existing 100/3 breaker in existing panel 230. Feeder shall be 3#2, 1#8GRD., 1 1/2" C.

AD-2, ITEM 42:

In reference to Sheet E-107, Classrooms 119, 120, if UPS alternate is not accepted, circuits shall be connected to 20/1 spares in panel 'P2'.

AD-2, ITEM 43:

In reference to Sheet E-107, Classrooms 200, 202, 222, and 226, if UPS alternate is not accepted, circuits shall be connected to 20/1 spares in panel 'P3'.

AD-2, ITEM 44:

In reference to Sheet E-501, 'S_{MS2}' symbol refers to dual technology, dual relay wall switch occupancy sensor for bi-level switching.

AD-2, ITEM 45:

In reference to Sheet E-601, Electrical Riser Diagrams, existing panel 'MDP' is a Siemens, 1600A, 50,000AIC panel.

AD-2, ITEM 46:

In reference to Sheet E-601, Electrical Riser Diagrams: see attached revised sheets E-601.1, E-601.2, and E-601.3.

AD-2, ITEM 47:

In reference to Sheet E-602, Lighting Fixture Schedule, revise Type 'B2' to be 'fixed output', no dimming.

AD-2, ITEM 48:

In reference to Sheet E-602, Lighting Fixture Schedule, add Type 'B4' reading "Cree CR22-22L-35K-S. Other manufacturers: 1,2,3,4."

AD-2, ITEM 49:

In reference to Sheet E-602, Lighting Fixture Schedule, add Type 'C2' reading "Prescolite LBSLEDA10L-30K-9-WH.

AD-2, ITEM 50:

In reference to Sheet E-602, Lighting Fixture Schedule, add Type 'G1EM' reading "Columbia #LWC-4-35-ML-E-U-ELL14. Chain hang per note 'B'. Other manufacturers: 1,2,3,4."

END AD-2

SIGN-IN SHEET

PATTERSON HALL M&E UPGRADES

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SECTION 093000 - TILING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ceramic tile.
2. Porcelain tile.
3. Crack isolation membrane.
4. Tile backing panels.
5. Metal edge strips.

- B. Tile patterns are laid out with a specific design intent. Contractors electing to bid this project acknowledge this design intent. All costs associated with pattern matching such materials and installation is to be included in their bid.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

B. Samples:

1. Each type and composition of tile and for each color and finish required.

- C. Shop Drawings: For each type of tile. Include tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts

1. Seaming diagram for all flooring areas shall be provided to Davis Design, Inc. prior to installation.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.

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PART 2 - PRODUCTS

2.1 TILE PRODUCTS

- A. ANSI Ceramic Tile Standard: Provide Standard grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
- B. Tile Type: Factory-mounted unglazed ceramic mosaic tile.
 - 1. Manufacturers: Subject to compliance with requirements, provide products indicated in the Materials List and Room Finish Schedule.

2.2 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 or ASTM C 1325.
 - 1. Manufacturers: Subject to compliance with requirements, provide products specified in Section 092900 "Gypsum Board."

2.3 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated.

2.4 SETTING MATERIALS

- A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
- B. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. [Laticrete International, Inc.](#); Product 254.
 - 2. Prepackaged, dry-mortar mix to which only water must be added.
 - 3. Prepackaged, dry-mortar mix combined with liquid-latex additive.
 - 4. For wall applications, provide nonsagging mortar.

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2.5 GROUT MATERIALS

A. Standard Cement Grout: ANSI A118.6.

1. Manufacturers: Subject to compliance with requirements, provide products specified in Materials Lists and Room Finish Schedule. Substitutions only with prior approval of designer.

- a. [Bostik, Inc.](#)
- b. [Laticrete International, Inc.](#)
- c. [MAPEI Corporation.](#)
- d. [Summitville Tiles, Inc.](#)
- e. [TEC; a subsidiary of H. B. Fuller Company.](#)

B. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D.

1. Manufacturers: Subject to compliance with requirements, provide products specified in Materials Lists and Room Finish Schedule. Substitutions only with prior approval of designer.

- a. [Bonsal American; an Oldcastle company.](#)
- b. [Bostik, Inc.](#)
- c. [Laticrete International, Inc.](#)
- d. [TEC; a subsidiary of H. B. Fuller Company.](#)

2.6 ELASTOMERIC SEALANTS

A. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.

1. Products: Subject to compliance with requirements, provide one of the following:

- a. [DAP Inc.](#); Titanium Enriched Kitchen and Bath Sealant or 100 percent Silicone Kitchen and Bath Sealant.
- b. [Dow Corning Corporation; Dow Corning 786.](#)
- c. [GE Silicones, a division of GE Specialty Materials; Sanitary 1700.](#)
- d. [Laticrete International, Inc.; Latasil Tile & Stone Sealant.](#)
- e. [Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.](#)
- f. [Tremco Incorporated; Tremsil 600 White.](#)

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2.7 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, stainless steel, ASTM A 666, 300 Series exposed-edge material. Subject to compliance with requirements, provide the following:
 - 1. Schluter Systems, L.P.
194 Pleasant Ridge Road
Plattsburgh, NY 12901-5841
Telephone: (800) 472-4588
Facsimile: (800) 477-9783
Email: info@schluter.com
 - a. Product: Schluter RONDEC
 - b. Description: Bullnose-type profile with symmetrically rounded visible surface with 1/4 radius. Integrated trapezoid-perforated anchoring leg, and integrated grout joint spaces.
 - c. Material and Finish: EV4A, stainless steel type. 316L-V4A.
 - d. Stainless steel type 304=V2A.
 - e. Height: **3/8 inch.**
- C. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints and that does not change color or appearance of grout.
 - 1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. Bonsal American, an Oldcastle company; Grout Sealer.
 - b. Bostik, Inc.; CeramaSeal Grout & Tile Sealer, Magic Seal, Silox 8, or Siloxane 220.
 - c. TEC, a subsidiary of H. B. Fuller Company; TA-256 Penetrating Silicone or TA-257 Silicone Grout Sealer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

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3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped **1/4 inch per foot (1:50)** toward drains.
- C. Blending: For tile exhibiting color variations, use factory blended tile or blend tiles at Project site before installing.
- D. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Jointing Pattern: As drawn in elevations and floor plans.
- F. Joint Widths: Unless otherwise indicated, provide minimum joint widths per manufacturer's specifications.
- G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
 - 2. Prepare joints and apply sealants.

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- H. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
 - 1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).
- I. Metal Edge Strips: Install at exposed, unfinished edges of wall tile, excluding window insets.
- J. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.
- K. Install cementitious backer units and fiber-cement underlayment and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use latex-portland cement mortar for bonding material unless otherwise directed in manufacturer's written instructions.
- L. Install crack isolation membrane as needed to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.
- M. Tile patterns are laid out with a specific design intent. Contractors electing to bid this project acknowledge this design intent. All costs associated with pattern matching such materials and installation is to be included in their bid.

3.4 INTERIOR TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
 - 1. Tile Installation F115: Thin-set mortar; epoxy grout; TCA F115.
 - a. Tile Type: Ceramic.
 - b. Thin-Set Mortar: Latex portland cement mortar.
 - c. Grout: Water-cleanable epoxy grout.
- B. Interior Wall Installations, Masonry or Concrete:
 - 1. Tile Installation W202: Thin-set mortar; TCA W202.
 - a. Tile Type: Porcelain.
 - b. Thin-Set Mortar: Latex portland cement mortar.
 - c. Grout: As scheduled.

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C. Interior Wall Installations, Wood Studs or Furring:

1. Tile Installation W244: Thin-set mortar on cementitious backer units or fiber cement underlayment over cleavage membrane; TCA W244.
 - a. Tile Type: Porcelain.
 - b. Thin-Set Mortar: Latex portland cement mortar.
 - c. Grout: As scheduled.

END OF SECTION 093000

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SECTION 142400 - HYDRAULIC ELEVATORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes hydraulic passenger elevators.
- B. Work Required:
 - 1. The work required under this section consists of all labor, materials and services required for the complete installation (including operational verification) of all the equipment required for the elevator(s) as herein specified.
- C. Related work not specified herein: The following sections contain requirements that relate to this section and are performed by trades other than the elevator manufacturer/installer.
 - 1. Section 01500 - Construction Facilities and Temporary Controls: protection of floor openings and personnel barriers; temporary power and lighting.
 - 2. Section 02200 - Earthwork: excavation for cylinder well casing.
 - 3. Section 03300 - Cast-In-Place Concrete: elevator pit, elevator motor and pump foundation, and grouting thresholds.
 - 4. Section 04200 - Unit Masonry: masonry hoistway enclosure, building-in and grouting hoistway door frames, grouting thresholds.
 - 5. Section 05500 - Metal Fabrications: pit ladder, divider beams, support for entrances and rails, hoisting beam at top of hoistway.
 - 6. Section 16100 - Electrical
 - a. Main disconnects for each elevator.
 - b. Electrical power for elevator installation and testing.
 - c. Disconnecting device to elevator equipment prior to activation of sprinkler system.
 - d. The installation of dedicated GFCI receptacles in the pit and overhead.
 - e. Lighting in controller area, machine area and pit.
 - f. Wiring for telephone service to controller.
 - 7. Section 16720 - Fire Alarm Systems: fire and smoke detectors and interconnecting devices; fire alarm signal lines to contacts in the machine area.

1.2 ACTION SUBMITTALS

- A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information including the following:
 - 1. Signal and operating fixtures, operating panels and indicators.
 - 2. Cab design, dimensions and layout.

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3. Hoistway-door and frame details.
4. Electrical characteristics and connection requirements.
5. Expected heat dissipation of elevator equipment in hoistway (BTU).
6. Cab and Entrances finishes.

B. Shop Drawings:

1. Include plans, elevations, sections, and large-scale details indicating service at each landing, machine room layout, coordination with building structure, relationships with other construction, and locations of equipment.
2. Indicate maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands.
3. Include the following
 - a. Car, guide rails, buffers and other components in hoistway.
 - b. Maximum rail bracket spacing.
 - c. Clearances and travel of car.
 - d. Clear inside hoistway and pit dimensions.
 - e. Location and sizes of access doors, hoistway entrances and frames.

C. Samples: For exposed finishes.

1.3 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Certificates: For elevator equipment, accessories, and components, from manufacturer.
- B. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, as shown and specified, are adequate for elevator system being provided.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For elevators to include in emergency, operation, and maintenance manuals.
- B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.
- C. Continuing Maintenance Proposal: Submit a continuing maintenance proposal from Installer to Owner, in the form of a standard one-year maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

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1.5 SYSTEM DESCRIPTION

- A. Equipment Description: Holeless Hydraulic elevator with Machine-Room Less application
- B. Equipment Control: Elevonic® Control System.
- C. Quantity of Elevators: 1
- D. Elevator Stop Designations:
- E. Stops : 2
- F. Openings: In line.
- G. Travel (maximum): 12'-0".
- H. Rated Capacity: 3500 lb.
- I. Rated Speed: 125 fpm.
- J. Platform Size: 6'-6 3/4" W x 6'-1 1/8" D
- K. Clear Inside Dimensions: 6'-5 9/16" W x 5'-5 9/16" D
- L. Cab Height: 7'-9" or 9'-9"
- M. Clear Cab Height: 7'-9" with 5/16" floor recess and 4LED ceiling
- N. Entrance Type and Width: Center-Open Doors 3' 6"
- O. Entrance Height: 7' 0" (2134 mm)
- P. Main Power Supply: 208 - Volts, 3-Phase, 60Hz + or - 5% of normal, with a separate equipment grounding conductor.
- Q. Car Lighting Power Supply: 120 Volts, Single-phase, 15 Amp, 60 Hz.
- R. Machine and Controller Location: No machine-room required, tank and controller in hoistway pit.
- S. Signal Fixtures: Manufacturer's standard with stainless steel metal button targets.
- T. Controller Location: Inside hoistway, accessible by a door in a side hoistway wall on the 1st or 2nd landing.
- U. Stopping Accuracy: ±1/4" (6.4 mm) under any loading condition or direction of travel.

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- V. Operation: Simplex Collective Operation: Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the car shall park at the last landing served.
- W. Operating Features – Standard
 - 1. Full Collective Operation
 - 2. Fan and Light Protection.
 - 3. Firefighters' Service Phase I and Phase II.
 - 4. Top of Car Inspection.
- X. Door Control Features:
 - 1. Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.
 - 2. Elevator doors shall be provided with a reopening device that will stop and reopen the car door(s) and hoistway door(s) automatically should the door(s) become obstructed by an object or person.
 - 3. Door protection shall consist of a two dimensional, multi-beam array projecting across the car door opening.
 - 4. Door nudging operation to occur if doors are prevented from closing for an adjustable period of time.
- Y. Provide equipment according to seismic information on Sheet A-403.

1.6 WARRANTY

- A. Special Manufacturer's Warranty: Provide special project warranty, signed by Contractor, Installer, and Manufacturer, agreeing to replace, repair, and / or restore defective materials and workmanship of elevator work during warranty period. Defective is hereby defined to include, but not by way of limitation, operation or control system failures, performances below required minimums, excessive wear, unusual deterioration or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise or vibration, and similar unusual, unexpected and unsatisfactory conditions.
 - 1. Warranty Period: One year from date of Substantial Completion

1.7 QUALITY ASSURANCE

- A. Manufacturer: Elevator manufacturer shall be ISO 9001 certified.
- B. Installer: Elevators shall be installed by the manufacturer.
- C. Permits, Inspections and Certificates: The Elevator Contractor shall obtain and pay for necessary Municipal or State Inspection and permit as required by the elevator inspection authority, and make such tests as are called for by the regulations or such authorities. These tests shall be made in the presence of such authorities or their authorized representatives.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Otis Elevator Co. Otis Hydrofit 3500

2.2 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with ASME A17.1/CSA B44.
- B. Accessibility Requirements: Comply with Section 407 in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and with ICC A117.1.
- C. NFPA Code: Comply with applicable NFPA codes and, specifically, with sections relating to electrical work and elevators.
- D. Fire Resistance of Entrances: Comply with NFPA No. 80 and provide units bearing UL labels that inset indicated 30 minute temperature rise.
- E. Seismic Performance: Elevator system shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 and shall comply with elevator safety requirements for seismic risk Zone 2 or greater in ASME A17.1/CSA B44.
 - 1. Provide earthquake equipment required by ASME A17.1/CSA B44.
 - 2. Provide seismic switch required by ASCE/SEI 7.
 - 3. Design earthquake spectral response acceleration short period (Sds) for Project is 0.131.
 - 4. Site Classification: D.
 - 5. Elevator Component Importance Factor: 1.0.
 - 6. Seismic Use Group II.
 - 7. Seismic Design Category: A.

2.3 ELEVATORS

- A. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated, manufacturers' standard components shall be used, as included in standard elevator systems and as required for complete system.

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2.4 SYSTEMS AND COMPONENTS

- A. Provide machine-roomless holeless hydraulic elevators from Otis Elevator Company. The control system and car design based on materials and systems manufactured by Otis Elevator Company. Specifically, the system shall consist of the following components:
 - 1. The entire hydraulic system and the controller shall be located inside the hoistway. No extra machine room or control closet space is required.
 - 2. Sleep mode operation for LED ceiling lights and car fan.
 - 3. LED lighting standard in ceiling lights and elevator fixtures.
 - 4. Sleep mode operation for LED ceiling lights and car fan.
- B. Approved Installer: Otis Elevator

2.5 EQUIPMENT: MACHINE COMPONENTS

- A. The hydraulic system shall be of compact design suitable for operation under the required pressure. The power component shall be mounted in the hydraulic-fluid storage tank. The control valve shall control flow for up and down directions hydraulically and shall include an integral check valve. A control section including control solenoids shall direct the main valve and control: up and down starting, acceleration, transition from full speed to leveling speed, up and down stops, pressure relief and manual lowering. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. System to be provided with a low-pressure switch and a shut-off valve.
- B. The entire hydraulic system with hydraulic-fluid storage tank, power component and valves shall be located in the hoistway pit and be easily accessible for maintenance through an access door in the hoistway wall.
- C. A microprocessor-based controller shall be provided, including necessary starting switches together with all relays, switches, solid-state components and hardware required for operation, including door operation, as described herein. A three (3) phase overload device shall be provided to protect the motor against overloading.
- D. The controller shall be located together with the hydraulic system in the hoistway pit and be easily accessible for maintenance through the same access door that is also used for the hydraulic system.
- E. An auxiliary battery back-up lowering feature shall permit lowering the elevator at slow speed in the event of power failure or for adjusting purposes.
- F. Pressure switch.

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2.6 EQUIPMENT: HOISTWAY COMPONENTS

- A. Plunger(s) and Cylinder(s): Each cylinder shall be constructed of steel pipe of sufficient thickness and suitable for the operating pressure. The top of each cylinder shall be equipped with a cylinder head with a drip ring to collect any oil seepage as well as an internal guide ring and self-adjusting packing. Each plunger shall be constructed of selected steel tubing or pipe of proper diameter machined true and smooth with a fine polished finish. Each plunger shall be provided with a stop ring electrically welded to it to prevent the plunger from leaving the cylinder. Each plunger and cylinder shall be installed plumb and shall operate freely with minimum friction.
- B. Car Guide Rails: Tee-section steel rails with brackets and fasteners.
- C. Polyurethane type buffers shall be used.
- D. Wiring: Wiring for hoistway electrical devices included in scope of the elevator system, hall panels, pit emergency stop switch, and the traveling cable for the elevator car.
- E. Hoistway Entrances:
 - 1. Frames: Entrance frames shall be of bolted construction for complete one-piece unit assembly. All frames shall be securely fastened to fixing angles mounted in the hoistway and shall be of UL fire rated steel.
 - 2. Sills shall be extruded aluminum finish.
 - 3. Doors: Entrance doors shall be of metal construction with vertical channel reinforcements.
 - 4. Fire Rating: Entrance and doors shall be UL fire rated for 1-1/2 hour (for M1, M2, M3, D1, and D2 Entrance Arrangements or 1 hour for D3 Entrance Arrangement).
 - 5. Entrance Finish: Satin Stainless steel doors and frames.
 - 6. Entrance marking plates: Entrance jambs shall be marked with 4" x 4" (102 mm x 102 mm) plates having raised floor markings with Braille located adjacent to the floor marking. Marking plates shall be provided on both sides of the entrance.
 - 7. Sight Guards: sight guards will be furnished with all doors painted to match with painted doors, painted black for stainless steel doors.

2.7 EQUIPMENT: CAR COMPONENTS

- A. Cab: Steel Shell Cab with stainless steel vertical removable panels and brushed Stainless Steel finished base plate located at top and bottom
- B. Car Front Finish: Satin Stainless Steel.
- C. Car Door Finish: Satin Stainless Steel.
- D. Ceiling Type:
- E. Flat steel ceiling Brushed Steel Finish (BSF) with 4 LED lights.

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- F. Emergency Car Lighting: An emergency power unit employing a 6-volt sealed rechargeable battery and totally static circuits shall be provided to illuminate the elevator car in the event of building power failure.
- G. Fan: A one-speed 120 VAC fan will be mounted to the structural ceiling to facilitate in-car air circulation, meeting A17.1 code requirements. The fan shall be rubber mounted to prevent the transmission of structural vibration and will include a baffle to diffuse audible noise. A switch shall be provided in the car-operating panel to control the fan.
- H. Handrail: Handrails shall be provided on the side walls of the car enclosure. Handrails shall be 3/8" x 2" (9.5 mm x 51 mm) flat tubular handrail with a Brushed Steel Finish.
- I. Threshold: Nickel-Silver Finish.
- J. Emergency Exit Contact: An electrical contact shall be provided on the car-top exit.
- K. Guides: Car roller type guides at the top and the bottom.
- L. Platform: Car platform shall be constructed of metal.
- M. Flooring: Flooring shall be Frits Tile - TT-1 by flooring contractor. Provide flooring surface suitable for installation by others. Coordinate with flooring contractor.
- N. Certificate frame: Provide a Certificate frame with a satin stainless steel finish.
- O. The LED ceiling lights and the fan should automatically shut off when the system is not in use and be powered back up after a passenger calls the elevator and pushes a hall button.
- P. Glass rear cab wall - 9/16" laminated safety glass per ANSI code. If exposed to direct sun light then a variable speed fan will be necessary. Aluminum tube frame painted black. Two piece design with handrail space between the top and bottom pieces of glass. No shrouding at the top or bottom of car.

2.8 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

- A. Car Operating Panel: A car operating panel shall be provided which contains all push buttons, key switches, and message indicators for elevator operation. The car operating panel shall have a satin stainless steel finish.
- B. A car operating panel shall be furnished. It shall contain a bank of round stainless steel, mechanical LED illuminated buttons. Flush mounted to the panel and marked to correspond to the landings served. All buttons to have raised numerals and Braille markings with:
- C. Flat Flush Mounted satin stainless steel button with blue or white LED illuminating halo

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- D. The car operating panel shall be equipped with the following features:
1. Raised markings and Braille to the left hand side of each push-button.
 2. Car Position Indicator at the top of and integral to the car operating panel.
 3. Door open and door close buttons.
 4. Inspection key-switch.
 5. Elevator Data Plate marked with elevator capacity and car number.
 6. Help Button: The help button shall initiate two-way communication between the car and a location inside the building, switching over to another location if the call is unanswered, where personnel are available who can take the appropriate action. Visual indicators are provided for call initiation and call acknowledgement.
 7. In car stop switch as required by code.
 8. Firefighter's hat
 9. Firefighter's Phase II Key-switch
 10. Car Position Indicator: A digital, LED car position indicator shall be integral to the car operating panel.
- E. Hall Fixtures: Hall fixtures shall be provided with necessary push buttons and key switches for elevator operation
- F. Integral Hall fixtures shall feature round stainless steel, mechanical buttons marked to correspond to the landings. Hall fixtures to be located in the entrance frame face or the wall. Buttons shall be in vertically mounted fixture. Fixture shall be satin stainless steel.
- G. Button Options: Flat Flush Mounted satin stainless steel button with blue or white LED illuminating halo
- H. Car Lantern and Chime: A directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel and a chime will sound.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Excavation for Cylinder: Drill well hole in elevator pit to accommodate installation of cylinder; comply with applicable requirements in Section 312000 "Earth Moving."
- B. Provide **waterproof** well casing **as necessary** to retain well-hole walls.
- C. Install cylinder in protective casing within well hole. Before installing protective casing, remove water and debris from well hole **and provide permanent waterproof seal at bottom of well casing.**
1. Align cylinders and fill space around protective casing with fine sand.

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- D. Install cylinder plumb and accurately centered for elevator car position and travel. Anchor securely in place, supported at pit floor. Seal between well, protective casing, and pit floor with **4 inches (100 mm)** of nonshrink, nonmetallic grout.
- E. Install cylinder plumb and accurately centered for elevator car position and travel. Anchor securely in place, supported at pit floor and braced at intervals as needed to maintain alignment. Anchor cylinder guides at spacing needed to maintain alignment and avoid overstressing guides.
- F. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration transmission to structure and structure-borne noise due to elevator system.
- G. Lubricate operating parts of systems as recommended by manufacturers.
- H. Leveling Tolerance: **1/4 inch (6 mm)**, up or down, regardless of load and travel direction.
- I. Set sills flush with finished floor surface at landing. Fill space under sill solidly with nonshrink, nonmetallic grout.
- J. Locate hall signal equipment for elevators as follows, unless otherwise indicated:
 - 1. Mount hall lanterns at a minimum of **72 inches (1829 mm)** above finished floor.

3.2 FIELD QUALITY CONTROL

- A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.

3.3 PROTECTION

- A. Temporary Use: Comply with the following requirements for elevator used for construction purposes:
 - 1. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
 - 2. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.
 - 3. Engage elevator Installer to provide full maintenance service.
 - 4. Engage elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

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3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate, adjust, and maintain elevator.

3.5 MAINTENANCE

- A. Maintenance service consisting of regular examinations and adjustments of the elevator equipment shall be provided by the elevator contractor for a period of twelve (12) months after the elevator has been turned over for the customer's use. This service shall not be subcontracted but shall be performed by the elevator contractor. All work shall be performed by competent employees during regular working hours of regular working days. This service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the elevator contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.
- B. The elevator control system must:
1. Provide in the controller the necessary devices to run the elevator on inspection operation.
 2. Provide on top of the car the necessary devices to run the elevator in inspection operation.
 3. Provide in the controller an emergency stop switch. This emergency stop switch when opened disconnects power from the brake and prevents the motor from running..
- C. Provide system capabilities to enable a remote expert to create a live, interactive connection with the elevator system to enable the following functions:
1. Remotely diagnose elevator issues with a remote team of experts
 2. Remotely return an elevator to service
 3. Provide real-time status updates via email
 4. Remotely make changes to selected elevator functions including:
 - a. Control building traffic: Restrict floor access, remove car from group operation, shut down elevator, select uppeak/downpeak mode, activate independent service
 - b. Conserve energy: Activate cab light energy save mode, activate fan energy save mode, shut down car
 - c. Improve passenger experience: Extend door open times, change parking floor, activate auto car full, activate anti-nuisance, advance door opening, door nudging, extend specific floor extended opening time, release trapped passengers

END OF SECTION 142400

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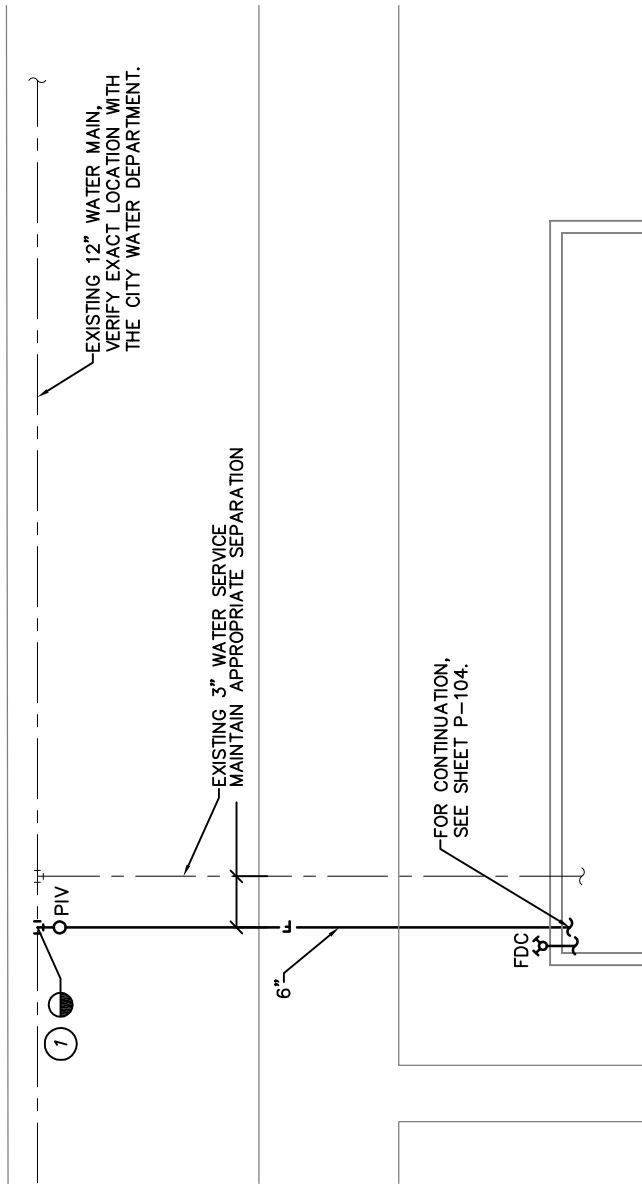
Project Information
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OSE # R0614--15X**

Issue Date	01-28-2015
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Site Utility Plan

From Sheet: **C-101** for CA use:
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NOTE:
OUTSIDE WORK TAKES
PLACE AFTER GRADUATION



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Drawing Title

Basement Plumbing Plan

From Sheet: P-104 for CA use:

P-104

Drawing # P-104.1

1

NOTE: NO HEADS WILL BE INSTALLED UNTIL FIRE SPRINKLER PIPING IS
CONNECTED AND ACTIVE.

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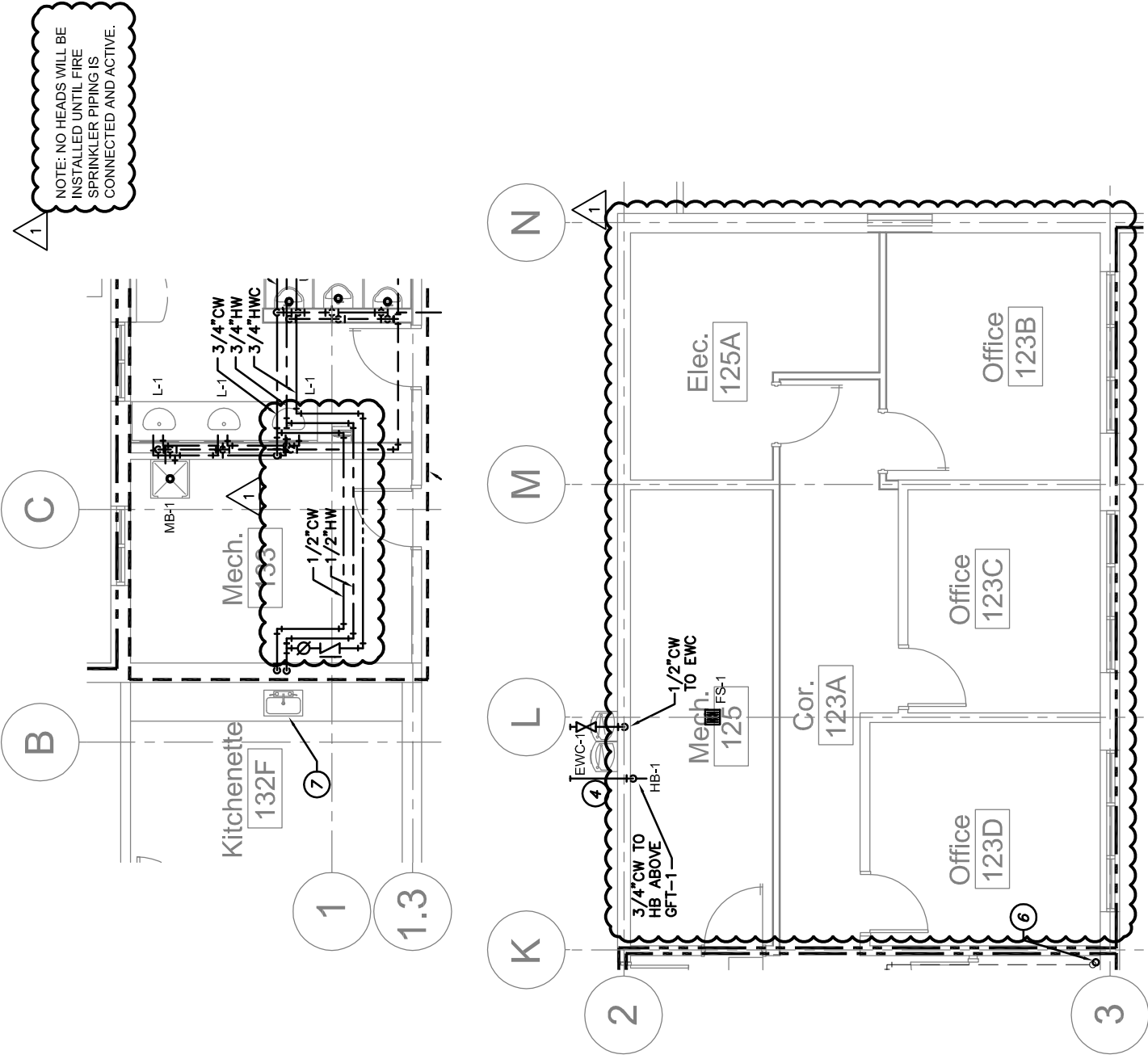
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First Floor Plumbing Plan

From Sheet: P-105 for CA use:

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01/28/2015 ADDENDUM 2



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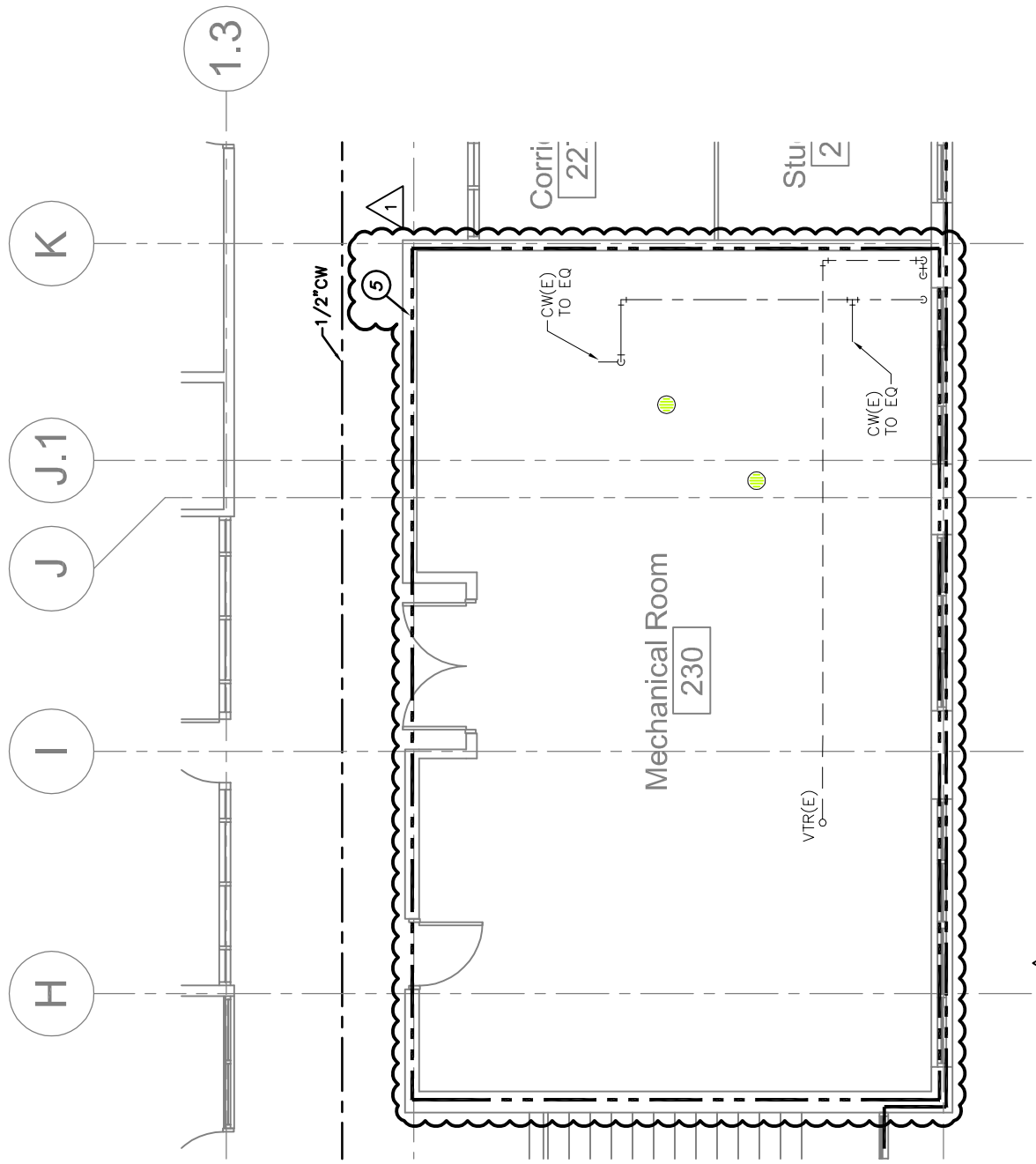
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Drawing Title
Second Floor Plumbing Plan

From Sheet: P-106 for CA use:
Drawing # P-106.1



⑤ VALVES SHALL BE ACCESSIBLE FROM ACCESS DOOR INTO CHASE TO ISOLATE THE BATHROOM GROUP ON THIS FLOOR.
NOTE: NO HEADS WILL BE INSTALLED UNTIL FIRE SPRINKLER PIPING IS CONNECTED AND ACTIVE.

**GENERAL NOTES
DIVISION 23 - MECHANICAL**

THE FOLLOWING NOTES APPLY TO ALL MECHANICAL DRAWINGS AS APPLICABLE.

32. ALL EXISTING CONTROLS SHALL REMAIN ACTIVE UNTIL CONTROLLED EQUIPMENT IS REMOVED. RELOCATION AND TEMPORARY WORK MAY NEED TO BE COMPLETED.



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Drawing Title

**Mechanical Legends and
General Notes**

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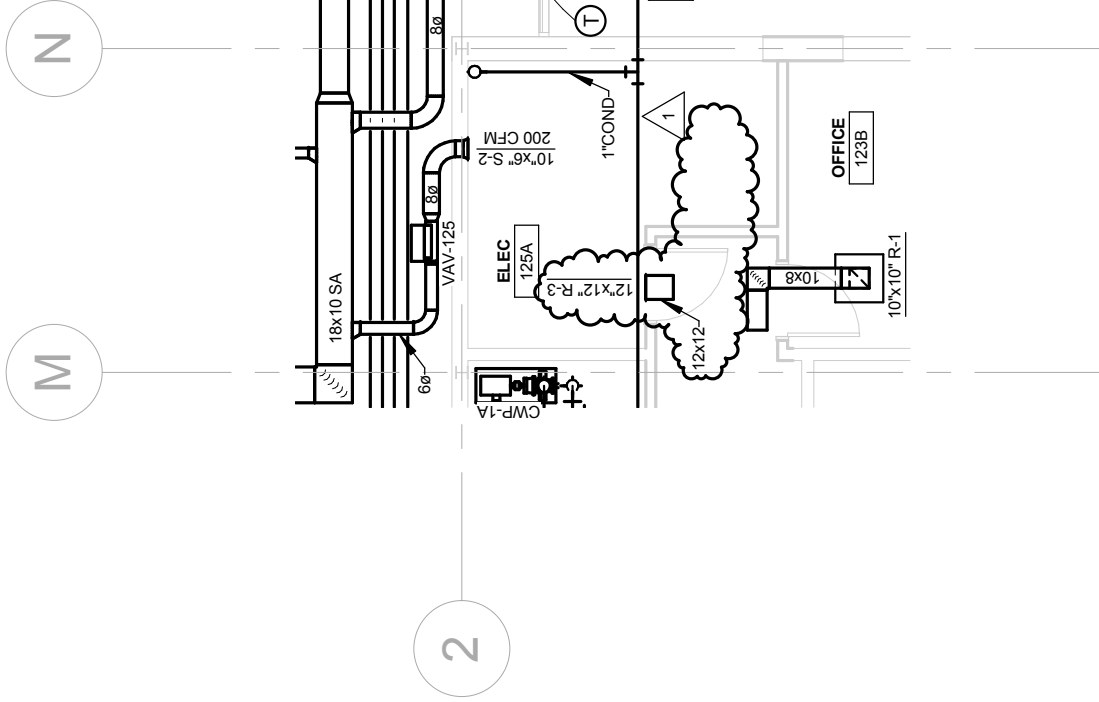
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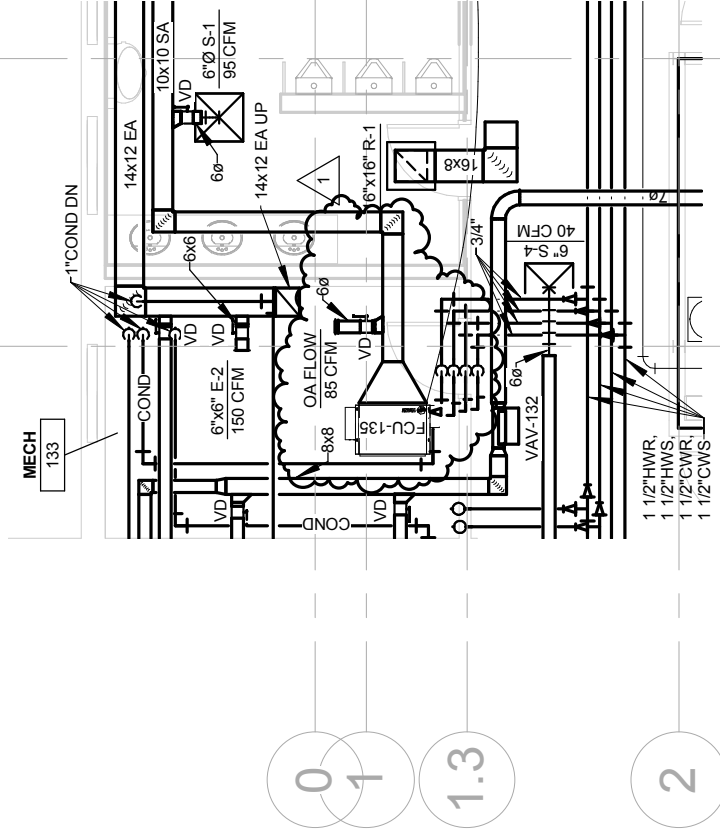
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M-105

Drawing #

M-105.1





C

D

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1.3

2

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M-105.2

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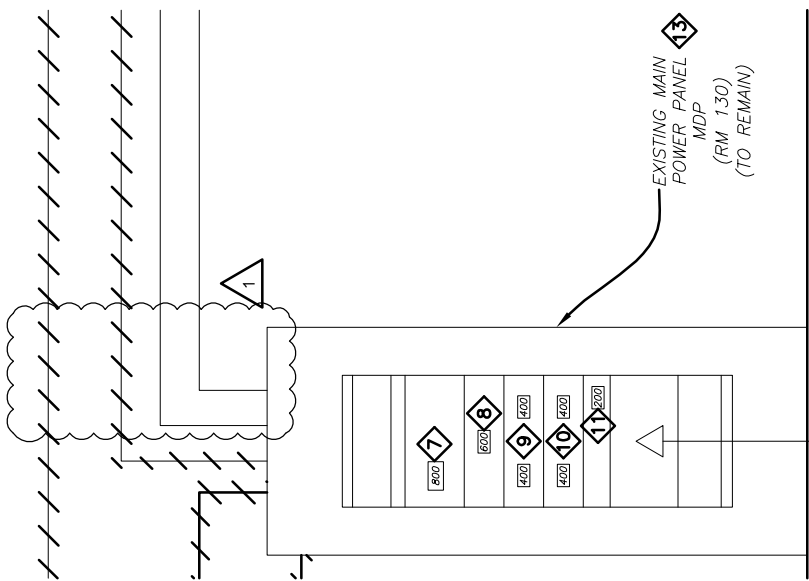
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Drawing Title
Electrical Revisions

From Sheet: **E-601** for CA use:
 Drawing # **E-601.1**



PARTIAL ELECTRICAL RISER DIAGRAM - DEMOLITION

1
 Scale: NO SCALE

- 1 EXISTING 600 AMP BREAKER IN EXISTING PANEL 'MDP' CURRENTLY FEEDING PANEL 'MSB' TO BE REPLACED WITH 800 AMP BREAKER TO FEED 'DPI'.
- 9 EXISTING 400 AMP BREAKER FEEDING 'NDP' TO FEED 'L1' REMOVE SPARE 400 AMP BREAKER AND REPLACE WITH BLANK COVER.
- 10 EXISTING 400 AMP BREAKERS FEEDING '124' AND '128' TO REMAIN.
- 11 EXISTING 200 AMP BREAKER TO FEED NEW PANEL 'L2'.
- 12 EXISTING FEEDER FOR '122' MAY BE RE-USED. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.

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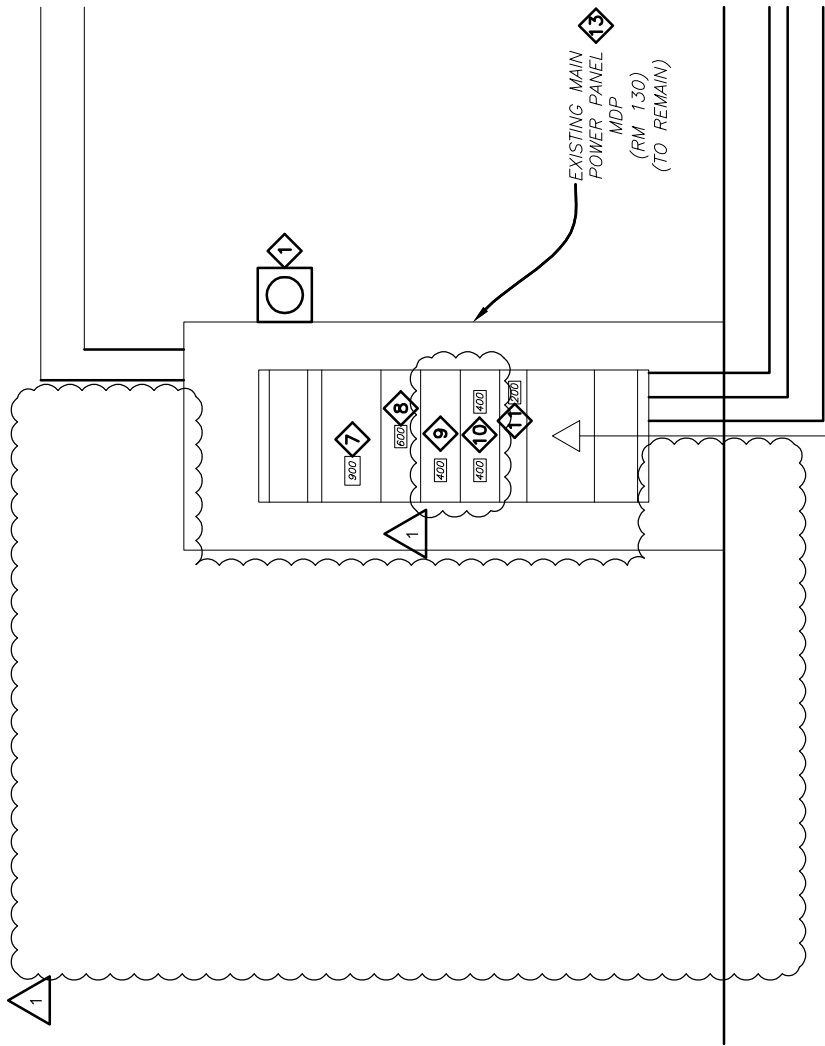
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Electrical Revisions

From Sheet: **E-601** for CA use:

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E-601.2



PARTIAL ELECTRICAL RISER DIAGRAM - NEW

2

Scale: NO SCALE

POWER PANEL SCHEDULE 'DP1'

PANEL DESIGNATION DP1	CKT. NO.	CIRCUIT NAME/PLATE DESIGNATION	NO. & SIZE BRANCHES			O.C. DEVICE		FEEDER	NOTES
			FRAME	WIRES	SPARE	SPACE	TYPE		
120/ 208 VOLTS, 3 PH, 4 W.	1	PANEL 'P1'	100	3			B	100 4#2, 1#8G., -1 1/2" C.	
800 AMP BUS	2	PANEL 'M1'	125	3			B	125 4#1, 1#6G., -2" C.	
800 MAIN SWITCH	3	PANEL 'P2'	100	3			B	100 4#2, 1#8G., -1 1/2" C.	
22K AIC CURRENT	4	PANEL 'M2'	125	3			B	125 4#1, 1#6G., -2" C.	
SERVICE RATED	5	PANEL 'P3'	100	3			B	100 4#2, 1#8G., -1 1/2" C.	
FEEDER ENTRANCE	6	PANEL 'M3'	225	3			B	225 4#4/0, 1#4G., -2 1/2" C.	
BOTTOM	7	EXISTING PANEL A5	125	3			B	125 EXTEND EXISTING	
ENCLOSURE TYPE 1	8	ELEVATOR (ALT. ONLY)	100	3			B	100 4#2, 1#8G., -1 1/2" C.	1
	9	UPS MAIN BY-PASS	125	3			B	125 4#1, 1#6G., -2" C.	1
	10	PANEL '230'	225	3			B	225 4#4/0, 1#4G., -2 1/2" C.	1
	11	SPACE							
	12	SPACE							



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Vermillion, South Dakota

Project Information
**Patterson Hall
Mech./Elec.
Infrastructure Upgrade
OSE # R0614--15X**

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Drawing Title
Electrical Revisions

From Sheet: E-601 for CA use:
Drawing # E-601.3