

MORONGO
BAND OF
MISSION
INDIANS



A SOVEREIGN NATION

MORONGO BAND OF MISSION INDIANS
BANNING, CALIFORNIA

ADDENDUM NO. 4

EQUIPPING DOMESTIC WELL 7A & 8

GENERAL

All provisions of this Addendum No. 4 are hereby incorporated into the "MORONGO BAND OF MISSION INDIANS EQUIPPING OF DOMESTIC WELL 7A AND 8 and bidders shall account for all provisions pursuant to this Addendum No. 4 in submitting their bid proposals. **Each Bidder shall include a dated and signed copy of this Addendum No. 4 with the sealed bid proposal.**

Bidders are advised that the schedule for the above referenced project is hereby amended in the following manner and the following manner only:

PLEASE BE ADVISED:

Reference: 1) Instructions to Bidders for Construction Contracts (Article 7 Interpretations and Addenda), (Article 15 Submittal of Bid), and (Article 17 Opening of Bids).

Added to Instruction to Bidders in its entirety, Amended as follows:

Article 7 Interpretations and Addenda:

Questions will be received until **November 8, 2024 until 5:00 pm (PST)**, questions received after this time may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Article 15 - SUBMITTAL OF BID

15.01 A Bid shall be submitted no later than the date and time prescribed (**November 14, 2024**) and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to:

15.02 outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to:

15.03 tside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to:

ATT: Mr. John Covington—Water Department Manager 12700 Pumarra Rd, Banning CA 92220

Article 17 Opening of Bids:

17.01 The sealed bids will be publicly opened and announced at **10:00 AM (PST) on November 15, 2024** at the Tribal Administration Building, 12700 Pumarra Road, Banning, CA 92220. Attendance is not required.

REVISION TO BIDDING SCHEDULE NO. I:

Item No. 2 – MASONRY BUILDING STRUCTURAL DESIGN

Provide structural design plans and calculations for the CMU block portion of the well building; including the building foundation and roof, to the dimensions as shown on the plans complete for the lump sum price of:

REVISION TO TECHNICAL SPECIFICATIONS:

Section 02200 (3.11) – IMPORTATION OF SUITABLE MATERIALS

Owner shall provide suitable material for controlled fills from an alternate source, including transportation of such material as approved by Owner's Geotechnical Engineer. Include all associated costs in Bid Item No. 8 of the Bidding Sheet.

Section 16995 (2.3) – RTU Operational and Telemetry Functions

The pressure switch and flow meter locations are shown on the plans. The programming of the operational RTU functions required will be provided by the Owner. The RTU, PLC, radio, power supply, and associated equipment (i.e. DC/DC Converter, batteries) shall be furnished by the Owner under a separate project. The RTU antenna location shall be shown on the design plans. Contractor shall provide conduit from future SCADA panel location to antenna location as shown on the plans.

Sections 15162, 16270, and 17010 replaced in their entirety in **Attachment 1**.

REVISION TO DESIGN DRAWINGS:

Drawing No. E-14, E-15, and E-20 in **Attachment 2**, showing the revisions to the SCADA antenna.

ANSWERS TO QUESTIONS:

1. Will there be a Geotechnical Report for Well 7A?

Answer: No specific report for Well 7A will be provided. Overexcavation/compaction provisions from the geotechnical report for Well No. 8 shall apply to Well No. 7A. Seismic data for Well No. 7A are provide in **Attachment 3**.

2. Who is providing the staking for the project – the Owner or Contractor?

Answer: Contractor is, see Special Requirements Item 12 – Construction Staking

3. Is this project subject to either Davis Bacon or Prevailing Wage rates?

Answer: No, project is not subject to Davis Bacon or Prevailing Wage rates.

4. What is the column, tube, and shaft requirements? Confusion as to whether 10' or 20' lengths.

Answer: Spec Section 15162 2.01H has been revised for 20' length column pipe. Shaft length shall be 20' in accordance with 2.01J and tube shall be 5' in accordance with 2.01K. See **Attachment 1** for revised Section 15162.

5. What is Flowmeter size? When in check scaling in E-14, it seems size is 6". But I do not think it is correct. Please clarify it is 12" per sheet M-1

Answer: Flowmeter size is 12" as indicated on Dwg. No. M-1. The flow meter size appears to match sheet M-1 as 12". The sheet scale is 1/2" = 1'-0" on sheet E-14.

6. In E-2 shows there are Well Level "1LT" and High-Pressure Switch & Ch2 Tank Level. I cannot find in in another plan. In spec 17010-2, we have spec for Flowmeter & Water Level. What about Pressure Switch & Cl2 Tank Level? Please clarify scope of instrument.

Answer: The following part numbers shall be used: Pressure Guage (Dwyer #DPG-206), Pressure Switch (Dwyer #DA-31-2-8) and Cl2 Tank Level Transducer (Endress + Hauser #FMX21). The spec section 17010 shall be updated to include this information the Pressure Guage/Switch and Cl2 Tank Level. See **Attachment 1** for revised Section 17010.

7. In spec 17010-2, there is BOM for RTU Control panel, in E-20, there is other BOM for RTU. But in mentioned Future SCADA/RTU. Please clarify, they are with us.

Answer: The BOM for RTU Control Panel shall follow the spec section 17010-2. Detail on sheet E-20 shall be updated to refer back to spec section. See **Attachment 1** for revised Section 17010.

8. The RTU BOM, has different Radio model. Which one is more priority?

Answer: The BOM for RTU Control Panel shall follow the spec section 17010-2. Detail on sheet E-20 shall be updated to refer back to spec section. See **Attachment 1** for revised Section 17010.

9. Addendum #3 added a detail where the new Antenna will be mounted to the side of the building, however, the attached specification is calling for a new 56' Antenna mast as indicated on drawings. I see nothing on the drawings for the new mast.

Answer: Antenna will be mounted to the side of the building as indicated on revised Drawing Nos. E-14 and E-15 in **Attachment 2**.

10. The specs have Square D, ABB, and Eaton as approved manufacturers for the MCC, however, the specs have Motortronics XLD listed for the Solid State Reduced Voltage Starters. With this, none of the manufacturers listed will be able to build this, it will have to be built by a custom Integrator. Also, the specs state the following:

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The installation shall comply with manufacturer' s instructions, drawings and recommendations.
- B. Only authorized integrators and service center for Motortronics & Toshiba will be acceptable for assembly of the soft starter sections. No other OEM' s will be acceptable. The authorized integrator/service center shall have the assembly factory/service center within 50 miles of jobsite.
- C. Align starters with other motor control sections and equipment as shown on plans.

END OF SECTION 16270

If the integrator has to be within 50 miles of the project, please specify what manufacturer/Integrator you want to build the MCC? We don't know any integrator within 50 miles of the project.

Answer: 50 mile radius has been removed per revised Section 16270 in **Attachment 1**.

By: 
Shane Bloomfield (Engineer of Record)

Date: 10/30/24

ADDENDUM NO. 4 ACKNOWLEDGEMENT

Bidder hereby acknowledges receipt of Addendum No. 4 and the incorporation thereof in bid proposal for: MORONGO BAND OF MISSION INDIANS EQUIPPING OF DOMESTIC WELL NO. 7A AND 8 and bidders shall account for all provisions pursuant to this Addendum No. 4. **This acknowledgement page shall be signed, dated, and included with the Bid Proposal Packet.**

Contractor: _____

By: _____
(Contractor's Authorized Representative)

Date: _____

Title: _____

ATTACHMENT 1

SECTION 15162

DEEP WELL VERTICAL TURBINE PUMPS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. **GENERAL:** This Specification is for a deep well, enclosed line shaft, oil lubricated, vertical turbine pump with above-ground flanged discharge and enclosed impellers. The complete pump assembly must be NSF certified by the pump manufacturer. All parts of the pump exposed to water shall be of stainless steel, steel, heavy cast iron, or equivalent corrosion-proof material.

The pumping unit shall be designed and furnished according to the latest Hydraulic Institute standards and American Water Works Association specifications.

Unless otherwise specified herein, all applicable provisions of AWWA E-103, latest edition, are hereby made a part of these Specifications.

The pump shall be manufactured by Simflo or pre-approved equal.

- B. **RELATED WORK NOT INCLUDED IN THIS SECTION:** The following Work shall be included as part of the Work of this Section; provided that such Work shall be performed in accordance with the applicable requirements of the following Sections:

1. Section 01820 -- Field Testing and Operational Demonstrations
2. Section 09871 -- Painting and Protective Coatings
3. Section 15170 -- Induction Motors
4. Section 15171 -- Vertical Hollow Shaft Electric Motors
5. Section 15991 -- Field Vibration Testing

1.02 UNIT RESPONSIBILITY

The Pump Manufacturer shall be responsible for providing the pump, lineshaft, pump shaft, motor shaft (w/bronze adjusting nut), column piping, enclosing tube, stainless steel air line, and the motor as a complete unit including discharge head and sole plate to the District approved Pump Installer. During the submittal process, the Pump Manufacturer shall provide a notarized certificate stating that all equipment listed above will be provided by the Pump Manufacturer.

All combinations of manufactured equipment which are approved under this specification shall be entirely compatible and the Pump Installer shall be responsible for the compatible and successful operation of the various components of the units conforming to the specified requirements as indicated in Section 4.0 herein. All necessary mountings, couplings, and appurtenances shall be included with each unit. All materials employed in the pump equipment shall be suitable for the intended application and shall be high grade commercial quality, free from all defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended.

1.03 ALTERNATE PUMP MANUFACTURER REQUIREMENTS

Submission of an alternate pump selection and manufacturer shall require that the Contractor provide the Owner with a \$4,000 cash deposit within ten (10) calendar days following Award of Contract to cover engineering expenses related to the detailed review for an "approved equal" status. The evaluation will be performed on a time and material basis; and any unexpended portion of the deposit will be returned to the Contractor. Submission of a bid proposal with an alternate pump manufacturer is at the bidder's risk since no detailed review or "or equal" status determination of any alternate pump or manufacturer will be performed prior to the bid opening.

Submission of a non-approved manufacturer may be subject to rejection. Authority for determination of "approved equal" pump and manufacturer, including conformance with Specification requirements, shall rest solely with the Owner. In the event that the Contractor's submission of an alternate pump selection and manufacturer is rejected, Contractor shall submit the specified pump and manufacturer at no additional cost to the Owner. No additional contract time extension will be granted for the Owner's review and evaluation.

Should the equipment selected by the Contractor require revisions to the structures, piping, electrical, or other work shown on the drawings, the Contractor shall include the cost of such revisions in his bid for the equipment, and no extra payment shall be made for such revisions. All such revisions shall be submitted for Owner approval, and shall be subject to the approval of the Engineer.

1.04 OPERATING CONDITIONS

The pump will be used for pumping potable water. The capacities, heads, efficiencies, and horsepower requirements specified herein are for a completely assembled unit. The pumping unit shall meet the requirements and design points as specified in the Pump Schedule.

The pump and motor combination shall be matched to deliver at least the maximum flow rate at the maximum speed.

1.05 SUBMITTALS

- A. **GENERAL:** Submit shop drawings, including related details and data, in accordance with Basic and Technical Specifications and Special Requirements. The Contractor shall make a complete and acceptable submittal to the Owner, as determined by the Engineer, by the second submission. The Owner reserves the right to withhold monies due the Contractor or require a \$3,000 deposit to cover additional costs of the Owner's review beyond the second submission.
- B. **CERTIFIED PUMP CURVES:** The Contractor shall submit certified pump curves, for approval by the Owner, for each pumping unit to be furnished herein; showing head versus capacity, bowl efficiency versus capacity; and NPSHR. Each curve shall be continuous over the full operating range from zero (0) flow up to the maximum flow permissible through each pump, and each curve shall be based upon the RPM listed herein. For variable speed operation, if applicable, include curve for operation at the specified minimum RPM. Each curve shall state the RPM speed of the pumping unit, and shall be furnished full-size on 8 1/2" x 11" paper.

The Contractor shall provide pumps capable of meeting all aspects of the Pumping Unit Design Data section herein and as shown on the Drawings.

- C. **PUMPING UNIT OUTLINE DIAGRAMS:** Before the manufacture of the pumping units and appurtenances is commenced, the Contractor shall submit to the Owner for approval, detailed fabrication drawings of said pumping unit material.
- D. **NPSH REQUIREMENTS:** Submit calculations and written certification from pump manufacturer that the pumps furnished herein will operate compatible with the Net Positive Suction Head (NPSH) available.
- E. **DISCHARGE HEAD:** Submit details of fabricated steel discharge head and provide written certification from pump manufacturer that the discharge head has the capability of accommodating the specified drives and the design column length within acceptable vibration limits. Submit seismic calculations signed and stamped by a civil or structural engineer registered in the State of California.
- F. **COATINGS:** Provide coating manufacturer's information and data for fusion bonded epoxy lining and coating in accordance with Section 09871.
- G. **FIELD PROCEDURES:** Submit for approval of the Owner a detailed field procedure for installation, adjustment, inspection, and testing of all pumping equipment.

- H. TEST PROCEDURES: Pump manufacturer shall submit proposed shop testing procedures at least thirty (30) days prior to the test for approval by the Owner.
- I. OPERATION AND MAINTENANCE INSTRUCTIONS: Complete and detailed operation and maintenance instructions shall be submitted in accordance with the Special Requirements and Technical Specifications.
- J. ADDITIONAL SUBMITTAL REQUIREMENTS: Pump Manufacturer shall submit necessary data and calculations as summarized herein to demonstrate full compliance with the specification requirements, including, but not limited to, thrust data, pump bowl lateral data, shafting stretch determination, impeller lift, and complete listing of all pump materials and parts.
 - 1. Complete listing of all pump materials and parts
 - 2. Calculations for column; head losses and all miscellaneous losses for review and confirmation of design TDH
 - 3. Acknowledgement of Flow Conditions described in paragraph 3.02 A and B, herein.
 - 4. Strainer detail, including open area and friction loss through strainer
 - 5. Thrust data and calculations, including shaft stretch determination (70° F water)
 - 6. Proposed shop testing procedures
 - 7. Detailed field procedures for installation, impeller adjustment, inspection and testing of all pumping equipment.
 - 8. CAD drawing detailing the line shaft bearings and flush head nut assembly.
 - 9. Operation and Maintenance Manual

PART 2 - PRODUCTS

2.01 PUMP CONSTRUCTION

- A. PUMP BOWLS: The bowls shall be of close-grained, ductile iron or gray cast iron, Class 30 or better, precision cast, free from blow holes, sand pockets, and other detrimental defects. In order to improve the guaranteed efficiency at the design point(s), lined bowls shall be furnished. Said lining, shall be vitreous porcelain enamel and shall be applied in such manner to produce a long effective life which and shall not be applied for the purpose of a short time gain in efficiency. Lining, identical to that furnished hereunder, shall have been used in the field, under identical conditions, with satisfactory results for at least a five-year period. The outside diameter of the bowls shall be of such size to fit the well casing ID, with proper clearances as approved by Engineer. The bowls shall be

able to withstand a minimum of 1 1/2 times the maximum pump shut-off head (zero GPM) pressure or twice the pressure at rated capacity, whichever is greater. Bowl material shall have a minimum tensile strength of 30,000 psi. Coating of bowls shall be fusion bonded epoxy per Section 09871. All bolts to be 416 stainless steel.

- B. PUMP IMPELLERS: The impellers shall be of the enclosed type, constructed of nickel aluminum bronze C95500. They shall be statically and dynamically balanced to prevent vibration and shall be smoothly finished on all surfaces to reduce friction losses to a minimum. The impellers shall be accurately fitted and securely locked to the pump shaft using 416 stainless steel taper locks, and vertical adjustment of the impellers shall be possible by means of an adjustment method in the driver assembly.
- C. PUMP SHAFT: The pump shaft shall be constructed of pump shaft quality A564M 14-4PH stainless steel and shall be accurately machined to a sufficient dimension to provide smooth operation and to easily withstand torsional loads and other stresses encountered within the pump. Pump shaft shall be one piece through the bowl assembly. The pump shaft shall have adequate bearing support at every bowl section and at the top and bottom case section, and shall be equipped with a suitable steel coupling for connection to the line shaft. No step coupling or “flat stop” machined coupling will be allowed for connection of pump shaft to line shaft.
- D. PUMP BEARINGS: The suction case section and the discharge case section shall be sleeve type, B39 C954 aluminum bronze. The bowl bearings shall be sleeve type of lead-free bronze, or equal as approved by the Engineer. Bearing area, bearing cooling, and bearing lubrication shall be ample for long trouble-free operating life of the equipment.
- E. PUMP DISCHARGE CASE: The discharge case shall securely fasten the top pump bowl assembly to the column piping. This section shall be heavily reinforced with streamlined fluid passages and shall contain sleeve bearings for the pump shaft.
- F. PUMP SUCTION CASE: The suction case shall securely fasten the bottom bowl assembly to the suction bell. This section shall be heavily reinforced with streamlined fluid passages and shall contain a sleeve bearing for the pump shaft which is effectively plugged at the bottom to form a grease container. A sand collar shall prevent sand from entering the suction case bearing. Coating of pump suction case shall be fusion bonded epoxy per Section 09871.
- G. PUMP SUCTION PIPE NIPPLE AND STRAINER: Unless otherwise specified, a suction pipe nipple, approximately 10' long, shall be provided

of the same material and diameter as the column piping. A cone type strainer shall be provided for attachment to the suction pipe. The strainer shall be 316 stainless steel and shall have a net inlet area of at least four times the suction pipe area. The maximum strainer opening shall not be more than 75% of the minimum opening of the water passage through the bowl or impeller.

- H. PIPE COLUMN NIPPLE: The column nipple shall be threaded Grade A steel pipe and shall conform to the following diameter weight per foot table:

<u>Nominal Size</u> (Inches)	<u>OD</u> (Inches)	<u>Weight Per Foot</u> (Pounds)
4	4.500	10.79
6	6.625	18.97
8	8.625	24.69
10	10.750	31.20
12	12.750	43.77
14	14.000	54.57
16	16.000	62.58

The pipe shall be furnished in interchangeable sections of 20-foot nominal length with the exception of the top and bottom column lengths which shall be 10-foot or shorter. The column pipe sections shall be connected with threaded steel sleeve type couplings. The ends of the pipe section shall be faced parallel and machined with threads and/or flanged to insure proper alignment when assembled. The exterior and interior surfaces of all column pipe shall be cleaned and disinfected prior to installation.

- I. PUMP DISCHARGE HEAD ASSEMBLY: The pump discharge head shall be fabricated steel and shall be arranged for mounting the motor and for connecting top column pipe, and containing an above-ground flanged discharge outlet. The discharge head shall be fusion bonded epoxy lined per System P11 of Section 09871, Painting and Protective Coatings. A tube nut assembly with bronze sleeve bearing shall be provided to seal the enclosed line shaft to prevent any leakage. Also, an automatic oiler assembly shall be provided; including 2 gallon container, brackets, fittings, sight feed valve and solenoid (110 V, 1 Phase 60 Hz) valve. Type and grade of lubricating oil shall be submitted to the District for approval.

Mount the discharge head on a 2-inch thick, fabricated steel base plate. The fabricated base plate shall have tapped holes for bolting down pump discharge head, complete with all bolts, nuts, washers, and anchor bolts. The top of the base plate shall be machined to mate with the pump discharge head base plate.

- J. PUMP LINE SHAFT ASSEMBLY: The line shaft shall be of pump shaft quality C-1045 carbon steel and shall conform to AWWA E-103, Section A4.2 and A5.5, except having 20-foot nominal length shafting. The shaft shall be precisely machined, ground, and polished. Heat shall not be used to straighten line shaft. The butting faces shall be machined square to the axis of the shaft, with the maximum permissible axial misalignment of the thread axis with the shaft axis 0.002" in 6 inches. The shaft shall be coupled with extra strong threaded steel couplings machined from solid steel bar. Steel couplings shall have a safety factor of 1 1/2 times the shaft safety factor. Threads shall be left-hand to tighten during pump operation and have sufficient threads to fully seat shaft faces.
- K. SHAFT ENCLOSING TUBE: The shaft enclosing tube (2.5" minimum diameter) shall be provided in interchangeable sections, not over five (5) feet in length, as ASTM A120 extra heavy weight, continuous weld pipe to receive bronze couplings, which will also act as lineshaft bearings. The exterior of the shaft enclosing tube shall be fusion bonded epoxy lined per system P11 of Specification Section 09871, Painting and Protective Coatings. Enclosing tube shall be stabilized inside the column pipe by using rubber centering spiders. The top and bottom spiders shall be 10 feet from the top and bottom, remaining shall be spaced at 40 ft. (max.) intervals throughout the column pipe length.
- L. PUMP NAMEPLATE: The pump shall be provided with an easy to read, corrosion resistant nameplate. It shall contain complete pump information including: pump manufacturer's name, serial number, pump model number, number of stages, speed, TDH and capacity in GPM at the middle design point, etc. Said nameplate shall be mounted on the pump head.
- M. AIR LINE: A stainless steel PVC jacketed airline shall extend from the surface to the top of the bowl assembly. Airline shall be 0.25-inch or 3/8-inch diameter by 0.035-inch wall thickness (diameter as recommended by pump manufacturer), Type 304 stainless steel, welded and fully annealed per ASTM A269; complete with continuous PVC jacket of 0.032-inch wall thickness. The airline shall be continuous with the only connection being above the pump head at the airline gage connection. Secure airline to outside of column piping with stainless steel bands and extend to top of pump bowls.
- N. SOUNDING TUBE: Contractor shall install one (1) 1-1/2-inch schedule 40 PVC pipe (threaded pipe and couplings) for use with the transducer that shall extend from the surface to the top of the bowl assembly. The last 10-feet of the assembly shall be perforated with a cap on the bottom. The assembly shall extend through the pump discharge head where the assembly will be equipped with a threaded cap. Secure assembly to the outside of the column piping with stainless steel bands at 20-foot intervals and extend to top of pump bowls.

- O. MOTOR SHAFT COUPLING: Provide 4 piece heavy duty adjustable spacer coupling with registered fit to allow impellor and shaft adjustment.

PART 3 - PUMPING UNIT DESIGN DATA

3.01 DESIGN DATA

- A. The pumping unit for Well No. 7A shall be furnished in accordance with the following design and operating conditions:

<u>ITEM</u>	<u>DESCRIPTION</u>
Motor	200 HP, 460V, 1785 RPM, Premium Efficiency, WP-1 enclosure, 3 phase.
Discharge Head	10x10x16.5 FA fabricated steel, 10-inch diameter 150 lb. discharge flange.
Sole Plate	2-inch thickness, steel, inside diameter to match pumping unit.
Suction Pipe Nipple	10' of Column Size Diameter, with Strainer
Setting	400-feet below ground surface (top of bowls)
Column	10-inch diameter
Line Shaft	1.5-inch diameter minimum
Oil Tube	2.5-inch
Impeller Shaft	9.93-inch diameter
Suction Bell	12.75" OD (Max.)
Pump	Peerless Pump GL14ME/LC, 4 stages, premium efficiency (hand polished); Curve No. GL14MELC4606333 (Rev. October 2022), Flowserve, or Owner approved equal in accordance with Section 1.03 above.

OPERATING CONDITIONS

<u>Pump Design Points</u>	<u>Min. Bowl Lab Efficiency</u>
1200 gpm @ 335' TDH*	77.5%
1500 gpm @ 311' TDH* (Design Point)	82.5%
1750 gpm @ 275' TDH*	81.0%

Thrust

No continuous upthrust is allowed. Pump Manufacturer to provide thrust calculations at the three design points listed above.

Drive Load

Drive load shall not exceed 160 BHP within the full operating range between 275' THD and 335' TDH, when including shaft loss, bearing loss, bowl efficiency, column loss and discharge head loss.

*TDH indicated is inclusive of losses in column and discharge head. Pump manufacturer or pump dealer to provide calculations for column and head losses for verification and adjust pump curve accordingly, if required.

- B. The pumping unit for Well No. 8 shall be furnished in accordance with the following design and operating conditions:

<u>ITEM</u>	<u>DESCRIPTION</u>
Motor	400 HP, 460V, 1780 RPM, Premium Efficiency, WP-1 enclosure, 3 phase.
Discharge Head	10x10x20 FA fabricated steel, 10-inch diameter 150 lb. discharge flange.
Sole Plate	2-inch thickness, steel, inside diameter to match pumping unit.
Suction Pipe Nipple	10' of Column Size Diameter, with Strainer
Setting	700-feet below ground surface (top of bowls)
Column	10-inch diameter
Line Shaft	1.94-inch diameter minimum

Oil Tube	3.0-inch
Impeller Shaft	10.21-inch diameter
Suction Bell	12.75" OD (Max.)
Pump	Peerless Pump GL14ME/LC, 9 stages, premium efficiency (hand polished); Curve No. GL14MELC4606333 (Rev. October 2022), Flowserve, or Owner approved equal in accordance with Section 1.03 above.

OPERATING CONDITIONS

<u>Pump Design Points</u>	<u>Min. Bowl Lab Efficiency</u>
1250 gpm @ 780' TDH*	77.5%
1500 gpm @ 722' TDH* (Design Point)	83.7%
1800 gpm @ 640' TDH*	81.0%

Thrust

No continuous upthrust is allowed. Pump Manufacturer to provide thrust calculations at the three design points listed above.

Drive Load

Drive load shall not exceed 375 BHP within the full operating range between 640' TDH and 780' TDH, when including shaft loss, bearing loss, bowl efficiency, column loss and discharge head loss.

*TDH indicated is inclusive of losses in column and discharge head. Pump manufacturer or pump dealer to provide calculations for column and head losses for verification and adjust pump curve accordingly, if required.

3.02 CERTIFIED PUMP CURVES

The Contractor shall submit certified pump curves, for approval by Engineer, for each pumping unit to be furnished herein; showing head versus capacity, bowl efficiency versus capacity; each curve shall be continuous over the full operating range from zero (0) flow up to the maximum flow permissible through each pump, and each curve shall be based upon the RPM listed herein. Each curve shall state the RPM speed of the pumping unit, and shall be furnished full-size on 8 1/2" x 11" paper. The Contractor shall provide pumps capable of meeting all aspects of the Pumping Unit Design Data section herein and as shown on the Drawings.

3.03 FACTORY NON-WITNESSED PUMP TESTS

- A. GENERAL: Pump(s) shall undergo factory non-witnessed pump testing. Unless otherwise approved by Engineer, test driver shall be of the same horsepower and voltage as the specified motor. Tests shall be performed in accordance with the applicable provisions of AWWA E101 and the standards of the Hydraulic Institute. All tests shall be performed at a submergence level pre-approved by the Engineer. To successfully pass a laboratory performance test, a pumping unit shall meet all performance requirements specified.
- B. NON-COMPLIANCE: Should results of the test indicate, in the opinion of the Engineer, that the pumps fail to meet any of the specified requirements, the Owner will notify the Contractor of such failure. The manufacturer shall thereupon, at no expense to the Owner, make such modifications and perform additional testing as may be necessary to comply with these specifications.

3.04 PUMPING UNIT OUTLINE DIAGRAMS

Before the manufacture of the pumping unit and appurtenances is commenced, the Contractor shall submit to the Engineer for approval, detailed fabrication drawings of said pumping unit material.

3.05 NPSH REQUIREMENTS

The pumping equipment furnished herein shall be designed, and shall operate compatible with the NPSH. Maximum NPSH required at Design point shall be 20 feet.

3.06 ADDITIONAL SUBMITTAL DATA AND CALCULATIONS

Pump Manufacturer shall submit necessary data and calculations as summarized herein to demonstrate full compliance with the specification requirements, including, but not limited to, thrust data, pump bowl lateral data, shafting stretch determination, impeller lift, and complete listing of all pump materials and parts.

- 10. Complete listing of all pump materials and parts
- 11. Thrust data and calculations, including shaft stretch determination (70° F water)
- 12. Bowl lining information and data
- 13. Proposed shop testing procedures
- 14. Detailed field procedures for installation, impeller adjustment, inspection and testing of all pumping equipment.
- 15. Operation and Maintenance Manual

PART 4 - EXECUTION

4.01 PUMPING UNIT - PUMP INSTALLER REQUIREMENTS

A Owner approved pump installer, hired by the Contractor, shall set into the well, the complete deep well pumping unit as provided by the Pump Manufacturer including the pump assembly, column piping, line shaft and enclosure tube, air line, discharge head, and motor, and shall attend field acceptance tests as the Contractor's Field Service Engineer. The Pump Installer shall have a 25 year minimum successful experience record for pump installation, sales, and repair from this office/shop location.

4.02 INSTALLATION AND FIELD ACCEPTANCE TEST RESPONSIBILITY

- A. GENERAL: The Pump Installer under this specification shall have full responsibility for the proper installation and operation of said pumping equipment, including furnishing the services of a pumping equipment field Service Engineer to provide inspection during equipment installation, and to adjust, if necessary, any portion of the pumping equipment required herein.
- B. TESTING AND PERFORMANCE: The Engineer will arrange with Southern California Edison or Pump Check to conduct a field pump performance test on the pumping unit, prior to final acceptance by the Owner. The head-capacity, input horsepower, and overall efficiency values will be determined for at least three points in the stated operating range of the pump, and will be compared with the certified submittal curves, after reasonable allowances for field conditions.

In addition to the above field performance requirements, the “overall plant efficiency” of the installation (at normal operation) shall be a minimum of 72% based upon stated SCE field pump performance test. In the event that any of the test results indicate non-compliance of the workmanship or equipment with these specifications, the Contractor shall be required to perform at his own expense, and as approved by the Engineer, such work and furnish such materials as will restore the equipment to the specified performance.

- C. INDEPENDENT TESTING COMPANY REQUIREMENTS: For field test flow measurement, Pump Installer shall arrange and pay for an independent testing organization as approved by the Engineer. The independent testing organization shall supply all necessary measuring equipment (calibrated test gages, flow measuring equipment, etc.). The Owner's flow meter may be utilized for obtaining test flow rates, subject to approval by the Owner.

- D. NON-COMPLIANCE: In the event that the tests reveal noncompliance of the workmanship or equipment with these specifications, the Pump Installer shall be required to perform, at his own expense, such work and furnish materials as will, in the opinion of the Engineer, restore the equipment to the specified performance. Any identified specific issues that indicate non-compliance with the pumping equipment supplied by the Pump Manufacturer to the Pump Installer shall be resolved between the Pump Installer and the Pump Manufacturer. The Owner will look to the Pump Installer to provide unit responsibility under this contract.

4.03 DISINFECTION OF PUMPING UNIT

The pumping unit and material to be installed in the well shall be chlorinated just prior to installation by spraying such areas with a solution having a chlorine residual of not less than 200 ppm. After installation of the pumping unit, chlorinate well per AWWA C654 and in accordance with 4.04 below.

4.04 DISINFECTION OF WATER WELL

The Pump Installer shall provide for disinfection of the well as soon as testing of the pumping unit has been performed and the Prime Contractor has confirmed, with concurrence from the Owner, that the pumping plant is ready to be put into service.

The Contractor shall adjust the fluid pH in the well to 5.0 pH units before adding the chlorine solution. Liquid disinfection solution will be used, and distributed through the existing gravel tubes and sounding tube. The Contractor must achieve the required minimum concentration of 100 milligrams per liter (mg/L) free chlorine concentration.

If requested by the Contractor, the Owner will assist in the disinfection procedure by operating the pumping unit to provide a “surge” of the chlorine solution into the well and surrounding formation. Following disinfection, the Owner will collect groundwater samples for analysis on two consecutive days for heterotrophic plate counts (HPC) and coliform bacteria. Pump Installer shall be required to perform the well disinfection process until the HPC is <200 colonies/mL and bacteria is not present after a minimum of two (2) successful tests taken 24 hours apart.

Only chlorine or other compounds approved by the State of California, Department of Health Services, Drinking Water Board and the National Sanitation Foundation (NSF Standard 60), will be used as disinfectants. The disinfectant shall be delivered to the site of the Work in the original closed containers bearing the original label indicating the percentage of available chlorine. The disinfectant shall be recently purchased.

4.05 CERTIFICATION OF INSTALLATION

The Contractor shall submit a letter to the Owner confirming that all pumping equipment was inspected, approved for installation, operation checked, and that the pumping unit was installed properly by the Contractor’s Pump Installer.

4.06 WARRANTY

All pumping equipment shall carry an extended warranty from the pump manufacturer for a two year period from the date of **acceptance**. All warranties shall be provided to the Owner prior to project completion.

4.07 MAINTENANCE BOND FOR PUMPING EQUIPMENT

The Contractor shall provide a maintenance bond from a bonding company acceptable to the Owner equal to 100% of the pumping equipment value (including motors, pumps and pump assemblies) for a two (2) year term starting when the Owner has accepted the contracted work. Equipment and/or components failing within this period due to deficiency in design workmanship or material shall be removed, replaced, and reinstalled at no cost to the Owner, and said replacement shall be guaranteed for two years continuous service. The maintenance bond shall be submitted to the Owner prior to the performance test of the pump(s).

4.08 IN-SERVICE CHECKS

The Contractor shall provide In-Service Checks of each pumping unit shall be performed every six months (total of 4 checks) during the period of the warranty by qualified technical representatives of the Contractor's Pump Installer. Checks shall be detailed and complete, including but not limited to the following; vibration testing (Section 15991), pumping plant efficiency testing by an independent testing organization as approved by the Engineer, motor inspection (including motor bearing), and shall be performed under the observation and to the satisfaction of the Owner's Plant Superintendent or his designated representative. In-Service Checks shall be conducted in accordance with Section 01820 of these Contract Documents.

Should the results of the "semi-annual" In-Service Check(s) indicate non-compliance with the requirements of these specifications and the requirements listed herein, the Contractor shall be required to perform at his own expense, and as approved by the Engineer, such work and furnish such materials as will restore the equipment to the specified performance. Should the results of the "semi-annual" In-Service Check(s) indicate an increase in vibration in excess of the Vibration Acceptance Criteria in Section 15991 or a decrease of 2.0% or more per year from the initial "overall plant efficiency" (at normal operation), as performed by Pump Check, the Contractor shall be required to perform work necessary to restore the equipment to the specified performance.

In the event that the pumping unit needs to be removed during the two year warranty period for inspection/evaluation due to non-compliance with the requirements listed above, the Contractor shall be required to remove the pumping unit at no additional cost to the Owner. Inspection/evaluation of the pumping shall be performed in the presence of Owner personnel, at the well site or as determined by the Owner. If the cause of the decreased pump performance is determined to be covered under the warranty, the Contractor will be allowed to perform the work necessary to restore the equipment to the

specified performance. If the cause of the decreased pump performance is determined to not be covered under the warranty, the Owner will contract the necessary work with a contractor of their choice. Final determination of the cause of decreased pump performance rests with the Owner.

END OF SECTION 15162

**SECTION 16270
SOLID STATE REDUCED VOLTAGE STARTERS**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Floor standing, NEMA 1, Solid State Reduced voltage starters.
- B. Motor Control Center installed soft starters.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. SUBMITTALS: Section 16010.
- B. OVERCURRENT PROTECTIVE DEVICES: Section 16180.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- 1. Motortronics XLD Series
- 2. Toshiba
- 3. Or approved equal.

2.02 SOLID STATE REDUCED VOLTAGE STARTERS

- A. The Solid State Reduced Voltage Soft Start Starter (RVSS) shall be the soft-start, soft-stop complete with but not limited to, the following equipment and features:
 - 1. Molded case circuit breaker with a frame size to be sized by the equipment manufacturer. The circuit breaker shall be provided with door mounted handle with ON, TRIP and OFF indicator and provision for locking in the ON or OFF position. The breaker shall be rated at 480V, 3-pole, complete with adjustable trip and shunt-trip option.
 - 2. Bypass contactor automatically controlled by the RVSS control module to close and bypass the solid state power module only when motor reaches full rated speed and not before. The contactor shall be 3-pole, ampere rating based on NEMA or IEC standard.
 - 3. Contactors shall be vacuum for 100HP and larger and shall be IEC horsepower rated for 75HP and smaller. Vacuum contactors shall be manufactured by Toshiba (or approved equal).
 - 4. Symcom Model 777 Motor Protector Relay (no substitutions) with correctly sized current transformers shall be used for added motor protection on 100HP or larger size motors or with a current rating of 100 amps or greater.
 - 5. Unit shall be self-powered and shall not require a separate power supply module for the soft-starter's control power.
 - 6. The Solid State Reduced Voltage Starter shall be provided with the following devices and features as follows:

- a. A momentary power outage, a fault condition or device is turned off; the controller shall ramp down and shut off completely
- b. Acceleration and deceleration ramp adjustable from 1-60 seconds. Factory set at 15 seconds
- c. Initial torque limit adjustable from 0-100% nominal motor torque full load amperes (FLA). Factory set at 100%.
- d. Start current limit adjustable from 0-500% nominal FLA. Factory set at 400%
- e. Torque control shall be a selectable option for control operation.
- f. Soft-starter operation keypad shall be mounted on the door with manufacture's remote keypad option kit.
- g. Voltage rating from 208V – 10% to 690V +10%, 50/60Hz
- h. SCR's are rated for 1600V PIV.
- i. Unit will have intergrated thermal protection (Class 5-30) Motor underload settings. Current overload settings. Phase reversal. Phase loss. Automatic restart. All programmable.
- j. The bypass contactor must be mounted externally and the soft starter must not be dependent on the bypass contactor for continuous duty.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The installation shall comply with manufacturer's instructions, drawings and recommendations.
- B. Only authorized integrators and service center for Motortronics & Toshiba will be acceptable for assembly of the soft starter sections. No other OEM's will be acceptable.
- C. Align starters with other motor control sections and equipment as shown on plans.

END OF SECTION 16270

**SECTION 17010
CONTROLS AND INSTRUMENTATION**

PART 1 - GENERAL

1.01 WORK INCLUDED

Telemetry panel and related equipment including a PLC, standby 24 Volt D.C. power supply, and installing the central station (SCADA) modifications and additions. Programming of PLC for each well site will be performed by Owner (see Section 2.02).

1.02 SUBMITTALS

Submit in accordance with Section 16010

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. GENERAL PROVISIONS: Section 16010.
- B. SOLID STATE REDUCED VOLTAGE AC MOTOR STARTER:
Section 16270.
- C. MOTOR CONTROL: Section 16920

PART 2 - PRODUCTS

2.01 MATERIALS

- A. The telemetry and RTU control equipment required for this project shall be provided by the Owner.
- B. Water Level: Ametek PN:SSTSB0100NLSV, 500 foot min cable length for Well No. 7A and 800 foot min cable length for Well No. 8, extend cable length as necessary
- C. Flow Meter: TigermagEP #FM656 or UltraMag Model UM06
- D. Tank Level Transducer: Endress+Hauser #FMX-21.
- E. Pressure Guage: Dwyer #DPG-206.
- F. Pressure Switch: Dwyer #DA-31-2-8.

2.02 RESPONSIBILITIES

The responsibilities of the system integrator for this work shall include the following:

1. Purchase, install and calibrate all instrumentation.
2. MBMI uses Allen Bradley SLC 500 processors, Model SLC 5/05 and RSView 32 HMI software. No equal is acceptable.

3. All equipment and software development shall be coordinated with MBMI prior to the purchase and installation of the equipment.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Provide all required wiring, conduit (if req.) and anchoring equipment for wall mounting of panel.
- B. Provide engraved nameplates for equipment.
- C. Provide wire numbers for all terminations.
- D. All outputs should have Relays, All analogs should be fused.
- E. RTU Wires, DI input Blue color, Di outputs Yellow color, AC control wires (Hot) Red, 24VDC (pos) brown, 24VDC (com) orange, 120 VAC Power (Hot) Black, AC (common) white, Ground Green

END OF SECTION 17010

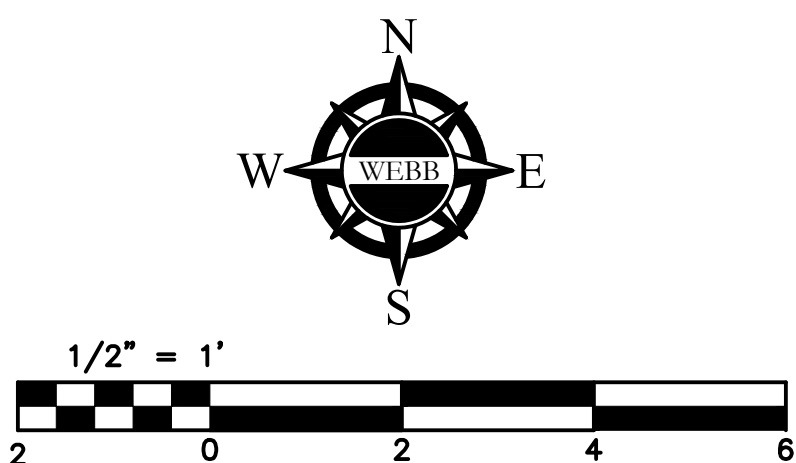
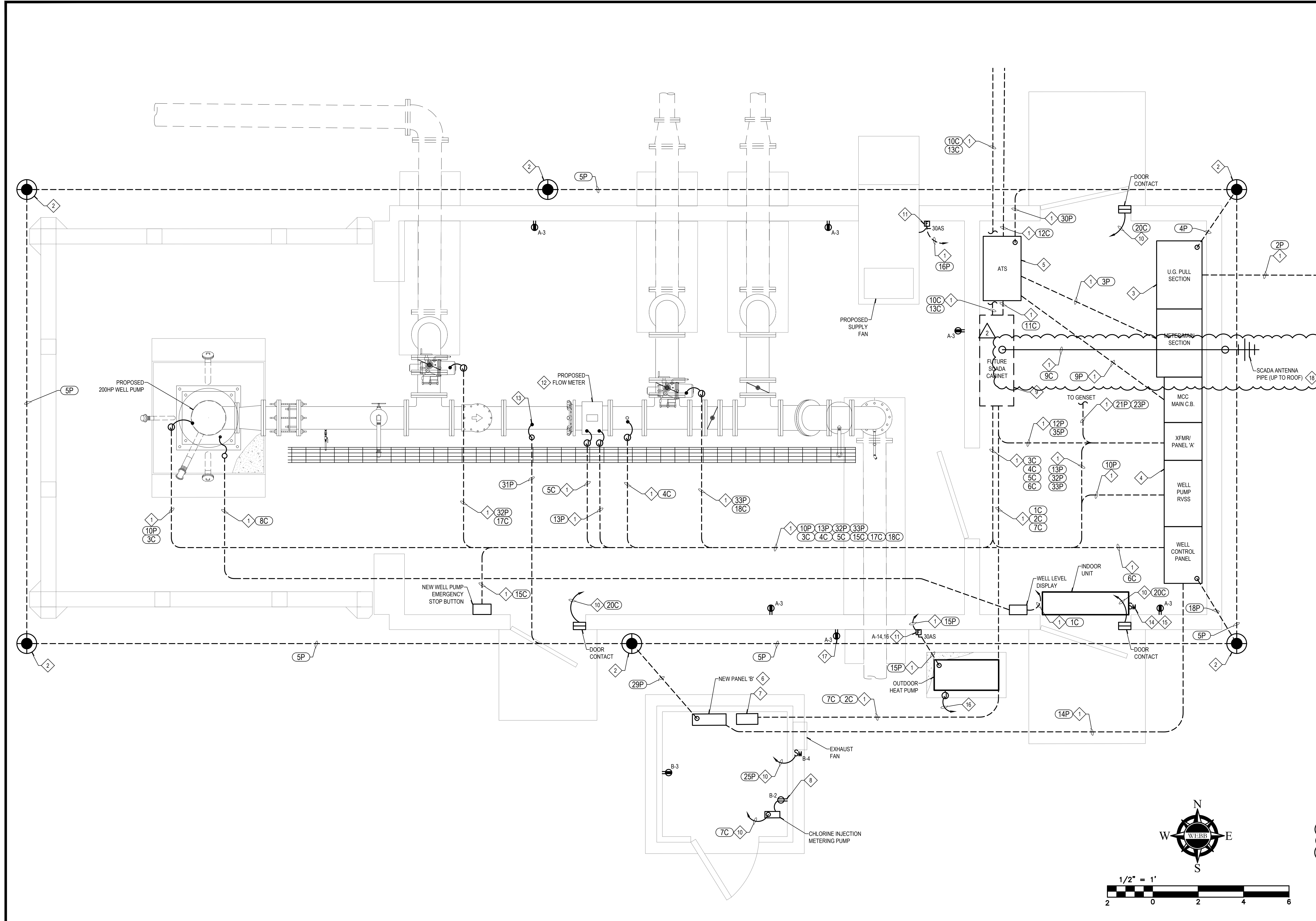
ATTACHMENT 2

GENERAL NOTES

- COORDINATE TRENCH ROUTING AND EQUIPMENT LOCATIONS WITH EXISTING CONDITIONS AND NEW WORK.
- CONTRACTOR SHALL UTILIZE 'GPR' GROUND PENETRATING RADAR TO SURVEY AND TRACE ALL EXISTING UNDERGROUND UTILITY LINES IN AREAS WHERE NEW TRENCHING IS PLANNED. CONTRACTOR TO SUBMIT 'GPR' REPORT TO PROJECT MANAGER FOR REVIEWING PRIOR TO TRENCHING.
- ALL SITE UNDERGROUND CONDUIT TO BE 1" MIN. UNLESS OTHERWISE NOTED.
- LOW VOLTAGE CONDUCTOR COLORS SHALL BE 'RED' FOR STATUS AND 'YELLOW' FOR CONTROLS.
- CONTRACTOR TO PROVIDE CONDUCTOR LABELS AND SCHEDULE. COORDINATE WITH DISTRICT FOR ALL LABELING STANDARDS.
- CONTRACTOR SHALL POT HOLE AREA PRIOR TO EXCAVATING.
- SIGNAL TERMINATIONS AND PROGRAMMING SHALL BE PROVIDED BY OTHERS.
- PROVIDE STAINLESS STEEL FACEPLATES FOR ALL OUTLETS AND SWITCHES. ALL OUTLETS AND SWITCHES SHALL BE TAGGED WITH PANEL AND CIRCUIT NUMBER.

ELECTRICAL KEYNOTES

SYMBOL	DESCRIPTION
1	PROVIDE UNDERGROUND CONDUIT WITH POWER/CONTROL CONDUCTORS. REFER TO FEEDER SCHEDULE FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES. REFER TO DETAIL: (4) E-18
2	NEW GROUND ROD AND GROUND WELL. REFER TO DETAIL: (5) E-18
3	NEW 600A SERVICE METER MAIN/PULL SECTION, ON CONCRETE PAD. REFER TO DETAIL: (1) E-19
4	NEW 600A MCC SWITCHBOARD, ON CONCRETE PAD. REFER TO DETAIL: (1) E-19
5	NEW 600A ATS, ON CONCRETE PAD. REFER TO DETAIL: (5) E-19
6	NEW SURFACE WALL MOUNTED PANEL 'B'. REFER TO DETAIL: (6) E-19
7	PROVIDE TERMINAL BOX FOR SIGNALS TO AND FROM SCADA CABINET. MOUNTED ON WALL. TERMINAL BOX SHALL BE NEMA 12 ENCLOSURE 12"x12" Wx6" D. WITH SINGLE DOOR AND BACK PANEL (HOFFMAN #CSD12126 WITH #CP1212 BACK PANEL). LABEL ALL TERMINALS AND WIRES IN BOX ACCORDINGLY. REFER TO DETAIL: (6) E-19
8	PROVIDE DEDICATED 120VAC RECEPTACLE ON WALL FOR CHLORINE INJECTION PUMP.
9	FUTURE SURFACE WALL MOUNTED SCADA CABINET. REFER TO DETAIL: (2) E-20
10	PROVIDE JUNCTION BOX AND SURFACE MOUNTED CONDUIT ONLY TO FUTURE SCADA CABINET. STUB DOWN 12" FROM CEILING, WITH PULL STRING AND IDENTIFICATION TAG. REFER TO DETAIL: (9) E-18
11	PROVIDE SURFACE MOUNTED FUSED DISCONNECT ON WALL. REFER TO DETAIL: (4) E-20
12	PROVIDE FLOW METER POWER AND SIGNAL CONNECTIONS. REFER TO DETAIL: (2) E-19
13	PROVIDE GROUNDING BOND TO PIPING. REFER TO DETAIL: (3) E-19
14	PROVIDE NEMA 1 20A 2P MOTOR RATED SNAP SWITCH.
15	INDOOR UNIT SHALL BE POWERED BY OUTDOOR UNIT. REFER TO MECHANICAL PLANS TO ACHIEVE INTERLOCK CONTROL AS INDICATED ON MECHANICAL EQUIPMENT SCHEDULE.
16	PROVIDE 3/4" C. FROM OUTDOOR CONDENSING UNIT TO INDOOR FAN COIL FOR EQUIPMENT CONTROL INTERLOCK AS INDICATED ON MECHANICAL EQUIPMENT SCHEDULE.
17	PROVIDE MAINTENANCE RECEPTACLE IN RECESSED WEATHERPROOF LOCKABLE BOX.
18	PROVIDE ANTENNA PIPE FOR FUTURE ANTENNA. REFER TO DETAIL: (5) E-20



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
1	10/21/24	ST	ADDENDUM 03	
2	10/29/24	ST	ADDENDUM 04	

THE MORONGO BAND OF MISSION INDIANS
 A SOVEREIGN NATION

ENGINEER'S SEAL

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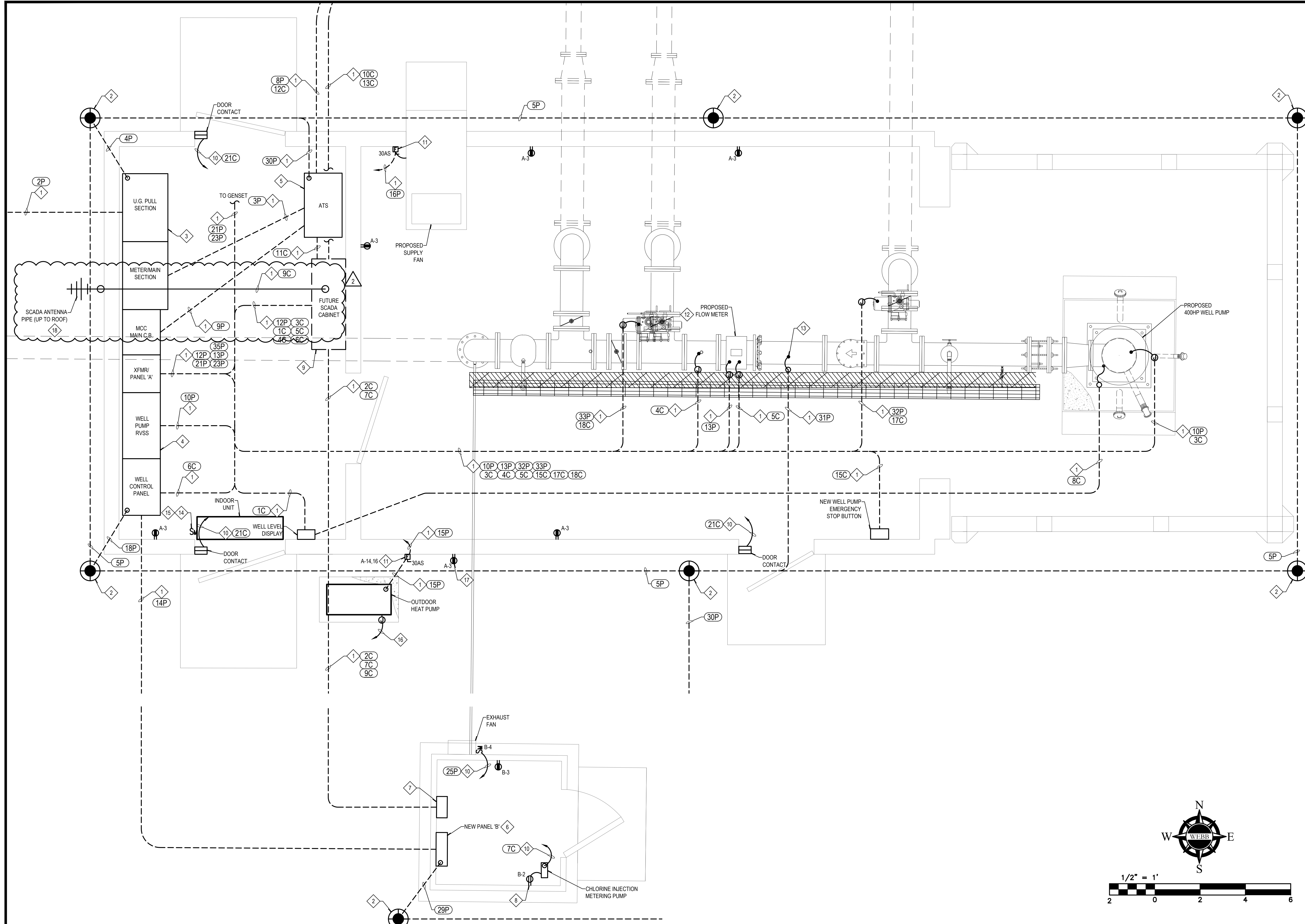
DESIGNED:	DATE

MORONGO BAND OF MISSION INDIANS
 BANNING, CALIFORNIA

EQUIPPING OF WELL NOS. 7A AND 8
 ELECTRICAL FLOOR PLAN - WELL 7A

DWG. NO. E-14

PROJECT: 2023-03-293 MORONGO 2 NEW WATER WELLS CAD: 03-293 E-14R1 PLW: JWG 8/11/2024 2:04 PM

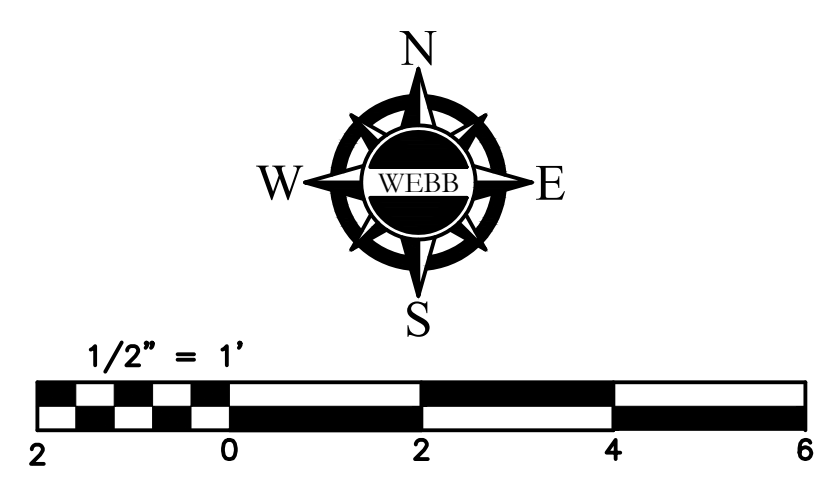


GENERAL NOTES

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8. PROVIDE STAINLESS STEEL FACEPLATES FOR ALL OUTLETS AND SWITCHES. ALL OUTLETS AND SWITCHES SHALL BE TAGGED WITH PANEL AND CIRCUIT NUMBER.

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NO.	DATE	INITIAL	DESCRIPTION	APPROVED/DATE
1	10/21/24	ST	ADDENDUM 03	
2	10/29/24	ST	ADDENDUM 04	

DESIGNED BY: _____ DRAWN BY: _____ CHECKED BY: _____

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THE MORONGO BAND OF MISSION INDIANS
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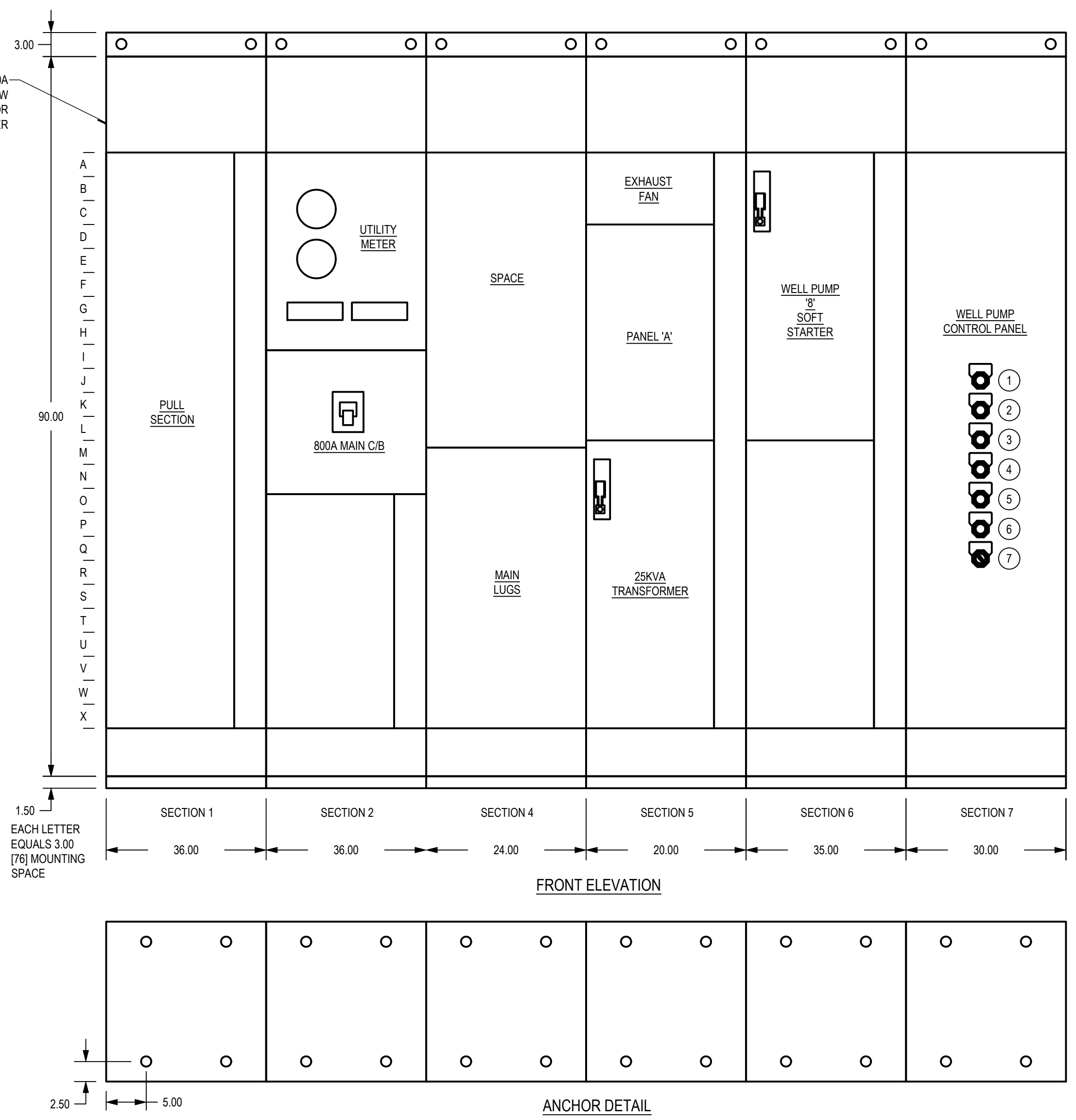
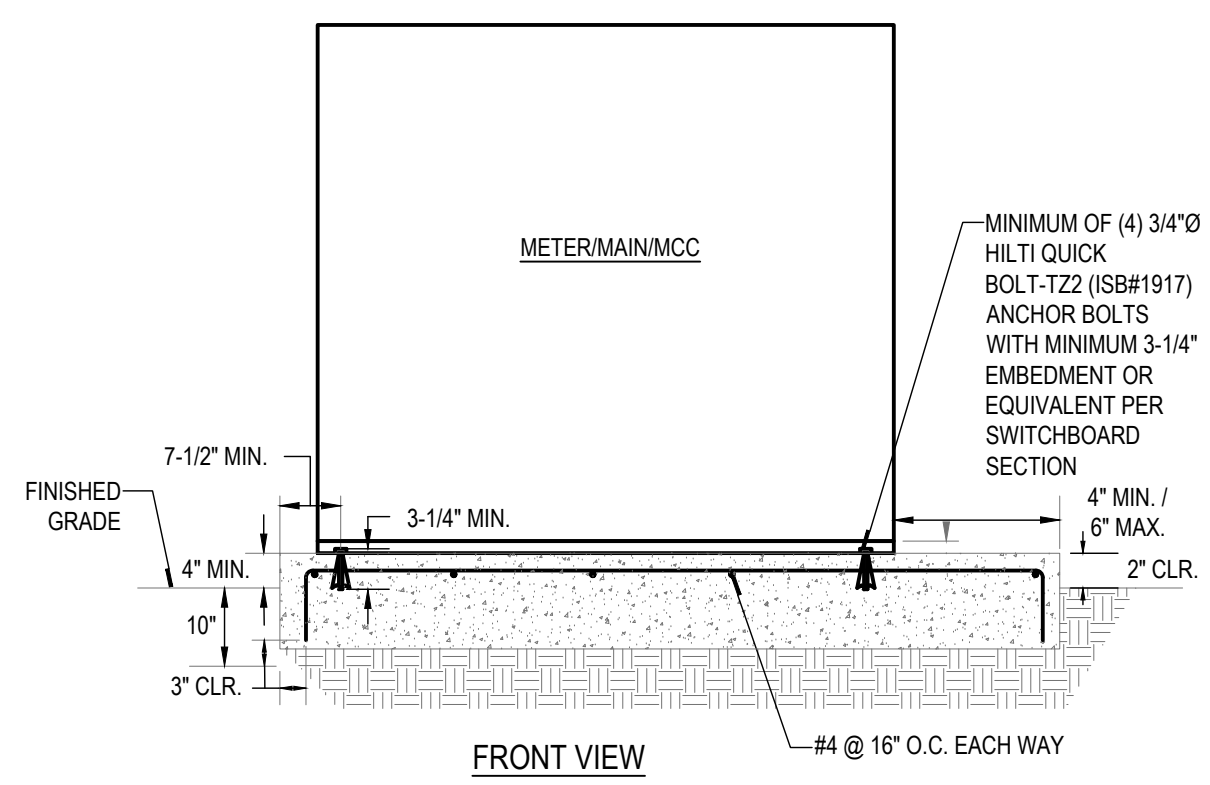
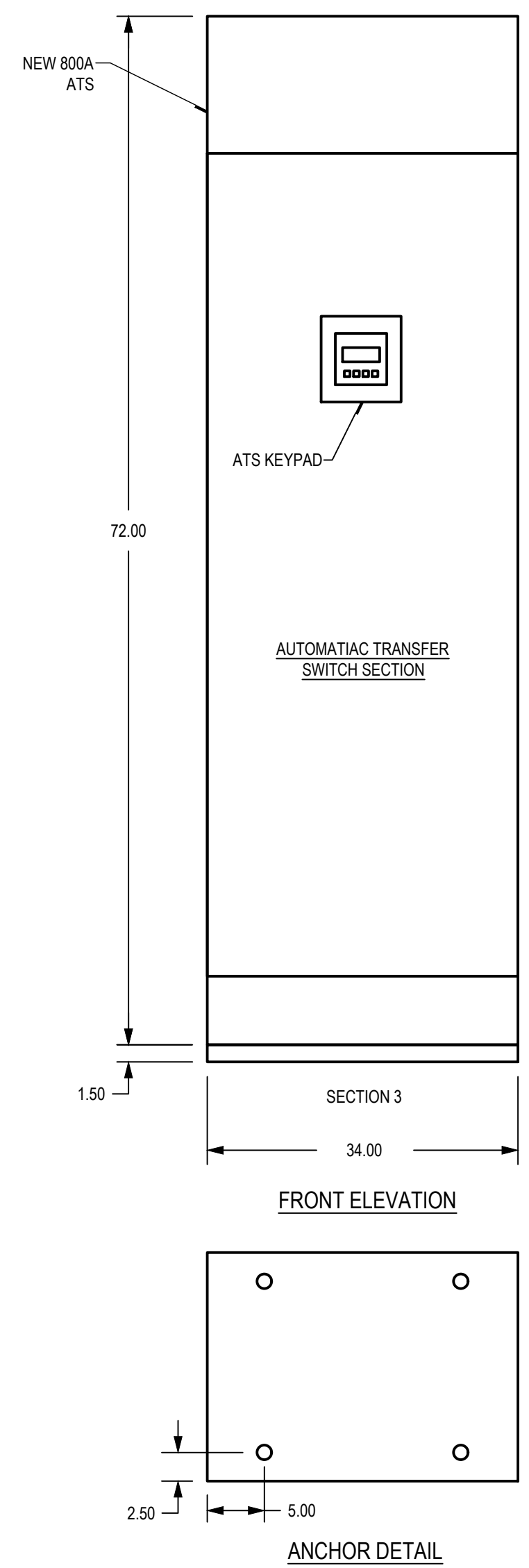
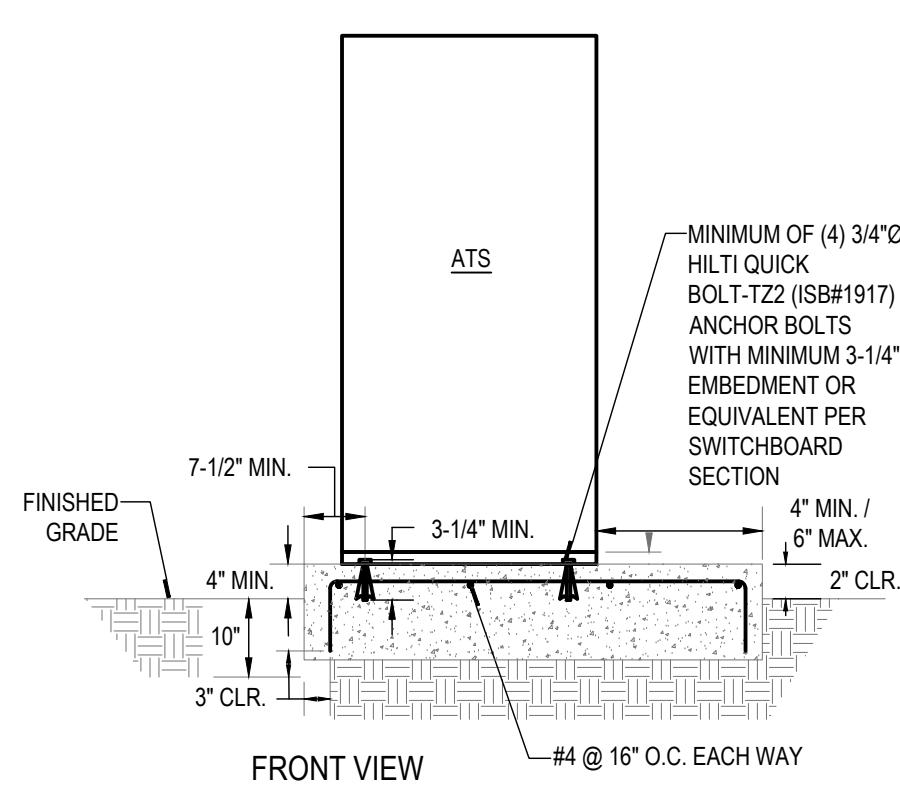
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DESIGNED:	DATE

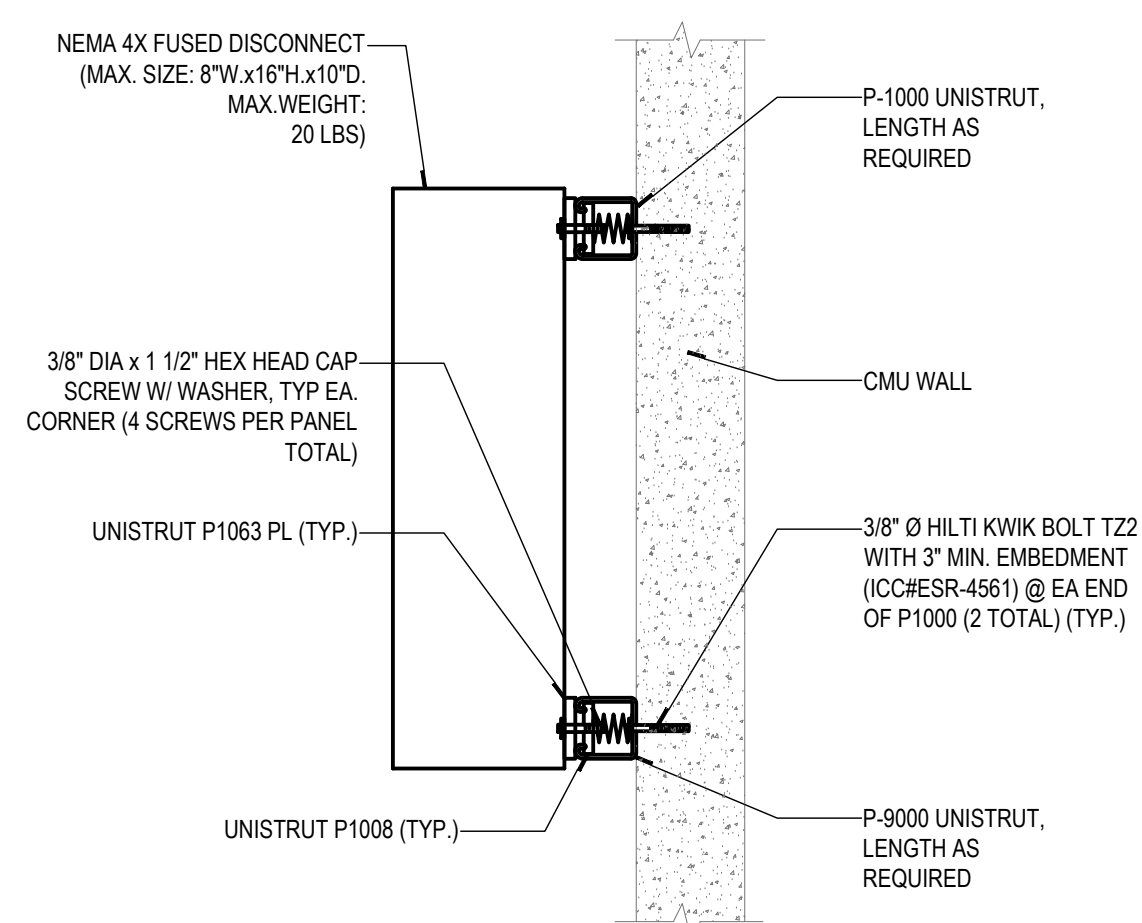
MORONGO BAND OF MISSION INDIANS
BANNING, CALIFORNIA

EQUIPPING OF WELL NOS. 7A AND 8
ELECTRICAL FLOOR PLAN - WELL 8

BID NO. 2023-####
SHEET 33 OF 38
DWG. NO. E-15



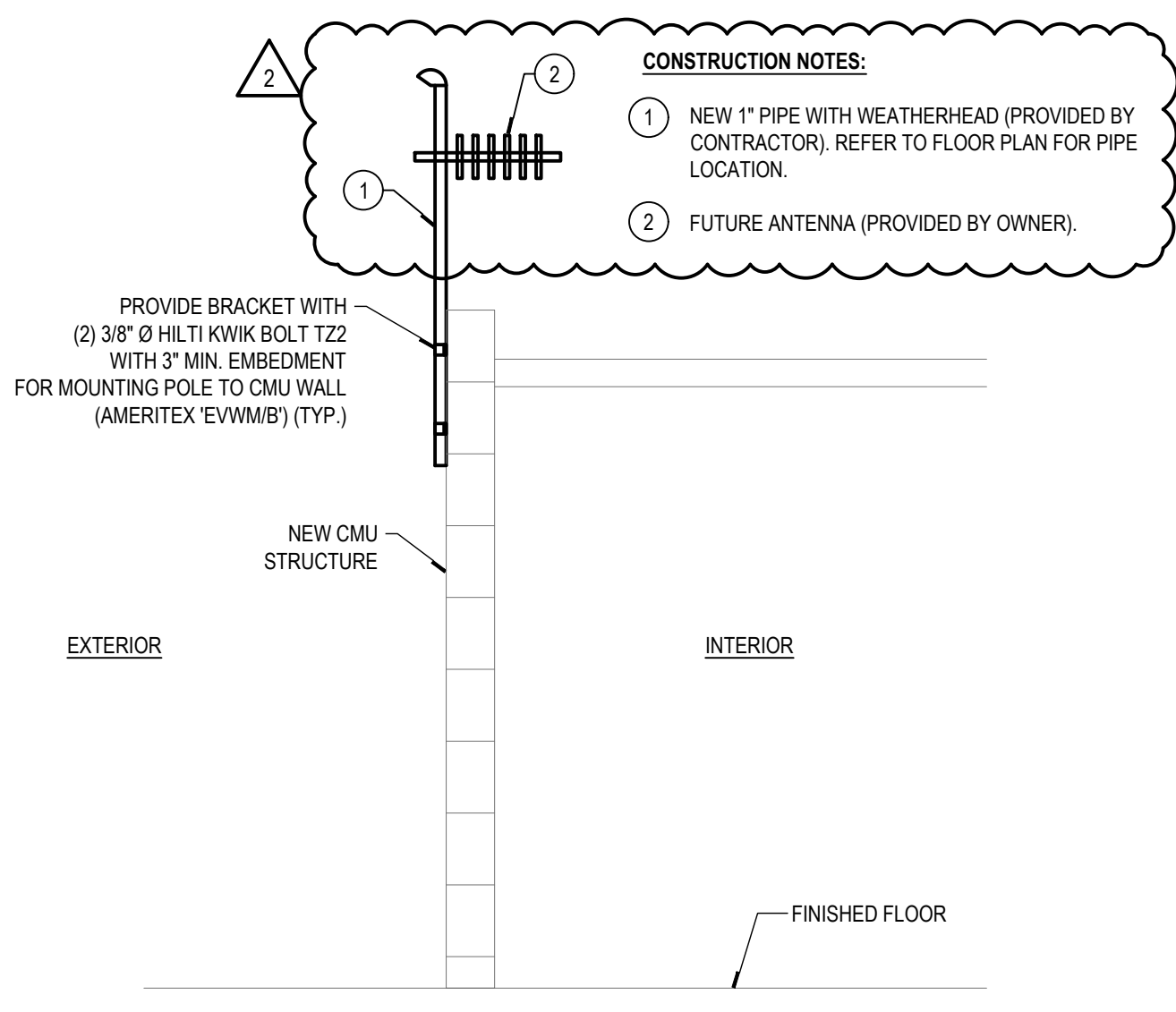
- ① BACKUP CONTROL ACTIVATED (RED PILOT LIGHT).
- ② PUMP FAIL INDICATOR LIGHT (RED PILOT LIGHT).
- ③ RUNNING AT PRESSURE INDICATOR LIGHT (GREEN PILOT LIGHT).
- ④ PUMP CALL INDICATOR LIGHT (AMBER PILOT LIGHT).
- ⑤ PUMP REQUIRED INDICATOR LIGHT (AMBER PILOT LIGHT).
- ⑥ PUMP FAIL RESET PUSHBUTTON (BLACK 30MM PUSHBUTTON).
- ⑦ WELL HOA SELECTOR SWITCH (3 POSITION, CENTER OFF, 30MM).



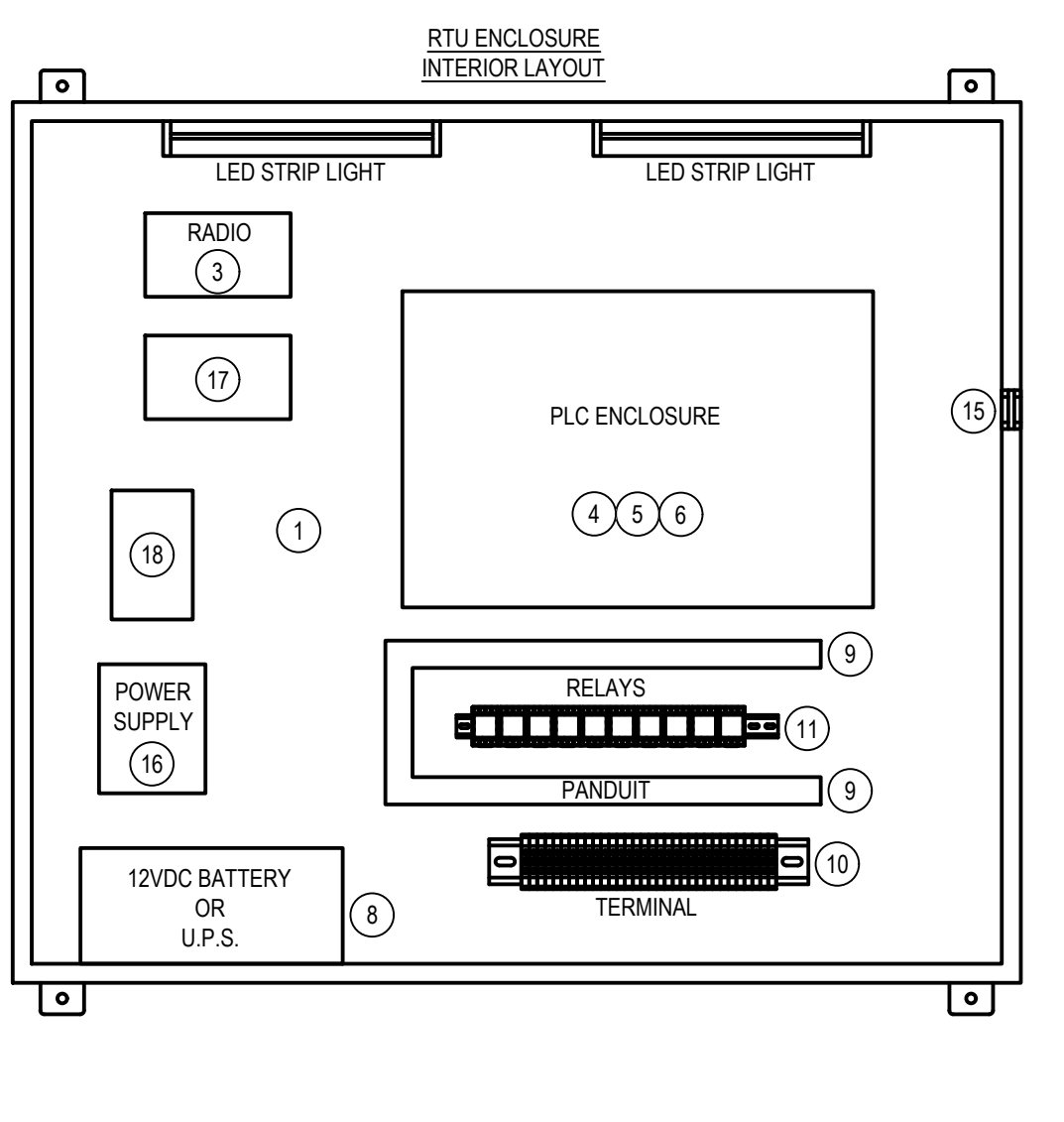
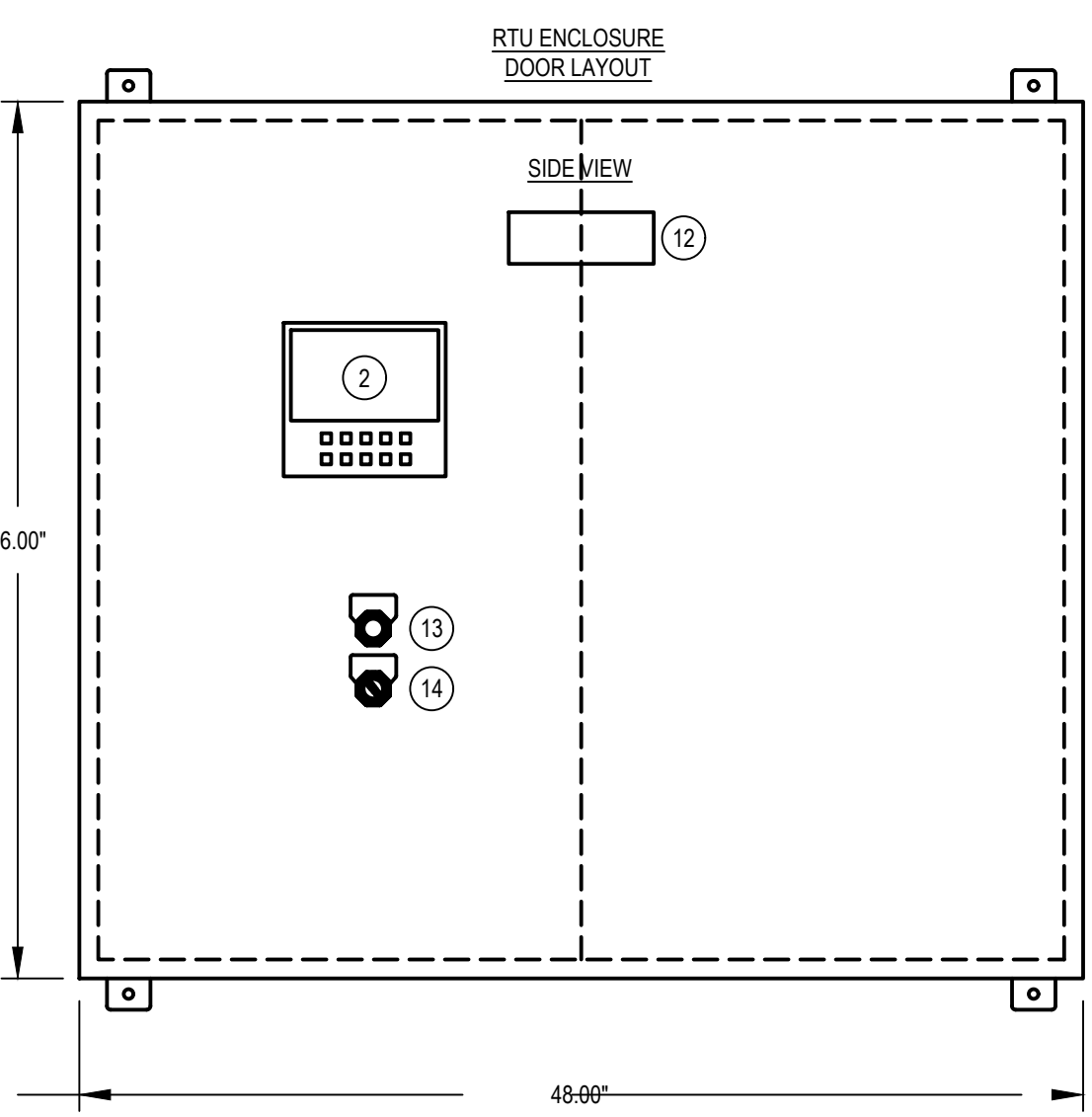
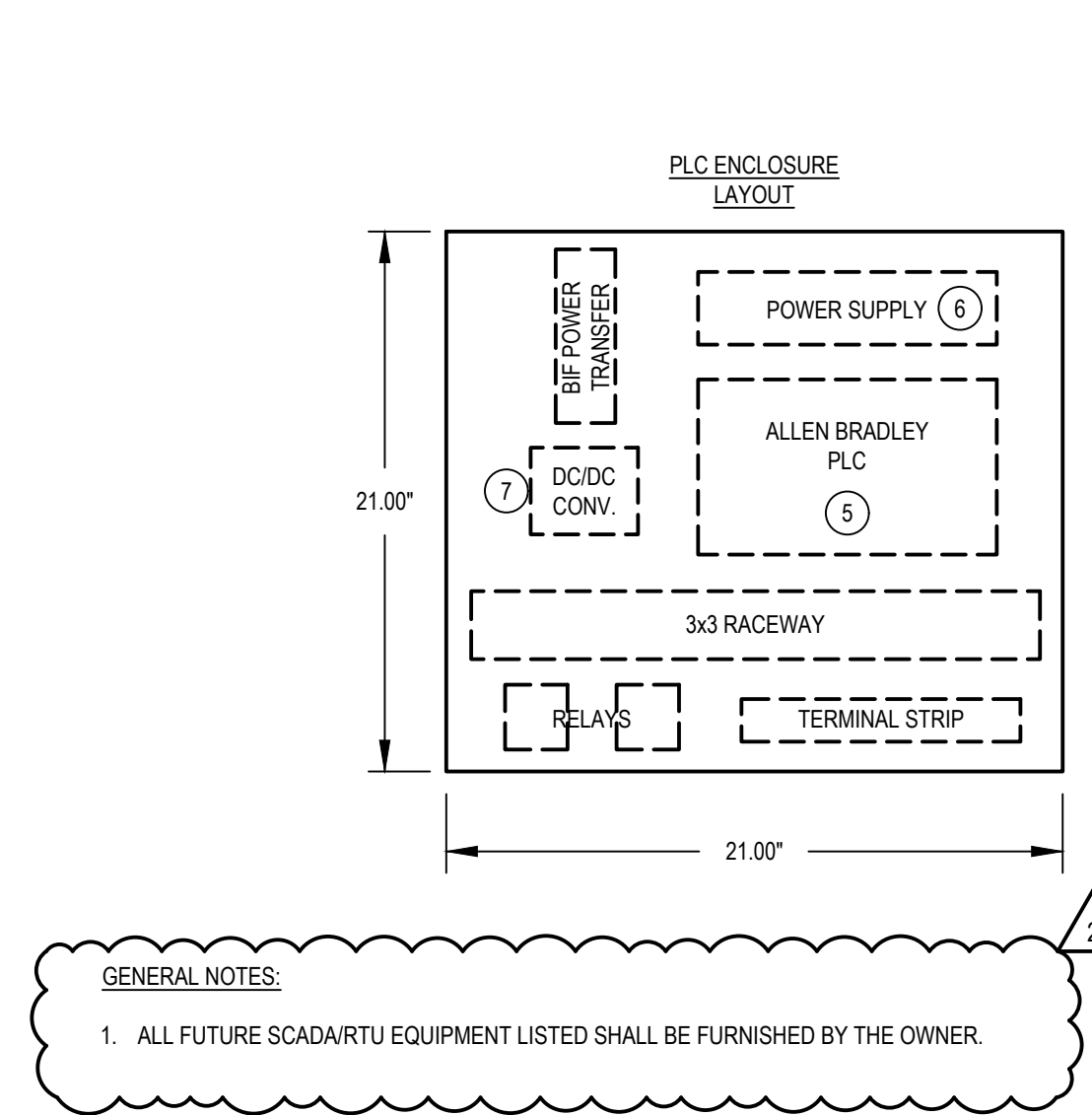
FUSED DISCONNECT MOUNTING DETAIL 4

ATS ELEVATION - WELL 8 3

METER/MAIN/MCC ELEVATION - WELL 8 1



ROOF ANTENNA PIPE MOUNTING DETAIL 5



- ① STAINLESS STEEL CABINET W/ 48" x 36" BACKPANEL.
- ② 15" TOUCH PANEL, W/ DH48S COMM PORT, 24VDC POWER.
- ③ RADIO TRANSCIVER UNIT, 24VDC POWER.
- ④ POWER MONITOR UNIT.
- ⑤ PLC COMPLETE W/ PROCESSOR, 7 SLOT RACK, 24VDC POWER SUPPLY, AND REQUIRED I/O MODULES.
- ⑥ POWER SUPPLY UNIT 5VDC.
- ⑦ VOLTAGE MONITOR.
- ⑧ TWO 12VDC BATTERIES 7.2AH OR UNINTERRUPTED POWER SOURCE.
- ⑨ 3" x 3" PANDUIT PLASTIC RACEWAY.
- ⑩ TERMINAL STRIP.
- ⑪ CONTROL RELAYS.
- ⑫ RTU NAME PLATE.
- ⑬ CONTROL POWER ON INDICATOR LIGHT (GREEN PILOT LIGHT).
- ⑭ CONTROL POWER ON/OFF SELECTOR SWITCH (2 POSITION, 30MM).
- ⑮ PADLOCKING HASP & STAPLE.
- ⑯ POWER SUPPLY 24VDC.
- ⑰ ETHERNET SWITCH W/ 5 PORT INPUTS.
- ⑱ LIGHT SWITCH FOR LED STRIP LIGHTS.

FUTURE SCADA / RTU CABINET (FOR REFERENCE ONLY) 2

REVISIONS			
NO.	DATE	INITIAL	DESCRIPTION
1	10/21/24	ST	ADDENDUM 03
2	10/29/24	ST	ADDENDUM 04

ENGINEER'S SEAL

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Email: codd@designwesteng.com

DESIGNED:	DATE
DRAWN:	
TRACED:	
CHECKED:	
SUBMITTED:	
SCALE:	

MORONGO BAND OF MISSION INDIANS
BANNING, CALIFORNIA

EQUIPPING OF WELL NOS. 7A AND 8

ELECTRICAL DETAILS CONTINUED

BID NO. 2023-####

SHEET 38 OF 38

DWG. NO. E-20



ATTACHMENT 3

Table 1a
Summary of Characteristics of Closest Known Active Faults

Fault Name	Approximate Distance (miles)	Approximate Distance (km)	Maximum Moment Magnitude (Mw)	Fault Length (km)	Slip Rate (mm/yr)
San Andreas - San Bernardino (South)	0.3	0.5	7.4	103 ± 10	30 ± 7
Pinto Mtn.	8.8	14.0	7.2	74 ± 7	2.5 ± 2
Garnet Hill *	9.0	14.5			
Morongo *	12.8	20.5			
San Jacinto - San Jacinto Valley	13.4	21.4	6.9	43 ± 4	12 ± 6
San Andreas - San Bernardino (North)	16.1	25.7	7.5	103 ± 10	24 ± 6
San Jacinto - Anza	17.2	27.6	7.2	91 ± 9	12 ± 6
San Jacinto - San Bernardino	23.1	36.9	6.7	36 ± 4	12 ± 6
Burnt Mtn.	25.0	39.9	6.5	21 ± 2	0.6 ± 0.4
North Frontal Fault Zone - Western	25.0	40.0	7.2	51 ± 5	1 ± 0.5
North Frontal Fault Zone - Eastern	25.0	40.0	6.7	27 ± 3	0.5 ± 0.3
Helendale - S. Lockhart	26.9	43.1	7.3	97 ± 10	0.6 ± 0.4
Landers	26.9	43.1	7.3	83 ± 8	0.6 ± 0.4
Lenwood - Lockhart - Old Woman Springs	27.3	43.7	7.5	145 ± 15	0.6 ± 0.4
Eureka Peak	27.5	44.0	6.4	19 ± 2	0.6 ± 0.4
Johnson Valley (northern)	31.5	50.4	6.7	35 ± 4	0.6 ± 0.4
Cleghorn	33.1	53.0	6.5	25 ± 3	3 ± 2
Blue Cut *	33.9	54.3			
Indio Hills *	35.2	56.3			
Elsinore - Temecula	36.3	58.1	6.8	43 ± 4	5 ± 2
Cucamonga	36.9	59.1	6.9	28 ± 3	5 ± 2
Elsinore - Glen Ivy	37.3	59.6	6.8	36 ± 4	5 ± 2

* Note: Faults not included in CGS database.

Table 2a
2022 California Building Code (CBC) and ASCE 7-16 Seismic Parameters

Soil Site Class:	D	<u>ASCE 7-16 Reference</u>
Latitude:	33.9806 N	Table 20.3-1
Longitude:	-116.8397 W	
Risk Category:	II	
Seismic Design Category:	E	

Maximum Considered Earthquake (MCE) Ground Motion

Mapped MCE _R Short Period Spectral Response	S_s	2.469 g	ASCE Figure 22-1
Mapped MCE _R 1 second Spectral Response	S₁	1.027 g	ASCE Figure 22-2
Short Period (0.2 s) Site Coefficient	F_a	1.00	ASCE Table 11.4-1
Long Period (1.0 s) Site Coefficient	F_v	1.70	ASCE Table 11.4-2
MCE _R Spectral Response Acceleration Parameter (0.2 s)	S_{MS}	2.469 g	= F _a * S _s ASCE Equation 11.4-1
MCE _R Spectral Response Acceleration Parameter (1.0 s)	S_{MI}	1.746 g	= F _v * S ₁ ASCE Equation 11.4-2

Design Earthquake Ground Motion

Design Spectral Response Acceleration Parameter (0.2 s)	S_{DS}	1.646 g	= 2/3*S _{MS}	ASCE Equation 11.4-3
Design Spectral Response Acceleration Parameter (1.0 s)	S_{DI}	1.164 g	= 2/3*S _{MI}	ASCE Equation 11.4-4
Risk Coefficient at Short Periods (less than 0.2 s)	C_{RS}	0.902		ASCE Figure 22-17
Risk Coefficient at Long Periods (greater than 1.0 s)	C_{RI}	0.884		ASCE Figure 22-18
	T_L	8.00 sec		ASCE Figure 22-12
	T_O	0.14 sec	= 0.2*S _{DI} /S _{DS}	
	T_S	0.71 sec	= S _{DI} /S _{DS}	
Peak Ground Acceleration	PGA_M	1.14 g		ASCE Equation 11.8-1

