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Addendum No. 1

REBID TRUCKEE CANYON WATER SYSTEM EXPANSION

PWP Bid No. WA-2016-158

May 31, 2016

The following information, clarifications, changes and modifications are by reference incorporated into the bid documents for the above referenced project. Any work item or contract provision not changed or modified will remain in full force and effect. The bid date and time and construction schedule has not changed.

CLARIFICATION, QUESTIONS AND RESPONSES

CLARIFICATION

Please note the following issues with specification.

Clarification Item No. : 2.2:C) Impellers are not bronze on these style of pumps.

Response to Clarification No. 2.2:C: Attached, please see the revised specification section 11300.

Clarification Item No.: 2.2:D) Shaft is not 416 SS on these style of pumps.

Response to Clarification Item No. 2.2:D: Attached, please see the revised specification section 11300.

Clarification Item No.: 2.2) Motor is 10 HP in lieu of 15 HP

Response to Clarification Item No. 2.2: Attached, please see the revised specification section 11300.

Clarification Item No.: 2.3:a) Submersible Motors are not offered with Premium Efficiency.

Response to Clarification Item No. 2.3:a Attached, please see the revised specification section 11300.

Clarification Item No.: 2.6) What type of cable needs to be used, does it need to meet the National Electric Code? There are a lot of loop holes with submersible cable I would be specific with what you're looking for.

Response to Clarification Item No. 2.6: Attached, please see the revised specification section 11300.

QUESTIONS AND RESPONSES

Question No. 1: This is e-mail is to serve as an official request for or equal substitution on the Truckee Canyon Project.

- Section 11300 Submersible Turbine Pump & Motor 1.3:B Requires that any or equal be submitted 3 working days prior to the bid opening.

- Please note that the original bid had a cast iron bronze fitted pump specified, the new spec has a stamped SS pump specified which is considered a throw away pump.
- Please also note that the original pump meet all the requirements of 1.2:C:4 for NSF Certification.
- Per the NSF Website the pump you currently have specified the Grundfoss 85S100-8 is not listed as being NSF Certified, I don't believe that county health will allow for this style of pump to be used.
- Attached is the Gould's version of the Grundfoss 85S100, please review and let me know if you have any questions, the Gould's pump has a higher efficiency and only requires a 10 HP Motor in lieu of the 15 HP Motor specified

Response to Question No. 1: Attached, please see specification section 11300 for revisions to the submersible turbine pump requirements.

Question No. 2: Drawing E001 Panel HA shows “ main breaker size 600amps” Drawing E002 Panel HA shows “ MLO” main lug only. Will it be 600a main breaker or MLO ?

Response to Question No. 2: Panel HA is MLO, the CB value noted on E001 is for load calculation purpose only.

Question No. 3: May we please have a spec for the manual transfer switch?

Response to Question No. 3: Transfer Switch shall be 600A 277/480V 4pole by GE Zenith Controls model #ZTG000A00060F-ZEC3R-ZVC70 with MX150 controller.

Question No. 4: Drawings E050 and E101 show the 600amp meter main on different exterior walls.

Which one is correct?

Response to Question No. 4: The location of the 600A meter main panel shown on E101 is correct. Corrections to E050 are attached.

Question No. 5: If E101 is correct the project will still require new trench and conduit to the NVE Transformer, correct?

Response to Question No. 5: The project will require trenching and conduit from the NVE transformer to the 600A meter main panel. The existing plant must remain in service during construction.

Question No.6: Drawing E005 conduit and cable schedule P00002, Calls out for a 2” conduit and pull rope for (F) well #2

- Where is future Well #2 going to be located?
- How much conduit and pull rope should be account for?
- Will there be excavation that needs to be accounted for?

Response to Question No. 6:

- Location to be determined, however, stub conduit into (n) power pullbox.
- Enough conduit and pull rope to the pullbox.
- It will be part of the trench from the pull box to the building for Well 3.

Question No. 7: The bid item description for item 5.1 describes grading work per the original bid, however this grading is not shown on the current plans. Please confirm there is no grading outside of the pipe and precast backfill areas.

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Response to Question No. 7: There is no additional grading outside the pipe and precast backfill areas.

TECHNICAL SPECIFICATIONS

Section	Page(s)	Description of amendment
01656	01656-1	Please see attached specification 01656 for the addition of AWWA disinfection standards.
11223	11223-1, 11223-2	Please see attached specification 11223 for NSF requirements
11300	11300-2, 11300-5, 11300-6	Please see attached specification 11300 for revisions. The submersible turbine pump manufacturer and model has been removed from the specification. The submersible pump will be operated by a VFD and the design flow ranges from 50 to 100 GPM. The submersible motor will not have premium efficiency. Additional cable requirements have been specified.
11317	11317-1, 11317-4, 11317-5	Please see attached specification 11317 for revisions. The decant pumps shall be Grundfoss Model: CRE 10-2 A-BN-A-E-HQQE; or approved equal. The decant pumps shall be operated by a VFD.
15100	15100-1, 15100-11, 15100-12	Please see attached specification 15100 for revisions to NSF requirements, the CAV model and water pressure regulating valve models.

DRAWINGS

Sheet Number	Page(s)	Description of amendment
M101	27	Please see attached M101 for changes to the booster pump manifold including the addition of pressure gauge taps and eccentric reducers on the suction side of the booster pumps.
M104	30	Please see attached M10 for changes to the booster pump manifold including the installation of eccentric reducers on the suction side of the booster pumps.
E002	36	Manual transfer switch replaced with automatic transfer switch. Please see attached E002 for automatic transfer switch model.
E030	40	The enclosure specified in note 2 of detail B/E030 shall be rated for 600A.
E050	42	Please see attached E050 for the location of the 600A meter main panel.
E051	43	Please see attached E051 for changes to the control panel, starter panel and bill of materials.

PLEASE NOTE: QUESTION CUT-OFF DATE IS JUNE 09, 2016 AT 5 P.M.

SECTION 01656

DISINFECTION OF WATER LINES

PART 1 GENERAL

1.1 DESCRIPTION

The work of this section consists of the disinfection of all portions of the new utility water system by the Contractor, including valves and stops and any portion of the existing connecting system that might have become contaminated during construction activities.

1.2 SUBMITTALS

- A. Submit plan for conveying water and protecting the existing utility water system used to supply disinfection water.
- B. Submit plan for disposal of chlorinated water.

1.3 REFERENCES

- A. **Piping disinfection shall be done in accordance with AWWA C651.**
- B. **Well disinfection shall be done in accordance with AWWA C654.**
- C. **Treatment equipment disinfection shall be done in accordance with AWWA C653.**

PART 2 MATERIALS

2.1 CALCIUM HYPOCHLORITE

HTH, by Olin Chemicals, Olin Corporation, 120 Long Ridge Road, Stamford, CN 06904, or similar commercial product having approximately 70 percent available chlorine.

2.2 MIXTURE

A 5-percent solution shall be made by mixing 5 percent of powder with 95 percent water, by weight, first into a paste, then thinning to slurry by the addition of water.

PART 3 EXECUTION

3.1 FLUSHING

Prior to commencing the disinfection process, flush the water system to remove all dirt and debris. Fill the system at a rate not to exceed 1 foot per second. Once filled, open valves and appurtenances as necessary to achieve flushing velocities, on the order of 3 feet per second. Continue flushing until the receiving water is free of visible dirt and impurities. Commence disinfection operations only after the successful completion of flushing and pressure testing operations in accordance with Section 01667. Operation of all valves shall be performed by the Owner unless the Contractor is otherwise directed in writing.

SECTION 11223
STATIC MIXERS

PART 1 GENERAL

1.1 DESCRIPTION

- A. The work of this section consists of furnishing and installing in-line static mixer.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300: Submittals
- B. Section 11010: General Mechanical Equipment Provisions
- C. Section 15010: General Process and Onsite Utility Piping Provisions

1.3 QUALITY ASSURANCE

Addendum 1

All static mixers, coatings, and related equipment shall be NSF 61 approved, and when applicable, have NSF 372 certification.

1.4 SUBMITTALS

- A. Submittals are to be in accordance with Section 01300.
- B. Drawings and descriptive data, as provided by the manufacturer, are to be submitted.

PART 2 MATERIALS

2.1 STATIC MIXER

- A. The size and quantity of static mixers is as shown on the Contract Drawings.
- B. The Static Mixer shall be of a compact ring body design with 150 lb. flanges for mounting between two standard pipe flanges. The ring body shall be a minimum thickness of 0.875-inch.
- C. The mixer body shall include one or more injection fittings, as shown on the Contract Drawings. The fittings shall be fabricated of a material that is compatible with all chemicals shown as being used on this project.
- D. The mixer body and plate materials shall be suitable for handling raw well water as the process fluid at a maximum rate of flow of 100 GPM.
- E. The mixer body and plate shall be fabricated from materials that are suitable for handling the following injection chemicals:
 - 1. Poly Aluminum Chloride (PAC)

2. Sodium Hypochlorite (NaOCl)
 3. Ferric Chloride (FeCl₃)
- F. Gaskets: Ring-type neoprene gaskets or as appropriate for the chemical(s) being injected at that site shall be furnished and shall be adhered to both sides of the mixer body.
- G. Mixing Plate
1. The mixing plate shall be computer designed to provide a geometric shape which will create the mixing vortices to effectively mix the injected fluid(s) with the main process fluid.
 2. The average variation in the process stream of the injected fluid shall be within 1% of the mean value at 10 pipe diameters downstream of the mixer.
 3. The mixing plate shall be no less than 0.125-inch thick and shall be formed from a material that is compatible with all chemicals shown as being used on this project. It shall be mounted in a machined cavity on the upstream side of the ring body.
 4. The mixing plate shall be designed and fabricated in such a manner so as to minimize head loss.
- H. Manufacturer

Addendum 1

1. **Mixers shall be by Westfall Manufacturing Company; or**
2. Approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

Static mixers shall be installed as shown on the Contract Drawings and in accordance with manufacturer instructions.

END OF SECTION

demand, overall efficiency and minimum submergence required at the specified design point(s).

2. The submittal shall include complete and detailed information regarding the installation of the pump. Any unusual installation requirements or operating conditions which are critical to the installation and safe and reliable operation of the pumps should be identified and described in detail.
3. Motor manufacturer and performance criteria including, horsepower, efficiency, power factor, dimensions, weight, startup characteristics, and warranty.
4. **Pump and motor suppliers shall supply a copy of the certification documentation that the supplied pump and motor meet NSF 61 and NSF 372 requirements.**
5. Column Check Valves. Provide manufacturer's data.
6. Operation and Maintenance Manuals shall be in accordance with Specification Section 01680 – Operating and Maintenance Manuals.

Addendum 1

1.3 PUMP MANUFACTURERS

Addendum 1

- A. The submersible pump **manufacturer shall be Goulds or Grundfoss**. Other manufacturers are acceptable per paragraph B.
- B. Alternative Manufacturer Submittals
 1. All requests to accept a pump as an alternate shall be prepared as a detailed submittal to the Owner. The submittal shall contain documentation including pump construction, materials, pump curves, and a list of any requested exceptions to the specifications.
 2. The submittal shall include a list with a minimum of 10 installations of similar sized pumps more than 2 years old, with the names and phone numbers of a reference at each installation.
 3. The submittal shall include a statement regarding expected delivery times for the proposed equipment.
 4. Requests for substitution prior to the receipt of bids must be received by the Owner no less than 3 working days prior to bid opening. If received more than 3 working days prior to bid opening, a determination will be made and the results forwarded to potential bidders prior to bid opening.

1.4 WARRANTY

The pump and motor shall be covered by a warranty covering defective parts and labor. The warranty period shall extend twelve (12) months from startup. During the warranty period, the Contractor's guarantee shall include costs for removal of the pump and motor, shipping costs for service, and the cost to reinstall the repaired pump and motor. This warranty shall not be limited by hours of running time.

Addendum 1

Normal Operating System Discharge, Point A	80 GPM
Normal Operating Range,	50 to 100 GPM
At TDH of	245 feet
Depth from ground surface to pump intake	230 feet
Minimum Pump Efficiency (Normal operating Point A)	65 %
Nominal Pump Speed	3600 rpm
Minimum Motor Horsepower	10 HP.
Power	460 V, 3ø, 60 Hz
Motor Size (must fit in 8" well)	6 inches
Existing Steel Casing Diameter (nominal)	8 inches
Maximum Bowl Diameter (must fit in 8" well)	6 inches
Discharge Size	3 inches
Drive	VFD

Addendum 1

2.3 SUBMERSIBLE MOTOR

Addendum 1

A. The submersible motor shall be a ~~premium efficiency~~ **10 HP minimum**, 1.15SF, and of sufficient size to supply the needed power for the entire rated range of the pump curve. The motor shall conform to the latest NEMA specifications for submersible motors. The motor thrust bearing shall be sized to carry the full weight of all rotating parts plus the hydraulic thrust of the pump.

2.4 DISCHARGE COLUMN PIPE

A. The discharge column pipe shall be nominal 3" diameter, SCH 40 304 Stainless Steel pipe in interchangeable sections not over 20 feet in length and with the ends of each section faced parallel and machined with 8 straight threads per inch permitting the ends to butt and insuring alignment when connected by standard mill steel couplings. The weight of the column pipe shall be no less than that stated in ANSI Specification E101, Section 5.1 "Standard Specifications for Discharge Column Pipe". The strength of the pipe and couplings shall be adequate for the pump shut off head with a factor of safety of 1.5. Two column check valves shall be installed, one directly above the pump and one at the midpoint of the column.

- B. Pipe shall be steam cleaned at the factory after threading, and shall be provided with a certification from the factory that the pipe is contaminant free.

2.5 SPARE PARTS

The pump manufacturer shall provide the following spare parts:

- A. One set of bearings for each pump model.
- B. Two sets of all gaskets and o-rings for each pump model

2.6 POWER CABLE

Power cable shall be specifically designed for submersible pump service. There shall be no splices in the motor leads inside the pitless case.

PART 3 EXECUTION

3.1 SUBMERSIBLE PUMP INSTALLATION

- A. The pump shall be installed per manufacturer's installation instructions. The electrical cable shall be supported on the discharge pipe at 10 foot minimum intervals with plastic waterproof tape. For every 50 ft of setting, 1 ft extra cable shall be installed to compensate for possible twist or sag of the cable during installation. Provide protection for cable to prevent cable damage during pump installation.
- B. Cooling shrouds shall be installed to ensure over heating of motor does not occur during normal usage.

Addendum 1

- C. **The pump shall be installed using submersible cable, sized per NEC for the size of motor provided, also taking into account the voltage drop caused by the losses in the feeder from the motor starter. Voltage drop of the motor feeder from the controller to motor shall be no more than 3% at rated FLA.**

3.2 DISCHARGE COLUMN PIPE

- A. The discharge pipe shall be installed to the depth as indicated in this specification. The discharge pipe will be secured so that it will not unscrew. Lubricant used for installation shall be non-petroleum, food-grade material. Each length of pipe may be of random length, not to exceed 20 feet. Install lift check valves of stainless steel construction every 150' min.

SECTION 11317
DECANT PUMPS

PART 1 GENERAL

1.1 DESCRIPTION

Addendum 1

The work of this section consists of the supply, delivery, installation and commissioning of decant pumps system at each site. The decant pumps will be a **duplex pump system** complete with automated controls. Pumps are required to be NSF 61 and NSF 372, if applicable, approved.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300: Submittals
- B. Section 15080: Piping Accessories and Appurtenances
- C. Section 09900: Painting
- D. Section 11010: General Mechanical Equipment Provisions (includes Electric Motors)
- E. Section 15010: General Process and Onsite Utility Piping Provisions
- F. Section 15100: Valves
- G. Division 16: Electrical

1.3 SYSTEM DESCRIPTION

- A. Pumps shall be centrifugal end suction pumps.
- B. Equipment Tag Numbers

Tag Number	Equipment Name
PMP 100	Filtration Room Decant Pump 1
PMP 200	Filtration Room Decant Pump 2

1.5 QUALITY ASSURANCE

Referenced Standards: All equipment shall be fabricated, assembled and tested in accordance with the following, latest editions, except as otherwise shown or specified:

- A. American National Standards Institute (ANSI).
- B. American Bearing Manufacturers Association (ABMA)
- C. American Water Works Association (AWWA)
- D. Hydraulic Institute (ANSI/HI)
- E. Institute of Electrical and Electronic Engineers (IEEE)
- F. National Electrical Manufacturers' Association (NEMA). Motors shall be designed, built, and tested per NEMA MG1 standards.
- G. All materials and equipment shall be labeled or listed as being approved by the Underwriters Laboratories (U.L.) whenever applicable. Equipment offered as meeting the intent of the U.L. requirements may be acceptable subject to the approval of the Engineer.

1.6 SEISMIC PROTECTION

The equipment in this section requires seismic anchoring certification and description per specification section 01620 – Seismic Design.

1.7 WARRANTY

Provide a three-year minimum warranty for all pumps and system components, from date of approved startup.

PART 2 MATERIALS

2.1 PUMPS

A. Pump Manufacturers

Addendum 1

1. Pumps shall be **Grundfoss** Model: CRE 10-2 A-BN-A-E-HQQE; or approved equal.
2. If the pump manufacturer has any reservations or recommendation concerning the satisfactory operation of his equipment under the required conditions (relative to cavitation, vortexing, minimum submergence, on-off cycle, pumped liquid, pH, etc.) such qualification shall be brought to the Engineer's attention at the time of submittal preparation. Otherwise the pump manufacturer accepts all responsibility for pump and motor service duty.

B. Pump Design Criteria

- Two pumps are to be provided and shall be capable of running intermittently or continuously, and they shall meet or exceed the following service criteria:

Filtration Building Site		
Pump Tag Numbers	PMP 100	PMP 200
Service	Decant	Decant
Liquid Temperature	50 to 90 degrees F	50 to 90 degrees F
Operation	Continuous and Intermittent	Continuous and Intermittent
Drive	VFD	VFD
Minimum Motor Size	1.5 hp	1.5 hp
Maximum Motor Speed	3600 rpm	3600 rpm
Maximum Pump Speed	3600 rpm	3600 rpm
Maximum NPSH required at any (operating condition)	8 ft	8 ft
Suction Condition	Flooded	Flooded
Pump Orientation	Horizontal	Horizontal
Design Condition No. 1 (Full Speed)	35 GPM @ 75 ft TDH	35 GPM @ 75 ft TDH
Pump Efficiency	57% @ 35 GPM	57% @ 35 GPM
Suction Pressure Range	3.5 to 14 psi	3.5 to 14 psi

Addendum 1

C. Pump Design Requirements

- Casing: Shall be ductile iron grade ASTM A395-88 with 1/8 inch minimum corrosion allowance, foot mounted, with gauge and drain connections. Backhead to permit removal of impeller, shaft and bearings without disturbing the piping.
- Impeller: 316SS ASTM A743 or A744, open, single suction type, screwed to shaft, with o-ring seal.
- Pump Base: Common baseplate with drain pan of cast iron or steel with drain connection and piping.
- Shaft: Stainless steel, type 316, full size where in stuffing box.
- Shaft Sleeve: Stainless Steel, type 316 pinned or positively driven.
- Seal: Single mechanical cartridge type.
- Coupling: Flexible coupling, heavy duty type, with OSHA approved guard.
- Frame: Frame mounted.
- Bearings: Ball or roller bearings, with an L-10 life of 50,000 hours minimum.
- Lubrication: Grease lubricated.

SECTION 15100

VALVES

PART 1 GENERAL

1.1 DESCRIPTION

The work of this section consists of furnishing and installing valves used to throttle, isolate, and control flow in water and sewer systems piping systems.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 11405 Filtration Vessels and Filtration Media (motorized actuators)

1.3 QUALITY ASSURANCE

Reference, American Society for Testing and Materials (ASTM).

Addendum 1

All valves and related equipment shall be NSF 61 and, when applicable, NSF 372 certification.

1.4 SUBMITTALS

- A. Submit shop drawings in accordance with Section 01300.
- B. Materials list and catalog data sheets naming each product to be used identified by manufacturer and type number.
- C. Valve Shop Drawings/Submittal Requirements: Shop drawings shall contain the following information:
 - 1. Valve name, size, C_v factor, and pressure rating
 - 2. Complete information on valve actuator (if supplied), including size, Manufacturer, model number, limit switches, and mounting.
 - 3. Assembly drawings showing part nomenclature, materials, dimensions, weights, and relationships of valve handles, handwheels, position indicators, limit switches, integral control systems, needle valves, and control systems.
 - 4. Valve Owner's Manual: The Owner's Manual shall contain the required information for each valve.
 - 5. Valve Spare Parts List: A Spare Parts List shall contain the required information for each valve assembly, where indicated.

2.12 REDUCED PRESSURE BACKFLOW PREVENTER (RP)

- A. Reduced pressure principle.
- B. Bronze body construction.
- C. Corrosion-resistant internal components.
- D. In-line serviceability.
- E. Certified under the following Standards:
 - 1. ASSE No. 1013
 - 2. AWWA C506
 - 3. IAPMO Listed
 - 4. USC FCCC & HR
- F. Provide a valve setter and spools as shown on the drawings.
- G. Danfoss Flomatic DCVE, or approved equal.

2.13 COMBINATION AIR AND VACUUM AND AIR RELEASE VALVES (CAV)

CAV valves shall be of the combination type, heavy duty, with cast iron body and cover stainless steel float. All internal parts to be bronze or stainless steel. Valves shall release air under pressure and allow air to enter line under vacuum conditions. Valve shall be rated for 250 psi design pressure. CAVs on 12-inch and smaller mains shall be 1 inch unless shown otherwise on the plans. Valves shall be an Apco or **Val Matic** combination air valve, or approved equal.

Addendum 1

2.14 GLOBE VALVES

- A. Design: Valve rated for 200 psi at 150 degrees F. Manual opening valve shall have a handwheel with outside screw and yoke assembly.
- B. Materials: Body and bonnet shall be constructed of cast iron, conforming to ASTM A 126 class B. Disc shall be bronze faced.
- C. Manufacturers: Crane, or equal.

2.15 NEEDLE VALVES (NV)

- A. 3/4 -inch and Smaller: Crane No. 88 or 89; Stockham B64, or equal.

2.16 PLASTIC AIR RELEASE VALVE (ARV)

- A. Design: PVC body with EPDM seals.
Maximum working pressure = 150 psig.
- B. Manufacturers: FIP, or equal.

2.17 PLASTIC AIR RELIEF VALVE (PRV)

- A. Design: PVC body, pressure set point 5-150 psig angle pattern.

- B. Manufacturers: Plast-O-Matic Series RVD, or equal.

2.18 WATER PRESSURE REGULATING VALVES

- A. Water Pressure Regulating Valves, less than 4-inches:

1. Manufacturers:
- a. Valves 2 inches and smaller: Watts, Number **LF223**; Masoneilan Number 227; Cla-Val Model 90-01 or equal.
 - b. Valves 2 inches to 3 -1/2 Inches: Watts/Bailey, Number 30A; Fisher Controls Company, Type 616; Masoneilan Number 525 Cla-Val Model 90-01; or equal.
2. Water Pressure Reducing Valves less than 4 inch size: Direct acting, spring loaded valves except where otherwise specified in the Specifications.
3. Materials:
- a. Valves 2-inches or smaller: Bronze body , nylon reinforced diaphragm single seat, composition disc.
 - b. Valves 2-inches to 3-1/2 inches: Double port with stainless steel V-ported or contoured plug, reinforced neoprene diaphragm, and stainless steel stem.

Addendum 1

- B. Water Pressure Regulating Valves, 4-inches and larger:

1. Manufacturers: Watts Number 115; Cla-Val Model 90-01 series; or equal.
2. Design:
 - a. Pressure Regulating Valves 4 Inches and Larger: Hydraulically operated, diaphragm actuated, globe patterned valve.
 - b. Valve: Rated for 125 pounds per square inch gauge.
 - c. Pilot Line: Equipped with a strainer.
 - d. Stainless Steel Trim
 - e. Speed controls for opening and closing.
3. Materials:
 - a. Body and Cover: Cast-iron ASTM A 48 or ASTM A 126.
 - b. Valve Trim: Bronze.
 - c. Pilot Control: Cast bronze with Series 303 stainless series trim.
 - d. Seals: Buna N

2.19 TUBING VALVES

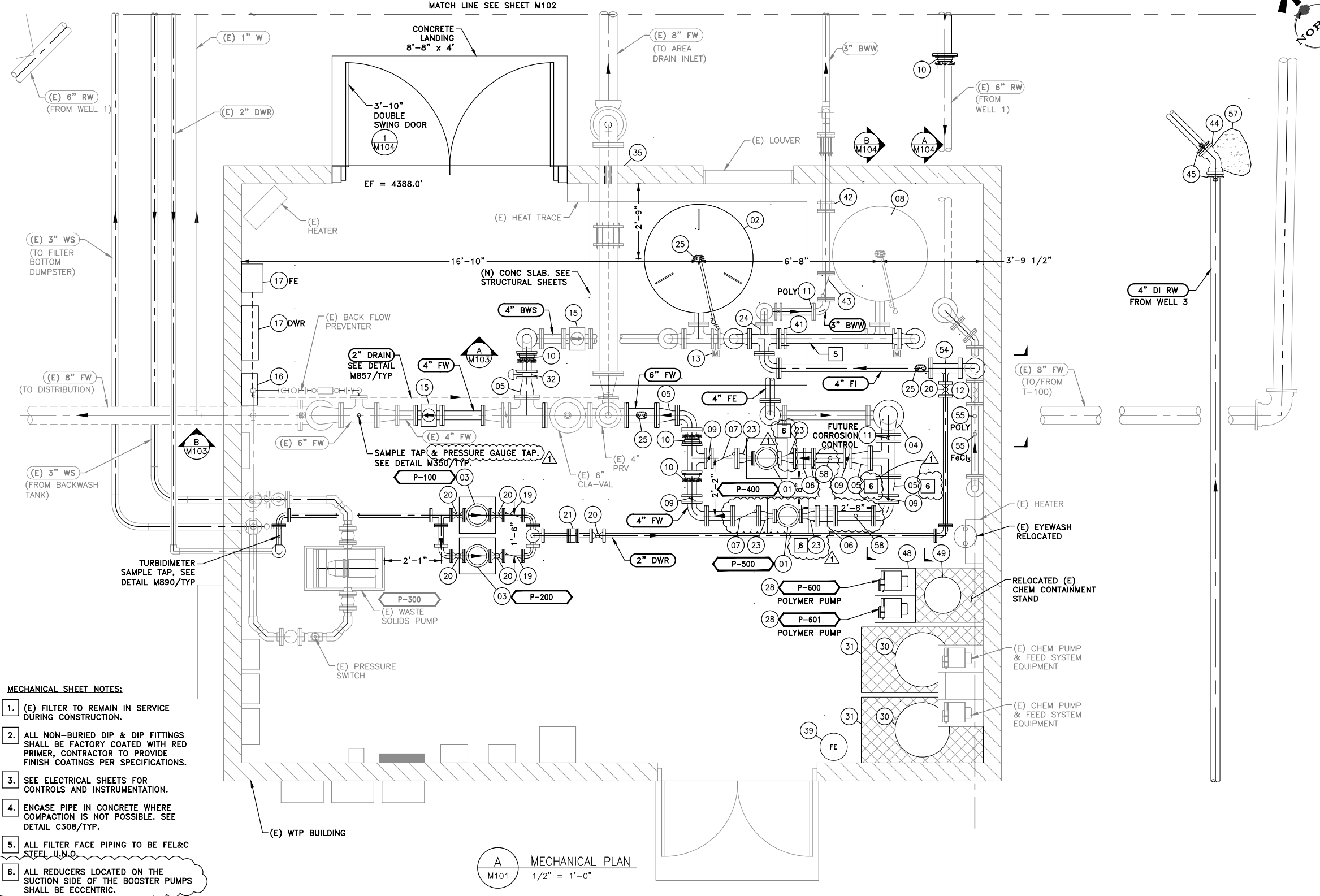
- A. Manufacturers: One of the following or equal:

1. Stockham, Figure S-127
2. Jenkins, 1336
3. Crane, 950 TF

- B. Valves: 1 piece bar stock ball valve.

MECHANICAL EQUIPMENT NOTES

TAG	DESCRIPTION	DETAIL
01	BOOSTER PUMP	2/M104
02	48" DIA FILTER	
03	35 GPM DECANT PUMP	
04	8" x 6" FLG REDUCING ELBOW	
05	6" x 4" FLG REDUCER	
06	4" DISMANTLING JOINT	
07	4" FLG SILENT CV	
08	(E) 42" DIA FILTER	
09	4" WAFER BFV	
10	4" RFCA	
11	4" FLG WAFER MIXER (WESTFALL MODEL 2800)	
12	3" 3 STAGE WESTFALL 3050 STATIC MIXER	
13	4" MOTOR ACTUATED WAFER BFV	
14	4" FLG BFV	
15	4" FLG MAG METER	
16	HACH CL17 CHLORINE RESIDUAL ANALYZER	M341/TYP
17	TURBIDIMETER	M857/TYP
18	ACCESS LADDER WITH LADDER UP	
19	2" FLG CV	
20	2" FLG BV	
21	2" FLG MAG METER	
22	3" DEEP WELL CONTROL VALVE W/ CHECK OPTION	
23	4" x 2" FLG REDUCER	
24	4" x 3" FLG TEE	
25	1/2" AIR VALVE	M351/TYP
26	ADJUSTABLE PIPE SUPPORT	M412/TYP
27	PIPE & EQUIPMENT SUPPORT	M444/TYP
28	CHEMICAL PUMP ASSEMBLY	M704/TYP
29	3" MOTOR ACTUATED WAFER BFV	
30	55 GAL CHEMICAL DRUM - OWNER PROVIDED	
31	58 GAL CAPACITY DRUM SAFETY PALLET	
32	4" WAFER FCV	
33	JENSEN MODEL 66-8-U	
34	6" FLG CV	
35	WALL PIPE PENETRATION	M302/TYP
36	6" FLG BFV	
37	3" FLG BFV	
38	6" x 4" FLG TEE	
39	FIRE EXTINGUISHER	M730/TYP
40	6" x 3" FLG TEE	
41	4" FCA	
42	3" FCA	
43	3" FLG CV	
44	4" MJ 45° ELBOW	
45	4" MEGALUG	
46	6" FCA	
48	FRP MOUNTING PLATE	
49	15 GAL CHEMICAL DRUM - OWNER PROVIDED	
50	6" x 3" FLG REDUCING ELBOW	
51	4" x 3" FLG REDUCER	
52	3" FLG 45° ELBOW	
53	3" FLG MAG METER	
54	4" x 2" FLG TEE	
55	CHEMICAL INJECTION	M717/TYP
56	1" BRASS BALL VALVE	M105/TYP
57	THRUST BLOCK	10L-2/TYP
58	1" OUTLET FOR OWNER PROVIDED PRESSURE GAUGE	M105/TYP



- MECHANICAL SHEET NOTES:**
- (E) FILTER TO REMAIN IN SERVICE DURING CONSTRUCTION.
 - ALL NON-BURIED DIP & DIP FITTINGS SHALL BE FACTORY COATED WITH RED PRIMER, CONTRACTOR TO PROVIDE FINISH COATINGS PER SPECIFICATIONS.
 - SEE ELECTRICAL SHEETS FOR CONTROLS AND INSTRUMENTATION.
 - ENCASE PIPE IN CONCRETE WHERE COMPACTION IS NOT POSSIBLE. SEE DETAIL C308/TYP.
 - ALL FILTER FACE PIPING TO BE FEL&C STEEL U.N.O.
 - ALL REDUCERS LOCATED ON THE SUCTION SIDE OF THE BOOSTER PUMPS SHALL BE ECCENTRIC.

A MECHANICAL PLAN
1/2" = 1'-0"

REVISION	DESCRIPTION	BY	APP	DATE
1	ADDENDUM #1	MSW	MSW	5/27/16

WORK ORDER NO.	
DESIGNED	EHP
DRAWN	AAA
DATE	APRIL 2016
CHECKED	MSW
SUBMITTED	
RECOMMENDED	
APPROVED	

TRUCKEE MEADOWS WATER AUTHORITY
 1355 CAPITAL BLVD. / PO BOX 30013
 RENO, NEVADA 89520-3013
 PH 775-834-8080 / FX 775-834-8003

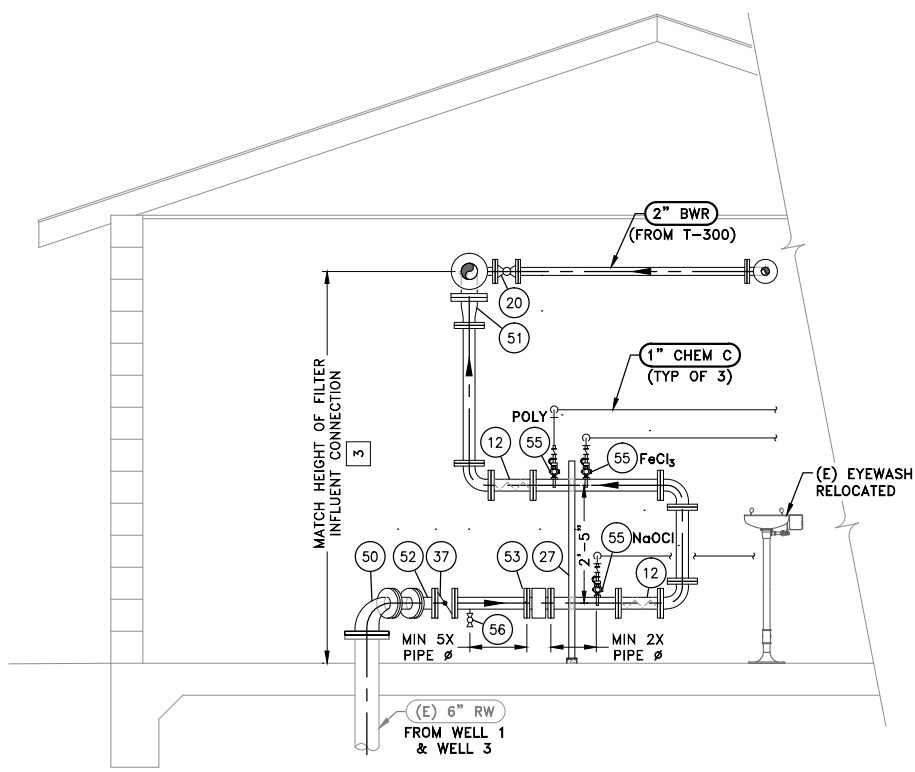
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 PROPERTY OF TRUCKEE MEADOWS WATER AUTHORITY, RETURN UPON COMPLETION OF PROJECT
 (Per Homeland Security Act)

TRUCKEE CANYON WATER SYSTEM EXPANSION (REBID)
TREATMENT BUILDING
MECHANICAL PLAN

PROFESSIONAL ENGINEER - STATE OF NEVADA
 MICHAEL S. WILKIN
 EXP: 6/30/16
 CIVIL
 No. 17270

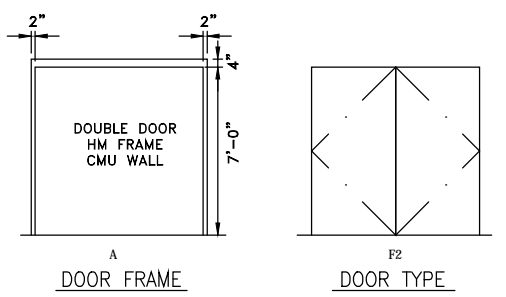
SHEET NUMBER
M101
 27 OF 53

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 User: mschmitt



A PIPING MECHANICAL SECTION
M104 1/2" = 1'-0"

DOOR SCHEDULE										
DOOR			DOOR MATERIAL		DOOR TYPE		FRAME		HARDWARE GROUP SET	COMMENTS
WIDTH	HEIGHT	THICKNESS					FRAME TYPE	FRAME MATERIAL		
7' - 8"	7' - 0"	1 3/4"	HM	F2	A	HM			1	PAIR OF DOORS, SEE SPEC 08710 MOUNT NFPA HAZMAT SIGNAGE PER SPEC 10400



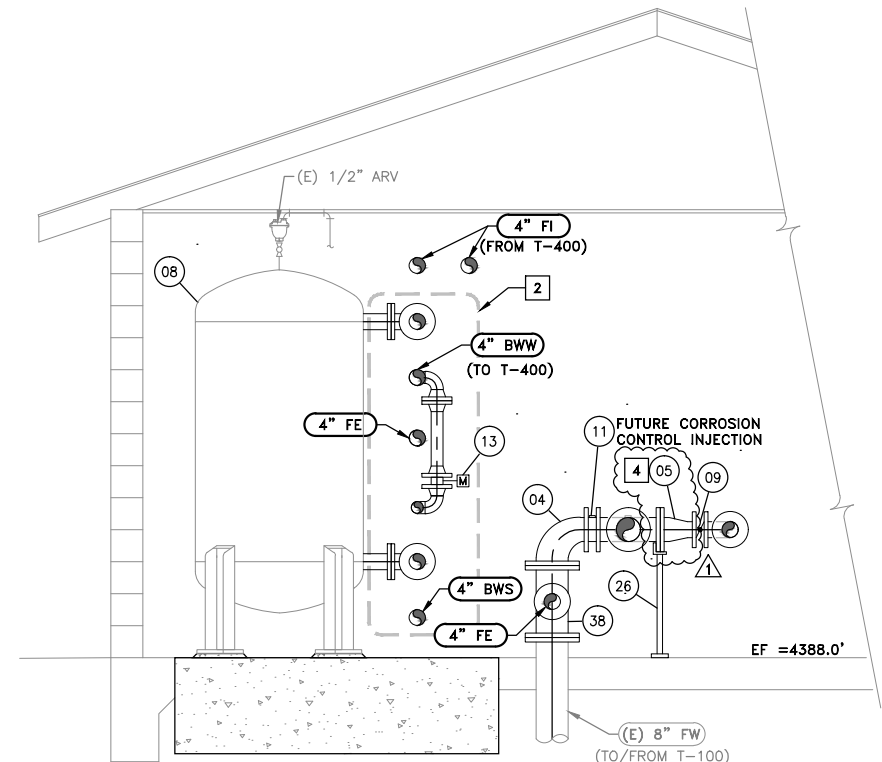
1 DOOR DETAIL
M104 NTS

GROUP 1 EXTERIOR (PAIR)
 LOCKSET SCHLAGE ND-80-PD-RHO-626 (STOREROOM)
 IC CORE VERIFY CORE & KEYWAY WITH OWNER
 FLUSH BOLTS HAGER 282D
 LOCKGUARD HAGER 340D
 ASTRAGAL PEMKO P355CS84
 GASKET PEMKO 303-S
 CLOSER LCN 4041
 HINGES HAGER BB 1279 NRP
 THRESHOLD PEMKO 2005AV MATCH DOOR & FRAME WIDTH
 BOTTOM PEMKO 216 FG

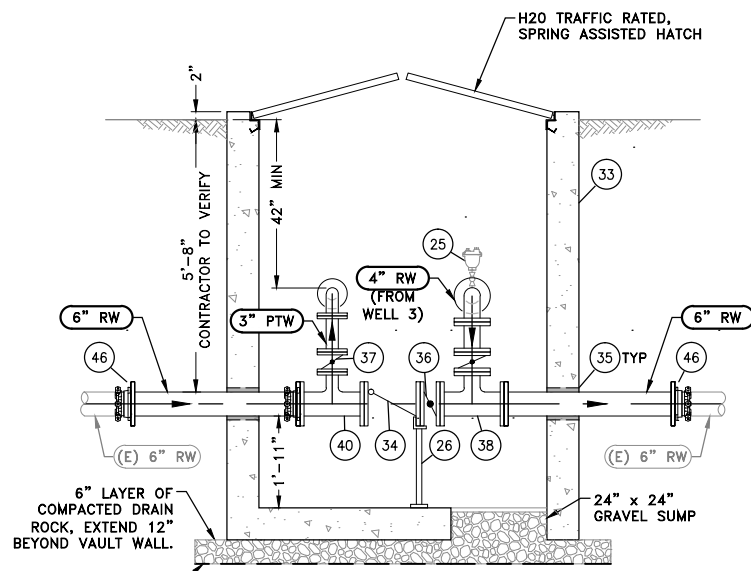
DOOR HARDWARE

- MECHANICAL SHEET NOTES:**
- (E) FILTER TO REMAIN IN SERVICE DURING CONSTRUCTION.
 - ALL FILTER FACE PIPING TO BE FEL&C STEEL U.N.O.
 - FILTER FACE PIPING SHOWN IN A/M103 IS REPRESENTATIVE. FILTER MANUFACTURER TO SUBMIT SHOP DRAWINGS OF FILTER FACE PIPING FOR APPROVAL PRIOR TO FABRICATION.
 - ALL REDUCERS LOCATED ON THE SUCTION SIDE OF THE BOOSTER PUMPS SHALL BE ECCENTRIC.

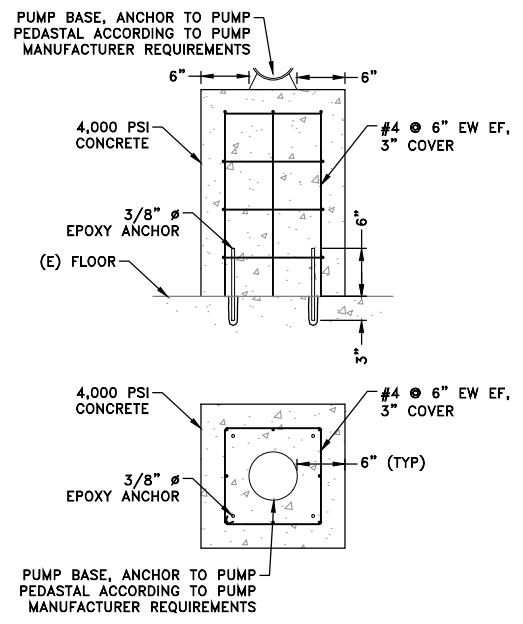
MECHANICAL EQUIPMENT NOTES		
TAG	DESCRIPTION	DETAIL
01	BOOSTER PUMP	2/M104
02	48" DIA FILTER	
03	35 GPM DECANT PUMP	
04	8" x 6" FLG REDUCING ELBOW	
05	6" x 4" FLG REDUCER	
06	4" DISMANTLING JOINT	
07	4" FLG SILENT CV	
08	(E) 42" DIA FILTER	
09	4" WAFER BFV	
10	4" RFCA	
11	4" FLG WAFER MIXER (WESTFALL MODEL 2800)	
12	3" 3 STAGE WESTFALL 3050 STATIC MIXER	
13	4" MOTOR ACTUATED WAFER BFV	
14	4" FLG BFV	
15	4" FLG MAG METER	
16	HACH CL17 CHLORINE RESIDUAL ANALYZER	M341/TYP
17	TURBIDIMETER	M857/TYP
18	ACCESS LADDER WITH LADDER UP	
19	2" FLG CV	
20	2" FLG BV	
21	2" FLG MAG METER	
22	3" DEEP WELL CONTROL VALVE W/ CHECK OPTION	
23	4" x 2" FLG REDUCER	
24	4" x 3" FLG TEE	
25	1/2" AIR VALVE	M351/TYP
26	ADJUSTABLE PIPE SUPPORT	M412/TYP
27	PIPE & EQUIPMENT SUPPORT	M444/TYP
28	CHEMICAL PUMP ASSEMBLY	M704/TYP
29	3" MOTOR ACTUATED WAFER BFV	
30	55 GAL CHEMICAL DRUM - OWNER PROVIDED	
31	58 GAL CAPACITY DRUM SAFETY PALLET	
32	4" WAFER FCV	
33	JENSEN MODEL 66-8-U	
34	6" FLG CV	
35	WALL PIPE PENETRATION	M302/TYP
36	6" FLG BFV	
37	3" FLG BFV	
38	6" x 4" FLG TEE	
39	FIRE EXTINGUISHER	M730/TYP
40	6" x 3" FLG TEE	
41	4" FCA	
42	3" FCA	
43	3" FLG CV	
44	4" MJ 45' ELBOW	
45	4" MEGALUG	
46	6" FCA	
48	FRP MOUNTING PLATE	
49	15 GAL CHEMICAL DRUM - OWNER PROVIDED	
50	6" x 3" FLG REDUCING ELBOW	
51	4" x 3" FLG REDUCER	
52	3" FLG 45' ELBOW	
53	3" FLG MAG METER	
54	4" x 2" FLG TEE	
55	CHEMICAL INJECTION	M717/TYP
56	1" BRASS BALL VALVE	M105/TYP
57	THRUST BLOCK	10L-2/TYP
58	1" OUTLET FOR OWNER PROVIDED PRESSURE GAUGE	M105/TYP



B PIPING MECHANICAL SECTION
M104 1/2" = 1'-0"



C PIPING MECHANICAL SECTION
M104 1/2" = 1'-0"



2 BOOSTER PUMP PEDESTAL DETAIL
M104 NTS

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REVISION	DESCRIPTION	BY	APP	DATE
1	ADDENDUM #1	MSW	MSW	5/27/16

WORK ORDER NO.	
DESIGNED	EHP
DRAWN	AAA
DATE	APRIL 2016
CHECKED	MSW
SUBMITTED	
RECOMMENDED	
APPROVED	

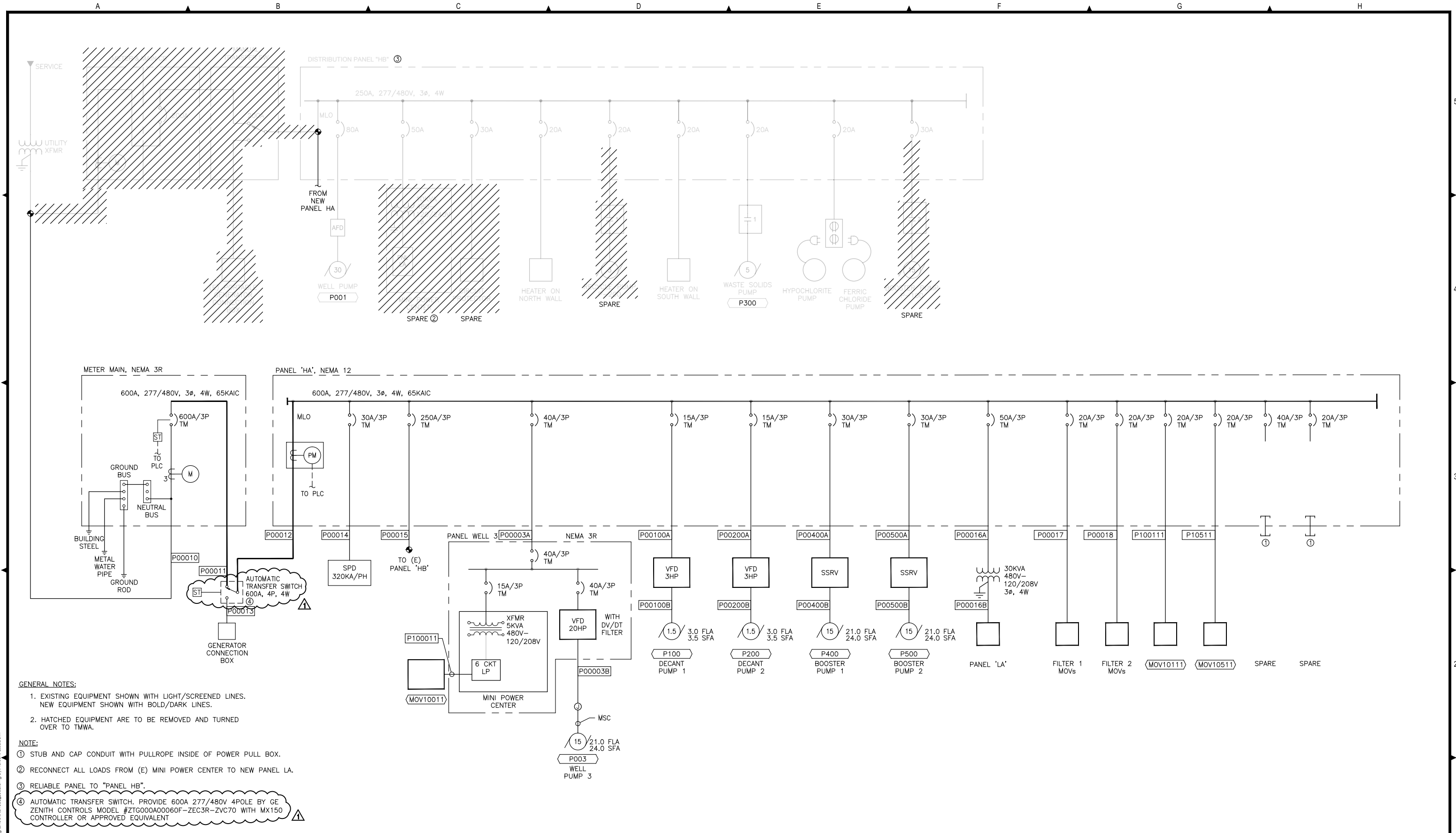
TRUCKEE MEADOWS WATER AUTHORITY
 1355 CAPITAL BLVD. / PO BOX 30013
 RENO, NEVADA 89520-3013
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NOT REPRODUCIBLE
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 (Per Homeland Security Act)

TRUCKEE CANYON WATER SYSTEM EXPANSION (REBID)
TREATMENT BUILDING MECHANICAL SECTIONS

PROFESSIONAL ENGINEER - STATE OF NEVADA
 MICHAEL S. WILKIN
 EXP: 6/30/16
 CIVIL
 No. 17270

SHEET NUMBER
M104
 30 OF 53



- GENERAL NOTES:**
- EXISTING EQUIPMENT SHOWN WITH LIGHT/SCREENED LINES.
NEW EQUIPMENT SHOWN WITH BOLD/DARK LINES.
 - HATCHED EQUIPMENT ARE TO BE REMOVED AND TURNED OVER TO TMWA.

- NOTE:**
- ① STUB AND CAP CONDUIT WITH PULLROPE INSIDE OF POWER PULL BOX.
 - ② RECONNECT ALL LOADS FROM (E) MINI POWER CENTER TO NEW PANEL LA.
 - ③ RELIABLE PANEL TO "PANEL HB".
 - ④ AUTOMATIC TRANSFER SWITCH. PROVIDE 600A 277/480V 4POLE BY GE ZENITH CONTROLS MODEL #ZTG000A00060F-ZEC3R-ZVC70 WITH MX150 CONTROLLER OR APPROVED EQUIVALENT

REVISION	DESCRIPTION	BY	APP	DATE
④	ADDENDUM #1	L VH	L VH	5/23/16

WORK ORDER NO.	DESIGNED	L VH
DRAWN	HAM	
DATE	APRIL 2016	
CHECKED	L VH	
SUBMITTED		
RECOMMENDED		
APPROVED		

TRUCKEE MEADOWS WATER AUTHORITY

 1355 CAPITAL BLVD. / PO BOX 30013

 RENO, NEVADA 89520-3013

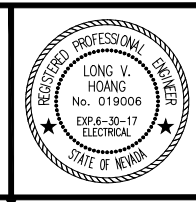
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TRUCKEE CANYON WATER SYSTEM EXPANSION (REBID)

ONE LINE DIAGRAMS

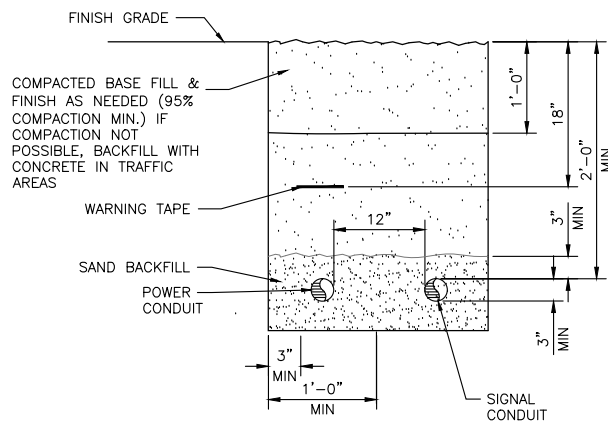


SHEET NUMBER

E002

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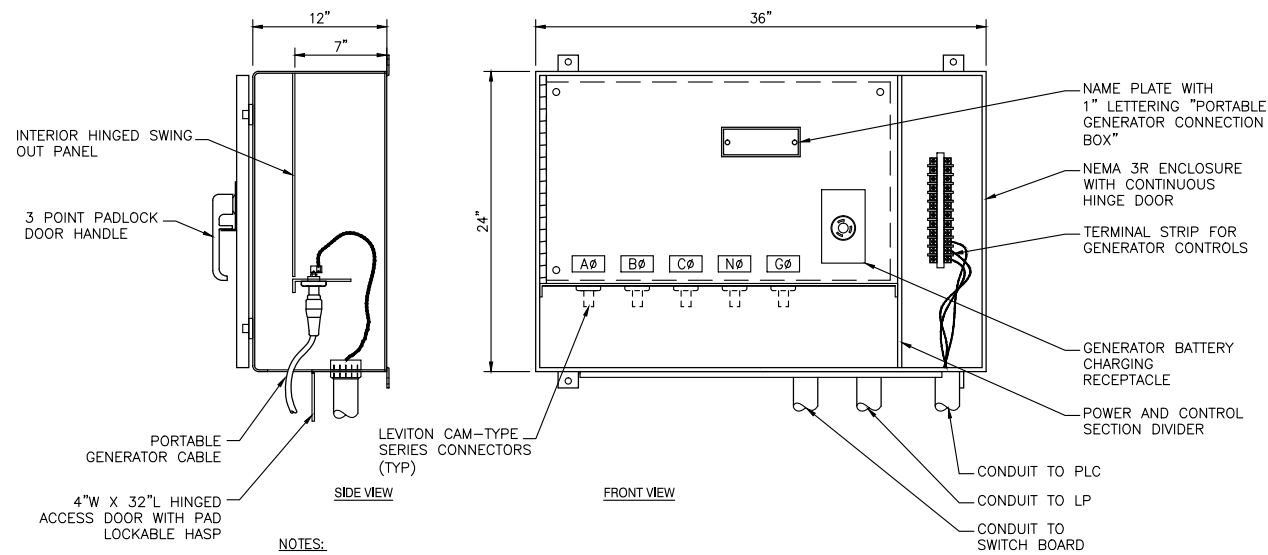
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TRENCH DETAIL

SCALE: NONE

A
E030



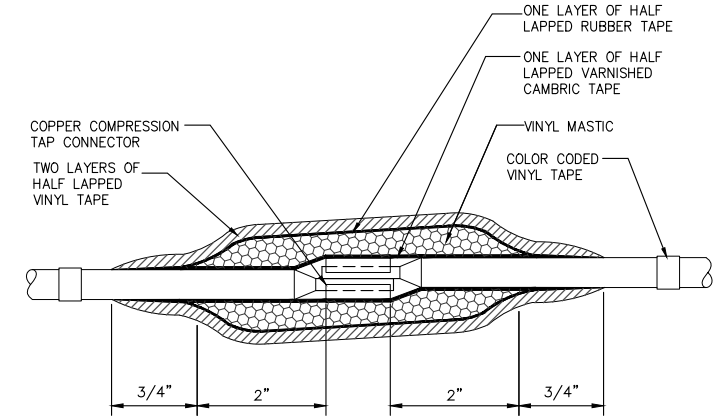
NOTES:

1. CONNECTIONS TO BOX MUST BE WATER TIGHT SEALED WITH RING AND INSULATED THROAT.
2. ENCLOSURE SHALL BE 600A RATED, PROVIDE POWERTRON SERIES 400, NEVADA ENERGY SYSTEMS, CONTRACTOR FABRICATED, OR APPROVED EQUAL.
3. PROVIDE CAM CONNECTORS WITH THE FOLLOWING COLORS:
AØ=BROWN
BØ=ORANGE
CØ=YELLOW
GØ=GREEN
NØ=WHITE

PORTABLE GENERATOR CONNECTION BOX

SCALE: NONE

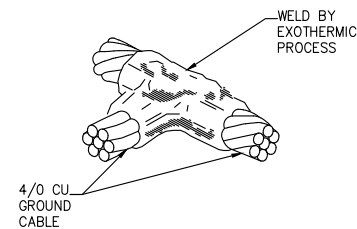
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E030



600V AND LESS CABLE SPLICE DETAIL

SCALE: NONE

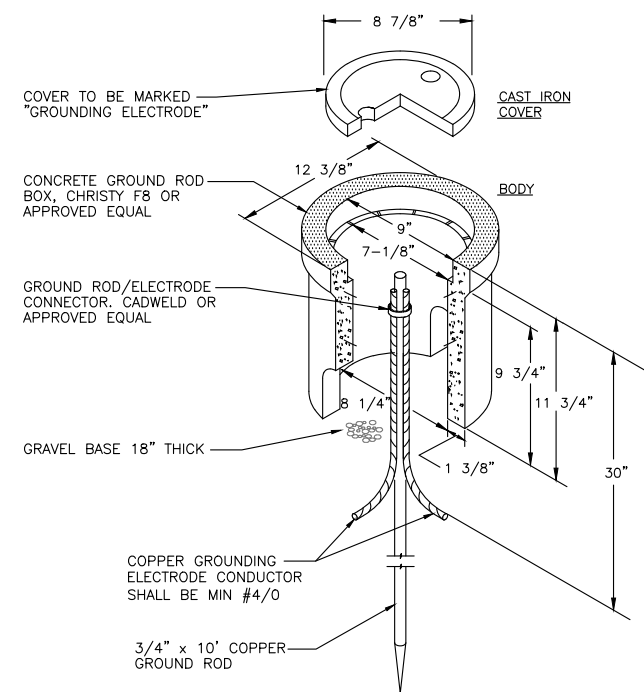
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GROUND CONNECTION DETAIL

SCALE: NONE

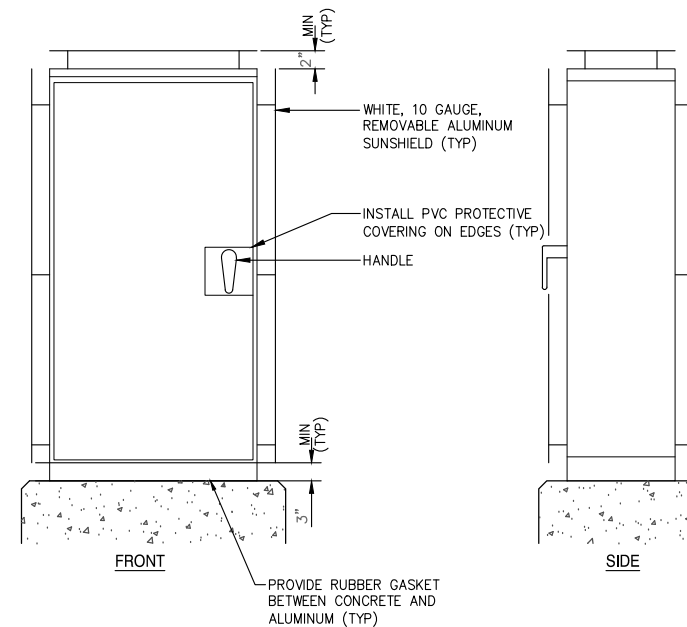
D
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CONCRETE GROUND ROD BOX DETAIL

SCALE: NONE

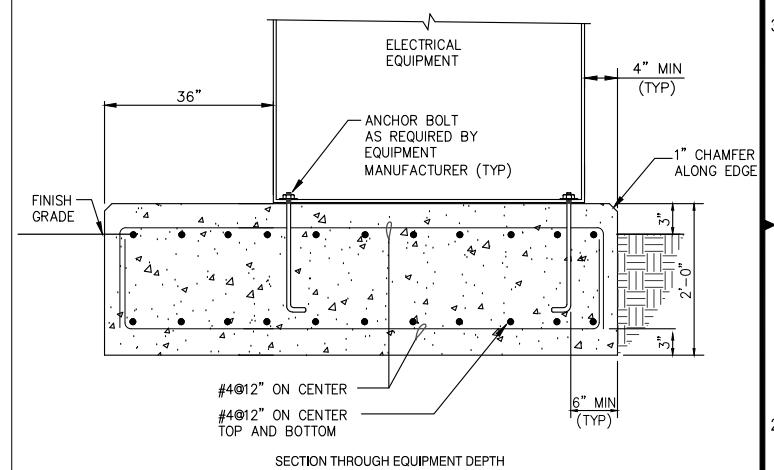
E
E030



SUNSHIELD INSTALLATION

SCALE: NONE

F
E030



ELECTRICAL EQUIPMENT FOUNDATION

SCALE: NONE

G
E030

REVISION	DESCRIPTION	BY	APP	DATE
▲	ADDENDUM #1	LVH	LVH	5/23/18

WORK ORDER NO.	
DESIGNED	LVH
DRAWN	HAM
DATE	APRIL 2016
CHECKED	LVH
SUBMITTED	
RECOMMENDED	
APPROVED	

TRUCKEE MEADOWS WATER AUTHORITY

1355 CAPITAL BLVD. / PO BOX 30013
RENO, NEVADA 89520-3013
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TRUCKEE CANYON WATER SYSTEM EXPANSION (REBID)

TYPICAL ELECTRICAL DETAILS 1

REGISTERED PROFESSIONAL ENGINEER

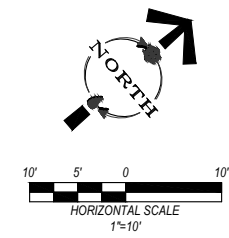
LONG V. HOANG
No. 019006
EXP. 6-30-17
ELECTRICAL
STATE OF NEVADA

SHEET NUMBER

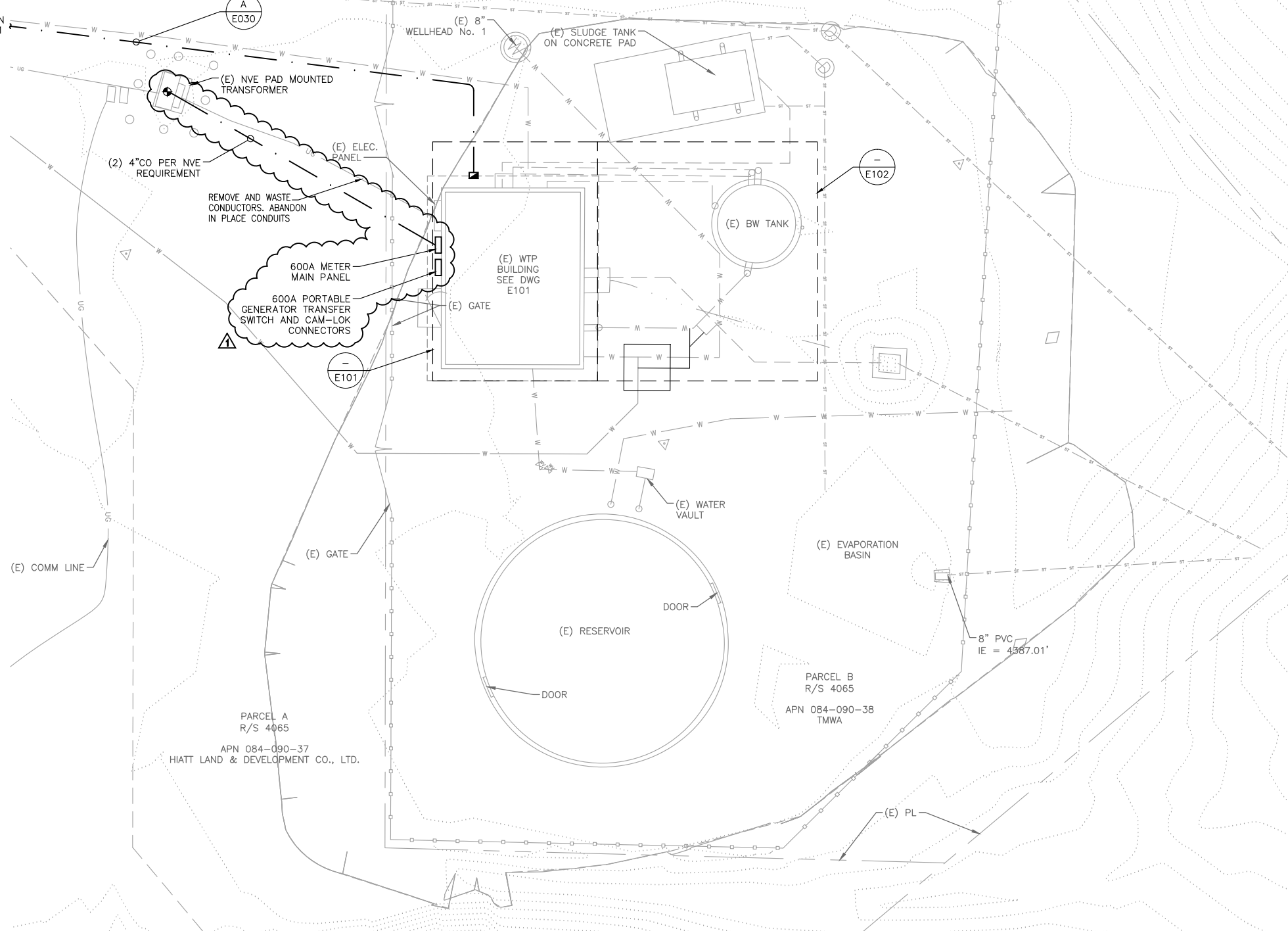
E030

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CONTINUED ON DRAWING E051




PARCEL A
R/S 4065
APN 084-090-37
HIATT LAND & DEVELOPMENT CO., LTD.

PARCEL B
R/S 4065
APN 084-090-38
TMWA

REVISION	DESCRIPTION	BY	APP	DATE
▲	ADDENDUM #1	L VH	L VH	5/23/16

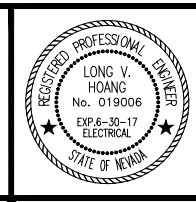
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DESIGNED	L VH
DRAWN	H AM
DATE	APRIL 2016
CHECKED	L VH
SUBMITTED	
RECOMMENDED	
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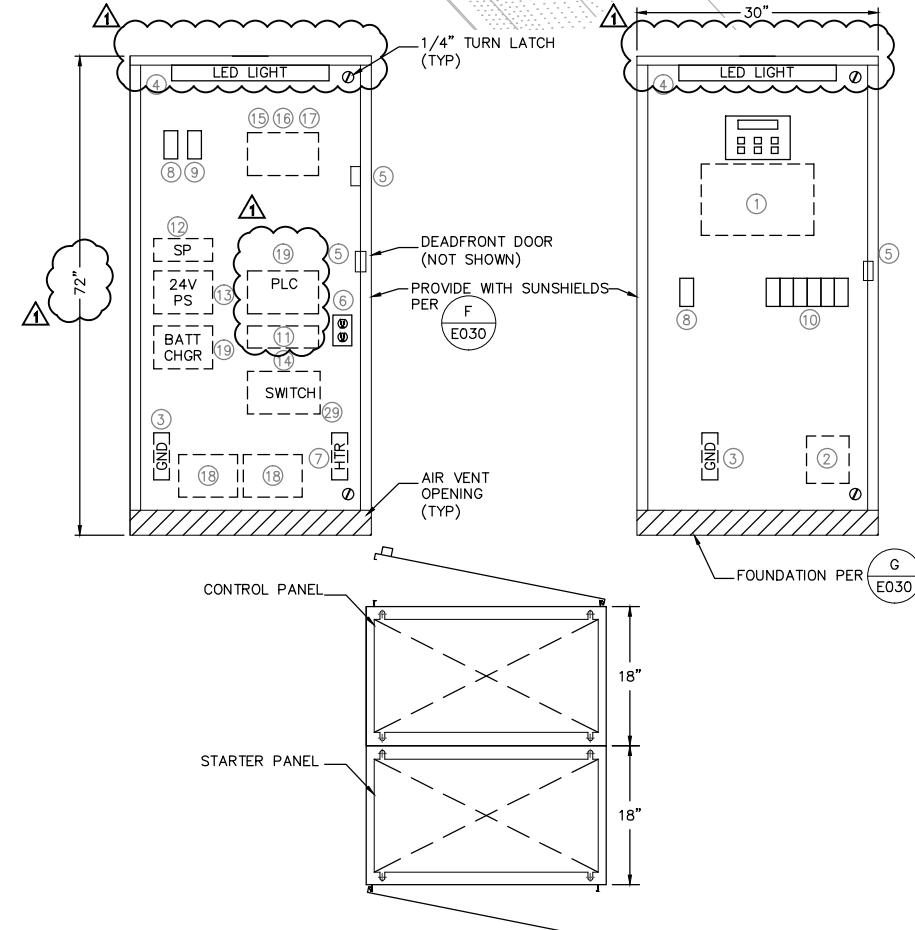
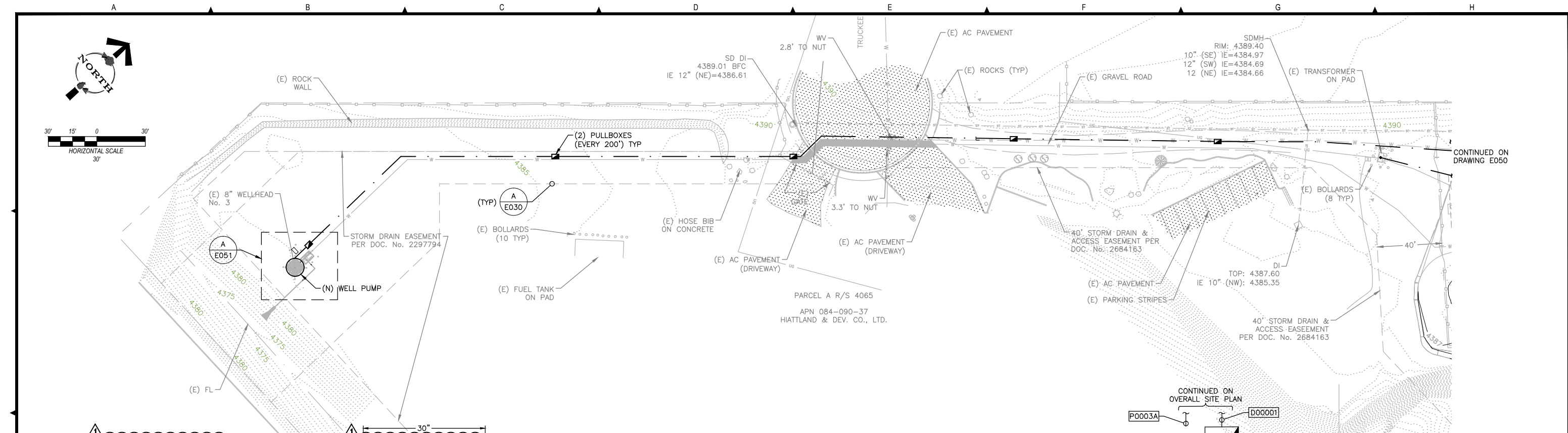
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TRUCKEE CANYON WATER SYSTEM EXPANSION (REBID)
ELECTRICAL SITE PLAN 1



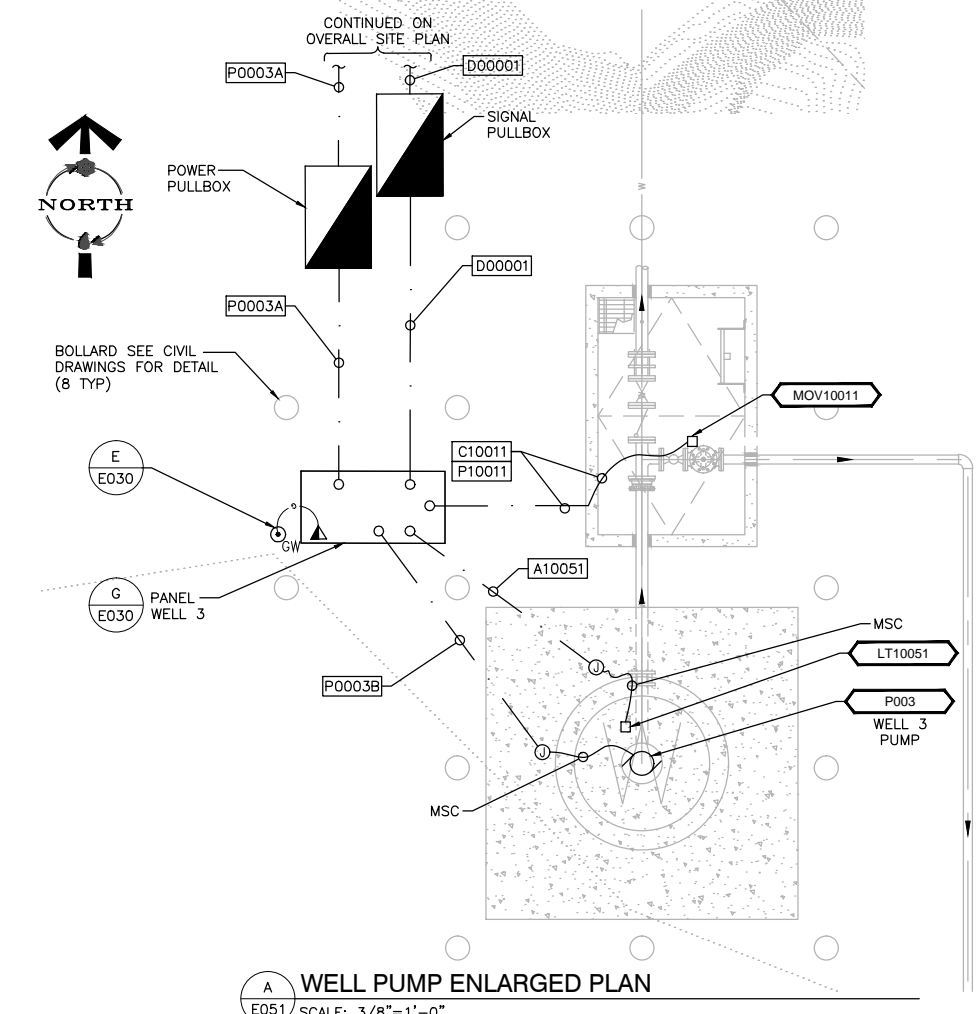
SHEET NUMBER
E050
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ITEM	DESCRIPTION	MFR	PART NO.
1	VFD	TBD	-
2	POWER TRANSFORMER	EATON	-
3	GROUND BAR, 600V	ISLCO	167-12
4	LIGHT, LED, 18", 120 VAC	PROGRESS	P7005-30
5	SWITCH, AC, DOOR INTERLOCK, SPDT, 15 AMP, 120VAC	MICROSWITCH	P7005-30
6	RECEPTACLE, GFCI, 20 AMP	LEVITON	6899-1
7	HEATER STRIP, 120 VAC, 250W	CHROMALOX	OT-1025
8	THERMOSTAT, N.C. CONTACT, 15A, 120 VAC	HOFFMAN ENGINEERING	A-TEMNC
9	THERMOSTAT, N.O. CONTACT, 15A, 120 VAC	HOFFMAN ENGINEERING	A-TEMNO
10	CIRCUIT BREAKERS PER ONLINE DIAGRAM	EATON	-
11	FIBER PATCH PANEL, ST MULTIMODE	-	-
12	POWER SUPPLY AND UPS BATTERY TENDER	PHOENIX CONTACT	2866611
13	FIBER TO ETHERNET, 24V DIN RAIL MM ST CONN	PHOENIX CONTACT	2891316
14	ETHERNET MODULE	MODICON	STBNP2212
15	D1 24VDC 4PT	MODICON	STBDD13425K
16	POWER DISTRIBUTION MODULE	MODICON	STBDD13425K
17	12V 7.2 AMP BATTERY	POWER SONIC	PS-1270-PI(2)
18	VFD CONTROLS	ADVANTYS	STB ACO 1225
19	VFD CONTROLS	ADVANTYS	STB ACI 1225
20	VFD CONTROLS	ADVANTYS	STB DDO 3410

NOTE:
 1. TMWA TO CONFIRM FINAL BILL OF MATERIALS. COORDINATE WITH TMWA FOR ADDITIONAL REQUIREMENT.
 2. PANELS TO BE SAGINAW #SCE-72EL3018FS OR APPROVED EQUAL.
 3. PANELS SHALL BE POWDER COATED WHITE COLOR.
 4. PROVIDE DOORS WITH PAD LOCKABLE HANDLES.



REVISION	DESCRIPTION	BY	APP	DATE
1	ADDENDUM #1	L VH	L VH	5/16/16

WORK ORDER NO.	
DESIGNED	L VH
DRAWN	HAM
DATE	APRIL 2016
CHECKED	L VH
SUBMITTED	
RECOMMENDED	
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TRUCKEE CANYON WATER SYSTEM EXPANSION (REBID)
ELECTRICAL SITE PLAN 2



SHEET NUMBER
E051
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