



TESla Engineering, LLC
 ELECTRICAL ENGINEERING CONSULTANTS
 P.O. BOX 504
 Vaughn, Montana 59487
 Phone (406) 964-8523

NO.	REVISION DESCRIPTION	BY	DATE

GENERAL ELECTRICAL SITE NOTES

- SEE CIVIL SITE PLANS FOR ADDITIONAL SITE INFORMATION AND REQUIREMENTS. COORDINATE SITE WORK WITH OTHER TRADES.
- ELECTRICAL TERMINATION AT SERVICE EQUIPMENT, AND ALL OTHER ELECTRICAL WORK AS INDICATED ON THIS DRAWING TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
- ALL CONDUITS, FOR BRANCH CIRCUIT FEEDERS UNDER PAVEMENT AND LANDSCAPED AREAS SHALL BE SCHEDULE 80 PVC, UNLESS NOTED OTHERWISE. RUN ALL CONDUITS 24" MINIMUM BELOW FINISHED GRADE, UNLESS SPECIFICALLY NOTED OTHERWISE. COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC).
- REFER TO ELECTRICAL DETAILS, E11, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- REPAIR LANDSCAPE AND PARKING AREAS THAT ARE DISTURBED BY THIS SCOPE OF WORK. AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION, UNLESS NOTED OTHERWISE BY PROJECT SCOPE OF WORK. COORDINATE WITH THE GENERAL CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WIRING, CONDUIT, METER BASES, GROUNDING, ETC. FOR A COMPLETE AND OPERATIONAL SERVICE INSTALLATION(S).
- COORDINATE AND LOCATE ALL UTILITIES PRIOR TO ANY EXCAVATION. CALL FOR UTILITY LOCATES AND COORDINATION OF WORK PRIOR TO ALL EXCAVATIONS.
- REFER TO POWER RISER DIAGRAMS, E5, E6, AND E10, FOR ADDITIONAL INFORMATION REGARDING THE SERVICES WHICH ARE A PART OF THIS SCOPE OF WORK.
- PROVIDE ADEQUATELY SIZED PULLBOXES FOR POWER, AS NEEDED. STUB UP CONDUIT IN PULLBOX, CAP AND LABEL AS NEEDED. PULLBOX COVER SHALL READ "ELECTRIC," AS APPROPRIATE. PROVIDE A PULLBOX AFTER (2) 90-DEGREE BENDS OR AN ACCUMULATION OF 120-DEGREES OF TOTAL PATH-WAY DEVIATION FROM A STRAIGHT LINE BETWEEN EACH ACCESS POINT. LOCATE PULLBOXES SUCH THAT THERE IS A MAXIMUM OF 400'-0" BETWEEN EACH ACCESS POINT. DO NOT LOCATE IN TRAFFIC AREAS, UNLESS SPECIFICALLY MANUFACTURED TO HANDLE VEHICLE TRAFFIC.
- REVIEW EXACT LOCATION OF PULLBOXES WITH THE CIVIL ENGINEER AND OWNER PRIOR TO START OF EXCAVATION. TYPICAL FOR ALL.
- ALL CONDUIT ROUTING SHALL BE FIELD COORDINATED. CAP AND LABEL THE CONDUITS AT BOTH ENDS, AS NEEDED. TYPICAL FOR ALL SITE CONDUIT RUNS.
- ELECTRICAL PERMIT SHALL BE OBTAINED FROM THE APPROPRIATE AUTHORITY HAVING JURISDICTION (A-H) PRIOR TO BEGINNING WORK ON ANY ELECTRICAL WIRING, EQUIPMENT, ETC. ALL ELECTRICAL WIRING TO COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL WIRING SHALL BE STANDARD COPPER FOR MOTORS, UNLESS NOTED OTHERWISE.

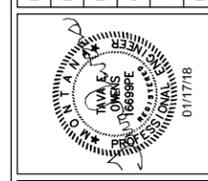
FLAG NOTES THIS SHEET:

- LOCATION OF NEW WATER TANK AND DUPLEX SUBMERSIBLE PUMPS. REFER TO ELECTRICAL WATER SYSTEM PLAN, E3, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- NEW PUMP BUILDING. REFER TO ELECTRICAL WATER SYSTEM PLAN, E3, AND ENLARGED ELECTRICAL PLANS - PUMP BUILDING, E4, FOR ADDITIONAL INFORMATION. REFER ALSO TO POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR NEW SERVICE REQUIREMENTS FOR THE BUILDING.
- EXISTING FISH CLEANING STATION. STATION HAS AN EXISTING PANEL THAT WILL PROVIDE POWER FOR THE NEW E-ONE PUMP STATION. REFER TO ELECTRICAL FISH CLEANING STATION PLAN, E7, FOR ADDITIONAL INFORMATION.
- NEW E-ONE PUMP STATION. REFER TO ELECTRICAL FISH CLEANING STATION PLAN, E7, AND POWER RISER DIAGRAM - FISH CLEANING STATION, E8, FOR ADDITIONAL INFORMATION.
- APPROXIMATE LOCATION OF EXISTING UTILITY TRANSFORMER AND METER. FIELD VERIFY THE EXACT LOCATION. THE METER WILL NEED TO BE REPLACED AS PART OF THIS SCOPE OF WORK. REFER TO POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- APPROXIMATE LOCATION OF EXISTING UTILITY JUNCTION BOX TO FEED NEW TRANSFORMER FOR THE SAND FILTER AND DRAINFIELD SERVICE. FIELD VERIFY THE LOCATION. COORDINATE NEW SERVICE WITH THE SERVING UTILITY. REFER ALSO TO POWER RISER DIAGRAM - SAND FILTER AND DRAINFIELD, E10, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- THERE ARE (3) SEPARATE LOCATIONS REQUIRING POWER ON THE SITE. REFER TO ALL PLAN DRAWINGS AND RISER DIAGRAMS AND BE FAMILIAR WITH THE FULL SCOPE OF WORK. COORDINATE ALL ELECTRICAL SERVICE REQUIREMENTS WITH UTILITY COMPANY AND OWNER. UTILITY COMPANY IS McCONE ELECTRIC CO-OP, TELEPHONE NUMBER (406) 485-3430.
- APPROXIMATE LOCATION OF THE EXISTING WELL HOUSE BUILDING. NEW FLOAT SWITCH IN THE NEW WATER TANK WILL HAVE A CONNECTION BACK TO THIS BUILDING. REFER ALSO TO ELECTRICAL WATER SYSTEM PLAN, E3, FOR ADDITIONAL INFORMATION.



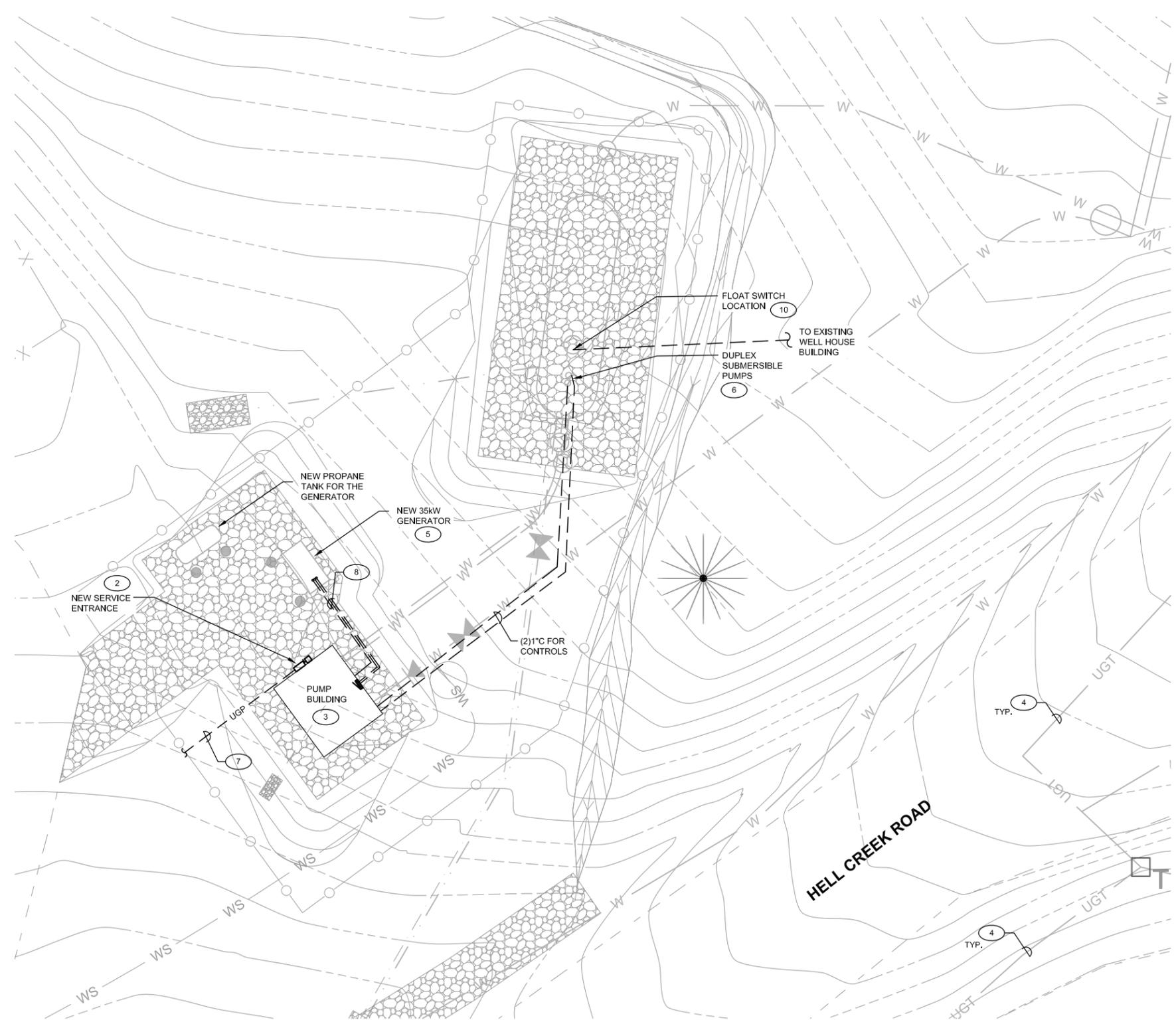
1 **ELECTRICAL OVERALL SITE PLAN** 7
 E2
 0 100 200
 SCALE IN FEET

PROJECT: 1-1713 (GW/17-205) (TESB)
DESIGNED: TEO
DRAWN: TEO
CHECKED: TEO
APPROVED: TEO
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**MONTANA FISH WILDLIFE & PARKS
 HELL CREEK STATE PARK
 IMPROVEMENTS**
 ELECTRICAL OVERALL SITE PLAN

SHEET NO.
E2



1 ELECTRICAL WATER SYSTEM PLAN 1 9
 E3
 0 10 20
 SCALE IN FEET

GENERAL ELECTRICAL SITE NOTES

- SEE CIVIL SITE PLANS FOR ADDITIONAL SITE INFORMATION AND REQUIREMENTS. COORDINATE SITE WORK WITH OTHER TRADES.
- ELECTRICAL TERMINATION AT SERVICE EQUIPMENT, AND ALL OTHER ELECTRICAL WORK AS INDICATED ON THIS DRAWING AND ELECTRICAL OVERALL SITE PLAN, E2, TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
- ALL CONDUITS, FOR BRANCH CIRCUIT FEEDERS UNDER PAVEMENT AND LANDSCAPED AREAS SHALL BE SCHEDULE 80 PVC, UNLESS NOTED OTHERWISE. RUN ALL CONDUITS 24" MINIMUM BELOW FINISHED GRADE. COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC).
- REFER TO ELECTRICAL DETAILS, E11, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- REPAIR LANDSCAPE AND PARKING AREAS THAT ARE DISTURBED BY THIS SCOPE OF WORK. AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION, UNLESS NOTED OTHERWISE BY PROJECT SCOPE OF WORK. COORDINATE WITH THE GENERAL CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WIRING, CONDUIT, METERING, ETC. FOR A COMPLETE AND OPERATIONAL SERVICE INSTALLATION. REFER ALSO TO ELECTRICAL OVERALL SITE PLAN, E2, AND POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- COORDINATE AND LOCATE ALL UTILITIES PRIOR TO ANY EXCAVATION. CALL FOR UTILITY LOCATES AND COORDINATION OF WORK PRIOR TO ALL EXCAVATIONS.
- REFER TO POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR ADDITIONAL INFORMATION REGARDING THE SERVICE WHICH IS A PART OF THIS SCOPE OF WORK.
- PROVIDE ADEQUATELY SIZED PULLBOXES FOR POWER, AS NEEDED. STUB UP CONDUIT IN PULLBOX, CAP AND LABEL, AS NEEDED. PULLBOX COVER SHALL READ "POWER," AS APPROPRIATE. PROVIDE A PULLBOX AFTER 2) 90-DEGREE BENDS OR AN ACCUMULATION OF 120-DEGREES OF TOTAL PATHWAY DEVIATION FROM A STRAIGHT LINE BETWEEN EACH ACCESS POINT. LOCATE PULLBOXES SUCH THAT THERE IS A MAXIMUM OF 400'-0" BETWEEN EACH ACCESS POINT. DO NOT LOCATE IN TRAFFIC AREAS, UNLESS SPECIFICALLY MANUFACTURED TO HANDLE VEHICLE TRAFFIC.
- REVIEW EXACT LOCATION OF PULLBOXES WITH THE CIVIL ENGINEER AND OWNER PRIOR TO START OF EXCAVATION. TYPICAL FOR ALL.
- ALL CONDUIT ROUTING SHALL BE FIELD COORDINATED. CAP AND LABEL THE CONDUITS AT BOTH ENDS, AS NEEDED. TYPICAL FOR ALL SITE CONDUIT RUNS.
- ELECTRICAL PERMIT SHALL BE OBTAINED FROM THE APPROPRIATE AUTHORITY HAVING JURISDICTION (AHJ) PRIOR TO BEGINNING WORK ON ANY ELECTRICAL WIRING, EQUIPMENT, ETC. ALL ELECTRICAL WIRING TO COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL PUMP BUILDING WIRING SHALL BE STANDARD COPPER FOR THREE PHASE POWER AND MOTORS, UNLESS NOTED OTHERWISE.

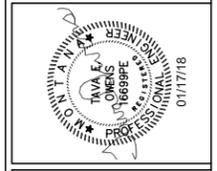
FLAG NOTES THIS SHEET:

- COORDINATE ELECTRICAL SERVICE REQUIREMENTS WITH UTILITY COMPANY AND OWNER. UTILITY COMPANY IS McCONE ELECTRIC CO-OP, TELEPHONE NUMBER (406) 485-3430. SERVICE APPLICATION MUST BE SUBMITTED IN A TIMELY MANNER FOR PROGRESS OF WORK TO MEET THE CONSTRUCTION SCHEDULE. COORDINATE WITH THE OWNER AND GENERAL CONTRACTOR.
- LOCATION FOR NEW ELECTRICAL SERVICE ENTRANCE, INCLUDING AUTOMATIC TRANSFER SWITCH (ATS), AND MAIN DISCONNECT. EQUIPMENT WILL BE MOUNTED ON THE EXTERIOR WALL OF THE NEW PUMP BUILDING. REFER TO ENLARGED ELECTRICAL PLAN - PUMP BUILDING, E4, FOR ADDITIONAL INFORMATION ON THE LOCATION AND MOUNTING OF THE EQUIPMENT. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH THE SERVING UTILITY AND THE FIELD CONDITIONS. INSTALL SUCH THAT MINIMUM WORKING CLEARANCES ARE MAINTAINED IN FRONT OF THE ATS AND MAIN DISCONNECT. REFER ALSO TO POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR ADDITIONAL INFORMATION. SERVICE INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 70 AND UTILITY REQUIREMENTS.
- REFER TO ENLARGED ELECTRICAL PLANS - PUMP BUILDING, E4, FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE NEW PUMP BUILDING.
- EXISTING UNDERGROUND TELEPHONE LINES BY THE SERVING UTILITY TO REMAIN. (TYPICAL)
- NEW GENERATOR SHALL BE PROVIDED WITH WEATHERPROOF ENCLOSURE. PROVIDE AN EXTERNAL TANK FOR THE PROPANE. TANK SHALL BE SIZED TO ACCOMMODATE 250 GALLONS OF PROPANE. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL PIPING, VALVES, MONITORS, ETC. FOR A FULLY FUNCTIONAL STANDBY POWER SYSTEM WITH THE PROPANE FUEL GENERATOR. REFER ALSO TO POWER RISER DIAGRAM - WATER SYSTEM, E5, AND SPECIFICATION SECTION 262313 FOR ADDITIONAL INFORMATION REGARDING THE REQUIREMENTS FOR THE PROPANE GENERATOR. COORDINATE CONCRETE PAD WITH THE GENERAL CONTRACTOR; REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- LOCATION OF DUPLEx SUBMERSIBLE PUMPS AT THE WATER TANK. REFER TO POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR FEEDER INFORMATION. PUMPS WILL BE CONTROLLED BY PRESSURE SENSOR IN THE PUMP BUILDING. E.C. TO PROVIDE 1" C WITH PULLWIRE FROM EACH PUMP BACK TO THE PUMP BUILDING. STUB UP, CAP AND LABEL THE CONDUIT AT EACH END. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH THE PUMP INSTALLER.
- PROVIDE (1) 2" C FOR SERVICE ENTRANCE FROM UTILITY POINT OF SERVICE LOCATED TO THE WEST OF THE FISH CLEANING STATION. REFER TO ELECTRICAL OVERALL SITE PLAN, E2, FOR APPROXIMATE LOCATION.
- PROVIDE (1) 1" C FOR GENERATOR CONTROLS AND ALARMS. ALSO PROVIDE (2) SETS OF (2#12; #12GND) 3/4" C FOR 120V CIRCUITS FOR THE GENERATOR BATTERY CHARGER AND HEATER.
- SOILS IN THIS AREA ARE NOT GOOD. ELECTRICAL CONTRACTOR SHALL PROVIDE FLEXIBLE CONNECTIONS AND SLACK IN ELECTRICAL FEEDERS AND CONDUIT RUNS TO ALLOW FOR SETTLEMENT. TYPICAL FOR ALL UNDERGROUND ELECTRICAL LINES.
- STORAGE TANK WILL HAVE A NEW FLOAT SWITCH INSTALLED FOR CONTROL OF THE PUMPS. PROVIDE NEW WIRING AND CONDUIT FROM THE FLOAT SWITCH IN THE TANK TO THE EXISTING WELL HOUSE BUILDING. REFER TO THE ELECTRICAL OVERALL SITE PLAN, E2, FOR LOCATION OF THE WELL HOUSE BUILDING. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAKING ALL THROUGH CONNECTIONS FOR THE FLOAT SWITCH AND CONTROLS. COORDINATE ROUTING OF THE WIRING TO THE EXISTING BUILDING WITH THE FIELD CONDITIONS. COORDINATE REQUIREMENTS FOR CONNECTIONS WITH THE PUMP SUPPLIER/INSTALLER PRIOR TO ROUGH-INS.

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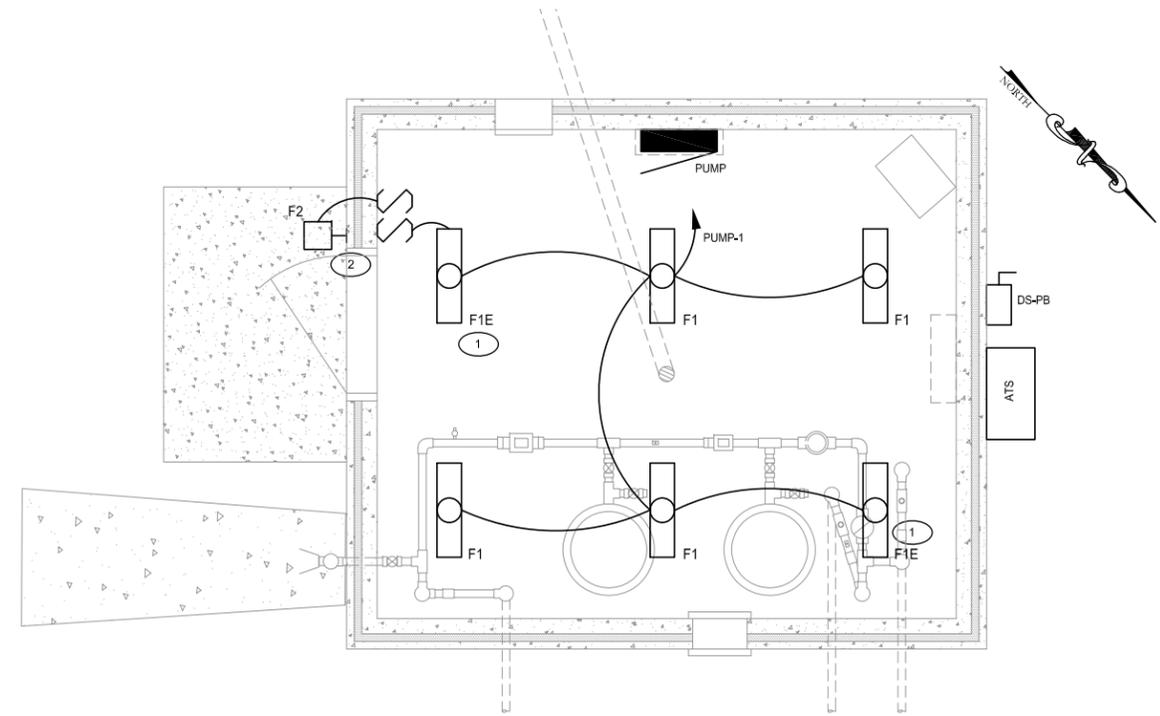
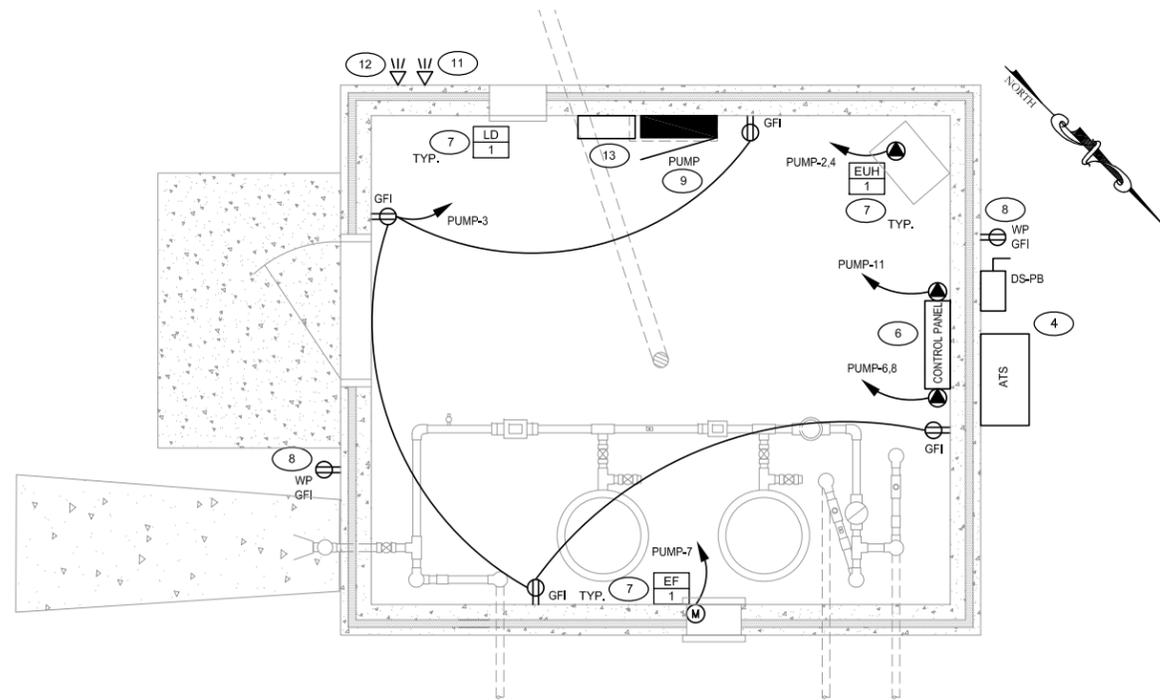
NO.	REVISION DESCRIPTION	BY	DATE

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**MONTANA FISH WILDLIFE & PARKS
 HELL CREEK STATE PARK
 IMPROVEMENTS**
 ELECTRICAL WATER SYSTEM PLAN

SHEET NO.
E3



1 ENLARGED ELECTRICAL PLANS - PUMP BUILDING 5
 E4 1/4" = 1'-0" 0 1 2 4 SCALE IN FEET

GENERAL ELECTRICAL NOTES

- REFER TO FLAG NOTES, THIS SHEET, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- ALL 240V, SINGLE PHASE AND 120V FEEDERS ARE (2#12,1#12G)1/2", UNLESS SPECIFICALLY NOTED OTHERWISE. REFER ALSO TO PANEL "PUMP" SCHEDULE, E6, OR THE POWER RISER DIAGRAM - WATER SYSTEM, E5, FOR ADDITIONAL INFORMATION ON FEEDERS.
- COORDINATE ALL DEVICE AND EQUIPMENT LOCATIONS WITH THE OWNER AND/OR SYSTEM SUPPLIER/INSTALLER.
- ALL MOTORS SHALL HAVE A LOCAL DISCONNECTING MEANS LOCATED AT THE MOTOR, OR A MAXIMUM OF 5'-0" AWAY WITHIN SIGHT OF THE MOTOR.
- FIELD COORDINATE MOUNTING OF ELECTRICAL BOXES, PANELS, DEVICES, ETC. AND ROUTING OF CONDUITS WITH OTHER TRADES.
- REFER TO DETAILS, E11, FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE PANEL, MOUNTING CLEARANCES, ETC.
- FIELD COORDINATE ROUTING OF ALL CONDUITS. CONDUIT ROUTING SHALL NOT INTERFERE WITH THE PIPING.

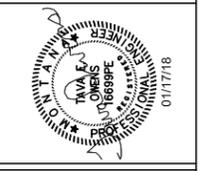
FLAG NOTES THIS SHEET:

- CONNECT EMERGENCY LIGHTING UNITS TO CIRCUIT AHEAD OF ALL LOCAL ON/OFF CONTROLS.
- CONTROL OF EXTERIOR FIXTURE SHALL BE VIA SWITCH INSIDE THE BUILDING. PROVIDE LABEL FOR THE SWITCH TO IDENTIFY IT CONTROLS THE EXTERIOR FIXTURE. ROUTE CONDUIT FOR EXTERIOR LIGHTING AS INCONSPICUOUS AS POSSIBLE. WHERE CONDUIT IS VISIBLE ON THE EXTERIOR OF THE BUILDING, IT SHALL BE PAINTED TO MATCH THE SURROUNDING SURFACE. FIELD COORDINATE EXACT ROUTING OF THE FEEDERS BETWEEN FIXTURES AND INTO THE BUILDING WITH THE FIELD CONDITIONS.
- COORDINATE FIXTURE MOUNTING IN THE BUILDING WITH THE EQUIPMENT, PIPING, ETC. MOUNT FIXTURE(S) SO AS TO AVOID THE EQUIPMENT, PIPING, AND ANY OTHER OBSTRUCTIONS.
- LOCATION FOR NEW ELECTRICAL SERVICE ENTRANCE, INCLUDING AUTOMATIC TRANSFER SWITCH (ATS) AND MAIN DISCONNECT. EQUIPMENT WILL BE MOUNTED ON THE EXTERIOR WALL OF THE PUMP BUILDING. COORDINATE LOCATIONS WITH THE FIELD CONDITIONS. INSTALL SUCH THAT MINIMUM WORKING CLEARANCES ARE MAINTAINED IN FRONT OF THE ATS AND DISCONNECT. REFER ALSO TO POWER RISER DIAGRAM, E5, FOR ADDITIONAL INFORMATION. SERVICE INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 70 AND UTILITY REQUIREMENTS. COORDINATE ELECTRICAL SERVICE REQUIREMENTS WITH UTILITY COMPANY AND OWNER.
- COORDINATE EXACT LOCATION AND REQUIREMENTS FOR THE PUMP EQUIPMENT WITH THE PUMP SUPPLIER/INSTALLER AND THE EQUIPMENT SUPPLIED PRIOR TO ROUGH-INS. FIELD COORDINATE LOCATIONS FOR ALL PANELS, ALARMS, CONTROLS, AND VARIABLE FREQUENCY DRIVES. ALSO FIELD COORDINATE ROUTING OF THE CONDUITS TO EACH PIECE OF EQUIPMENT. CONDUIT ROUTING SHALL NOT INTERFERE WITH THE PIPING. (TYPICAL)
- ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ALARM AND CONTROL WIRING WITH THE PUMP SYSTEM INSTALLER.
- COORDINATE EXACT LOCATION AND REQUIREMENTS FOR MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR AND THE EQUIPMENT SUPPLIED, PRIOR TO ROUGH-INS. REFER ALSO TO SCHEDULE OF CONTROL EQUIPMENT, E6, FOR ADDITIONAL INFORMATION.
- CONNECT EXTERIOR RECEPTACLES TO CIRCUIT PUMP-5. TYPICAL FOR (2) EXTERIOR RECEPTACLES.
- LOCATION FOR ELECTRICAL PANEL "PUMP". REFER TO POWER RISER DIAGRAM - WATER SYSTEM, E5, PANEL SCHEDULE, E6, FOR ADDITIONAL INFORMATION. MAINTAIN MINIMUM WORKING CLEARANCES, AS REQUIRED BY THE NEC.
- ELECTRICAL CONTRACTOR TO PROVIDE CONNECTIONS FOR ALL EQUIPMENT WITHIN THE PUMP BUILDING, INCLUDING, BUT NOT LIMITED TO, SENSORS, TRANSDUCERS, CONTROLS, ALARMS, COMMUNICATIONS AND THERMOSTAT. VERIFY THE EQUIPMENT AND ELECTRICAL REQUIREMENTS WITH THE WATER TANK PUMP SYSTEM SUPPLIER/INSTALLER.
- EXTERIOR STROBE FOR ALARMS. PROVIDE WEATHERPROOF, WALL-MOUNTED EXTERIOR STROBE, AS MANUFACTURED BY EDWARDS SIGNALING, 90 SERIES, OR EQUIVALENT. LIGHT SOURCE SHALL BE XENON. LIGHT SHALL BE RED LENS COLOR WITH EFFECTIVE LIGHT OUTPUT OF 90cd. FLASH RATE FOR STROBE SHALL BE 65ipm. MOUNT AT 72" AFG.
- EXTERIOR STEADY ON LIGHT FOR PUMP RUNNING. PROVIDE WEATHERPROOF, WALL-MOUNTED EXTERIOR LIGHT, AS MANUFACTURED BY EDWARDS SIGNALING, 125LED SERIES, OR EQUIVALENT. LIGHT SOURCE SHALL BE LED. LIGHT SHALL BE GREEN LENS COLOR. MOUNT AT 72" AFG.
- LOCATION FOR REMOTE GENERATOR ANNUNCIATOR PANEL. COORDINATE EXACT LOCATION WITH PARK MANAGER. INSTALL PER THE MANUFACTURER'S RECOMMENDATIONS.

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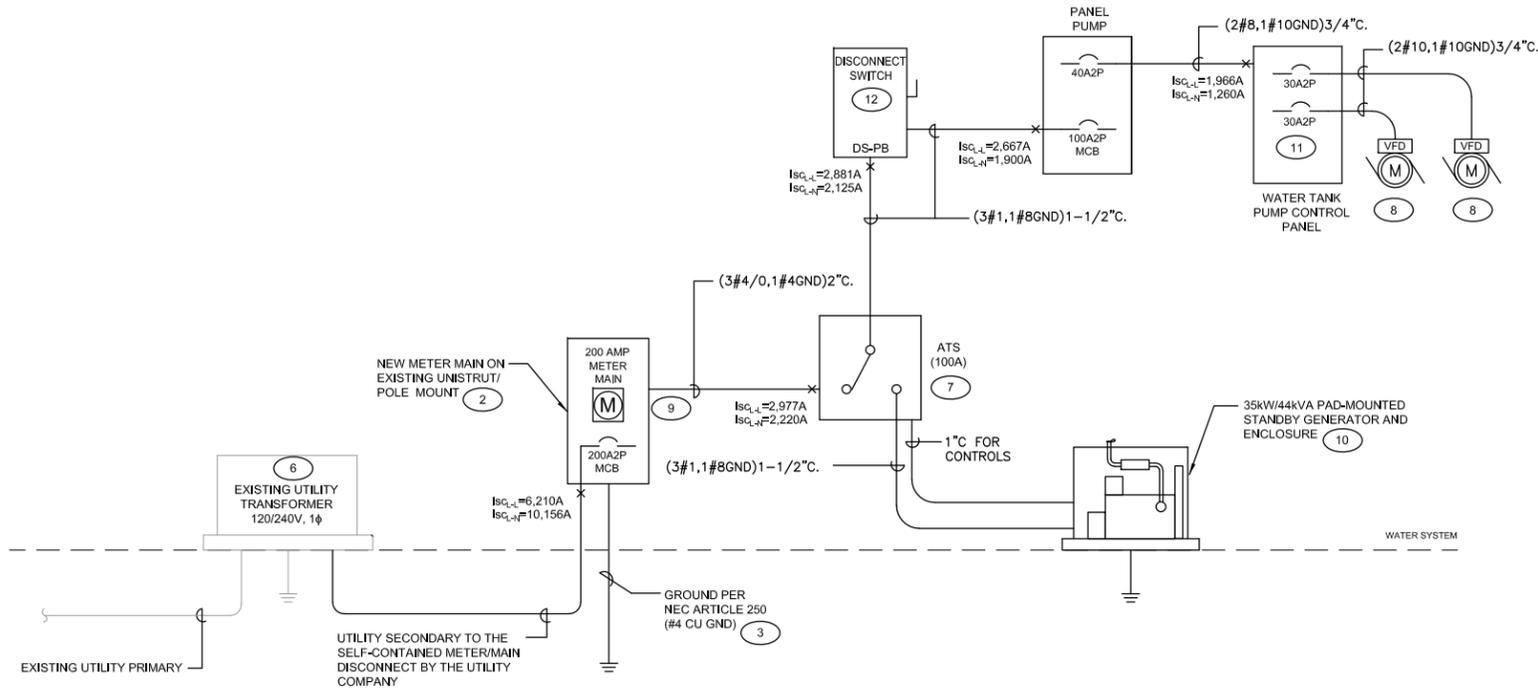
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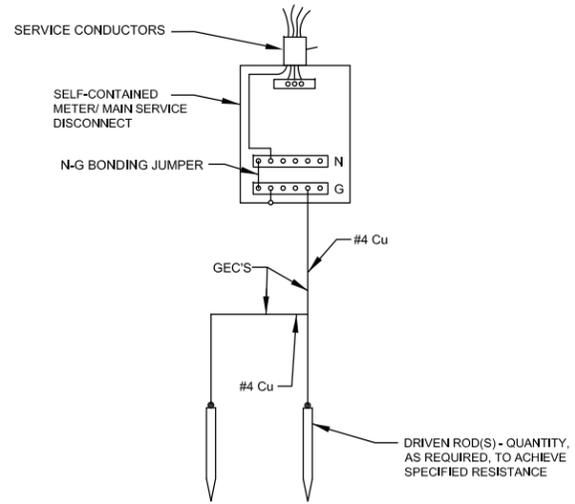
**MONTANA FISH WILDLIFE & PARKS
 HELL CREEK STATE PARK
 IMPROVEMENTS**

ENLARGED ELECTRICAL PLANS - PUMP BUILDING

SHEET NO.
E4



1 POWER RISER DIAGRAM - PUMP BUILDING **1 4 5**
 E5 NOT TO SCALE 120/240V 1PH 3W SN



2 GROUNDING ELECTRODE SYSTEM - WATER SYSTEM
 E5 NOT TO SCALE

GENERAL RISER DIAGRAM NOTES:

- COORDINATE ALL ELECTRIC SERVICE REQUIREMENTS WITH THE LOCAL SERVING UTILITY, McCONE ELECTRIC CO-OP, (406) 485-3430.
- PROVIDE SELF-CONTAINED METER/DISCONNECT, CONDUIT, GROUND RODS, ETC. CONFORMING WITH UTILITY COMPANY REGULATIONS AND NEC STANDARDS. UTILITY COMPANY WILL PROVIDE METER.
- GROUND IN STRICT ACCORDANCE WITH NEC ARTICLE 250.
- VERIFY LOCATIONS OF ALL UTILITY SERVICE EQUIPMENT AND THE UTILITY REQUIREMENTS PRIOR TO BIDDING.
- ALL CONDUITS NOT SHOWN SIZED ON THE DRAWINGS SHALL BE SIZED TO NOT EXCEED 40% FILL AND SHALL COMPLY WITH NEC REQUIREMENTS.
- CIRCUIT BREAKERS SHALL BE SERIES RATED FOR AVAILABLE FAULT CURRENTS.
- SEE FLAG NOTES, THIS SHEET, FOR FEEDER AND BRANCH CIRCUIT WIRING INFORMATION NOT DESIGNATED ON THE RISER DIAGRAM. REFER ALSO TO PANEL SCHEDULE, E6, FOR ADDITIONAL INFORMATION ON THE BRANCH CIRCUITS.
- SERVICE INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 70 AND UTILITY REQUIREMENTS.
- COORDINATE GENERATOR INSTALLATION WITH THE MANUFACTURER'S REPRESENTATIVE AND THE GENERAL CONTRACTOR.

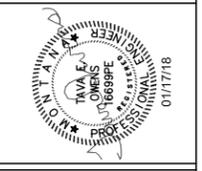
FLAG NOTES THIS SHEET:

- COORDINATE ALL NEW ELECTRICAL SERVICE REQUIREMENTS WITH UTILITY COMPANY AND OWNER PRIOR TO BID AND ADJUST BID ACCORDINGLY. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE 200A SELF-CONTAINED METER BASE WITH 200A DISCONNECT; GROUNDING AT THE METER MAIN; AND THE CONDUIT RISER. ALL SERVICE CONDUCTORS WILL BE PROVIDED AND INSTALLED BY THE UTILITY. THE UTILITY WILL ALSO PROVIDE AND INSTALL THE METER IN THE METER BASE.
- REPLACE EXISTING 100A METER MAIN WITH NEW 200A METER MAIN CONFORMING TO THE UTILITY COMPANY REQUIREMENTS. METER BASE MUST BE RATED FOR 200A WITH LUGS CAPABLE OF ACCEPTING #4/0 ALUMINUM WIRE. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE METER BASE AND GROUNDING AT THE METER BASE. COORDINATE WITH McCONE ELECTRIC CO-OP.
- CONNECT THE GROUND TO ALL AVAILABLE GROUNDING ELECTRODES INCLUDING DRIVEN GROUND ROD(S). REFER ALSO TO GROUNDING ELECTRODE SYSTEM DETAIL, THIS SHEET, FOR ADDITIONAL INFORMATION. GROUND RODS MUST HAVE A RESISTANCE TO GROUND OF 25 OHMS OR LESS OR ADDITIONAL RODS SHALL BE ADDED. MINIMUM (2) GROUND RODS SPACED A MINIMUM OF 20'-0" APART.
- REFER ALSO TO ELECTRICAL OVERALL SITE PLAN, E2, AND ELECTRICAL WATER SYSTEM PLAN, E3, FOR ADDITIONAL INFORMATION REGARDING THE INCOMING SERVICE.
- PROVIDE TEMPORARY SERVICE, AS REQUIRED, DURING CONSTRUCTION.
- EXISTING PAD-MOUNTED UTILITY TRANSFORMER. FIELD VERIFY LOCATION.
- AUTOMATIC TRANSFER SWITCH (ATS) SHALL BE RATED 100A, 120/240V, SINGLE PHASE, 3-WIRE, 60 HZ. THE ATS SHALL HAVE OPEN TRANSITION OPERATION. THE GENERATOR WILL NOT BE CONSIDERED A SEPARATELY DERIVED SYSTEM, THEREFORE SOLIDLY CONNECT THE NEUTRAL CONDUCTORS FOR THE ATS. PROVIDE THE ATS WITH 100 PERCENT FULLY RATED NEUTRAL CONDUCTOR PLATE AND 100 PERCENT FULLY RATED CONNECTORS.
- NEW 2HP SUBMERSIBLE WATER TANK PUMP. VARIABLE FREQUENCY DRIVE (VFD) PROVIDED BY THE PUMP SUPPLIER WITH THE PUMPS. E.C. TO FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH THE INSTALLER AND THE EQUIPMENT PROVIDED. PROVIDE ALL WIRE, CONDUIT, ANCHOR BOLTS, TEMPLATES, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION OF THE SYSTEM. E.C. TO PROVIDE THE ELECTRICAL CONNECTIONS. TYPICAL FOR (2) PUMPS.
- CONNECT SERVICE FOR NEW PUMP BUILDING TO THE LUGS OF THE NEW METER MAIN. ALSO RE-ESTABLISH CONNECTION FOR THE EXISTING FISH CLEANING STATION PANEL TO THE NEW METER MAIN. COORDINATE ALL POWER OUTAGES WITH THE PARK MANAGER AT LEAST 72 HOURS PRIOR TO THE OUTAGE. MINIMIZE ALL OUTAGES BY INSTALLING ALL NEW CONDUIT, WIRE, GROUNDING, ETC. PRIOR TO THE TRANSFER OVER TO THE NEW METER MAIN.
- INSTALL GENERATOR PER MANUFACTURER'S RECOMMENDATIONS. REFER ALSO TO THE ELECTRICAL WATER SYSTEM PLAN, E3, AND ELECTRICAL DETAILS, E11, FOR ADDITIONAL INFORMATION. PROVIDE ALL POWER AND CONTROL CONNECTIONS BETWEEN GENERATOR SET, TRANSFER SWITCH, GENERATOR ANNUNCIATION AND ASSOCIATED EQUIPMENT REQUIRED FOR A FULLY AND PROPERLY OPERATING SYSTEM. VERIFY ALL WIRING REQUIREMENTS WITH THE GENERATOR SET MANUFACTURER PRIOR TO BID AND ADJUST BID ACCORDINGLY. GENERATOR PAD SHALL COMPLY WITH GENERATOR MANUFACTURER RECOMMENDATIONS AND EXTEND MINIMUM 6 INCHES BEYOND DIMENSIONS OF THE UNIT. GENERATOR MUST BE PROVIDED WITH AN INTEGRAL DISCONNECTING MEANS. THE GENERATOR WILL BE REQUIRED TO ACCOMMODATE THE INRUSH OF THE MOTORS AT A 20% VOLTAGE DIP (NOMINAL). REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CONTROL PANEL PROVIDED WITH THE WATER TANK DUPLEX SUBMERSIBLE PUMPS.
- PROVIDE LABEL ON THE DISCONNECT SWITCH THAT CLEARLY INDICATES WHERE THE SERVICE FEEDING THE BUILDING IS COMING FROM, AS REQUIRED.

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 HELL CREEK STATE PARK
 IMPROVEMENTS**

POWER RISER DIAGRAM - WATER SYSTEM