

January 23, 2019



DePauli Engineering
307 S. 4th Street
2nd Floor
Gallup, NM 87301

Attn: Mr. Marc DePauli, P.E.

Re: Mexican Hat – Halchita WRF
Electrical Field Order No.1 (Underground Secondary Conduit)

Dear Marc,

NTUA reviewed our electrical plans in order to prepare their electrical service design and is requesting that the existing overhead secondary conductors between the pole mounted utility transformers and the service entrance section be replaced with new underground conduit and conductors. As a result, the following changes to the construction documents are required.

Drawing E2- Electrical Site Plan:

1. Replace the original drawing with the attached drawing having Revision 1 changes clouded.

Drawing E3 – Single Line Plan:

1. Replace the original drawing with the attached drawing having Revision 1 changes clouded.

Drawing E5- Conduit and Conductor Schedule

1. Replace the original drawing with the attached drawing having Revision 1 changes clouded. The revised drawing reflects conduit and conductor modifications indicated herein.

Drawing E6- Treatment Building Electrical Plan

1. Replace the original drawing with the attached drawing having Revision 1 changes clouded.

Drawing E7- Enlarged Treatment Room Power Plan

1. Replace the original drawing with the attached drawing having Revision 1 changes clouded.

Please forward this Field Order onto the Contractor and contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jorge Gerardo", written over a horizontal line.

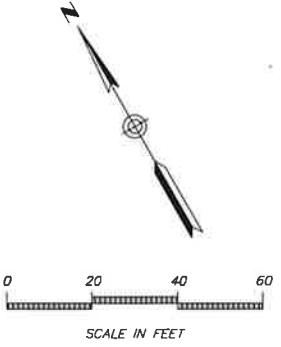
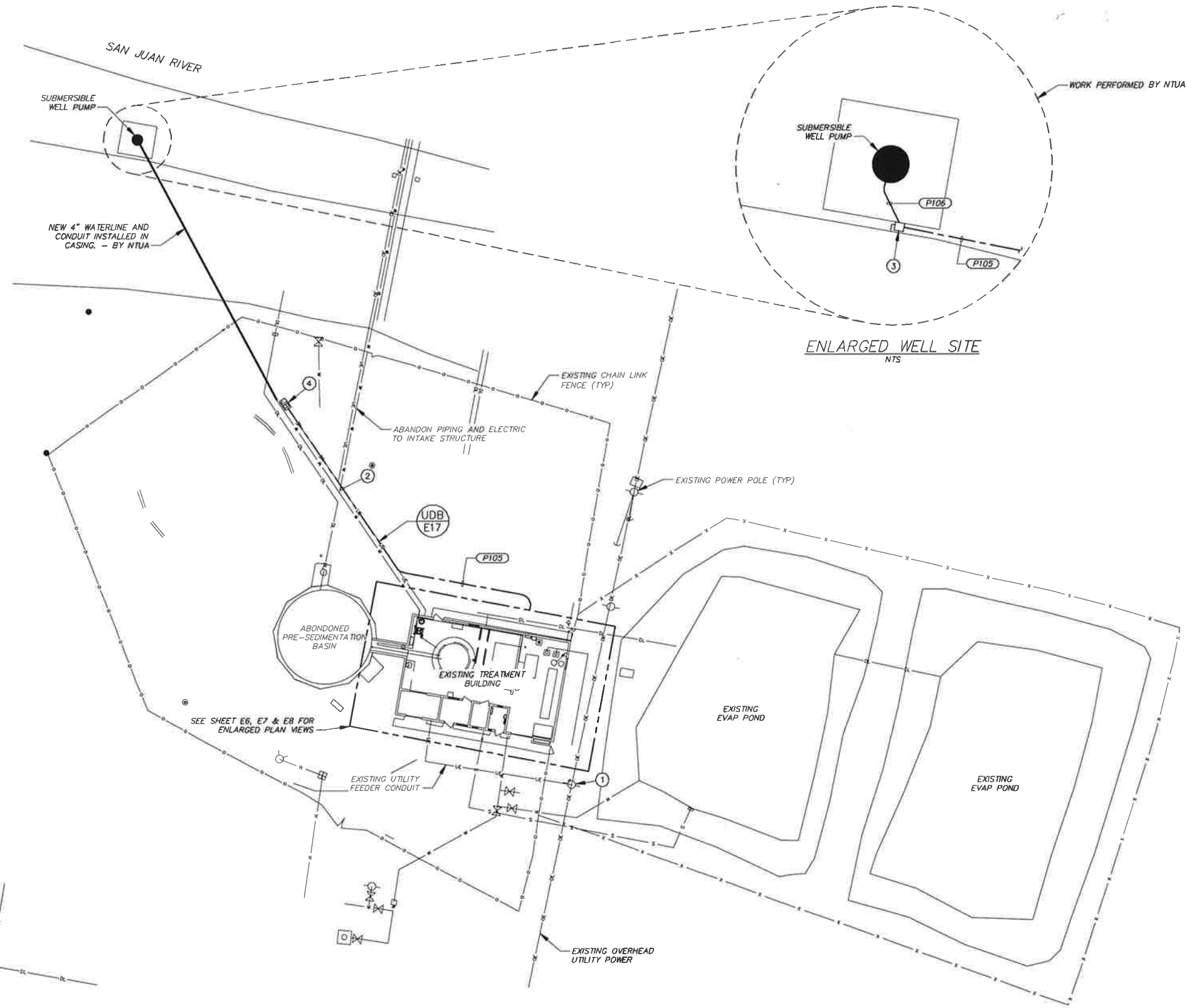
Jorge Gerardo, P.E.
Project Electrical Engineer

GENERAL NOTES

- A. SEE SHEET E5 FOR CONDUIT AND CONDUCTOR SCHEDULE.
- B. ALL CONDUIT RISERS TRANSITIONING FROM BELOW GRADE SHALL BE PVC COATED RIGID CONDUIT. RISERS SHALL INCLUDE AN ELBOW TO ATTACH TO PVC FITTING/CONDUIT AND EXTEND 6" MINIMUM AFG.


KEY NOTES

- 1. EXISTING UTILITY TRANSFORMERS. COORDINATE WITH NTUA TO DISCONTINUE POWER TO REMOVE EXISTING METER, SERVICE MAST, CONDUIT, CONDUCTORS AND WEATHERHEAD.
- 2. INSTALL ELECTRICAL CONDUIT IN JOINT-USE TRENCH WITH WATERLINE PER DETAIL ON CIVIL PLANS.
- 3. INSTALL DISCONNECT SWITCH PER DETAIL "D" ON SHEET E17. DISCONNECT SHALL BE CAPABLE OF BEING LOCKED IN THE ON AND OFF POSITION.
- 4. INSTALL UNDERGROUND JUNCTION BOX PER DETAIL "UJB" ON SHEET E17. CONDUIT AND CONDUCTORS BETWEEN JUNCTION BOX AND WELL WILL BE INSTALLED BY NTUA.



| NO. | BY | DATE | |
|-----|-----|---------|-------------------------------------|
| 1 | DAR | 1-22-19 | ELECTRICAL SERVICE CHANGES PER NTUA |
| | | | |
| | | | |



| NO. | BY | DATE | |
|---|-----|---------|-------------------------------------|
|  | DAR | 1-22-19 | ELECTRICAL SERVICE CHANGES PER NTUA |
| | | | |
| | | | |

CONDUIT AND CONDUCTOR SCHEDULE

SCALE: AS SHOWN
DATE: DECEMBER 2018
DRAWN BY: BB
CHECKED BY: JLG

SHEET
E5

GENERAL DEMOLITION NOTES

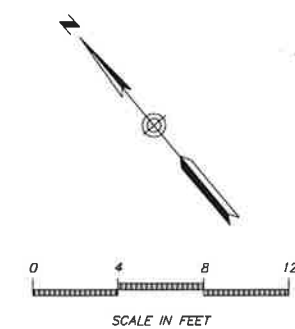
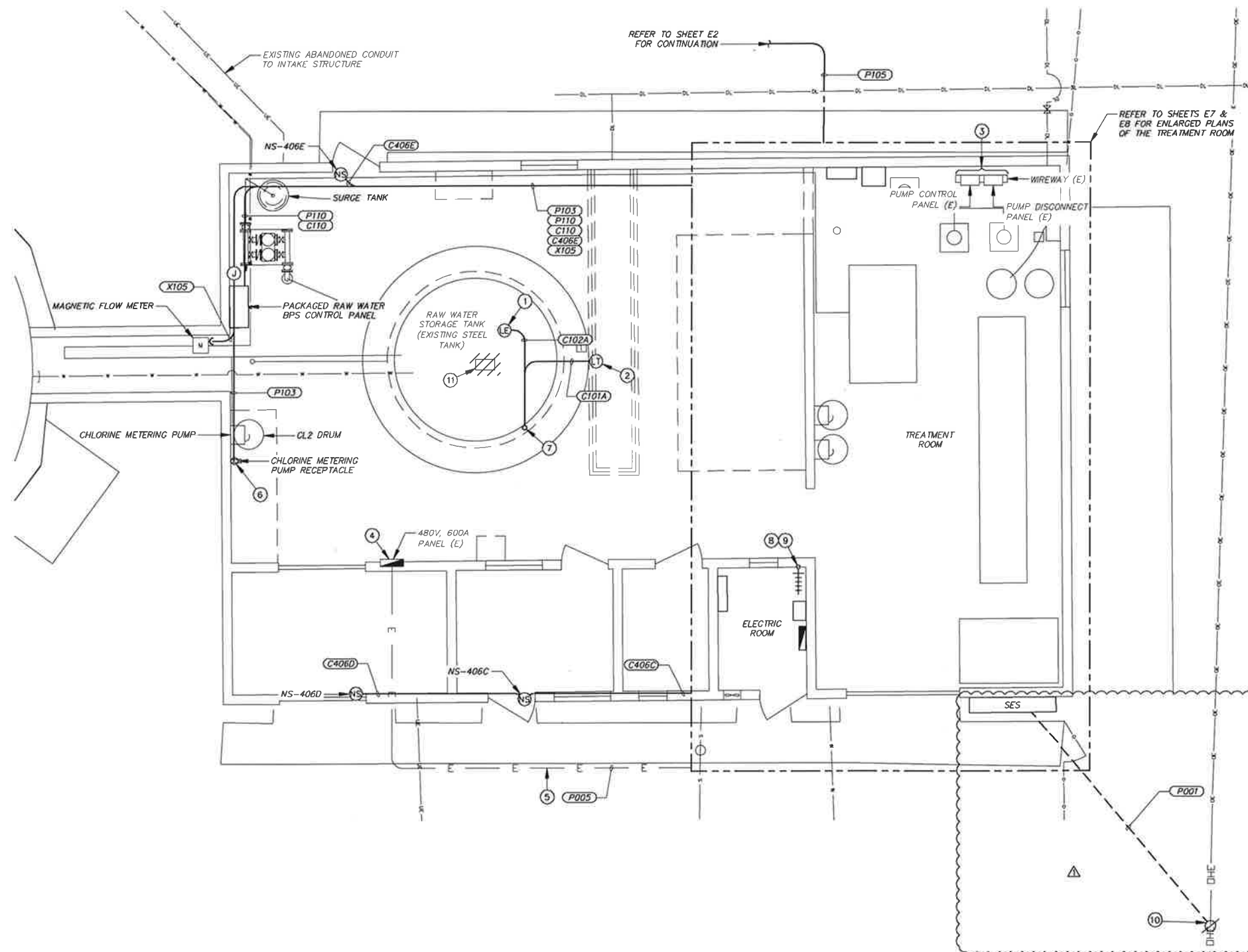
- DISCONNECT AND REMOVE ALL CONDUCTORS. DEMOLITION OF CONDUITS INCLUDES REMOVAL AND DISPOSAL OF EXISTING EXPOSED CONDUITS.
- ALL REMOVED MATERIAL NOT BEING SALVAGED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR REMOVAL AND DISPOSAL.
- ALL DEMOLISHED AND REMOVED MATERIAL SHALL BE HAULED OFF SITE AND DISPOSED OF AT AN APPROVED LANDFILL, OR OTHER APPROVED LOCATION.
- THE CONTRACTOR SHALL PERFORM ALL WORK ON THIS PROJECT WHILE THE EXISTING FACILITIES AND SURROUNDING UTILITIES ARE OPERATING. ALL CONNECTIONS OF NEW WORK TO EXISTING FACILITIES SHALL BE PERFORMED IN A MANNER TO MINIMIZE DOWN TIMES, OPERATIONAL UPSETS AND AS SPECIFIED AND SHOWN ON THESE SHEETS.

GENERAL NOTES

- ALL EXPOSED CONDUITS TO BE TYPE IMC.
- ALL BRANCH CIRCUIT CONDUCTORS TO BE STRANDED COPPER TYPE THHN. SIZE SHALL BE #12 AWG WITH #12 GROUND UNLESS OTHERWISE INDICATED.
- ALL 120V RECEPTACLES TO BE INSTALLED +18" ABOVE FINISHED FLOOR/GRADE UNLESS OTHERWISE INDICATED.
- SEE SHEET E5 FOR CONDUIT AND CONDUCTOR SCHEDULE.
- FURNISH AND INSTALL 3/4" CONDUITS, FITTINGS, PULL BOX, ETC AS REQUIRED FOR RECEPTACLES AND EQUIPMENT. USE #10 AWG CONDUCTORS WITH #10 AWG GND FOR 30A AND 25A CIRCUITS. USE #12 AWG CONDUCTORS WITH #12 AWG GND FOR 20A CIRCUITS. DO NOT EXCEED 6 CURRENT CARRYING CONDUCTORS PER CONDUIT.
- SEE SHEET E17 FOR ELECTRICAL DETAILS.

KEY NOTES

- INSTALL LEVEL PROBE HOLDER (LE-101) ON EXISTING STRUCTURE.
- INSTALL LEVEL TRANSMITTER (LT-101) ON EXISTING 1/2" SAMPLE LINE.
- DEMOLISH (2) EXISTING PANELS IN THIS AREA. DEMOLISH ASSOCIATED WIREWAY AND CONDUCTORS BACK TO SOURCE.
- REMOVE EXISTING UTILITY FEED CONDUCTORS FEEDING THIS PANEL.
- RECONNECT FEEDER CONDUIT TO NEW SERVICE ENTRANCE SECTION. PULL NEW CONDUCTORS FROM SES TO 480V DISTRIBUTION PANEL PER CONDUIT AND CONDUCTOR SCHEDULE ON SHEET E5.
- INSTALL A 120V, 20A SIMPLEX RECEPTACLE OUTLET AT CL2 DRUM LOCATION.
- TRANSITION CONDUITS C101A AND C102A TO EXISTING WIREWAY. EXTEND CABLES AND/OR CONDUCTORS THROUGH WIREWAY TO ASSOCIATED CONDUITS AT ELECTRICAL ROOM. SEE SHEET E7 FOR LOCATION OF CONDUITS C101 AND C102.
- CORE DRILL THROUGH THE UPPER LEVEL WALL, EXTEND THE ANTENNA HELIAX CABLE IN A 1-1/2" RIGID CONDUIT 10 FEET ABOVE ROOF. THIS HEIGHT IS SUBJECT TO CHANGE PENDING RESULTS OF THE RADIO PATH STUDY PERFORMED BY NTUA.
- INSTALL ANTENNA PER DETAIL "ANT" ON SHEET E18.
- EXISTING POLE MOUNTED TRANSFORMERS. EXTEND CONDUIT AND CONDUCTORS UP POLE AND TERMINATE IN A WEATHERHEAD PER NTUA REQUIREMENTS. COORDINATE WITH NTUA TO DISCONTINUE POWER.
- DISCONNECT AND REMOVE TANK ROTOR CONTROL CABINET AND CONDUIT AND CONDUCTORS BACK TO IT SOURCE.



DARCOR
ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
TEL: (602) 795-3899
WWW.DARCORINC.COM



SCALE: AS SHOWN
DATE: DECEMBER 2018
DRAWN BY: BB
CHECKED BY: JLG

SHEET
E6

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505) 883-5440 WWW.DEPAULIENGINEERING.COM

for the
**NAVAJO TRIBAL
UTILITY AUTHORITY**
FORT DEFENCE, ARIZONA

| NO. | BY | DATE |
|-------------------------------------|-----|---------|
| 1 | DAR | 1-22-19 |
| ELECTRICAL SERVICE CHANGES PER NTUA | | |

NTUA
HALCHITA WATER TREATMENT PLANT
MEXICAN HAT, UTAH

**TREATMENT BUILDING
ELECTRICAL PLAN**

Saved: January 22, 2019 File: 16066-E6.dwg Drafter: Brandon Rickard

GENERAL DEMOLITION NOTES

- DISCONNECT AND REMOVE ALL CONDUCTORS. DEMOLITION OF CONDUITS INCLUDES REMOVAL AND DISPOSAL OF EXISTING EXPOSED CONDUITS.
- ALL REMOVED MATERIAL NOT BEING SALVAGED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR REMOVAL AND DISPOSAL.
- ALL DEMOLISHED AND REMOVED MATERIAL SHALL BE HAULED OFF SITE AND DISPOSED OF AT AN APPROVED LANDFILL, OR OTHER APPROVED LOCATION.
- THE CONTRACTOR SHALL PERFORM ALL WORK ON THIS PROJECT WHILE THE EXISTING FACILITIES AND SURROUNDING UTILITIES ARE OPERATING. ALL CONNECTIONS OF NEW WORK TO EXISTING FACILITIES SHALL BE PERFORMED IN A MANNER TO MINIMIZE DOWN TIMES, OPERATIONAL UPSETS AND AS SPECIFIED AND SHOWN ON THESE SHEETS.

GENERAL NOTES

- ALL EXPOSED CONDUITS TO BE TYPE IMC.
- ALL BRANCH CIRCUIT CONDUCTORS TO BE STRANDED COPPER TYPE THHN. SIZE SHALL BE #12 AWG WITH #12 GROUND UNLESS OTHERWISE INDICATED.
- ALL 120V RECEPTACLES TO BE INSTALLED +18" ABOVE FINISHED FLOOR/GRADE UNLESS OTHERWISE INDICATED.
- SEE SHEET E5 FOR CONDUIT AND CONDUCTOR SCHEDULE.
- FURNISH AND INSTALL 3/4" CONDUITS, FITTINGS, PULL BOX, ETC AS REQUIRED FOR RECEPTACLES AND EQUIPMENT. USE #10 AWG CONDUCTORS WITH #10 AWG GND FOR 30A AND 25A CIRCUITS. USE #12 AWG CONDUCTORS WITH #12 AWG GND FOR 20A CIRCUITS. DO NOT EXCEED 6 CURRENT CARRYING CONDUCTORS PER CONDUIT.
- SECURE CONDUITS TO RAFTERS AND CMU WALLS USING SHALLOW STRUT AND CONDUIT CLAMPS.
- SEE SHEETS E17 & E18 FOR ELECTRICAL DETAILS AND ELEVATIONS.

KEY NOTES

- INSTALL LEVEL ELEMENT AND LEVEL TRANSMITTER ON NEW BLIND FLANGE.
- INSTALL NEW SES, CONDUIT AND CONDUCTORS BACK TO NEW WEATHERHEAD. COORDINATE WITH NTUA FOR REQUIRED CONDUCTOR LENGTHS FROM WEATHERHEAD TO POLE-MOUNTED TRANSFORMERS, AND FOR RECONNECTION OF POWER.
- REMOVE EXISTING WIRE TROUGH BACK TO WEST WALL OF TREATMENT ROOM. COVER OPENING WITH 10GA METAL MINIMUM.
- EXTEND A 3/4" CONDUIT FROM OVERHEAD TO A JUNCTION BOX MOUNTED ON A STRUT STAND, EXTEND 1/2" LPMC TO EACH PRESSURE SWITCH.
- DIG DOWN BELOW GRADE AND INTERCEPT EXISTING FEEDER CONDUIT. REROUTE CONDUIT FROM THE EXISTING 480V DISTRIBUTION PANEL TO THE NEW SES. DEMOLISH THE EXISTING CONDUIT BACK TO THE POWER POLE.
- TRANSITION CONDUITS C101 AND C102 INTO THE EXISTING WIREWAY. EXTEND CONDUCTORS THROUGH WIREWAY TO CONDUITS C101A AND C102A AT THE RAW WATER STORAGE TANKS. SEE SHEET E6 FOR CONDUIT C101A AND C102A CONDUIT LOCATION.
- SURFACE MOUNTED 4" X 4" X 4" NEMA 1 JUNCTION BOX TO THE CMU WALL.
- INSTALL 12" X 12" X 6" NEMA 1 JUNCTION BOXES ABOVE EXISTING PIPING AND TRANSITION ALL CONDUITS INSTALLED OVERHEAD IN ELECTRIC ROOM TO THE TREATMENT ROOM. EXTEND CONDUITS FROM JUNCTION BOXES TO BE ROUTED OVERHEAD OR WALL MOUNTED IN THE TREATMENT ROOM.
- SURFACE MOUNT A 4" X 4" X 4" NEMA 3R JUNCTION BOX ON THE CMU WALL. EXTEND CONDUITS AND CONDUCTORS TO RECEPTACLE LOCATIONS SO THAT CHEMICAL PUMPS CAN BE PLUGGED INTO THE DESIGNATED RECEPTACLE.

