

N:\2016\016-0039 Winterhaven WTP & Wastewater Improvements\DWG\016-0039 Winterhaven Sewer Imp_C8.dwg



LEGEND

---	EXISTING CENTER LINE
---	EXISTING RIGHT OF WAY LINE
[Hatched Box]	EXISTING BUILDING
[Hatched Box]	EXISTING ASPHALT PAVEMENT
[Dotted Box]	EXISTING CONCRETE
[Symbol]	EXISTING GUY WIRE POLE
[Symbol]	EXISTING WATER VALVE
[Symbol]	EXISTING SEWER MANHOLE
[Symbol]	EXISTING FIRE HYDRANT
[Symbol]	EXISTING POWER POLE
[Symbol]	EXISTING WATER METER
[Symbol]	EXISTING TELEPHONE JUNCTION BOX

SCHEDULE OF WORK

1	REPLACE EXISTING SEWER MANHOLE.....	SEE DETAIL	A C8	B C9
2	REPLACE EXISTING ELECTRICAL PANEL.....	SEE DETAIL	C C8	



WINTERHAVEN WATER/SEWER IMPROVEMENT

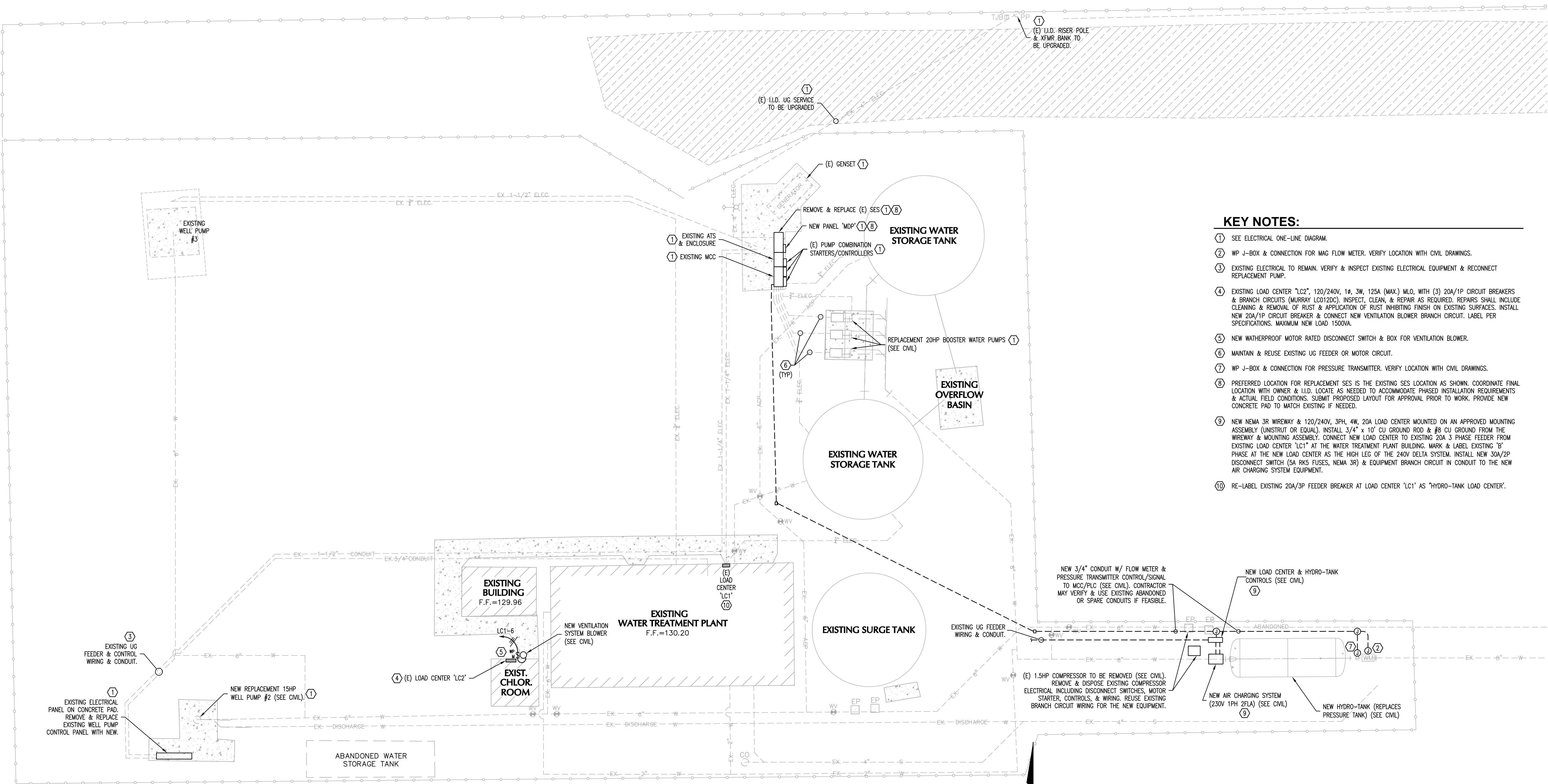
SEWER SYSTEM SITE PLAN

NEI
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SCALE: AS SHOWN
DATE: MARCH, 2018
DES. BY: EG
DRAWN BY: ZF
SURVEYED BY: RS
JOB. No.: 016-0039
SHEET 9 OF 16

C8

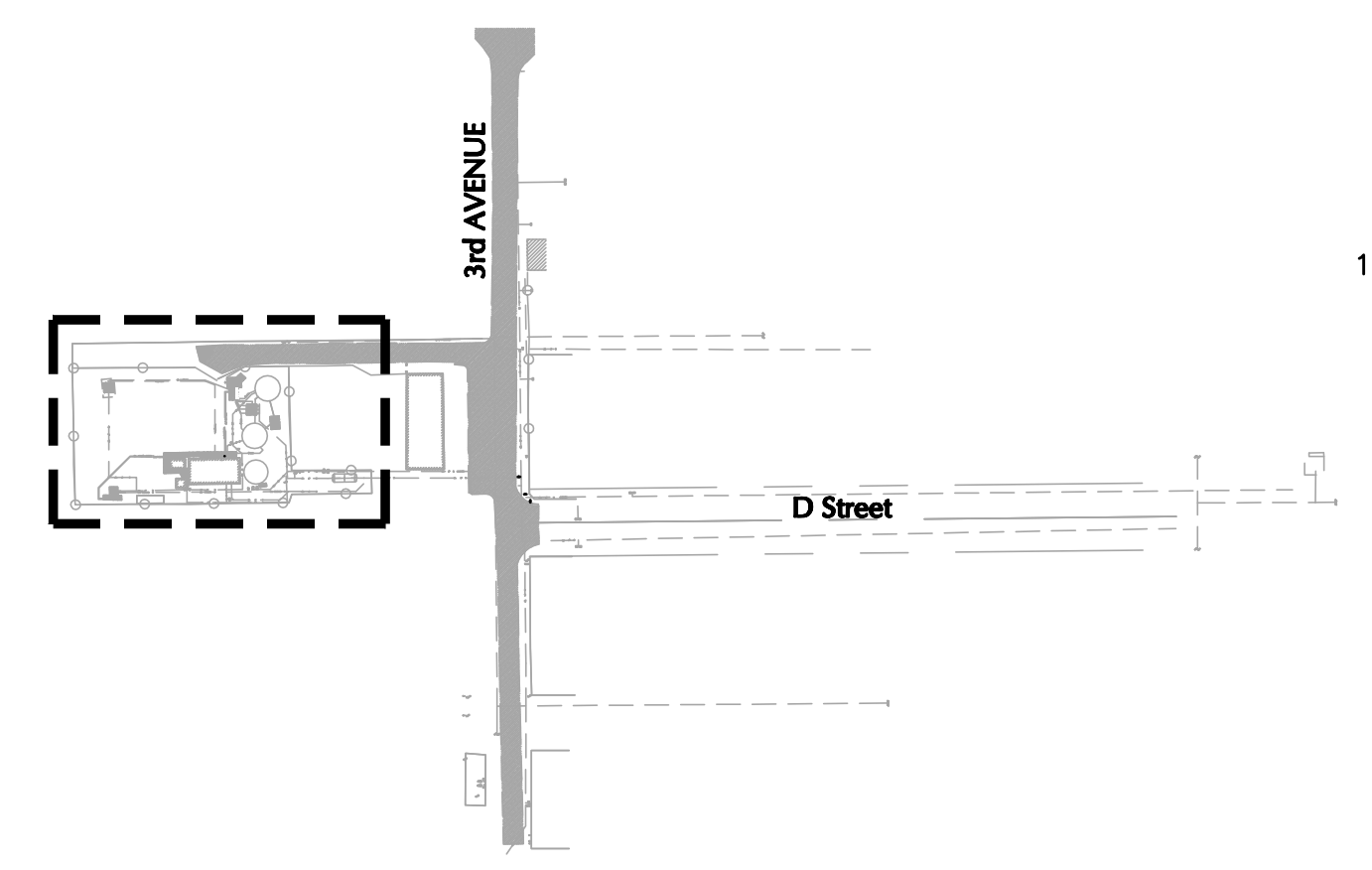
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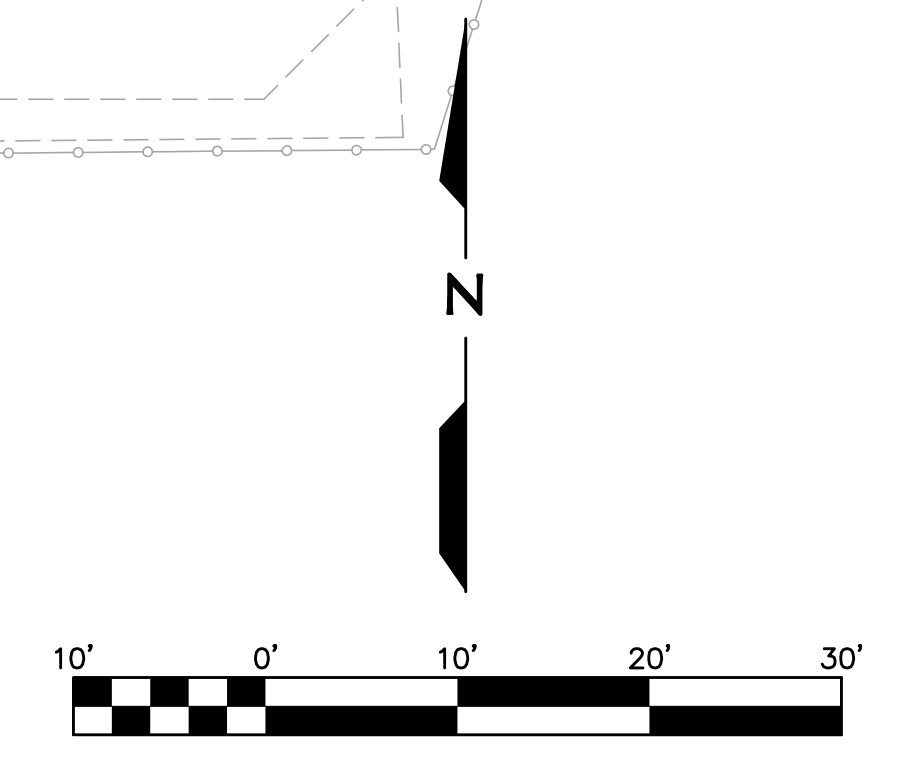
- KEY NOTES:**
- SEE ELECTRICAL ONE-LINE DIAGRAM.
 - WP J-BOX & CONNECTION FOR MAG FLOW METER. VERIFY LOCATION WITH CIVIL DRAWINGS.
 - EXISTING ELECTRICAL TO REMAIN. VERIFY & INSPECT EXISTING ELECTRICAL EQUIPMENT & RECONNECT REPLACEMENT PUMP.
 - EXISTING LOAD CENTER "LC2", 120/240V, 1A, 3W, 125A (MAX.) MLO, WITH (3) 20A/1P CIRCUIT BREAKERS & BRANCH CIRCUITS (MURRAY L00120C). INSPECT, CLEAN, & REPAIR AS REQUIRED. REPAIRS SHALL INCLUDE CLEANING & REMOVAL OF RUST & APPLICATION OF RUST INHIBITING FINISH ON EXISTING SURFACES. INSTALL NEW 20A/1P CIRCUIT BREAKER & CONNECT NEW VENTILATION BLOWER BRANCH CIRCUIT. LABEL PER SPECIFICATIONS. MAXIMUM NEW LOAD 1500VA.
 - NEW WATERPROOF MOTOR RATED DISCONNECT SWITCH & BOX FOR VENTILATION BLOWER.
 - MAINTAIN & REUSE EXISTING UG FEEDER OR MOTOR CIRCUIT.
 - WP J-BOX & CONNECTION FOR PRESSURE TRANSMITTER. VERIFY LOCATION WITH CIVIL DRAWINGS.
 - PREFERRED LOCATION FOR REPLACEMENT SES IS THE EXISTING SES LOCATION AS SHOWN. COORDINATE FINAL LOCATION WITH OWNER & I.L.D. LOCATE AS NEEDED TO ACCOMMODATE PHASED INSTALLATION REQUIREMENTS & ACTUAL FIELD CONDITIONS. SUBMIT PROPOSED LAYOUT FOR APPROVAL PRIOR TO WORK. PROVIDE NEW CONCRETE PAD TO MATCH EXISTING IF NEEDED.
 - NEW NEMA 3R WIREWAY & 120/240V, 3PH, 4W, 20A LOAD CENTER MOUNTED ON AN APPROVED MOUNTING ASSEMBLY (UNISTRUT OR EQUAL). INSTALL 3/4" x 10" CU GROUND ROD & #8 CU GROUND FROM THE WIREWAY & MOUNTING ASSEMBLY. CONNECT NEW LOAD CENTER TO EXISTING 20A 3 PHASE FEEDER FROM EXISTING LOAD CENTER "LC1" AT THE WATER TREATMENT PLANT BUILDING. MARK & LABEL EXISTING "B" PHASE AT THE NEW LOAD CENTER AS THE HIGH LEG OF THE 240V DELTA SYSTEM. INSTALL NEW 30A/2P DISCONNECT SWITCH (SA RKS FUSES, NEMA 3R) & EQUIPMENT BRANCH CIRCUIT IN CONDUIT TO THE NEW AIR CHARGING SYSTEM EQUIPMENT.
 - RE-LABEL EXISTING 20A/3P FEEDER BREAKER AT LOAD CENTER "LC1" AS "HYDRO-TANK LOAD CENTER".

- ELECTRICAL GENERAL NOTES:**
- ALL MATERIALS AND WORKMANSHIP TO BE NEW AND OF FIRST RATE QUALITY. MATERIALS TO BE UL LISTED AND APPROVED. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND ANY OTHER STATE AND LOCAL APPLICABLE CODES.
 - ALL CEILING, FLOOR, AND WALL PENETRATIONS AND BOXES SHALL BE CAULKED/SEALED TO PRESERVE FIRE RATINGS AND WATER PROOF INTEGRITY.
 - ALL ELECTRICAL CONDUCTORS SHALL BE COPPER, 90 DEGREE C TEMPERATURE RATING, MINIMUM SIZE IS NO. 12 AWG. ALL WIRING SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED ON THE DRAWINGS. UNDERGROUND CONDUCTORS MUST BE RATED FOR 90 DEGREE C AS DEFINED FOR "WET LOCATION" BY THE NEC UNLESS NOTED OTHERWISE.
 - A. ALL CONDUIT SHALL BE METALLIC ELECTRICAL CONDUIT UNLESS NOTED OTHERWISE ON THE DRAWINGS. MINIMUM SIZE CONDUIT IS 1/2". ALL CONDUITS AND BOXES SHALL BE CONCEALED ABOVE CEILINGS, IN WALLS OR UNDER FLOORS AS REQUIRED OR AS NOTED OTHERWISE ON THE DRAWINGS.
B. UNDERGROUND CONDUIT SHALL BE MINIMUM OF SCHEDULE 40 PVC, 90 DEGREE C. RATED WITH MINIMUM OF TRENCH COVER PER NEC TABLE 300-5. ALL UNDERGROUND JUNCTION/PULL BOXES SHALL BE RATED THE SAME AS THE ASSOCIATED CONDUIT, MINIMUM SIZE UNDERGROUND CONDUIT IS 3/4".
 - THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF CONDUIT, WIRING, ELECTRICAL EQUIPMENT AND ASSOCIATED HARDWARE WITH THE INSTALLATION OF THE MECHANICAL EQUIPMENT AND OTHER TRADES. SEE THE MECHANICAL/CIVIL PLANS FOR EXACT LOCATIONS.
 - THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND INSTALLATION OF EXISTING SERVING ELECTRICAL TELEPHONE/TV COMPANY SYSTEMS AND SERVICE EQUIPMENT. UNDERGROUND TRENCH LOCATIONS MUST BE VERIFIED BY THE SERVING UTILITY. CONTACT WITH THE SERVING UTILITIES IS REQUIRED PRIOR TO INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR EXISTING FIELD CONDITIONS AND PROVIDING A FULL FUNCTIONING ELECTRICAL SYSTEM.
 - ALL LIGHT FIXTURES, RECEPTACLE AND JUNCTION BOXES, PANEL BOARDS AND ALL OTHER METALLIC ELECTRICAL APPLIANCES AND DEVICES MUST BE GROUNDED AS REQUIRED BY SECTION 250 OF THE NATIONAL ELECTRICAL CODE.
 - MATERIALS & INSTALLATION SHALL COMPLY WITH REQUIREMENTS FOR INSTALLATION IN SEISMIC ZONE 4/DESIGN CATEGORY D.

ELECTRICAL SITE PLAN



KEY MAP
N.T.S.

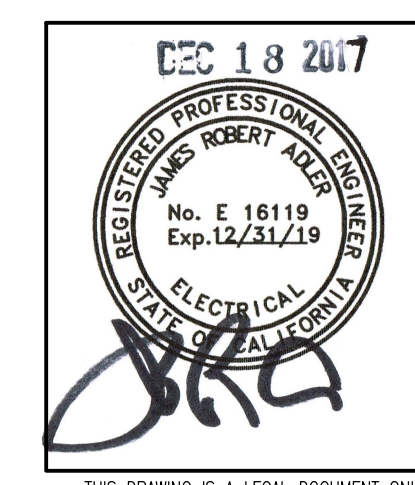


NO WORK SHALL BE DONE ON THIS SITE UNTIL BELOW AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE.

Underground Service Alert
Call: TOLL FREE
811

TWO WORKING DAYS BEFORE YOU DIG.

REVISIONS:
▽ 11/29/17, REVISED SCOPE OF WORK, J.R.A.



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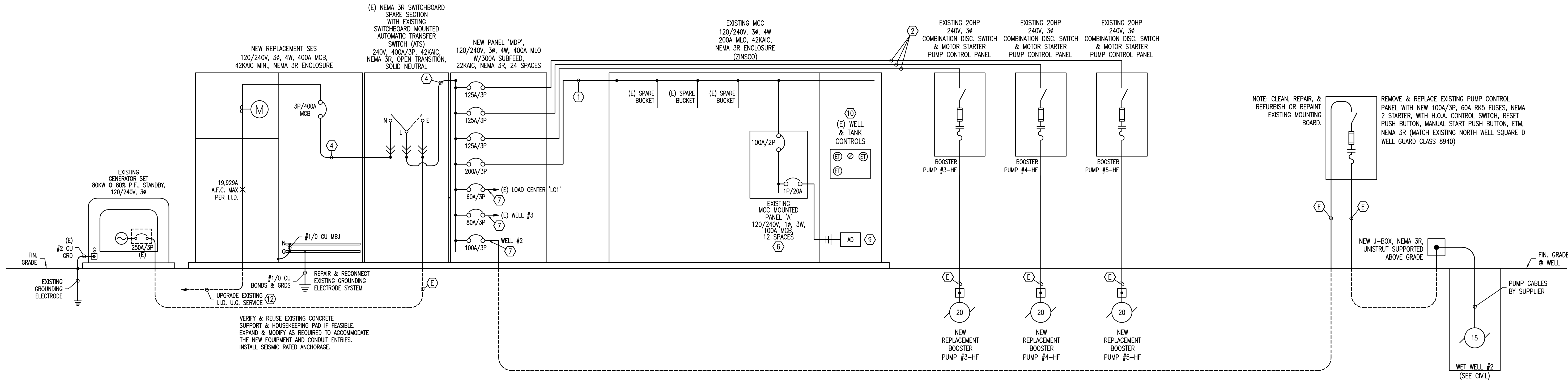
JOB. No.: 16-036

WINTERHAVEN WATER TREATMENT PLANT

W.T.P. ELECTRICAL SITE PLAN

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SCALE: AS SHOWN	E-1
DATE: JUNE, 2016	
DES. BY: JRA	
DRAWN BY: VED	
SURVEYED BY: RS	
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ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

KEY NOTES :

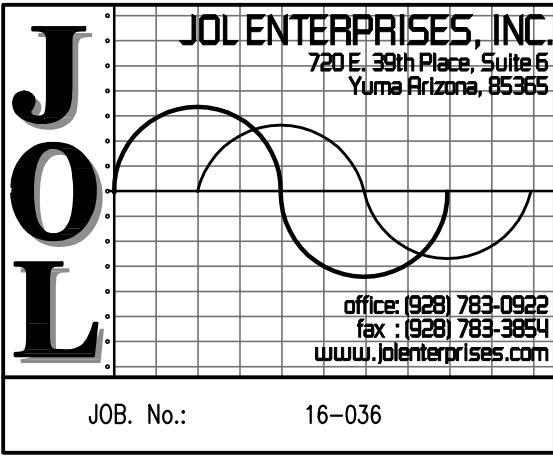
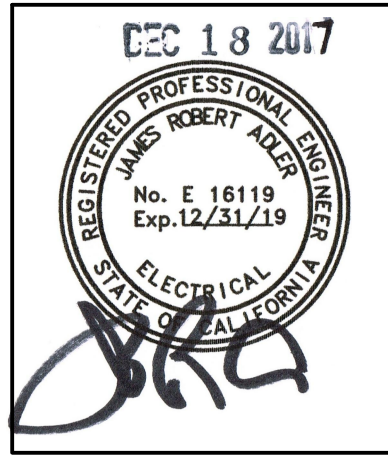
- (3) #4/0 CU THWN-2, (1) #1 CU THWN-2 NEUTRAL, (1) #6 CU GRD, 2" CONDUIT.
- VERIFY EXISTING MOTOR CIRCUIT. PROVIDE NEW WIRE & CONDUIT AS REQUIRED TO RELOCATE MOTOR CIRCUIT TO NEW PANEL MOTOR CIRCUIT BREAKER. (3) #4 CU THWN-2, (1) #6 CU GRD, 1" CONDUIT.
- NOT USED.
- (3) 600 MCM CU THHN, (1) #4/0 CU THHN NEUTRAL, (1) #1/0 CU GRD.
- NOT USED.
- EXISTING BRANCH CIRCUIT BREAKERS (20A/1P LIGHTING; 20A/1P BOOSTER CONTROL; 20A/1P BOOSTER WELL CONTROL; 20A/1P GENSET BATTERY CHARGER; 20A/1P OUTDOOR RECEPTACLES; 60A/2P WELDER/EQUIPMENT RECEPTACLE; 20A/1P SPARE). CONNECT NEW BRANCH CIRCUIT AS SHOWN.
- RELOCATE EXISTING FEEDER FROM EXISTING EQUIPMENT TO NEW EQUIPMENT.
- NOT USED.
- NEW AUTO DIALER PER OWNER NEEDS & REQUIREMENTS. AUTODIALER TO MONITOR ALARM CONDITIONS INCLUDING HIGH & LOW WATER LEVEL CONDITIONS, PUMP FAILURES, & ATS/GENSET ALARM CONDITIONS. MINIMUM 8 MONITOR INPUTS, PLC INTERFACE, SOLID STATE MESSAGE RECORDING, 120V W/ BATTERY BACKUP. PROVIDE PHONE LINES IN CONDUIT AND CONNECT TO NEAREST AVAILABLE TELEPHONE LINES OR PROVIDE ALTERNATE CELLULAR OPTION. (RACD VERBATIM OR EQUAL.)
- EXISTING WELL PUMP & TANK LEVEL CONTROLS. VERIFY EXISTING PUMP CONTROLS INCLUDING TANK LEVEL CONTROLLED START/STOP, TANK SELECTOR SWITCH TO SELECT BETWEEN NORTH TANK & SOUTH TANK LEVEL CONTROLS, BOOSTER PUMP CONTROL, PUMP ELAPSED TIME METERS, & MOTOR PROTECTION CIRCUITS. COORDINATE MINOR MODIFICATIONS & ADJUSTMENTS WITH CIVIL ENGINEER. SEE CIVIL SHEETS C2 & C3 FOR CONTROL PARAMETERS.
- NOT USED.
- COORDINATE W/I.I.D. TO UPGRADE EXISTING POLE MOUNT XFMR'S & UG SERVICE FROM 300A TO 400A. TRENCH, BACKFILL, & CONDUIT PER I.I.D. DRAWINGS & SPECS..
- EXISTING FEEDER.

NOTES (ONE-LINE DIAGRAM):

- PROVIDE RATED EQUIPMENT & DEVICES BY MANUFACTURER CAPABLE OF SAFELY INTERRUPTING THE AVAILABLE FAULT CURRENT.
- PROVIDE WARNING LABELS & MARKING BY MANUFACTURER AT ALL SWITCHBOARDS, PANELBOARDS, & INDUSTRIAL CONTROL PANELS/MCC'S LIKELY TO CREATE ARC FLASH CONDITIONS AS REQUIRED BY NEC ART. 110.16.
- LABEL & MARK MAIN SERVICE DISCONNECT(S) PER NEC. MAXIMUM OF 6 DISCONNECTS PERMITTED PER NEC.
- ALL EQUIPMENT SHALL BE DESIGNED & MANUFACTURED FOR OPERATION IN AN OUTDOOR ENVIRONMENT WITH A MINIMUM AMBIENT OF 50°C. (122°F.). PROVIDE AMBIENT COMPENSATED CB'S, OVERLOAD RELAYS, WIRING, CT'S, & ACCESSORIES AS REQUIRED BY MANUFACTURER.
- SES & ANCHORS SHALL BE DESIGNED & MANUFACTURED AS REQUIRED FOR WIND VELOCITIES UP TO 90 MPH & SEISMIC ZONE 4/DESIGN CATEGORY D.
- THE EXISTING SES IS OBSOLETE & UNDERSIZED FOR THE NEW WORK AND WILL BE REPLACED UNDER THIS PROJECT. THE EXISTING GENERATOR IS NEW AND WILL REMAIN. THE EXISTING ATS IS NEW AND WILL REMAIN. THE EXISTING MCC IS OBSOLETE & MOSTLY ABANDONED BUT WILL REMAIN IN SERVICE. THE CONTRACTOR SHALL MAINTAIN THE WATER TREATMENT PLANT IN OPERATION AT ALL TIMES BY PHASING THE WORK AS FOLLOWS OR BY AN ALTERNATE SCHEDULE/PHASING PLAN TO BE PROPOSED & SUBMITTED BY THE CONTRACTOR & APPROVED BY THE OWNER.
 - INSTALL NEW UNDERGROUND SERVICE WORK AND PREPARE AND/OR INSTALL NEW NORMAL FEEDER FROM NEW SES READY TO CONNECT TO THE ATS. DURING SCHEDULED OUTAGE OR WITH SYSTEM ON EMERGENCY POWER, COORDINATE WITH I.I.D. TO DISCONNECT THE EXISTING SERVICE. DISCONNECT EXISTING SES NORMAL FEEDER CONNECTION TO ATS. REMOVE THE EXISTING SES & INSTALL THE NEW SES. CONNECT NEW SES NORMAL FEEDER TO ATS. INSPECT & TEST NEW SES. COORDINATE WITH I.I.D. TO CONNECT THE NEW SERVICE & ENERGIZE THE NEW SES. UPON SUCCESSFUL STARTUP OF THE NEW SES, COORDINATE WITH I.I.D. TO DE-ENERGIZE THE EXISTING SES. UPON COMPLETION OF THIS PHASE, THE NEW SES SHALL BE ENERGIZED AND POWERING THE EXISTING PLANT.
 - INSTALL NEW DISTRIBUTION PANEL 'MDP' AND NEW LOAD SIDE FEEDER READY TO CONNECT TO ATS. DURING SCHEDULED POWER OUTAGE, DISCONNECT THE EXISTING DISTRIBUTION SECTION LOAD SIDE FEEDER AT THE ATS AND CONNECT THE NEW PANEL 'MDP' LOAD SIDE FEEDER AT THE ATS. RELOCATE ALL EXISTING FEEDERS FROM THE EXISTING DISTRIBUTION SECTION TO THE NEW PANEL 'MDP'. UPON COMPLETION OF THIS PHASE, THE NEW SES AND NEW PANEL 'MDP' SHALL BE ENERGIZED AND POWERING THE EXISTING PLANT.
 - PERFORM ALL OTHER SCHEDULED WORK. DISPOSE OF THE EXISTING SES. CLEAN UP THE PROJECT SITE.
- SCHEDULE & COORDINATE OUTAGES WITH OWNER & MINIMIZE DISRUPTION TO NORMAL OPERATIONS. OUTAGES SHALL BE SCHEDULED AT THE OWNER'S CONVENIENCE FOR MAXIMUM 30 MINUTES DURATION AS SCHEDULED IN ADVANCE WITH THE OWNER. THE PLANT GENERATOR MAY BE USED FOR OUTAGES LESS THAN 30 MINUTES IN DURATION. PROVIDE CONTRACTOR FURNISHED TEMPORARY PORTABLE GENERATOR UNIT WITH CONTRACTOR FURNISHED FUEL AS REQUIRED TO POWER WATER TREATMENT PLANT DURING OUTAGES LONGER THAN 30 MINUTES IN DURATION.
- DESIGNATE, INSTALL, MARK & LABEL 'B' PHASE AS THE HIGH-LEG OF THE 240V 3-PHASE DELTA SYSTEM ON ALL LOAD SIDE EQUIPMENT PER NEC. ('C' PHASE SHALL BE PERMITTED TO BE THE HIGH-LEG ON UTILITY COMPANY EQUIPMENT ONLY.)

REVISIONS:

11/29/17, REVISED SCOPE OF WORK, J.R.A.



WINTERHAVEN WATER TREATMENT PLANT

W.T.P. ELECTRICAL ONE-LINE DIAGRAM

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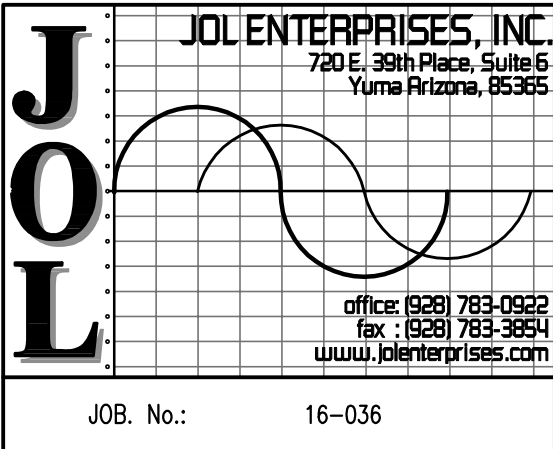
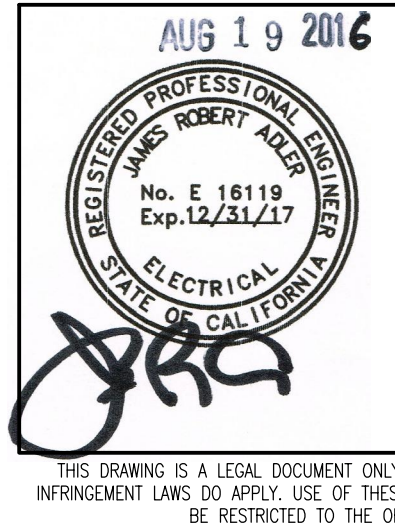
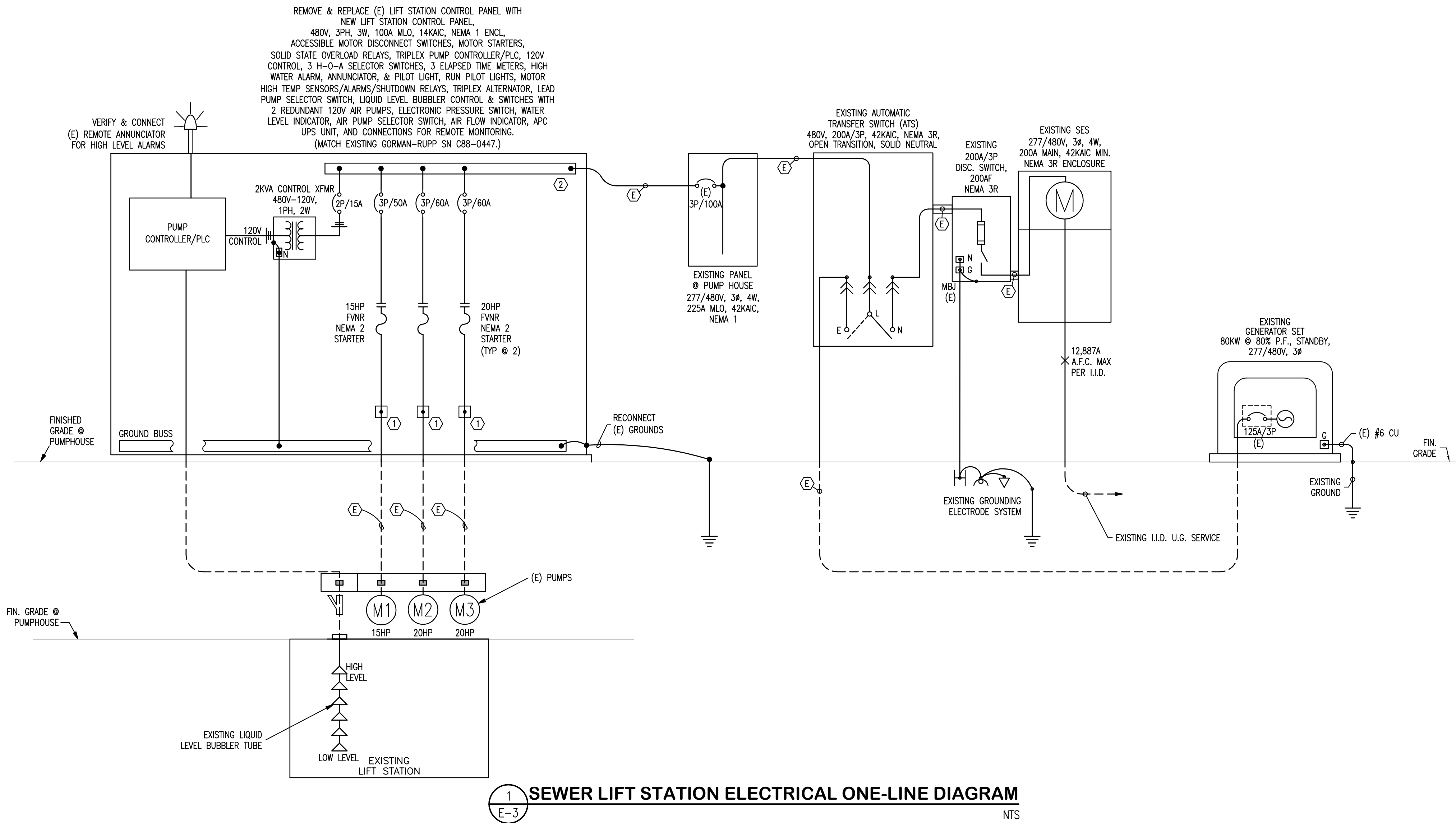
SCALE: NONE
DATE: JUNE, 2016
DES. BY: JRA
DRAWN BY: VED
SURVEYED BY: RS
JOB. No.: 016-0039
SHEET - OF -

NOTES (ONE-LINE DIAGRAM):

1. PROVIDE RATED EQUIPMENT & DEVICES BY MANUFACTURER CAPABLE OF SAFELY INTERRUPTING THE AVAILABLE FAULT CURRENT.
2. PROVIDE WARNING LABELS & MARKING BY MANUFACTURER AT ALL SWITCHBOARDS, PANELBOARDS, & INDUSTRIAL CONTROL PANELS/MCC'S LIKELY TO CREATE ARC FLASH CONDITIONS AS REQUIRED BY NEC ART. 110.16.
3. LABEL & MARK MAIN SERVICE DISCONNECT(S) PER NEC. MAXIMUM OF 6 DISCONNECTS PERMITTED PER NEC.
4. CONTROL PANEL SHALL BE DESIGNED & MANUFACTURED FOR OPERATION IN AN OUTDOOR ENVIRONMENT WITH A MAXIMUM AMBIENT OF 50°C. (122°F.). PROVIDE ADDITIONAL VENTILATION AND AMBIENT COMPENSATED CB'S, OVERLOAD RELAYS, WIRING, CT'S, & ACCESSORIES AS REQUIRED BY MANUFACTURER.
5. CONTROL PANEL & SUPPORTS SHALL BE DESIGNED & MANUFACTURED AS REQUIRED FOR SEISMIC ZONE 4 DESIGN CATEGORY D.
6. PROVIDE SERVICES OF MANUFACTURER'S TECHNICAL REPRESENTATIVE AS REQUIRED TO SET UP, CONNECT, TEST, DEMONSTRATE, & TRAIN FOR PROPER INSTALLATION & OPERATION OF CONTROL PANEL.
7. THE CONTRACTOR SHALL MAINTAIN THE PUMP STATION IN OPERATION AT ALL TIMES BY PHASING THE WORK AS FOLLOWS OR BY AN ALTERNATE SCHEDULE/PHASING PLAN TO BE PROPOSED & SUBMITTED BY THE CONTRACTOR & APPROVED BY THE OWNER. NEW CONTROL PANEL SHALL BE ASSEMBLED & PREPARED FOR INSTALLATION PRIOR TO ANY WORK AT THE PUMP STATION. TEMPORARILY RELOCATE THE EXISTING CONTROL PANEL TO THE SOUTH WALL ADJACENT THE PERMANENT CONTROL PANEL LOCATION. MAINTAIN CONTROL PANEL IN SERVICE UNTIL THE NEW CONTROL PANEL IS INSTALLED, OPERATIONAL, & PUT INTO SERVICE. BOTH NEW & EXISTING CONTROL PANELS MAY BE TAPPED FROM THE 3P/100A CIRCUIT BREAKER UNTIL THE NEW CONTROL PANEL IS IN SERVICE. RELOCATE PUMP CIRCUITS TO NEW PANEL & REMOVE EXISTING CONTROL PANEL ONCE THE NEW CONTROL PANEL IS IN SERVICE.
8. COORDINATE OUTAGES WITH OWNER & MINIMIZE DISRUPTION TO NORMAL OPERATIONS. OUTAGES SHALL BE SCHEDULED FOR MAXIMUM 30 MINUTES DURATION AS SCHEDULED IN ADVANCE WITH THE OWNER.
9. SEE CIVIL PLANS, SHEETS C-7 & C-8, FOR SITE & PLAN DRAWINGS.

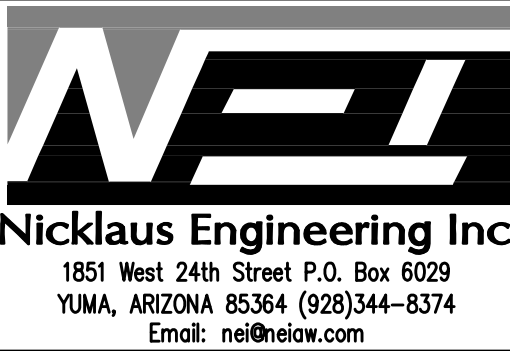
KEY NOTES :

- ① RECONNECT EXISTING PUMP CIRCUIT TO NEW CONTROL PANEL.
- ② RECONNECT EXISTING PUMP CONTROL PANEL FEEDER TO NEW PUMP CONTROL PANEL.
- ③ NEW AUTO DIALER PER OWNER NEEDS & REQUIREMENTS. AUTO DIALER TO MONITOR ALARM CONDITIONS INCLUDING HIGH & LOW WATER LEVEL CONDITIONS, PUMP FAILURES, & ATS/GENSET ALARM CONDITIONS. MINIMUM 8 MONITOR INPUTS, PLC INTERFACE, SOLID STATE MESSAGE RECORDING, 120V W/ BATTERY BACKUP. PROVIDE PHONE LINES IN CONDUIT AND CONNECT TO NEAREST AVAILABLE TELEPHONE LINES OR PROVIDE ALTERNATE CELLULAR OPTION. (RACO VERBATIM OR EQUAL.)
- Ⓔ EXISTING FEEDER OR PUMP CIRCUIT.



WINTERHAVEN WATER TREATMENT PLANT

LIFT STATION ELECTRICAL ONE-LINE DIAGRAM



SCALE: NONE

DATE: JUNE, 2016

DES. BY: JRA

DRAWN BY: VED

SURVEYED BY: RS

JOB. No.: 016-0039

SHEET -- OF --

E-3

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GENERAL PROVISIONS FOR ELECTRICAL WORK

1. PART ONE --- GENERAL

1.1. WORK SPECIFIED HEREIN

- A. Provide all labor, materials, equipment, services and transportation necessary to receive, install, adjust and put into operation complete electrical systems as indicated or specified. Provide products not mentioned but obviously necessary and incidental to the completion of this work.

1.2. EQUIPMENT FURNISHED BY OTHERS & INSTALLED BY ELECTRICIAN

- A. Mount and install unmounted motor starters and equipment not in motor control centers, related to:
1. HVAC System.
- B. Provide power, control, and interlock electrical wiring for mechanical equipment and systems.

1.3. POWERED EQUIPMENT ELECTRICAL EQUIPMENT CONNECTIONS

- A. Make final connections to electrical equipment, furnished and set in place under other sections as shown or specified. Provide disconnect switches, conduits, wire, outlet boxes, and other required appurtenances.
- B. Rough-in and connections work shall be done in strict accordance with shop drawing and details furnished by the equipment supplier. Connections shall be made as directed, and shall be checked and approved by the party furnishing the equipment. Suppliers shall furnish shop drawings indicating exact locations, power requirements, and details, which shall govern in the installation of rough-in requirements. Verify requirements before installing work. Coordinate completely with affected trades.
- C. Include descriptive data showing complete arrangements, construction, electrical, optical, physical, and quality characteristics for materials and equipment. Submit shop drawings of electrical closets, shafts, major conductor routing, and mechanical/electrical rooms.

1.4. CODES, LAWS, AND ORDINANCES

- A. Work shall be performed in accordance with the current rules and regulations of:
1. National Electrical Code (NEC).
2. Underwriter's Laboratories, Inc. (UL).
3. Insulated Power Cable Engineers Association (IPCEA).
4. National Electrical Manufacturers Association (NEMA).
5. National Fire Protection Association (NFPA).
6. Occupational Safety and Health Administration (OSHA).
7. National Electrical Safety Code.
8. Applicable Local Codes, Laws and Ordinances.

2. PART TWO --- BASIC MATERIALS AND IDENTIFICATION

2.1. MATERIALS

- A. Materials and products included in this work shall be listed, labeled or certified by Underwriters Laboratories, Inc.

2.2. HANGERS AND SUPPORTS

- A. Suspend and support horizontal and vertical conduit from approved hangers and structural steel supports, spaced as scheduled. Provide necessary accessories, nuts, lock nuts, bolts, rods and devices to allow installation to freely expand and contract. Hangers shall be formed steel with adjustable attachment to hanger rod.

2.3. EQUIPMENT FOUNDATIONS

- A. Floor mounted electrical equipment shall be mounted on concrete housekeeping pads at least 4" higher than final grade, poured integral with the floor slab wherever practicable.
- B. where required, pads shall extend a minimum of 36" in front of equipment where necessary to afford operating surface no more than 78" beneath the center of the highest operating handle in it's highest position. Slope to drain away from equipment.
- C. Coordinate pad sizes and locations for pad mounted transformer with serving utility company.

2.4. IDENTIFICATION

- A. Products shall be identified as specified in "General Requirements for Electrical Work" and equipped with identification as follows:
1. Manufacturer's attached circuit number identification at each panelboard and branch circuit overcurrent device.
2. A typed circuit directory identifying use of each panelboard branch circuit overcurrent device.
- B. Provide permanently attached engraved laminated plastic nameplate to indicate:
1. Identity of each transformer, switchboard, switchgear assembly, motor control center, distribution panel, panelboard, and individually enclosed overcurrent device, using the identification shown on the contract drawings.
2. Circuit number and equipment supplied, at each switchboard, switchgear, motor control center, and distribution panel overcurrent device.
3. Use of equipment disconnecting devices by identifying the equipment disconnected.
4. The identity of signal, alarm, and communications cabinet, racks, and other enclosures using the identification shown on the drawings.
- C. Identify underground conduits using one detectable underground warning tape per trench at 3 inches below grade. Tape shall be 4 inch wide plastic tape with suitable color and warning legend describing buried electrical/communications lines.

3. PART THREE --- SERVICE, GENERAL WIRING AND GROUNDING

3.1. UTILITY COORDINATION AND CHARGES

- A. Coordinate, verify, and include all construction and support work required by utilities in the bid. Immediately upon award of contract, coordinate with utilities to finalize the utility company construction requirements. Coordinate between utilities and owner to quantify and finalize total utility company service charges and the owner's direct payment of service charges to the utilities for serving electrical, telephone, and/or cable television utilities. Include in bid and provide all construction work, materials, etc., required by the utilities such as trenching, backfill, conduit, transformer pads, grounding, etc. required to provide complete electrical and telephone service to this project.

3.2. ELECTRICAL SERVICE

- A. Contact local power company and obtain written verification of service capacity and fault current available at secondary bushings of service transformer. A copy of each report shall be forwarded to the Architect prior to submission of switchgear for approval.

- B. Power company serving project: Imperial Irrigation District (I.I.D.)

3.3. WORK EXCLUDED:

1. Primary service cables and service connections to the extent supplied by utility.
2. Service transformer.
3. Service metering equipment to the extent supplied by utility.

D. WORK INCLUDED:

1. Cooperate with serving utility, make all connections, metering arrangements, and layout compatible with the equipment equipment provided by the utility.
2. Electrical contractor will provide service transformer concrete pads, trenching, and conduit in accordance with utility company requirements; coordinate.
3. Provide service transformer grounding in accordance with utility company requirements.

3.3. GENERAL WIRING REQUIREMENTS

- A. Enclose interior wiring in metal raceways, boxes, outlets, cabinets, wireways, gutters, or other metal enclosures. Use non-metallic products to enclose wiring only where so specified. Use open wiring only where so specified.

3.4. GROUNDING

- A. Provide wiring, connections and devices necessary to comply with the grounding requirements of the local authorities and the National Electrical Code. Exposed non-current carrying metallic parts of the electrical equipment, raceway systems, grounding conductors and neutral conductor of the wiring system shall be grounded.

3.5. CALIBRATION AND TESTING OF EQUIPMENT AND WIRING SYSTEMS

- A. Equipment: Shall be tested and adjusted to insure correct functional performance. Inspect, lubricate, test and adjust equipment and correct defects or damages before connecting the equipment and correct defects or damages before connecting the equipment to the system.

3.6. WIRING

- A. Test power, lighting and control wiring for continuity, short circuits and improper grounding.
- B. Test feeder and power circuits No. 8 AWG or larger with a "megger" from each conductor to ground and between conductors. Record each reading. At the completion of work, deliver a copy of these "megger" readings to the Architect/owner.

3.7. SITE WORK

- A. Contractor shall employ independent locating service to locate and verify all existing services, whether specifically shown on the drawing or not. Location of services shall be recorded on record documents. No trenching or excavation shall commence until locations are verified. The Owner shall be notified in writing prior to any trenching requiring a utility shutdown. Any services interrupted by trenching or excavating shall be repaired by the contractor with no additional cost to the Owner. Existing services not specifically indicated on the drawings to be relocated, which interfere with building components, shall be brought to the Engineer's immediate attention. Prepare drawings showing proposed re-routing, area(s) affected, and length of interruption(s).

3.8. ELECTRIC WIRING FOR MECHANICAL EQUIPMENT

- A. Provide wiring in connection with motor driven mechanical equipment required for "hand" operation of each motor or appliance, with cover mounted "hand-off-auto" selector switch on motor starter in "hand" position.

4. PART FOUR --- WIRE, CONDUIT, DEVICES, LIGHTING

4.1. EQUIPMENT WITHSTAND RATINGS

- A. Electrical equipment, circuit protective devices, bussing, and switches shall be rated to interrupt or withstand short circuit faults greater than the available fault current.

4.2. WIRE AND CABLE

- A. Wire and cable for feeder and branch circuits shall conform to the requirements of the current edition of the National Electric Code, and shall meet applicable ASTM specifications. Conductors shall be soft drawn, annealed 99% conductivity copper. Wire and cable shall be new, shall have size, type of insulation, voltage rating and manufacturer's name permanently marked on the outer covering at regular intervals. Conductors No. 6 AWG and smaller shall be color coded. Colors for each phase and neutral shall be consistent throughout the system.
- B. Provide conductors with insulation rated for 600 volts unless specified or indicated otherwise.
1. NEC type TEW, THW, XHNW, THWN, or THHN solid or stranded for number 10 AWG or smaller, except TW not allowed for motor.
2. NEC type THW, XHNH, THWN or THHN stranded for number 8 and larger.
3. NEC type TEW, THW, NM1W, AWA or AVL for branch circuit wiring through light fixtures not approved for TW wiring.

4.3. CONDUIT AND RACEWAYS

- A. Provide electrical metallic tubing (EMT) within structure, or except as specified otherwise or for the following:
1. Outside structure or on roof.
2. At or below grade (concealed).
3. In or beneath slabs of grade.
4. Where exposed to physical damage (interior grade to 5'-0").
5. Where subject to excess moisture and deterioration.
- B. Rigid steel conduit (GRC) shall be used in the following locations:
1. In locations where electrical metallic tubing is not permitted and other raceway is not required.
2. At drop connections to motors.
3. Intermediate metal conduit (MC) may be substituted for GRC if approved by code authority.
4. Rigid aluminum conduit (ARC) may be used in sizes 2-1/2" and larger in lieu of rigid steel conduit except in contact with concrete or embedded in concrete.
5. Provide flexible conduit for transformer connections and at equipment requiring adjustments or removal for service not subject to moisture.
6. Provide liquid-tight flexible conduit for each motor and rotating device for power and control, and for other equipment requiring adjustments or removal for service in mechanical rooms or where subject to moisture or weather.
7. Provide non-metallic conduit (and grounding conductor) with rigid steel riser stub-ups for burial in the earth.
8. Non-metallic conduit (and ground conductor) with rigid steel riser stub-ups used for slabs on grade.
9. Acceptable manufacturers. All manufacturers providing NEMA and UL listed materials.
- C. PVC conduit shall be NEMA TC2 Schedule 40 or 80 PVC. Use PVC conduit at exterior underground locations and under slab, per NEC.

4.4. WIREWAYS, PULL AND JUNCTION BOXES

- A. Provide wireways, junction and pull boxes indicated and at locations required to facilitate the pulling of wire fabricated in accordance with NEMA and National Electrical Code requirements with respect to material, gauges, dimensions and methods of fastening. Wireways, junction and pull boxes shall bear UL label. Units shall be finished in standard gray enamel, sides and backs spot welded in position, and removable screw cover.

4.5. OUTLET BOXES

- A. Interior Boxes: Standard minimum 4" square box with single or multiple gang stamped extension of plaster ring, of the proper depth to accommodate the device and function for which intended. Boxes for mounting of surface lighting fixtures shall be 4" octagon boxes, with 3/8" no-bolt fixture studs. Provide proper covers or device plates.
- B. Exterior Boxes: Hot-dipped galvanized complete with weatherproof covers and rubber or neoprene gaskets.
- C. Concrete Boxes: Outlet boxes in concrete slabs shall be two-piece concrete boxes not less than 4" nominal size with a minimum depth of 2-1/2". If used for lighting fixtures, outlet boxes shall be equipped with fixture stud.
- D. Waterproof Boxes: With threaded hubs and gasketed.
- E. Flush Type Floor Boxes: Fully adjustable (before and after concrete pour), cast iron for slabs on grade, stamped steel for slabs above grades, with surface ring finish to match wiring devices, and coverplates specified, with waterproof threaded outlets, sized and arranged to receive devices scheduled. Flush boxes shall be Hubbell.

4.6. TERMINAL CABINETS

- A. Cabinet Bodies shall be constructed in accordance with the NEMA PBI specification for panelboard cabinets. Provide steel doors with key locks and keys as specified for panelboards.

4.7. CONTACTORS AND RELAYS

- A. Contactors and relays shall be UL listed under UL 508, fully rated and marked for use with tungsten lamp and ballast (fluorescent) lamp loads with electrical characteristics as required. Contactors shall be of the single coil, electrically operated, mechanically held type, in NEMA 1 enclosures, or cabinets, or pull boxes with hinged covers, or integrally mounted in panelboards, or as otherwise scheduled. Control voltage shall be 120 volts and where line voltage to unit is greater than 120 volts, phase to neutral shall contain a control power transformer with fused primary.

4.8. EQUIPMENT CONNECTIONS

- A. Provide wiring for the connection of motors and control equipment and control wiring as indicated on the electrical drawings.
- B. Equipment installed under other sections of the specifications: Wiring shall be extended to the equipment, and proper connections made thereto.
- C. Flexible connections of short lengths: Shall be provided for equipment subject to vibration or movement for motors. Liquid-tight conduit shall be used in wet locations. A separate ground conductor shall be provided across flexible connections.

4.9. CONDUIT INSTALLATION

- A. Coordinate installation of raceways with building structure and other mechanical trades complete with bends, fittings, junction and pull boxes to meet codes and make complete operating systems. Raceways 1" and larger shall not be run in concrete slabs without approval of the Architect.
- B. In general, conduits shall be concealed in finished areas, and may be exposed in unfinished areas, run square to the building construction, and continuous from outlet to outlet, connected mechanically and electrically to assure grounding. Conduits shall be cut square, reamed to full size, shouldered without butting into couplings or fittings. The threads shall be of standard length and diameter required for the size of the conduit used, and graphite bearing threaded lubricant shall be used in making up the threads. Running threads will not be acceptable. Conduit shall have a smooth interior surface free of obstructions, shall be capped with conduit seals during the construction period, shall be thoroughly cleaned and dry before pulling and wire. Conduit installation shall clear hot pipes not less than 6".

4.10. FASTENINGS

- A. Fastenings for raceways and boxes shall be made by means of toggle or expansion bolts no smaller than 3/16" diameter, or wood screws no smaller than number 9x1 inch long.
- B. Fastenings to masonry or concrete shall be made by means of machine screws no smaller than number 10-32x1-1/4" long, screwed into lead expansion shields no smaller than 3/8" diameter x 5/8" long.

4.11. CONDUCTOR INSTALLATION

- A. Wire and cable No. 6 and smaller shall be factory color coded. Where factory color is not available, or where on short runs factory color coding is not practical, mark conductors on each end and in all junction or pull boxes with 1" band of colored pressure sensitive plastic tape. Colors for each phase and the neutral shall be consistent throughout the system.

B. Color coding shall be:

277/480 volt	120/240 volt	Use
Brown	Black	Phase A
Orange	Orange (High Leg)	Phase B
Yellow	Blue	Phase C
Gray	White	Neutral
Green	Green	Ground

- C. Minimum wire size for branch circuits shall be No. 12 except that home runs longer than 100' on 120/240 system and 200' on 277/480 volt systems in actual wire length from panel to the electrical load center of the circuit, shall be no smaller than No. 10 AWG.

- D. Cable terminals, taps and splices No. 6 and larger shall be made secure with UL approved solder less indenter compression barrel type connectors wherever practicable. UL approved set screw lugs may be used on circuit breakers, motor starters, and switches not available with indenter connectors. Joints in conductors No. 8 and smaller shall be made by applying a UL approved insulated, cadmium plated, live steel spring type connector in sizes up to the catalog capacity of the connector.

PART FIVE --- POWER DISTRIBUTION

5.1. CIRCUIT SWITCHING AND PROTECTIVE DEVICES

- A. Shall be complete from incoming line terminals to outgoing load terminals, number of poles and rated for current characteristics indicated, with interrupting ratings at least equal to the available short-circuit current available at the line terminals.

B. Molded case circuit breakers:

1. Shall conform to NEMA standard AB-1, UL 489, and FS-W-C-375B.
2. Shall have an integral rugged housing of molded polyester glass insulating compound, with silver alloy contacts, arc quenchers, and phase barriers for each pole, and stored energy operating mechanism. Shall be electrically and mechanically trip free, with a trip element for each pole, and a common trip bar connected to a single handle of insulating material (handle ties are unacceptable), indicating "on," "tripped," and "off" positions. Provide inverse time element thermal trip for overload protection and magnetic instantaneous trip for short circuit protection unless otherwise indicated.

3. Standard convention breakers (breaker drawing symbol without modification) shall be quick-make, quick-break, wiping contact, thermal, magnetic, common trip, trip indicating, ambient compensated, with arc chutes, single trip-free handle mechanisms, and thermal long time trip and magnetic instantaneous trip.
4. Ground fault interrupting --- provide UL class A (5 milliamperes sensitivity) single-phase ground fault circuit protection.

C. Manual Switch (smaller than 800):

1. Shall conform to NEMA Standard KSI, UL 98, and FS-WS-865C.
2. Shall not be used in excess of 600 amps rating.
3. Shall be dead front, load break, heavy duty, horsepower rated, quick-make, quick-break, switches with arc quenchers, padlock provisions, and defeatable front accessible door interlock to prevent opening door with switch "on" or switching on with door open.

5.2. ENCLOSURES

- A. Circuit switching/protective devices shall be housed in an enclosure suitable for the environment in which they are located.
- B. Normal indoor location --- NEMA general purpose.
- C. Normal outdoor location --- NEMA 3R rain-tight.

5.3. TRANSFORMERS, DRY TYPE

- A. Two winding of the size and electrical characteristics as scheduled, in conformance with ANSI-C89.2 and NEMA S120 standards and Underwriters Laboratories listing UL 506.
- B. Guaranteed sound ratings shall not exceed ANSI standard decibel levels. Transformers shall be rated at full load in a 40 degree C ambient with 30 degree C ultimate hot spot temperature rise allowance, with Class F insulation having a UL 185 degree C rating limiting system temperature to 115 degrees C on 25 KVA and smaller units and Class H insulation. Having UL 220 degree C rating limiting system temperature to 150 degrees on 30 KVA and larger units.
- C. The maximum temperature rise of the top of the enclosure shall not exceed 35 degrees C rise over a 40 degree C ambient.
- D. Transformers 30 KVA and above shall have core and coil assembly completely isolated from enclosure with neoprene rubber pads, and six primary voltage taps rated (4) 2-1/2% below normal and (2) 2-1/2% above normal. Transformers 25 KVA and under shall have four primary voltage taps rated (2) 2-1/2% below normal and (2) 2-1/2% taps above normal.

5.4. SWITCHBOARDS AND PANELBOARDS

- A. Provide arrangement and electrical characteristics as indicated or scheduled.
- B. Classification and ratings: Complete unit shall be given a single integrated equipment rating certifying that all components are capable of withstanding the stresses of a fault of the magnitude indicated by the RMS symmetrical current available and that no device will be applied beyond its interrupting or switchboard shall carry a certification label indicating suitability for service entrance.

- C. Switchboard Structure: Dead front, floor mounted, comprised of vertical sections bolted together to form one rigid assembly, completely metal-enclosed, self-supporting of the universal frame type, ventilated and constructed UL-891 enclosure standards using standardized components of steel. The sides, top and rear shall be covered with removable screw-on plates. Front plates shall be sectionized and removable. Height shall be nominal 90" with depth as necessary but in no case less than 20". All steel shall be phosphatized, primed, and finished in gray enamel.

- D. Bussing: Copper bus bars shall be uniformly arranged to provide A-B-C sequence, left to right, front to rear, or top to bottom from front of board. Provide copper ground lugs and a full length copper ground bus bolted to each vertical section. All hardware used on bussing shall be zinc or cadmium plated. Each bolt shall have a Belleville washer to maintain clamping force under thermal cycling.

- E. Switching and Protective Devices: Fused switches, equipped with ARC quenchers, and quick-make, quick-break operating mechanism, shall each be mounted in an individual sheet steel enclosure with an external operating handle which may be padlocked in either the ON or OFF position. Doors shall be interlocked to prevent opening when switch is in ON position, with provisions to void cover interlock to allow authorized inspection. Switches 600 amp and smaller shall be 5" minimum height with high pressure spring load rejection type fuse holders.

5.5. INDIVIDUALLY MOUNTED SAFETY SWITCHES

- A. Safety switches shall be heavy-duty UL listed, horsepower rated manual disconnect switches in conformance with NEMA specifications KS1-1969. Unit shall be fused with fuse clips having rejection feature, or unfused as indicated with ampere ratings as required. Enclosures shall be NEMA 1, unless otherwise noted. Each switch shall have insulated neutral and ground terminal or proper size where required, for grounded conductors. Lugs shall be UL listed for copper cables.

- B. Motors 1/2 horsepower and less, toggle type, quick-make, quick-break, two (2) horsepower rated manual motors starters, with the number of poles required, with flush mounting wall plate or surface mounted NEMA enclosure, as indicated. Provide overload heaters as required.

- C. Motors 3/4 horsepower and larger, type HD, fused or unfused, 3-pole 480 volt AC in NEMA general purpose or weatherproof enclosure.

- D. Safety switches shall be of same manufacturer as switchboard and panels.

5.6. FUSES

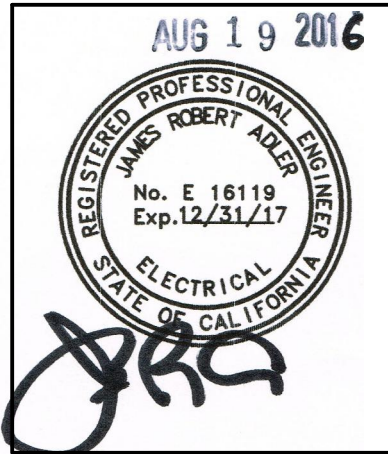
- A. Furnish time-current characteristic and coordination curves for each fuse on service entrance equipment and coordinate with utility to assure service entrance fuse opening prior to actuation of the utility circuit protective devices in the event of a fault.

- B. Fuses 600 amperes and less serving non-inductive loads (circuit breakers, circuit breaker panelboards), shall be in accordance with UL standard 198.2, Class J, current limiting, quick acting, with 200,000 RMS symmetrical amperes interrupting capacity.

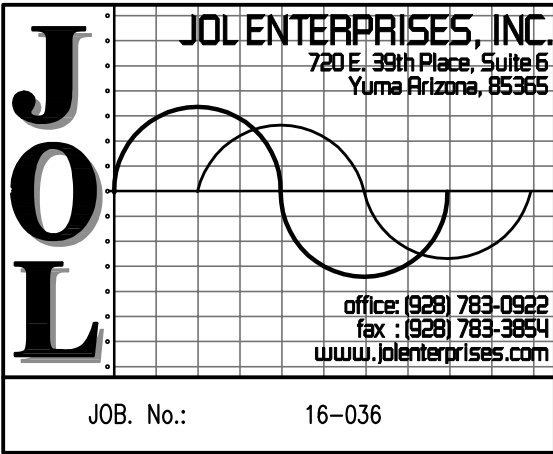
- C. Fuses 600 amperes and less serving inductive loads (transformer or motor), shall be in accordance with UL standard 198.4, Class RK1, dual element, with minimum time delay of 10 seconds at 500% rating, current limiting, with interrupting capacity of 200,000 amperes RMS symmetrical.

6. PART SIX --- EXECUTION

- 6.1. Contractor is required to install equipment in strict accordance with manufacturer's recommendations and requirements of other sections.



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WINTERHAVEN WATER TREATMENT PLANT

ELECTRICAL SPECIFICATIONS

NEL
Nicklaus Engineering Inc.
1851 West 24th Street P.O. Box 6029
YUMA, ARIZONA 85364 (928)344-8374
Email: nel@nelcw.com

SCALE:	NONE
DATE:	JUNE, 2016
DES. BY:	JRA
DRAWN BY:	VED
SURVEYED BY:	RS
JOB. No.:	016-0039
SHEET	OF

GENERAL STRUCTURAL NOTES

APPLIES UNLESS NOTED OTHERWISE

- ALL WORK SHALL CONFORM TO THE 2013 CALIFORNIA BUILDING CODE (CBC).
- NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
- VERIFY ALL DIMENSIONS WITH EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION - RESOLVE ANY DISCREPANCY WITH THE STRUCTURAL ENGINEER. DO NOT SCALE DRAWINGS.
- DETAILS MARKED "TYPICAL" MAY OR MAY NOT BE OUT ON PLANS, BUT SHALL APPLY UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, BRACING, SHORING, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL SCAFFOLDING, BRACING AND SHORING. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS. THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION NOR WILL THE STRUCTURAL ENGINEER BE RESPONSIBLE FOR CONSTRUCTION SITE SAFETY, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO.
- DESIGN SOIL BEARING PRESSURE = 1,500 PSF PER 2012 IBC IN ABSENCE OF SOILS REPORT.
- THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.
- DESIGN LOADS:
TANK SELF WEIGHT = 14,000 LBS
TANK CONTENTS MAXIMUM WEIGHT = 84,000 LBS

SEISMIC:

SOIL SITE CLASS D,

$S_S = 0.707g$

$S_1 = 0.267g$

$S_{DS} = 0.582g$

$S_{D1} = 0.332g$

SEISMIC DESIGN CATEGORY D

RISK CATEGORY IV

$I_E = 1.5$

$R = 3.0$ (HORIZONTAL, SADDLE SUPPORTED, WELDED STEEL VESSEL)

WIND:

RISK CATEGORY IV

$V_{ult} = 115$ MPH

$V_{asd} = 90$ MPH

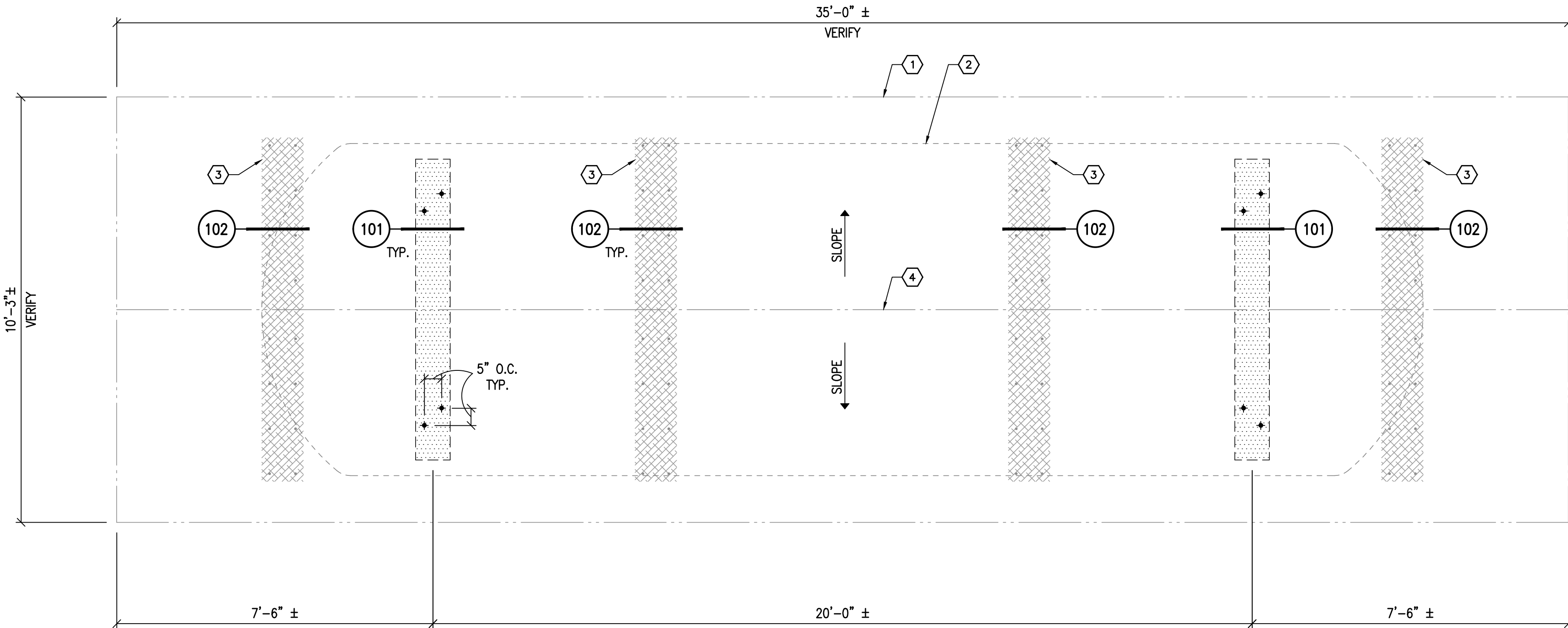
EXPOSURE C

9. MATERIALS OF CONSTRUCTION:

A. ALL-THREAD AND ANCHOR RODS: ASTM A307A OR ASTM F1554, GRADE 36

B. EPOXY BOLTS IN CONCRETE: HILTI HIT-RE 500 V3 PER ICC-ESR-3814

C. EPOXY COATING: SIKAGARD 62 2-COAT PROTECTIVE EPOXY COATING SYSTEM. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SURFACE PREPARATION AND APPLICATION PROCEDURES.



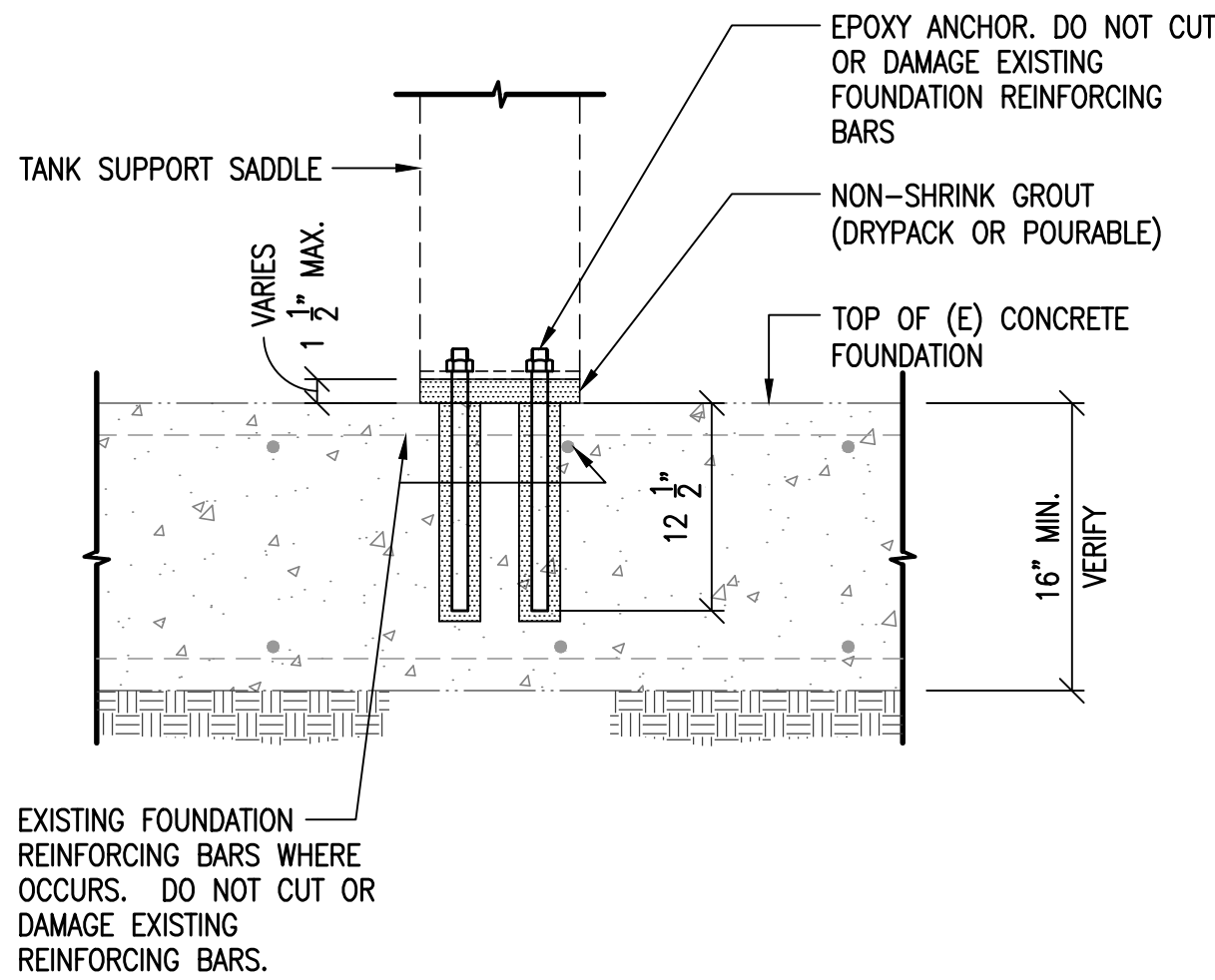
TANK EXISTING FOUNDATION PLAN

SCALE: 1/2" = 1'-0"

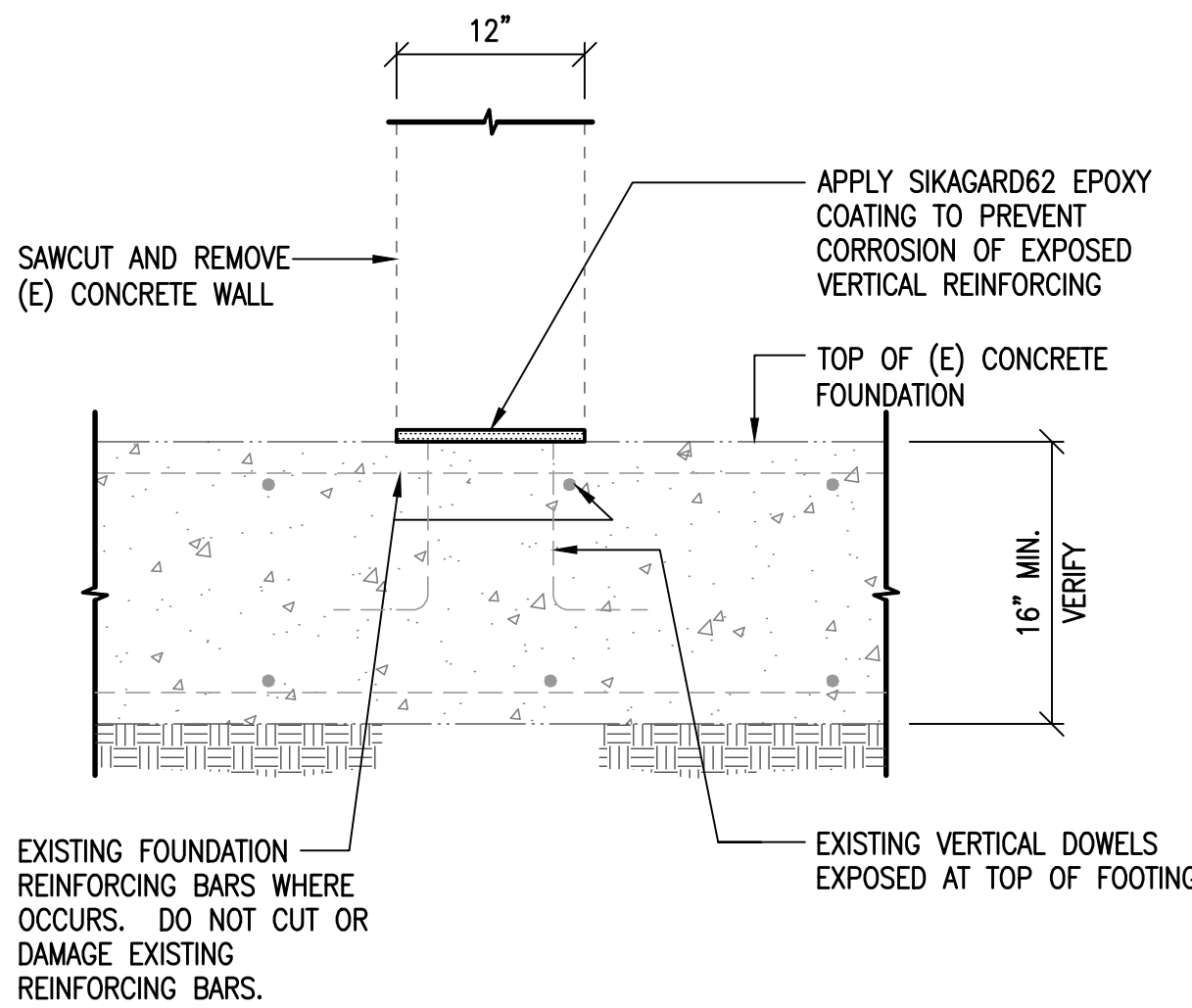
NOTE:
THE TANK AND TANK INFORMATION SHOWN IS PRELIMINARY.
PRIOR TO START OF CONSTRUCTION RCSE SHALL REVIEW FINAL
TANK DESIGN AND VERIFY ITS CONFORMANCE WITH THIS DRAWING.

S-1.1 PLAN KEYNOTES:

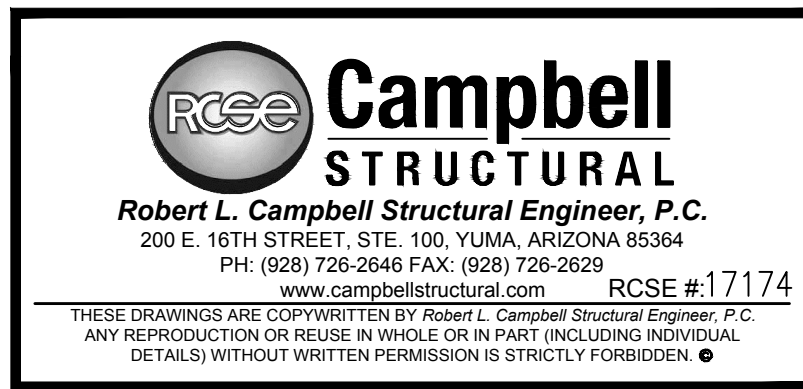
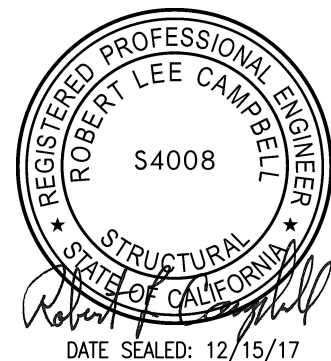
- EXISTING (E) TANK FOUNDATION TO REMAIN - VERIFY 16" MIN. THICKNESS EXISTS.
- OUTLINE OF TANK - 10,000 GALLON 8' Ø ABOVE GROUND HORIZONTAL HYDROPNEUMATIC VESSEL, ANCHOR TANK TO FOUNDATION WITH A MINIMUM 8 - 5/8" Ø EPOXY SET-ALLTHREAD ANCHORS WITH 12 1/2" EMBEDMENT - SEE DETAIL.
- REMOVE EXISTING TANK CONCRETE SUPPORT SADDLES. CUT EXISTING VERTICAL DOWELS AND PATCH EXPOSED REBAR CUTS PER DETAILS.
- CREST OF (E) SLOPED TOP OF FOOTING.



101 TANK SADDLE AT EXISTING FOUNDATION



102 EXISTING CONCRETE TANK SADDLE AT FOUNDATION



WINTERHAVEN COUNTY WATER DISTRICT

TANK FOUNDATION PLAN

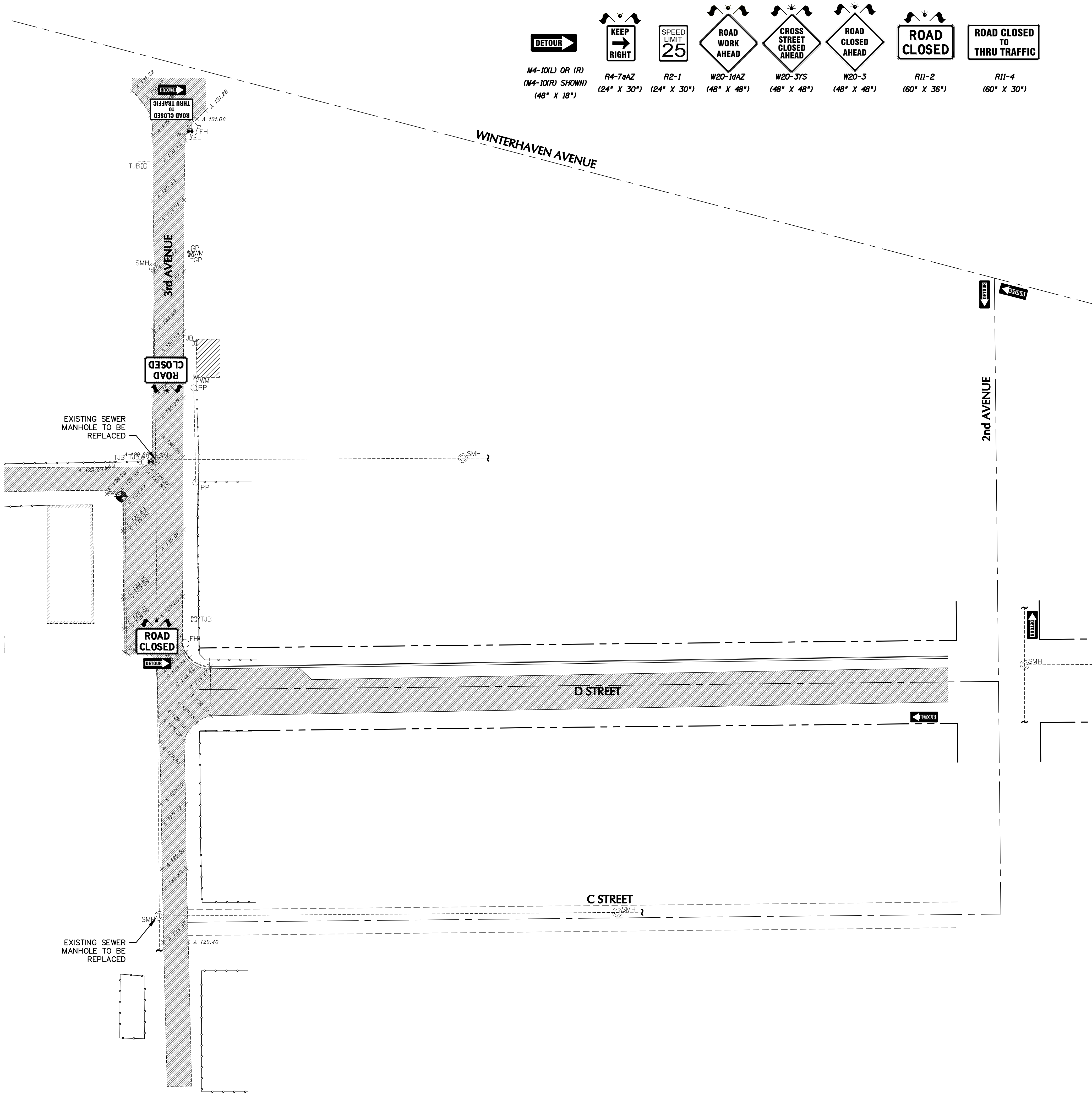


Nicklaus Engineering Inc.
1851 West 24th Street P.O. Box 6029
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Email: nei@neia.com

SCALE: AS SHOWN
DATE: DECEMBER, 2017
DES. BY: DDD
DRAWN BY: EJ
SURVEYED BY: --
JOB. No.: --
SHEET -- OF --

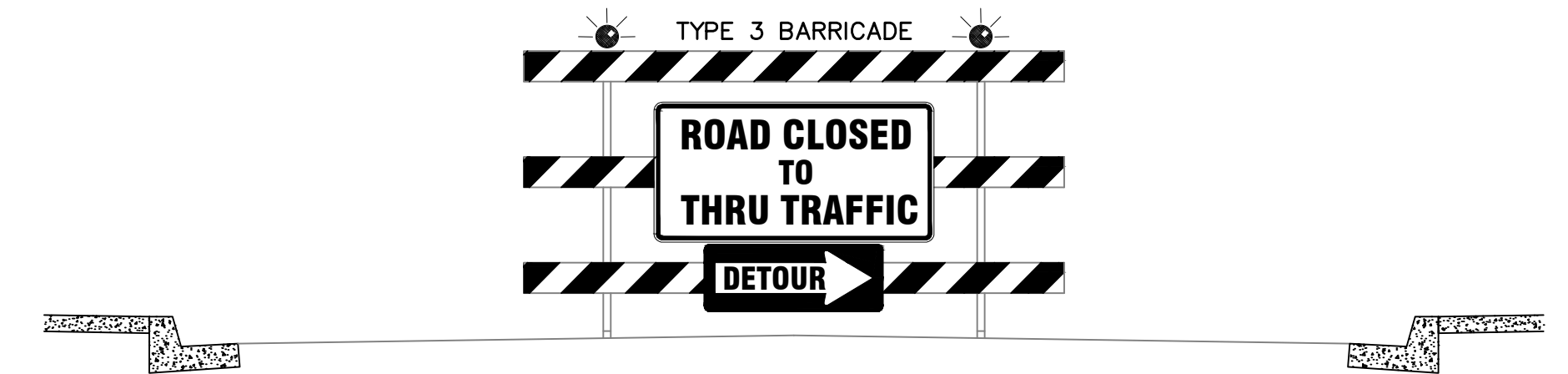
S-1.1

N:\2016\016-0039 Winterhaven WTP & Wastewater Improvements\DWG\016-0039 Winterhaven Sewer Imp_C8.dwg

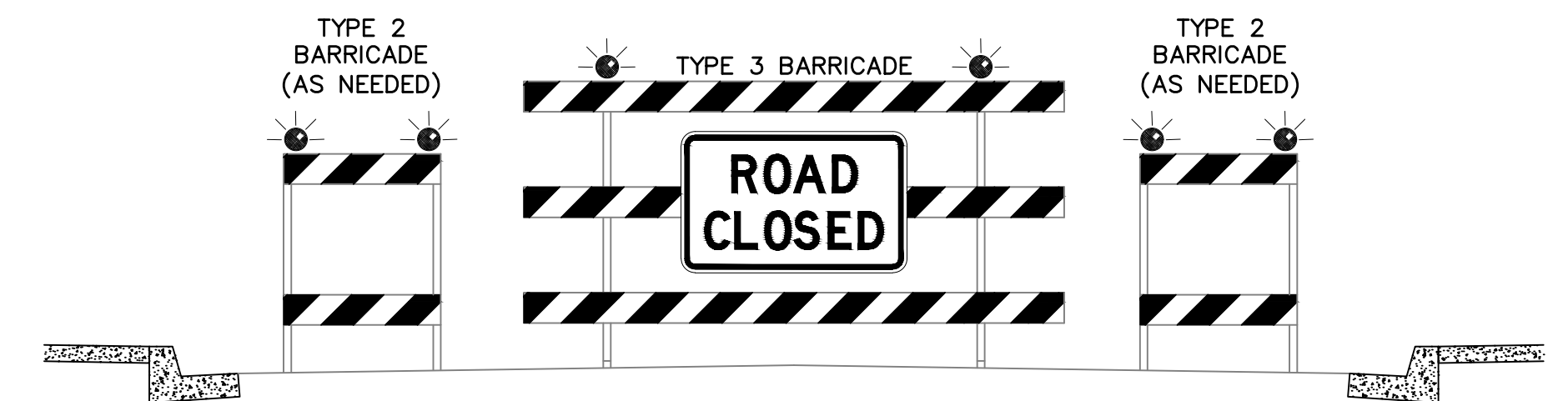


LEGEND

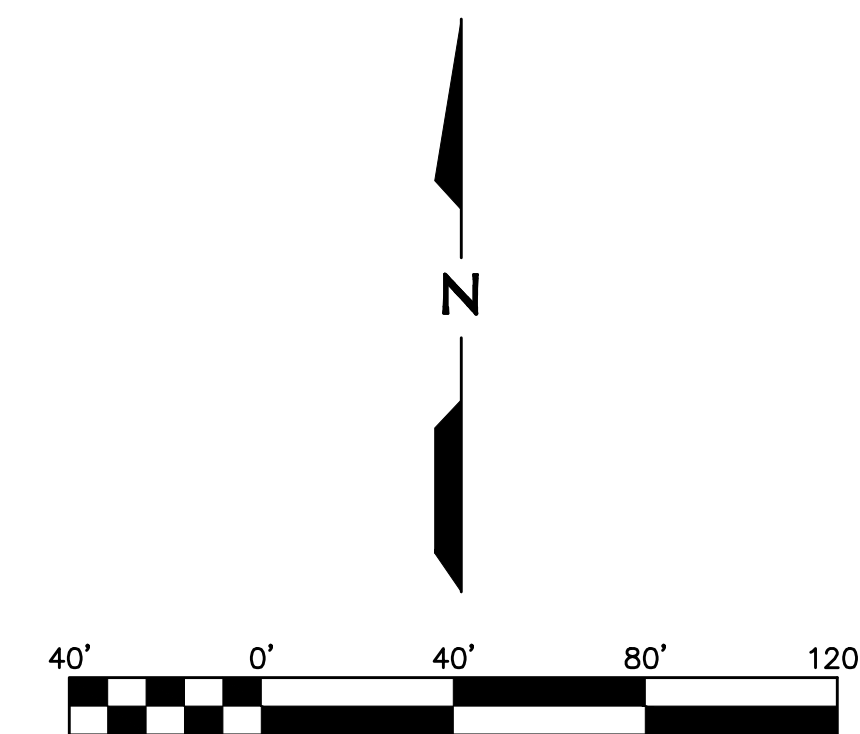
	EXISTING CENTER LINE
	EXISTING RIGHT OF WAY LINE
	EXISTING BUILDING
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE
	EXISTING GUY WIRE POLE
	EXISTING WATER VALVE
	EXISTING SEWER MANHOLE
	EXISTING FIRE HYDRANT
	EXISTING POWER POLE
	EXISTING WATER METER
	EXISTING TELEPHONE JUNCTION BOX



SOFT ROAD CLOSURE DETAIL 1
NTS TCP1



HARD ROAD CLOSURE DETAIL 2
NTS 21



WINTERHAVEN WATER/SEWER IMPROVEMENT

TRAFFIC CONTROL PLAN

NEI
Nicklaus Engineering Inc.
1851 West 24th Street P.O. Box 6029
YUMA, ARIZONA 85364 (928)344-8374
Email: nei@neilaw.com

SCALE: AS SHOWN
DATE: MARCH, 2018
DES. BY: EG
DRAWN BY: GM
SURVEYED BY: RS
JOB. No.: 016-0039
SHEET 16 OF 16

TCP1

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