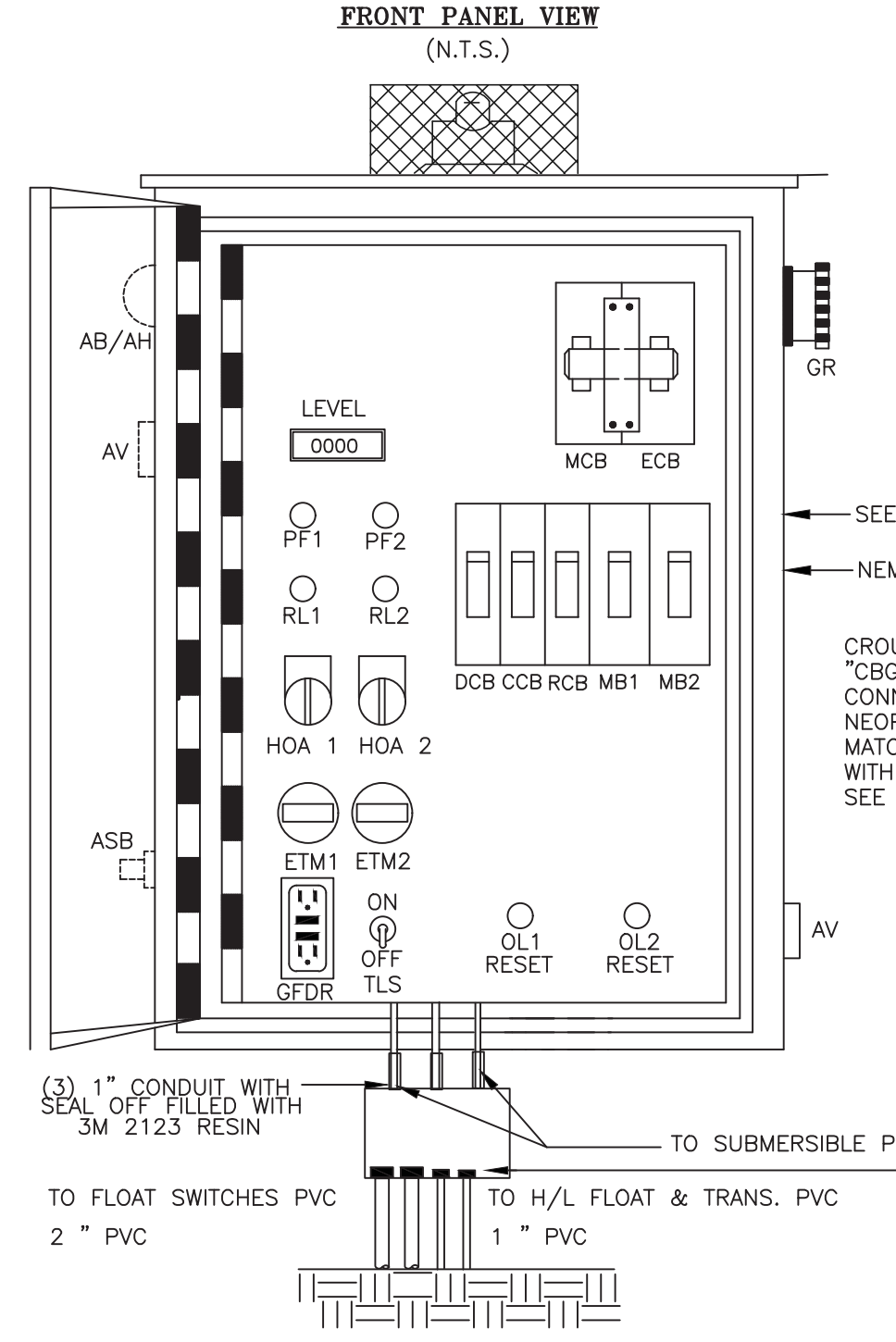
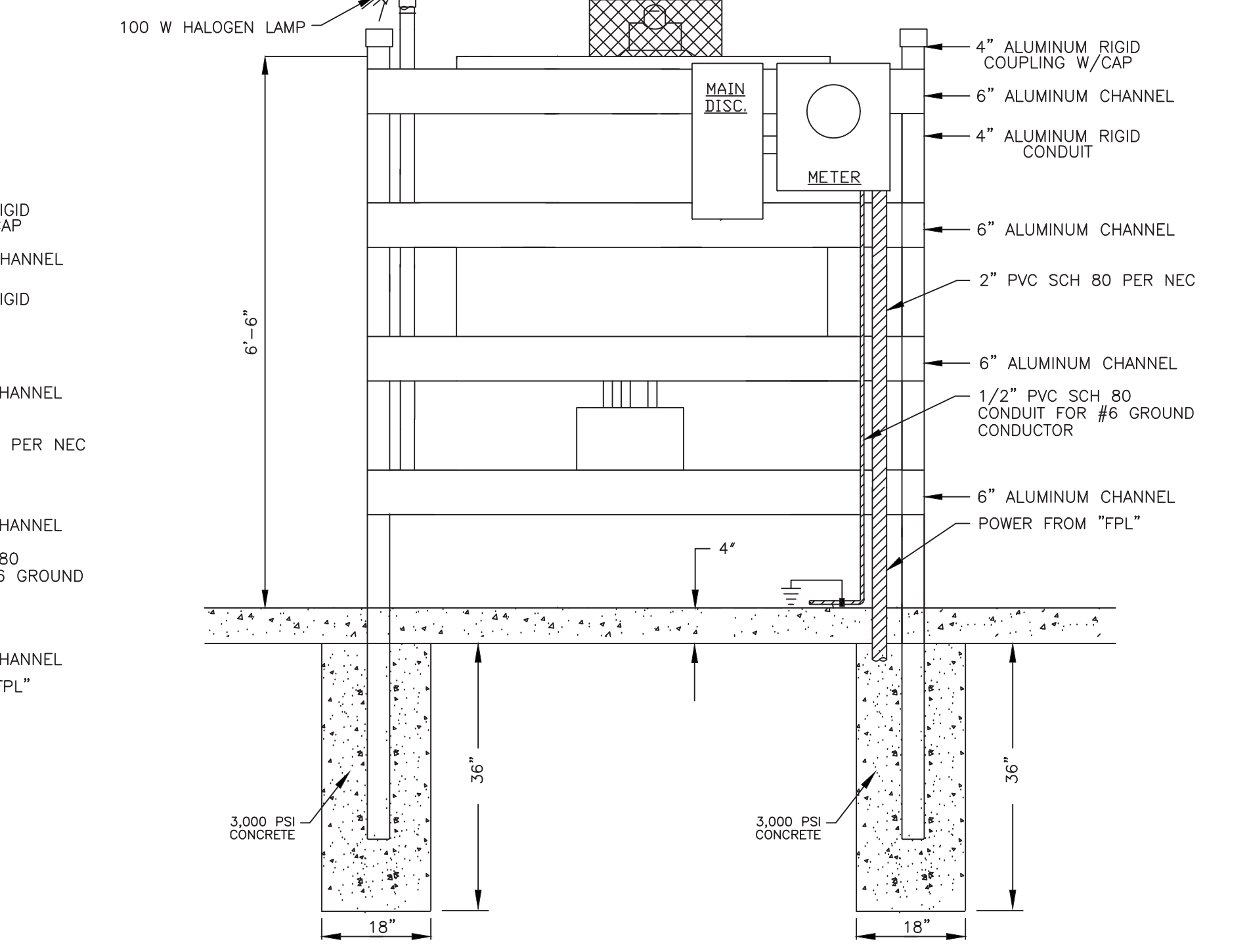
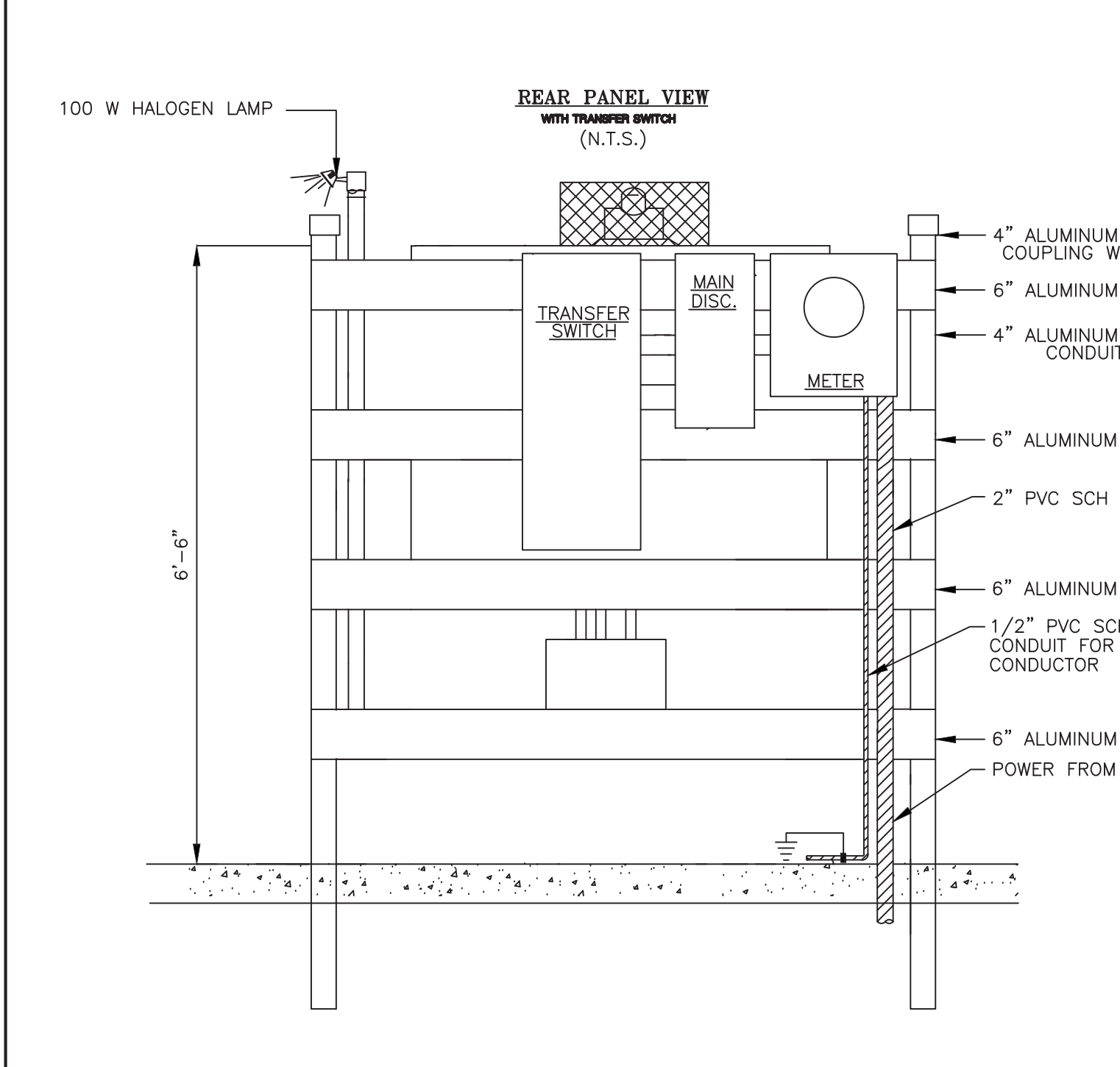
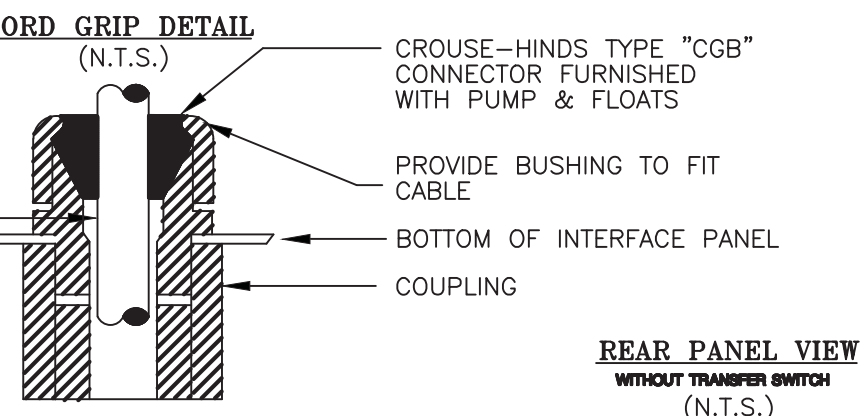
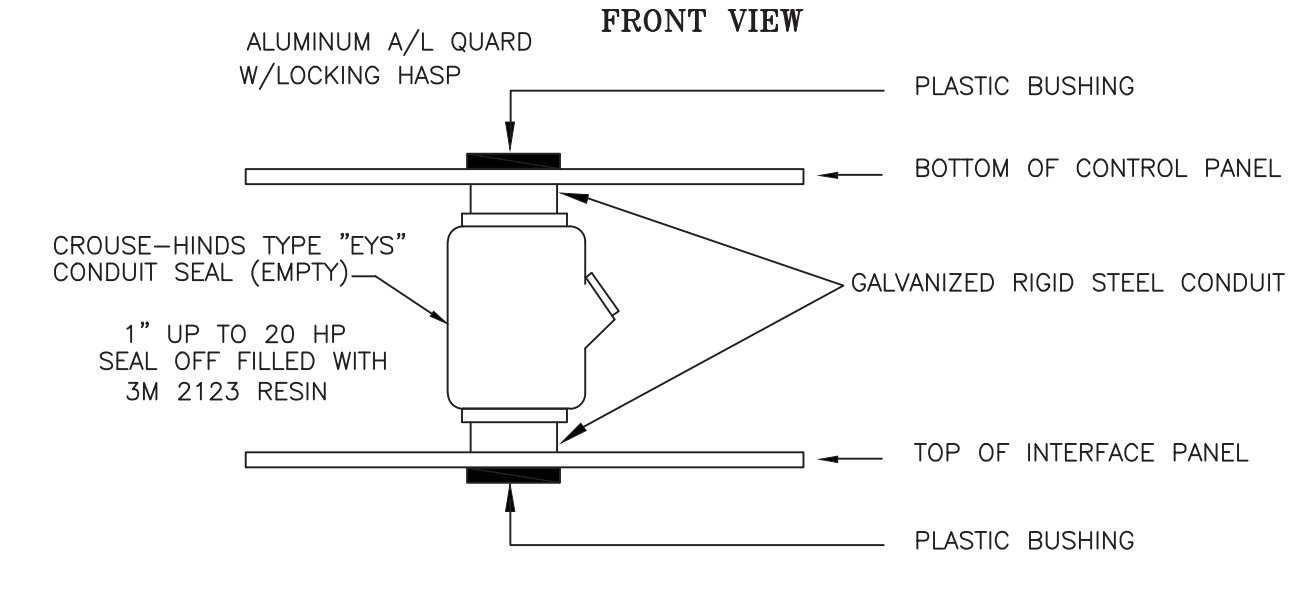


LADDER DIAGRAM MUST INCLUDE PROVISIONS FOR GFDR

### COMPONENT LEGEND

- |                                       |                                   |
|---------------------------------------|-----------------------------------|
| AL - ALARM LIGHT                      | LCB - LIGHT CONTROL BREAKER       |
| ALT - ALTERNATOR                      | MB - MOTOR BREAKER                |
| ATS - ALTERNATOR TEST SWITCH          | MCB - MAIN CIRCUIT BREAKER        |
| AV - AIR VENT                         | MS - MOTOR STARTER                |
| BCB - BLOWER CONTROL BREAKER          | OL - OVERLOAD                     |
| CCB - CONTROL CIRCUIT BREAKER         | PF - PUMP FAILURE                 |
| DPDT - DOUBLE-POLE, DOUBLE-THROW      | PFT - PUMP FAILURE TIMER          |
| DR - DISABLE RELAY                    | PM - PHASE MONITOR                |
| DRB - DUPLEX RECEPTACLE BREAKER       | PR - PUMP RUN                     |
| ECB - EMERGENCY CIRCUIT BREAKER       | R - RELAY                         |
| ETM - ELAPSED TIME METER              | RCB - RTU CIRCUIT BREAKER         |
| F - FUSE                              | RECB - RECEPTACLE CONTROL BREAKER |
| FB - FUSE BLOCK                       | RL - RUNNING LIGHT                |
| FL - FLASHER                          | RTU - REMOTE TELEMETRY UNIT       |
| FLG - FLUORESCENT LIGHT               | T - TERMINAL                      |
| FLS - FLUORESCENT LIGHT SWITCH        | TB - TERMINAL BLOCK               |
| FR - FLOAT REGULATOR                  | TD - TIME DELAY                   |
| FTS - FLOAT TEST SWITCH               | TDDE - TIME DELAY ON DE-ENERGIZE  |
| GFDR - GROUND FAULT DUPLEX RECEPTACLE | TDDE - TIME DELAY ON ENERGIZE     |
| GND - EARTH GROUND                    | TPDT - TRIPLE-POLE, DOUBLE-THROW  |
| GR - GENERATOR RECEPTACLE             | TTS - THERMAL TERMINAL STRIP      |
| HOA - HAND-OFF-AUTO SELECTOR SWITCH   | XFMR - TRANSFORMER                |
| LA - LIGHTNING ARRESTOR               | PFR - PUMP FAIL RESET             |

### SERVICE ENTRANCE AND INTERFACE BOX (N.T.S.)



### GENERAL NOTES AND REQUIREMENTS

- THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE STANDARD BUILDING CODES AND LOCAL CODES AS MAY BE APPLICABLE. SIX SHOP DRAWINGS OF ALL MAJOR EQUIPMENT SHALL BE REQUIRED PRIOR TO ORDERING EQUIPMENT.
- WORK SHALL INCLUDE ALL LABOR, MATERIALS, PERMITS AND COSTS FOR INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM.
- ALL EQUIPMENT, FIXTURES, ETC., SHALL BE STARTED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION BY THIS CONTRACTOR WHO SHALL GUARANTEE ALL WORKMANSHIP, MATERIALS AND EQUIPMENT TO BE FREE OF DEFECTS FOR A PERIOD OF (1) ONE YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY (C.O.); AND SHALL REPAIR SUCH DEFECTS WITHOUT COST TO THE OWNER. ALL EQUIPMENT SHALL BE COVERED FOR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY, AND THIS CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEES AND WARRANTIES.
- ALL WIRE SIZES SHOWN ARE FOR TINNED COPPER CONDUCTORS.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL METERING OF A TYPE APPROVED BY THE UTILITY COMPANY AND U.L. LISTED. THIS METER SHALL BE MADE OF ALUMINUM OR STAINLESS.
- IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL DETAILS OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS SUCH AS HARDWARE, CONDUIT FITTINGS, ETC., AS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM IN WORKING ORDER.
- PROVIDE A SERVICE GROUND ACCORDING TO N.E.C. ART. 250, PART "H" MINIMUM INSTALLATION TO INCLUDE: FOOTER/FOUNDATION REINFORCING STEEL (20' OF #4 MIN. SIZE), TURNED UP OR OTHERWISE EXPOSED AT THE SERVICE WITH APPROVED CONNECTORS BONDING A GROUNDING CONDUCTOR SIZED PER TABLE 250-94 TO THE STEEL AND A DRIVEN ROD GROUND (MIN. 5/8" X 8' DEEP) WITH #6 COPPER GROUNDING CONDUCTOR. ALSO BOND: METAL PIPING AND EQUIPMENT.
- ALL FASTENERS FOR CONSTRUCTION OF THE PANEL ENCLOSURE SHALL BE TYPE 304 S/S SCREWS, NUTS, BOLTS & WASHERS.
- PANEL WARNING LABELS STATING "DANGER HIGH VOLTAGE" "PUMP STATION VOLTAGE" IN RED WITH 1" WHITE LETTERS. SECURE LABEL TO DOOR.
- NON FUSED SAFETY DISCONNECT SWITCH SHALL BE SQ-D CLASS 3110 IN NEMA 4X STAINLESS STEEL ENCLOSURE C/W HANDLE WITH POWER ON POSITION LOCKING PLATE. DISCONNECT BOX SHALL HAVE LOCKABLE QUICK RELEASE DOOR LATCH ON CABINET ENCLOSURE. (NO SCREW DOWN COVER WILL BE ACCEPTED) NOTE: IF SITE HAS GENERATOR DISCONNECT SHALL HAVE A BREAKER SIZED PER NEC IN A CLASS 610 SQ-D NEMA 4X S-BREAKER ENCLOSURE.
- LADDER DIAGRAM IS DRAWN FOR THREE PHASE 230V. CHANGES ARE REQUIRED FOR SINGLE PHASE 230V, THREE PHASE 208V OR THREE PHASE 480V.
- CONTROL PANEL ENCLOSURE SHALL HAVE A PAINTED STEEL BACKPLATE, AND ALUMINUM DEADFRONT DOOR, ENCLOSURE SHALL BE TYPE 304 STAINLESS STEEL, NEMA 4X GASKETED TYPE WITH PAD LOCKABLE HASP, THREE POINT LATCH SYSTEM AND WIND RESTRAINER ARM THAT INCLUDES HARDWARE TO RESTRAIN DEADFRONT DOOR WHEN OPEN. ALL METAL COMPONENTS OF LATCH SYSTEM AND RESTRAINER TO BE MANUFACTURED OF TYPE 304 STAINLESS STEEL. ALL DEVICES MOUNTED ON ENCLOSURE ARE TO BE GASKETED OR CALKED WITH SEALANT TO RETAIN NEMA RATING. ENCLOSURE SHALL BE FURNISHED WITH TYPE 304 STAINLESS STEEL, 1-7/8" UNISTRUTS, WELDED. PROVIDE 1-7/8" STAINLESS STEEL CHANNEL, STRUT C/W TYPE 304 STAINLESS STEEL NUTS AND BOLTS TO SUIT, AS SUPPLIED BY B-LINE SYSTEMS INC. OR EQUAL. ISOLATE DISSIMILAR METALS WITH TEFLON GASKETING. PROVIDE PAD LOCKING PROVISIONS. PANEL SHALL BE ASSEMBLED IN A UL 508 RATED SHOP.
- ALL ELECTRICAL CONDUITS TO/FROM CONTROL PANELS AND SERVICE FEEDER ARE TO DROP VERTICALLY TO CONCRETE SLAB AND ROUTED UNDER SLAB TO THEIR RISE LOCATION AND CONTINUE VERTICALLY TO DESTINATION.
- AFTER ALL WIRING IS COMPLETED, ALL COB'S MUST BE TIGHTENED TO SEAL AROUND CABLES.
- FLOATS SHALL HAVE MERCURY CONTACTS.
- PLC, RTU SHALL PROVIDE THE FUNCTIONS AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
- WHEN AN ODOOR CONTROL SYSTEM IS REQUIRED THE PANEL MANUFACTURER SHALL PROVIDE AN APPROPRIATELY SIZED BREAKER AND AN ALARM CONTACT FOR THE RTU.
- THE VARIABLE DRIVE SHALL BE A SQ.D ALTIVAR 61 OR APPROVED EQUAL BY LCU. PROPER VENTILATION SHALL BE PROVIDED AS PER MANUFACTURER SPEC.
- THE CONTRACTOR SHALL PROVIDE A LIGHTNING SURGE ARRESTOR RATED FOR THE INCOMING VOLTAGE AND CURRENT.
- WHEN PANEL IS SUPPLIED WITH 480 VOLT A SIGN SHALL BE ADDED BY GF1 RECEPTACLE STATING NOT RATED FOR POWER TOOLS.
- ALL FEEDER WIRING FROM THE MAIN DISCONNECT TO THE CONTROL PANEL MAIN BREAKER SHALL HAVE NO TERMINATIONS, OR SPLICES NO EXCEPTIONS.

### ELECTRICAL NOTES:

- RTU SHALL BE SCADA PACK 334E
- MODEM OR ANY OTHER COMMUNICATIONS WILL BE SUPPLIED BY LCU
- VARIABLE DRIVES TO BE USED ON ALL SINGLE PHASE POWER
- VARIABLE DRIVES SHALL BE SQUARE D ALTIVAR 61
- POWER SUPPLY SHALL HAVE BATTERY BACKUP
- ALL SWITCHES SHALL BE SQUARE D 30 MM
- ALL STARTERS SHALL BE SQUARE D
- ALL BREAKERS SHALL BE SQUARE D
- ALL INDICATOR LIGHTS SHALL HAVE LED LAMPS
- HMI SHALL BE C-MORE EA7-56M
- PLC CODE WILL BE INSTALLED BY LCU
- ALL BREAKERS, STARTERS, VARIABLE DRIVE, WIRE SHALL BE SIZED PER NEC
- ALL CONDUCTORS FROM THE MAIN DISCONNECT TO THE MAIN BREAKER IN THE CONTROL PANEL SHALL HAVE NO TERMINATIONS.

THE FOLLOWING ARE OPTIONS:  
 1. TESYS 1 MOTOR MANAGEMENT FOR 3 PHASE STATIONS  
 2. DRIVES CONNECTED TO THE SCADA PACK THROUGH ETHERNET

### EQUIPMENT ELEVATION (N.T.S.)

