

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 (NEC MOST CURRENT ISSUE IN FORCE), THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE SHALL NOT BE PERMITTED.
- 2. COORDINATE ELECTRIC SERVICE WORK WITH THE SERVING ELECTRIC UTILITY COMPANY, AMEREN IP,
  ATTN MR. MARTY BEHRENS, P.E.
  REGIONAL ENGINEERING SUPERVISOR
  501 EAST LAFAYETTE STREET
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  PHONE 309-823-9271
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- 3. INCLUDE WEATHER PROOF ENGRAVED PHENOLIC LEGEND PLATE FOR SERVICE BREAKER LABELED "SERVICE DISCONNECT 208Y/120 VAC, 3 PH, 4W", AND A SEPARATE LEGEND PLATE LABELED "NOTE GENERATOR NEUTRAL IS ALSO BONDED TO GROUND AT SERVICE BREAKER".
- 4. SEE PANELBOARD SCHEDULE FOR ADDITIONAL REQUIREMENTS ON THE PANELBOARD.
- 5. PUMP MOTOR SIZES MAY VARY DEPENDING UPON MANUFACTURER. PUMP MOTOR STARTERS SHALL BE SIZED FOR THE RESPECTIVE PUMP MOTOR FURNISHED AND SHALL BE NEMA SIZE 1 MINIMUM. VERIFY REQUIREMENTS WITH THE RESPECTIVE PUMP MOTOR MFR.
- INCLUDE LEGEND PLATE ON PANELBOARD LABELED "WARNING POTENTIAL ELECTRIC ARC FLASH HAZARD" PER THE REQUIREMENTS OF NEC 110.16.
- 7. BATTERY, BATTERY CHARGER, AND ALL GEN. SET CONTROL AND INDICATOR PANELS SHALL BE INSTALLED INSIDE THE ENGINE GENERATOR SET WEATHER PROTECTIVE HOUSING. INCLUDE 120 VAC, 20 AMP GFCI CONVENIENCE RECEPT. WITH FS BOX TO BE INSTALLED IN THE GEN SET HOUSING.
- ALL METAL CONDUITS ENTERING SERVICE ENTRANCE EQUIPMENT AND/OR THE XFER SWITCH, SHALL BE GROUNDED USING GROUNDING BUSHINGS/ GROUNDING HUBS WITH GROUND CONDUCTOR FROM BUSHING TO RESPECTIVE ENCLOSURE GROUND BUS.
- METAL CONDUIT IN DIRECT CONTACT WITH EARTH OR CONCRETE SHALL BE PVC COATED GRSC. METAL CONDUIT ENTERING THE SEWAGE PUMP STATION WET WELL SHALL BE PVC COATED GRSC OR PVC COATED RIGID ALUMINUM.
- 10. PROVIDE NEMA 4 HUBS FOR ALL CONDUITS ENTERING ENCLOSURES THAT ARE RATED NEMA 4 OR NEMA 4X TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE. PROVIDE NEMA 4 HUBS FOR ALL CONDUITS ENTERING THE PANELBOARD ENCLOSURE.
- 11. SERVICE BREAKER AND GENERATOR BREAKER SHALL BE SELECTED & COORDINATED TO MAINTAIN THE WITHSTAND AND CLOSING RATING OF THE RESPECTIVE AUTO TRANSFER SWITCH. GENERATOR BREAKER SHALL ALSO BE SIZED PER THE ENGINE GENERATOR SET REPRESENTATIVE'S/MFR'S RECOMMENDATION FOR THE RESPECTIVE SET FURNISHED. AUTO TRANSFER SWITCH SHALL HAVE A 14,000 AMP (MINMUM) WITHSTAND & CLOSING RATING WHEN USED WITH SPECIFIED BREAKERS LISTED BY THE AUTO TRANSFER SWITCH MFR. PROVIDE THIS INFORMATION WITH THE SHOP DRAWING SUBMITTAL.



EXPIRES! NOV. 30, 2005

PUMP STATION ELECTRICAL ONE—LINE FELL AVENUE BRIDGE REPLACEMENT

DRAWN MV 10/07/2004 DESIGNED KNL 10/07/2004

FILE: 03S2019

CHECKED KNL 10/09/2004 CHECKED XXX

DATE: 2-2-05



- 100 AMP, 3 POLE, CIRCUIT BREAKER WITH 100 AMP, 3 POLE WITH S/N 22,000 AIC (MIN.) AT 240 VAC IN A NEMA 208Y/120 VAC, 3 PH, 4W WEATHERPROOF, RODENT 4X STAINLESS STEEL ENCL. UL LISTED AUTO TRANSFER SWITCH IN A PROOF ENGINE GENERATOR SUITABLE FOR SERVICE ENTRANCE, SQUARE D NEMA 4 PAINTED STEEL SET HOUSING 3 #2 XHHW, 1 #2 NEUTRAL, CAT. NO. ECL34100 WITH FA100DS ENCLOSURE OR NEMA 4X 1 #6 GND IN 2" GRSC SEE NOTE 11 ENCLOSURE, OR APPROVED EQUAL. INCLUDE STAINLESS STEEL ENCLOSURE 3 #2 XHHW, 1 #2 NEUTRAL -NEUTRAL & GND KIT. SEE NOTE 11. IN 2" GRSC 100A 3P DIESEL ENGINE 100A 3P 100A 3P GENERATOR SET. 208Y/120 VAC 3 PH. 4W SEE SPECS. O.H. SERVICE GND S/N #6 AWG (MIN.) CU METER BASE PER SERVING-S/N GND BONDING JUMPER ELECTRIC UTILITY CO. TO WATER SERVICE PIPE. CONNECT REQUIREMENTS TO WATER PIPE (ON LINE SIDE #6 AWG BARE STRANDED BEFORE THE VALVE) WITH UL LISTED 3 #2 XHHW, 1 #2 NEUTRAL, COPPER GROUNDING 3 #2 XHHW, 1 #2 NEUTRAL, PIPE CLAMP SUITABLE FOR DIRECT ELECTRODE CONDUCTOR. 1 #6 GND IN 2" GRSC 1 #6 GND IN 2" GRSC #6 BARE STR. CU. BURIAL IN FARTH & SIZED FOR THE RESPECTIVE PIPE & GROUND WIRE. - ULLISTED PER UL 1449 AC SURGE PROTECTOR 3 #2 XHHW, 1 #2 NEUTRAL, SUITABLE FOR 208/120 VAC. 3 PH. 4W PLUS 1 #6 GND IN 2" GRSC GROUND SYSTEM, WITH SURGE CURRENT RATING #6 AWG BARE STRANDED COPPER GROUNDING ELECTRODE OF 40 KA, 8x20 MICROSECOND WAVE, PER MODE, AND STATUS INDICATION LIGHTS, JOSLYN CONDUCTOR INSTALL IN 1" MODEL 1455-21, OR APPROVED EQUAL. SCHED 40 PVC FROM SERVICE MAINTAIN LEADS AS SHORT & AS STRAIGHT AS BKR ENCL TO 1' BELOW GRADE. POSSIBLE. 12' TO 15' (TYP.) 10'L x 3/4" DIA UL LISTED COPPER CLAD GND ROD (TYP. FOR 3). TOP OF GND RODS GROUND TO BE 24" MIN. BELOW GRADE. #6 BARE STR. CU GND GND GND FIELD CONDUCTOR'S TO TO GROUND FIELD ROD ROD ROD BE 30" MIN. BELOW GRADE. - #6 BARE STR. CU. MIN. BURY 30" BELOW GRADE. CONNECT 100 AMP, 208/120 VAC, 3 PH, 4W 24 TO GND RODS WITH CKT PANELBOARD WITH 100 AMP. 3P EXOTHERMIC WELD (TYP.) MAIN BKR IN A NEMA 3R & 12 ENCLOSURE. SEE PANEL SCHEDULE. 30A 3P UL LISTED PER UL 1449, AC SURGE PROTECTOR SUITABLE FOR 208Y/120 VAC. 3 PH. 4W PLUS GROUND SYSTEM 60A 3F WITH SURGE CURRENT RATING OF 40 KA, 8x20 MICROSECOND WAVE, PER 20A 1P PROVIDE EQUIPT GND BAR-2 #6 THWN, 1 #6 NEUTRAL, -MODE, AND STATUS INDICATION LIGHTS, TO ACCOMODATE ALL GND 1 #8 GND IN 1" GRSC JOSLYN MODEL 1455-21, OR WIRES TO & FROM PUMP CONTROL PANEL APPROVED EQUAL. MAINTAIN LEADS AS S/N • SHORT & AS STRAIGHT AS POSSIBLE PUMP STATION CONTROL PANEL PUMP STATION PANELBOARD IN A NEMA 4X GND • STAINLESS STEEL ENCLOSURE, SEE SPECS POWER DIST BLOCK-1 #10 THWN. 1 #10 BREAKERS SIZED AS-REQUIRED FOR THE NEUTRAL, 1 #10 GND IN TO CONTROL RESPECTIVE PUMP 3/4" GRSC CIRCUIT MOTOR AND IN ACCORDANCE WITH NEC TO HEATER & TELEPHONE DIALER CIRCUIT NEMA 7 & NEMA 4 CAST ALUMINUM J-BOX IN VALVE SZE SIZE VAULT. SPHCF CONDUCTORS IN J-BOX & PROVIDE CORD GRIP SEALING FITTING FOR PUMP MOTOR CABLE SUBMERSIBLE SEWAGE PUMP WITH 200 VAC, 3 PH EXPLOSION PROOF MOTOR UL LISTED, FM LISTED, OR ETL SUMP PUMP WITH FLOAT 3 SWITCHES & CONTROLLER IN LISTED SUITABLE FOR CLASS 1, GROUP D HAZARDOUS VALVE VAULT. SUMP PUMP & PUMP #1 PUMP #2 LOCATION MOTOR SHALL BE UL LISTED, FM LISTED, OR ETL LISTED SUITABLE FOR CLASS I, DIV. 2,

GROUP D LOCATION