ADDENDUM #2

PROJECT: City of Waycross - Wastewater Treatment Plant Generator Replacement

ACTION: Plan/Specification Changes

DATE: September 4, 2020

REVISED BID DATE: Friday, September 11 at **10:00 AM** (see #1 below)

The following addenda items are for the above referenced plans, specifications, and/or contract documents:

1. **BID OPENING TIME:** Bid opening **time** will change to **Friday, September 11 at 10:00 A.M**.

2. **SPECIFICATION SECTION 00400 – BID FORM** – the Bid Form has been revised to add an alternate deductive bid item. Bidders should use the Bid Form included with this addendum when preparing their bid. The City reserves the right to award the project either based on low base bid or base bid with selected alternate deduct; whichever the City deems is in it's best interest. The bidder is not required to offer an alternate if offering a base bid.

   Additionally, all bidders shall be an electrical contractor licensed by the State of Georgia. The Georgia Electrical Contractor License Number should be listed on the BID FORM included with this addendum.

3. **SPECIFICATION SECTION 16231 – ACCEPTABLE GENERATOR MANUFACTURERS** The list of acceptable generator manufactures shall be amended to include Blue Star.

4. **SPECIFICATION SECTION 16231 – GENERATOR CONTROLLER CLARIFICATION** Contractor is allowed to use generator controller functionality to meet NEC 240.87 requirement of "Maintenance mode" instead of traditional ARM switch.

Below are questions submitted through written RFI during the bid period and pertaining answers if not addressed elsewhere in this addendum:

1. **Question:** Switchboard #2 is a stand-alone SWD. Currently the existing service is entering from the top but whomever installed a normal power feeder to the ATS also ran the raceway across the top of the SWD. How long of a power outage will be allowed to demo existing and install new service. The current service is 1200amp (3) sets of four inch and we are replacing them with (6) sets. There physically is not enough space in the top of the gear for both sets.

   Answer: The contractor shall install power conduits (SWBD-1 to new ATS and from new ATS to SBWD-2) to the closest proximity to the Switchboards to minimize shut down time during cables/conduits connection to the electrical equipment and demolition of the existing conduits.

The maximum shutdown time should not exceed 2 hours and only between the hours of 2:00 AM and 5:00 AM during weekday nights. Should the installing contractor need more downtime, he/she shall install temporary power to power the facility.

2. **Question:** Entry point shown on contract drawings already has HVAC installed in the area and there is an electrical manhole in the same space. Moving west is not an option due to existing electrical already being surface mounted. Moving east will have us going through a shower area. Please advise.

   Answer: The contractor shall adjust the building entry points as needed to avoid interference with the existing utilities. Run the incoming conductors through "storage" or "Open Air Storage" area around Bathroom and penetrate the Electrical room from South side.

3. **Question:** While on site several 18 wheel trucks entered the plane to dump their loads. Can road be closed while new electrical duct bank is being installed?

   Answer: Location of generator has been changed. Refer to revised plan sheets E-001 – E - 901 included with this addendum for revised location.

4. **Question:** Stagger Starting – 1250kW vs. 1500kW.
   a. Loads are all listed under step 1, its possible to achieve this. However, we see that many of the large motors have VFD's. It maybe beneficial **to introduce a time delay** for the 150 hp motors and the 75 hp motors (motors or VFD's). Its likely we, and others, will have to quote 1500kW gensets rather than 1250kW gensets. Introducing a time delay between some of these motors will **avoid upsizing to 1500kW**. We also have a 1350kW available, but 1250kW is enough since cumulative loads add to 1040kW. (82% of 1250kW)

   b. It possible to add this time delay for some of the motors that have VFD?

   Answer: In case 1250kW generator can't start the loads in one step as specified on the drawings, contractor shall include time relays to provide the required load staggering as recommended by the generator manufacturer.

5. **Question:** Can we offer Factory enclosure as a VE package, and would adding a floor qualify our factory enclosure as walk-in? We can certainly offer walk-in from a vendor as well.

   Answer: This issue is addressed in the Bid Form as part of this addendum- Item 2 above. Factory enclosures for the Generator are acceptable. The Generator vendor shall ensure that the generator enclosure will house a disconnect switch, stepdown transformer and distribution panelboard with all generator accessories prewired as indicated on the one line diagram drawing E-101. All the required platforms/stairs shall be included with the proposed generator to meet applicable codes. Factory enclosure shall provide the required clearances for proper generator service and maintenance. For the Generator vendors, who

are not able to house Disconnect switch and Stepdown transformer inside the generator factory enclosure, the contractor shall install outdoor rated Disconnect switch and 480-208/120, 3Ph Transformer next to the generator. Disconnect and Transformer shall be properly selected for the Voltage and amperage ratings and shall be provided with NEMA 4X SS enclosure to withstand corrosive environment. The contractors may submit two options for the City's consideration – base bid with walk-in enclosure (as specified on the drawings and specifications) and alternative bid with Factory enclosure (including all the costs for external disconnect switch and TFR installation and wiring) as described above.

PLAN SHEET CHANGES: Plan Sheet numbers E-001, E-101, E-301, E-302, and E-901 have been revised to reflect the new location of the generator. The revised plan sheets are included with this addendum and should be used in the preparation of bids.

All bidders shall acknowledge receipt of all addenda issued where indicated on the bid sheets. (SECTION 00410 - BID FORM, Page 2)

ATTENTION

ALL BIDDERS SHALL MARK IN THE SPACE PROVIDED ON THE BID SHEET(S) TO INDICATE RECEIPT OF THIS ADDENDUM.

BIDDERS ARE ADVISED THAT IT IS THEIR RESPONSIBILITY TO VERIFY THAT ANY AND ALL ADDENDA HAVE BEEN RECEIVED PRIOR TO SUBMISSION OF THE BID. IN CASE ANY BIDDER FAILS TO ACKNOWLEDGE RECEIPT OF ANY SUCH ADDENDA IN THE SPACE PROVIDED ON THE BID FORM, THE BID WILL NEVERTHELESS BE CONSTRUED AS THOUGH THE BIDDER HAS RECEIVED AND ACKNOWLEDGED ALL SUCH ADDENDA, AND THE SUBMISSION OF THE BID WILL CONSTITUTE ACKNOWLEDGEMENT AND RECEIPT OF SAME.

SECTION 00410
BID FORM

PROJECT IDENTIFICATION:
Wastewater Treatment Plant Generator Replacement

CONTRACT IDENTIFICATION AND NUMBER:
W3000.101

THIS BID IS SUBMITTED TO:
City of Waycross
417 Pendleton St.
Waycross, GA 31501

THIS BID IS SUBMITTED FROM:

Bidder: _____

Address: _____

_____

Phone: _____

State of Georgia Electrical Contractor License No.: _____

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the day of Bid opening. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of Owner's Notice of Award.

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

(a) Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Addendum Number

(b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

(c) Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in paragraph 4.2 of the General Conditions, and accepts the determination set forth in paragraph 4.2.1 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which Bidder is entitled to rely.

(d) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work as Bidder considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.

(e) Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by Bidder in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.3 of the

General Conditions.

(f) Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents. Bidder has given Engineer written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder.

(g) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with an agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

(h) Bidder agrees to commence work under this Agreement on or before a date to be specified in a written "Notice to Proceed" of the Owner.

Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.

4. Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

(a) BASE BID:

TOTAL LUMP SUM BID AMOUNT

Bidder agrees to furnish all labor, materials, and equipment necessary for demolition and to construct the Wastewater Treatment Plant Generator Replacement Project for the City Waycross per the full set of Construction Drawings, Design Based Equipment, Contract Documents and Technical Specifications, and all other supporting documents referenced in the Plans and Specifications for the LUMP SUM PRICE (including all cash allowances per Section 01020) for the amount of

(Words) _____

_____ **Dollars**

$_____ **(Numbers).**

(b) ALTERNATE BID:

DEDUCTIVE AMOUNT FOR FACTORY ENCLOSURE

Bidder may choose to offer a deduct for providing a factory enclosure rather than a walk-in type enclosure. Below, please list the amount to be deducted from the BASE BID price above to provide a factory enclosure that will house a disconnect switch, stepdown transformer and distribution panelboard with all generator accessories prewired as indicated on the one line diagram drawing E-101. All the required platforms/stairs shall be included with the proposed generator to meet applicable codes. Factory enclosure shall provide the required clearances for proper generator service and maintenance. For the Generator vendors, who are not able to house Disconnect switch and Stepdown transformer inside the generator factory enclosure, the contractor shall install outdoor rated Disconnect switch and 480-208/120, 3Ph Transformer next to the generator. Disconnect and Transformer shall be properly selected for the Voltage and amperage ratings and shall be provided with NEMA 4X SS enclosure to withstand corrosive environment.

The reduction in scope described above in the ALTERNATE BID shall reduce the BASE BID amount by: (Words) _____

_____ **Dollars $** _____

_____ **(Numbers).**

5. Bidder agrees that the Work will be substantially complete and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 150 calendar days after the date when the Contract Times commence to run.

6. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

7. The following documents are attached to and made a condition of this Bid:
   a. Required Bid Security in the form of 5% of the Bid Total Price.

8. The undersigned further agrees that in case of failure on his part to execute the said contract and the Bond within fifteen (15) consecutive calendar days after written notice being given

of the award of the contract, the check or bid bond accompanying this bid, and the monies payable thereon shall be paid into the funds of the Owner as liquidated damages for such failure, otherwise, the check or bid bond accompanying this proposal shall be returned to the undersigned.

9. Communications concerning this Bid shall be addressed to:

ESG Engineering, Inc.
6400 Peake Rd
Macon, GA 31210
Attn: Margaret Hildebrand
mhildebrand@esgengineering.com

Terms used in this Bid which are defined in the General Conditions or Instructions to Bidders will have the meanings indicated in the General Conditions of Instructions.

SUBMITTED on _____, 20___.

BIDDER: _____

BY: _____

TITLE: _____

STATE CONTRACTOR
LICENSE NO. _____

ADDRESS: _____

_____

_____

PHONE: _____

Seal: (if bid by a Corporation)

END OF SECTION

SCHEMATIC DIAGRAM SYMBOLS

- CONDUCTORS CONNECTED
- CONDUCTORS NOT CONNECTED
- CONNECTION POINT
- XX — TERMINAL POINT FOR OUTGOING CONDUCTORS, WITH IDENTIFICATION. "XX" DENOTES CONTRACTOR ASSIGNED.
- MCPXXX–XX / XXA — MAGNETIC–ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING
- CBXXX–XX / XXA — CIRCUIT BREAKER, THERMAL–MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING
- FUXXX–XX / XXA — FUSE WITH SIZE AND OPTIONAL IDENTIFICATION.
- DSXXX–XX / XXXA — DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP, 600V RATED MINIMUM UNLESS OTHERWISE NOTED.
- FUXXX–XX / XXA — FUSE DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP, 600V MINIMUM UNLESS OTHERWISE NOTED.
- M–XXX / XX — MOTOR (HP AS SHOWN, PHASES AS REQUIRED)
- MSR–XXX / XX XX — MOTOR STARTER COIL
- OL–XXX — THERMAL MOTOR OVERLOAD
- M–XXX — MOTOR CONTACT
- LSXXX–XX LSXXX–XX — LIMIT SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- PSXXX–XX PSXXX–XX — PRESSURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- TSXXX–XX TSXXX–XX — TEMPERATURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- FSXXX–XX FSXXX–XX — FLOW SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- FLTXXX–XX FLTXXX–XX — LEVEL SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- PRSXXX–XX PRSXXX–XX — PROXIMITY SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- PCSXXX–XX PCSXXX–XX — PULLCORD SWITCH NORMALLY CLOSED AND NORMALLY OPEN
- SVXXX–XX — SOLENOID VALVE
- PBXXX–XX PBXXX–XX — MOMENTARY PUSHBUTTON NORMALLY CLOSED AND NORMALLY OPEN
- SSXXX–XX SSXXX–XX — OX OX — SELECTOR SWITCH NORMALLY NORMALLY CLOSED AND NORMALLY OPEN
- LTXXX–XX — PILOT LIGHT X = LENS COLOR
  - A = AMBER
  - B = BLUE
  - G = GREEN
  - R = RED
  - W = WHITE
- CRXXX–XX — CONTROL RELAY
- CRXXX–XX CRXXX–XX — CONTROL RELAY CONTACT NORMALLY CLOSED AND NORMALLY OPEN
- ALXXX–XX — ALARM LIGHT
- AHXXX–XX — ALARM HORN
- H1 H2 / X1 X2 — TFRXXX–XX — CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED.
- C.T. — CTXXX–XX — CURRENT TRANSFORMER. PRIMARY/SECONDARY TURNS RATIO AS SHOWN.

GROUNDING SYMBOLS

- GROUND ROD, 3/4" x 10'–0", COPPERCLAD (UNLESS OTHERWISE NOTED)
- GROUND ROD AND WELL
- COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT
- EXOTHERMIC TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT

ONE LINE DIAGRAM SYMBOLS

- CB–XXX — LOW VOLTAGE POWER CIRCUIT AND BREAKER DRAWOUT TYPE, FRAME TRIP SHOWN
- CB–XXX — MOLDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN
- LIGHTNING ARRESTOR AND GROUND
- DS–XXX — DISCONNECT OR ISOLATING SWITCH: CONTINUOUS RATING SHOWN
- MCP–XXX — MAGNETIC–ONLY CIRCUIT BREAKER (MCP), DRAWOUT TYPE, WITH CURRENT RATING
- FS–XXX — FUSED SWITCH: FUSE AND SWITCH CONTINUOUS RATINGS SHOWN
- TFR–XXX — POWER TRANSFORMER: PRIMARY & SECONDARY VOLTAGES, KZ, SIZE SHOWN
- XS — CURRENT TRANSFORMER: RATIO SHOWN (3 INDICATES NO. OF CT'S)
  METER SWITCH, XS:
  - AS – AMMETER SWITCH
  - VS – VOLTMETER SWITCH
  - FS – FREQUENCY SWITCH
- PT — POTENTIAL TRANSFORMER PRIMARY & SECONDARY VOLTAGES & WINDINGS SHOWN. (x) UNITS
- METER:
  - A – AMMETER
  - W – WATTMETER
  - KWH – WATT–HOUR METER
  - F – FREQUENCY METER
  - VAR – VAR METER
  - V – VOLTMETER
- FVNR SIZE 1 — FULL VOLTAGE, NON–REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED
- FVR SIZE X — FULL VOLTAGE, REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED
- XXHP — VFD–XXX — VARIABLE FREQUENCY DRIVE. NEMA SIZE INDICATED
- XXHP — RVSS–XXX — REDUCED VOLTAGE SOLID STATE DRIVE (SOFT START). NEMA SIZE INDICATED
- XX / M–XXX — MOTOR (HP AS SHOWN, PHASES AS REQUIRED)
- GENERATOR RECEPTACLE
- N E — MTS–XXX — MANUAL TRANSFER SWITCH
- P–XXX–X — CABLE TAG:
  - P – POWER CABLE
  - C – CONTROL CABLE
  - S – SHIELDED SIGNAL CABLE

CIRCUIT AND RACEWAY SYMBOLS

- SCHEMATIC DIAGRAM FIELD WIRING. (UNLESS OTHERWISE NOTED)
- ONE LINE DIAGRAM EQUIPMENT ENCLOSURE. (UNLESS OTHERWISE NOTED)
- GROUNDING CONDUCTOR (CONCEALED), #4/0 AWG BARE COPPER
- GROUNDING CONDUCTOR (EXPOSED), #4/0 AWG INSULATED COPPER
- PBD A–1,3,5 — HOME RUN – SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION
  EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5

FIRE ALARM SYSTEM SYMBOLS

- S — SMOKE DETECTOR

GENERAL ABBREVIATIONS

AR	ALARM RELAY	MCC	MOTOR CONTROL CENTER
AS	AMMETER SELECTOR SWITCH	MCP	MOTOR CONTROL PANEL/MOTOR CIRCUIT PROTECTOR
A, AMP	AMP(S), AMPERE(S)		
AC	ALTERNATING CURRENT	MECH	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURE(R)
AHAP	AS HIGH AS POSSIBLE	MH	MANHOLE
AIC	AMPS INTERRUPTING CAPACITY, SYMM.	MIC	MICROPHONE
AL	ALUMINUM	MIN	MINIMUM
AT	AMPERE TRIP	MISC	MISCELLANEOUS
AF	AMPERE FRAME	mM	MILLIMETER
AUTO	AUTOMATIC	mV	MILLIVOLT
AUX	AUXILIARY	MCM	MILLI CIRCULAR MILLS
AWG	AMERICAN WIRE GAUGE	MOP	MOTOR OPERATOR PANEL
		MPR	MOTOR PROTECTION RELAY
BC	BARE COPPER CONDUCTOR	MCB	MAIN CIRCUIT BREAKER
BKR	BREAKER	MTR	MOTOR
		MVS	MEDIUM VOLTAGE STARTER
C	CONDUCTOR/CONTACTOR		
CB	CIRCUIT BREAKER	N/A	NOT APPLICABLE
CJB	CIRCUIT JUNCTION BOX	NC	NORMALLY CLOSED
CKT	CIRCUIT	NEUT,N	NEUTRAL
CLG	CEILING	NIC	NOT IN CONTRACT
CR	CONTROL RELAY	NO	NORMALLY OPEN
CND	CONDUIT	NOM	NOMINAL
CONC	CONCRETE	NP	NAMEPLATE
CS	CONTROL SWITCH	NTS	NOT TO SCALE
CONT	CONTROL		
CPT	CONTROL POWER TRANSFORMER	OC	ON CENTER
CT	CURRENT TRANSFORMER	OD	OUTSIDE DIAMETER
CU	COPPER	OH	OVERHEAD
		OL's	OVERLOADS
D	DIAMETER	OT	OIL TIGHT
DB	DUCT BANK		
DC	DIRECT CURRENT	P	POLE
DET	DETAIL	PA	PUBLIC ADDRESS
DIAG	DIAGRAM	PB	PUSHBUTTON, PULLBOX
DPSH	DIFFERENTIAL PRESSURE SWITCH	PE	PHOTO ELECTRIC CELL
DS	DISCONNECT SWITCH	PF	POWER FACTOR
DWG	DRAWING	PH	PHASE
		PJB	POWER JUNCTION BOX
EA	EACH	PLC	PROGRAMMABLE LOGIC CONTROLLER
EC	ELECTRICAL CONTRACTOR	PNL	PANEL
EF	EXHAUST FAN	PP	POWER PANEL
EL	ELEVATION	PR	PAIR
ELEC	ELECTRIC(AL)	PRI	PRIMARY
EMER	EMERGENCY	PS	PRESSURE SWITCH
ENCL	ENCLOSURE/ENCLOSED	PT	POTENTIAL TRANSFORMER
EP	EXPLOSION PROOF EQUIP.	PVC	POLYVINYL CHLORIDE
EX, E	EXISTING	PWR	POWER
FCP	FURNISHED WITH EQUIPMENT PANEL	QSH	SHEAR PIN LIMIT SWITCH
FDR	FEEDER		
FLA	FULL LOAD AMPS	RCPT	RECEPTACLE
FPP	FIBER OPTIC DISTRIBUTION PANEL	RCT	REACTOR
FS	FLOW SWITCH	REF	REFERENCE REQ'D REQUIRED
FU	FUSE	RMS	ROOT MEAN SQUARE
FUT	FUTURE	RTD	RESISTANCE TEMPERATURE DETECTOR
FVNR	FULL VOLTAGE NON–REVERSING		
FVR	FULL VOLTAGE REVERSING	SCH	SCHEDULE
		SE	SPEED SENSOR
GALV	GALVANIZED	SEC	SECONDARY
GEN	GENERATOR	SEL	SELECTOR
GFR	GROUND FAULT RELAY	SER	SERVICE ENTRANCE RATED
GRD	GROUND	SPDT	SINGLE POLE DOUBLE THROW
GRS	GALVANIZED RIGID STEEL	SPEC	SPECIFICATION
		SPHTR	MOTOR SPACE HEATER
H	HIGH	SPKR	SPEAKER
HGT	HEIGHT	SSL	SPEED SWITCH
HH	HANDHOLE	SUB	SUBSTATION
HID	HIGH INTENSITY DISCHARGE	SW	SWITCH
HP	HORSEPOWER	SYMM	SYMMETRICAL
HS	HAND STATION (SWITCH)	SYS	SYSTEM
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	SV	SOLENOID OPERATED VALVE
		SPB	SIGNAL PULL BOX
HZ	HERTZ (CYCLES PER SECOND)		
HOA	HAND/OFF/AUTO	TB	TERMINAL BOX
HOR	HAND/OFF/REVERSE	TEL	TELEPHONE
HMH	HIGH VOLTAGE MANHOLE	TEMP	TEMPERATURE
		TFR	TRANSFORMER
ID	INSIDE DIAMETER	TH	THERMOSTAT
IMC	INDIVIDUAL MOTOR CONTROLLER	TJB	TERMINAL JUNCTION BOX
INTLK	INTERLOCK	TSH	TEMPERATURE SWITCH HIGH
INST	INSTANTANEOUS	TV	TELEVISION
INSTR	INSTRUMENT	TYP	TYPICAL
I/O	INPUT–OUTPUT	TR	TIMING RELAY
		TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
JB	JUNCTION BOX	TSP	TWISTED SHIELDED PAIR
KV	KILOVOLT	UG	UNDERGROUND
KVA	KILOVOLT–AMPERE	UH	UNIT HEATER
KVAR	KILOVOLT–AMPERE REACTIVE	UON	UNLESS OTHERWISE NOTED
KW	KILOWATT		
KWH	KILOWATT–HOUR	V	VOLT
KAIC	KILO AMPERE INTERRUPTING CURRENT	VA	VOLT AMPERE
		VAR	VOLT AMPERE REACTIVE
L–O–R	LOCAL–OFF–REMOTE	VFD	VARIABLE FREQUENCY DRIVE
L	LONG	VSH	VIBRATION SWITCH
LC	LIGHTING CONTACTOR		
LCP	LOCAL CONTROL PANEL	W	WATT, WIRE, WIDE
LP	LIGHTING PANEL	W/	WITH
LOS	LOCK–OUT STOP	W/O	WITHOUT
LSIG	LONG, SHORT, INSTANTANEOUS TRIP SETTING AND GROUND FAULT PROTECTION	WE	WEIGHT LOAD CELL
		WIT	WEIGHT INDICATING TRANSMITTER
LSL	LEVEL SWITCH LOW	WP	WEATHERPROOF
LSO	LIMIT SWITCH OPEN		
LSC	LIMIT SWITCH CLOSED	XL	WARNING HORN/LIGHT
LTG	LIGHTING	XT	ANEMOMETER
LV	LOW VOLTAGE		
LSH	LEVEL SWITCH HIGH	ZS	POSITION (LIMIT) SWITCH
		ZSO	POSITION (LIMIT) SWITCH OPEN
M	MOTOR CONTACTOR	ZSC	POSITION (LIMIT) SWITCH CLOSED
mA	MILLIAMPERE	ZT	POSITION TRANSMITTER
MAX	MAXIMUM		
MCB	MAIN CIRCUIT BREAKER		

PLAN DRAWING SYMBOLS

- M — MOTOR CONNECTION
- MOTOR STARTER, INDIVIDUAL –– NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY
- COMBINATION MOTOR STARTER/DISCONNECT INDIVIDUAL –– NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY
- DISCONNECT SWITCH. DISCONNECT SWITCHES ARE HEAVY DUTY, SINGLE THROW, WITH NEMA 4X ENCLOSURE UNLESS OTHERWISE NOTED. MOUNT AT 4'–8" TO CENTER OF DISCONNECT.

GENERAL NOTES:

1. SCOPE:
   A. FURNISH ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS REQUIRED TO COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEM INCLUDING BUT NOT LIMITED TO WIRING, BOXES, PANELS, SWITCHES, RECEPTACLES AND ALL OTHER WORK INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN.
   B. OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION AND DELIVER CERTIFICATE OF APPROVAL TO THE GENERAL CONTRACTOR. ALL ASSOCIATED FEES SHALL BE PAID BY THE CONTRACTOR.
   C. ALL MATERIALS AND EQUIPMENT OF THE ELECTRICAL SYSTEM NECESSARY FOR ITS PROPER AND SAFE OPERATION OR OTHERWISE REQUIRED BY CODE, BUT NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL CHARGE.
   D. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE, THE LATEST STANDARD BUILDING CODE, ANY OTHER LOCALLY ADOPTED CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.
2. ALL SUBSTITUTIONS FOR EQUIPMENT AND MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES. IT IS THE RESPONSIBILITY OF CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AND COORDINATED THE INSTALLATION ACCORDINGLY. THE EQUIPMENT WIRING SHALL INCLUDE ALL NECESSARY CABLES AND CONDUIT REQUIRED FOR THE PROPER AND SAFE EQUIPMENT OPERATION.
4. ALL CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR POWER AND LIGHTING WIRING. USE #14 AWG MINIMUM CONDUCTOR FOR SIGNAL WIRING. THE INSULATION FOR ALL CONDUCTORS SHALL BE THWN–2. SERVICE ENTRANCE CONDUCTORS SHALL BE XHHW. ALL CABLE INSTALLED IN CABLE TRAYS SHALL BE TC RATED.
5. POWER WIRES SIZES #12 AWG AND #10 AWG SHALL BE SOLID TYPE. ALL OTHER SIZES SHALL BE STRANDED.
6. ALL EXPOSED CONDUITS SHALL BE GALVANIZED RIGID STEEL, UNLESS NOTED OTHERWISE ON THE DRAWINGS, MINIMUM OF 3/4". ALL BURIED CONDUIT SHALL BE PVC–40, MINIMUM OF 1". ALL UNDERGROUND CONDUITS SHALL HAVE RIGID STEEL ELBOWS.
7. ALL FITTINGS SHALL BE CAST WITH THREADED HUBS. ALL CONNECTIONS SHALL BE COMPRESSION TYPE.
8. CONTRACTOR SHALL PROVIDE PULL STRING AND IDENTIFICATION LABELS AT EACH CONDUIT END FOR ALL SPARE CONDUITS.
9. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO CONFIRM ALL DIMENSIONS AND DISTANCES IN THE FIELD. THE CONTRACTOR SHALL VERIFY POTENTIAL INTERFERENCE WITH EXISTING UTILITIES (SUCH AS EXISTING CONDUITS) WHERE INSTALLED EXPOSED TO IDENTIFY SCOPE FOR EXISTING UTILITIES RELOCATION/ADJUSTMENTS TO ALLOW NEW INSTALLATION. IN CASE OF DISCREPANCY, CONTRACTOR SHALL INCLUDE A MORE EXPENSIVE OPTION.
10. FOR NEW CONSTRUCTION, INSTALLATION AND/OR DEMOLITION THAT INTERRUPTS ANY POWER, CONTROL OR SIGNAL WIRING TO EXISTING EQUIPMENT OR DEVICES THAT SHALL REMAIN IN OPERATION, CONTRACTOR SHALL INCLUDE ALL REQUIRED BREAKERS, CABLES, CONDUITS AND/OR ANY OTHER EQUIPMENT AS REQUIRED TO KEEP THE EXISTING SYSTEM FUNCTIONAL.
11. ALL SCHEMATIC WIRING DIAGRAMS ARE GENERAL IN NATURE. CONTRACTOR SHALL ADJUST NUMBER AND SIZE OF CABLES/CONDUITS BASED ON THE APPROVED VENDOR DRAWINGS.
12. WHEN THE CABLES ARE LARGER THAN THE TERMINATING LUGS OR TERMINALS (DUE TO VOLTAGE DROP), THE CONTRACTOR SHALL PROVIDE A TERMINAL JUNCTION BOX FOR CABLE SIZE REDUCTION.
13. GENERATOR VENDOR SHALL INCLUDE PLATFORMS AND STAIRS AS REQUIRED BY ALL APPLICABLE CODES FOR ACCESS, SERVICE AND MAINTENANCE OF THE GENERATORS.

PLAN DRAWING SYMBOLS (CONT.)

- FUSED DISCONNECT, NON–FUSED. PROVISION FOR CLASS R FUSES.
- FIELD INSTRUMENT CONNECTION
- START/STOP HAND STATION MOUNTED TO HANDRAIL (NEMA 4X UNLESS OTHERWISE NOTED)
- $X — 120V, 20A, 1P TOGGLE SWITCH
  [BLANK] = 1P TOGGLE SWITCH
  2 = 2P TOGGLE SWITCH
  3 = 3P TOGGLE SWITCH
  D = SLIDE DIMMER
  M = MOTOR RATED
  S = TOGGLE WITH OCCUPANCY SENSOR
- DUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.
- GFCI DUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.
- QUADRAPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.
- TELEPHONE BOX. MOUNT 18" A.F.F., INSTALL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTIONS AS REQUIRED.
- JB — JUNCTION BOX
- 60A, 480V, 3PH WELDING RECEPTACLE WITH INTERLOCKED 60A (NEMA 4X FUSED DISCONNECT SWITCH UNLESS OTHERWISE NOTED)

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WASTEWATER TREATMENT PLANT
GENERATOR REPLACEMENT
FOR THE
CITY OF WAYCROSS

REVISIONS

NO.	DESCRIPTION	DATE
A	ISSUED FOR BID	08/12/20

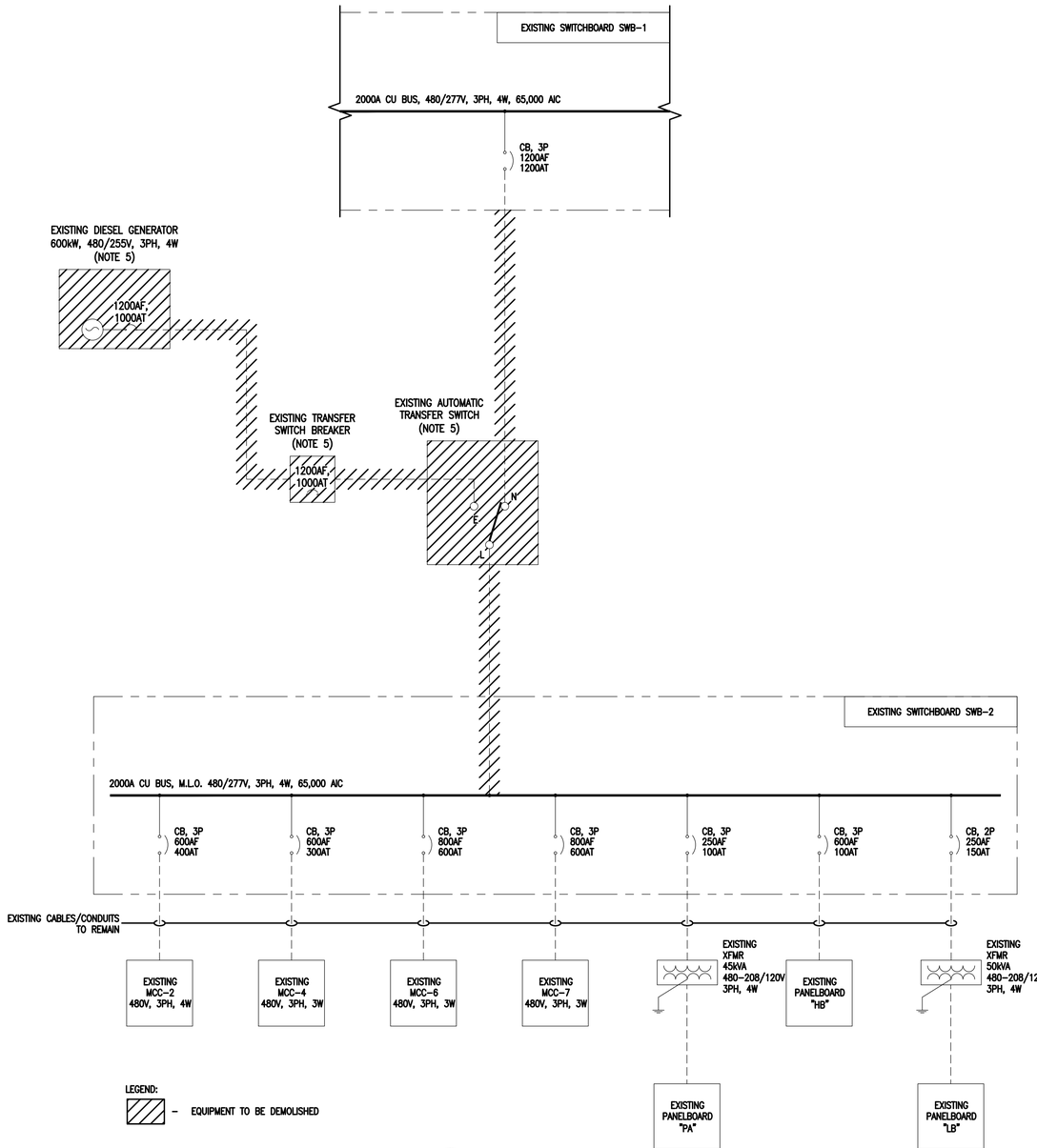
GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK

DRAWN BY: I.S.
CHECKED BY: A.Z.
DATE: AUGUST 2020
SCALE: N.T.S.

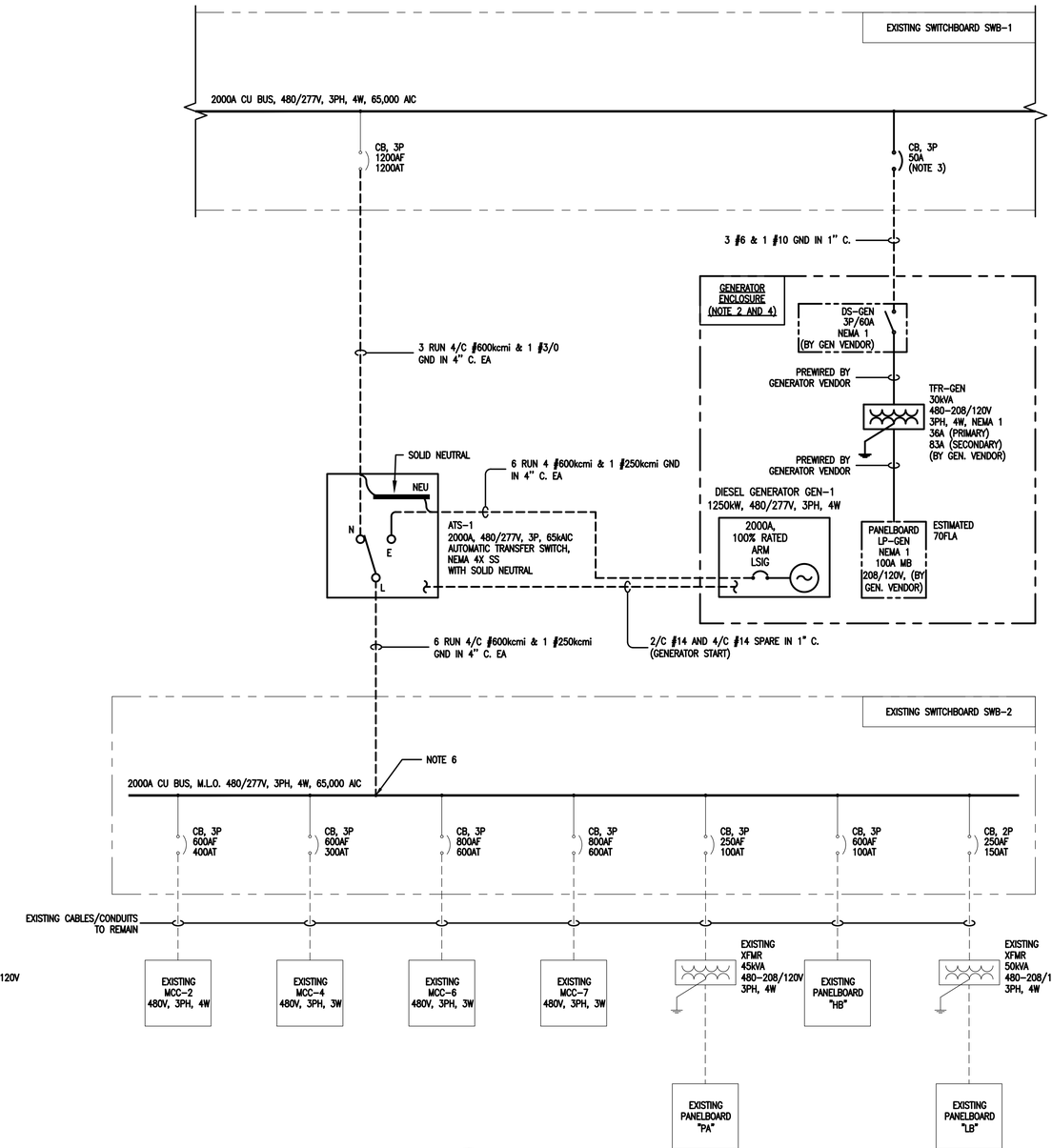
CONTENT:
ELECTRICAL LEGEND AND NOTES

SHEET NO:
E-001

Plotted: 9/4/2020 10:04 AM
Last Saved By: IvanS
Drawing Path: X:\active projects\2020 projects\20082-esg waycross wwtp generator replacement\1.0 drawings\1.1 electrical\E-001 ELECTRICAL LEGEND AND NOTES.dwg



1 ONE LINE DIAGRAM (DEMOLITION)



2 ONE LINE DIAGRAM

NOTES:

1. ALL CIRCUIT BREAKERS 1200AF OR LARGER SHALL HAVE ARC REDUCTION MAINTENANCE (ARM) SWITCH TO REDUCE ARC FLASH PER NEC 240.87.

2. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE 1250KW/1562KVA 480/277V, 3 PHASE STANDBY DIESEL GENERATOR SET IN WEATHERPROOF WALK-IN INDUSTRIAL ENCLOSURE . CONTRACTOR SHALL SUPPLY A LETTER OF GUARANTEE THAT THE SUBMITTED GENERATOR IS RATED TO START AND RUN SPECIFIED LOADS. IF A LARGER GENERATOR IS REQUIRED TO RUN SPECIFIED LOADS, THEN CONTRACTOR SHALL UPSIZE GENERATOR AND CABLES/CONDUITS AS REQUIRED. CONTRACTOR SHALL VERIFY GENERATOR BREAKER SIZE AND ADJUST CABLE SIZE PER NEC 310.16 AS REQUIRED. GENERATOR SET SHALL INCLUDE GENERATOR, GENERATOR CONTROL PANEL, MAIN BREAKER, GENERATOR PAD, FUEL TANK RATED FOR AT LEAST 24HR OF GENERATOR OPERATION AT 100% LOAD FULL OF DIESEL FUEL AND AUTOMATIC TRANSFER SWITCH ATS-1. THE PROPOSED GENERATOR SHALL BE RATED TO START AND RUN THE FOLLOWING LOADS:
   STEP 1:
   - BAR SCREEN #1: 3HP/480V/3PH/FVNR;
   - BAR SCREEN #2: 3HP/480V/3PH/FVNR;
   - COMPACTOR: 3HP/480V/3PH/FVNR;
   - GRIT KING #1: 3HP/480V/3PH/FVNR;
   - GRIT KING #2: 3HP/480V/3PH/FVNR;
   - CLASSIFIER: 1HP/480V/3PH/FVNR;
   - INFLUENT PUMP #1: 75HP/480V/3PH/VFD;
   - INFLUENT PUMP #2: 75HP/480V/3PH/VFD;
   - OFFICE/LAB: 100A/480V/3PH;
   - PRIMARY CLARIFIER #1: 0.5HP/480V/3PH/FVNR;
   - PRIMARY CLARIFIER #2: 0.5HP/480V/3PH/FVNR;
   - PRIMARY CLARIFIER #3: 0.5HP/480V/3PH/FVNR;
   - PRIMARY CLARIFIER #4: 0.5HP/480V/3PH/FVNR;
   - INTERMEDIATE PUMP #1: 45HP/480V/3PH/VFD;
   - INTERMEDIATE PUMP #2: 45HP/480V/3PH/VFD;
   - RECYCLE PUMP #1: 25HP/480V/3PH/VFD;
   - RECYCLE PUMP #2: 25HP/480V/3PH/VFD;
   - RECYCLE PUMP #3: 25HP/480V/3PH/VFD;
   - AERATOR #3: 125HP/480V/3PH/VFD;
   - AERATOR #4: 125HP/480V/3PH/VFD;
   - RAS PUMP #1: 25HP/480V/3PH/VFD;
   - RAS PUMP #2: 25HP/480V/3PH/VFD;
   - WAS PUMP #1: 20HP/480V/3PH/VFD;
   - WAS PUMP #2: 20HP/480V/3PH/VFD;
   - WAS PUMP #3: 20HP/480V/3PH/VFD;
   - FINAL CLARIFIER #1: 1.5HP/480V/3PH/FVNR;
   - FINAL CLARIFIER #2: 1.5HP/480V/3PH/FVNR;
   - EFFLUENT PUMP #1: 150HP/480V/3PH/VFD;
   - EFFLUENT PUMP #2: 150HP/480V/3PH/VFD;
   - BELT PRESS #1: 60HP/480V/3PH/VFD.

   THE EXPECTED VOLTAGE AND FREQUENCY DIP SHALL NOT EXCEED 25% AND 10% ACCORDINGLY. SEE SPECIFICATION 16231 FOR MORE DETAILS. GENERATOR CONTROL PANEL SHALL INCLUDE 120VAC, 2A RATED CONTACTS FOR FUTURE CONNECTION TO SCADA:
   - GENERATOR RUNNING;
   - GENERATOR LOW FUEL;
   - GENERATOR COMMON FAULT.

   AUTOMATIC TRANSFER SWITCH SHALL INCLUDE 120VAC, 2A RATED CONTACTS FOR FUTURE CONNECTION TO SCADA:
   - ATS IN NORMAL POSITION;
   - ATS IN GENERATOR POSITION.

3. THE CONTRACTOR SHALL PROVIDE AND INSTALL A 50A, 3P CIRCUIT BREAKER INTO EXISTING SWITCHBOARD SWB-1 LOCATED IN EXISTING PUMP BUILDING ELECTRICAL ROOM. THE BREAKER SHALL BE OF THE SAME MANUFACTURER AND SHALL HAVE THE SAME AIC RATING AS THE EXISTING SWITCHBOARD.

4. GENERATOR ENCLOSURE SHALL BE A WALK IN TYPE WITH A MINIMUM OF TWO ACCESS DOORS AND STAIRS WITH WALKWAYS TO MEET NEC WORKING CLEARANCE AND EXIT REQUIREMENTS. THE AUXILIARY POWER TO THE GENERATOR ENCLOSURE SHALL BE 480V, 3 PHASE, 3 WIRE. THE GENERATOR VENDOR SHALL SUPPLY AND INSTALL A 480V, 3 POLE, 60 AMP RATED DISCONNECT SWITCH FOR THE INCOMING POWER TERMINATION. THE DISCONNECT SWITCH SHALL FEED A 30 KVA, 480-208/120V, 3 PHASE, 3 WIRE COMBINATION TRANSFORMER/PANELBOARD TO PROVIDE POWER TO THE GENERATOR ENCLOSURE UNIT HEATER, EXHAUST FAN, BATTERY CHARGER, BLOCK HEATER, LIGHTS, RECEPTACLES, ETC. THE GENERATOR VENDOR SHALL PREWIRE ALL 208V AND 120V GENERATOR ENCLOSURE LOADS TO THE PANELBOARD. THE GENERATOR ENCLOSURE SHALL A SINGLE POINT 480V CONNECTION FOR ALL AUXILIARY POWER. ALL ELECTRICAL COMPONENTS WITHIN THE GENERATOR ENCLOSURE SHALL BE GROUNDED BY THE GENERATOR VENDOR TO A COPPER WALL MOUNTED BUS FOR CONNECTION TO THE PLANT GROUNDING SYSTEM.

5. THE CONTRACTOR SHALL REMOVE EXISTING EQUIPMENT AND ALL ASSOCIATED CABLES/CONDUITS AS SHOWN. RETURN ALL DEMOLISHED ELECTRICAL EQUIPMENT TO THE OWNER FOR SPARE PARTS.

6. THE CONTRACTOR SHALL CONFIRM THE NUMBER OF AVAILABLE EXISTING LUGS FOR INCOMING POWER FEEDER CONNECTION TO SWB-2. PROVIDE ADDITIONAL LUGS AS NEEDED.

7. THE CONTRACTOR SHALL LIMIT POWER OUTAGES TO A MINIMUM. COORDINATE ALL SHUT DOWNS WITH THE CITY AT LEAST 48 HOURS BEFORE THE POWER OUTAGE.

8. THE CONTRACTOR SHALL INCLUDE CIRCUIT BREAKERS COORDINATION STUDY FOR ALL NEW CIRCUIT BREAKERS NEED TRIP UNIT ADJUSTMENTS. THE STUDY SHALL ALSO ADVISE IF EXISTING CIRCUIT BREAKER SETTINGS NEED TO BE ADJUSTED BASED ON THE POWER DISTRIBUTION SYSTEM CHANGES.

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FOR THE

CITY OF WAYCROSS

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GEORGIA REGISTERED ENGINEER ALEC ZAYCHIK

DRAWN BY: I.S.
CHECKED BY: A.Z.
DATE: AUGUST 2020
SCALE: N.T.S.

CONTENT:
ONE LINE DIAGRAM

SHEET NO:
E-101

Last Saved By: IvanS
Plotted: 9/4/2020 10:04 AM
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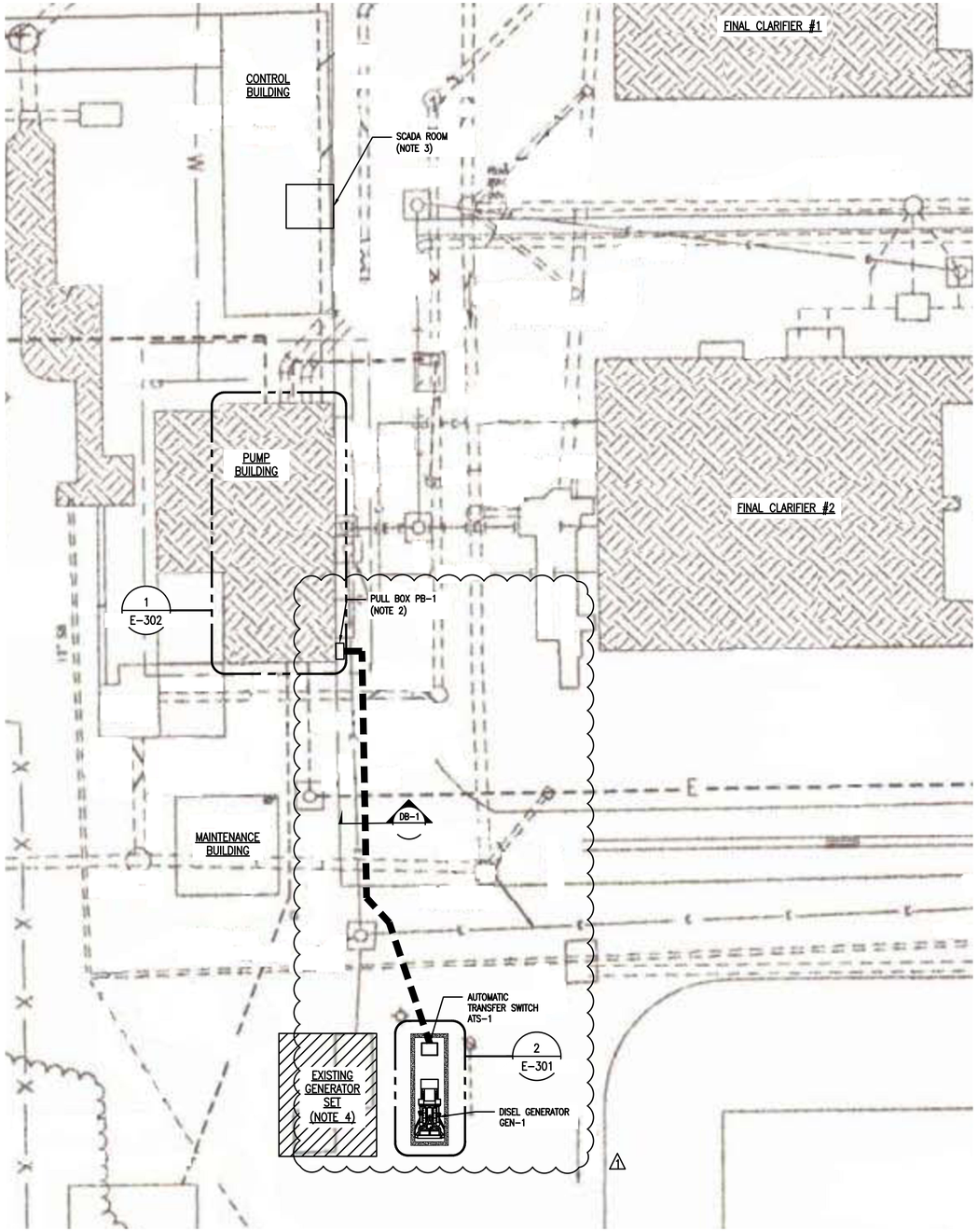


LEGEND:

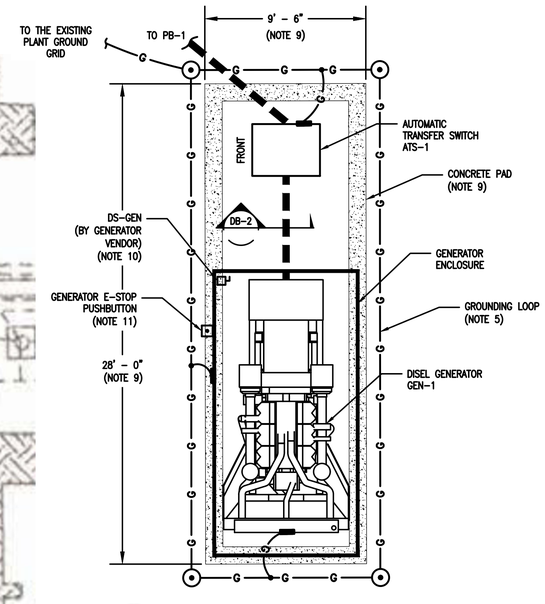
▨ – EQUIPMENT TO BE DEMOLISHED

1 OVERALL ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'-0"

GRAPHIC SCALE

16 0 8 16 32 64

(IN FEET)
1/16 inch = 1 ft.

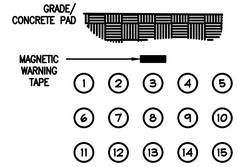


2 GENERATOR AND ATS ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE

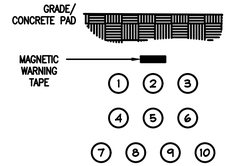
4 0 2 4 8 16

(IN FEET)
1/4 inch = 1 ft.



DB-1

1 – 4" C. (480V POWER FROM SWB-1 TO ATS-1)
2 – 4" C. (480V POWER FROM SWB-1 TO ATS-1)
3 – 4" C. (480V POWER FROM SWB-1 TO ATS-1)
4 – 4" C. (SPARE)
5 – 4" C. (480V POWER FROM ATS-1 TO SWB-2)
6 – 4" C. (480V POWER FROM ATS-1 TO SWB-2)
7 – 4" C. (480V POWER FROM ATS-1 TO SWB-2)
8 – 4" C. (480V POWER FROM ATS-1 TO SWB-2)
9 – 4" C. (480V POWER FROM ATS-1 TO SWB-2)
10 – 4" C. (480V POWER FROM ATS-1 TO SWB-2)
11 – 4" C. (SPARE)
12 – 4" C. (SPARE)
13 – 1" C. (480V POWER FROM SWB-1 TO TFR-GEN)
14 – 1.5" C. (FUTURE ATS-1 CONTROLS) (NOTE 3)
15 – 1.5" C. (FUTURE GENERATOR GEN-1 CONTROLS) (NOTE 3)



DB-2

1 – 4" C. (480V POWER FROM GEN-1 TO ATS-1)
2 – 4" C. (480V POWER FROM GEN-1 TO ATS-1)
3 – 4" C. (480V POWER FROM GEN-1 TO ATS-1)
4 – 4" C. (480V POWER FROM GEN-1 TO ATS-1)
5 – 4" C. (480V POWER FROM GEN-1 TO ATS-1)
6 – 4" C. (480V POWER FROM GEN-1 TO ATS-1)
7 – 4" C. (SPARE)
8 – 4" C. (SPARE)
9 – 1" C. (480V POWER FROM SWB-1 TO TFR-GEN)
10 – 1.5" C. (CONTROLS)

NOTES:

1. NEW UNDERGROUND DUCTBANKS ROUTING SHALL BE COORDINATED WITH THE EXISTING UTILITIES AND ADJUSTED AS NECESSARY. CONTRACTOR SHALL POTHOLE AND/OR USE GROUND PENETRATING RADAR TO LOCATE CONFLICTS. ADJUST THE DUCKTBANK ROUTING AS NEEDED AT NO COST TO THE CITY.
2. THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEMA 4X SS PULL BOX ADEQUATELY SIZED FOR ASSOCIATED CABLES AND CONDUITS.
3. CONTRACTOR SHALL RUN TWO (2) – 1.5" EMPTY CONDUITS FOR FUTURE SCADA CONNECTION FROM GENERATOR GEN-1 AND ATS-1 TO PULL BOX PB-1. CONTRACTOR SHALL CAP AND TAG THE SPARE CONDUITS.
4. REFER TO ONE LINE DIAGRAM DWG. E-101 FOR ADDITIONAL DETAILS.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL A GROUNDING LOOP AS INDICATED. PROVIDE CONNECTION TO ATS AND GENERATOR ENCLOSURE AND METAL FRAME WITH #1/0 BARE COPPER CONDUCTOR. CONNECT THE GROUNDING LOOP AROUND THE GENERATOR TO THE EXISTING PLANT GROUND GRID.
6. THE CONTRACTOR SHALL INCLUDE ALL THE REQUIRED CIVIL WORK TO LEVEL THE GROUND FOR GENERATOR AND ATS CONCRETE PAD INSTALLATION. THE CONTRACTOR SHALL PATCH ALL PAVEMENT SURFACES AS SHOWN ON DETAIL "E" DWG. E-901. ALL UNDERGROUND DUCTBANK ROUTED THROUGH GRASSED AREA SHALL BE FILLED WITH FILLING MATERIALS AS REQUIRED, THE CONTRACTOR SHALL REINSTATE THE GROUND SURFACE WITH EITHER TURF OR SOIL AND GRASS SEED.
7. ONLY MAIN DUCTBANKS ARE SHOWN FOR CLARITY. THE CONTRACTOR SHALL PROVIDE AND INSTALL UNDERGROUND CABLES/CONDUITS AS SHOWN ON ONE LINE DIAGRAM DWG. E-101.
8. SEE DWG. E-901, DETAIL "B" AND "D" FOR UNDERGROUND DUCTBANKS INSTALLATION DETAILS. ALL UNDERGROUND DUCTBANKS UNDER ROADS AND PARKING AREAS SHALL BE STEEL REINFORCED.
9. THE CONTRACTOR SHALL COORDINATE SIZE OF GENERATOR AND ATS CONCRETE PAD WITH THE SELECTED MANUFACTURER AND ADJUST PAD SIZING ACCORDINGLY AT NO COST TO THE CITY.
10. REFER TO ONE LINE DIAGRAM DWG. E-101 FOR MORE DETAILS ON GENERATOR AUXILIARY LOAD 480V POWER CONNECTION.
11. THE GENERATOR VENDOR SHALL PROVIDE AND INSTALL A GENERATOR E-STOP PUSHBUTTON ON THE ENCLOSURE AS SHOWN FOR EMERGENCY GENERATOR SHUT DOWN.
12. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE GENERATOR WITH THE EXISTING UTILITIES (E.G. UNDERGROUND PIPING, VAULTS, VALVES, POLES, ETC.) DURING THE CONSTRUCTION. THE CONTRACTOR SHALL ADJUST THE GENERATOR LOCATION ACCORDINGLY TO AVOID CONFLICTS.

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WASTEWATER TREATMENT PLANT
GENERATOR REPLACEMENT

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GEORGIA REGISTERED PROFESSIONAL ENGINEER ALEC ZAYCHIK

DRAWN BY: I.S.
CHECKED BY: A.Z.
DATE: AUGUST 2020
SCALE: N.T.S.

CONTENT:
OVERALL ELECTRICAL SITE PLAN

SHEET NO:
E-301

Last Saved By: IvanS
Plotted: 9/4/2020 10:04 AM
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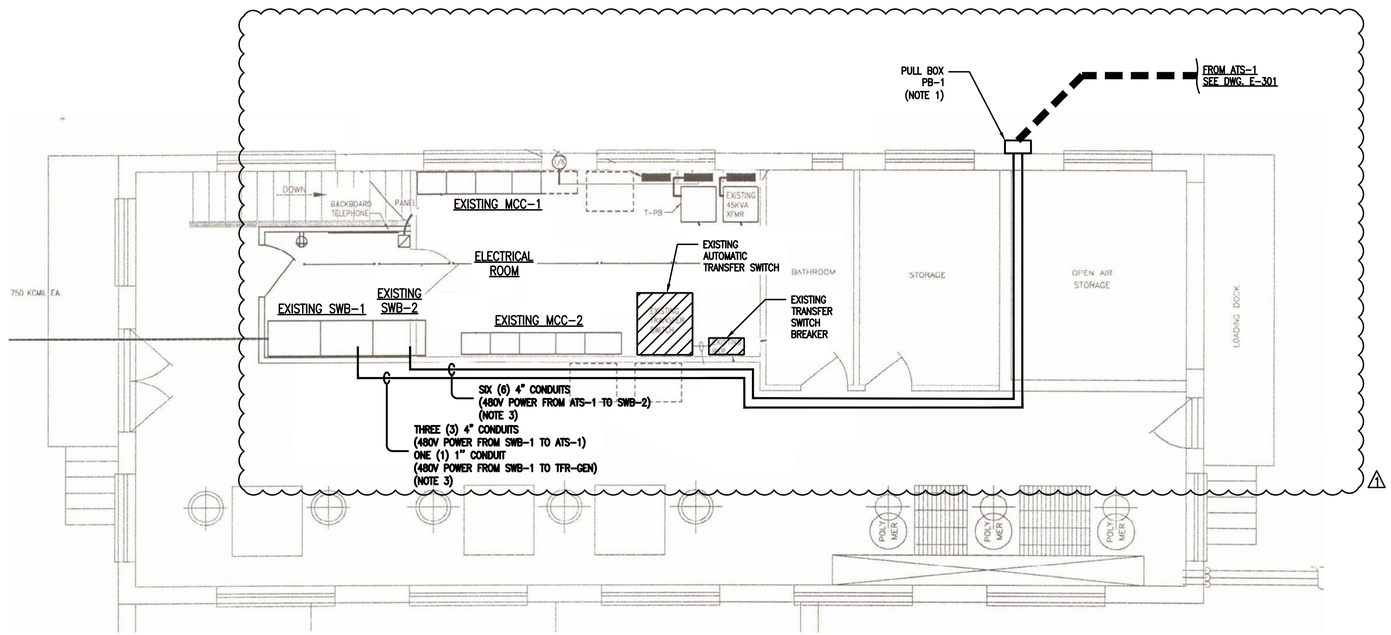

1 PUMP BUILDING ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE

4 0 2 4 8 16
(IN FEET)
1/4 inch = 1 ft.

NOTES:

1. THE CONTRACTOR SHALL COORDINATE THE PULL BOX MOUNTING HEIGHT IN THE FIELD TO AVOID INTERFERENCE WITH EXISTING CABLES, CONDUITS, BUILDING OPENINGS, WALL LOUVERS, ETC.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING TRANSFER SWITCH BREAKER AND TRANSFER SWITCH WITH ALL ASSOCIATED CABLES AND CONDUITS. RETURN ALL DEMOLISHED ELECTRICAL EQUIPMENT TO THE OWNER FOR SPARE PARTS.
3. EXPOSED CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY THE ACTUAL CONDUITS INSTALLATION IN THE FIELD TO COORDINATE WITH EXISTING CONDITION.

LEGEND:

▨ – EQUIPMENT TO BE DEMOLISHED

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DATE: AUGUST 2020
SCALE: N.T.S.

CONTENT:
PUMP BUILDING ELECTRICAL PLAN

SHEET NO:
E-302

Last Saved By: IvanS
Plotted: 9/4/2020 10:04 AM
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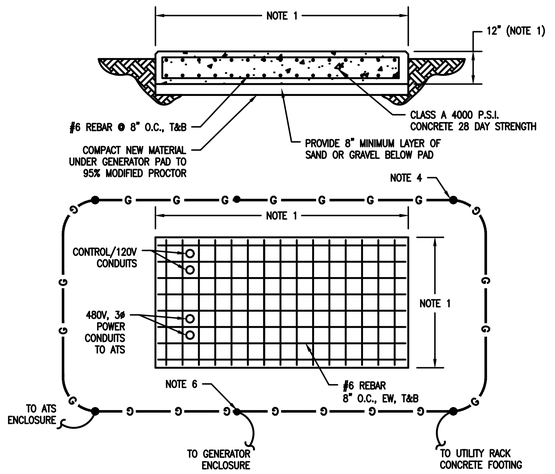
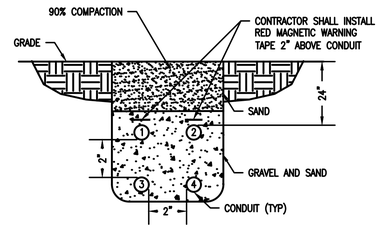


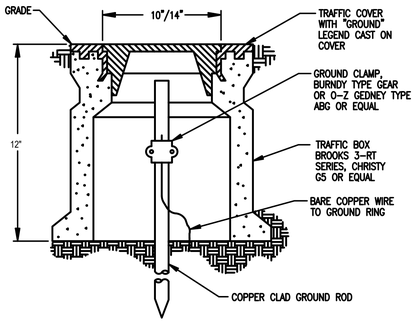
GENERATOR GROUNDING NOTES:

1. REVIEW DIMENSIONS OF GEN. SET, INCLUDING W.P. HOUSING, TO DETERMINE ACTUAL DIMENSIONS OF GEN. PAD. PAD SHALL BE INSTALLED AS RECOMMENDED BY THE GENERATOR MANUFACTURER.
2. PAD SHALL BE 12" LARGER ON ALL SIDES THAN THE GENERATOR BASE AND ENCLOSURE.
3. VERIFY CONDUIT PENETRATIONS WITH GENERATOR MANUFACTURER.
4. PROVIDE FOUR (4) 10'X3/8" COPPER CLAD STEEL GROUND RODS AS SHOWN WITH #4 BARE COPPER GROUND WIRE AROUND THE GENERATOR PAD. CONNECT GROUND WIRE TO THE GENERATOR ENCLOSURE.
5. EXACT GENERATOR PAD SIZE SHALL BE DETERMINED BY THE GENERATOR MANUFACTURER'S SHOP DRAWING PRIOR TO INSTALLATION.
6. GENERATOR HOUSING SHALL BE GROUNDED, NOT THE NEUTRAL.

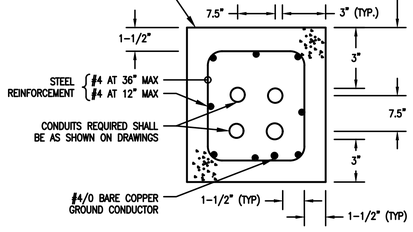
A GENERATOR GROUNDING INSTALLATION DETAIL



B CONDUIT SECTION IN TRENCH INSTALLATION DETAIL



C GROUND WELL INSTALLATION DETAIL



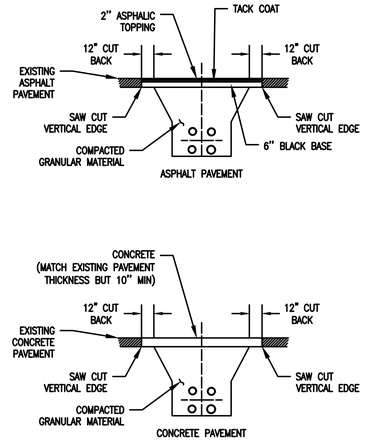
(DIMENSIONS ARE MINIMUM)

REINFORCED DUCTBANK

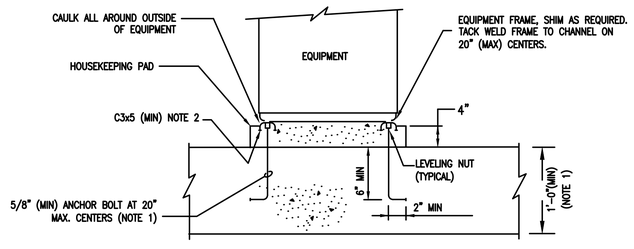
DUCT BANK NOTES:

1. ALL DUCTBANKS CROSSING ROADS OR HEAVY TRAFFIC AREAS SHALL BE REINFORCED WITHIN 5 (FIVE) FEET OF TRAFFIC AREAS.
2. CONTRACTOR SHALL FIELD COORDINATE EXACT DUCTBANK ROUTING WITH EXISTING UTILITIES.

D REINFORCED DUCTBANK INSTALLATION DETAILS



E PAVEMENT REPLACEMENT



NOTES:
1. IF SLAB IS LESS THAN 12" THICK, ANCHOR BOLTS SHALL EXTEND THROUGH SLAB AND BE BACKED UP WITH 4" X 3/16" (MIN) SQUARE WASHERS.
2. CHANNELS SHALL BE LEVELED AT TIME CONCRETE IS CAST.

F TYPICAL FLOOR MOUNTING

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DRAWN BY: I.S.
CHECKED BY: A.Z.
DATE: AUGUST 2020
SCALE: N.T.S.

CONTENT:
ELECTRICAL INSTALLATION DETAILS

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E-901