

CITY OF CANTON, GEORGIA



CANTON WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD VOLUME 2 of 2

MAYOR
BILL GRANT

CITY MANAGER
BILLY PEPPERS

CITY ENGINEER
DAVID HATABIAN, P.E.

COUNCIL MEMBERS

JO ELLEN WILSON: MAYOR PRO-TEM (WARD 1)
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SEPTEMBER 2020

CONSULTING ENGINEER:

ATKINS

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HARTWELL
ENGINEERING, INC.
ENGINEERS • INTEGRATORS
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BIDDING DOCUMENTS

Hector M. Casablanca of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 042364) responsible for the Process-Mechanical discipline work. This includes overall process design and equipment selection, sizing, and layout as reflected in the MECHANICAL set (M and DM series). Since process design and equipment sizing and layout affect various aspects of the overall site, Mr. Casablanca is also signing/sealing the GENERAL sheets (G series), Civil sheets (C-1 through C-27), Demolition sheets (CD-0 through CD-6 and MD-4 through MD-16), and Mechanical standard details (DM-1 through DM-11). Elements of other disciplines (i.e. structural, electrical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

George N. Kakunes of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 21371) responsible for the Grading, Site Storm Drainage Pipe Systems, and Erosion Control discipline work. This includes sheets C-30 through C-46, Site/civil standard details (DC-1 through DC-18), and the erosion control plans (EC-1 through EC-12). Elements of other disciplines (i.e. site layout, water distribution, sanitary sewer, electrical, natural gas, telephone, structural, mechanical, fencing, gates, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

Tim Hartwell of HARTWELL ENGINEERING INC. is the Georgia PE (GA PE 028093) responsible for the Electrical (E series) and Instrumentation (I series) discipline work. This includes site electrical and instrumentation as well as equipment specific electrical and instrumentation. Mr. Hartwell did not handle the electrical components for the interior of the Administrative Building. He also contributed to sitewide demolition plans affecting electrical components. Elements of other disciplines (i.e. structural, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

David L. Conrad of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 27030) responsible for the Structural discipline work. This includes structural demolition sheets (SD series) and structural sheets S-1 through 22-S-3, and Structural Standard Details (DS-1 through DS-10). Mr. Conrad did not lead the structural components for the Administrative Building Site/civil standard details (20-S series). Elements of other disciplines (i.e. electrical, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

Jeffrey N. Warmington of ATKINS NORTH AMERICA INC. is the Georgia Architect (GA RA 013500) responsible for the Architecture discipline work. This includes the architectural sheets for the Administrative Building (20-A-001 through 20-A-021) Elements of other disciplines (i.e. electrical, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

Pedro L. Trevin of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 29486) responsible for the Electrical work associated with the Administrative Building (20-E-01 through 20-E-62). Elements of other disciplines (i.e. electrical, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

Thomas J. Farmer of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 027398) responsible for the HVAC and Plumbing sheets for the Administrative Building (20-H-01 through 20-H-41, 1-H-1 through 1-H-3, 7-H-1 through 7-H-4). Elements of other disciplines (i.e. electrical, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

Clifton John Alford of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 018353) responsible for the Plumbing sheets for the Administrative Building (20-P-01 through 20-P-31). Elements of other disciplines (i.e. electrical, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.

Douglas Ramirez of ATKINS NORTH AMERICA INC. is the Georgia PE (GA PE 037804) responsible for the Structural sheets for the Administrative Building (20-S-01 through 20-S-35). Elements of other disciplines (i.e. electrical, mechanical, etc.) are shown in the series mentioned above for clarity and to help facilitate a cohesive and coordinated set.



REVISION	DATE

PROJ. NO. : 100061831
DESIGNED BY:
DRAWN BY:
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APPROVED BY:
DATE: SEPTEMBER 2020
SCALE:

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SHEET NO.

DRAWING NUMBER SHEET TITLE

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DATE	REVISION

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SCALE: NONE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
INDEX OF DRAWINGS
VOLUME 1

SHEET NO.
G-2

DRAWING NUMBER SHEET TITLE

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DRAWING NUMBER SHEET TITLE

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ATKINS NORTH AMERICA INC.	
DATE	
REVISION	

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
INDEX OR DRAWINGS
VOLUME 1 (continued)

SHEET NO.
G-3

DRAWING NUMBER SHEET TITLE

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E-75	ELECTRICAL SCHEMATICS 11
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DRAWING NUMBER SHEET TITLE

ELECTRICAL

1-E-1	HEADWORKS GRIT ELECTRICAL PLAN
4-E-1	FINE SCREENINGS FACILITY ELECTRICAL PLAN
5-E-1	BNR BASINS 1-3 ELECTRICAL PLAN
5-E-2	BNR BASINS 1-3 LIGHTING PLAN
5-E-3	BNR BLOWERS ELECTRICAL PLAN
5-E-4	SCUM PUMPING ELECTRICAL PLAN
6-E-1	BNR NO. 4 MODIFICATIONS ELECTRICAL PLAN
7-E-1	MEMBRANE FACILITY LOWER ELECTRICAL PLAN
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8-E-1	RAS SPLITTER BOX ELECTRICAL PLAN
9-E-1	BNR/MBR BUILDING ELECTRICAL PLAN
10-E-1	UVPA FACILITY ELECTRICAL PLAN
11-E-1	WAS HOLDING & REUSE ELECTRICAL PLAN
12-E-1	AEROBIC DIGESTER ELECTRICAL PLAN
14-E-1	SWITCHGEAR SG-MAIN ELECTRICAL PLAN
15-E-1	SOLIDS HANDLING FACILITY ELECTRICAL PLAN
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17-E-1	ALUM FEED FACILITY ELECTRICAL PLAN
18-E-1	ODOR CONTROL FACILITY ELECTRICAL PLAN

DRAWING NUMBER SHEET TITLE

INSTRUMENTATION

I-01	INSTRUMENTATION SYMBOLS & ABBREVIATIONS
I-02	CONTROL SYSTEM BLOCK DIAGRAM
I-03	INSTRUMENTATION NOTES
I-04	INSTRUMENTATION DETAILS 1
I-05	INSTRUMENTATION DETAILS 2
I-06	INSTRUMENTATION DETAILS 3
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11-1	P&ID HEADWORKS
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7-1-1	P&ID MEMBRANE FACILITY
8-1-1	P&ID RAS SPLITTER BOX FACILITY
10-1-1	P&ID UVPA FACILITY
10-1-2	P&ID UVPA AERATION BLOWERS
11-1-1	P&ID WAS STORAGE & REUSE PUMP STATION
11-1-2	P&ID WAS STORAGE BLOWERS
12-1-1	P&ID AEROBIC DIGESTER
12-1-2	P&ID AEROBIC DIGESTER BLOWERS
14-1-1	P&ID COMPRESSED AIR
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15-1-2	P&ID RDT POLYMER
15-1-3	P&ID BFP FEED PUMPS
15-1-4	P&ID BELT FILTER PRESS BFP
15-1-5	P&ID BFP POLYMER
15-1-6	P&ID SLUDGE CONVEYORS
15-1-7	P&ID THICKENING/DEWATERING DRAIN PUMP STATION
15-1-8	P&ID SOLIDS HANDLING FACILITY MISCELLANEOUS
15-1-9	P&ID SLUDGE HOPPER
15-1-10	P&ID ODOR CONTROL
17-1-1	P&ID BNR ALUM
18-1-1	P&ID HEADWORKS ODOR CONTROL
20-1-1	P&ID SWITCHGEAR SG-MAIN
20-1-2	P&ID SWITCHGEAR SG-OC



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REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

INDEX OF DRAWINGS
VOLUME 2

SHEET NO.
G-4

File Name: C:\PW_WORK\ATKIN\GA01\NEW\7492\DM555689\0100 - G-2, 3, 4, 5.DWG\Tab: G-4P\Plotter: September 29, 2020 1:36pm

DRAWING NUMBER SHEET TITLE

VOLUME 2

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CIVIL

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DC-2	CIVIL STANDARD DETAILS
DC-3	CIVIL STANDARD DETAILS
DC-4	CIVIL STANDARD DETAILS
DC-5	CIVIL STANDARD DETAILS
DC-6	CIVIL STANDARD DETAILS
DC-7	CIVIL STANDARD DETAILS
DC-8	CIVIL STANDARD DETAILS
DC-9	CIVIL STANDARD DETAILS
DC-10	CIVIL STANDARD DETAILS
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DC-12	CIVIL STANDARD DETAILS
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DS-6	STRUCTURAL STANDARD DETAILS
DS-7	STRUCTURAL STANDARD DETAILS
DS-8	STRUCTURAL STANDARD DETAILS
DS-9	STRUCTURAL STANDARD DETAILS
DS-10	STRUCTURAL STANDARD DETAILS SITE CIVIL

MECHANICAL

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DM-2	MECHANICAL STANDARD DETAILS
DM-3	MECHANICAL STANDARD DETAILS
DM-4	MECHANICAL STANDARD DETAILS
DM-5	MECHANICAL STANDARD DETAILS
DM-6	MECHANICAL STANDARD DETAILS
DM-7	MECHANICAL STANDARD DETAILS
DM-8	MECHANICAL STANDARD DETAILS
DM-9	MECHANICAL STANDARD DETAILS
DM-10	MECHANICAL STANDARD DETAILS
DM-11	MECHANICAL STANDARD DETAILS

DRAWING NUMBER SHEET TITLE

EROSION CONTROL

EC-01	EROSION AND SEDIMENT CONTROL PLAN INITIAL PHASE
EC-02	EROSION AND SEDIMENT CONTROL PLAN INTERMEDIATE PHASE
EC-03	EROSION AND SEDIMENT CONTROL PLAN FINAL PHASE
EC-04	EROSION AND SEDIMENT CONTROL NOTES
EC-05	EROSION AND SEDIMENT CONTROL NOTES
EC-06	EROSION AND SEDIMENT CONTROL NOTES
EC-07	EROSION AND SEDIMENT CONTROL NOTES
EC-08	EROSION AND SEDIMENT CONTROL DETAILS
EC-09	EROSION AND SEDIMENT CONTROL DETAILS
EC-10	EROSION AND SEDIMENT CONTROL DETAILS
EC-11	EROSION AND SEDIMENT CONTROL DETAILS
EC-12	EROSION AND SEDIMENT CONTROL DETAILS



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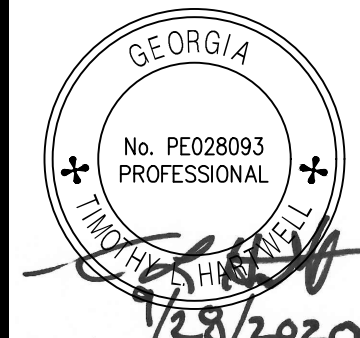
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PROJ. NO. : 100061831	CERTIFICATE OF AUTHORIZATION #PEE00002 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.	
DESIGNED BY: HC	REVISION	DATE
DRAWN BY: JN		
CHECKED BY: HC		
APPROVED BY: HC		
DATE: SEPTEMBER 2020		
SCALE: NONE		

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

INDEX OF DRAWINGS
 VOLUME 2 (continued)

SHEET NO.
G-5



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SCALE: AS SHOWN		

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

ELECTRICAL SYMBOLS & ABBREVIATIONS

SHEET NO.
E-1

File Name: C:\P_WORK\ATKIN\G01\NICKY.TODD\DWG\MS35907\1000 - E-01.DWG(Tab: E-1)Plotted: September 24, 2020 2:44pm

SYMBOLS

SINGLE LINE DIAGRAM

- UTILITY METERING
- CIRCUIT BREAKER
- POWER TRANSFORMER, SIZE AS NOTED
- MAGNETIC STARTER
X = STARTER NEMA SIZE,
Y = TYPE (N- NON-REVERSING)
(R- REVERSING)
- FUSE
- DRAW-OUT TYPE EQUIPMENT
- GROUND
- MOTOR OVERLOAD RELAY
- MOTOR OPERATED VALVE OR GATE ACTUATOR
- POWER MONITOR
- VARIABLE FREQUENCY DRIVE
- SURGE PROTECTIVE DEVICE
- REVERSED VOLTAGE SOLIDS STATE STARTER

GROUNDING

- OR GROUND ROD
- GROUND TEST WELL
- GROUNDING CABLE OR GROUND LOOP

EQUIPMENT

- NON-FUSED DISCONNECT SWITCH, 30A MINIMUM. SIZE SHALL BE EQUAL OR ONE SIZE GREATER THAN THE OVER CURRENT PROTECTION DEVICE FEEDING THE DS, 3P - UON
- FUSED DISCONNECT SWITCH, 30A, 3P - SIZE FUSE FOR LOAD, UON
- CONTROL STATION-TYPE AS INDICATED
- MOTOR
- EQUIPMENT RACK

SWITCHES & CONTROLS

- ALL SWITCHES ARE MOUNTED ±48" AFF, UON
- S SWITCH, SINGLE POLE
 - S₃ SWITCH, THREE WAY
 - S_{HOA} SWITCH, HAND OFF AUTO
 - S_{3HOA} SWITCH, THREE WAY HAND OFF AUTO
 - MMS SM MANUAL MOTOR STARTER

RECEPTACLE & DEVICES

- ALL RECEPTACLES ARE WALL MOUNTED ±48" AFF (UNLESS OTHERWISE NOTED)
- DUPLEX RECEPTACLE
WP - WEATHERPROOF
- DUPLEX RECEPTACLE FLOOR MOUNT FLUSH
- JUNCTION BOX, SIZE PER NEC, UON.
- THERMOSTAT-WALL MOUNTED
- HANDHOLE OR MANHOLE
HH - ELECTRICAL HANDHOLE
MH - ELECTRICAL MANHOLE

LIGHTING

- CEILING LED FIXTURE MOUNT 12" BELOW CEILING HEIGHT, UON
- EXIT LIGHT - 2 FACES DIRECT AS REQUIRED FOR EGRESS. MOUNT ±7' AFF ABOVE DOOR, UON
- EXIT LIGHT - WALL MOUNTED, LED TYPE FOR EGRESS. MOUNT ±7' AFF ABOVE DOOR, UON
- EMERGENCY LIGHTING FIXTURE - WALL MOUNTED MOUNT ±7' AFF, UON
- EXTERIOR LIGHTING FIXTURE - WALL MOUNTED
- EXTERIOR LIGHTING FIXTURE - POLE MOUNTED NO. OF HEADS AS INDICATED ON DRAWINGS
- INDOOR TYPE - HIGH BAY FIXTURE
- INDOOR TYPE - LOW BAY FIXTURE

SCHEMATIC DIAGRAM

- | | | | |
|------|------|--|---|
| N.O. | N.C. | | CONTACT |
| | | | TIMED CONTACT CONTACT ACTION TIMED ON DE-ENERGIZATION |
| | | | TIMED CONTACT CONTACT ACTION TIMED ON ENERGIZATION |
| | | | PUSHBUTTON SINGLE CIRCUIT MOMENTARY CONTACT |
| | | | PUSHBUTTON SINGLE CIRCUIT LOCK - OUT |
| | | | LIMIT SWITCH |
| | | | LIMIT SWITCH HELD CLOSED |
| | | | LIMIT SWITCH HELD OPEN |
| | | | LIQUID - LEVEL ACTUATED SWITCH |
| | | | PRESSURE OR VACUUM ACTUATED SWITCH |
| | | | FLOW ACTUATED SWITCH |

SCHEMATIC DIAGRAM CONT

- | | | | |
|------|------|--|---|
| N.O. | N.C. | | FLOW ACTUATED SWITCH |
| | | | MOTOR OVERLOAD HEATERS |
| | | | INDICATING LIGHT
A=AMBER
B=BLUE
G=GREEN
R=RED |

SCHEMATIC DIAGRAM CONT

- PILOT LIGHT
R=RED, W=WHITE, G=GREEN, B=BLUE
- PILOT LIGHT - PUSH TO TEST
- STARTER COIL
- SOLENOID OPERATED CONTROL VALVE
- ELAPSED TIME METER
- FUSE
- MOTOR OPERATED TERMINAL
- SELECTOR SWITCH
- PUSHBUTTON
- OVERLOAD

CONDUIT AND WIRE

- CONDUCTORS - H, N, G - #12 CONDUCTORS IN 3/4" CONDUIT, UON
- HOMERUN - TO(X) - PANELBOARD, (Y) - CIRCUIT, OR OTHER DEVICES AS NOTED.
- XXP-CXXX FEEDER POWER
- XXC-CXXX FEEDER CONTROL
- (E) EXISTING FEEDER TO REMAIN
- XX PROCESS AREA
- X FEEDER NUMBER
- FE FIBER OPTIC ETHERNET CABLE (MULTIMODE)
- E ETHERNET CABLE (ALL CAT5 CABLE SHALL BE CAT5e SHIELDED)
- CONDUIT - EXPOSED
- CONDUIT - CONCEALED
- DUCT BANK (NEW)
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT (NEW)
- CONDUCTORS - H, N, G - #12 CONDUCTORS IN 3/4" CONDUIT, UON
- CONDUIT OR CONDUCTOR - TURNING UP OR TOWARDS OBSERVER
- CONDUIT OR CONDUCTOR - TURNING DOWN OR AWAY FROM OBSERVER
- FLEXIBLE CONDUIT
- CONDUIT STUB-OUT WITH CAP

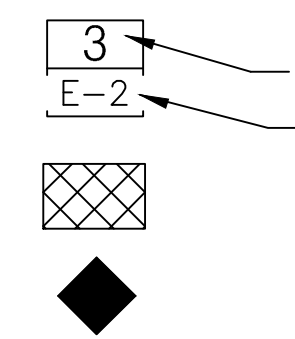
- GENERAL ABBREVIATIONS**
- | | | | |
|--------|--|-----------------|-------------------------------------|
| ø | PHASE | LCP | LOCAL CONTROL PANEL |
| ⊙ | AT | LD | LEAK DETECTOR |
| A | AMPERE | LL | LOWER LEVEL |
| AC | ALTERNATING CURRENT | LP | LIGHTING PANEL |
| AE | ANALYZER ELEMENT | LS | LOCAL STATION OR LIMIT SWITCH |
| AF | AMPERE (FRAME RATING) | LTS | LIGHTS |
| AFF | ABOVE FINISHED FLOOR | MAX | MAXIMUM |
| AFG | ABOVE FINISHED GRADE | ME | METHANOL |
| AMP | AMPERE | MFR | MANUFACTURER |
| ATS | AUTOMATIC TRANSFER SWITCH | MCC | MOTOR CONTROL CENTER |
| AWG | AMERICAN WIRE GAUGE | MCP | MOTOR CIRCUIT PROTECTOR |
| BKR | BREAKER | MDS | MAIN DISTRIBUTION SWITCHBOARD |
| BL | BLOWER | MH | MANHOLE |
| BLDG | BUILDING | MIN | MINIMUM |
| BWA | BACKWASH AIR | MISC | MISCELLANEOUS |
| BWW | BACKWASH WATER | MOD | MOTOR OPERATED DAMPER |
| | | MOV | MOTOR OPERATED VALVE |
| | | MPE | MAIN PLC ENCLOSURE |
| C | CONDUCTOR | N | NEUTRAL |
| CB | CIRCUIT BREAKER | NEC | NATIONAL ELECTRICAL CODE |
| CCS | CENTRAL CONTROL STATION | NO ₃ | NITRATE |
| CP | CONTROL PANEL | NTS | NOT TO SCALE |
| CPP | CONTROL POWER PANEL | NPW | NON POTABLE WATER |
| CKT | CIRCUIT | | |
| CNTL | CONTROL | OH | OVERHEAD |
| COND | CONDENSER | OL | OVERLOAD |
| CONT | CONTINUED | OHJ | OVERHEAD JUNCTION BOX |
| CPT | CONTROL POWER TRANSFORMER | OIT | OPERATOR INTERFACE TERMINAL |
| COMMS | COMMUNICATION | OVFL | OVERFLOW |
| CS | CONSTANT SPEED | | |
| CT | CURRENT TRANSFORMER | P | POLE |
| CWPS | CLEARWELL PUMPING STATION | PLC | PROGRAMMABLE LOGIC CONTROLLER |
| | | PNL | PANEL |
| DB | DUCTBANK | PCE | POWER CENTER ENCLOSURE |
| DBC | DIRECT BURIED CONDUIT | PCP | PUMP CONTROL PANEL |
| DI | DIGITAL INPUT | PS | PUMP STATION |
| DWG(S) | DRAWING(S) | PIT | PRESSURE INDICATING TRANSMITTER |
| DP | DISTRIBUTION PANEL | PT | POTENTIAL TRANSFORMER |
| DS | DISCONNECT SWITCH | PVC | POLYVINYL CHLORIDE |
| | | PWR | POWER |
| ECG | EQUIPMENT GROUNDING CONDUCTOR | PM | POWER MONITOR |
| EF | EXHAUST FAN | QTY | QUANTITY |
| ETH SW | ETHERNET SWITCH | RIO | REMOTE INPUT/OUTPUT |
| ETM | ELAPSED TIME METER | RVSS | REDUCED VOLTAGE SOLID STATE STARTER |
| EWH | ELECTRIC WATER HEATER | RECPT. | RECEPTACLE |
| EX | EXISTING. 'EX FAN' IS EXHAUST FAN, UON | SDP | SECONDARY DISTRIBUTION SWITCHBOARD |
| | | SHT | SHEET |
| FCP | FAN CONTROL PANEL | SPBW | SPENT BACKWASH WATER |
| FIN | FINISHED | SPST | SINGLE POLE SINGLE THROW |
| FLT | FILTER | SST | STAINLESS STEEL |
| FOD | FIBER OPTIC DISTRIBUTION BOX | SWGR | SWITCHGEAR |
| FVNR | FULL VOLTAGE NON-REVERSING | | |
| G | GROUND | TSP | TWISTED SHIELDED PAIR |
| GFCI | GROUND FAULT CURRENT INTERRUPT | TST | TWISTED SHIELDED TRIAD |
| GFI | GROUND FAULT INTERRUPTER | TYP | TYPICAL |
| GFP | GROUND FAULT PROTECTION | TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSION |
| GND | GROUND | | |
| HH | HAND HOLE | UH | UNIT HEATER |
| HOA | HAND-OFF-AUTO | UL | UNDERWRITERS LABORATORIES |
| HID | HIGH INTENSITY DISCHARGE | UON | UNLESS OTHERWISE NOTED |
| HP | 480V PANEL OR HORSE POWER | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| HT | HEAT TRACE | | |
| HTC | HEAT TRACE CONTROLLER | V | VOLT |
| | | VFD | VARIABLE FREQUENCY DRIVE |
| | | VS | VARIABLE SPEED |
| | | W/ | WITH |
| | | WHS | EYE WASH AND SHOWER SYSTEM |
| | | WP | WEATHERPROOF |
| | | XFER | TRANSFER |
| | | XFMR | TRANSFORMER |
| | | XMTR | TRANSMITTER |

GENERAL NOTES:

- SEE GENERAL NOTES ON DRAWING E-2.
- REFER TO DRAWING I-1 FOR ADDITIONAL SYMBOLS.

MISCELLANEOUS

- CALL-OUT FOR DETAIL OR SECTION ON DRAWING
- "3" INDICATES NUMERICAL ORDER ON DETAIL DRAWING
- "E-2" INDICATES DETAIL DRAWING REFERENCED.
- TO BE DEMOLISHED
- MANUFACTURER'S PANEL

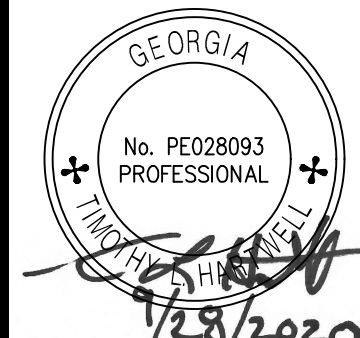


GENERAL NOTES:

1. NOT ALL SYMBOLS / ABBREVIATIONS USED ON DRAWINGS.
2. "EXTEND CONDUIT AND WIRE" IS DEFINED AS PROVIDE AND INSTALL NEW WIRING AND CONDUIT AS REQUIRED WITH SAME RATING WIRE AND SIZE CONDUIT AS EXISTING TO CONNECT EQUIPMENT.
3. WHEN SPECIFIC CONDUIT SIZE AND CONDUCTORS ARE NOT NOTED BUT REQUIRED FOR CONNECTIONS ON THE DRAWINGS, PROVIDE AS A MINIMUM:
3/4" CONDUIT WITH 2-#12, 1-#12, 1-#12G FOR 1φ, UON
3/4" CONDUIT WITH 3-#12, 1-#12G FOR 3φ, UON.
3/4" CONDUIT WITH 8-#14, 1-#14G FOR DIGITAL SIGNAL, UON.
3/4" CONDUIT WITH 2-#18 STP FOR ANALOG SIGNAL, UON.
4. REFER TO DRAWING I-1 FOR INSTRUMENTATION ABBREVIATIONS.
5. PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED EQUIPMENT.
6. PROVIDE INTEGRAL SURGE PROTECTION WITH OVERCURRENT PROTECTION FOR LP PANELBOARDS.
7. COORDINATE MANHOLE, DUCTBANK AND ALL UNDERGROUND WORK WITH NEW AND EXISTING PROCESS PIPE LOCATION.
8. CONDUIT ID SHOWN IN DUCT BANK IS FOR CLARIFICATION OF THE EQUIPMENT TO BE FED. CONDUIT SIZE SHOWN ON FEEDER SCHEDULES SHALL BE PROVIDED FOR FEEDERS NOT IN DUCT BANK OR WIREWAY.
9. CONDUIT ROUTING IS SHOWN SCHEMATICALLY. CONTRACTOR SHALL FIELD VERIFY TO DETERMINE BEST CONDUIT ROUTING METHODS.
10. FOR ALL SINGLE LINE DIAGRAMS, POWER RISER DIAGRAMS, AND CONTROL DIAGRAMS NOT ALL TYPICAL FEEDERS ARE SHOWN. REFER TO FEEDER SCHEDULES AND OTHER DRAWINGS.
11. ALL EXTERIOR INSTRUMENTS TO BE PROVIDED WITH SUNSHIELD PER DETAIL 2 ON DRAWING I-5.
12. DO NOT INSTALL JUNCTION BOXES BELOW GRADE IN SUMP CONTAINMENT AREAS, MANHOLES, OR HANDHOLES.
13. THE INSTRUMENTATION AND ELECTRICAL DRAWINGS DO NOT SHOW ALL PROCESS PIPING AND EQUIPMENT. THE CONTRACTOR SHALL PERFORM COORDINATION WITH THE WORK IDENTIFIED ON THE ELECTRICAL DRAWINGS AND ALL OTHER CONTRACT DOCUMENTS.
14. NOT ALL HAZARDOUS AREAS SHOWN ON DRAWINGS. REFER TO SPECIFICATION SECTION 16010 FOR IDENTIFICATION OF HAZARDOUS AREAS AND AREA CLASSIFICATIONS.
15. PROVIDE AND INSTALL NEW DOOR, OPERATING MECHANISM, TERMINAL BLOCKS, DEVICES AND EQUIPMENT REQUIRED FOR EACH MCC UNIT TO BE MODIFIED.
16. FIELD VERIFY FOOTER OF EXISTING AND NEW LOCATIONS FOR DUCT BANK, DIRECT BURIED CONDUITS AND PULL BOXES.
17. NO CONDUCTOR OR CABLE SPLICING IS ALLOWED UNLESS APPROVED IN WRITING BY THE ENGINEER
18. NOT ALL LOCAL DISCONNECTS SHOWN ON DRAWINGS. PROVIDE AND INSTALL LOCAL DISCONNECTS ADJACENT TO EQUIPMENT AS REQUIRED BY NEC. PROVIDE FUSES OR OTHER OVERCURRENT PROTECTION IN DISCONNECTS AS REQUIRED.
19. PROVIDE BARRIERS IN MANHOLES, WIREWAY, AND JUNCTION BOXES TO SEPARATE 480 VOLT CABLES, 120 VOLT CABLES, CONTROL WIRING, ANALOG WIRING, AND NETWORK/FIBER OPTIC CABLING.
20. CONTRACTOR SHALL PROVIDE ALL LUGS AND TERMINATION CONNECTIONS ON EQUIPMENT TO MATCH WIRE AND CABLE INSTALLED. PROVIDE AND INSTALL ALL TERMINAL CONNECTORS AND LUGS AS REQUIRED.
21. WHERE DUCTBANKS OR CONDUITS ARE SHOWN ENTERING A PIECE OF EQUIPMENT, THE CONTRACTOR SHALL PROVIDE A JUNCTION BOX OR PULL BOX FOR ALL FEED THRU CONDUCTORS, IF THE EQUIPMENT PROVIDED IS NOT LISTED FOR THIS USE.
22. A DISTINCTION BETWEEN NEW AND EXISTING MATERIALS, EQUIPMENT AND STRUCTURES HAS BEEN MADE ON THE DRAWINGS BY LINE WEIGHT. IN GENERAL HEAVY REPRESENTS NEW WORK, LIGHT REPRESENTS EXISTING CONSTRUCTION.
23. THE CONTRACTOR IS RESPONSIBLE TO FIELD CHECK AND MEASURE LOCATIONS, ELEVATIONS AND DIMENSIONS TO FIT AND OTHERWISE INSTALL THE NEW WORK TO ACTUAL EXISTING LOCATIONS, ELEVATIONS AND DIMENSIONS FOR A COMPLETE AND TROUBLE FREE OPERATING FACILITY.
24. NOT ALL EQUIPMENT IS SHOWN ON THE DRAWINGS FOR CLARITY.
25. CONTRACTOR SHALL PROVIDE AND INSTALL ALL TEMPORARY WIRE, CONDUIT, CONNECTORS, OVERCURRENT PROTECTION, MOTOR CONTROLS, AND EQUIPMENT REQUIRED TO MAINTAIN SYSTEM OPERATION DURING CONSTRUCTION.
26. ALL CONTROL PANEL, DISCONNECT SWITCHES AND DEVICES MOUNTED IN EXTERIOR LOCATIONS SHALL ONLY ALLOW PENETRATIONS FOR CONDUIT IN THE BOTTOM OF THE PANEL OR DEVICE.
27. ALL MANUFACTURERS AND VENDOR SUPPLIED CONTROL PANELS TO BE PROVIDED WITH DISCONNECTING MEANS AND OVERCURRENT PROTECTION FOR ALL PANEL LOADS AS REQUIRED BY NEC AND UL. CONTRACTOR SHALL PROVIDE, INSTALL, AND CONNECT.

28. THIS PROJECT INCLUDES ELECTRICAL DEMOLITION. ELECTRICAL CONTRACTOR SHALL REFERENCE CIVIL AND MECHANICAL PLANS FOR REQUIREMENTS FOR DEMOLITION. COORDINATION WITH GENERAL CONTRACTOR WILL BE REQUIRED. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
29. IN FEEDER SCHEDULES, "SETS" REFERS TO PROVIDING NUMBER OF COMPLETE SETS OF CONDUIT AND WIRE AS INDICATED.
30. PROVIDE AND INSTALL POWER MONITORS AS SPECIFIED IN SPECIFICATION 16155 AT ALL NEW MOTOR CONTROL CENTERS, SWITCHBOARDS, AND SWITCHGEAR. PROVIDE A POWER MONITOR ON EACH INCOMING LINE (MAIN) TO EACH DEVICE. ELECTRICAL AND INSTRUMENTATION DRAWINGS SHOW GENERAL LOCATIONS. EXTEND CONNECTION CABLES BETWEEN POWER MONITORS TO ASSOCIATED ETHERNET COMMUNICATIONS. PROVIDE ALL POWER, CONNECTIONS, AND PROGRAMMING TO POWER MONITORS FOR OPERATION.
31. PROVIDE TERMINAL BOXES WITH TERMINAL BLOCKS FOR CONNECTIONS OF ALL MANUFACTURERS CABLE TO FIELD WIRING AS REQUIRED. NO SPLICING OR WIRE NUT CONNECTORS SHALL BE USED.
32. CONTRACTOR SHALL REFERENCE FACILITY RECORD DRAWINGS FOR EXISTING DUCT BANK ROUTES AND CONSTRUCTION.
33. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL THE MAIN FIBER OPTIC CABLE AND TRUCK LINES INCLUDING TERMINATIONS AND TESTING. CONNECT FIBER OPTIC CABLE TO FIBER OPTIC DISTRIBUTION BOX (FOD) AS SHOWN ON THE DRAWINGS. PROVIDE 1" CONDUIT FROM THE FOD TO THE PLC PANEL, CONTROL PANEL, OR NETWORK CABINET, AT THE LOCATION OF THE FIBER OPTIC SWITCH. INSTALL FIBER OPTIC PATCH CABLES OR INTERIOR FIBER OPTIC CABLES FROM THE FOD TO THE NETWORK SWITCH. REFER TO DETAIL 3, DRAWING I-5.
34. DUCTBANK AND SITE CONDUIT INSTALLATIONS
 - A. THE SITE AND EXISTING UNDERGROUND UTILITIES WHICH ARE SHOWN ON THE SITE DRAWINGS TO THE BEST KNOWLEDGE OF THE CITY AND ENGINEER. THE CONTRACTOR SHALL PROVIDE TEST PITS AS REQUIRED FOR ALL INSTALLATIONS TO DETERMINE LOCATIONS AND DEPTHS OF EXISTING UTILITIES.
 - B. NEW DUCTBANKS SHALL BE ROUTED IN APPROXIMATE LOCATIONS AS SHOWN ON THE DRAWINGS, HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO GO UNDER EXISTING UTILITIES AS REQUIRED FOR THE INSTALLATION.
 - C. MANY INSTANCES MAY REQUIRE THE DUCTBANK TO BE INSTALL 84" BELOW GRADE TO THE TOP OF THE DUCTBANK. THEREFORE, THE CONTRACTOR SHALL INCLUDE IN THEIR WORK THAT ALL DUCTBANKS WILL BE INSTALLED 84" BELOW GRADE. THE CONTRACTOR CAN SUBMIT DEVIATIONS TO THIS DEPTH DURING CONSTRUCTION FOR APPROVAL BY THE ENGINEER, BUT NO LESS THAN 24" TO THE TOP OF THE DUCTBANK. ANY DEPTH LESS THAN 84" WILL BE A CREDIT CHANGE TO THE CONTRACT.
 - D. THE CONTRACTOR SHALL PERFORM A REVIEW OF ALL EXISTING DUCTBANKS AND EXISTING UNDERGROUND ELECTRICAL CONDUITS PRIOR TO INSTALLATION OF NEW DUCTBANKS. SOME EXISTING ELECTRICAL DUCTBANKS TO BE ABANDON OR DEMOLISHED. CONTRACTOR SHALL VERIFY EXISTING CONDUCTORS IN EXISTING DUCTBANKS PRIOR TO INSTALLATION OF NEW DUCTBANKS. CONTRACTOR SHALL DEVELOP AND SUBMIT AN EXISTING DUCTBANK LAYOUT WITH ALL EXISTING WIRING FOR REVIEW AND APPROVAL OF THE ENGINEER.
35. INSTALL LIGHTING FIXTURES IN LOCATIONS AS SHOWN. CONTRACTOR SHALL COORDINATE WITH HVAC AND PROCESS TRADES BEFORE MOUNTING FIXTURES. FIXTURES SHALL BE MOUNTED AS CLOSE AS POSSIBLE TO THESE LOCATIONS WHEN ADJUSTMENTS TO AVOID INTERFERENCES ARE REQUIRED. FIXTURES SHALL BE INSTALLED LEVEL AND PLUMB.
36. CONNECT FIXTURES ON CIRCUITS AS SHOWN ON DRAWINGS AND ON PANELBOARD SCHEDULES. LIGHTING CIRCUIT CONDUIT AND CONDUCTORS SHALL BE PER NEC OR AS NOTED ON THE DRAWINGS.
37. CLEAN EACH FIXTURE AT TIME OF SUBSTANTIAL COMPLETION.
38. OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR AND REPAIR ALL IMPROPER CONNECTIONS AND OPERATION.
39. THE GROUNDING SYSTEM IS SHOWN DIAGRAMMATICALLY. EXACT LOCATION OF CABLE GROUND RODS AND CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD.
40. ALL BURIED GROUNDING CABLE CONNECTIONS SHALL BE CADWELD OR THERMOWELD. THE WELDED CONNECTIONS SHALL BE LEFT EXPOSED FOR INSPECTION BY ENGINEER PRIOR TO BACKFILLING.
41. WHERE EXPOSED TO MECHANICAL DAMAGE. THE GROUNDING CONDUCTOR SHALL BE SUITABLY PROTECTED BY PIPE OR OTHER MECHANICAL PROTECTION. EACH END OF PROTECTING CONDUIT (IF METALLIC) SHOULD BE GROUNDED TO THE BARE CABLE.
42. ALL EXPOSED CABLE LUGS AND CONNECTORS SHALL BE OF THE COMPRESSION TYPE UNLESS OTHERWISE NOTED.
43. STEEL MUST BE CLEANED THOROUGHLY AND CABLE MUST BE COMPLETELY DRY BEFORE MAKING WELD CONNECTIONS.
44. THE SERVICE GROUNDING ELECTRODE SYSTEMS SHALL BE CONNECTED TO A METALLIC WATERLINE WITH A MINIMUM OF 10 FEET LENGTH UNDERGROUND AND TO THE GROUNDING ELECTRODES.
45. REMOVE PAINT FROM UNDER ALL GROUND LUGS AND BARS, INCLUDING SHOP FABRICATED PANELS.

46. GROUND ALL MOTORS AND EQUIPMENT RACKS.
47. REFER TO DRAWING 14-E-1 FOR SUGGESTED CONSTRUCTION PHASING FOR CONNECTIONS.
48. ALL CONDUITS AND RACEWAYS WITH TWISTED SHIELD CONDUCTORS OR COMMUNICATIONS CABLE (IE. CATEGORY 6E) SHALL INCLUDE AN INSULATED EQUIPMENT GROUND CONDUCTOR, MINIMUM SIZE #12 AWG. ADDITIONALLY, PROVIDE AND INSTALL MINIMUM 1 SPARE CABLE OF SAME TYPE IN EACH CONDUIT AND RACEWAY.
49. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, NFPA 820 & ALL STATE & LOCAL CODES & SHALL CONFORM TO REQUIREMENTS OF THE LOCAL UNITY COMPANY PROVIDING SERVICE.
50. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ), OBTAIN AND PAY FOR ALL PERMITS AND/OR INSPECTIONS AS REQUIRED BY ANY GOVERNING BODY.
51. NEW POWER DISTRIBUTION SYSTEM SHALL CONNECT TO THE UTILITY'S TRANSFORMERS. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO LOCATE NEW TRANSFORMERS AND SERVICE COORDINATE AS NEEDED. ALL SERVICE REQUIREMENTS REQUIRED BY THE UTILITY SHALL BE PROVIDED BY THE CONTRACTOR.
52. CONTRACTOR SHALL LAYOUT AND VERIFY THAT MIN. WORKING SPACE AROUND ALL ELECTRICAL EQUIPMENT IS PROVIDED AS PER ARTICLE 110 OF THE NEC.
53. COORDINATE NEW CONDUIT STUB UP LOCATIONS WITH EQUIPMENT MANUFACTURER'S SUBMITTALS.
54. USE CADWELD CONNECTION OR EQUAL FOR GROUND CONNECTIONS. GROUND RODS SHALL BE 3/4"x10' COPPER CLAD STEEL. DRIVE IN THE GROUND UNTIL TOP IS BURIED 12" BELOW GRADE (MIN). ADDITIONAL GROUND RODS MAY BE REQUIRED TO MEET NEC REQUIREMENT FOR LOW IMPEDANCE PATH TO GROUND.
55. PROTECT EXISTING GROUND GRID CONNECTIONS. EXISTING GROUND GRID CONNECTIONS SHALL BE TERMINATED TO THE NEW GROUND GRID TO PROVIDE A SINGLE, COMMON FACILITY GROUNDING SYSTEM.
56. WHERE PRACTICAL, ELECTRICAL CONTRACTOR SHALL INSTALL ELECTRICAL EQUIPMENT OUTSIDE OF CLASSIFIED AREAS. ALL EQUIPMENT INSTALLED WITHIN BOUNDARIES OF CLASSIFIED AREAS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC ARTICLES 500 & 501. NOTE THAT CLASSIFIED AREAS EXIST AROUND & ABOVE OPENINGS, VENTILATION SYSTEMS AND LEAKAGE SOURCES. REFERENCE NFPA 820 FOR DEFINITIONS & AREA CLASSIFICATIONS.
57. JUNCTION BOXES AND CONTROL PANELS SHALL BE MOUNTED A MIN. OF 5' AWAY FROM HATCHES OR VENTS FROM CLASSIFIED AREAS. CONTROL PANELS SHALL BE MOUNTED ON EQUIPMENT RACKS OR MOUNTED ON EQUIPMENT RACKS OR MOUNTED AT GRADE ON CONCRETE EQUIPMENT PADS.
58. HAZARDOUS AREAS ARE DEFINED PER NFPA 820, LATEST EDITION. WETWELL AND SEWER MANHOLES ARE CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATIONS. VALVE AND METER VAULTS ARE CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATIONS.
59. CONTRACTOR SHALL REVIEW AREA CLASSIFICATION AND CONDUIT ROUTES. CONDUIT SEALS ARE REQUIRED TO BE INSTALLED IN ACCORDANCE WITH THE NEC, PROJECT DETAILS AND SPECIFICATIONS.
60. ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH COVERS, SHIELDS OR ENCLOSURES TO PREVENT CONTACT WITH LIVE PARTS.
61. ALL 120VAC, SINGLE PHASE, 20 AMP CONVENIENCE RECEPTACLES SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION.
62. ALL PANELBOARDS THAT ARE REQUIRED TO BE MODIFIED BY ADDING OR REMOVING BREAKERS SHALL HAVE UPDATED TYPED SCHEDULES.
63. PROVIDE GFI PROTECTION FOR ALL HEAT TRACE CIRCUITS.
64. CONDUITS SHALL NOT BE INSTALLED ON SLABS, WALKWAYS, GRATING, OR OTHER AREAS THAT WOULD CAUSE TRIPPING OR WALKING HAZARDS. OVERHEAD CONDUITS SHALL BE MINIMUM 96" ABOVE GRADE UNLESS OTHERWISE NOTED, AND 240" ABOVE ANY VEHICLE ACCESS.
65. MOUNT ALL CONDUITS MINIMUM 18" ABOVE HIGH WATER LEVEL AND SEAL CONDUIT ENTRIES PER NEC REQUIREMENTS.
66. FOR HVAC EQUIPMENT AND WORK, PROVIDE AND INSTALL ALL DISCONNECTS, THERMOSTATS, CONDUIT, WIRING, AND OVERCURRENT AS REQUIRED FOR OPERATION AND A COMPLETE SYSTEM. NOT ALL HVAC EQUIPMENT AND ACCESSORIES SHOWN.



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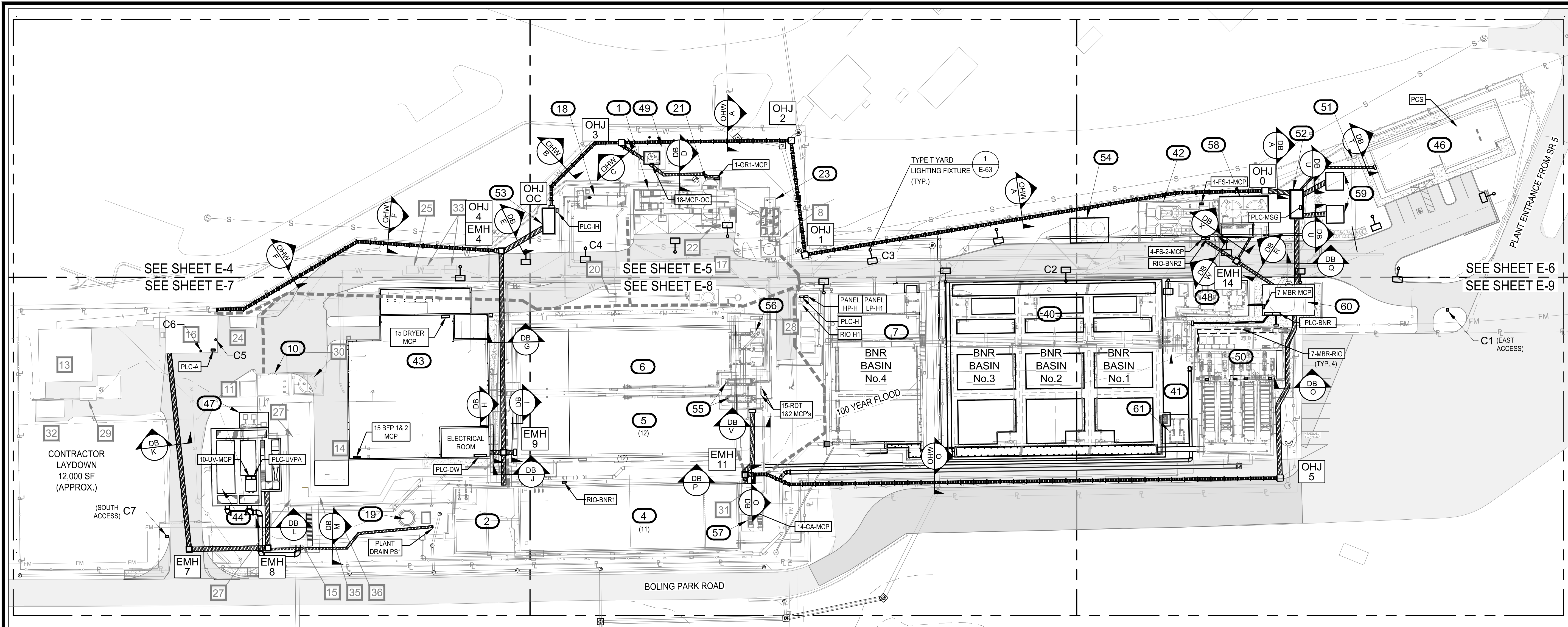
HARTWELL ENGINEERING, INC.
ENGINEERS & INTEGRATORS
STEVENSVILLE, MARYLAND
(410) 596-1111

DATE	REVISION

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

ELECTRICAL GENERAL NOTES



PROPOSED OVERALL YARD ELECTRICAL PLAN
 SCALE: 1"=40'



- DUCT BANK (NEW)
- ABOVE GROUND RACEWAY
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT
- CAMERA LOCATION

- EXISTING SITE/SYMBOLS LEGEND**
- ACCESS HATCH
 - STORM DRAIN MANHOLE
 - SANITARY MANHOLE
 - CATCH BASIN
 - JUNCTION BOX
 - PIPE RISER
 - YARD INLET
 - DROP INLET
 - CLEANOUT
 - YARD HYDRANT
 - LIGHT POLE
 - POWER POLE
 - BURIED ELECTRICAL
 - ELECTRICAL
 - ELECTRIC BOX/CONTROL BOX
 - ELECTRIC METER
 - WATER VALVE
 - SPIGOT
 - TEMPORARY SURVEY CONTROL POINT

- LEGEND:**
 (EXISTING STRUCTURES/EQUIPMENT)
- 1 HEADWORKS
 - 2 EQUALIZATION BASIN
 - 4 SBR No.1
 - 5 SBR No.2
 - 6 SBR No.3
 - 7 SBR No.4
 - 8 MAGNESIUM HYDROXIDE SYSTEM
 - 10 CHEMICAL BUILDING
 - 11 SODIUM HYPOCHLORITE SYSTEM
 - 12 POLYALUMINUM CHLORIDE SYSTEM
 - 13 SLUDGE PRESS BUILDING
 - 14 DYNASAND FILTER
 - 15 CASCADE AERATOR

- CONTINUED**
 (EXISTING STRUCTURES/EQUIPMENT)
- 16 OFFICE/ADMINISTRATION BUILDING
 - 17 INFLUENT PUMP STATION
 - 18 INFLUENT METERING FLUME
 - 19 PLANT DRAIN PUMP STATION PS-1
 - 20 FLOW METER VAULT
 - 21 GRIT CHAMBERS
 - 22 GRIT CLASSIFIER
 - 23 SBR SPLITTER BOX
 - 24 EMERGENCY GENERATOR
 - 25 WATER METER
 - 27 UV SYSTEM AND PARSHALL FLUME
 - 28 SBR No.4 BLOWERS
 - 29 SLUDGE VAULT

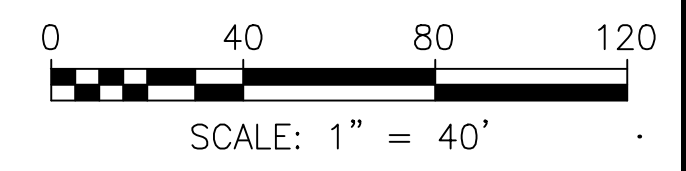
- CONTINUED**
 (EXISTING STRUCTURES/EQUIPMENT)
- 30 ALUM TANK
 - 31 POST EQUALIZATION BASIN BLOWERS
 - 32 SLUDGE LOADING STATION
 - 33 BACKFLOW PREVENTER
 - 35 REUSE WATER METER VAULT
 - 36 REUSE VALVE VAULT

- LEGEND:**
 (MODIFIED/REPURPOSED STRUCTURES/EQUIPMENT)
- 1 HEADWORKS
 - 2 REUSE WATER WETWELL (FORMER POST EQUALIZATION BASIN)
 - 4 WAS STORAGE (FORMER SBR No.1)
 - 5 AEROBIC DIGESTER (FORMER SBR No.2)
 - 6 AEROBIC DIGESTER (FORMER SBR No.3)
 - 7 BNR BASIN No. 4 (FORMER SBR No.4)
 - 10 CHEMICAL BUILDING MODIFICATIONS
 - 15 CASCADE AERATOR
 - 18 INFLUENT FLUME MODIFICATIONS
 - 19 PLANT DRAIN PUMP STATION PS-1 MODIFICATIONS
 - 21 GRIT CHAMBER MODIFICATIONS
 - 23 SBR SPLITTER BOX MODIFICATIONS

- LEGEND:**
 (PROPOSED STRUCTURES/EQUIPMENT)
- 40 BNR BASINS No.1, No.2, No.3
 - 41 RAS SPLITTER BOX
 - 42 FINE SCREENINGS FACILITY
 - 43 SOLIDS HANDLING FACILITY
 - 44 UVPA FACILITY (UV AND POST AERATION)
 - 45 NOT USED
 - 46 ADMINISTRATION / CONTROL BUILDING
 - 47 UVPA AERATION BLOWERS
 - 48 AERATION BASIN BLOWERS
 - 49 ODOR CONTROL / HEADWORKS
 - 50 MEMBRANE FACILITY
 - 51 RS SUMP FOR ADMINISTRATION BUILDING
 - 52 ELECTRICAL SWITCHGEAR-MAIN

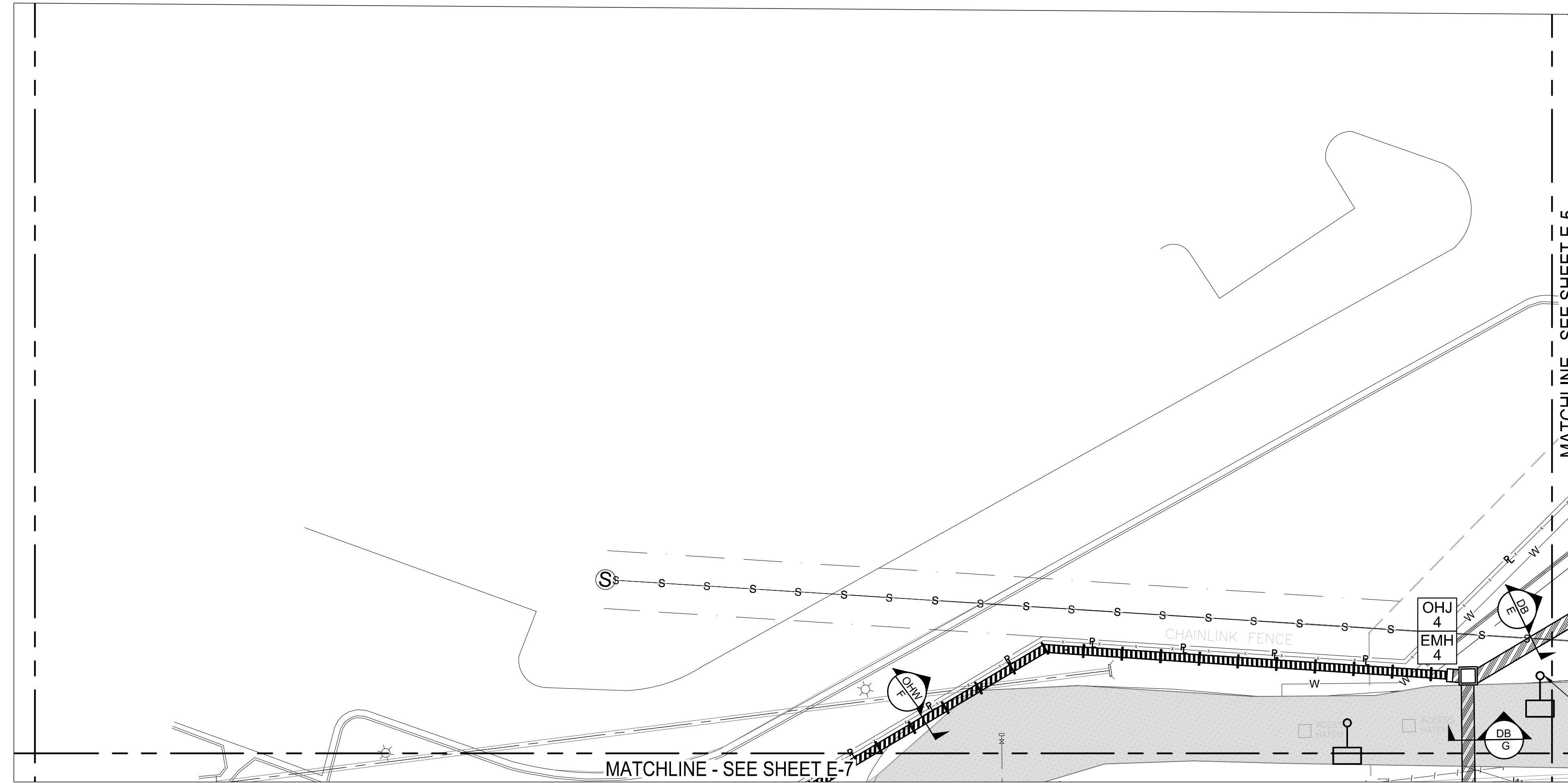
- CONTINUED**
 (PROPOSED STRUCTURES/EQUIPMENT - CONTINUED)
- 53 ELECTRICAL SWITCHGEAR-OC
 - 54 MAGNESIUM HYDROXIDE SYSTEM
 - 55 ROTARY DRUM THICKENER
 - 56 AEROBIC DIGESTER BLOWERS
 - 57 COMPRESSED AIR MIXING SYSTEM
 - 58 ALUM FEED FACILITY
 - 59 ELECTRICAL TRANSFORMER PAD
 - 60 BNR / MBR ELECTRICAL BUILDING
 - 61 SCUM PUMPING SYSTEM
 - 62 ODOR CONTROL / SOLIDS HANDLING FACILITY

- NOTES:**
- REFER TO DRAWING E-2 FOR NOTES.
 - FOR ADDITIONAL EXISTING STRUCTURES AND EQUIPMENT SHOWN IN LEGEND SEE EXISTING SITE PLAN.
 - REFER TO DRAWINGS E-4 TO E-9 FOR ADDITIONAL INFORMATION, INCLUDING REMOVAL OF EXISTING DUCTBANKS.
 - REFER TO DRAWING E-64 FOR LIGHTING SCHEDULE.

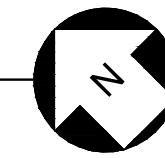


PROJ. NO.:	DATE	REVISION
100061831		
DESIGNED BY: RDWINJZ		
DRAWN BY: NCTANJZ		
CHECKED BY: TLH		
APPROVED BY: TLH		
DATE: SEPTEMBER 2020		
SCALE: AS SHOWN		

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**PROPOSED OVERALL
 YARD ELECTRICAL PLAN**



PROPOSED YARD ELECTRICAL PARTIAL PLAN
SCALE: 1"=20'



- DUCT BANK (NEW)
- ABOVE GROUND RACEWAY
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT

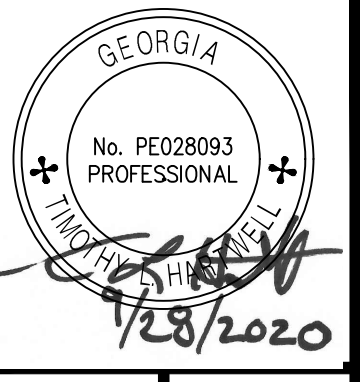
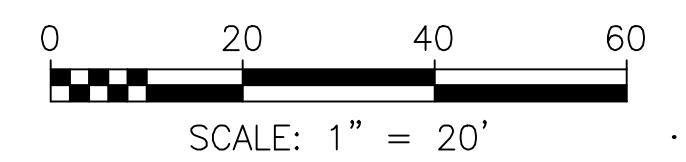
TYPE T YARD LIGHTING FIXTURE (TYP.) 1 E-63

- EXISTING SITE/SYMBOLS LEGEND**
- ACCESS HATCH
 - STORM DRAIN MANHOLE
 - SANITARY MANHOLE
 - CATCH BASIN
 - JUNCTION BOX
 - PIPE RISER
 - YARD INLET
 - DROP INLET
 - CLEANOUT
 - YARD HYDRANT
 - LIGHT POLE
 - POWER POLE
 - BURIED ELECTRICAL
 - ELECTRICAL
 - ELECTRIC BOX/CONTROL BOX
 - ELECTRIC METER
 - WATER VALVE
 - SPIGOT
 - TEMPORARY SURVEY CONTROL POINT
 - SIGN

NOTE:

1. REFER TO DRAWING E-3 FOR PROPOSED OVERALL YARD ELECTRICAL PLAN.
2. COORDINATE CONDUITS UNDERGROUND FROM OH WIREWAY. SEAL ALL CONDUITS IN WIREWAY PROVIDE JUNCTION BOX OR MANHOLE AT GRADE (EMH-4) FOR TRANSITION.

E-4	E-5	E-6
E-7	E-8	E-9



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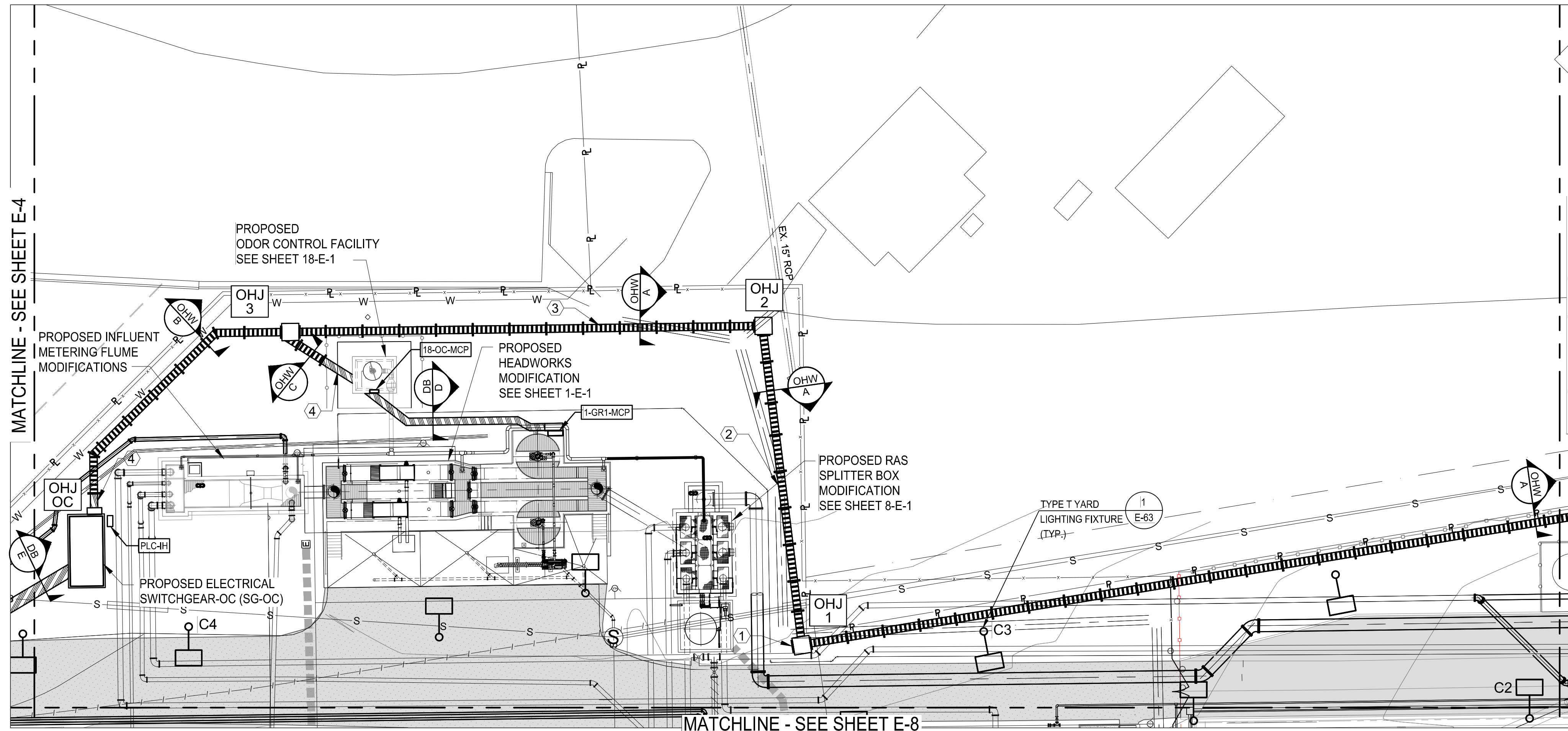
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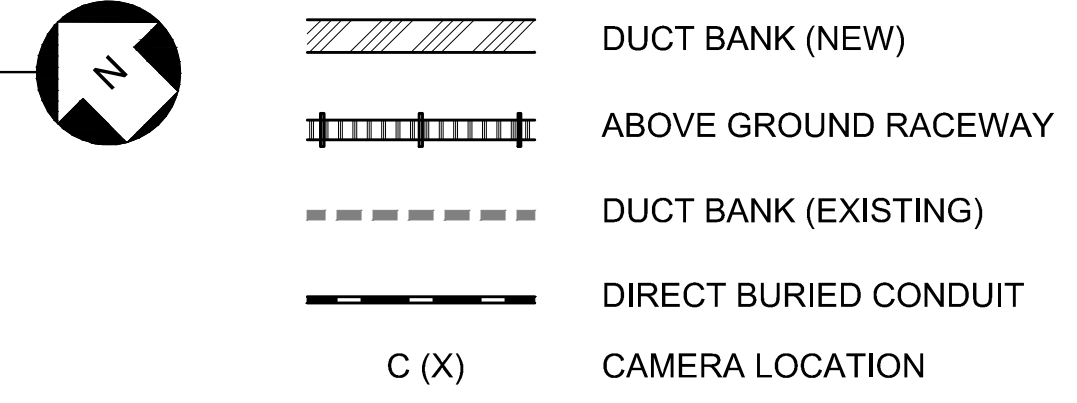
PROJ. NO.: 100061831
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
PROPOSED YARD ELECTRICAL PARTIAL PLAN

SHEET NO.
E-4



PROPOSED YARD ELECTRICAL PARTIAL PLAN
SCALE: 1"=20'



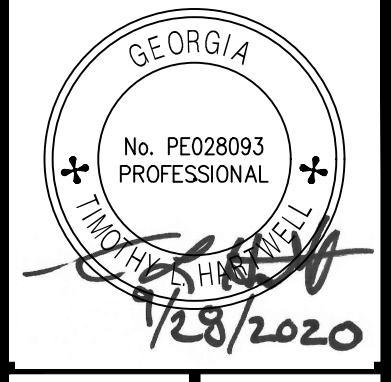
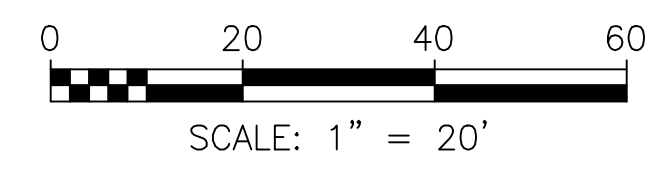
EXISTING SITE/SYMBOLS LEGEND

- ⊕ ACCESS HATCH
- ⊕ STORM DRAIN MANHOLE
- ⊕ SANITARY MANHOLE
- ⊕ CATCH BASIN
- ⊕ JUNCTION BOX
- ⊕ PIPE RISER
- ⊕ YARD INLET
- ⊕ DROP INLET
- ⊕ CLEANOUT
- ⊕ YARD HYDRANT
- ⊕ LIGHT POLE
- ⊕ POWER POLE
- ⊕ BURIED ELECTRICAL
- ⊕ ELECTRICAL
- ⊕ ELECTRIC BOX/CONTROL BOX
- ⊕ ELECTRIC METER
- ⊕ WATER VALVE
- ⊕ SPIGOT
- ⊕ TEMPORARY SURVEY CONTROL POINT
- ⊕ SIGN

- NOTE:**
- REFER TO DRAWING E-3 FOR PROPOSED OVERALL YARD ELECTRICAL PLAN.
 - COORDINATE FIELD CONDUIT ENTRY INTO SG-OC FOR TOP OR BOTTOM FEED.
 - CONDUITS TO MCC-A IN EXISTING ADMIN BUILDING TO BE INSTALLED IN PHASE 4 CONSTRUCTION. REFER TO ELECTRICAL SEQUENCE OF CONSTRUCTION ON DRAWING 14-E-1.
 - COORDINATE CONDUITS UNDERGROUND FROM OH WIREWAY. SEAL ALL CONDUITS IN WIREWAY PROVIDE JUNCTION BOX OR MANHOLE AT GRADE (OHJ-OC) FOR TRANSITION.

- KEY NOTES:**
- SUPPORT FOR OVERHEAD JUNCTION BOX IS CLOSE TO MANHOLE STRUCTURE AND UNDERGROUND PIPE. CONTRACTOR SHALL INVESTIGATE AREA AND PROVIDE SUPPORT THAT AVOIDS THESE STRUCTURES.
 - CONTRACTOR SHALL PROVIDE ACCESS TO DI FOR OPERATIONS. AREA BENEATH THE WIREWAY SHALL HAVE MIN. OF 6' OF ACCESS AFG.
 - SEPERATE THE SUPPORTS FOR THE WIREWAY TO AVOID THE STORM DRAIN STRUCTURE.
 - CONDUCTORS TRANSITIONING FROM WIREWAY TO UNDERGROUND DIRECT BURIED CONDUITS SHALL BE IN CONDUIT AND CONCRETE ENCASED, WITH CONDUITS EXTENDING UP THE WIREWAY TO THE RACK.

E-4	E-5	E-6
E-7	E-8	E-9



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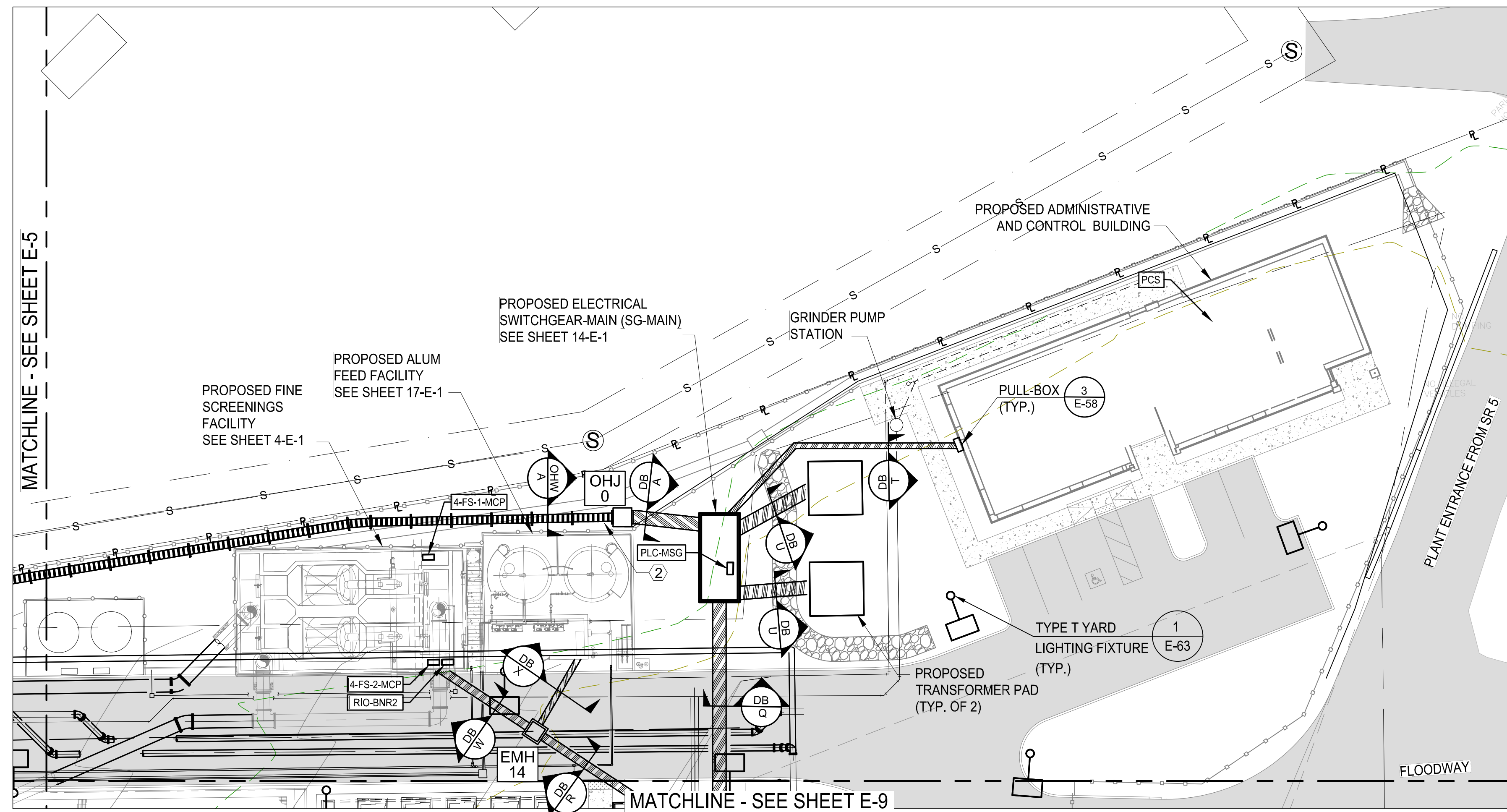
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REVISION	DATE

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DESIGNED BY: RDW/NJZ
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SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
PROPOSED YARD ELECTRICAL PARTIAL PLAN

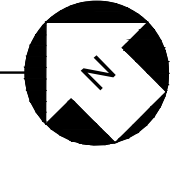
SHEET NO.
E-5



MATCHLINE - SEE SHEET E-5

MATCHLINE - SEE SHEET E-9

PROPOSED YARD ELECTRICAL PARTIAL PLAN
SCALE: 1"=20'



- DUCT BANK (NEW)
- ABOVE GROUND RACEWAY
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT

- EXISTING SITE/SYMBOLS LEGEND**
- ACCESS HATCH
 - STORM DRAIN MANHOLE
 - SANITARY MANHOLE
 - CATCH BASIN
 - JUNCTION BOX
 - PIPE RISER
 - YARD INLET
 - DROP INLET
 - CLEANOUT
 - YARD HYDRANT
 - LIGHT POLE
 - POWER POLE
 - BURIED ELECTRICAL ELECTRICAL
 - ELECTRIC BOX/CONTROL BOX
 - ELECTRIC METER
 - WATER VALVE
 - SPIGOT
 - TEMPORARY SURVEY CONTROL POINT
 - SIGN

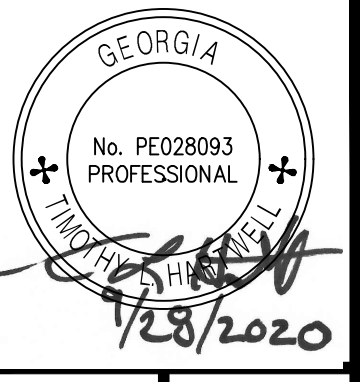
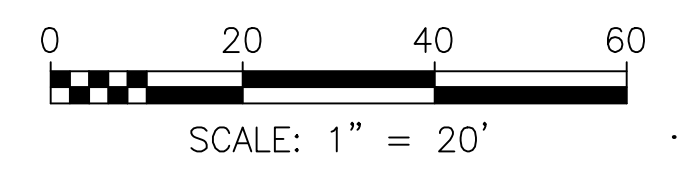
NOTE:

1. REFER TO DRAWING E-3 FOR PROPOSED OVERALL YARD ELECTRICAL PLAN.
2. COORDINATE CONDUIT ENTRY IN ADMINISTRATIVE AND CONTROL BUILDING.
3. PCS IS PLANT CONTROL SYSTEM. REFER TO DRAWING I-2 FOR LAYOUT.

KEY NOTES:

- ① EX. STRUCTURE IS APPROXIMATELY 3' AFG. OVERHEAD WIREWAY SUPPORT SHALL BE SPACED SUCH THAT IT DOES NOT INTERFERE WITH THE EXISTING STRUCTURE.
- ② CONDUCTORS TRANSITIONING FROM WIREWAY TO UNDERGROUND SHALL BE IN CONDUIT AND CONCRETE ENCASED WITH CONDUITS EXTENDING UP THE WIREWAY TO THE RACK.

E-4	E-5	E-6
E-7	E-8	E-9



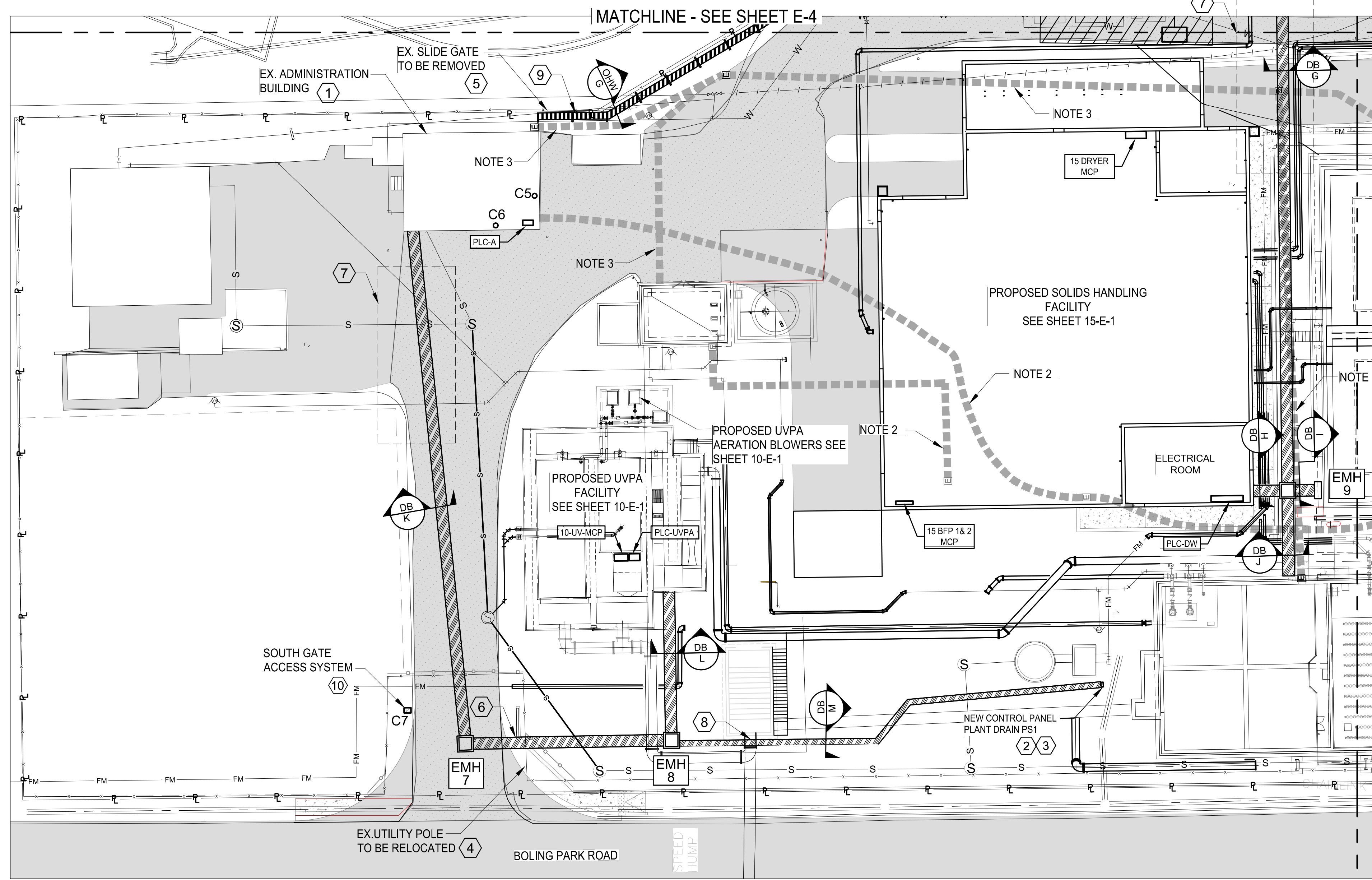
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1600 RiverEdge Parkway, N.W., Suite 700
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P: 770-993-0260

HARTWELL ENGINEERING, INC.
REGISTERED PROFESSIONAL ENGINEERS
STATE OF GEORGIA
LICENSE NO. 100061831

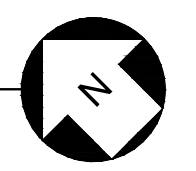
PROJ. NO.	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DATE	SCALE
100061831	RDWINJZ	NCTINJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
PROPOSED YARD ELECTRICAL PARTIAL PLAN

SHEET NO.
E-6



PROPOSED YARD ELECTRICAL PARTIAL PLAN
SCALE: 1"=20'



- DUCT BANK (NEW)
- ABOVE GROUND RACEWAY
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT
- C (X) CAMERA LOCATION

- EXISTING SITE/SYMBOLS LEGEND**
- ACCESS HATCH
 - STORM DRAIN MANHOLE
 - SANITARY MANHOLE
 - CATCH BASIN
 - JUNCTION BOX
 - PIPE RISER
 - YARD INLET
 - DROP INLET
 - CLEANOUT
 - YARD HYDRANT
 - LIGHT POLE
 - POWER POLE
 - BURIED ELECTRICAL
 - ELECTRICAL
 - ELECTRIC BOX/CONTROL BOX
 - ELECTRIC METER
 - WATER VALVE
 - SPIGOT
 - TEMPORARY SURVEY CONTROL POINT
 - SIGN

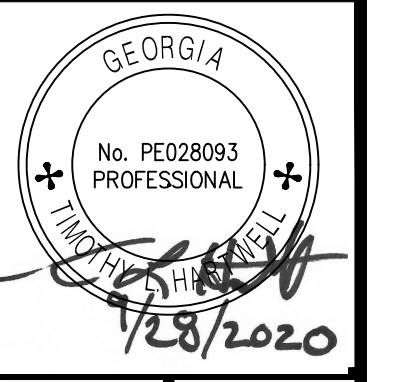
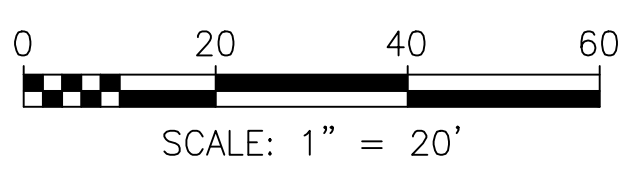
NOTE:

1. REFER TO DRAWING E-3 FOR PROPOSED OVERALL YARD ELECTRICAL PLAN.
2. EXISTING DUCTBANK TO BE REMOVED OR ABANDONED IN PLACE. CONTRACTOR SHALL LOCATE EXISTING CONDUCTORS AND SUBMIT EXISTING DB LAYOUT AND FEEDER STUDY PRIOR TO DEMOLITION AND NEW INSTALLATION.
3. EXISTING DUCT BANK TO REMAIN.
4. MBR STRUCTURE AND BNR BASINS ARE PRECAST STRUCTURES. PROVIDE SST PULL BOX TO TRANSITION FROM UG CONDUITS TO EXPOSED. ROUTING OF CONDUITS SHALL BE ON STRUCTURE INTERIOR.

KEY NOTES:

- ① REFER TO DRAWING E-57 FOR MODIFICATIONS IN EXISTING ADMINISTRATION BUILDING.
- ② PLANT DRAIN PS1 PUMPS REFEED FROM MCC-A WITH NEW CONTROL PANEL AND NEW DISCONNECT SWITCHES ON EQUIPMENT RACK. REMOVE EXISTING CONTROL PANEL AND INSTALL NEW PER SCHEMATIC DRAWING E-67.
- ③ CONNECT PUMP FEEDERS TO NEW DISCONNECT SWITCHES. CONNECT EX. PUMP CABLES TO NEW DS.
- ④ CONTRACTOR SHALL COORDINATE RELOCATION OF EX. UTILITY POLE WITH GEORGIA POWER. ALL CONTRACTOR COORDINATION IS INCLUDED IN BASE BID. GEORGIA POWER FEES WILL BE ASSESSED FROM ALLOWANCE.
- ⑤ CONTRACTOR SHALL REMOVE EXISTING SLIDE GATE ON FENCE. FENCE TO REMAIN.
- ⑥ CONTRACTOR SHALL INSTALL DUCTBANK UNDER NEW RETAINING WALL. ELEVATION ON OTHER SIDE OF RETAINING WALL INCREASES BY APPROXIMATELY 8 FEET. CONTRACTOR SHALL FIELD VERIFY PRIOR TO INSTALLATION.
- ⑦ EXISTING UNDERGROUND PIPING IS WITHIN THIS AREA. CONTRACTOR SHALL TEST PIT THE AREA FOR INSTALLATION OF DUCTBANK.
- ⑧ CONTRACTOR SHALL INSTALL DUCTBANK BETWEEN THE PIPING AT OUTFALL. ELEVATIONS ARE APPROXIMATELY BETWEEN 854 AND 866 FEET BETWEEN THE PIPES. CONTRACTOR SHALL FIELD VERIFY PRIOR TO INSTALLATION.
- ⑨ BUILDING 16 IS TO BE FED OVERHEAD TO LOCATION OF EX. UTILITY FEEDERS. BUILDING 16 IS APPROX. 20 FEET TALL. THE PORTION OF OVERHEAD WIREWAY SHALL BE APPROX. 16+ FEET ABOVE GRADE PARALLEL WITH FENCE AND DECLINE TO WIREWAY AT CORNER. EX. GENERATOR SHALL BE ACCESSIBLE UNDER WIREWAY.
- ⑩ REFER TO DRAWING I-9 FOR ACCESS AND VIDEO SYSTEM. LOCATION OF CAMERA C7.

E-4	E-5	E-6
E-7	E-8	E-9



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ATLANTA, GA 30328
(404) 249-5111

DATE	REVISION

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

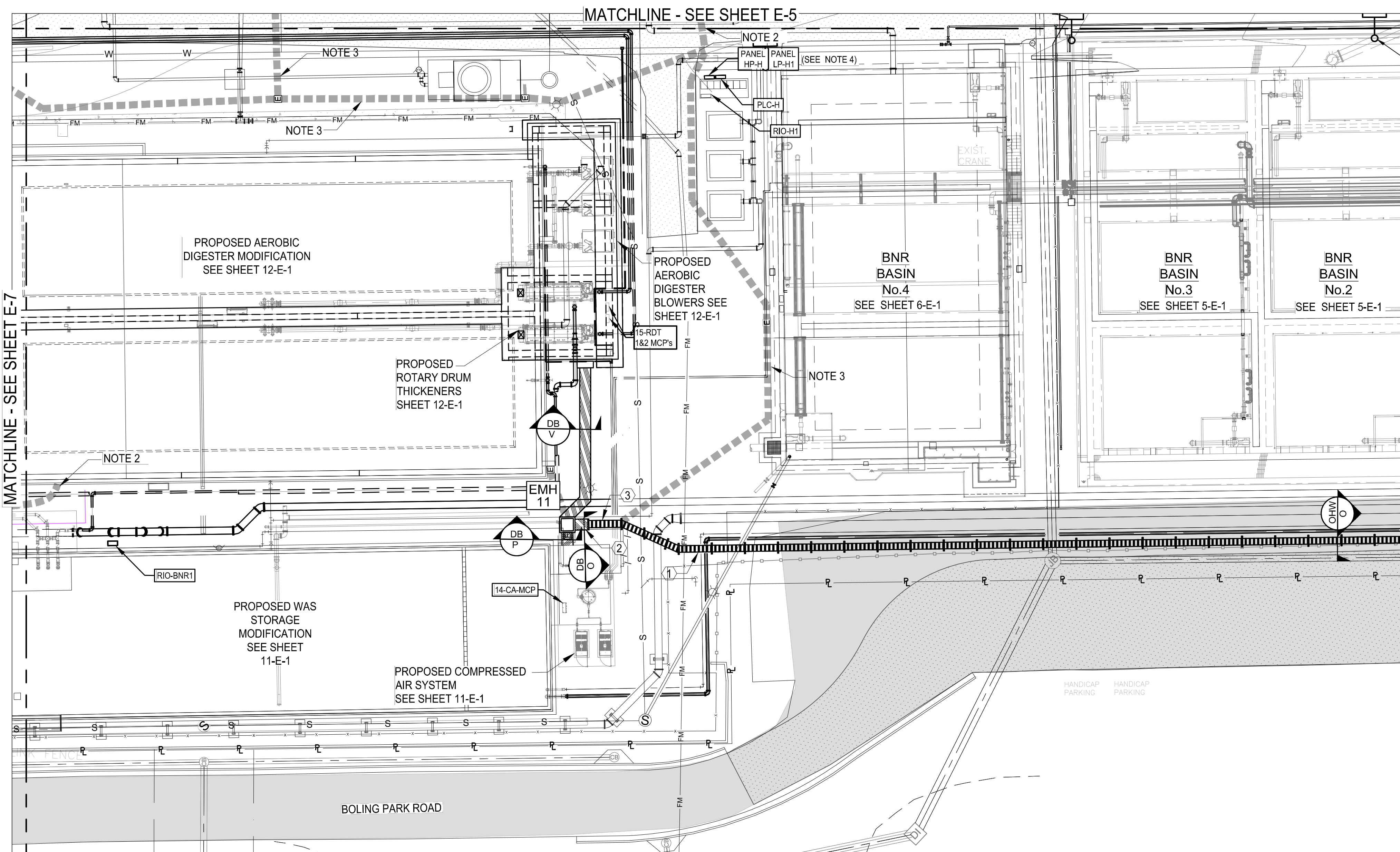
PROPOSED YARD ELECTRICAL PARTIAL PLAN

PROJ. NO.: 100061831
DESIGNED BY: RDVINJZ
DRAWN BY: NCTINJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

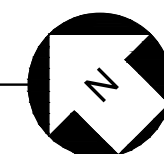
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED YARD ELECTRICAL PARTIAL PLAN

SHEET NO. **E-7**



PROPOSED YARD ELECTRICAL PARTIAL PLAN
SCALE: 1"=20'



- DUCT BANK (NEW)
- ABOVE GROUND RACEWAY
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT

EXISTING SITE/SYMBOLS LEGEND

	ACCESS HATCH
	STORM DRAIN MANHOLE
	SANITARY MANHOLE
	CATCH BASIN
	JUNCTION BOX
	PIPE RISER
	YARD INLET
	DROP INLET
	CLEANOUT
	YARD HYDRANT
	LIGHT POLE
	POWER POLE
	BURIED ELECTRICAL
	ELECTRICAL
	ELECTRIC BOX/CONTROL BOX
	ELECTRIC METER
	WATER VALVE
	SPIGOT
	TEMPORARY SURVEY CONTROL POINT
	SIGN

TYPE T YARD LIGHTING FIXTURE (TYP.) 1 E-63

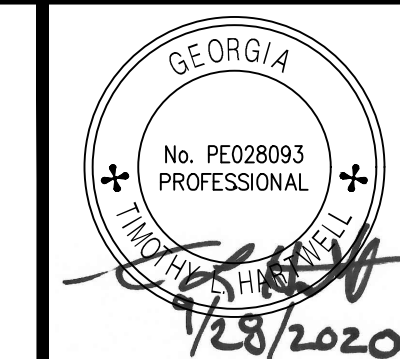
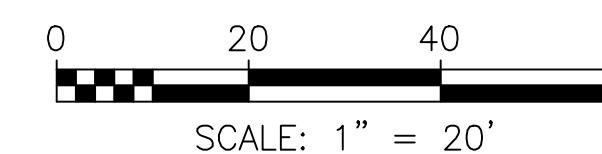
NOTE:

1. REFER TO DRAWING E-3 FOR PROPOSED OVERALL YARD ELECTRICAL PLAN.
2. REFER TO NOTE 2, DRAWING E-7.
3. EXISTING DUCT BANK TO REMAIN.
4. MOUNT PLC-H AND PANELS HP-H & LP-H1 ADJACENT TO MCC-H ON AN EQUIPMENT RACK, DETAIL 4, E-60.
5. MBR STRUCTURE, BNR 1-3 BASINS, AND UVPA STRUCTURE ARE PRECAST STRUCTURES. PROVIDE SST PULL BOX TO TRANSITION FROM UG CONDUITS TO EXPOSED. ROUTING OF CONDUITS SHALL BE ON STRUCTURE EXTERIOR.

KEY NOTES:

- ① OVERHEAD PIPE SUPPORTS ARE ADJACENT TO THE OVERHEAD WIREWAY. WIREWAY WILL NEED TO CROSS ABOVE THE PIPE STRUCTURE TO REACH TO MANHOLE. CONTRACTOR SHALL COORDINATE ELEVATIONS WITH PIPE STRUCTURE ELEVATIONS TO INSTALL WIREWAY STRUCTURES. PIPES ARE ALSO LOCATED IN THE GROUND AND WILL REQUIRE TEST PITTING FOR INSTALL STRUCTURE FOOTERS.
- ② CONDUCTORS TRANSITIONING FROM WIREWAY TO UNDERGROUND SHALL BE IN CONDUIT AND CONCRETE ENCASED WITH CONDUITS EXTENDING UP THE WIREWAY TO THE RACK.
- ③ EXISTING DUCT BANKS BELOW NEW DUCT & WIREWAY NOT SHOWN FOR CLARITY.

E-4	E-5	E-6
E-7	E-8	E-9



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(410) 342-2111

CERTIFICATE OF AUTHORIZATION #PE070723 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

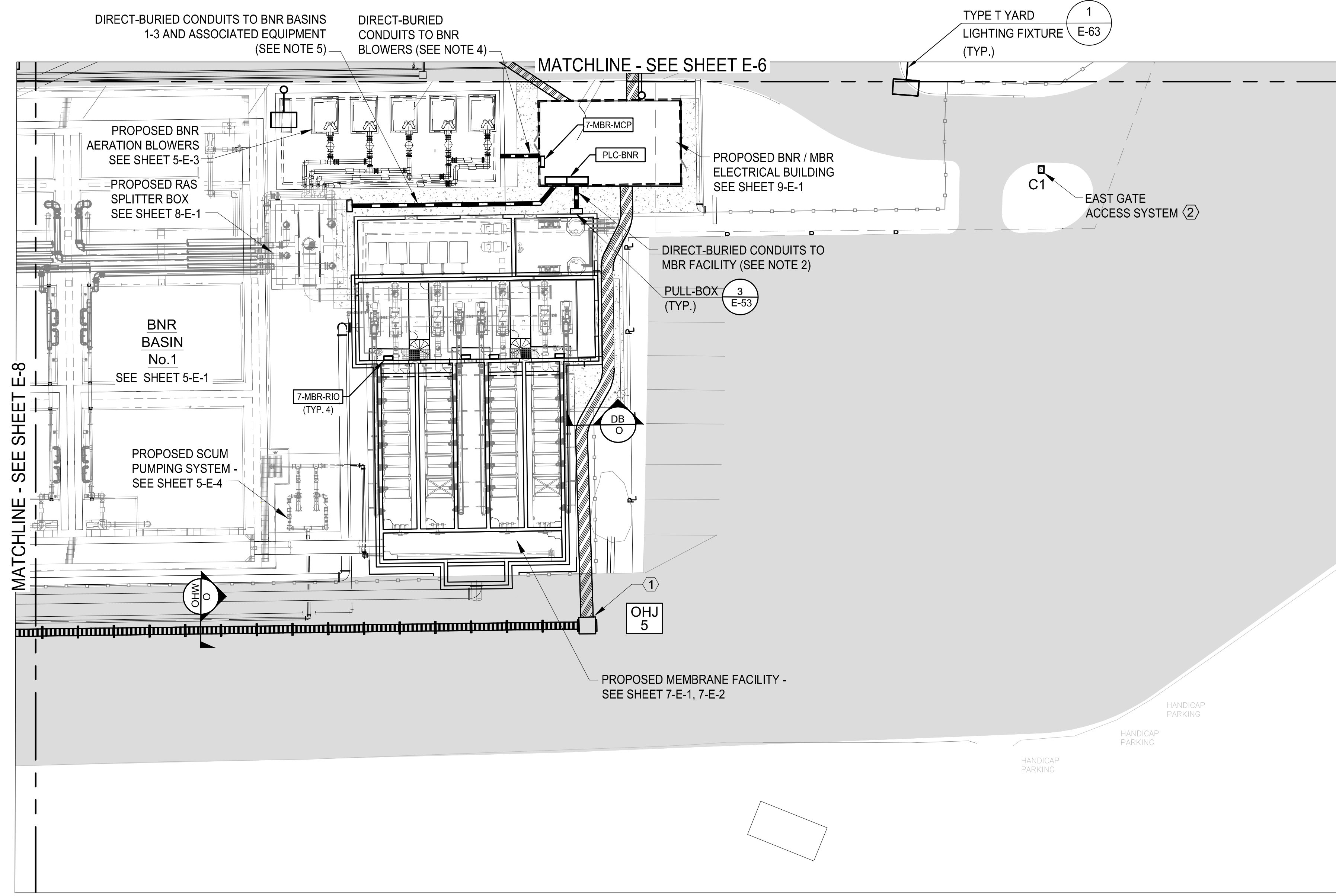
PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDWINJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN
	DRAWN BY: NCTANJZ				

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED YARD ELECTRICAL PARTIAL PLAN

SHEET NO.

E-8



PROPOSED YARD ELECTRICAL PARTIAL PLAN
SCALE: 1"=20'



- DUCT BANK (NEW)
- ABOVE GROUND RACEWAY
- DUCT BANK (EXISTING)
- DIRECT BURIED CONDUIT
- CAMERA LOCATION

EXISTING SITE/SYMBOLS LEGEND

- ACCESS HATCH
- STORM DRAIN MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- JUNCTION BOX
- PIPE RISER
- YARD INLET
- DROP INLET
- CLEANOUT
- YARD HYDRANT
- LIGHT POLE
- POWER POLE
- BURIED ELECTRICAL
- ELECTRICAL
- ELECTRIC BOX/CONTROL BOX
- ELECTRIC METER
- WATER VALVE
- SPIGOT
- TEMPORARY SURVEY CONTROL POINT
- SIGN

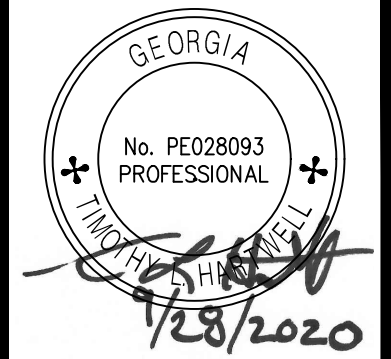
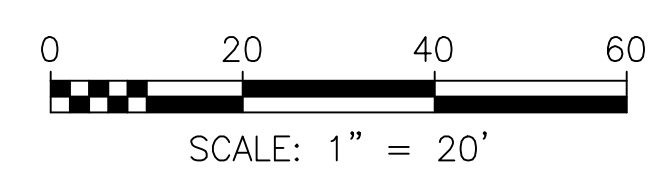
NOTE:

1. REFER TO DRAWING E-3 FOR PROPOSED OVERALL YARD ELECTRICAL PLAN.
2. PROVIDE UG CONDUITS FROM MCC-BNR AND 7-MBR-MCP(CP-01) TO THE MBR FACILITY AS INDICATED ON THE FEEDER SCHEDULES (POWER AND CONTROL) AND ASSOCIATED DRAWINGS.
3. MBR STRUCTURE, BNR 1-3 BASINS, AND UVPA STRUCTURE ARE PRECAST STRUCTURES. PROVIDE SST PULL BOX TO TRANSITION FROM UG CONDUITS TO EXPOSED. ROUTING OF CONDUITS SHALL BE ON STRUCTURE EXTERIOR.
4. PROVIDE UG CONDUITS TO BNR BLOWERS FROM MCC-BNR.
5. PROVIDE UG CONDUITS TO BNR BASINS 1-3 AND ASSOCIATED STRUCTURES TO SST PULLBOX 2. AT AIR PIPING RACK, RUN EXPOSED CONDUITS FROM PULLBOX ON PIPE SUPPORTS THROUGHOUT STRUCTURE. ADDITIONAL SUPPORTS MAY BE REQUIRED TO MEET NEC REQUIREMENTS.

KEY NOTES:

- ① CONDUCTORS TRANSITIONING FROM WIREWAY TO UNDERGROUND SHALL BE IN CONDUIT AND CONCRETE ENCASED WITH CONDUITS EXTENDING UP THE WIREWAY TO THE RACK.
- ② REFER TO DRAWING I-9 FOR ACCESS AND VIDEO SYSTEM. LOCATION OF CAMERA C1.

E-4	E-5	E-6
E-7	E-8	E-9



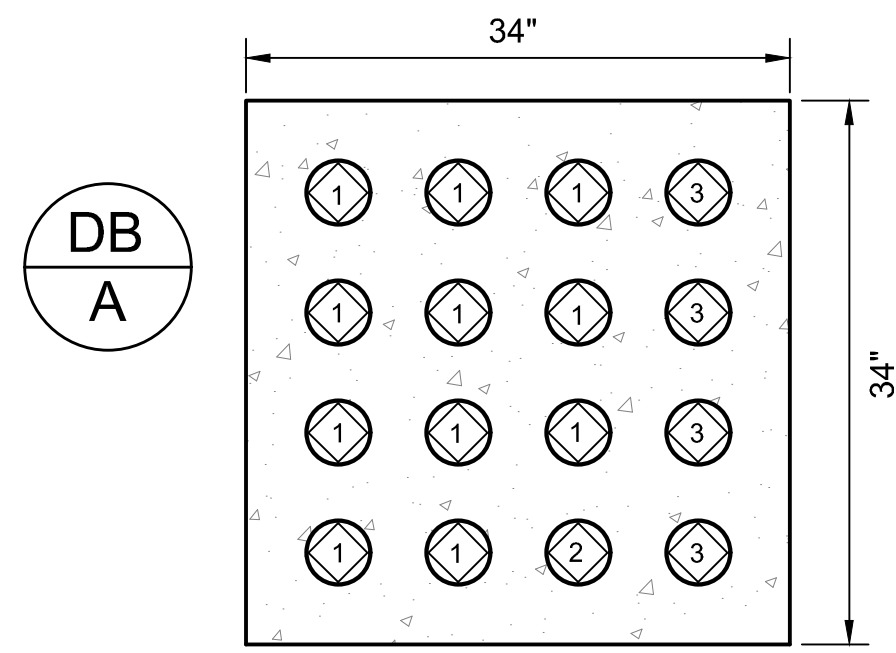
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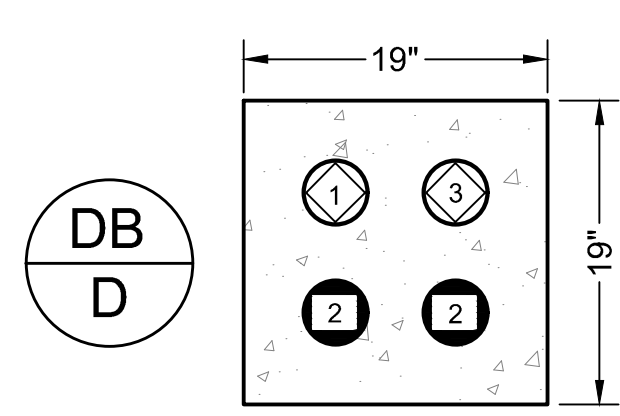
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100061831	RDW/NJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN
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	NCT/NJZ				

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
PROPOSED YARD ELECTRICAL PARTIAL PLAN

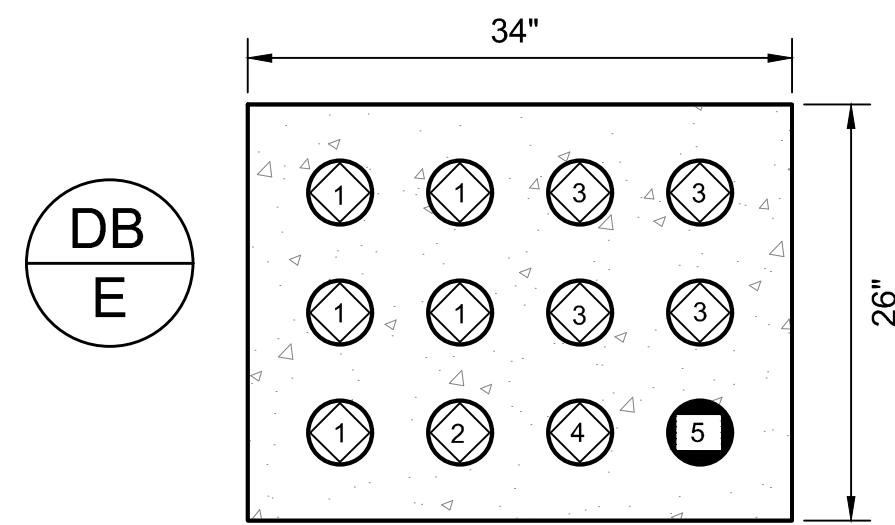
SHEET NO.
E-9



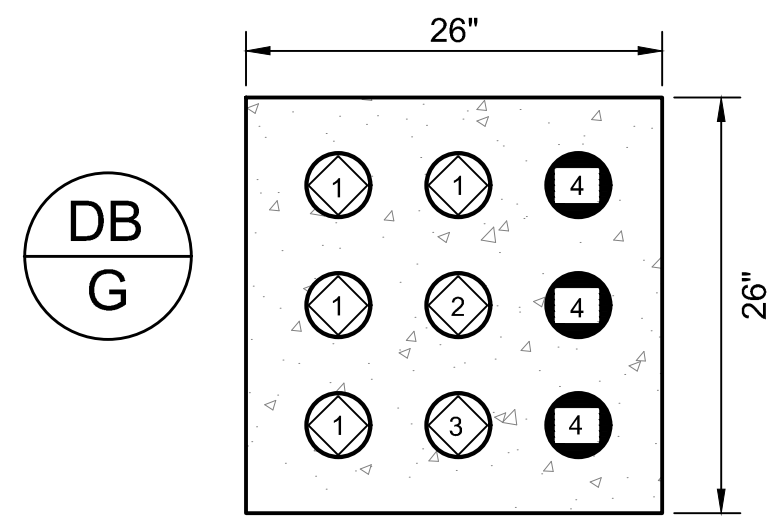
- 1 14P-C103 (MAIN-SG - SG-OC)
- 2 1C-C001 (SG-OC TO SG-MAIN)
- 3 SPARE



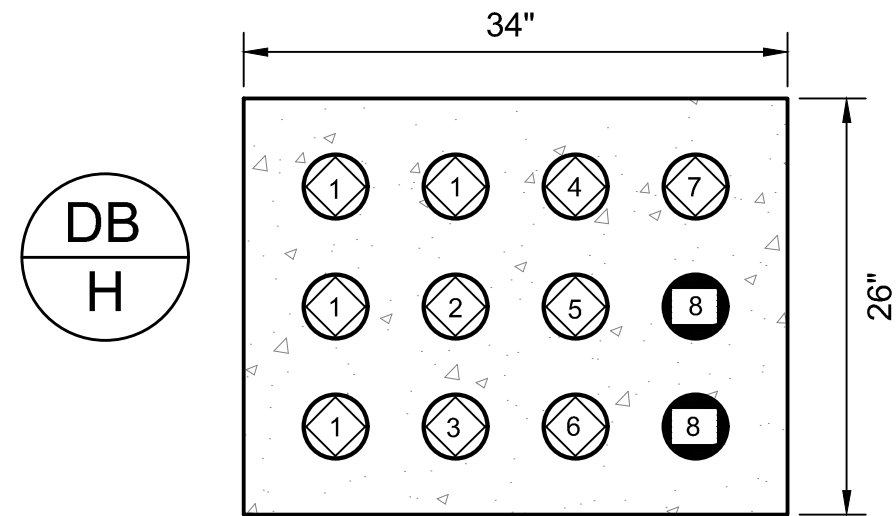
- 1 1C-C002 (PLC-IH TO PLC-MSG)
- 2 SPARE
- 3 14P-C051 (SG-OC TO GR-MCP)



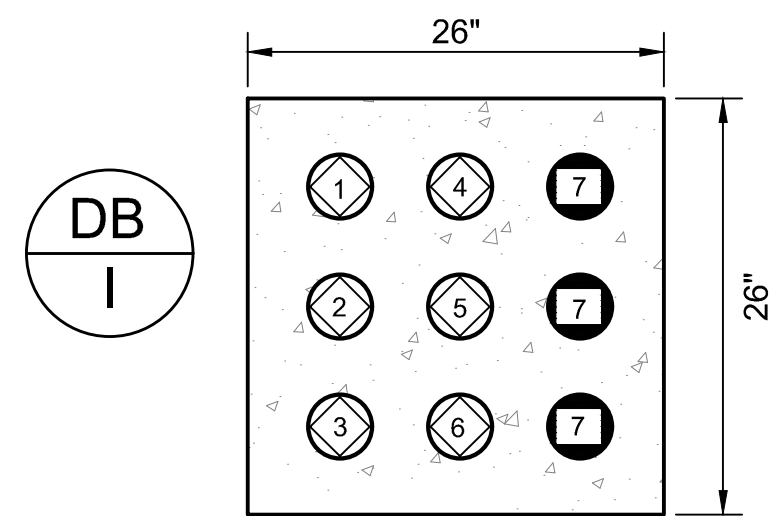
- 1 14P-C056 (SG-OC TO EX-MCC-A)
- 2 23C-C001, 15C-C001
- 3 14P-C058 (SG-OC TO MCC-DW)
- 4 14P-C052 (SG-OC TO REUSE PS)
- 5 SPARE



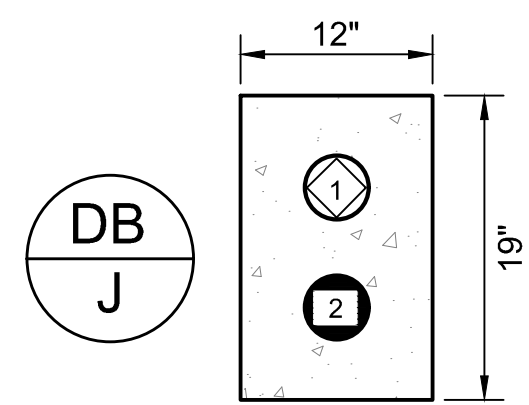
- 1 14P-C058 (SG-OC TO MCC-DW)
- 2 15C-C001 (PLC-DW TO PLC-HI)
- 3 14P-C052 (SG-OC TO REUSE PS)
- 4 SPARE



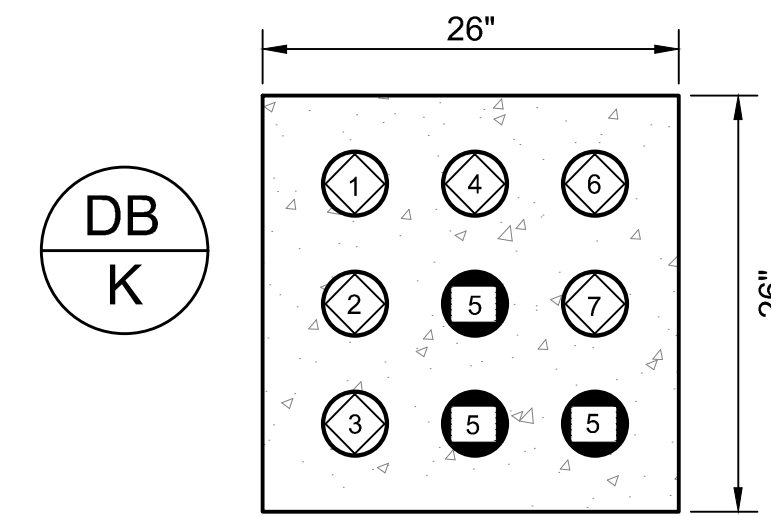
- 1 14P-C058
- 2 15C-C001, 15C-C006, 15C-C007
- 3 15P-C003 (MCC-DW TO RDT-1)
- 4 15P-C007 (MCC-DW TO RDT-2)
- 5 15P-C001 (MCC-DW TO 12-AD-BL-1)
- 6 15P-C002 (MCC-DW TO 12-AD-BL-2)
- 7 15P-C011 (MCC-DW TO 12-AD-BL-3)
- 8 SPARE



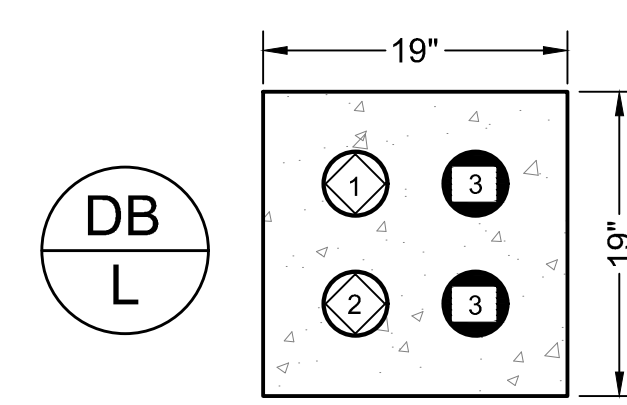
- 1 15P-C003 (MCC-DW TO RDT-1)
- 2 15P-C007 (MCC-DW TO RDT-2)
- 3 15C-C006, 15C-C007
- 4 15P-C001 (MCC-DW TO 12-AD-BL-1)
- 5 15P-C002 (MCC-DW TO 12-AD-BL-2)
- 6 15P-C011 (MCC-DW TO 12-AD-BL-3)
- 7 SPARE



- 1 14P-C052 (SG-OC TO REUSE PS)
- 2 SPARE



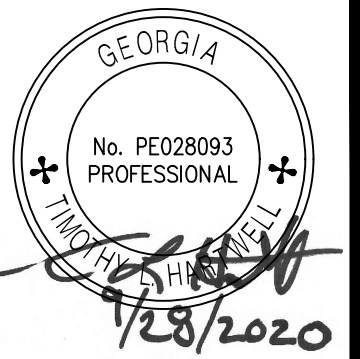
- 1 23P-C030 (DPSI-P2VFD-P1)
- 2 23P-C031 (DPSI-P2VFD-P2)
- 3 17C-C003
- 4 23C-C002, 23C-C004, 23C-C005
- 5 SPARE
- 6 23P-C002 (MCC-A TO HP-UVPA)
- 7 10C-C001 (PLC-A TO PLC-UVPA)



- 1 23P-C002 (MCC-A TO HP-UVPA)
- 2 10C-C001 (PLC-A TO PLC-UVPA)
- 3 SPARE

NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. PROVIDE CONDUIT CHAIRS WITH MIN. 3/8" SPACING BETWEEN CONDUITS.
2. ALL CONDUITS SHALL BE 4" IN DUCTBANKS.
3. ALL BENDS AND ELBOWS 45 DEGREES AND ABOVE IN DUCTBANKS SHALL BE PVC COATED GALVANIZED STEEL.



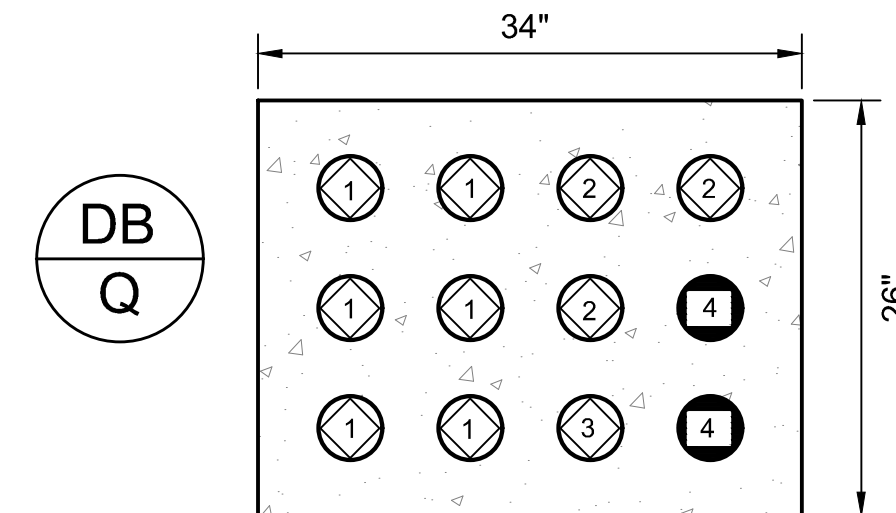
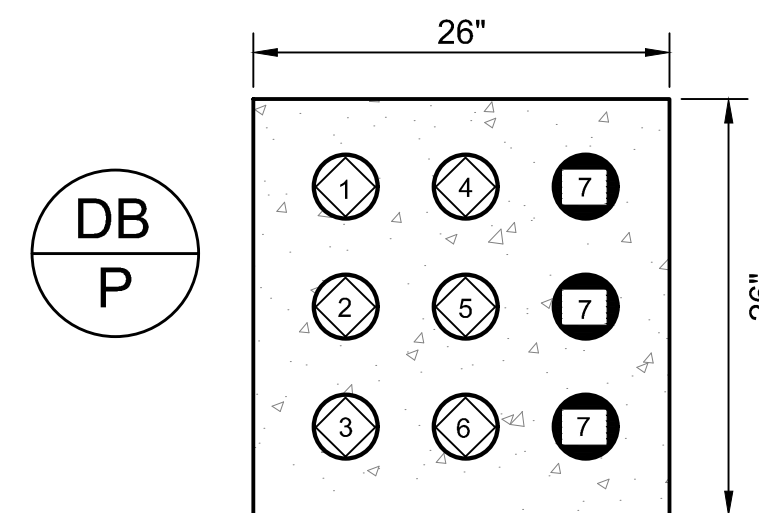
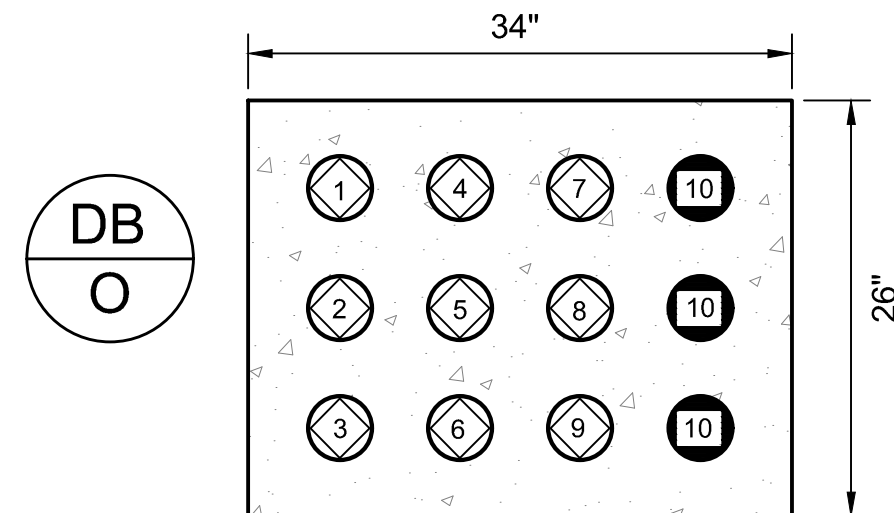
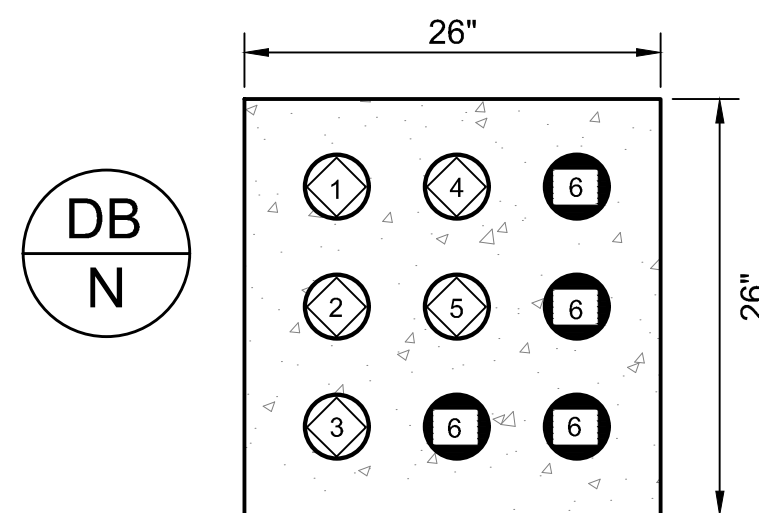
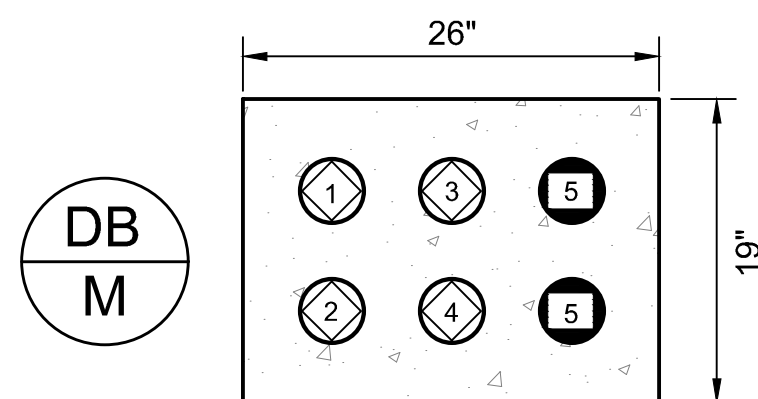
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HARTWELL ENGINEERING, INC.
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PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/NJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN
	DRAWN BY: NCT/NJZ				
	REVISION	DATE			

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DUCTBANK 1

SHEET NO.
E-10



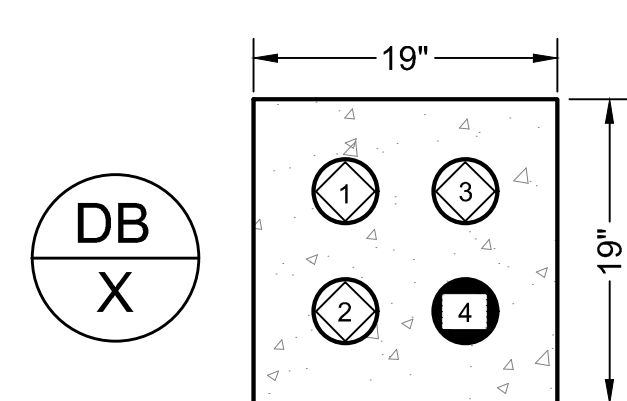
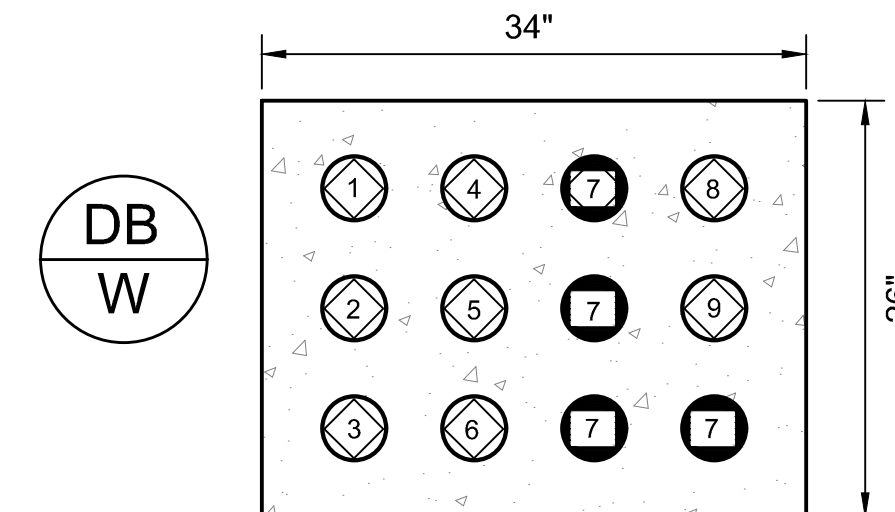
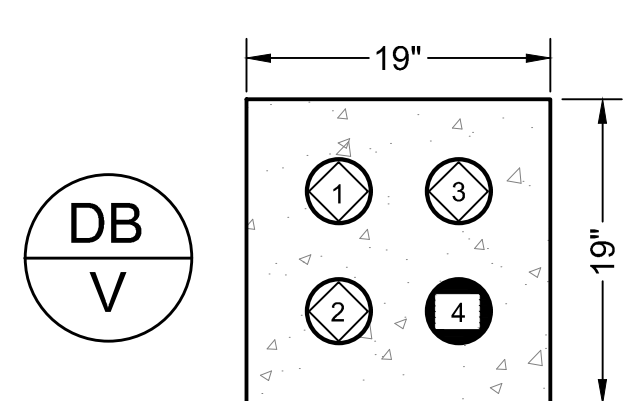
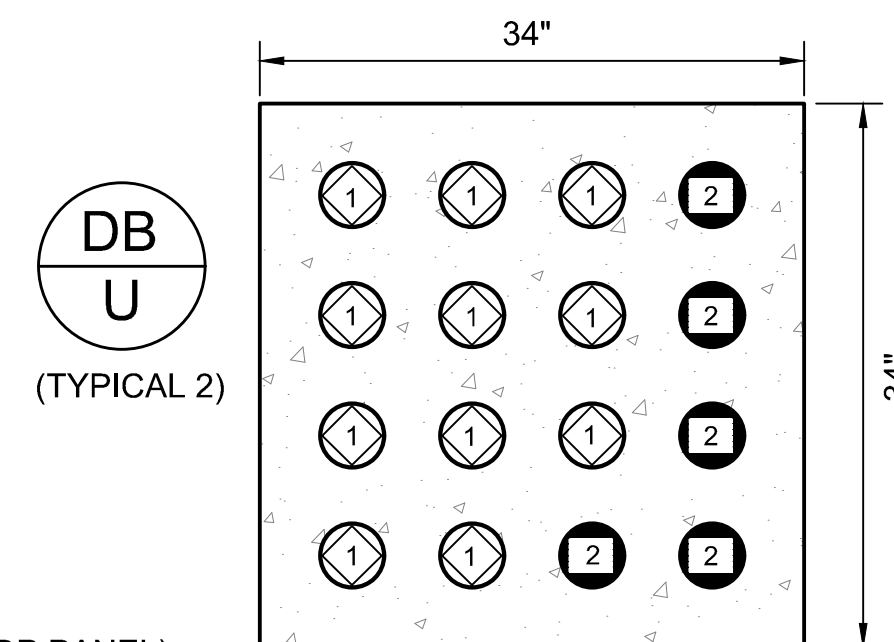
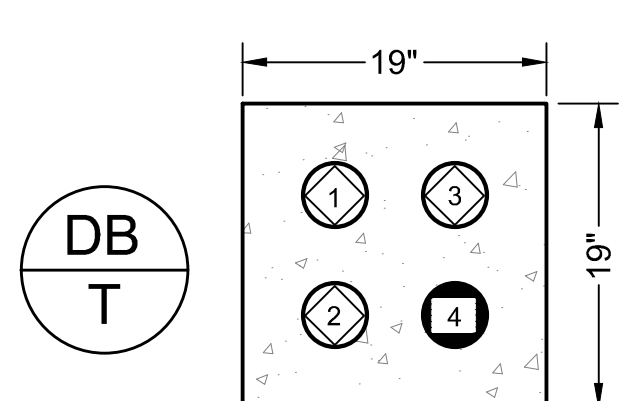
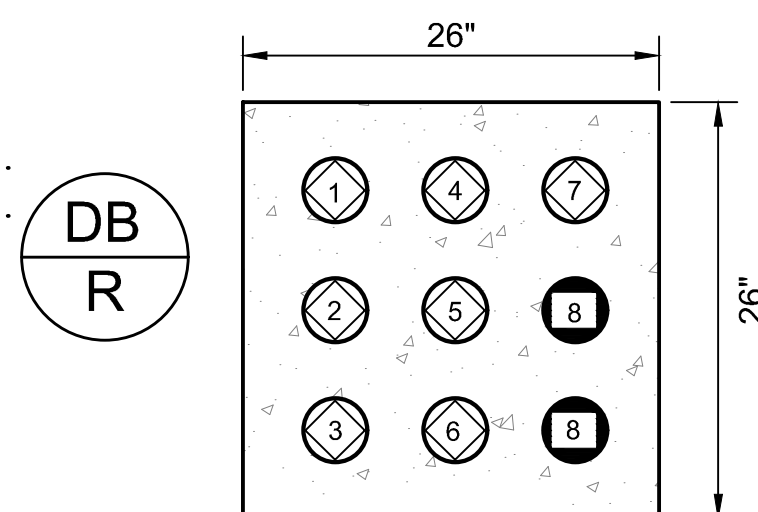
- 1 23P-C030
- 2 23P-C031
- 3 23C-C001, 23C-C004, 23C-C005
- 4 23P-C001
- 5 SPARE

- 1 5P-C030
- 2 5P-C031
- 3 5P-C032
- 4 11C-C005, 11C-C007, 11C-C009, 11C-C022
- 5 11C-C021, 11C-C030, 11C-C032, 11C-C033
- 6 SPARE

- 1 5P-C030
- 2 5P-C031
- 3 5P-C032
- 4 11C-C005, 11C-C007, 11C-C009, 11C-C022
- 5 5C-C009, 5C-C011
- 6 5C-C010, 5C-C012
- 7 5P-C019
- 8 5P-C020
- 9 11C-C001, 12C-C001
- 10 SPARE

- 1 11C-C022
- 2 5C-C009, 5C-C011, 5C-C013, 5C-C015
- 3 5C-C010, 5C-C012, 5C-C014, 5C-C016
- 4 5P-C019
- 5 5P-C020
- 6 11C-C001, 12C-C001
- 7 SPARE

- 1 14P-C105 (SG-MAIN TO MCC-BNR)
- 2 14P-C104 (SG-MAIN TO MCC-MBR)
- 3 5C-C001 (PLC-MSG TO PLC-BNR)
- 4 SPARE



- 1 5P-C001 (MCC-BNR TO FS1)
- 2 5P-C004 (MCC-BNR TO FS2)
- 3 5P-C007 (MCC-BNR TO FS CONV)
- 4 5P-C057, 5P-C058 (HP-BNR TO INF SENS)
- 5 5P-C069 (LP-BNR TO RIO-BNR2)
- 6 4C-C001 (PLC-BNR TO RIO-BNR2)
- 7 5P-C029 (MCC-BNR TO HP-AL)
- 8 SPARE

- 1 14P-C106 (SG-MAIN TO MDP PANEL)
- 2 14C-C001 (SG-MAIN TO PCS RACK)
- 3 KEY NOTE 3, DWG E-29 (SG-MAIN TO GRINDER PS) (NOTE 4)
- 4 SPARE
- 1 14P-C101 (UTIL XFMR TO SG-MAIN)
- 2 SPARE

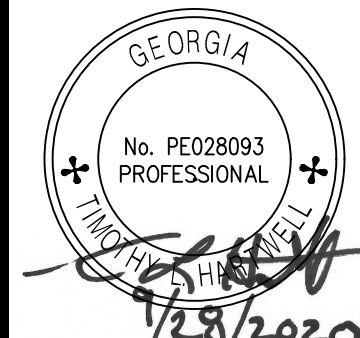
- 1 5C-C013, 5C-C015
- 2 5C-C014, 5C-C016
- 3 12C-C001 (PLC-H TO PLC-BNR)
- 4 SPARE

- 1 5P-C001 (MCC-BNR TO FS1)
- 2 5P-C004 (MCC-BNR TO FS2)
- 3 5P-C007, 5P-C008
- 4 5P-C057, 5P-C058 (HP-BNR TO INF SENS)
- 5 5P-C069 (LP-BNR TO RIO-MSG1)
- 6 4C-C001 (PLC-BNR TO RIO-BNR2)
- 7 SPARE
- 8 16C-C001, 16C-C003, 16C-C005, 16C-C007, 16C-C009, C16-C011, 16C-C013, 16C-C015
- 9 16C-C006, 16C-C008, 16C-C010, 16C-C012, 16C-C014, C16-C016

- 1 16C-C001, 16C-C003, 16C-C005, 16C-C007, 16C-C009, C16-C011, 16C-C013, 16C-C015
- 2 16C-C006, 16C-C008, 16C-C010, 16C-C012, 16C-C014, C16-C016
- 3 5P-C029
- 4 SPARE

NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. PROVIDE CONDUIT CHAIRS WITH MIN. 3 1/2" SPACING BETWEEN CONDUITS.
2. ALL CONDUITS SHALL BE 4" IN DUCTBANKS.
3. ALL BENDS AND ELBOWS 45 DEGREES AND ABOVE IN DUCTBANKS SHALL BE PVC COATED GALVANIZED STEEL.
4. DUCT SHALL BE DIRECTED TO PUMP STATION. DIRECT BURY FROM DUCT BANK TO PUMP STATION.



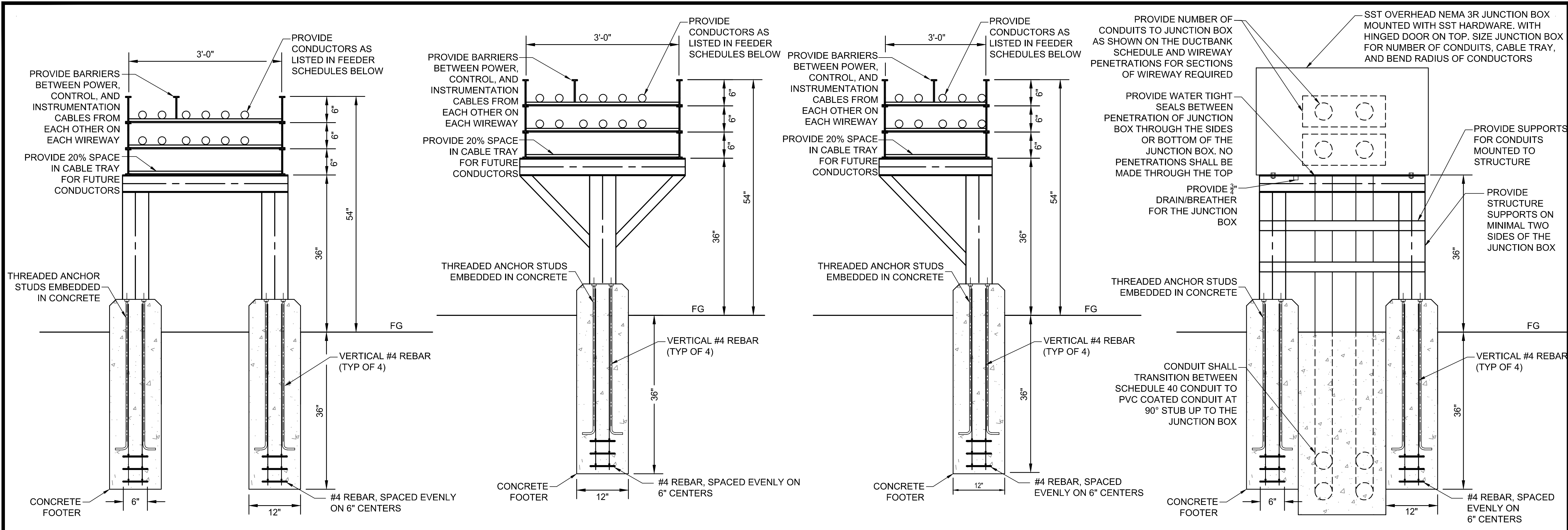
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NCT/NJZ		
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DUCTBANK 2

SHEET NO.
E-11



1 OVERHEAD CABLE TRAY SUPPORTS
SCALE: NTS

- OHW A**
- 1 14P-C103 (MAIN-SG - SG-OC)
 - 2 1C-C001 (SG-OC TO SG-MAIN)
 - 3 SPARE

- OHW C**
- 1 1C-C002, 1C-C010
 - 2 SPARE
 - 3 14P-C057 (SG-OC TO OC-MCP)
 - 4 14P-C051 (SG-OC TO GR-MCP)

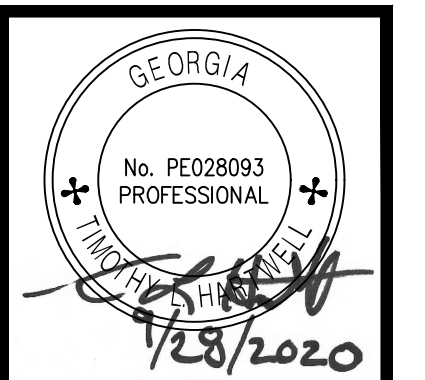
- OHW F**
- 1 14P-C056 (SG-OC TO EX-MCC-A)
 - 2 23C-C001 (PLC-A TO PLC-HI)
 - 3 SPARE

- OHW O**
- 1 5P-C030
 - 2 5P-C031
 - 3 5P-C032
 - 4 11C-C005, 11C-C007, 11C-C009, 11C-C022
 - 5 5C-C009, 5C-C011
 - 6 5C-C010, 5C-C012
 - 7 5P-C019
 - 8 5P-C020
 - 9 11C-C001, 12C-C001
 - 10 SPARE

- OHW B**
- 1 14P-C103
 - 2 1C-C001, 1C-C002, 1C-C010
 - 3 14P-C057 (SG-OC TO OC-MCP)
 - 4 14P-C051 (SG-OC TO GR-MCP)
 - 5 SPARE

- OHW E**
- 1 14P-C056 (SG-OC TO EX-MCC-A)
 - 2 23C-C001, 15C-C001
 - 3 14P-C058 (SG-OC TO MCC-DW)
 - 4 14P-C052 (SG-OC TO REUSE PS)
 - 5 SPARE

- NOTES:**
1. TYPICAL OH MOUNTING STRUCTURE SHOWN. CONTRACTOR SHALL UTILIZE BASED ON APPLICATION AND SPACING REQUIREMENTS. SUBMIT LOADING AND DESIGN CALCULATION.
 2. DIMENSIONS SHOWN ARE APPROXIMATIONS. DESIGN SUPPORTS AS REQUIRED FOR TERRAIN AND OBSTRUCTIONS. SUPPORTS SHALL BE MAXIMUM 10' APART.
 3. FABRICATE STRUCTURE WITH ALUM 6 x 4.03 FOR DUAL SUPPORTS AND 8 x 5.79 FOR SINGLE SUPPORTS MINIMUM, WITH 12" x 12" x 5/8" BASE PLATES. ALL SUPPORTS SHALL BE WELDED SEPARATE WIREWAY WITH 1-5/8" SST UNI-STRUT.
 4. COAT ALL ALUMINUM COMPONENTS THAT ARE IN CONTACT WITH CONCRETE.
 5. REFER TO SECTION 16/14 FOR CABLE TRAY. ALL CONDUCTORS INSTALLED OVERHEAD SHALL BE IN CONDUIT OR CABLE TRAY.
 6. SECTIONS INDICATE THREE LEVELS OF CABLE TRAY, PROVIDE AS REQUIRED, INCLUDE 20% SPARE SPACE.



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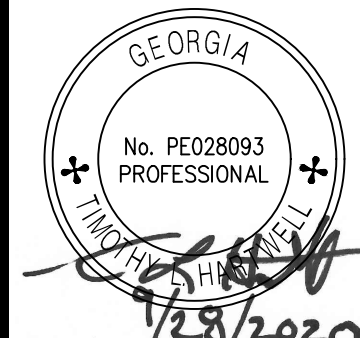
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

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APPROVED BY: TLH
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SCALE: AS SHOWN

ELECTRICAL OVERHEAD RACEWAY



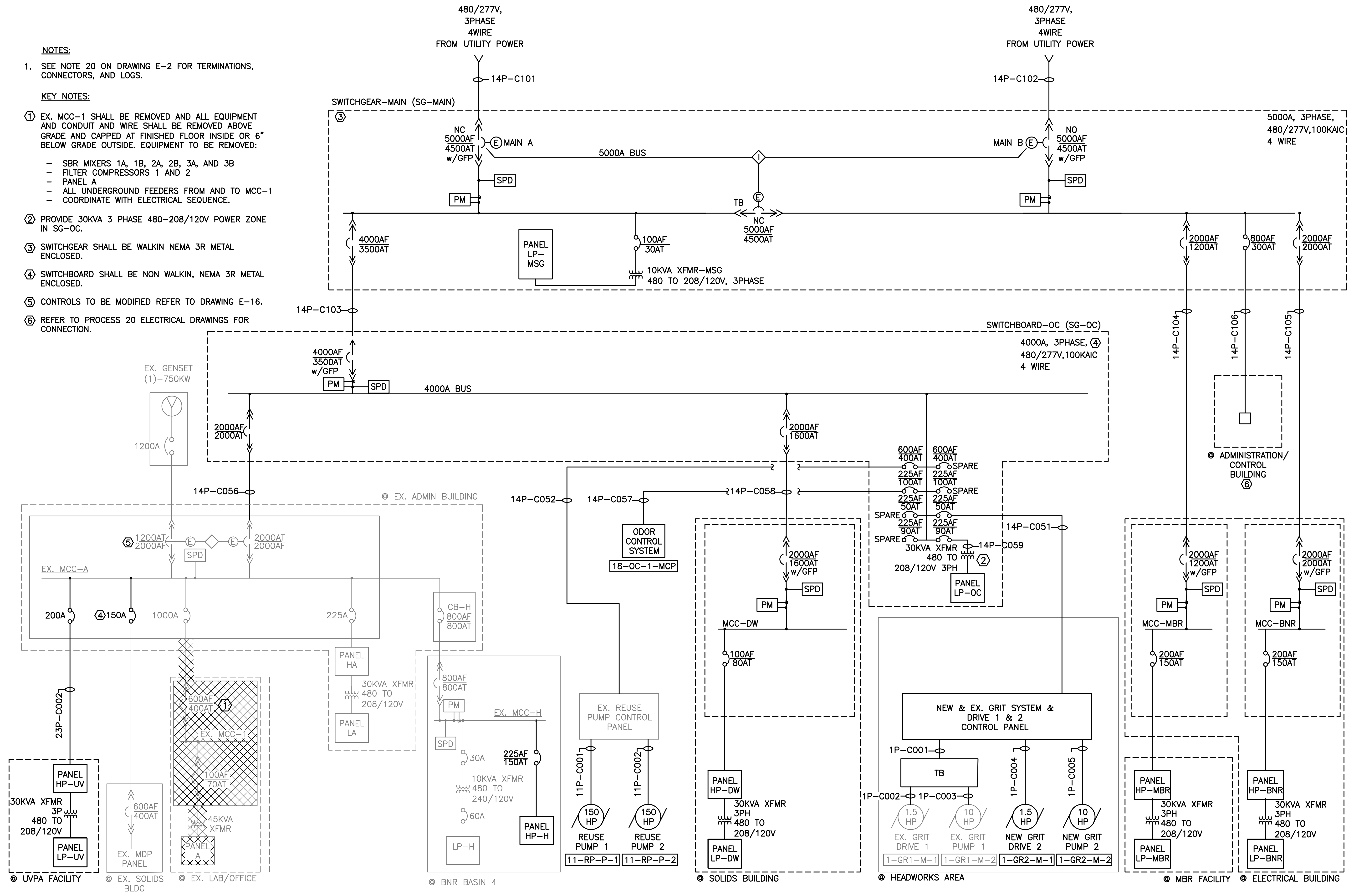
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DATE	REVISION	DATE	REVISION	DATE	REVISION

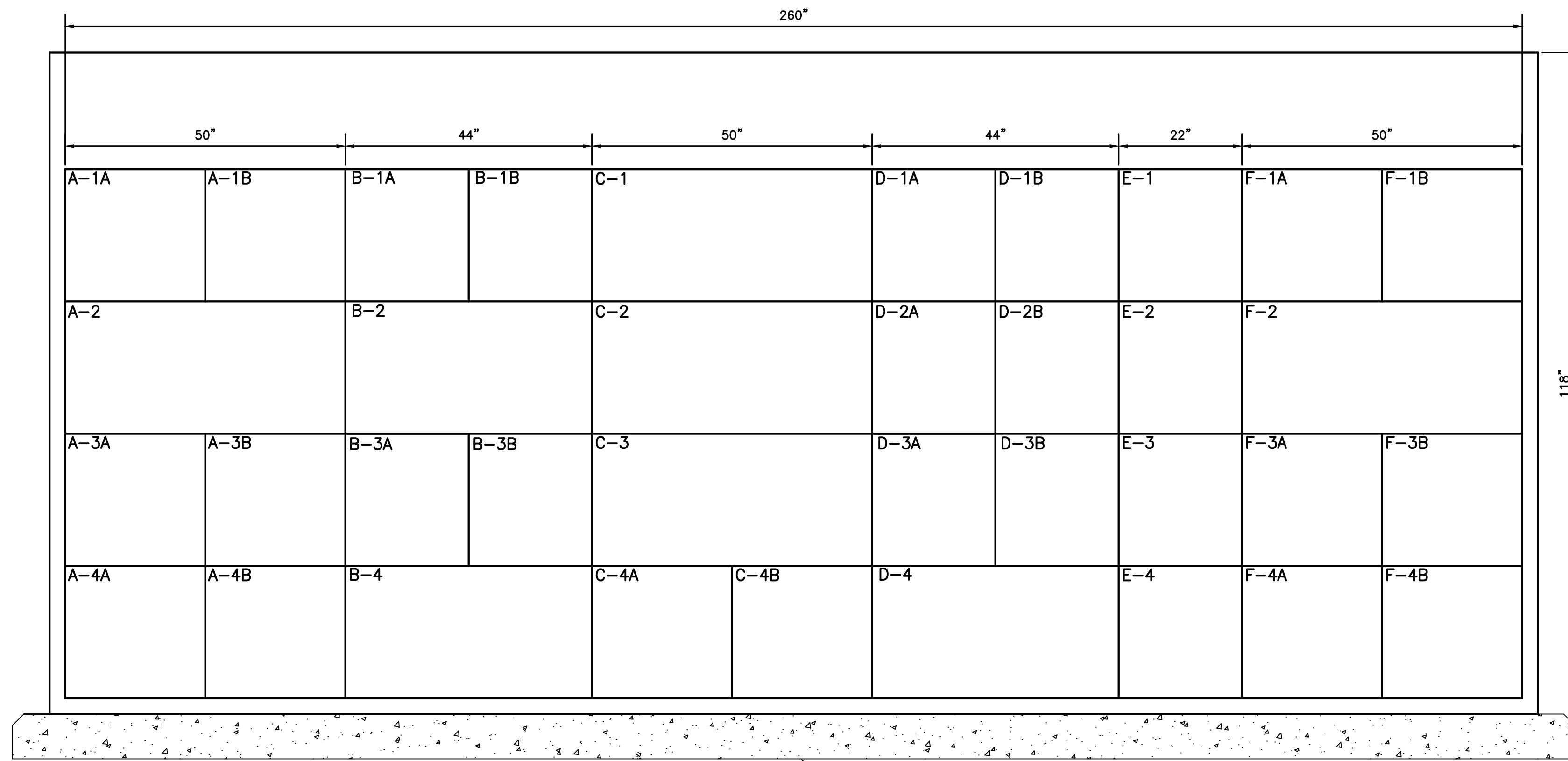
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 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 ELECTRICAL SWITCHGEAR ONE-LINE DIAGRAM

- NOTES:**
- SEE NOTE 20 ON DRAWING E-2 FOR TERMINATIONS, CONNECTORS, AND LOGS.
- KEY NOTES:**
- EX. MCC-1 SHALL BE REMOVED AND ALL EQUIPMENT AND CONDUIT AND WIRE SHALL BE REMOVED ABOVE GRADE AND CAPPED AT FINISHED FLOOR INSIDE OR 6" BELOW GRADE OUTSIDE. EQUIPMENT TO BE REMOVED:
 - SBR MIXERS 1A, 1B, 2A, 2B, 3A, AND 3B
 - FILTER COMPRESSORS 1 AND 2
 - PANEL A
 - ALL UNDERGROUND FEEDERS FROM AND TO MCC-1
 - COORDINATE WITH ELECTRICAL SEQUENCE.
 - PROVIDE 30KVA 3 PHASE 480-208/120V POWER ZONE IN SG-OC.
 - SWITCHGEAR SHALL BE WALKIN NEMA 3R METAL ENCLOSED.
 - SWITCHBOARD SHALL BE NON WALKIN, NEMA 3R METAL ENCLOSED.
 - CONTROLS TO BE MODIFIED REFER TO DRAWING E-16.
 - REFER TO PROCESS 20 ELECTRICAL DRAWINGS FOR CONNECTION.



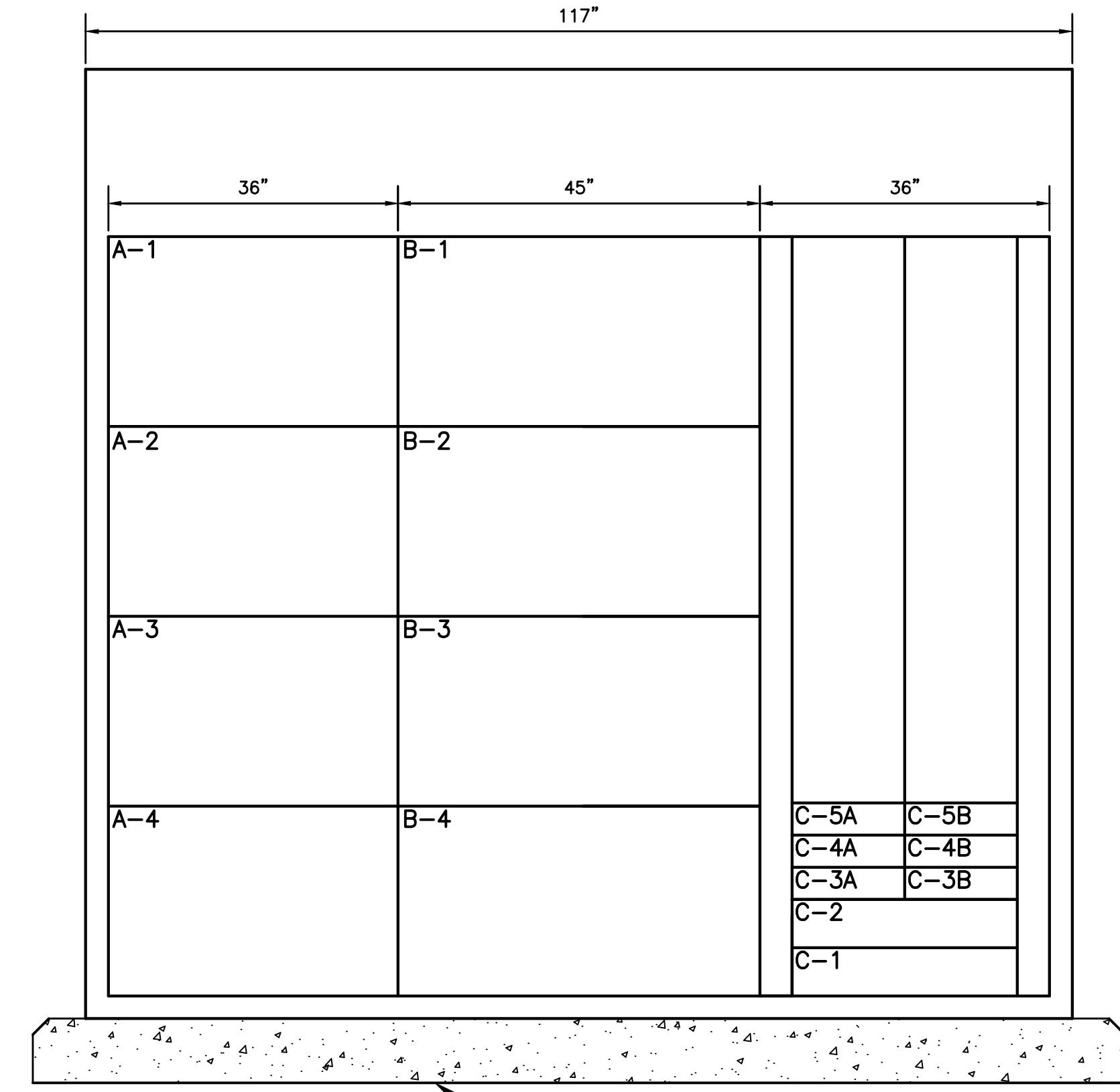
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CONCRETE OR STRUCTURAL PAD
(SEE STRUCTURAL DRAWINGS FOR DETAILS)

SG-MAIN LAYOUT
SCALE: 3/4"=1'-0"



CONCRETE OR STRUCTURAL PAD
(SEE STRUCTURAL DRAWINGS FOR DETAILS)

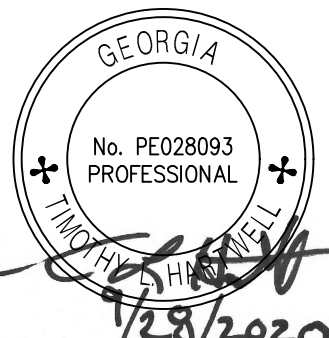
SG-OC LAYOUT
SCALE: 3/4"=1'-0"

SG-MAIN SCHEDULE 5000A BUS, 100KAICS 480/277 VOLTS, 3-PHASE, 4-WIRE			
UNIT	NAME PLATE	UNIT	NAME PLATE
A-1A	MAIN METERING PXM 3000 METER	D-1A	MCC MEMBRANE FACILITY (MCC-MBR)
A-1B	SPACE	D-1B	SPACE
A-2	MAIN CIRCUIT BREAKER 1 (MCB-1)	D-2A	ADMINISTRATION/CONTROL BUILDING
A-3A	SURGE PROTECTION DEVICE (SPD)	D-2B	SPACE
A-3B	LP-MSG	D-3A	MCC BNR FACILITY (MCC-BNR)
A-4A	SPACE	D-3B	SPACE
A-4B	LP-MSG TRANSFORMER	D-4	SPACE
B-1A	PLC-OIT (BY MANUFACTURER)	E-1	SPACE
B-1B	SPACE	E-2	SPACE
B-2	ODOR CONTROL SWITCHGEAR BREAKER (SG-OC)	E-3	SPACE
B-3A	PANEL LP-MSG TRANSFORMER BREAKER	E-4	SPACE
B-3B	SPACE	F-1A	MAIN METERING PXM 3000 METER
B-4	SPACE	F-1B	SPACE
C-1	TRANSFER CONTROLS	F-2	MAIN CIRCUIT BREAKER 2 (MCB-2)
C-2	TIE BREAKER	F-3A	SURGE PROTECTION DEVICE (SPD)
C-3	PLC-MSG AND OIT (SEE NOTE 5)	F-3B	SPACE
C-4A	SPACE	F-4A	SPACE
C-4B	SPACE	F-4B	SPACE

NOTES:

1. PROVIDE BREAKER HOIST AND REMOVAL DEVICE ON EACH SWITCHGEAR. EQUIPMENT IS NOT SHOWN FOR CLARITY.
2. SWITCHGEAR IS METAL ENCLOSED WALK IN TYPE. DESIGN IS BASED ON EATON.
3. COORDINATE TOP OR BOTTOM FEED WITH ELECTRICAL CONTRACTOR PRIOR TO SWITCHGEAR DESIGN.
4. ALL DIMENSIONS ARE APPROXIMATE.
5. SYSTEM INTEGRATOR SHALL COORDINATE WITH SWITCHGEAR TO PROVIDE PLC-MSG AND OIT IN SWITCHGEAR POWER FROM PANEL LP-MSG.

SG-OC SCHEDULE 4000A BUS, 100KAICS 480/277 VOLTS, 3-PHASE, 4-WIRE	
UNIT	NAME PLATE
A-1	PXM 3000 METER
A-2	MAIN CIRCUIT BREAKER (MCB)
A-3	SURGE PROTECTION DEVICE
A-4	SPACE
B-1	EX. MCC ADMIN BUILDING BREAKER (MCC-A)
B-2	MCC SOLIDS HANDLING BUILDING (MCC-DW)
B-3	PANEL LP-OC
B-4	SPACE
C-1	REUSE PUMP STATION BREAKER
C-2	400A SPARE
C-3A	ODOR CONTROL SYSTEM BREAKER
C-3B	100A SPARE
C-4A	NEW & EX. GRIT SYSTEM CP BREAKER
C-4B	50A SPARE
C-5A	PANEL LP-OC TRANSFORMER BREAKER
C-5B	90A SPARE



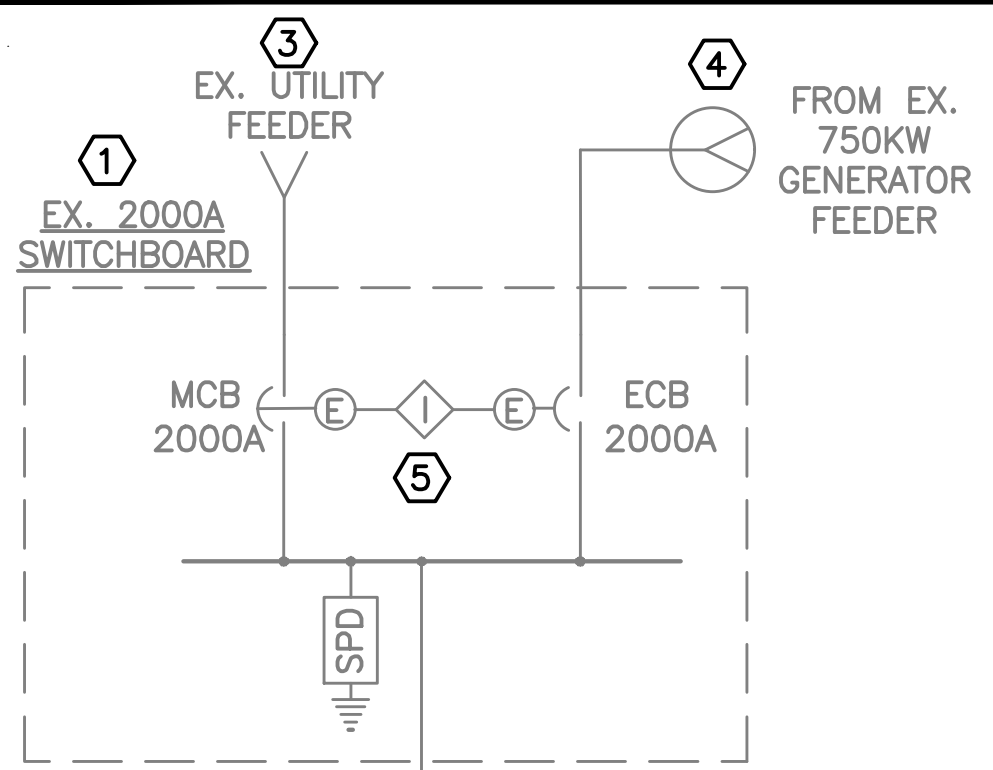
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APPROVED BY: TLH
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SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**ELECTRICAL SWITCHGEAR LAYOUTS
SG-MAIN & SG-OC**

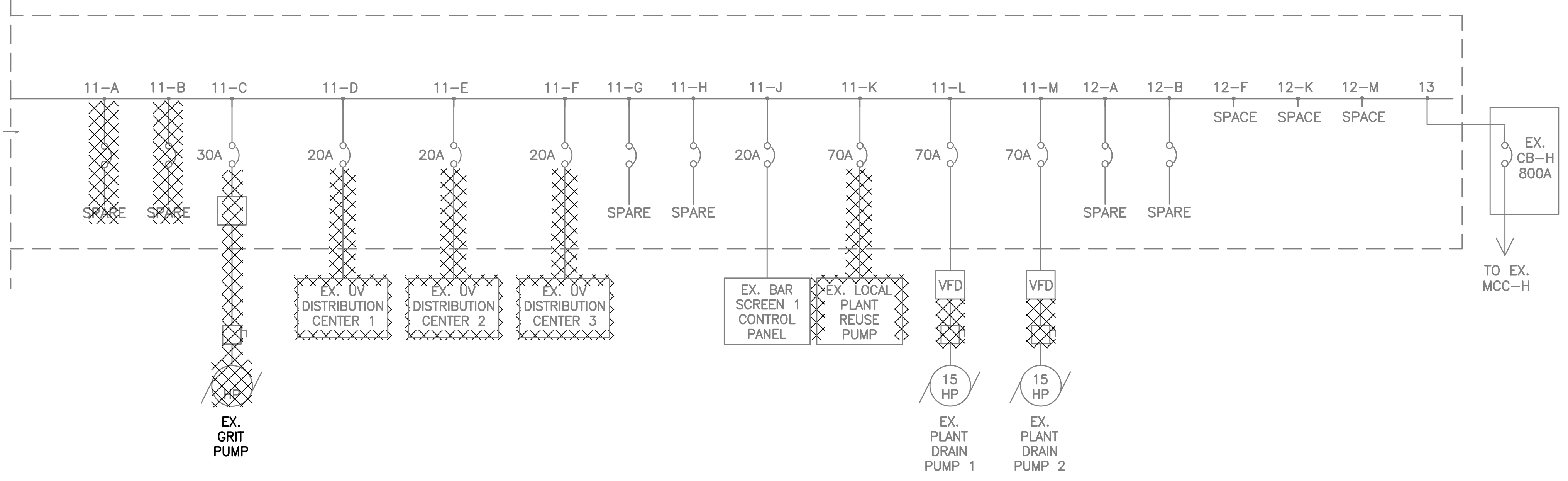
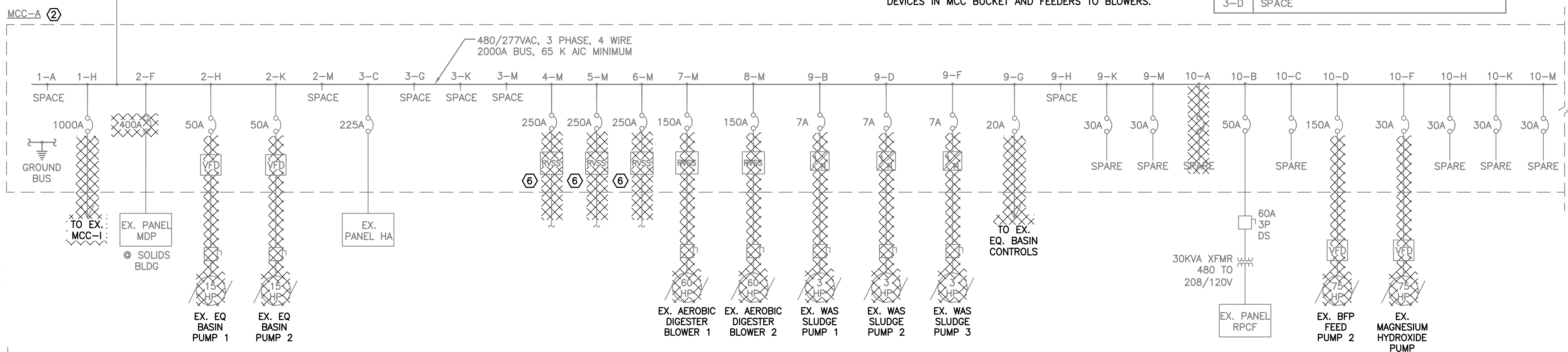


KEY NOTES:

- ① EX. SWITCHBOARD SQUARE-D QED, 2000A MCB, 480/277V, 3PH, 4W, 65 KAIC. REFER TO THIS SHEET FOR ELEVATION.
- ② EX. MCC-A, SQUARE-D, 2000A BUS, 480/277V, 3PH, 4W, 65 KAIC. REFER TO DRAWING E17 FOR ELEVATION.
- ③ EXISTING SERVICE FROM GEORGIA POWER TO REMAIN UNTIL NEW FEEDER FROM SG-OC IS INSTALLED. REFER TO ELECTRICAL SEQUENCE OF CONSTRUCTION ON DRAWING 14-E-1.
- ④ EX. CATERPILLAR 750KW, 480/277V, 3 ϕ GENERATOR ENGINE MODEL 3412 AND ASSOCIATED FEEDER TO REMAIN.
- ⑤ NORMAL/EMERGENCY CIRCUIT BREAKER INTERLOCK IS PERFORMED THRU SWITCHGEAR MODICOM CONTROLLER 924 CPU.
- ⑥ EX. SBR BLOWERS 1, 2, & 3 ARE DISCONNECTED. REMOVE DEVICES IN MCC BUCKET AND FEEDERS TO BLOWERS.

EX. 2000A SWITCHBOARD SCHEDULE
2000A MC, 65 KAIC
480/277 VOLTS, 3-PHASE, 4-WIRE

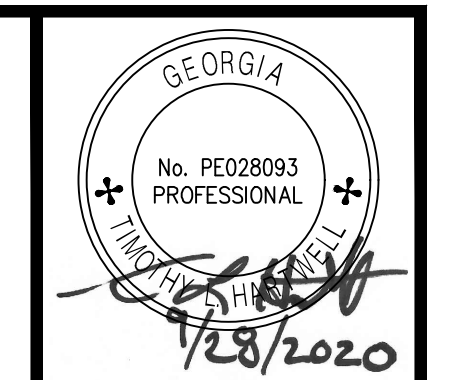
UNIT	NAME PLATE
1A-L	PLC CONTROLS
1A-R	SPACE
1-B	NORMAL 2000A MCB
1-C	SPACE
1-D	SPACE
3A-L	PLC CONTROLS
3A-R	SPACE
3-B	EMERGENCY 2000A ECB
3-C	SPACE
3-D	SPACE



TO BE REMOVED

1A-L	2A-R	3A-L	3A-R
	1-B		3-B
	1-C		3-C
	1-D		3-D

① EX. 2000A SWITCHBOARD
SCALE: N.T.S.



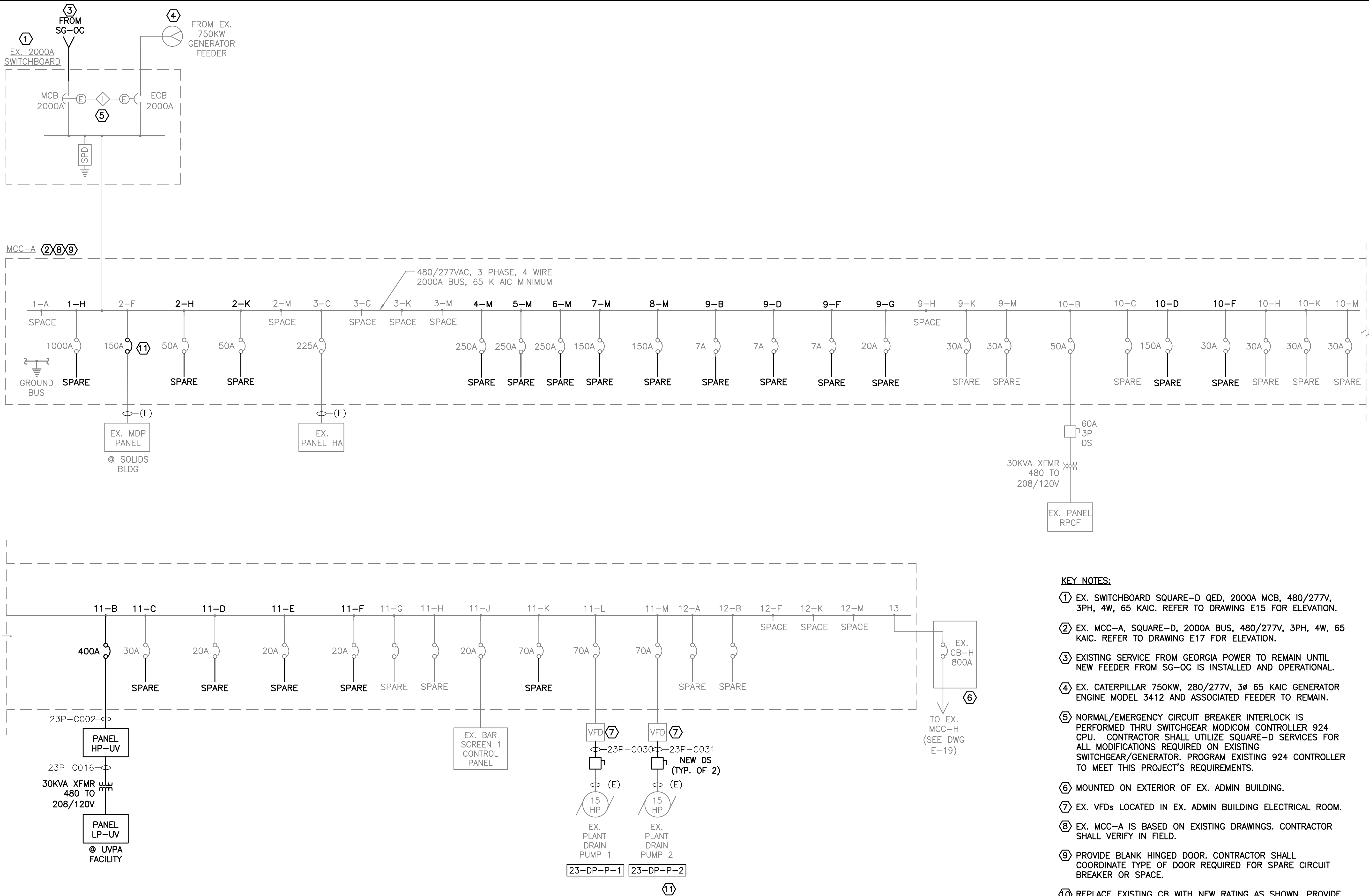
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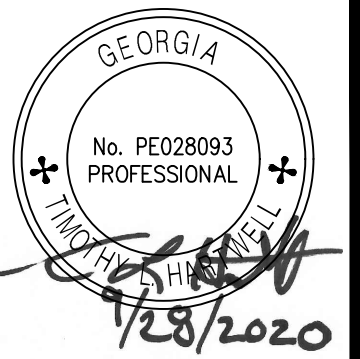
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

EX. MCC-A DEMO ONE-LINE DIAGRAM



KEY NOTES:

- ① EX. SWITCHBOARD SQUARE-D QED, 2000A MCB, 480/277V, 3PH, 4W, 65 KAIC. REFER TO DRAWING E15 FOR ELEVATION.
- ② EX. MCC-A, SQUARE-D, 2000A BUS, 480/277V, 3PH, 4W, 65 KAIC. REFER TO DRAWING E17 FOR ELEVATION.
- ③ EXISTING SERVICE FROM GEORGIA POWER TO REMAIN UNTIL NEW FEEDER FROM SG-OC IS INSTALLED AND OPERATIONAL.
- ④ EX. CATERPILLAR 750KW, 280/277V, 3Ø 65 KAIC GENERATOR ENGINE MODEL 3412 AND ASSOCIATED FEEDER TO REMAIN.
- ⑤ NORMAL/EMERGENCY CIRCUIT BREAKER INTERLOCK IS PERFORMED THRU SWITCHGEAR MODICOM CONTROLLER 924 CPU. CONTRACTOR SHALL UTILIZE SQUARE-D SERVICES FOR ALL MODIFICATIONS REQUIRED ON EXISTING SWITCHGEAR/GENERATOR. PROGRAM EXISTING 924 CONTROLLER TO MEET THIS PROJECT'S REQUIREMENTS.
- ⑥ MOUNTED ON EXTERIOR OF EX. ADMIN BUILDING.
- ⑦ EX. VFDs LOCATED IN EX. ADMIN BUILDING ELECTRICAL ROOM.
- ⑧ EX. MCC-A IS BASED ON EXISTING DRAWINGS. CONTRACTOR SHALL VERIFY IN FIELD.
- ⑨ PROVIDE BLANK HINGED DOOR. CONTRACTOR SHALL COORDINATE TYPE OF DOOR REQUIRED FOR SPARE CIRCUIT BREAKER OR SPACE.
- ⑩ REPLACE EXISTING CB WITH NEW RATING AS SHOWN. PROVIDE TERMINAL ADAPTERS TO MATCH EX. CONDUCTORS.
- ⑪ REFER TO CONDUIT AND WIRE SCHEDULE CONTROL FOR EX. PLANT DRAIN PUMPS.



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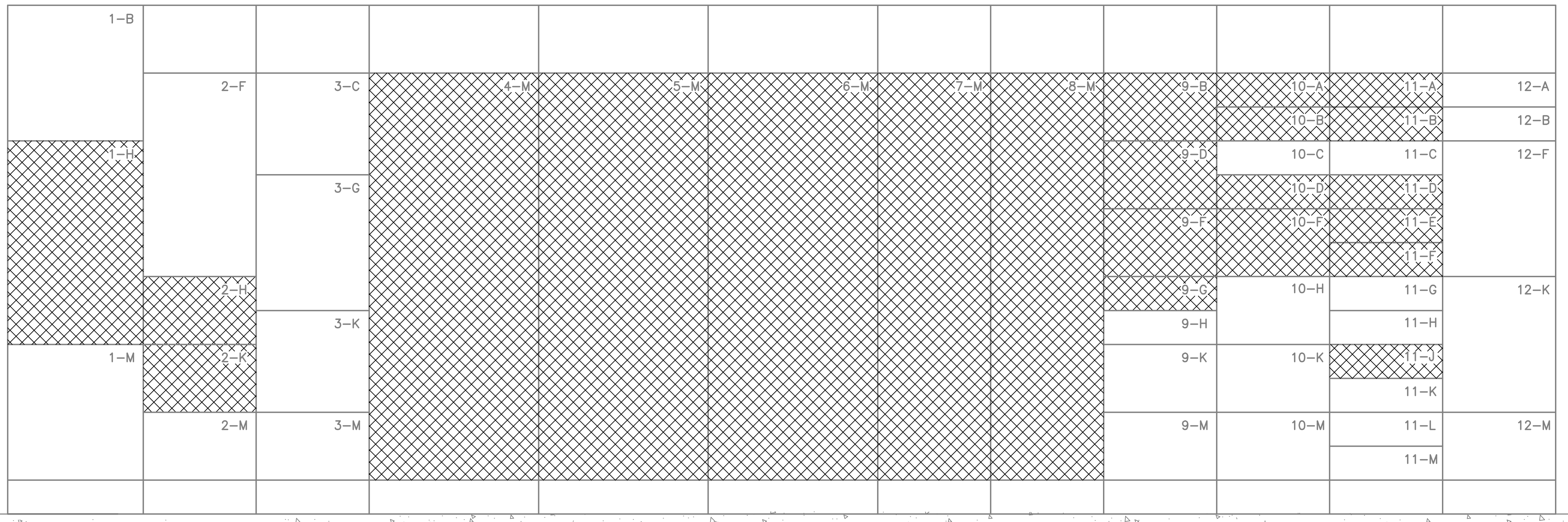
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 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

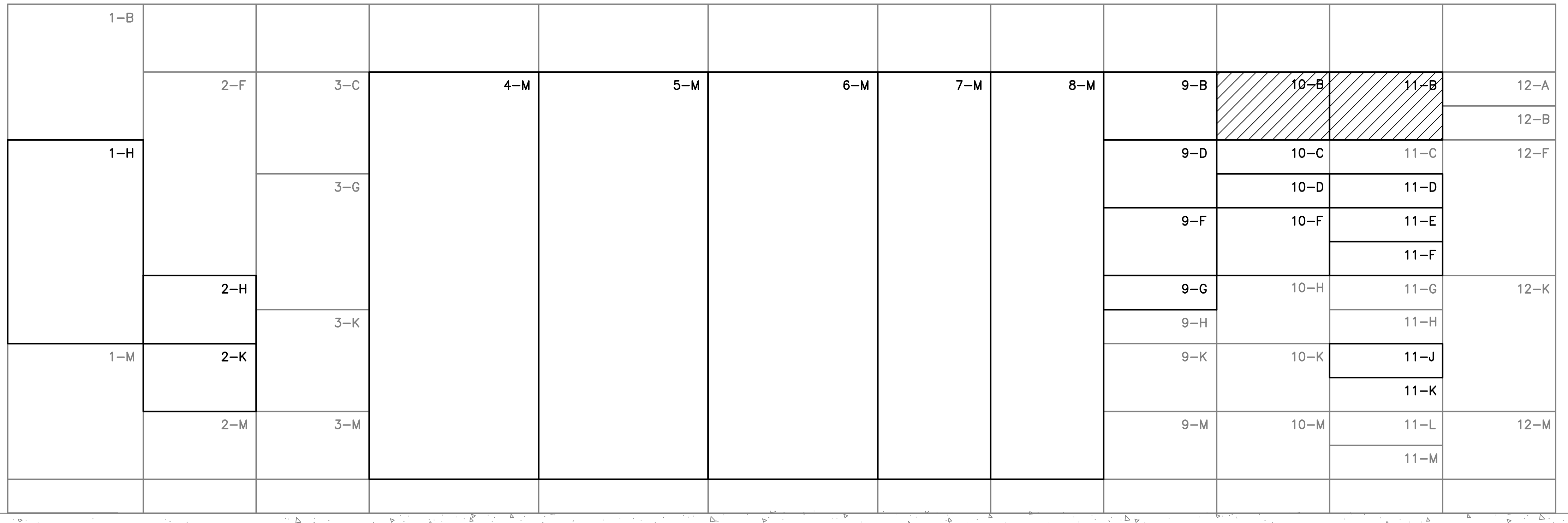
EX. MCC-A PROPOSED ONE-LINE DIAGRAM

SHEET NO.
E-16



EX. MCC-A LAYOUT - DEMO
SCALE: N.T.S.

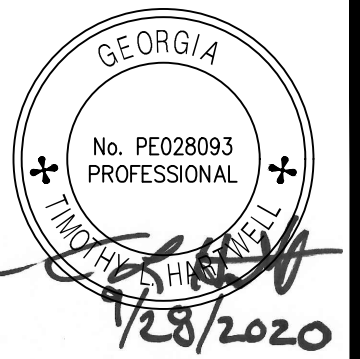
NOTES:
1. EX. MCC-A IS BASED ON EX. DRAWINGS. CONTRACTOR SHALL VERIFY IN FIELD.



EX. MCC-A LAYOUT - PROPOSED
SCALE: N.T.S.

MCC-A SCHEDULE	
2000A BUS, 65KAICS 480/277 VOLTS, 3-PHASE, 4-WIRE	
UNIT	NAME PLATE
1-A	SPACE
1-H	EX. MCC 1 CB- SPARE CB
1-M	SPACE
2-F	EX. PANEL MDP CB
2-H	EX. EQ. PUMP 1 CB- SPARE CB
2-K	EX. EQ. PUMP 2 CB- SPARE CB
2-M	SPACE
3-C	EX. PANEL HA CB
3-G	SPACE
3-K	SPACE
3-M	SPACE
4-M	SBR BLOWER 1 RVSS SPARE CB
5-M	SBR BLOWER 2 RVSS SPARE CB
6-M	SBR BLOWER 3 RVSS SPARE CB
7-M	AEROBIC DIGESTER BLOWER 1 SPARE CB
8-M	AEROBIC DIGESTER BLOWER 2 SPARE CB
9-B	WAS SLUDGE PUMP 1 SPARE CB
9-D	WAS SLUDGE PUMP 2 SPARE CB
9-F	WAS SLUDGE PUMP 3 SPARE CB
9-G	EX. EQ. BASIN CONTROLS SPARE CB
9-H	SPACE
9-K	SPARE CB
9-M	SPARE CB
10-A	SPARE CB
10-B	PANEL RPOP CB- PANEL HB CB
10-C	SPACE
10-D	BFP FEED PUMP 2 SPARE CB
10-F	MAGNESIUM HYDROXIDE PUMP SPARE CB
10-H	SPACE CB
10-K	SPACE CB
10-M	SPACE CB
11-A	SPARE
11-B	SPARE PANEL HP-UV CB
11-C	CRIT PUMP CB- SPARE CB
11-D	DISTRIBUTION CENTER 1 SPARE CB
11-E	DISTRIBUTION CENTER 2 SPARE CB
11-F	DISTRIBUTION CENTER 3 SPARE CB
11-G	SPACE CB
11-H	SPACE CB
11-J	BAR SCREEN 1
11-K	LOCAL PLANT REUSE PUMP CB- SPARE CB
11-L	EX. PLANT DRAIN PUMP 1 CB
11-M	EX. PLANT DRAIN PUMP 2 CB
12-A	SPACE CB
12-B	SPACE CB
12-F	SPACE
12-K	SPACE
12-M	SPACE
13	EX. MCC-H CB

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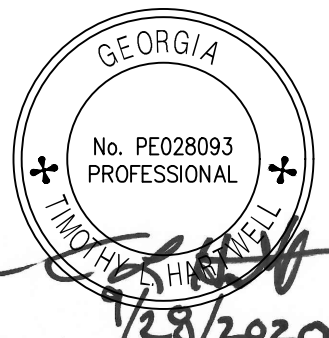
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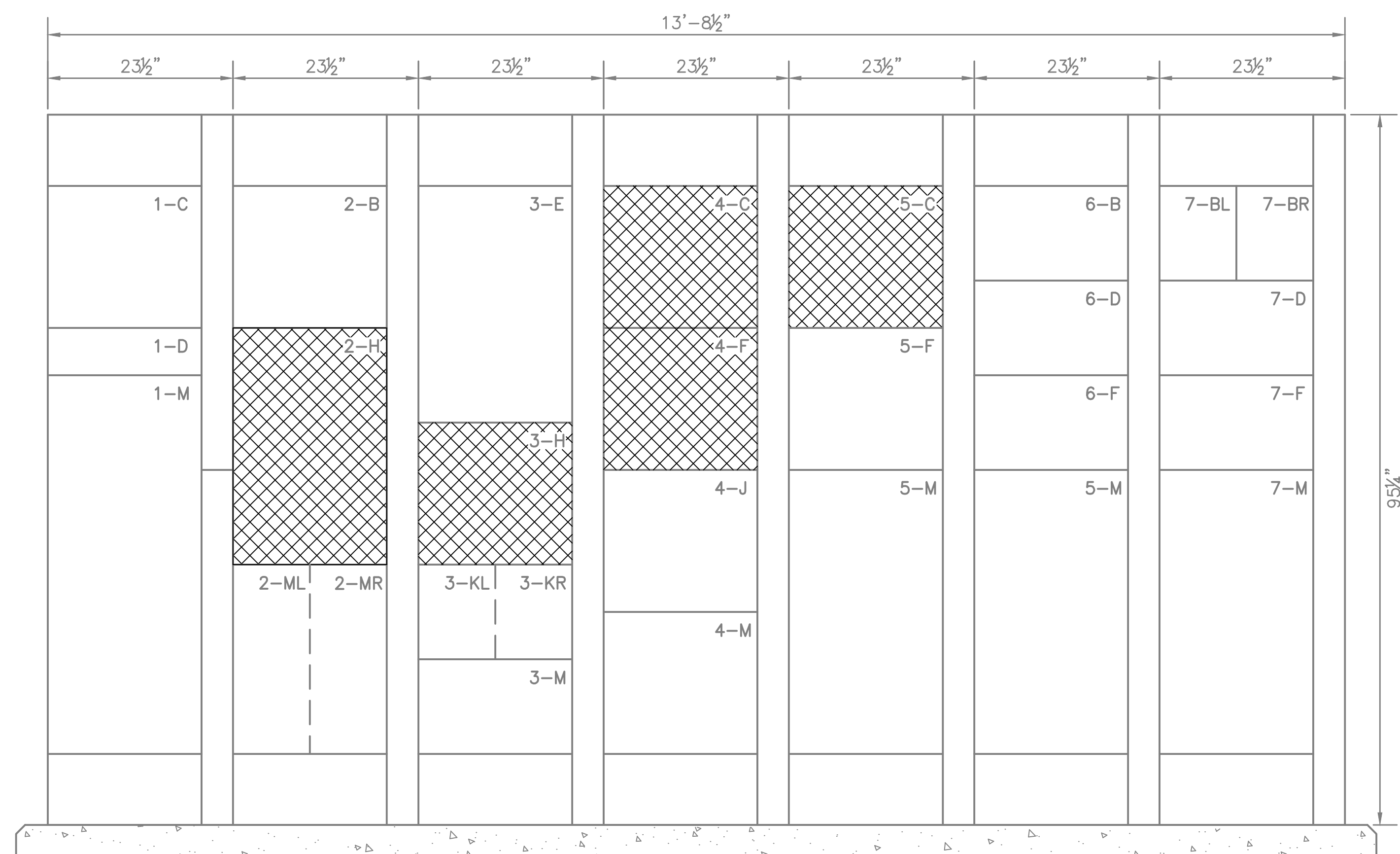
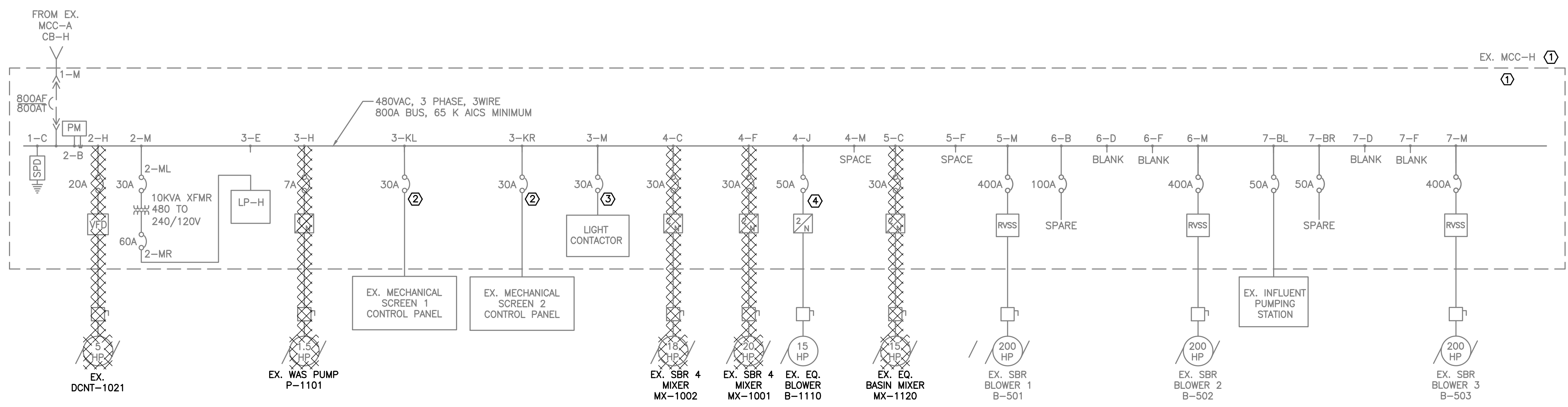
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

**EX. MCC-A
DEMO & PROPOSED LAYOUTS**



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EX. MCC-H LAYOUT
 SCALE: 1"=1'-0"

MCC-H SCHEDULE			
800A BUS, 65KAICS			
480 VOLTS, 3-PHASE, 3-WIRE			
UNIT	NAME PLATE	UNIT	NAME PLATE
1-C	SURGE PROTECTION DEVICE (SPD)	4-J	SPACE (4)
1-D	SURGE PROTECTION DEVICE (SPD) LIGHTS	4-M	SPACE
1-M	MAIN CIRCUIT BREAKER	5-C	EX. EQ. BASIN MIXER
2-B	POWER METER PXH-2270	5-F	EX. EQ. BLOWER (B-1110)
2-H	EX. DCNT-1021	5-M	EX. SBR BLOWER 1 (B-501)
2-ML	10KVA PRIMARY CB	6-B	SPARE
2-MR	10KVA SECONDARY CB	6-D	BLANK
3-E	EX. LP-H	6-F	BLANK
3-H	EX. WAS PUMP (P-1101)	6-M	EX. SBR BLOWER 2 (B-502)
3-KL	EX. MECHANICAL SCREEN 1 CONTROL PANEL	7-BL	EX. INFLUENT PUMPING STATION
3-KR	EX. MECHANICAL SCREEN 2 CONTROL PANEL	7-BR	SPARE
3-M	LIGHT CONTACTOR	7-D	BLANK
4-C	EX. SBR 4 MIXER (MX-1002)	7-F	BLANK
4-F	EX. SBR 4 MIXER (MX-1001)	7-M	EX. SBR BLOWER 3 (B-503)

KEY NOTES:

- (1) EX. MCC-H EATON FREEDOM SERIES 2100 MCC 800A BUS, 480V, 3PH, 3W, 60HZ
 - SECT 1 - 800A
 - SECT 2-7 - 600A
 - 65KAIC
- (2) RELOCATE BUCKETS 3KL & 3KR TO BUCKET 4C. EXTEND WIRES AS REQUIRED.
- (3) RELOCATE BUCKET 3M TO BUCKET 2H. EXTEND WIRES AS REQUIRED.
- (4) RELOCATE 4-J TO BUCKET 5-F.

TO BE REMOVED

DATE	REVISION

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

EX. MCC-H DEMO
 ONE-LINE DIAGRAM

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 DRAWN BY: NCT/NJZ
 CHECKED BY: TLH
 APPROVED BY: TLH
 DATE: SEPTEMBER 2020
 SCALE: AS SHOWN

PROJ. NO.: 100061831
 CERTIFICATE OF AUTHORIZATION: #PE070723 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

File Name: C:\P_WORK\ATK\NACA01\NICKY.TODD\DWG\535907\1000 - E-18.DWG Tab: E-18 Plotted: September 24, 2020 3:27pm

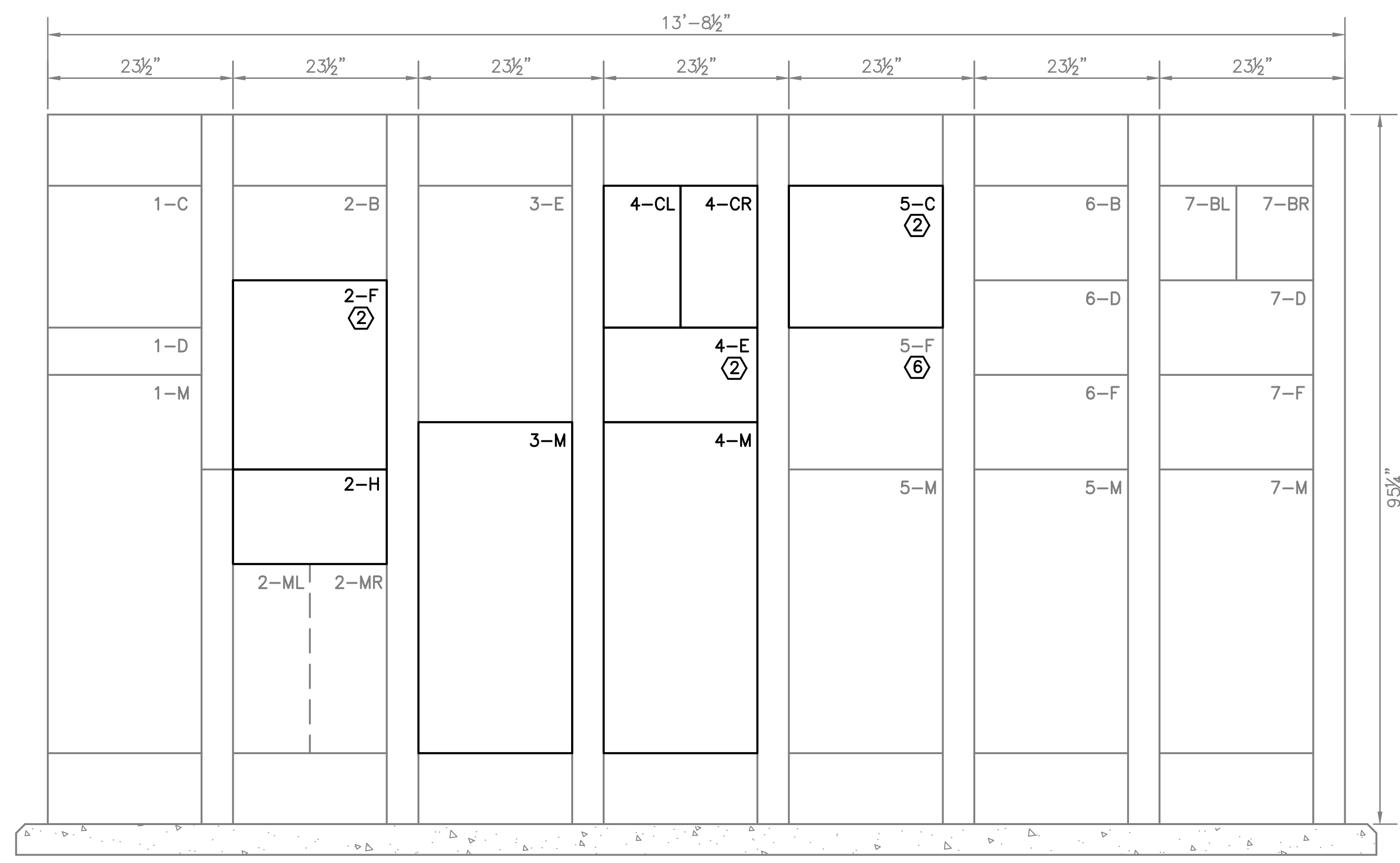
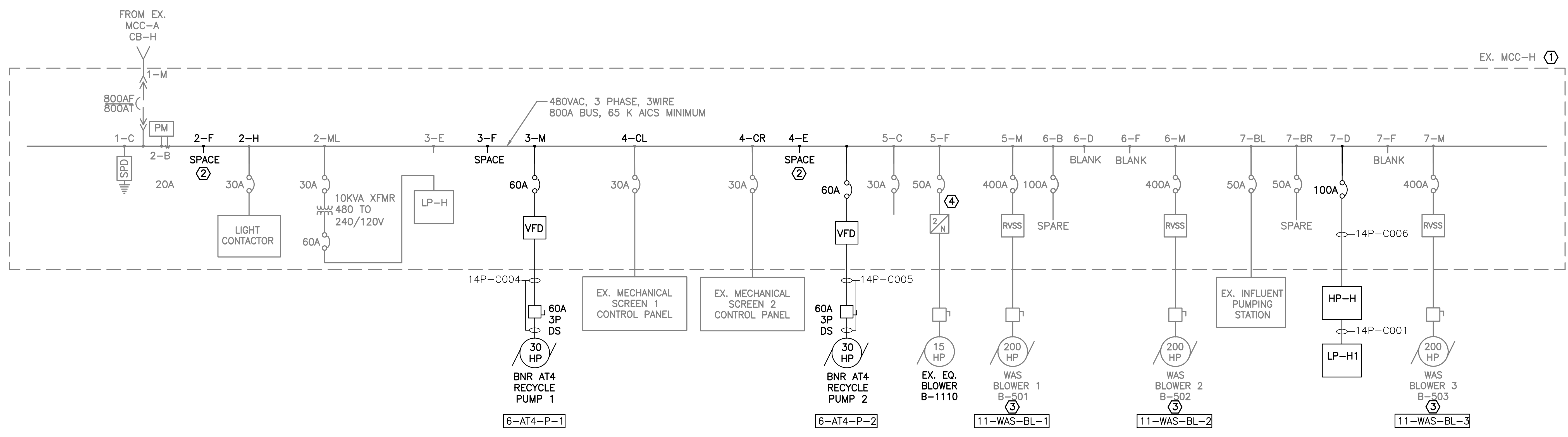
ATKINS
 1600 RiverEdge Parkway, N.W., Suite 700
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 P: 770-933-0280

HARTWELL ENGINEERING, INC.
 ENGINEERS AND SURVEYORS
 STEVENSON, GA
 (404) 249-2111

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 EX. MCC-H PROPOSED ONE-LINE DIAGRAM AND LAYOUT

DESIGNED BY: RDWIN/JZ
 DRAWN BY: NCT/NJZ
 CHECKED BY: TLH
 APPROVED BY: DATE: SEPTEMBER 2020
 SCALE: AS SHOWN

SHEET NO.
E-19

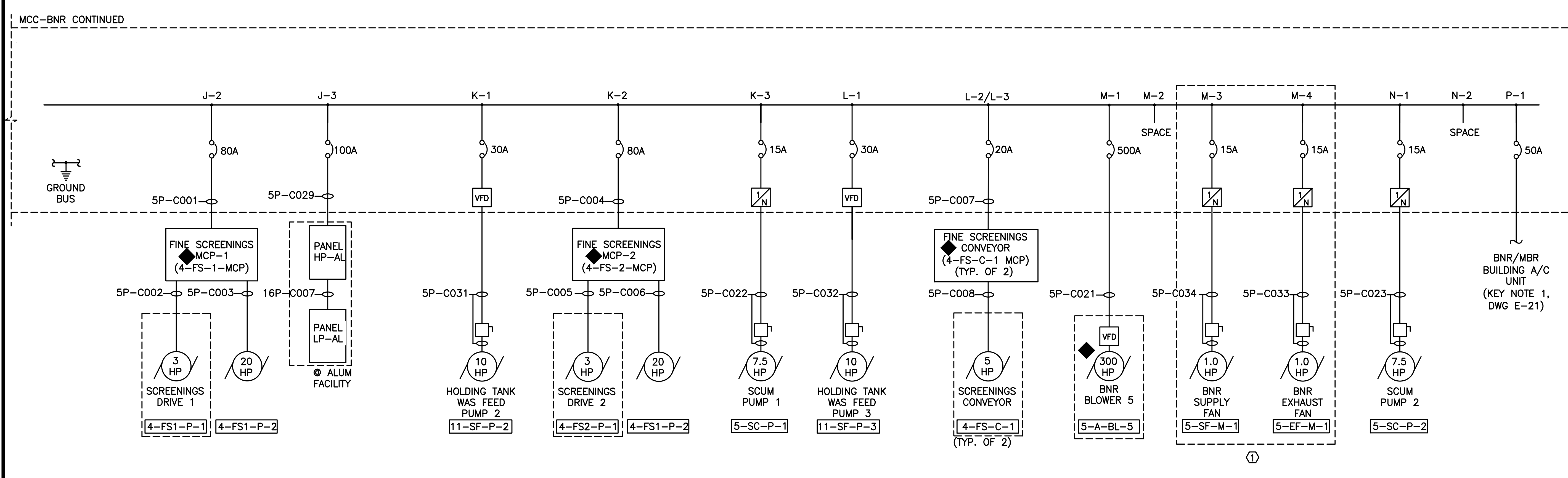
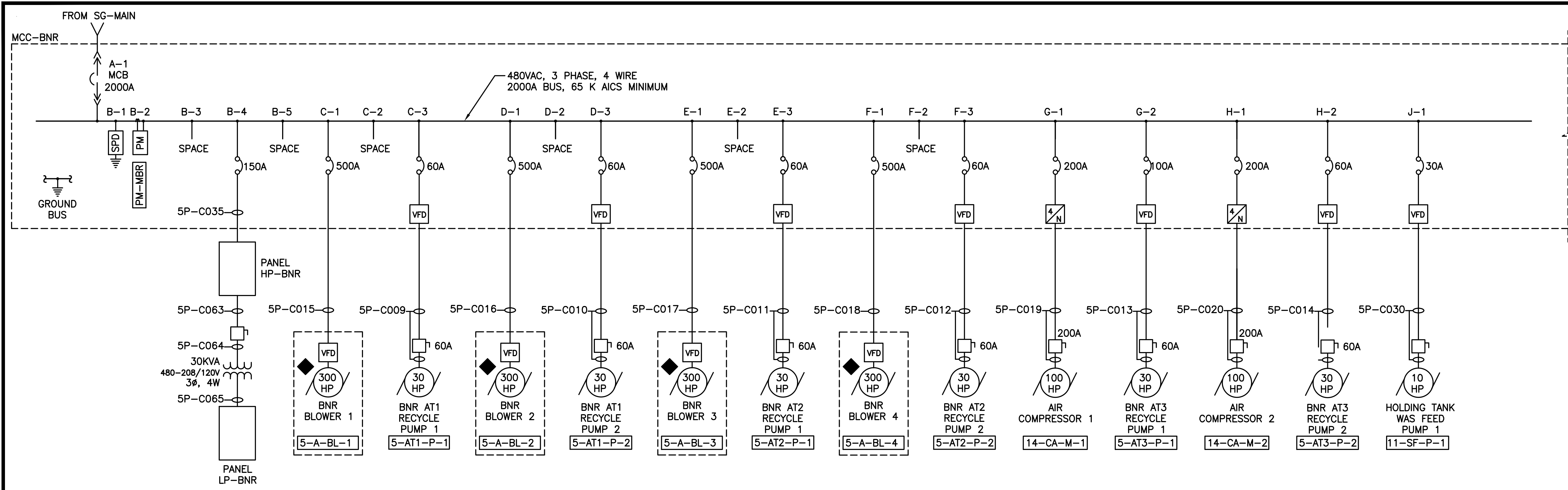


EX. MCC-H LAYOUT (4)
 SCALE: 1"=1'-0"

MCC-H SCHEDULE
 800A BUS, 65KAICS
 480 VOLTS, 3-PHASE, 3-WIRE

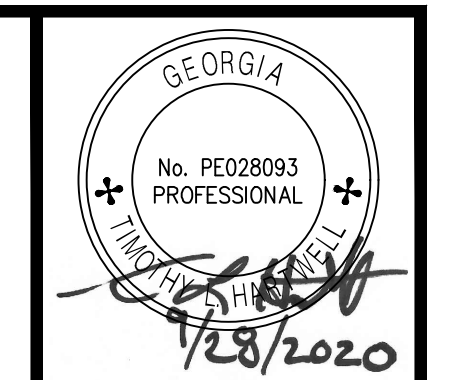
UNIT	NAME PLATE	UNIT	NAME PLATE
1-C	SURGE PROTECTION DEVICE (SPD)	4-M	BNR AT4 RECYCLE PUMP 2 (6-AT4-P-2)
1-D	SURGE PROTECTION DEVICE (SPD) LIGHTS	5-C	SPARE
1-M	MAIN CIRCUIT BREAKER	5-F	EX. EQ. BLOWER (B-1110)
2-B	POWER METER PXH-2270	5-M	EX. SBR BLOWER 1 (B-501) (3)
2-F	SPACE	6-B	SPARE
2-H	LIGHT CONTACTOR	6-D	BLANK
2-ML	10KVA PRIMARY CB	6-F	BLANK
2-MR	10KVA SECONDARY CB	6-M	EX. SBR BLOWER 2 (B-502) (3)
3-E	LP-H	7-BL	EX. INFLUENT PUMPING STATION
3-M	BNR AT4 RECYCLE PUMP 1 (6-AT4-P-1)	7-BR	SPARE
4-CL	EX. MECHANICAL SCREEN 1 CONTROL PANEL	7-D	HP-H
4-CR	EX. MECHANICAL SCREEN 2 CONTROL PANEL	7-F	BLANK
4-E	SPACE	7-M	EX. SBR BLOWER 3 (B-503) (3)

- KEY NOTES:**
- (1) EX. MCC-H EATON FREEDOM SERIES 2100 MCC 800A BUS, 480V, 3PH, 3W, 60HZ
 - SECT 1 - 800A
 - SECT 2-7 - 600A
 - 65KAIC
 - (2) PROVIDE BLANK HINGED DOOR. CONTRACTOR SHALL COORDINATE TYPE OF DOOR REQUIRED FOR SPARE CIRCUIT BREAKER OR SPACE. PROVIDE NEW NAMEPLATES FOR EQUIPMENT ON SCHEDULE.
 - (3) BLOWERS ARE REPURPOSED FOR WAS HOLDING TANK BLOWERS. REPLACE EXISTING NAMEPLATES AND TAGS WITH DESIGNATIONS SHOWN ON DRAWING 11-I-2.
 - (4) EX. MCC-H IS BASED ON EXISTING DRAWINGS. CONTRACTOR SHALL VERIFY IN FIELD.
 - (5) MOUNT PANEL HP-H AND LP-H1 IN NEMA 4X ENCLOSURE ADJACENT TO MCC-H ON EQUIPMENT RACK.
 - (6) RELOCATE EX. BLOWER B-1110 TO THIS BUCKET. EXTEND ALL WIRING AS REQUIRED.



ONE-LINE DIAGRAM

KEY NOTES:
 ① TYPICAL. REFER TO HVAC DRAWINGS. PROVIDE QUANTITY AND RATING AS REQUIRED. INSTALL IN SPARE SECTIONS.



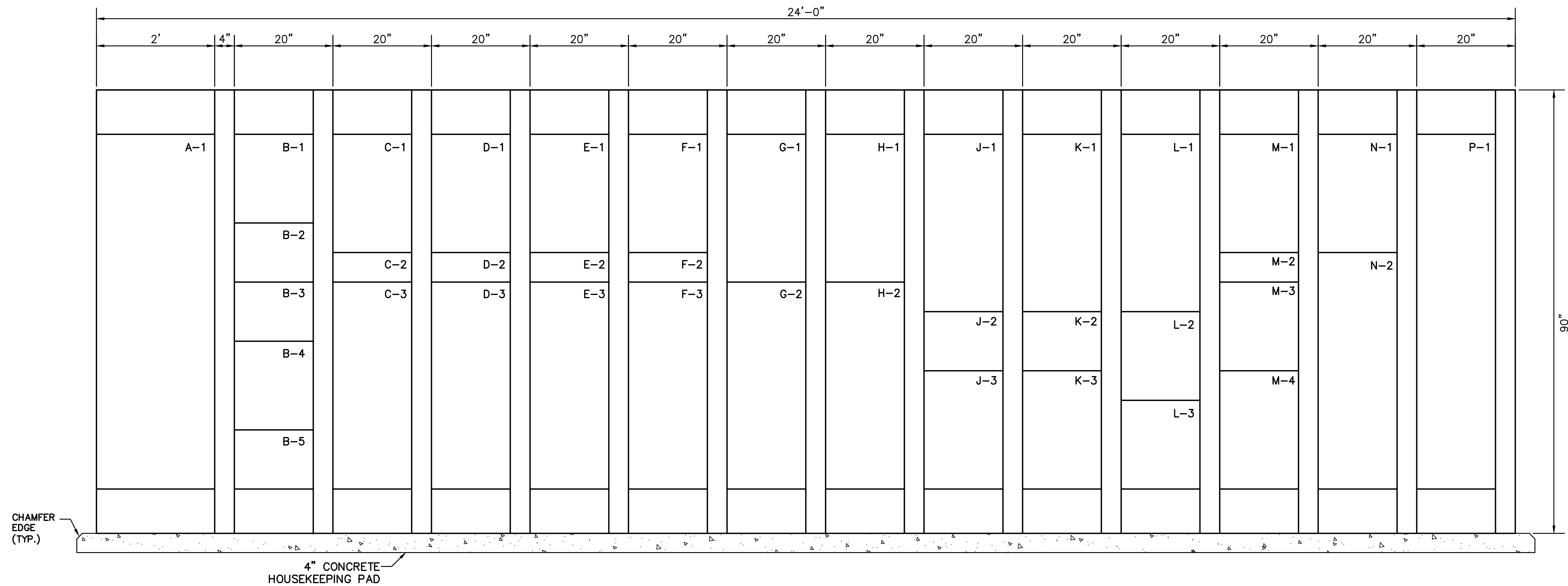
ATKINS
 1600 RiverEdge Parkway, N.W., Suite 700
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HARTWELL ENGINEERING, INC.
 ENGINEERS & ARCHITECTS
 STEVENSONVILLE, MARYLAND
 (410) 546-2111

PROJ. NO.	DESIGNED BY	DATE
100061831	RDWINJZ	
	DRWN BY: NCTANJZ	
	CHECKED BY: TLH	
	DATE: SEPTEMBER 2020	
	SCALE: AS SHOWN	

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MCC-BNR ONE-LINE DIAGRAM

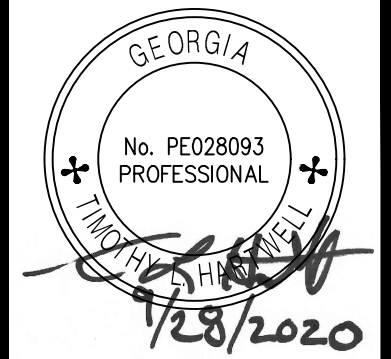


MCC-BNR LAYOUT
SCALE: 1" = 1'-0"

MCC-BNR SCHEDULE			
2000A BUS, 65K AICS			
480/277 VOLTS, 3-PHASE, 4-WIRE			
UNIT	NAME PLATE	UNIT	NAME PLATE
A-1	MCC-BNR MAIN CIRCUIT BREAKER	G-2	BNR AT3 RECYCLE PUMP 1 (5-AT3-P-1)
B-1	SURGE PROTECTION DEVICE	H-1	AIR COMPRESSOR 2 (5-AC-M-2)
B-2	POWER MONITOR	H-2	BNR AT3 RECYCLE PUMP 2 (5-AT3-P-2)
B-3	SPACE	J-1	HOLDING TANK WAS FEED PUMP 1 (11-SF-P-1)
B-4	PANEL HP-BNR	J-2	FINE SCREENINGS 1 (4-FS-1) CB
B-5	SPACE	J-3	PANEL HP-AL
C-1	BNR BLOWER 1 (5-A-BL-1)	K-1	HOLDING TANK WAS FEED PUMP 2 (11-SF-P-2)
C-2	SPACE	K-2	FINE SCREENINGS 2 (4-FS-2) CB
C-3	BNR AT1 RECYCLE PUMP 1 (5-AT1-P-1)	K-3	SCUM PUMP 1 (5-SC-P-1)
D-1	BNR BLOWER 2 (5-A-BL-2)	L-1	HOLDING TANK WAS FEED PUMP 3 (11-SF-P-3)
D-2	SPACE	L-2	FINE SCREENINGS CONVEYOR (4-FS-C-1)
D-3	BNR AT1 RECYCLE PUMP 2 (5-AT1-P-2)	L-3	FINE SCREENINGS CONVEYOR (4-FS-C-2)
E-1	BNR BLOWER 3 (5-A-BL-3)	M-1	BNR BLOWER 5 (5-A-BL-5)
E-2	SPACE	M-2	SPACE
E-3	BNR AT2 RECYCLE PUMP 1 (5-AT2-P-1)	M-3	BNR SUPPLY FAN 1 (5-SF-M-1)
F-1	BNR BLOWER 4 (5-A-BL-4)	M-4	BNR EXHAUST FAN 1 (5-EF-M-1)
F-2	SPACE	N-1	SCUM PUMP 2 (5-SC-P-2)
F-3	BNR AT2 RECYCLE PUMP 2 (5-AT2-P-2)	N-2	SPACE
G-1	AIR COMPRESSOR 1 (5-AC-M-1)	P-1	BNR/MBR BUILDING $\text{\textcircled{A}}$ UNIT

KEY NOTES:

① 50 AMP 3P C/B IS ESTIMATED SIZE. COORDINATE WITH UNIT PROVIDED. PROVIDE CONDUIT, CONDUCTORS AND FUSED DISCONNECTS FOR SPLIT SYSTEM, PER NEC.



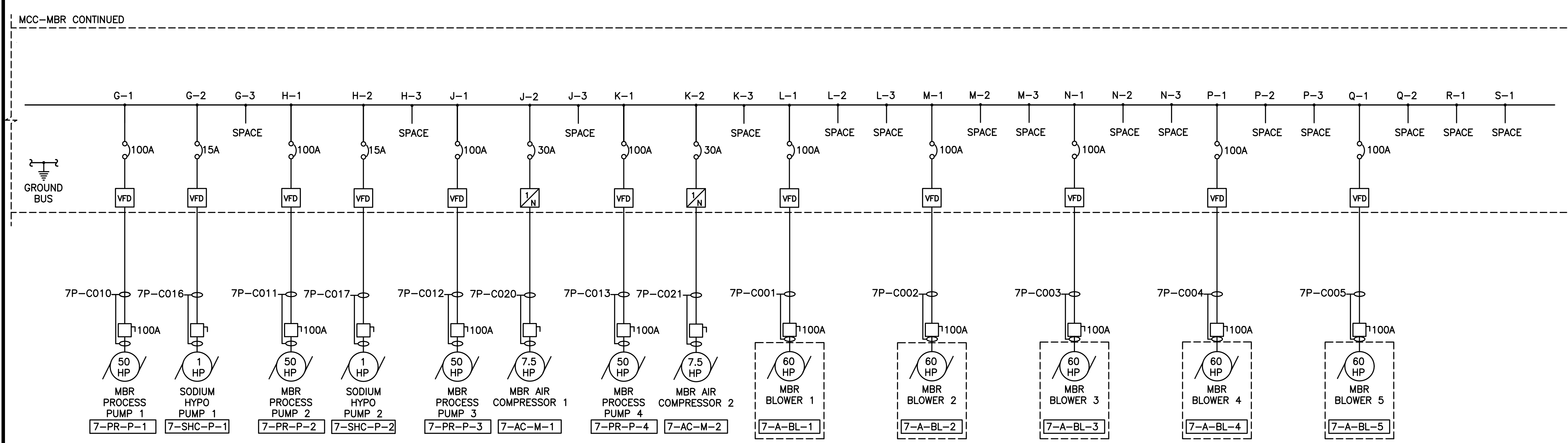
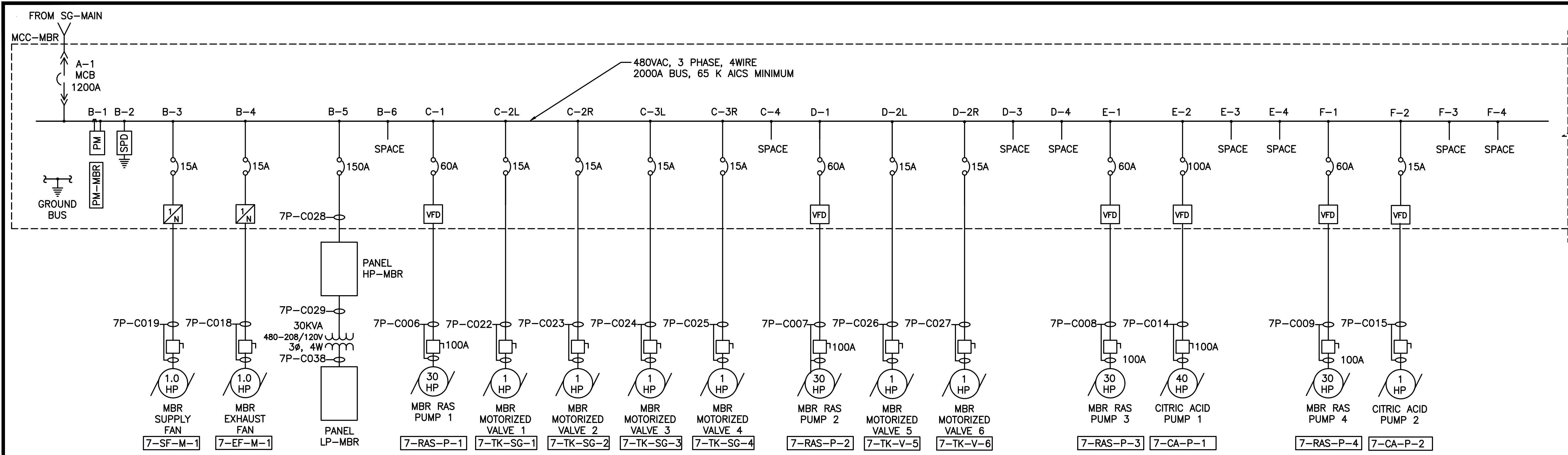
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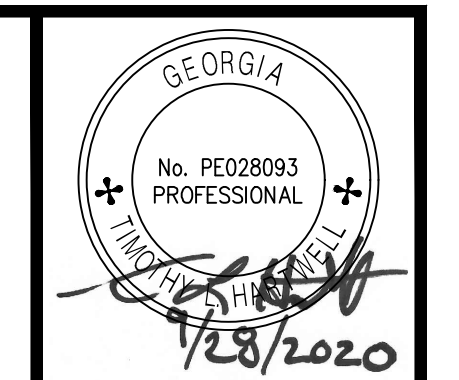
PROJ. NO.: 100061831	DESIGNED BY: RDW/NJZ	CERTIFICATE OF AUTHORIZATION: #PE07023 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.
	DRAWN BY: NCT/NJZ	REVISION
	CHECKED BY: TLH	DATE
	APPROVED BY: TLH	
	DATE: SEPTEMBER 2020	
	SCALE: AS SHOWN	

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MCC-BNR LAYOUT & SCHEDULE



ONE-LINE DIAGRAM



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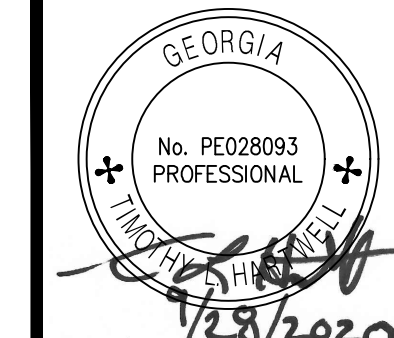
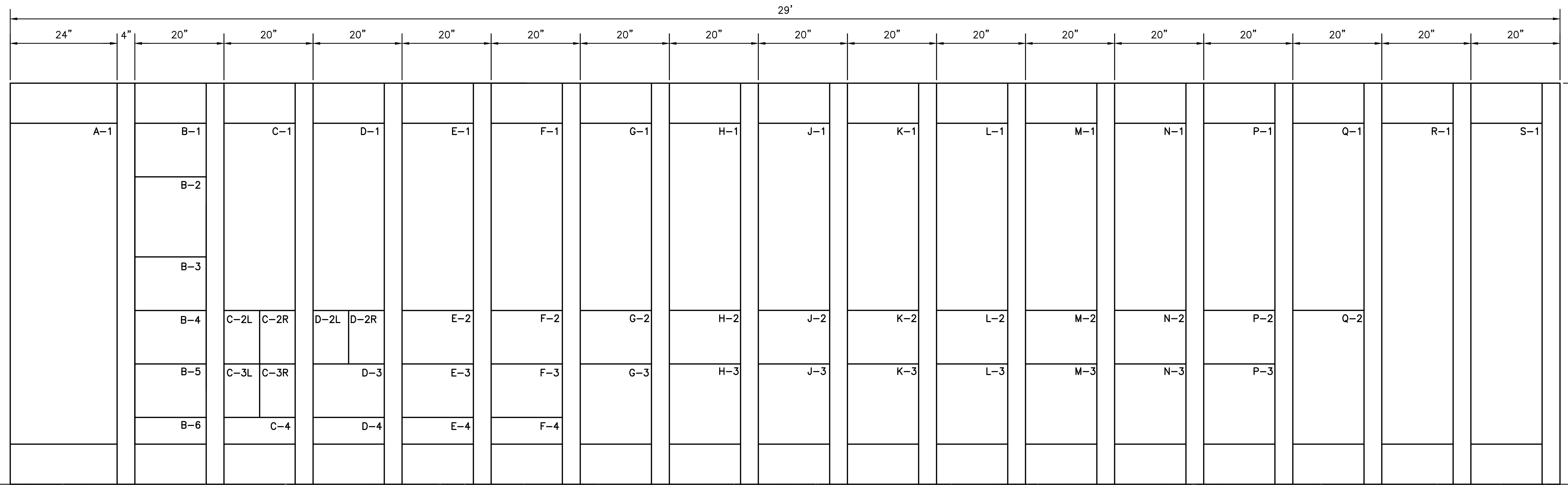
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ENGINEERS & REGULATORS
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(410) 546-2111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:	SCALE:
100061831	RDWINJZ	NCTANJZ	TLH	SEPTEMBER 2020	AS SHOWN
REVISION	DATE				

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CERTIFICATE OF AUTHORIZATION #PE0707623 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

MCC-MBR ONE-LINE DIAGRAM



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	NCT/NJZ	
	TLH	
	TLH	
	SEPTEMBER 2020	
	AS SHOWN	

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

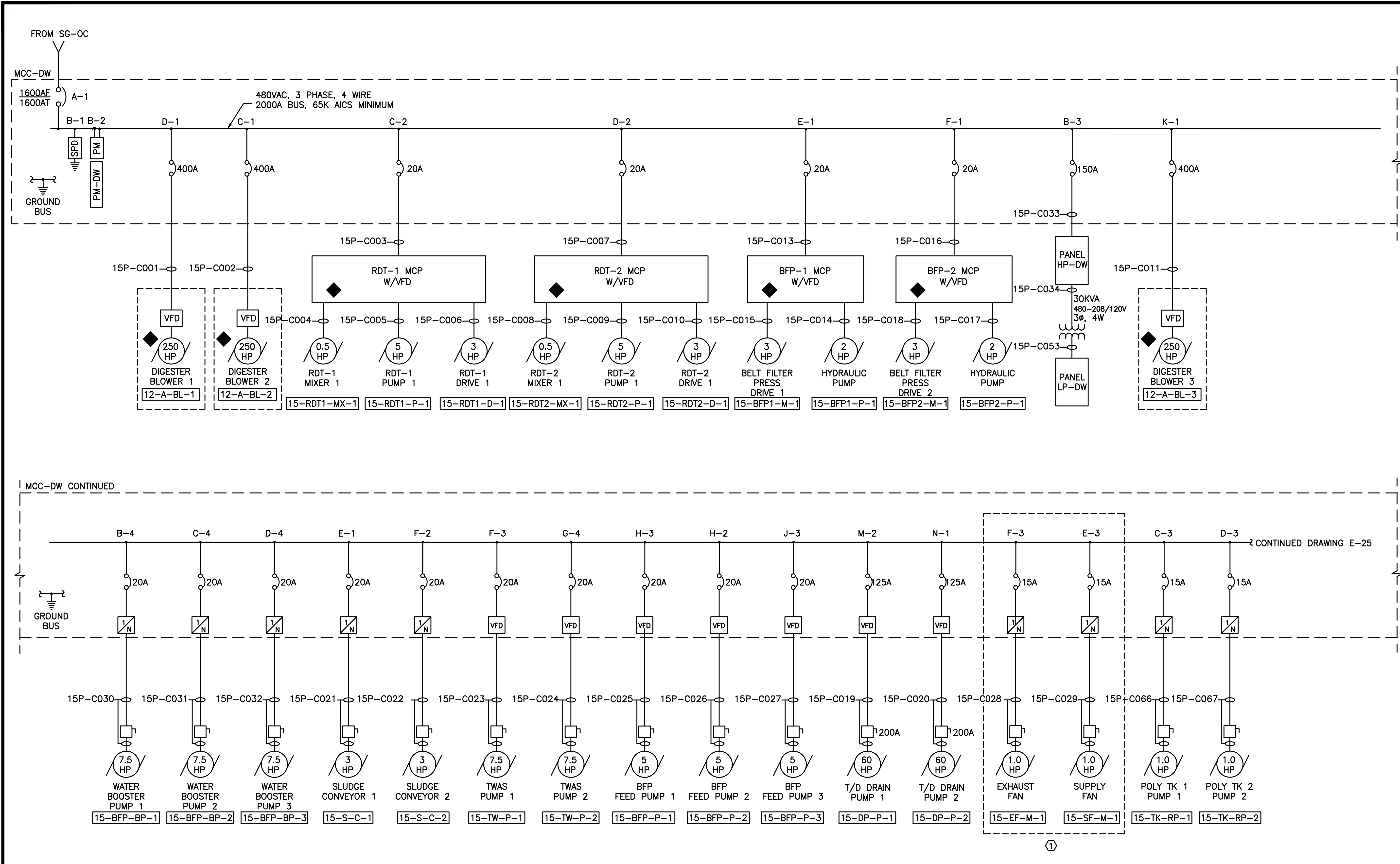
MCC-MBR LAYOUT & SCHEDULE

SHEET NO.
E-23

CHAMFER EDGE (TYP.)
 4" CONCRETE HOUSEKEEPING PAD

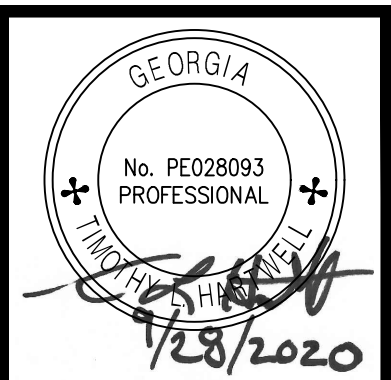
MCC-MBR LAYOUT
 SCALE: 1" = 1'-0"

MCC-MBR SCHEDULE					
2000A BUS, 65K AICS					
480/277 VOLTS, 3-PHASE, 4-WIRE					
UNIT	NAME PLATE	UNIT	NAME PLATE	UNIT	NAME PLATE
A-1	MCC-MBR MAIN CIRCUIT BREAKER	E-4	SPACE	M-2	SPACE
B-1	POWER MONITOR	F-1	MBR RAS PUMP 4 (7-RAS-P-4)	M-3	SPACE
B-2	SURGE PROTECTION DEVICE	F-2	CITRIC ACID PUMP 2 (7-CA-P-2)	N-1	MBR BLOWER 3 (7-TK-BL-3)
B-3	MBR SUPPLY FAN (7-SF-M-1)	F-3	SPACE	N-2	SPACE
B-4	MBR EXHAUST FAN (7-EF-M-1)	F-4	SPACE	N-3	SPACE
B-5	PANEL HP-MBR	G-1	MBR PROCESS PUMP 1 (7-PR-P-1)	P-1	MBR BLOWER 4 (7-TK-BL-4)
B-6	SPACE	G-2	SODIUM HYPO PUMP 1 (7-SHC-P-1)	P-2	SPACE
C-1	MBR RAS PUMP 1 (7-RAS-P-1)	G-3	SPACE	P-3	SPACE
C-2L	MBR MOTORIZED VALVE 1 CB (7-TK-SG-1)	H-1	MBR PROCESS PUMP 2 (7-PR-P-2)	Q-1	MBR BLOWER 5 (7-TK-BL-5)
C-2R	MBR MOTORIZED VALVE 2 CB (7-TK-SG-2)	H-2	SODIUM HYPO PUMP 2 (7-SHC-P-2)	Q-2	SPACE
C-3L	MBR MOTORIZED VALVE 3 CB (7-TK-SG-3)	H-3	SPACE	R-1	SPACE
C-3R	MBR MOTORIZED VALVE 4 CB (7-TK-SG-4)	J-1	MBR PROCESS PUMP 3 (7-PR-P-3)	S-1	SPACE
C-4	SPACE	J-2	MBR AIR COMPRESSOR 1 (7-AC-M-1)		
D-1	MBR RAS PUMP 2 (7-RAS-P-2)	J-3	SPACE		
D-2L	MBR MOTORIZED VALVE 5 CB (7-TK-V-5)	K-1	MBR PROCESS PUMP 4 (7-PR-P-4)		
D-2R	MBR MOTORIZED VALVE 6 CB (7-TK-V-6)	K-2	MBR AIR COMPRESSOR 2 (7-AC-M-2)		
D-3	SPACE	K-3	SPACE		
D-4	SPACE	L-1	MBR BLOWER 1 (7-TK-BL-1)		
E-1	MBR RAS PUMP 3 (7-RAS-P-3)	L-2	SPACE		
E-2	CITRIC ACID PUMP 1 (7-CA-P-1)	L-3	SPACE		
E-3	SPACE	M-1	MBR BLOWER 2 (7-TK-BL-2)		



ONE-LINE DIAGRAM

KEY NOTES:
 ① TYPICAL. REFER TO HVAC DRAWINGS. PROVIDE QUANTITY AND RATING AS REQUIRED. INSTALL IN SPARE SECTIONS.



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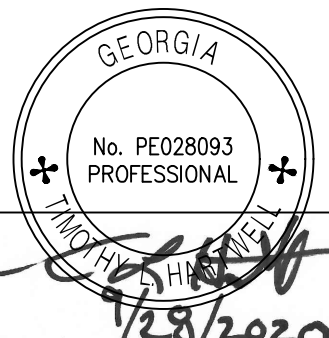
HARTWELL ENGINEERING, INC.
 ENGINEERS & INTEGRATORS
 STEVENSONVILLE, MARYLAND
 (410) 541-1111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:	SCALE:
100061831	RDW/INJ	NCT/INJ	TLH	SEPTEMBER 2020	AS SHOWN

REVISION	DATE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 MCC-DW
 ONE-LINE DIAGRAM

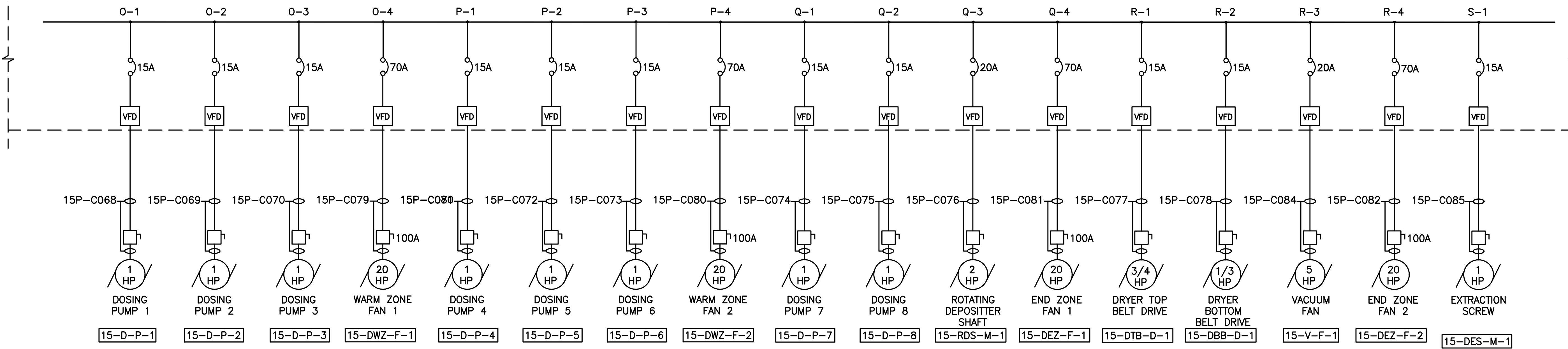
CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 MCC-DW
 ONE-LINE DIAGRAM



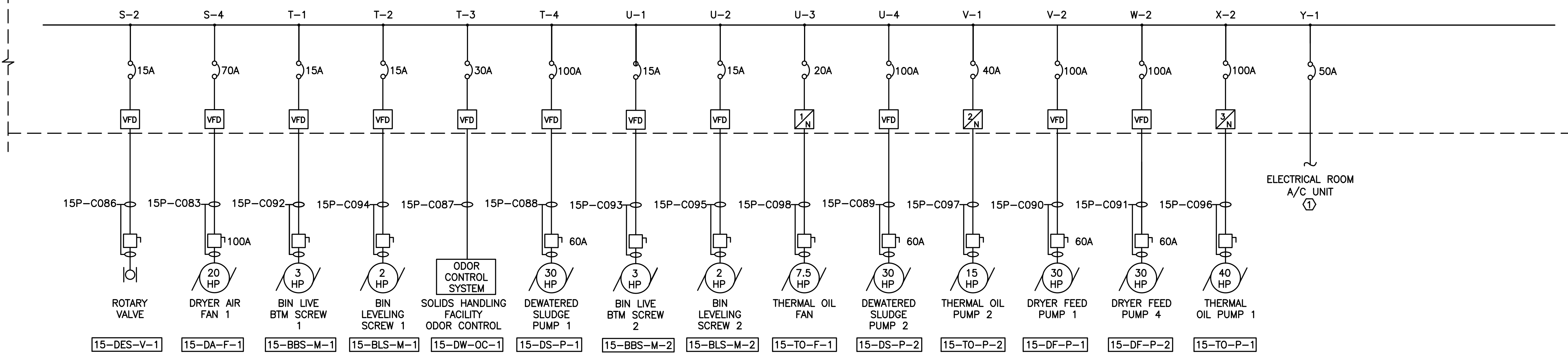
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(410) 281-1111

MCC-DW CONTINUED (FROM DRAWING E-24)



MCC-DW CONTINUED



ONE-LINE DIAGRAM

KEY NOTES:
① 50 AMP 3P C/B IS ESTIMATED SIZE. COORDINATE WITH UNIT PROVIDED. PROVIDE CONDUIT, CONDUCTORS AND FUSED DISCONNECTS FOR SPLIT SYSTEM, PER NEC.

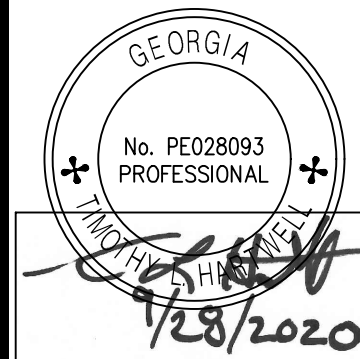
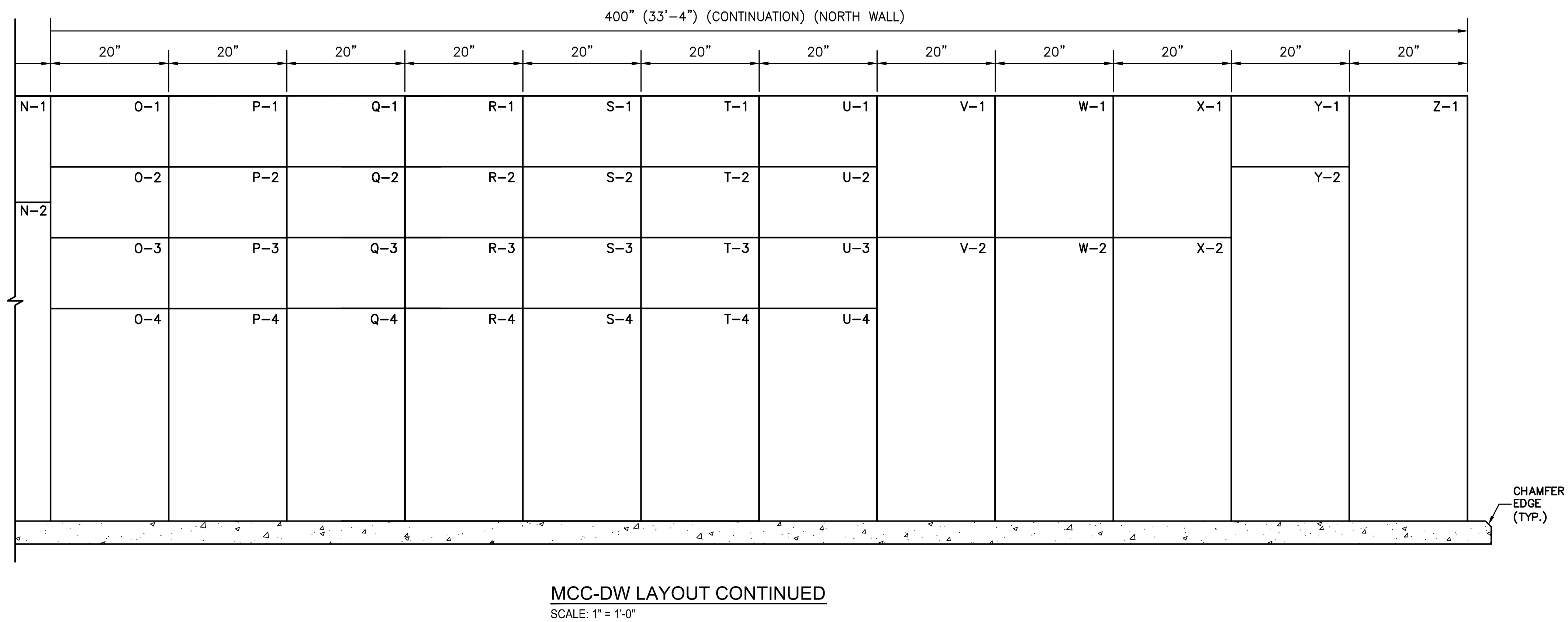
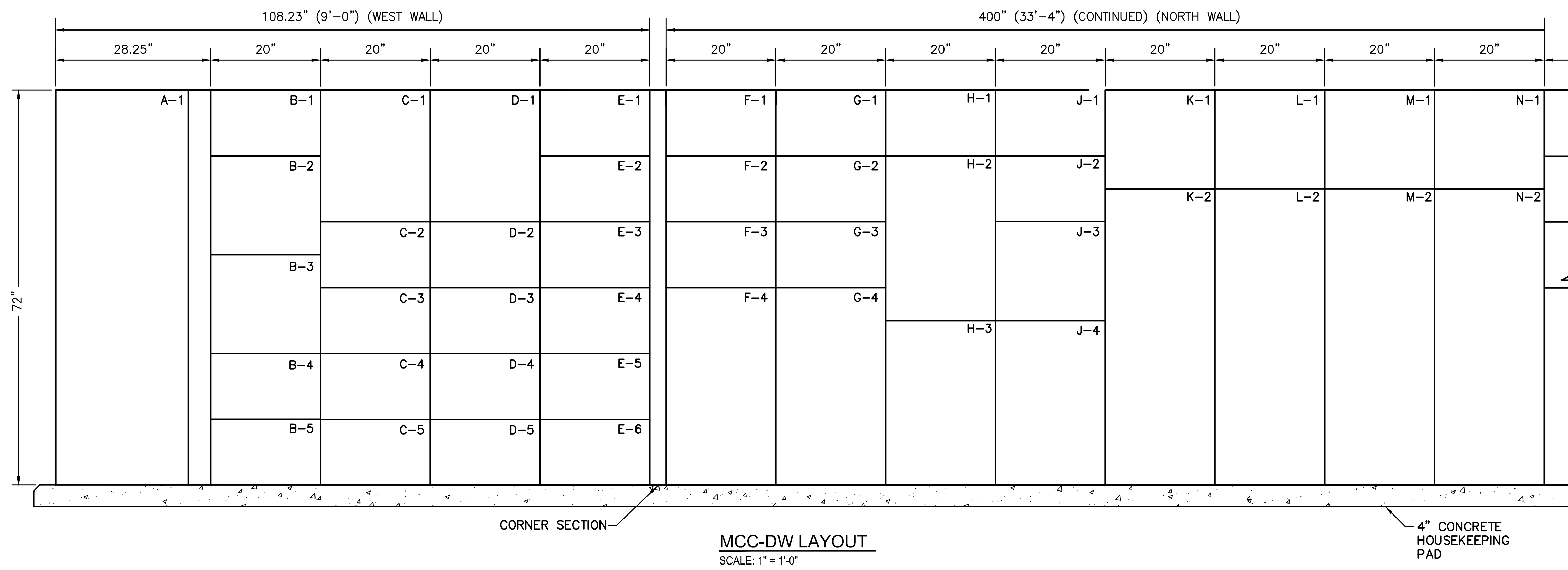
PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN
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	NCT/INJZ				

REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
MCC-DW
ONE-LINE DIAGRAM 2

CERTIFICATE OF AUTHORIZATION #PEP07023 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

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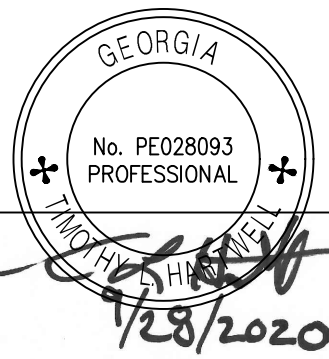
REVISION	DATE

CERTIFICATE OF AUTHORIZATION #PE028093 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MCC-DW LAYOUT

SHEET NO.
E-26



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 STEVENSON, MARYLAND
 (410) 542-1111

MCC-DW SCHEDULE					
1000A BUS, 65K AICS					
480/277 VOLTS, 3-PHASE, 4-WIRE					
UNIT	NAME PLATE	UNIT	NAME PLATE	UNIT	NAME PLATE
A-1	MAIN CIRCUIT BREAKER	G-2	SPACE	Q-2	DOSING PUMP 8 (15-D-P-8)
B-1	POWER MONITOR	G-3	SPACE	Q-3	ROTATING DEPOSITTER SHAFT (15-RDS-M-1)
B-2	SURGE PROTECTION DEVICE	G-4	TWAS PUMP 2 (15-TW-P-2)	Q-4	END ZONE FAN 1 (15-DEZ-F-1)
B-3	PANEL HP-DW BREAKER	H-1	SPACE	R-1	DRYER TOP BELT DRIVE (15-DTB-D-1)
B-4	15-BFP-BP-1	H-2	BFP FEED PUMP 2 (15-BFP-P-2)	R-2	DRYER BOTTOM BELT DRIVE (15-DBB-D-1)
B-5	SPACE	H-3	BFP FEED PUMP 1 (15-BFP-P-1)	R-3	VACUUM FAN 1 (15-V-F-1)
C-1	DIGESTER BLOWER 1 (12-A-BL-1)	J-1	SPACE	R-4	END ZONE FAN 2 (15-DEZ-F-2)
C-2	RDT-1 MCP	J-2	SPACE	S-1	EXTRACTION SCREW (15-DES-M-1)
C-3	15-TK-RP-1	J-3	SPACE	S-2	ROTARY VALVE (15-DES-V-1)
C-4	15-BFP-BP-2	J-4	BFP FEED PUMP 3 (15-BFP-P-3)	S-3	SPACE
C-5	SPACE	K-1	DIGESTER BLOWER 3 (12-A-BL-3)	S-4	DRYER AIR FAN 1 (15-DA-F-1)
D-1	DIGESTER BLOWER 2 (12-A-BL-2)	K-2	SPACE	T-1	BIN LIVE BTM SCREW 1 (15-BBS-M-1)
D-2	RDT-2 MCP	L-1	SPACE	T-2	BIN LEVELING SCREW 1 (15-BLS-M-1)
D-3	15-TK-RP-2	L-2	SPACE	T-3	ODOR CONTROL SYSTEM (15-DW-OC-1)
D-4	15-BFP-BP-3	M-1	SPACE	T-4	HIGH SOLIDS CAKE PUMP 1 (15-HSC-P-1)
D-5	SPACE	M-2	TD DRAIN PUMP 1 (15-DP-P-1)	U-1	BIN LIVE BTM SCREW 2
E-1	BFP-1 MCP	N-1	SPACE	U-2	BIN LEVELING SCREW 2
E-2	SLUDGE CONVEYOR 1 (15-SG-C-1)	N-2	TD DRAIN PUMP 2 (15-DP-P-2)	U-3	THERMAL OIL FAN (15-TO-F-1)
E-3	DW SUPPLY FAN (15-SF-M-1)	O-1	DOSING PUMP 1 (15-D-P-1)	U-4	HIGH SOLIDS CAKE PUMP 2 (15-HSC-P-2)
E-4	SPACE	O-2	DOSING PUMP 2 (15-D-P-2)	V-1	THERMAL OIL PUMP 2 (15-HSC-P-2)
E-5	SPACE	O-3	DOSING PUMP 3 (15-D-P-3)	V-2	HIGH SOLIDS CAKE PUMP 3 (15-HSC-P-3)
E-6	SPACE	O-4	WARM ZONE FAN 1 (15-DWZ-F-1)	W-1	SPACE
F-1	BFP-2 MCP	P-1	DOSING PUMP 4 (15-D-P-4)	W-2	HIGH SOLIDS CAKE PUMP 4 (15-HSC-P-4)
F-2	SLUDGE CONVEYOR 2 (15-SG-C-2)	P-2	DOSING PUMP 5 (15-D-P-5)	X-1	SPACE
F-3	DW EXHAUST FAN (15-EF-M-1)	P-3	DOSING PUMP 6 (15-D-P-6)	X-2	THERMAL OIL PUMP 1 (15-HSC-P-1)
F-4	TWAS PUMP 1 (15-TW-P-1)	P-4	WARM ZONE FAN 2 (15-DWZ-F-2)	Y-1	ELECTRICAL ROOM A/C UNIT (1)
G-1	SPACE	Q-1	DOSING PUMP 7 (15-D-P-7)	Y-2	SPACE
				Z-1	SPACE

PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDWINJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN
	DRAWN BY: NCT/ANZ				

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MCC-DW
 SCHEDULE

SHEET NO.
E-27

KEY NOTES:
 (1) SEE KEY NOTE 1, DRAWING E-25.

PANEL HP-AL					
480/277V, 3 PHASE, 4 WIRES, 42 CKTS 100A MAIN CIRCUIT BREAKER					
FEED FROM: MCC-BNR			LOCATION: ALUM FACILITY		
CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	3	100	15	ALUM PUMP 1	16-AL-P-1
2	3	100	40	PANEL LP-AL (15 KVA XFMR)	
3	-	-	-	ALUM PUMP 1	
4	-	-	-	PANEL AL (15 KVA XFMR)	
5	-	-	-	ALUM PUMP 1	
6	-	-	-	PANEL AL (15 KVA XFMR)	
7	3	100	15	ALUM PUMP 2	16-AL-P-2
8	3	100	15	ALUM PUMP 3	16-AL-P-3
9	-	-	-	ALUM PUMP 2	
10	-	-	-	ALUM PUMP 3	
11	-	-	-	ALUM PUMP 2	
12	-	-	-	ALUM PUMP 3	
13	3	100	15	ALUM PUMP 4	16-AL-P-4
14	3	100	15	ALUM PUMP 5	16-AL-P-5
15	-	-	-	ALUM PUMP 4	
16	-	-	-	ALUM PUMP 5	
17	-	-	-	ALUM PUMP 4	
18	-	-	-	ALUM PUMP 5	
19	3	100	15	ALUM PUMP 6	16-AL-P-6
20	3	100	15	SPARE	
21	-	-	-	ALUM PUMP 6	
22	-	-	-	SPARE	
23	-	-	-	ALUM PUMP 6	
24	-	-	-	SPARE	
25					
26					
27					
28					
29-42					

PANEL LP-AL					
208/120V, 3 PHASE, 4 WIRES, 12 CKTS (POWER ZONE) 60A MAIN CIRCUIT BREAKER					
FEED FROM: MCC-BNR			LOCATION: ALUM FACILITY		
CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	TANK 1 & 2 LEVEL TRANSMITTERS & LCP	17-AL-L-1 & 2
2	1	100	20	BUILDING LIGHTING	
3	1	100	20	BUILDING RECEPTACLES	
4	1	100	20	OUTDOOR LIGHTING	
5	1	100	20	ALUM TK 1 HEATER	17-TK-EH-1
6	1	100	20	TANK LEVEL LCP1 & LCP2	
7	1	100	25	ALUM HEAT TRACE	17-AL-HT-1
8	1	100	20	OUTDOOR RECEPTACLES	
9	1	100	20	ALUM TK 2 HEATER	17-TK-EH-2
10					
11	1	100	25	ALUM HEAT TRACE	17-AL-HT-2
12					

EXISTING PANEL LP-H					
208/120V, 3 PHASE, 4 WIRES, 30CKTS 60A MAIN CIRCUIT BREAKER					
FEED FROM: EX MCC-H & 10KVA XFMR			LOCATION: EX MCC-H		
CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	EX GFI @ P.F.	
2	1	100	20	EX FIT 120	
3	1	100	20	EX GFI @ H.W.	
4	1	100	20	EX DO	
5	1	100	20	EX HEAT TRACE	
6	2	100	20	EX AREA LIGHTS	
7	1	100	20	EX CV-1000	
8	-	-	-	EX AREA LIGHTS	
9	1	100	20	EX RECEPTACLES SBR4	
10	1	100	20	EX LIGHTING CONTACTOR	
11	1	100	20	SPARE	
12	2	100	20	EX AREA LIGHTS	
13	1	100	20	EX PLC (RIO-H1)	
14	-	-	-	EX AREA LIGHTS	
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

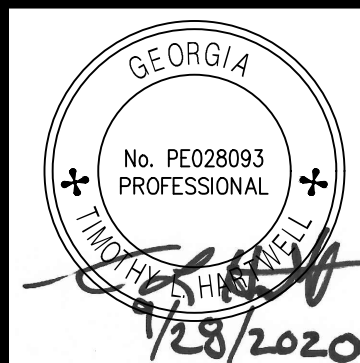
PANEL HP-H					
480/277V, 3 PHASE, 4 WIRES, 42 CKTS 150A MAIN CIRCUIT BREAKER					
FEED FROM: MCC-H			LOCATION: MCC-H AREA		
CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	3	100	15	OX-1 AIR VALVE 1	5-AT4-V-1
2	3	100	15	OX-1 AIR VALVE 2	5-AT4-V-2
3	-	-	-	OX-1 AIR VALVE 1	
4	-	-	-	OX-1 AIR VALVE 2	
5	-	-	-	OX-1 AIR VALVE 1	
6	-	-	-	OX-1 AIR VALVE 2	
7	3	100	15	OX-1 AIR VALVE 3	5-AT4-V-3
8	3	100	15	OX-1 AIR VALVE 4	5-AT4-V-4
9	-	-	-	OX-1 AIR VALVE 3	
10	-	-	-	OX-1 AIR VALVE 4	
11	-	-	-	OX-1 AIR VALVE 3	
12	-	-	-	OX-1 AIR VALVE 4	
13	3	100	15	OX-2 RECYCLE VALVE	5-AT4-V-5
14	3	100	15	AX-1 RECYCLE VALVE	5-AT4-V-6
15	-	-	-	OX-2 RECYCLE VALVE	
16	-	-	-	AX-1 RECYCLE VALVE	
17	-	-	-	OX-2 RECYCLE VALVE	
18	-	-	-	AX-1 RECYCLE VALVE	
19	3	100	15	RECYCLE VALVE	5-AT4-V-7
20	3	100	15	AD TANK 1 VALVE 6	12-AD-V-6
21	-	-	-	RECYCLE VALVE	
22	-	-	-	AD TANK 1 VALVE 6	
23	-	-	-	RECYCLE VALVE	
24	-	-	-	AD TANK 1 VALVE 6	
25	3	100	15	AD TANK 1 VALVE 7	12-AD-V-7
26	3	100	15	AD TANK 2 VALVE 8	12-AD-V-8
27	-	-	-	AD TANK 1 VALVE 7	
28	-	-	-	AD TANK 2 VALVE 8	
29	-	-	-	AD TANK 1 VALVE 7	
30	-	-	-	AD TANK 2 VALVE 8	
31	3	100	15	AD TANK 2 VALVE 9	12-AD-V-9
32	3	100	15	SPARE	
33	-	-	-	AD TANK 2 VALVE 9	
34	-	-	-	SPARE	
35	-	-	-	AD TANK 2 VALVE 9	
36	-	-	-	SPARE	
37-42					

PANEL LP-MSG					
208/120V, 3 PHASE, 4 WIRES, 12 CKTS 100A MAIN CIRCUIT BREAKER					
FEED FROM: SG-MAIN			LOCATION: SG-MAIN		
CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	2	100	40	GRINDER PS	
2	1	100	20	PLC-MSG	
3	-	-	-	GRINDER PS	
4	1	100	20	LIGHTING	
5	1	100	20	RECEPTACLES	
6	1	100	20	AS REQUIRED	
7	1	100	20	AS REQUIRED	
8	1	100	20	AS REQUIRED	
9	1	100	20	AS REQUIRED	
10	1	100	20	AS REQUIRED	
11	1	100	20	AS REQUIRED	
12	1	100	20	AS REQUIRED	

PANEL LP-H1					
208/120V, 3 PHASE, 4 WIRES, 18CKTS (POWER ZONE) 100A MAIN CIRCUIT BREAKER					
FEED FROM: EX MCC-H			LOCATION: EX MCC-H		
CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	HEAT TRACE	
2	1	100	20	HEAT TRACE	
3	1	100	20	AT4 MIXING VALVE 2	14-CA-VM-2
4	1	100	20	AD1 MIXING VALVE 3	14-CA-VM-3
5	1	100	20	AD2 MIXING VALVE 4	14-CA-VM-4
6	1	100	20	AT4 DO 1/2 TRANSMITTER	
7	1	100	20	AT4 DO 3/4 TRANSMITTER	
8	1	100	20	AT4 ORP TRANSMITTER	
9	1	100	30	PLC-H	
10	1	100	20	COMPRESSED AIR MCP	14-CA-MCP
11	1	100	30	RIO-BNR1	
12	1	100	15	AT4 FLOW METER 5	6-AT4-F-5
13	1	100	15	AT4 FLOW METER 6	6-AT4-F-6
14	1	100	15	AD TANK 1 LEVEL	12-AD-L-1
15	1	100	15	AD TANK 2 LEVEL	12-AD-L-2
16					
17					
18					

NOTES:

- REFER TO PANELBOARD NOTES AND KEY NOTES ON DRAWING E-29.



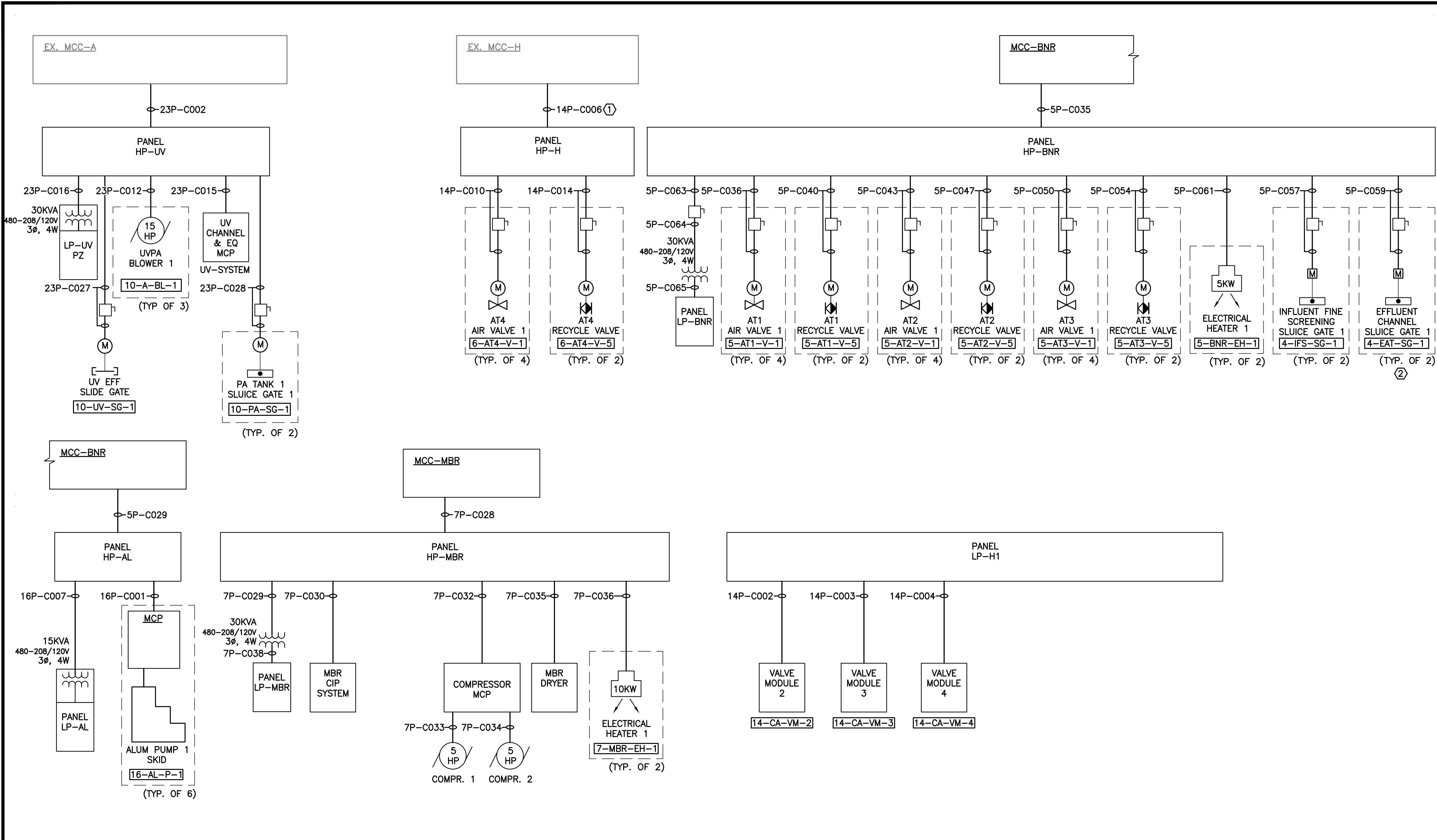
ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, GA 30328
P: 770-933-0260

HARTWELL ENGINEERING, INC.
ENGINEERS & SURVEYORS
STEVENSVILLE, MARYLAND
(410) 486-2111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJZ	NCT/INJZ	TLH	SEPTMBER 2020		AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
PANELBOARD SCHEDULE 3

SHEET NO.
E-30

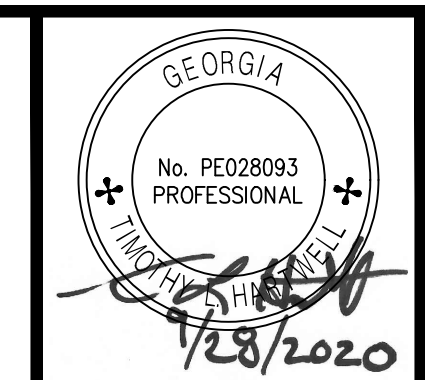


KEY NOTES:

- ① WIRE OR CONNECT TO MCC-H BUS AS REQUIRED.
- ② TYPICAL FOR INFLUENT CHANNEL SLUICE GATE 1 5-IAT-SG-1.

NOTES:

- 1. FOR TYPICAL FEEDERS SHOWN, REFER TO CONDUIT/WIRE SCHEDULE FOR NUMBERING. NOT ALL CIRCUITS SHOWN, REFER TO CONDUIT AND WIRE SCHEDULES.



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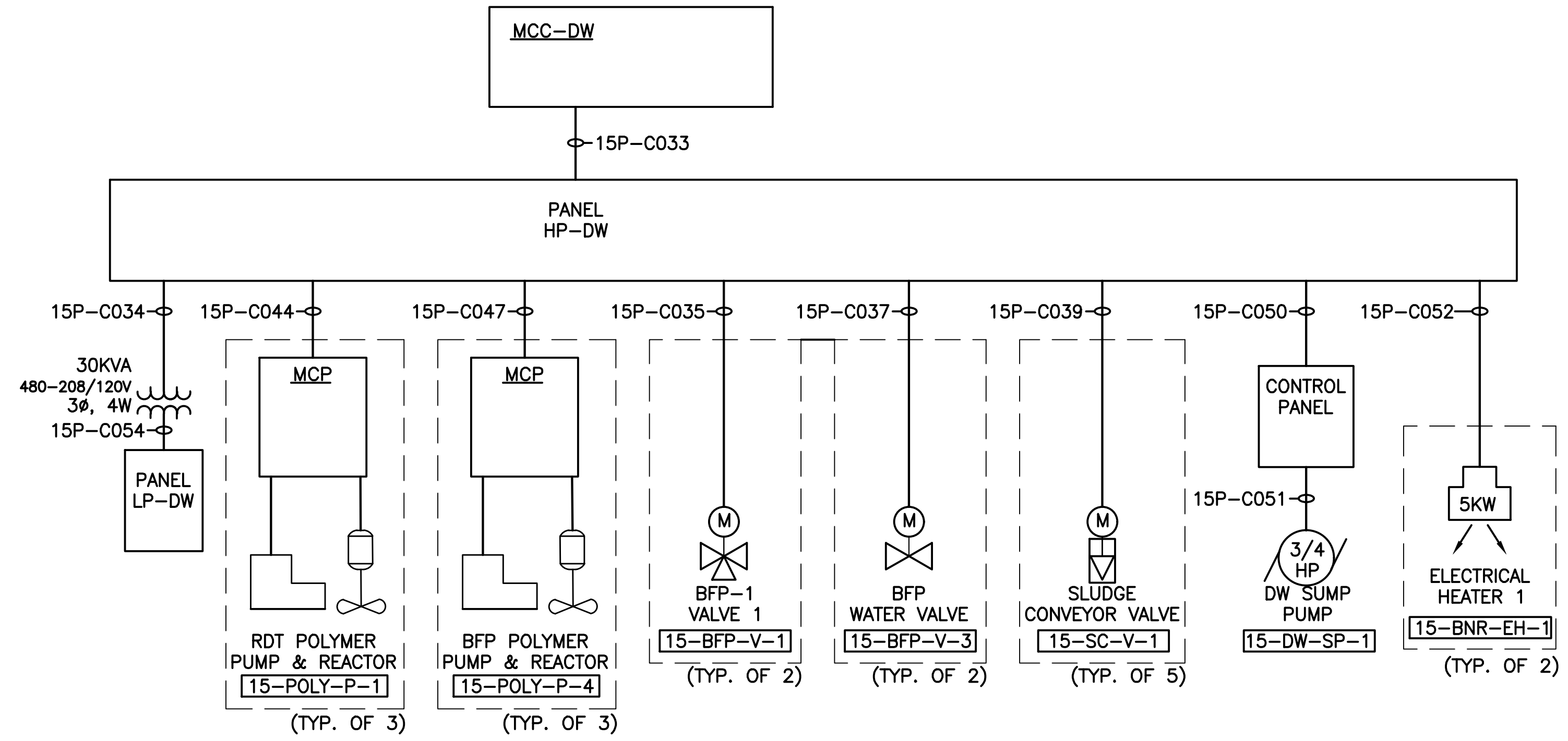
HARTWELL ENGINEERING, INC.
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 STEVENSON, MARYLAND
 (410) 342-1111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJ	NCT/INJ	TLH		SEPTEMBER 2020	AS SHOWN

REVISION	DATE

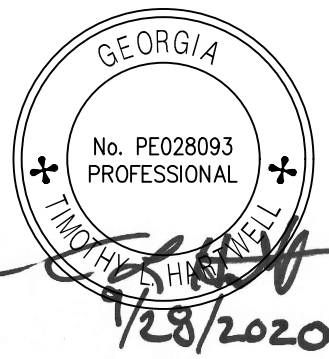
CERTIFICATE OF AUTHORIZATION #PEP07823 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
POWER RISER DIAGRAMS 1



NOTES:

- FOR TYPICAL FEEDERS SHOWN, REFER TO CONDUIT/WIRE SCHEDULE FOR NUMBERING. NOT ALL CIRCUITS SHOWN, REFER TO CONDUIT AND WIRE SCHEDULES.



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100061831	RDW/INJZ	NCT/INJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN

REVISION	DATE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
POWER RISER DIAGRAMS 2

SHEET NO.
E-32

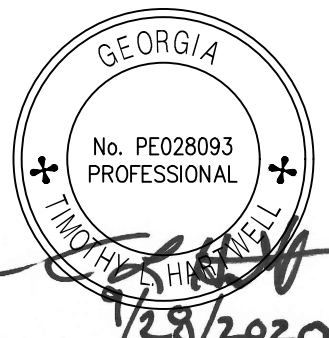
FEEDER SCHEDULE - POWER				
FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
SG-OC (GRIT REMOVAL SYSTEM)				
1P-C001	1-GR MCP	EX 1-GR-1 TB	1"	(6) #12 + (2) #12 EGC
1P-C002	EX 1-GR-1 TB	1-GR1-M-1	3/4"	(3) #12 + (1) #12 EGC
1P-C003	EX 1-GR-1 TB	1-GR1-M-2	3/4"	(3) #12 + (1) #12 EGC
1P-C004	1-GR MCP	1-GR2-M-1	3/4"	(3) #12 + (1) #12 EGC
1P-C005	1-GR MCP	1-GR2-M-2	3/4"	(3) #12 + (1) #12 EGC
1P-C006	1-GR MCP	EX 1-GR-1 TB	3/4"	(4) #10 + (2) #10 EGC
1P-C007	EX 1-GR-1 TB	EX 1-GR-C-1 LCP	3/4"	(2) #10 + (1) #10 EGC
1P-C008	EX 1-GR-1 TB	EX 1-GR1-VP-1 PNL	3/4"	(2) #10 + (1) #10 EGC
1P-C009	1-GR MCP	1-GR2-VP-1 PNL	3/4"	(2) #10 + (1) #10 EGC
MCC-BNR (BNR FACILITY)				
5P-C001	MCC-BNR	4-FS-1 MCP	1-1/4"	(4) #4 + (1) #3 EGC
5P-C002	4-FS-1 MCP	4-FS1-P-1	3/4"	(3) #12 + (1) #12 EGC
5P-C003	4-FS-1 MCP	4-FS1-P-2	1"	(3) #8 + (1) #10 EGC
5P-C004	MCC-BNR	4-FS-2 MCP	1-1/4"	(4) #4 + (1) #3 EGC
5P-C005	4-FS-2 MCP	4-FS2-P-1	3/4"	(3) #12 + (1) #12 EGC
5P-C006	4-FS-2 MCP	4-FS2-P-2	1"	(3) #8 + (1) #10 EGC
5P-C007	MCC-BNR	4-FS-C-MCP	3/4"	(4) #12 + (1) #12 EGC (TYP. OF 2)
5P-C008	4-FS-C-MCP	4-FS-C-1	3/4"	(3) #12 + (1) #12 EGC (TYP. OF 2)
5P-C009	MCC-BNR	5-AT1-P-1	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C010	MCC-BNR	5-AT1-P-2	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C011	MCC-BNR	5-AT2-P-1	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C012	MCC-BNR	5-AT2-P-2	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C013	MCC-BNR	5-AT3-P-1	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C014	MCC-BNR	5-AT3-P-2	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C015	MCC-BNR	5-A-BL-1	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C016	MCC-BNR	5-A-BL-2	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C017	MCC-BNR	5-A-BL-3	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C018	MCC-BNR	5-A-BL-4	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C019	MCC-BNR	14-CA-M-1	1-1/4"	(3) #10 + (1) #3 EGC
5P-C020	MCC-BNR	14-CA-M-2	1-1/4"	(3) #10 + (1) #3 EGC
5P-C021	MCC-BNR	5-A-BL-5	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C022	NOT USED	-	-	-
5P-C023	NOT USED	-	-	-
5P-C024	NOT USED	-	-	-
5P-C025	NOT USED	-	-	-
5P-C026	NOT USED	-	-	-
5P-C027	NOT USED	-	-	-
5P-C028	NOT USED	-	-	-
5P-C029	MCC-BNR	PANEL HP-AL	1-1/4"	(4) #3 + (1) #8 EGC
5P-C030	MCC-BNR	11-WAS-P-1	1"	(3) #8 + (1) #10 EGC
5P-C031	MCC-BNR	11-WAS-P-2	1"	(3) #8 + (1) #10 EGC
5P-C032	MCC-BNR	11-WAS-P-3	1"	(3) #8 + (1) #10 EGC
5P-C033	MCC-BNR	5-EF-M-1	3/4"	(3) #12 + (1) #12 EGC
5P-C034	MCC-BNR	5-SF-M-1	3/4"	(3) #12 + (1) #12 EGC
5P-C035	MCC-BNR	HP-BNR	1-1/4"	(4) 1/0 + (1) #6 EGC
5P-C036	HP-BNR	5-AT1-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C037	HP-BNR	5-AT1-V-2	3/4"	(3) #12 + (1) #12 EGC
5P-C038	HP-BNR	5-AT1-V-3	3/4"	(3) #12 + (1) #12 EGC
5P-C039	HP-BNR	5-AT1-V-4	3/4"	(3) #12 + (1) #12 EGC
5P-C040	HP-BNR	5-AT1-V-5	3/4"	(3) #12 + (1) #12 EGC
5P-C041	HP-BNR	5-AT1-V-6	3/4"	(3) #12 + (1) #12 EGC
5P-C042	NOT USED	-	-	-
5P-C043	HP-BNR	5-AT2-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C044	HP-BNR	5-AT2-V-2	3/4"	(3) #12 + (1) #12 EGC
5P-C045	HP-BNR	5-AT2-V-3	3/4"	(3) #12 + (1) #12 EGC
5P-C046	HP-BNR	5-AT2-V-4	3/4"	(3) #12 + (1) #12 EGC
5P-C047	HP-BNR	5-AT2-V-5	3/4"	(3) #12 + (1) #12 EGC
5P-C048	HP-BNR	5-AT2-V-6	3/4"	(3) #12 + (1) #12 EGC

①

②

MCC-BNR (BNR FACILITY) CONTINUED				
5P-C049	NOT USED	-	-	-
5P-C050	HP-BNR	5-AT3-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C051	HP-BNR	5-AT3-V-2	3/4"	(3) #12 + (1) #12 EGC
5P-C052	HP-BNR	5-AT3-V-3	3/4"	(3) #12 + (1) #12 EGC
5P-C053	HP-BNR	5-AT3-V-4	3/4"	(3) #12 + (1) #12 EGC
5P-C054	HP-BNR	5-AT3-V-5	3/4"	(3) #12 + (1) #12 EGC
5P-C055	HP-BNR	5-AT3-V-6	3/4"	(3) #12 + (1) #12 EGC
5P-C056	NOT USED	-	-	-
5P-C057	HP-BNR	4-IFS-SG-1	3/4"	(3) #12 + (1) #12 EGC
5P-C058	HP-BNR	4-IFS-SG-2	3/4"	(3) #12 + (1) #12 EGC
5P-C059	HP-BNR	5-EAT-SG-1	3/4"	(3) #12 + (1) #12 EGC
5P-C060	HP-BNR	5-IAT-SG-1	3/4"	(3) #12 + (1) #12 EGC
5P-C061	HP-BNR	5-BNR-EH-1	3/4"	(3) #12 + (1) #12 EGC
5P-C062	HP-BNR	5-BNR-EH-2	3/4"	(3) #12 + (1) #12 EGC
5P-C063	HP-BNR	XFMR DS	1"	(3) #8 + (1) #10 EGC
5P-C064	XFMR DS	LP-BNR via 30 KVA XFMR	1"	(3) #8 + (1) #10 EGC
5P-C065	LP-BNR - 30 KVA XFMR	LP-BNR	1-1/4"	(4) #3 + (1) #8 EBJ
5P-C066	LP-BNR	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
5P-C067	LP-BNR	RECEPTACLES	3/4"	(2) #12 + (1) #12 EGC
5P-C068	LP-BNR	PLC-BNR	3/4"	(2) #12 + (1) #12 EGC
5P-C069	LP-BNR	RIO-BNR2	3/4"	(2) #10 + (1) #12 EGC
5P-C070	LP-BNR	5-AT1-DO/ORP-1	3/4"	(2) #12 + (1) #12 EGC
5P-C071	LP-BNR	5-AT1-ORP-2	3/4"	(2) #12 + (1) #12 EGC
5P-C072	LP-BNR	5-AT1-DO-2&3	3/4"	(2) #12 + (1) #12 EGC
5P-C073	LP-BNR	PLC-BNR	-	-
5P-C074	LP-BNR	7-MBR-MCP	-	-
5P-C075	LP-BNR	RIO-BNR2	-	-
5P-C076	NOT USED	-	-	-
5P-C077	LP-BNR	5-AT1-F-5	3/4"	(2) #12 + (1) #12 EGC
5P-C078	LP-BNR	5-AT1-F-6	3/4"	(2) #12 + (1) #12 EGC
5P-C079	NOT USED	-	-	-
5P-C080	LP-BNR	5-AT2-DO/ORP-1	3/4"	(2) #12 + (1) #12 EGC
5P-C081	LP-BNR	5-AT2-ORP-2	3/4"	(2) #12 + (1) #12 EGC
5P-C082	LP-BNR	5-AT2-DO-2&3	3/4"	(2) #12 + (1) #12 EGC
5P-C083	NOT USED	-	-	-
5P-C084	NOT USED	-	-	-
5P-C085	NOT USED	-	-	-
5P-C086	NOT USED	-	-	-
5P-C087	LP-BNR	5-AT2-F-5	3/4"	(2) #12 + (1) #12 EGC
5P-C088	LP-BNR	5-AT2-F-6	3/4"	(2) #12 + (1) #12 EGC
5P-C089	NOT USED	-	-	-
5P-C090	LP-BNR	5-AT3-DO/ORP-1	3/4"	(2) #12 + (1) #12 EGC
5P-C091	LP-BNR	5-AT3-ORP-2	3/4"	(2) #12 + (1) #12 EGC
5P-C092	LP-BNR	5-AT3-DO-2&3	3/4"	(2) #12 + (1) #12 EGC
5P-C093	NOT USED	-	-	-
5P-C094	NOT USED	-	-	-
5P-C095	NOT USED	-	-	-
5P-C096	NOT USED	-	-	-
5P-C097	LP-BNR	5-AT3-F-5	3/4"	(2) #12 + (1) #12 EGC
5P-C098	LP-BNR	5-AT3-F-6	3/4"	(2) #12 + (1) #12 EGC
5P-C099	NOT USED	-	-	-
5P-C100	LP-BNR	14-CA-VM-1	3/4"	(2) #10 + (1) #10 EGC
MCC-MBR (MEMBRANE BUILDING)				
7P-C001	MCC-MBR	7-TK-BL-1	1"	(3) #4 + (1) #8 EGC
7P-C002	MCC-MBR	7-TK-BL-2	1"	(3) #4 + (1) #8 EGC
7P-C003	MCC-MBR	7-TK-BL-3	1"	(3) #4 + (1) #8 EGC
7P-C004	MCC-MBR	7-TK-BL-4	1"	(3) #4 + (1) #8 EGC
7P-C005	MCC-MBR	7-TK-BL-5	1"	(3) #4 + (1) #8 EGC

- KEY NOTES:
- ① INCLUDE CONDUIT WIRES IP-C002 & IP-C003.
 - ② INCLUDE CONDUIT WIRES IP-C007 & IP-C008.



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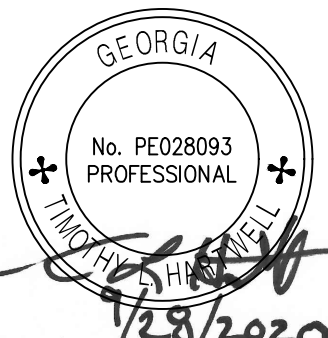
PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJZ	NCT/INJZ	TLH	SEPT 2020		AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**CONDUIT AND WIRE SCHEDULE
POWER 1**

SHEET NO.
E-33

FEEDER SCHEDULE - POWER				
FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
MCC-MBR (MEMBRANE BUILDING) CONTINUED				
7P-C006	MCC-MBR	7-RAS-P-1	3/4"	(3) #8 + (1) #10 EGC
7P-C007	MCC-MBR	7-RAS-P-2	3/4"	(3) #8 + (1) #10 EGC
7P-C008	MCC-MBR	7-RAS-P-3	3/4"	(3) #8 + (1) #10 EGC
7P-C009	MCC-MBR	7-RAS-P-4	3/4"	(3) #8 + (1) #10 EGC
7P-C010	MCC-MBR	7-PR-P-1	1"	(3) #6 + (1) #8 EGC
7P-C011	MCC-MBR	7-PR-P-2	1"	(3) #6 + (1) #8 EGC
7P-C012	MCC-MBR	7-PR-P-3	1"	(3) #6 + (1) #8 EGC
7P-C013	MCC-MBR	7-PR-P-4	1"	(3) #6 + (1) #8 EGC
7P-C014	MCC-MBR	7-CA-P-1	3/4"	(3) #12 + (1) #12 EGC
7P-C015	MCC-MBR	7-CA-P-2	3/4"	(3) #12 + (1) #12 EGC
7P-C016	MCC-MBR	7-SHC-P-1	3/4"	(3) #12 + (1) #12 EGC
7P-C017	MCC-MBR	7-SHC-P-2	3/4"	(3) #12 + (1) #12 EGC
7P-C018	MCC-MBR	7-EF-M-1	3/4"	(3) #12 + (1) #12 EGC
7P-C019	MCC-MBR	7-SF-M-1	3/4"	(3) #12 + (1) #12 EGC
7P-C020	MCC-BNR	7-AC-M-1	3/4"	(3) #12 + (1) #12 EGC
7P-C021	MCC-BNR	7-AC-M-2	3/4"	(3) #12 + (1) #12 EGC
7P-C022	MCC-BNR	7-TK-V-1	3/4"	(3) #12 + (1) #12 EGC
7P-C023	MCC-BNR	7-TK-V-2	3/4"	(3) #12 + (1) #12 EGC
7P-C024	MCC-BNR	7-TK-V-3	3/4"	(3) #12 + (1) #12 EGC
7P-C025	MCC-BNR	7-TK-V-4	3/4"	(3) #12 + (1) #12 EGC
7P-C026	MCC-BNR	7-TK-V-5	3/4"	(3) #12 + (1) #12 EGC
7P-C027	MCC-BNR	7-TK-V-6	3/4"	(3) #12 + (1) #12 EGC
7P-C028	MCC-MBR	HP-MBR	1-1/2"	(4) 1/0 + (1) #6 EGC
7P-C029	HP-MBR	30 KVA TRANSFORMER	3/4"	(3) #8 + (1) #10 EGC
7P-C030	HP-MBR	CIP SYSTEM	3/4"	(3) #12 + (1) #12 EGC
7P-C031	LP-MBR	MBR MAIN CONTROL PANEL	3/4"	(2) #12 + (1) #12 EGC
7P-C032	HP-MBR	COMPRESSOR MCP	1"	(3) #4 + (1) #8 EGC
7P-C033	COMPRESSOR MCP	COMPRESSOR 1	3/4"	(3) #12 + (1) #12 EGC
7P-C034	COMPRESSOR MCP	COMPRESSOR 2	3/4"	(3) #12 + (1) #12 EGC
7P-C035	HP-MBR	DRYER	3/4"	(3) #12 + (1) #12 EGC
7P-C036	HP-MBR	7-MBR-EH-1	3/4"	(3) #12 + (1) #12 EGC
7P-C037	HP-MBR	7-MBR-EH-2	3/4"	(3) #12 + (1) #12 EGC
7P-C038	30 KVA TRANSFORMER	LP-MBR	1-1/4"	(4) #3 + (1) #8 EBJ
7P-C039	LP-MBR	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
7P-C040	LP-MBR	RECEPTACLES	3/4"	(2) #12 + (1) #12 EGC
7P-C041	LP-MBR	CONTROLS	3/4"	(2) #12 + (1) #12 EGC
WAS HOLDING AND REUSE PUMPS				
11P-C001	Ex REUSE PUMP CTR PNL	EX 11-RP-P-1	2 1/2"	(3) 4/0 + (1) #2 EGC
11P-C002	Ex REUSE PUMP CTR PNL	EX 11-RP-P-2	2 1/2"	(3) 4/0 + (1) #2 EGC
11P-C003	Ex REUSE PUMP CTR PNL	EX 11-RP-HP-1	3/4"	(3) #12 + (1) #12 EGC
11P-C004	Ex REUSE PUMP CTR PNL	EX 11-RP-RV-1	3/4"	(3) #12 + (1) #12 EGC
11P-C005	Ex LP-RP	EX 11-RP-F-1	3/4"	(2) #12 + (1) #12 EGC
11P-C006	Ex LP-RP	EX 11-RP-RV-1 (HEATER)	3/4"	(2) #10 + (1) #10 EGC
11P-C007	Ex LP-RP	EX RECEPTACLES	3/4"	(2) #12 + (1) #10 EGC
11P-C008	Ex LP-RP	EX LIGHTS	3/4"	(2) #12 + (1) #10 EGC
EX. MCC-H				
14P-C001	LP-H1	14-CA-VM-2	3/4"	(2) #10 + (1) #10 EGC
14P-C002	LP-H1	14-CA-VM-3	3/4"	(2) #10 + (1) #10 EGC
14P-C003	LP-H1	14-CA-VM-4	3/4"	(2) #10 + (1) #10 EGC
14P-C004	MCC-H	6-AT4-P-1	3/4"	(3) #8 + (1) #10 EGC
14P-C005	MCC-H	6-AT4-P-2	3/4"	(3) #8 + (1) #10 EGC
14P-C006	MCC-H	PANEL HP-H	1-1/2"	(4) 1/0 + (1) #6 EGC
14P-C007	MCC-H	11-WAS-BL-1	2"	(3) 250 KCMIL + (1) #4 EGC
14P-C008	MCC-H	11-WAS-BL-2	2"	(3) 250 KCMIL + (1) #4 EGC
14P-C009	MCC-H	11-WAS-BL-3	2"	(3) 250 KCMIL + (1) #4 EGC
14P-C010	PANEL HP-H	6-AT4-V-1	3/4"	(3) #12 + (1) #12 EGC
14P-C011	PANEL HP-H	6-AT4-V-2	3/4"	(3) #12 + (1) #12 EGC
14P-C012	PANEL HP-H	6-AT4-V-3	3/4"	(3) #12 + (1) #12 EGC
14P-C013	PANEL HP-H	6-AT4-V-4	3/4"	(3) #12 + (1) #12 EGC

EX. MCC-H CONTINUED				
14P-C014	PANEL HP-H	6-AT4-V-5	3/4"	(3) #12 + (1) #12 EGC
14P-C015	PANEL HP-H	6-AT4-V-6	3/4"	(3) #12 + (1) #12 EGC
14P-C016	LP-H1	PLC-H	3/4"	(4) #10 + (1) #10 EGC
14P-C017	PANEL HP-H	12-AD-V-6	3/4"	(3) #12 + (1) #12 EGC
14P-C018	PANEL HP-H	12-AD-V-7	3/4"	(3) #12 + (1) #12 EGC
14P-C019	PANEL HP-H	12-AD-V-8	3/4"	(3) #12 + (1) #12 EGC
14P-C020	PANEL HP-H	12-AD-V-9	3/4"	(3) #12 + (1) #12 EGC
14P-C021	EX. LP-H	6-AT4-DO-1/2	3/4"	(2) #12 + (1) #12 EGC
14P-C022	EX. LP-H	6-AT4-DO-3/4	3/4"	(2) #12 + (1) #12 EGC
14P-C021	PANEL HP-H	LP-H1	1-1/2"	(4) #3 + (1) #8 EBJ
14P-C022	LP-H1	RIO-BNR1	3/4"	(4) #10 + (1) #10 EGC
14P-C023	LP-H1	14-CA MCP	3/4"	(2) #10 + (1) #10 EGC
14P-C024	LP-H1	6-AT4-ORP-1	3/4"	(2) #12 + (1) #12 EGC
14P-C025	LP-H1	6-AT4-DO-1&2	3/4"	(2) #12 + (1) #12 EGC
14P-C026	LP-H1	6-AT4-DO-3&4	3/4"	(2) #12 + (1) #12 EGC
14P-C027	LP-H1	6-AT4-F-5	3/4"	(2) #12 + (1) #12 EGC
14P-C028	LP-H1	6-AT4-F-6	3/4"	(2) #12 + (1) #12 EGC
14P-C030	LP-H1	11-WT-L-1	3/4"	(2) #12 + (1) #12 EGC
14P-C031	EX LP-H	12-AD-L-1	3/4"	(2) #12 + (1) #12 EGC
14P-C032	EX LP-H	12-AD-L-2	3/4"	(2) #12 + (1) #12 EGC
14P-C033	LP-H1	12-AD-DO-1A & B	3/4"	(2) #12 + (1) #12 EGC
14P-C034	LP-H1	12-AD-DO-2A & B	3/4"	(2) #12 + (1) #12 EGC
14P-C035	LP-H1	11-WAS-SP-1	3/4"	(2) #12 + (1) #12 EGC
SG-OC (AT ODOR CONTROL AREA)				
14P-C051	SG-OC	NEW GRIT CONTROL PANEL	1"	(4) #6 + (1) #10 EGC
14P-C052	SG-OC	REUSE PS CONTROL PANEL	4"	(3) 600kcmil + (1) #3 EGC
14P-C053	NOT USED	-	-	-
14P-C054	NOT USED	-	-	-
14P-C055	NOT USED	-	-	-
14P-C056	SG-OC	EX MCC-A	5 SETS of 4"	(4) 600kcmil + (1) 250 kcmil
14P-C057	SG-OC	18-OC-1 MCP	1-1/4"	(3) #3 + (1) #8 EGC
14P-C058	SG-OC	MCC-DW	4 SETS of 4"	(4) 600kcmil + (1) 250 kcmil
14P-C059	SG-OC	Panel LP-OC 30kva XFMR (PWR ZONE)	1"	(3) #3 + (1) #8 EGC
14P-C060	Panel LP-OC POWER ZONE	PLC-OC (1-OC-MCP)	3/4"	(2) #12 + (1) #12 EGC
14P-C061	Panel LP-OC POWER ZONE	PLC-IH	3/4"	(4) #10 + (1) #10 EGC
14P-C062	Panel LP-OC POWER ZONE	SG-OC CONTROLS	3/4"	(2) #12 + (1) #12 EGC
14P-C063	Panel LP-OC POWER ZONE	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
14P-C064	Panel LP-OC POWER ZONE	RECEPTACLE	3/4"	(2) #12 + (1) #12 EGC
14P-C065	Panel LP-OC POWER ZONE	HEAT TRACE	3/4"	(2) #12 + (1) #12 EGC
14P-C066	Panel LP-OC POWER ZONE	HEAT TRACE	3/4"	(2) #12 + (1) #12 EGC
SG-MAIN (AT PLANT ENTRANCE)				
14P-C101	GA POWER TRANSFORMER 1	MAIN SWITCH GEAR (SG-MAIN)	11 SETS of 4"	(4) 600 kcmil + 500 kcmil EGC
14P-C102	GA POWER TRANSFORMER 2	MAIN SWITCH GEAR (SG-MAIN)	11 SETS of 4"	(4) 600 kcmil + 500 kcmil EGC
14P-C103	MAIN SWITCH GEAR (SG-MAIN)	SG-OC	11 SETS of 4"	(4) 600 kcmil + (1) 500 kcmil EGC
14P-C104	MAIN SWITCH GEAR (SG-MAIN)	MCC-MBR	3 SETS of 4"	(4) 600 kcmil + (1) 250 kcmil EGC
14P-C105	MAIN SWITCH GEAR (SG-MAIN)	MCC-BNR	5 SETS of 4"	(4) 600 kcmil + (1) 250 kcmil EGC
14P-C106	MAIN SWITCH GEAR	CONTROL BUILDING	4"	(4) 500 kcmil + (1) #3 EGC
14P-C107	LP-MSG	PLC-MSG	3/4"	(2) #12 + (1) #12 EGC
14P-C108	LP-MSG	PLC-MMSG	3/4"	(2) #12 + (1) #12 EGC
MCC-DW (DEWATERING BUILDING)				
15P-C001	MCC-DW	12-AD-BL-1	2"	(3) 250 KCMIL + (1) #4 EGC
15P-C002	MCC-DW	12-AD-BL-2	2"	(3) 250 KCMIL + (1) #4 EGC
15P-C003	MCC-DW	15-RDT-1-MCP	3/4"	(3) #10 + (1) #10 EGC
15P-C004	15-RDT-1-MCP	15-RDT1-MX-1	3/4"	(3) #12 + (1) #12 EGC
15P-C005	15-RDT-1-MCP	15-RDT1-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C006	15-RDT-1-MCP	15-RDT1-D-1	3/4"	(3) #12 + (1) #12 EGC
15P-C007	MCC-DW	15-RDT-2-MCP	3/4"	(3) #10 + (1) #10 EGC
15P-C008	15-RDT-2-MCP	15-RDT2-MX-1	3/4"	(3) #12 + (1) #12 EGC
15P-C009	15-RDT-2-MCP	15-RDT2-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C010	15-RDT-2-MCP	15-RDT2-D-1	3/4"	(3) #12 + (1) #12 EGC
15P-C011	MCC-DW	12-AD-BL-3	2"	(3) 250 KCMIL + (1) #4 EGC
15P-C012	MCC-DW	12-AD-MX-2	1"	(3) #6 + (1) #8 EGC



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PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDWINJZ	NCTINJZ	TLH		SEPTEMBER 2020	AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

**CONDUIT AND WIRE SCHEDULE
POWER 2**

SHEET NO.
E-34

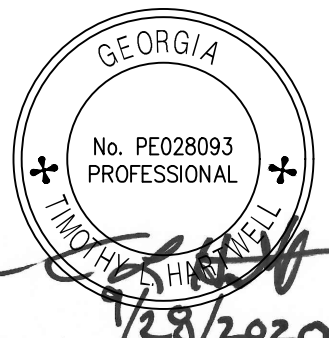
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FEEDER SCHEDULE - POWER

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
MCC-DW (DEWATERING BUILDING) CONTINUED				
15P-C013	MCC-DW	15-BFP-1 - MCP	3/4"	(3) #12 + (1) #12 EGC
15P-C014	15-BFP-1-MCP	15-BFP1-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C015	15-BFP-1-MCP	15-BFP1-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C016	MCC-DW	15-BFP-2 - MCP	3/4"	(3) #12 + (1) #12 EGC
15P-C017	15-BFP-2-MCP	15-BFP2-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C018	15-BFP-2-MCP	15-BFP2-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C019	MCC-DW	15-DP-P-1	1"	(3) #4 + (1) #8 EGC
15P-C020	MCC-DW	15-DP-P-2	1"	(3) #4 + (1) #8 EGC
15P-C021	MCC-DW	15-S-C-1	3/4"	(3) #12 + (1) #12 EGC
15P-C022	MCC-DW	15-S-C-2	3/4"	(3) #12 + (1) #12 EGC
15P-C023	MCC-DW	15-TW-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C024	MCC-DW	15-TW-P-2	3/4"	(3) #12 + (1) #12 EGC
15P-C025	MCC-DW	15-BFP-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C026	MCC-DW	15-BFP-P-2	3/4"	(3) #12 + (1) #12 EGC
15P-C027	MCC-DW	15-BFP-P-3	3/4"	(3) #12 + (1) #12 EGC
15P-C028	MCC-DW	15-EF-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C029	MCC-DW	15-SF-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C030	MCC-DW	15-BFP-BP-1	3/4"	(3) #12 + (1) #12 EGC
15P-C031	MCC-DW	15-BFP-BP-2	3/4"	(3) #12 + (1) #12 EGC
15P-C032	MCC-DW	15-BFP-BP-3	3/4"	(3) #12 + (1) #12 EGC
15P-C033	MCC-DW	HP-DW	1-1/2"	(4) 1/0 + (1) #6 EGC
15P-C034	HP-DW	30 KVA XFMR	3/4"	(3) #8 + (1) #10 EGC
15P-C035	HP-DW	15-BFP-V-1	3/4"	(3) #12 + (1) #12 EGC
15P-C036	HP-DW	15-BFP-V-2	3/4"	(3) #12 + (1) #12 EGC
15P-C037	HP-DW	15-BFP-V-3	3/4"	(3) #12 + (1) #12 EGC
15P-C038	HP-DW	15-BFP-V-4	3/4"	(3) #12 + (1) #12 EGC
15P-C039	HP-DW	15-SC-V-1	3/4"	(3) #12 + (1) #12 EGC
15P-C040	HP-DW	15-SC-V-2	3/4"	(3) #12 + (1) #12 EGC
15P-C041	HP-DW	15-SC-V-3	3/4"	(3) #12 + (1) #12 EGC
15P-C042	NOT USED	-	-	-
15P-C043	NOT USED	-	-	-
15P-C044	HP-DW	15-POLY-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C045	HP-DW	15-POLY-P-2	3/4"	(3) #12 + (1) #12 EGC
15P-C046	HP-DW	15-POLY-P-3	3/4"	(3) #12 + (1) #12 EGC
15P-C047	HP-DW	15-POLY-P-4	3/4"	(3) #12 + (1) #12 EGC
15P-C049	HP-DW	15-POLY-P-6	3/4"	(3) #12 + (1) #12 EGC
15P-C050	HP-DW	15-DW-SP-1 CP	3/4"	(3) #12 + (1) #12 EGC
15P-C051	15-DW-SP-1 CP	15-DW-SP-1	3/4"	(3) #12 + (1) #12 EGC
15P-C052	HP-DW	15-DW-EH-1	3/4"	(3) #12 + (1) #12 EGC
15P-C053	HP-DW	15-DW-EH-2	3/4"	(3) #12 + (1) #12 EGC
15P-C054	30 KVA XFMR	LP-DW	1-1/2"	(4) #3 + (1) #8 EBJ
15P-C055	LP-DW	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
15P-C056	LP-DW	RECEPTACLES	3/4"	(2) #12 + (1) #12 EGC
15P-C057	LP-DW	PLC DW	3/4"	(2) #12 + (1) #12 EGC
15P-C058	LP-DW	15-RDT1-F-1	3/4"	(2) #12 + (1) #12 EGC
15P-C059	LP-DW	15-RDT2-F-1	3/4"	(2) #12 + (1) #12 EGC
15P-C060	LP-DW	15-POLY-L-1	3/4"	(2) #12 + (1) #12 EGC
15P-C061	LP-DW	15-POLY-L-2	3/4"	(2) #12 + (1) #12 EGC
15P-C062	LP-DW	15-BFP-F-1	3/4"	(2) #12 + (1) #12 EGC
15P-C063	LP-DW	15-BFP-F-2	3/4"	(2) #12 + (1) #12 EGC
15P-C064	LP-DW	15-DP-F-1	3/4"	(2) #12 + (1) #12 EGC
15P-C065	LP-DW	15-DW-GM MCP	3/4"	(2) #12 + (1) #12 EGC
15P-C066	MCC-DW	15-TK-RP-1	3/4"	(3) #12 + (1) #12 EGC
15P-C067	MCC-DW	15-TK-RP-2	3/4"	(3) #12 + (1) #12 EGC
15P-C068	MCC-DW	15-D-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C069	MCC-DW	15-D-P-2	3/4"	(3) #12 + (1) #12 EGC
15P-C070	MCC-DW	15-D-P-3	3/4"	(3) #12 + (1) #12 EGC
15P-C071	MCC-DW	15-D-P-4	3/4"	(3) #12 + (1) #12 EGC

MCC-DW (DEWATERING BUILDING) CONTINUED

15P-C072	MCC-DW	15-D-P-5	3/4"	(3) #12 + (1) #12 EGC
15P-C073	MCC-DW	15-D-P-6	3/4"	(3) #12 + (1) #12 EGC
15P-C074	MCC-DW	15-D-P-7	3/4"	(3) #12 + (1) #12 EGC
15P-C075	MCC-DW	15-D-P-8	3/4"	(3) #12 + (1) #12 EGC
15P-C076	MCC-DW	15-RDS-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C077	MCC-DW	15-DTB-D-1	3/4"	(3) #12 + (1) #12 EGC
15P-C078	MCC-DW	15-DBB-D-1	3/4"	(3) #12 + (1) #12 EGC
15P-C079	MCC-DW	15-DWZ-F-1	3/4"	(3) #10 + (1) #10 EGC
15P-C080	MCC-DW	15-DWZ-F-2	3/4"	(3) #10 + (1) #10 EGC
15P-C081	MCC-DW	15-DEZ-F-1	3/4"	(3) #10 + (1) #10 EGC
15P-C082	MCC-DW	15-DEZ-F-2	3/4"	(3) #10 + (1) #10 EGC
15P-C083	MCC-DW	15-DA-F-1	3/4"	(3) #8 + (1) #10 EGC
15P-C084	MCC-DW	15-V-F-1	3/4"	(3) #12 + (1) #12 EGC
15P-C085	MCC-DW	15-DES-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C086	MCC-DW	15-DES-V-1	3/4"	(3) #12 + (1) #12 EGC
15P-C087	MCC-DW	15-SHOC-MCP	3/4"	(3) #10 + (1) #10 EGC
15P-C088	MCC-DW	15-DS-P-1	3/4"	(3) #8 + (1) #10 EGC
15P-C089	MCC-DW	15-DS-P-2	3/4"	(3) #8 + (1) #10 EGC
15P-C090	MCC-DW	15-DF-P-1	3/4"	(3) #8 + (1) #10 EGC
15P-C091	MCC-DW	15-DF-P-2	3/4"	(3) #8 + (1) #10 EGC
15P-C092	MCC-DW	15-BBS-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C093	MCC-DW	15-BBS-M-2	3/4"	(3) #12 + (1) #12 EGC
15P-C094	MCC-DW	15-BLS-M-1	3/4"	(3) #12 + (1) #12 EGC
15P-C095	MCC-DW	15-BLS-M-2	3/4"	(3) #12 + (1) #12 EGC
15P-C096	MCC-DW	15-TO-P-1	3/4"	(3) #6 + (1) #8 EGC
15P-C097	MCC-DW	15-TO-P-2	3/4"	(3) #10 + (1) #10 EGC
15P-C098	MCC-DW	15-TO-F-1	3/4"	(3) #12 + (1) #12 EGC
15P-C099	LP-DW	15-HOPPER MCP	3/4"	(2) #12 + (1) #12 EGC
15P-C100	15-SHOC-MCP	15-SHOC-MCP	1"	(3) #10 + (1) #10 EGC
15P-C101	15-SHOC-MCP	15-OC-RP-1	1"	(3) #12 + (1) #12 EGC
15P-C102	15-SHOC-MCP	15-OC-NP-1	1"	(2) #10 + (1) #10 EGC
15P-C103	15-SHOC-MCP	15-OC-F-1	3/4"	(2) #12 + (1) #12 EGC
15P-C104	15-SHOC-MCP	15-OC-F-2	3/4"	(2) #12 + (1) #12 EGC
15P-C105	15-SHOC-MCP	15-OC-HT-1	3/4"	(2) #12 + (1) #12 EGC



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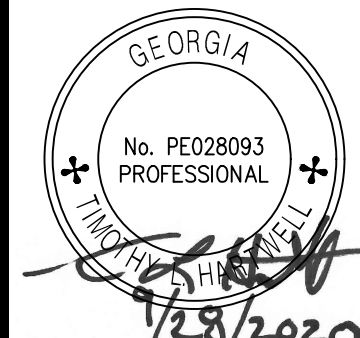
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

**CONDUIT AND WIRE SCHEDULE
POWER 3**

SHEET NO.
E-35

FEEDER SCHEDULE - POWER

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
ALUM FACILITY				
17P-C001	PANEL HP-AL	17-AL-P-1	3/4"	(3) #12 + (1) #12 EGC
17P-C002	PANEL HP-AL	17-AL-P-2	3/4"	(3) #12 + (1) #12 EGC
17P-C003	PANEL HP-AL	17-AL-P-3	3/4"	(3) #12 + (1) #12 EGC
17P-C004	PANEL HP-AL	17-AL-P-4	3/4"	(3) #12 + (1) #12 EGC
17P-C005	PANEL HP-AL	17-AL-P-5	3/4"	(3) #12 + (1) #12 EGC
17P-C006	PANEL HP-AL	17-AL-P-6	3/4"	(3) #12 + (1) #12 EGC
17P-C007	PANEL HP-AL	LP-AL	3/4"	(2) #12 + (1) #10 EGC
17P-C008	LP-AL	17-AL-L-1 & 2 - JB	3/4"	(2) #12 + (1) #10 EGC
17P-C009	17-AL-L-1 & 2 - JB	17-AL-L-1 & LCP	3/4"	(2) #12 + (1) #10 EGC
17P-C010	17-AL-L-1 & 2 - JB	17-AL-L-2 & LCP	3/4"	(2) #12 + (1) #10 EGC
17P-C011	LP-AL	17-TK-EH-1	3/4"	(2) #12 + (1) #10 EGC
17P-C012	LP-AL	17-TK-EH-2	3/4"	(2) #12 + (1) #10 EGC
17P-C013	LP-AL	17-AL-HT-1	3/4"	(2) #12 + (1) #10 EGC
17P-C014	LP-AL	17-AL-HT-2	3/4"	(2) #12 + (1) #10 EGC
17P-C015	LP-AL	RECEPTACLES	3/4"	(2) #12 + (1) #10 EGC
EX. MCC-A				
23P-C001	NOT USED	-	-	-
23P-C002	MCC-A	PANEL HP-UV	2"	(4) 3/0 + (1) #6 EGC
23P-C003	LP-UV (POWERZONE)	10-PA-DO-1	3/4"	(2) #12 + (1) #12 EGC
23P-C004	LP-UV (POWERZONE)	10-PA-DO-2	3/4"	(2) #12 + (1) #12 EGC
23P-C012	HP-UV	10-PA-BL-1	3/4"	(3) #10 + (1) #10 EGC
23P-C013	HP-UV	10-PA-BL-2	3/4"	(3) #10 + (1) #10 EGC
23P-C014	HP-UV	10-PA-BL-3	3/4"	(3) #10 + (1) #10 EGC
23P-C015	HP-UV	10-UV-CH-1	3/4"	(3) #10 + (1) #10 EGC
23P-C016	HP-UV	Panel LP-UV 30kva XFMR (PWR ZONE)	1"	(3) #3 + (1) #8 EGC
23P-C017	NOT USED	-	-	-
23P-C018	NOT USED	-	-	-
23P-C019	NOT USED	-	-	-
23P-C020	LP-UV (POWERZONE)	10-IUV-F-1	3/4"	(2) #12 + (1) #12 EGC
23P-C021	LP-UV (POWERZONE)	10-PA-DO-1	3/4"	(2) #12 + (1) #12 EGC
23P-C022	LP-UV (POWERZONE)	10-PA-DO-2	3/4"	(2) #12 + (1) #12 EGC
23P-C023	LP-UV (POWERZONE)	10-PA-SP-1	3/4"	(2) #12 + (1) #12 EGC
23P-C024	LP-UV (POWERZONE)	PLC-UVPA	3/4"	(2) #12 + (1) #12 EGC
23P-C025	LP-UV (POWERZONE)	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
23P-C026	LP-UV (POWERZONE)	RECEPTACLE	3/4"	(2) #12 + (1) #12 EGC
23P-C027	HP-UV	10-UV-SG-1	3/4"	(3) #12 + (1) #12 EGC
23P-C028	HP-UV	10-PA-SG-1	3/4"	(3) #12 + (1) #12 EGC
23P-C029	HP-UV	10-PA-SG-2	3/4"	(3) #12 + (1) #12 EGC
23P-C030	17-PS1-P-1 VFD	17-PS1-P-1	1"	(3) #8 + (1) #8 EGC
23P-C031	17-PS1-P-2 VFD	17-PS1-P-2	1"	(3) #8 + (1) #8 EGC
23P-C032	LP-UV (POWERZONE)	10-PA-TURB-1	3/4"	(2) #12 + (1) #12 EGC



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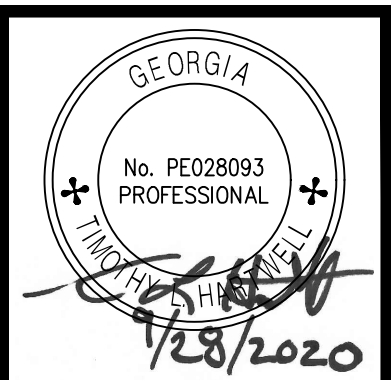
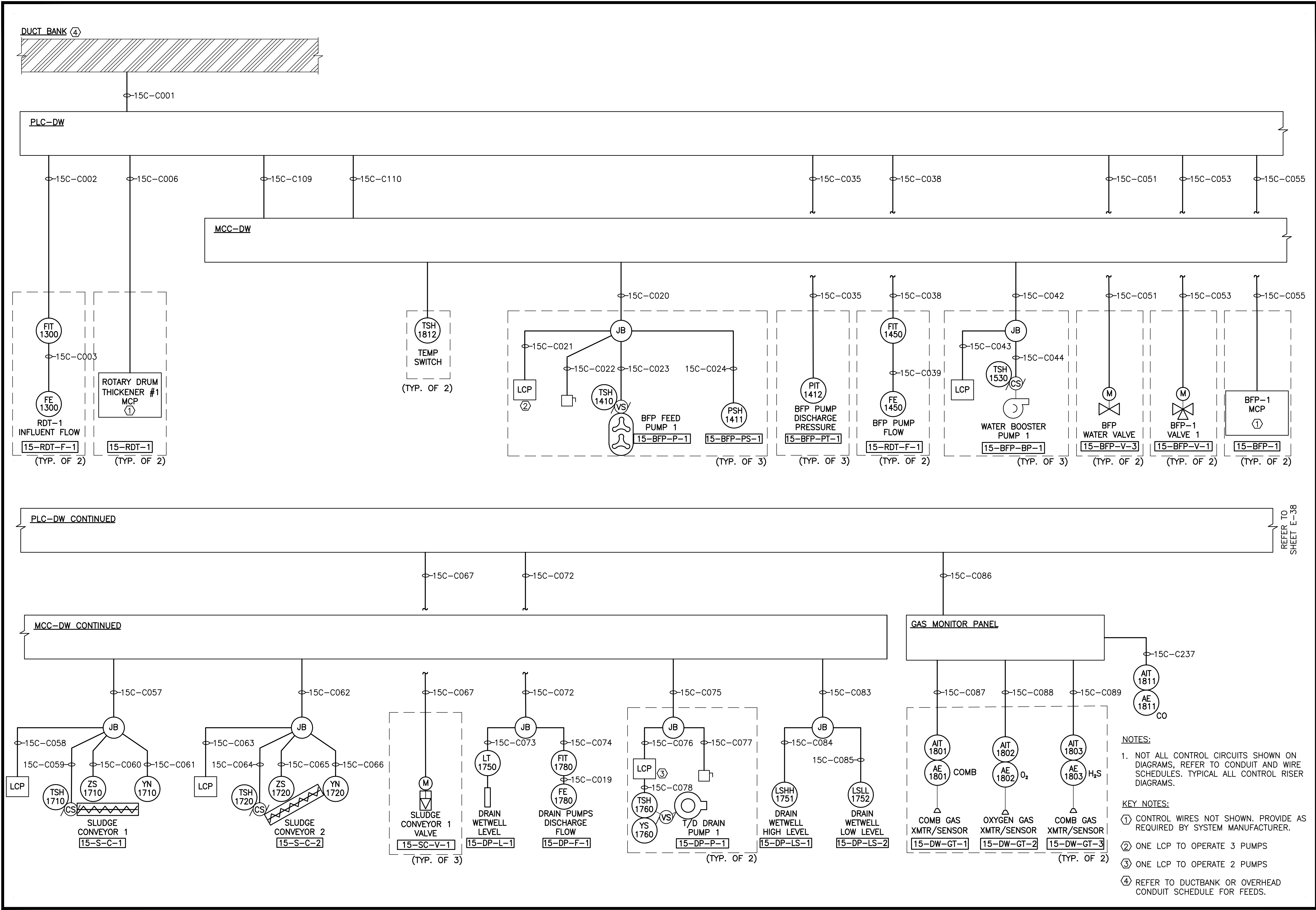
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 ENGINEERS & ELECTRICIANS
 STEVENSON, MARYLAND
 (410) 381-1111

CERTIFICATE OF AUTHORIZATION # PE028093 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.	DATE
REVISION	
PROJ. NO.: 100061831	DESIGNED BY: RDW/INJZ
	DRAWN BY: NCT/INJZ
	CHECKED BY: TLH
	APPROVED BY: TLH
	DATE: SEPTEMBER 2020
	SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

**CONDUIT AND WIRE SCHEDULE
 POWER 4**

SHEET NO.
E-36



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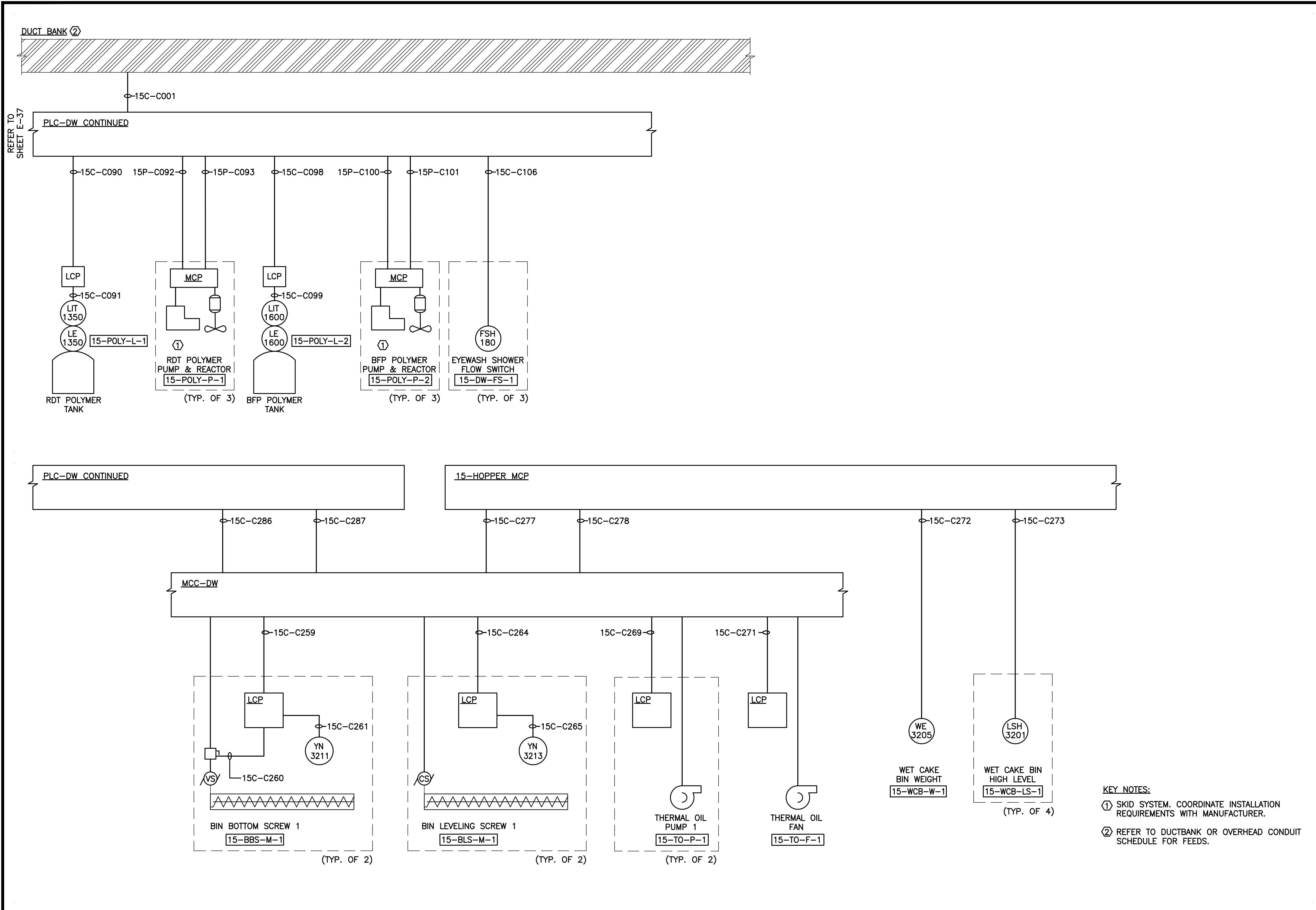
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NCT/INJZ	TLH	
APPROVED BY:	DATE:	
SEPTEMBER 2020		
SCALE:	AS SHOWN	

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 1

SHEET NO.
E-37

File Name: C:\PW_WORK\ATKIN\NICKY.TODD\DWG\535907\1000 - E-37.DWG\Tab:E-37\Plotted: September 24, 2020 3:52pm

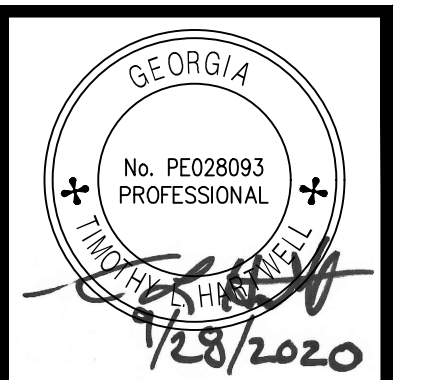
- NOTES:**
- NOT ALL CONTROL CIRCUITS SHOWN ON DIAGRAMS, REFER TO CONDUIT AND WIRE SCHEDULES. TYPICAL ALL CONTROL RISER DIAGRAMS.
 - CONTROL WIRES NOT SHOWN. PROVIDE AS REQUIRED BY SYSTEM MANUFACTURER.
 - ONE LCP TO OPERATE 3 PUMPS
 - ONE LCP TO OPERATE 2 PUMPS
 - REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.
- KEY NOTES:**
- CONTROL WIRES NOT SHOWN. PROVIDE AS REQUIRED BY SYSTEM MANUFACTURER.
 - ONE LCP TO OPERATE 3 PUMPS
 - ONE LCP TO OPERATE 2 PUMPS
 - REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.



KEY NOTES:

① SKID SYSTEM. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER.

② REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.



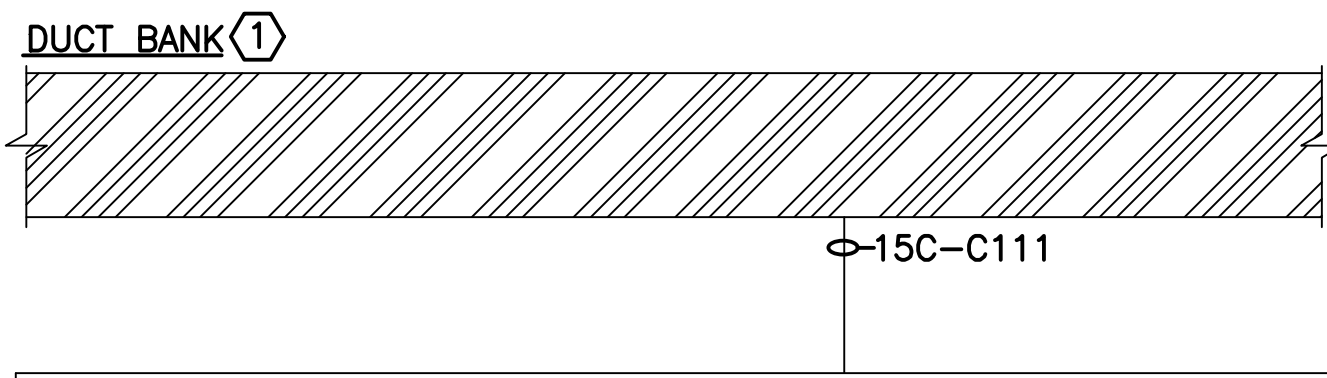
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CERTIFICATE OF AUTHORIZATION #	EXPIRATION DATE	REVISION	DATE
PEP07023	06/30/2022		

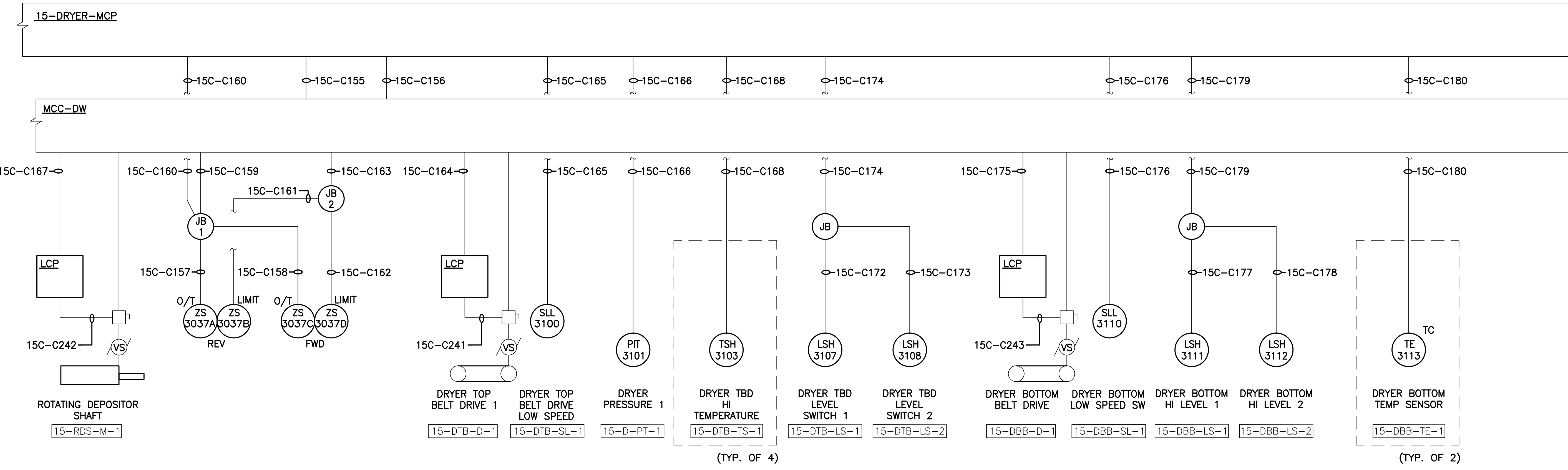
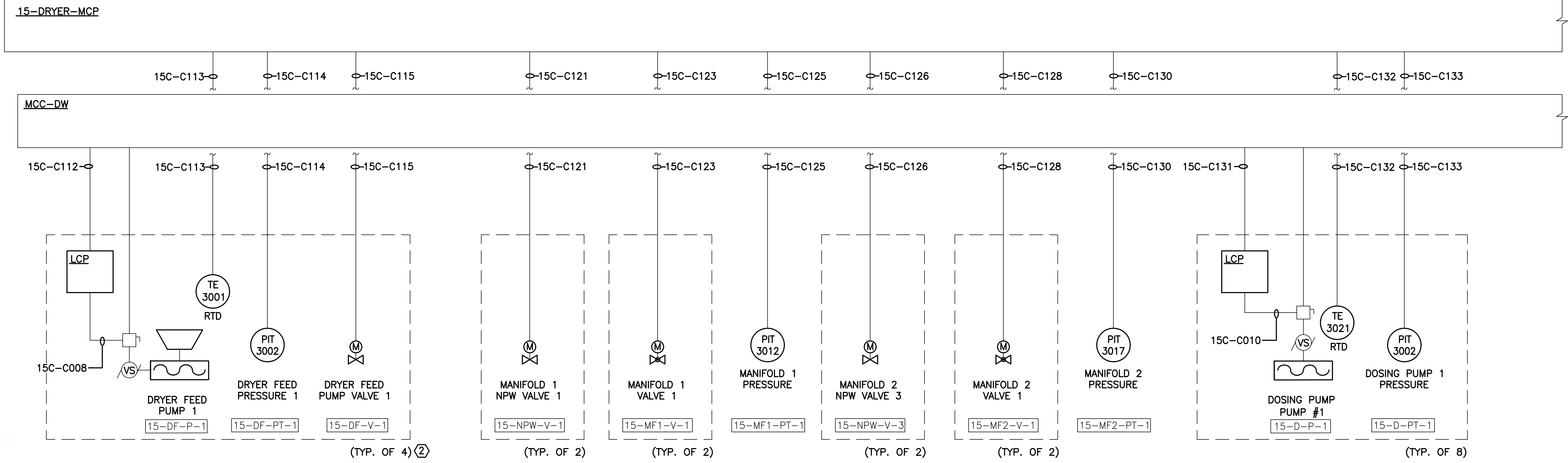
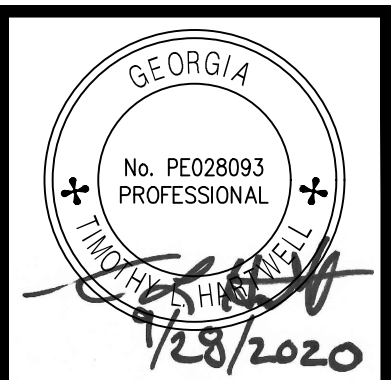
CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 2



KEY NOTES

① REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.

② PUMPS 15-BFP-DP-1 & 15-BFP-DP-2 SIMILAR TO 15-DF-P-1 & 2. CONNECT 15-BFP-DP-1 & 2 TO PLC-DW INSTEAD OF 15-DRYER-MCP.



CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 3

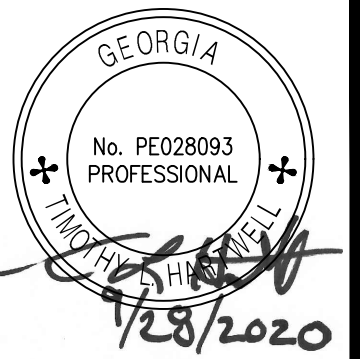
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SHEET NO.
E-39

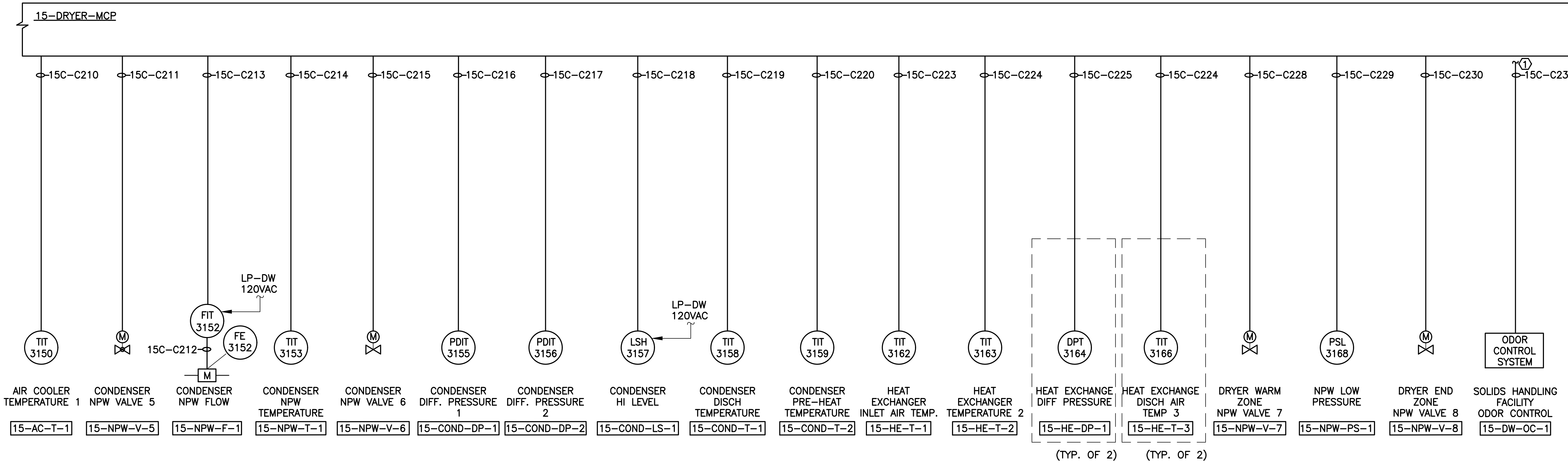
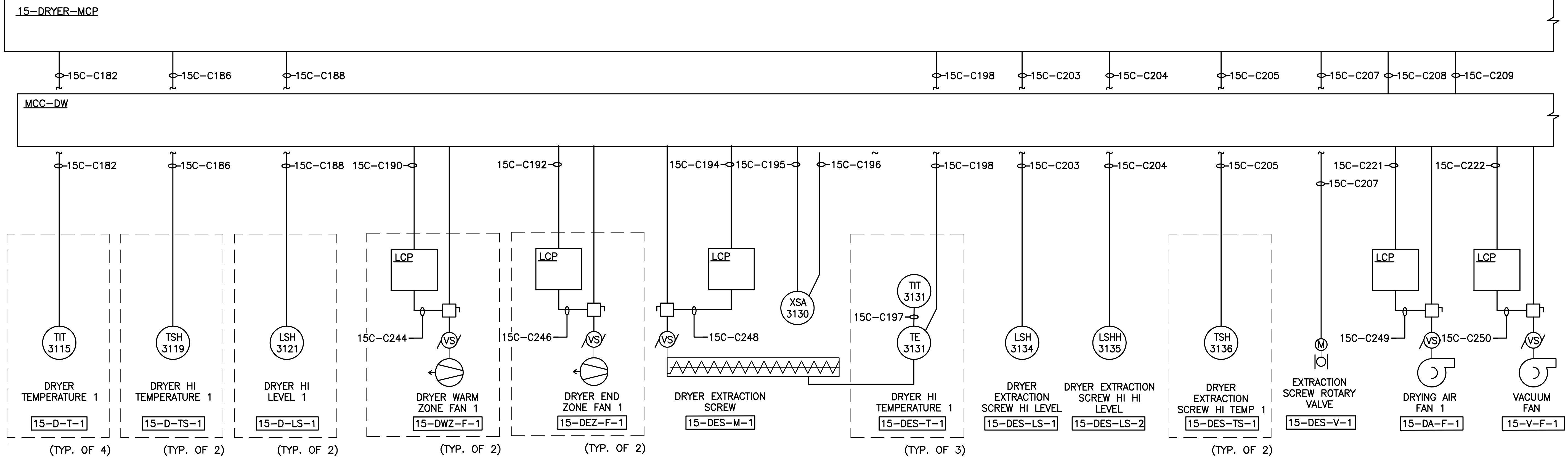
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KEY NOTES:
 Ⓛ TO PLC-DW.



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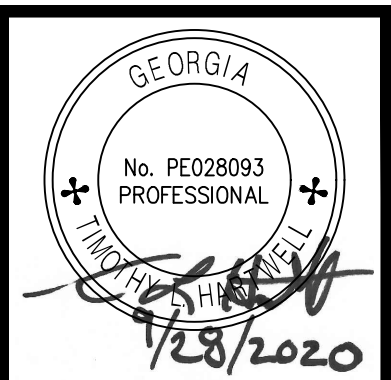
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 4

SHEET NO.
E-40

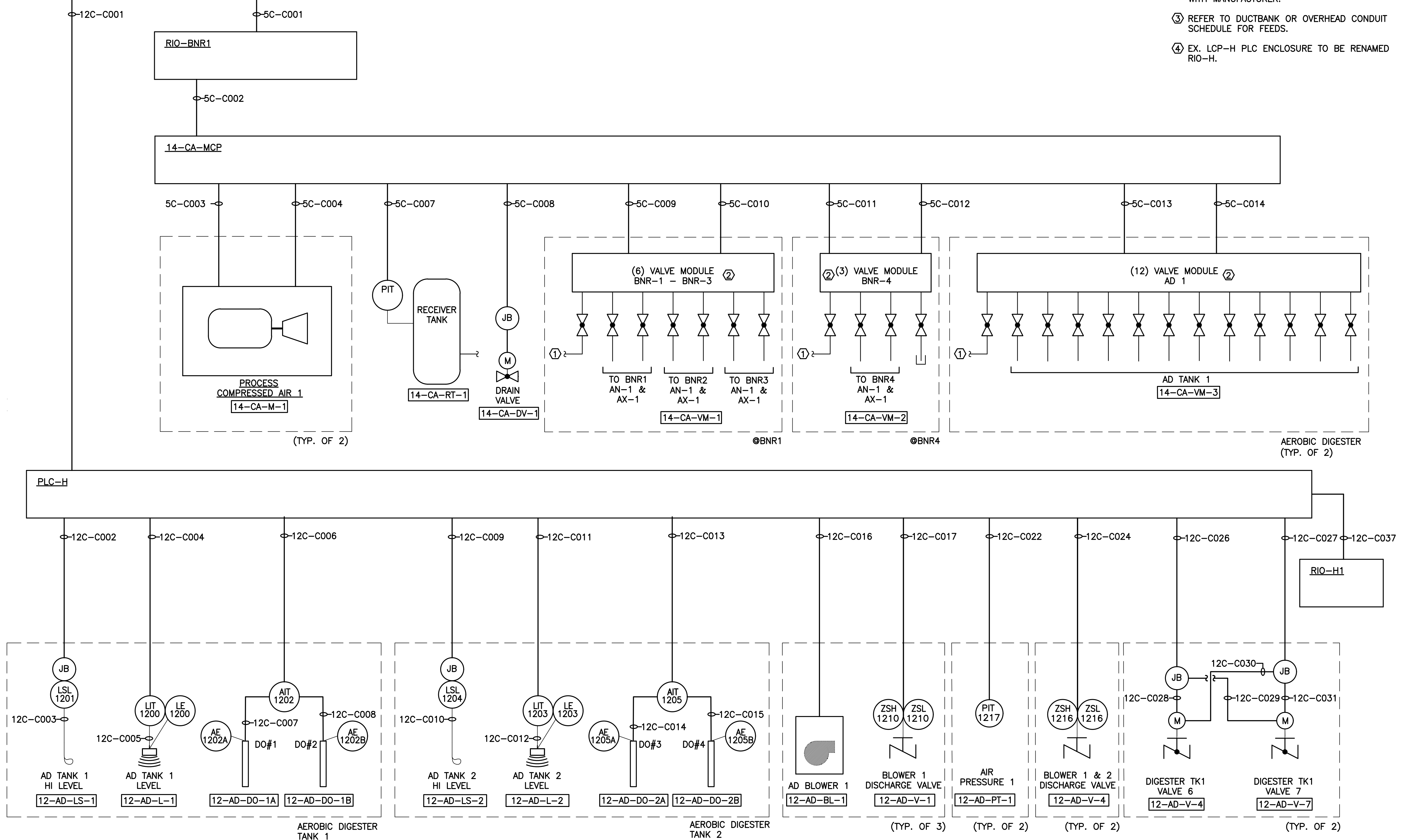
DUCT BANK ③

- KEY NOTES:**
- ① AIR FROM COMPRESSOR RECEIVER TANK.
 - ② COORDINATE LOCATION OF VALVE MODULE WITH MANUFACTURER.
 - ③ REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.
 - ④ EX. LCP-H PLC ENCLOSURE TO BE RENAMED RIO-H.



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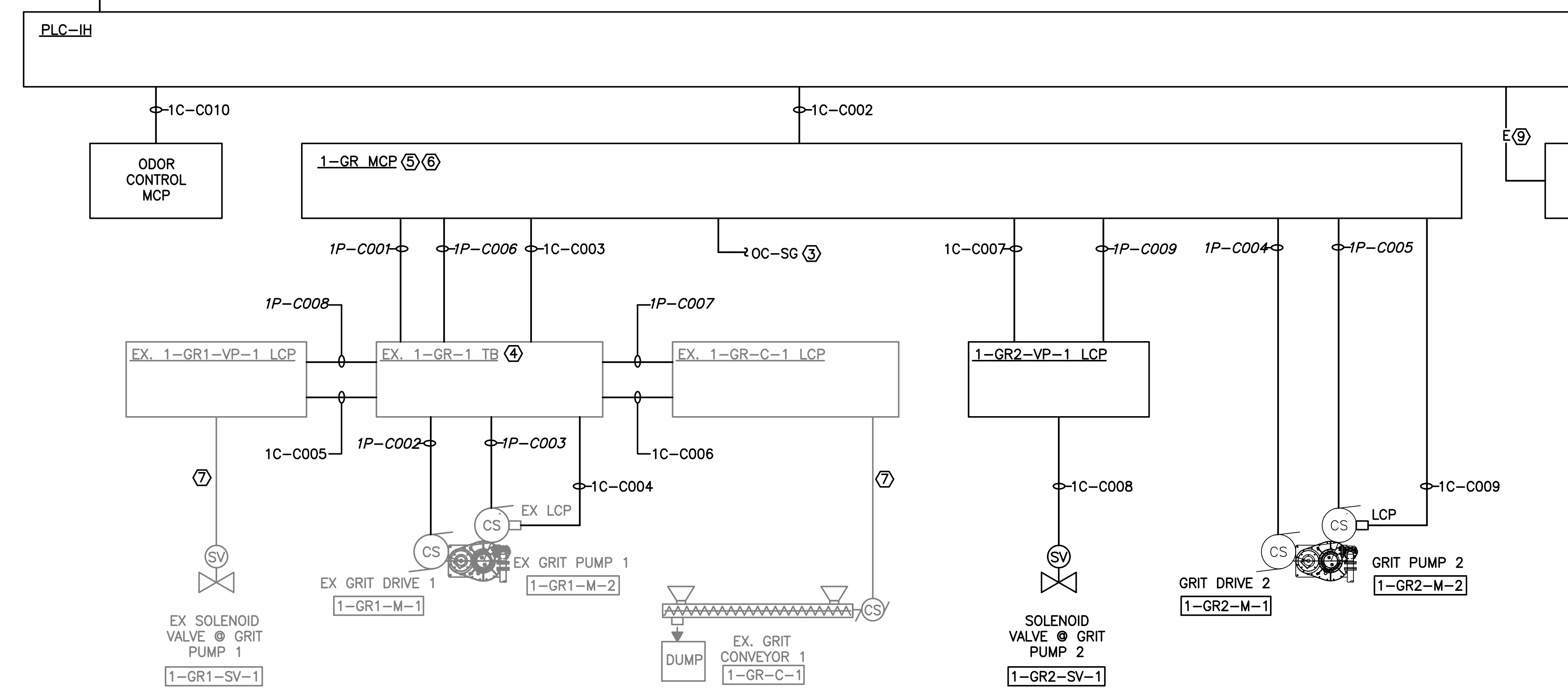
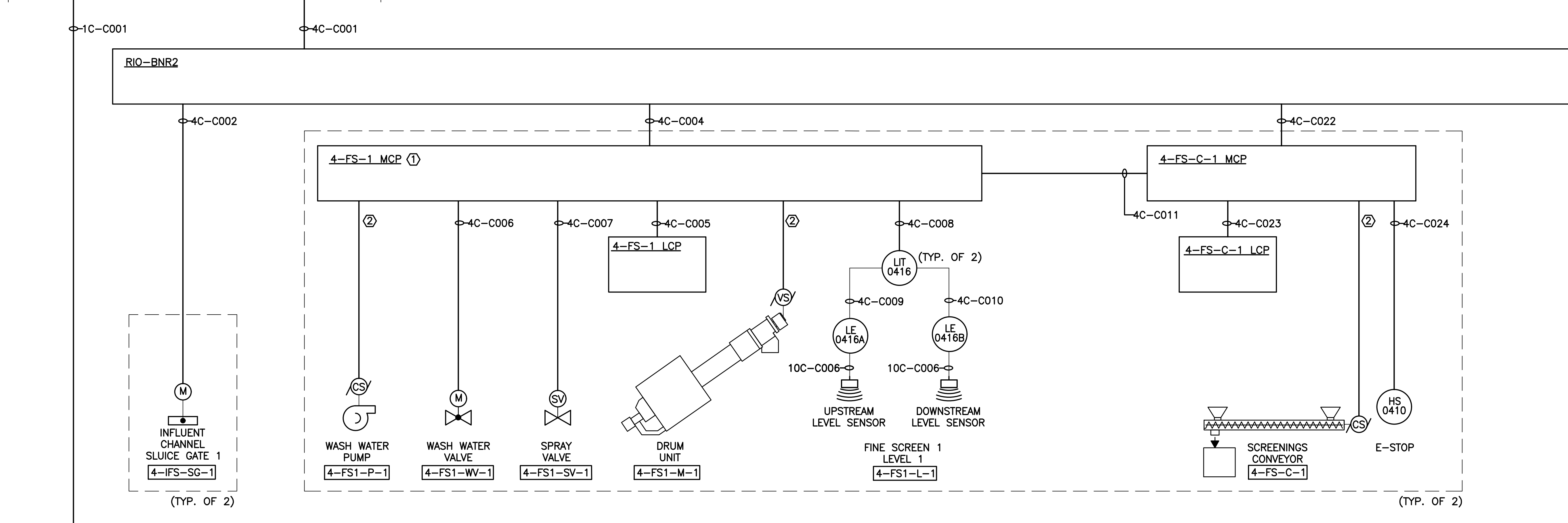
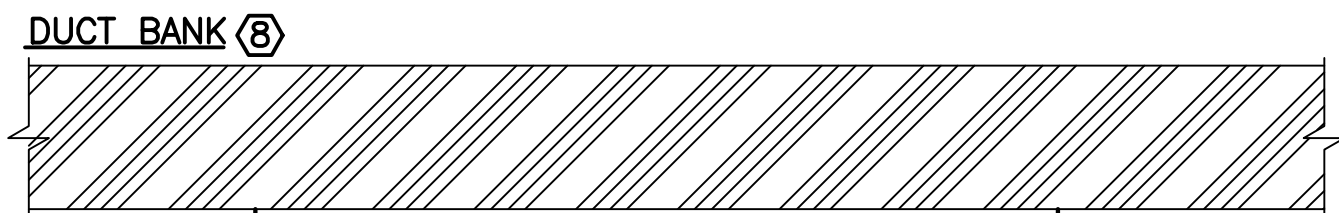
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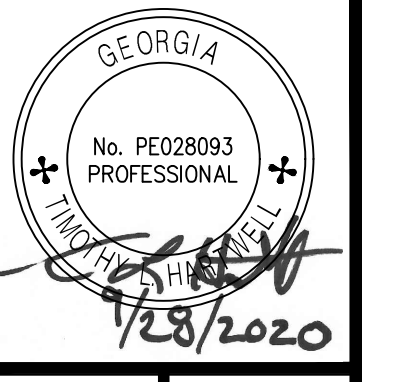
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 5

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- KEY NOTES:**
- ① WIRE/CONDUIT SHOWN FOR REFERENCE, COORDINATE WITH SUPPLIER FOR INSTALLATION REQUIREMENTS.
 - ② REFER TO ONE-LINE DIAGRAM FOR POWER WIRE/CONDUIT.
 - ③ POWER WIRE/CONDUIT SHOWN, REFER TO POWER FEEDER SCHEDULES.
 - ④ THE FOLLOWING ARE TO REMAIN:
 - EXISTING GRIT CONVEYOR AND LCP (1-GR-C-1)
 - GRIT REMOVAL DRIVE (1-GR-M-1)
 - PUMP (1-GR1-M-2)
 - VALVES AND CABINET
 GRIT REMOVAL CONTROL PANEL SHALL BE REMOVED AND REPLACED WITH A NEMA 4X ENCLOSURE WITH TERMINAL BLOCKS FOR CONNECTION OF EXISTING WIRING TO NEW GRIT CONTROL PANEL. CONTRACTOR SHALL VERIFY ALL FIELD CONNECTIONS PRIOR TO DISCONNECTION AND LABEL WIRE REQUIRED FOR CONNECTION TO NEW GRIT CONTROL PANEL. COORDINATE ALL WIRING WITH GRIT SYSTEM MANUFACTURER, AND REMOVE ALL EXISTING WIRING NOT REQUIRED FOR SYSTEM OPERATION.
 - ⑤ NEW GRIT REMOVAL MCP (1-GR-MCP) SHALL PROVIDE ALL POWER AND CONTROL DEVICES FOR EXISTING AND NEW GRIT REMOVAL 1 & 2 DRIVES, PUMPS, VALVES, AND ASSOCIATED EQUIPMENT.
 - ⑥ NEW GRIT REMOVAL MCP (1-GR-MCP) SHALL BE PROVIDED WITH CIRCUIT BREAKERS, 480/120V TRANSFORMER STARTERS, PLC, OIT, CONTROLS FOR EXISTING AND NEW GRIT REMOVAL DRIVES AND PUMPS.
 - ⑦ EXISTING WIRE/CONDUIT TO REMAIN.
 - ⑧ REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.
 - ⑨ PROVIDE AND INSTALL 1" CONDUIT WITH CAT6E CABLE.



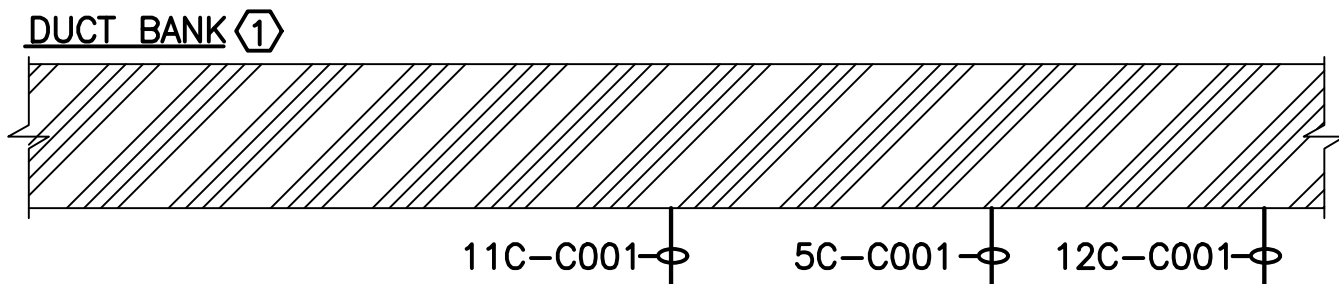
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 CONTROL RISER DIAGRAMS 6

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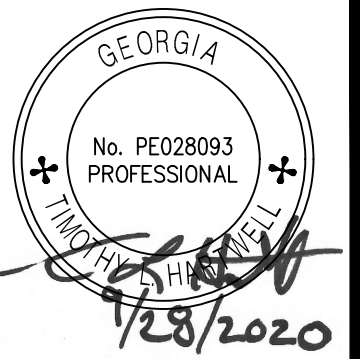
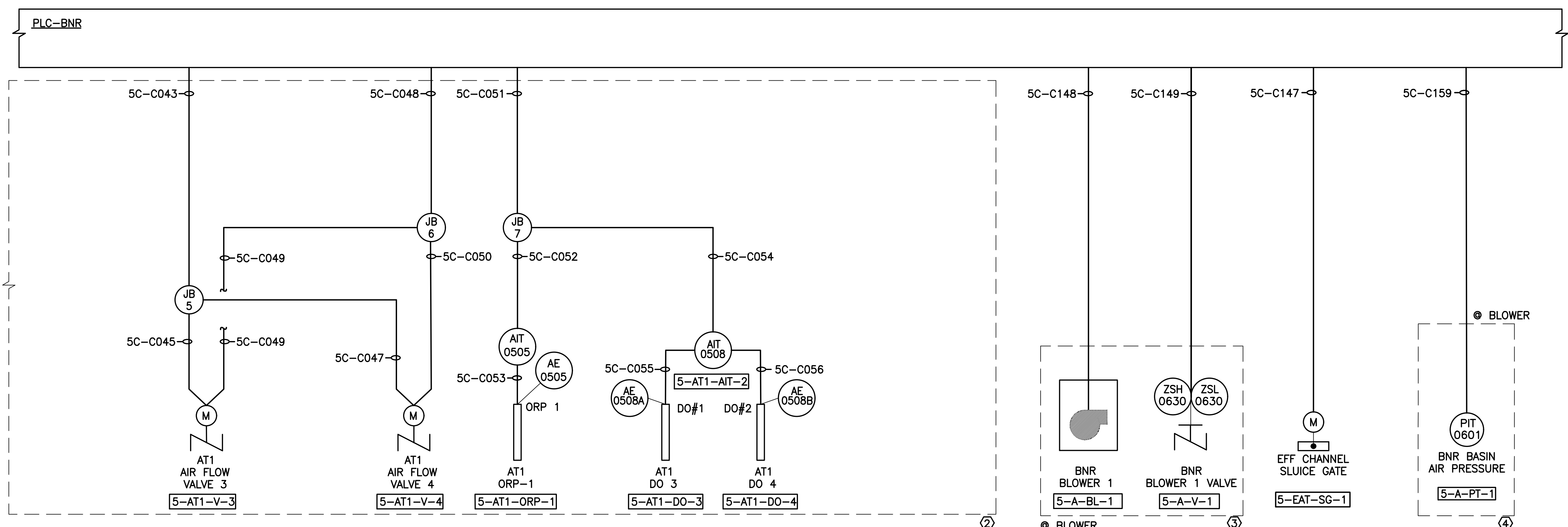
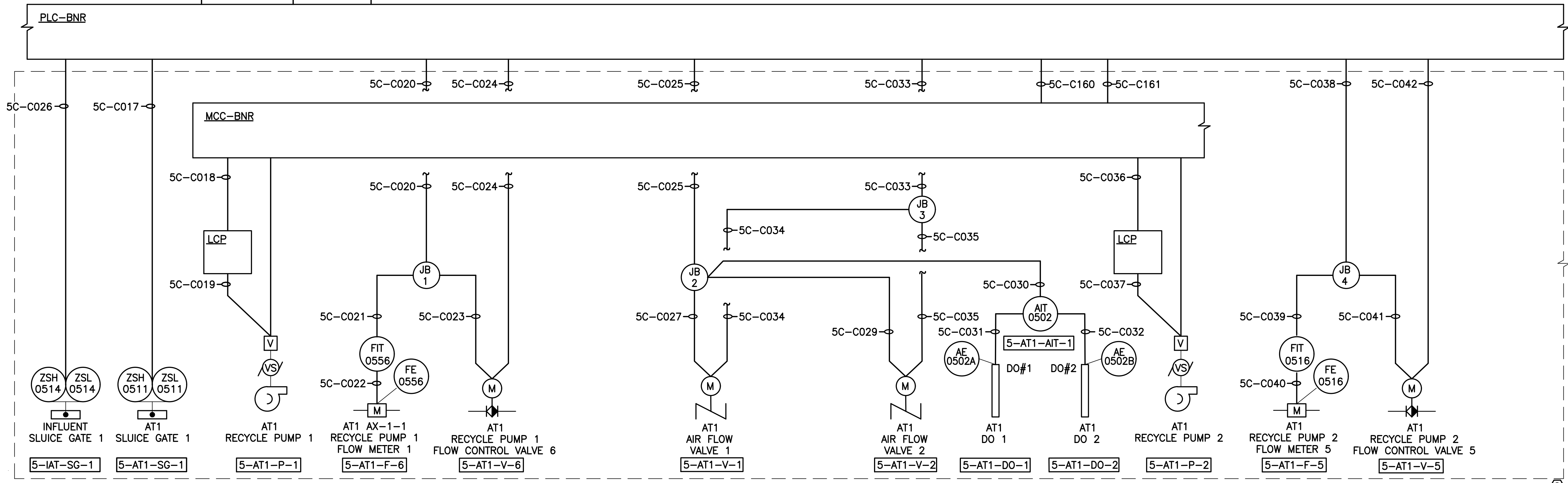


KEY NOTES:

- ① REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.
- ② BNR BASIN 1 SHOWN TYPICAL FOR BASINS 2 AND 3.
- ③ BLOWER 1 SHOWN TYPICAL FOR BLOWERS 2, 3, 4, AND 5.

KEY NOTES CONTINUED:

- ④ BNR BASIN 1 SHOWN TYPICAL FOR BASINS 2, 3, AND 4.



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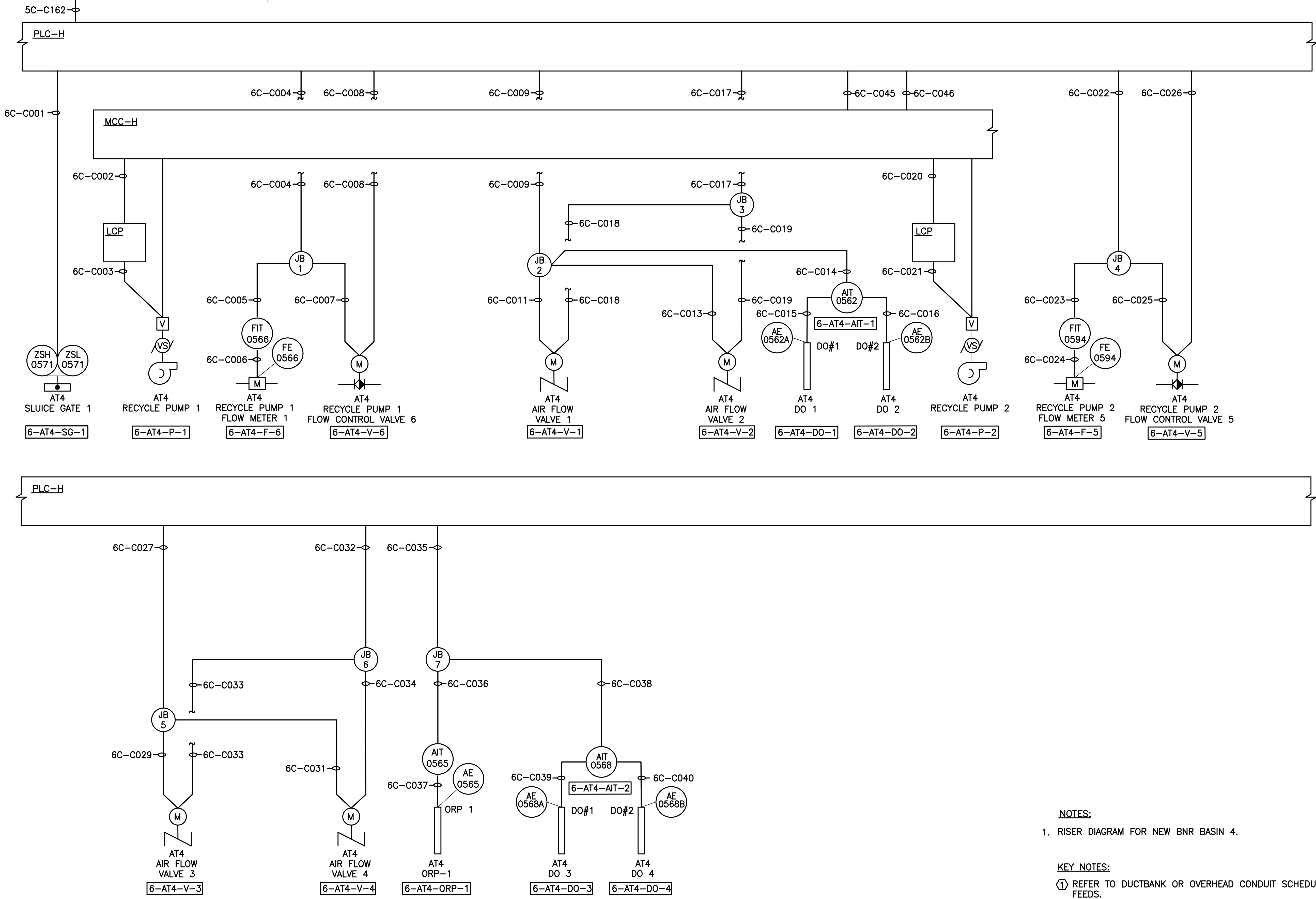
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REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 7

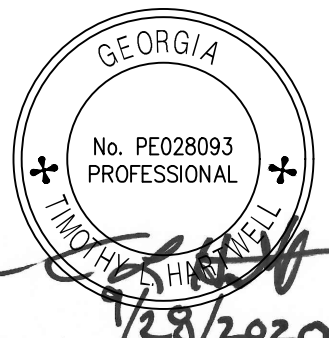
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DUCT BANK (1)



NOTES:
1. RISER DIAGRAM FOR NEW BNR BASIN 4.

KEY NOTES:
(1) REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.



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(410) 486-1111

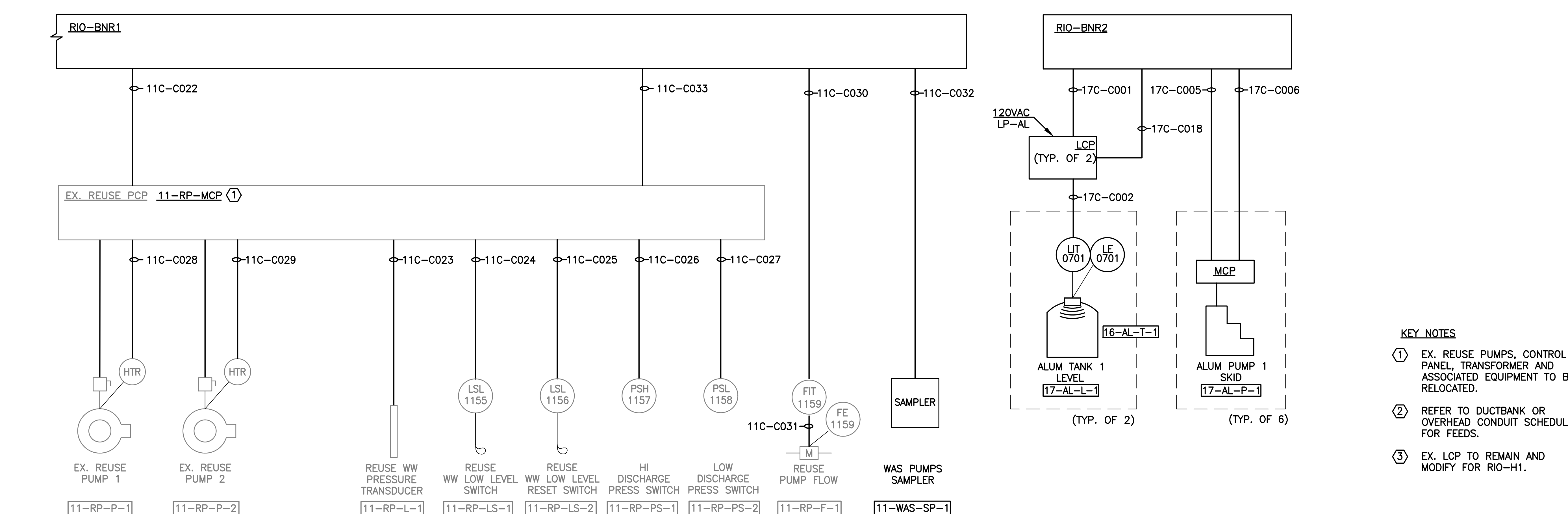
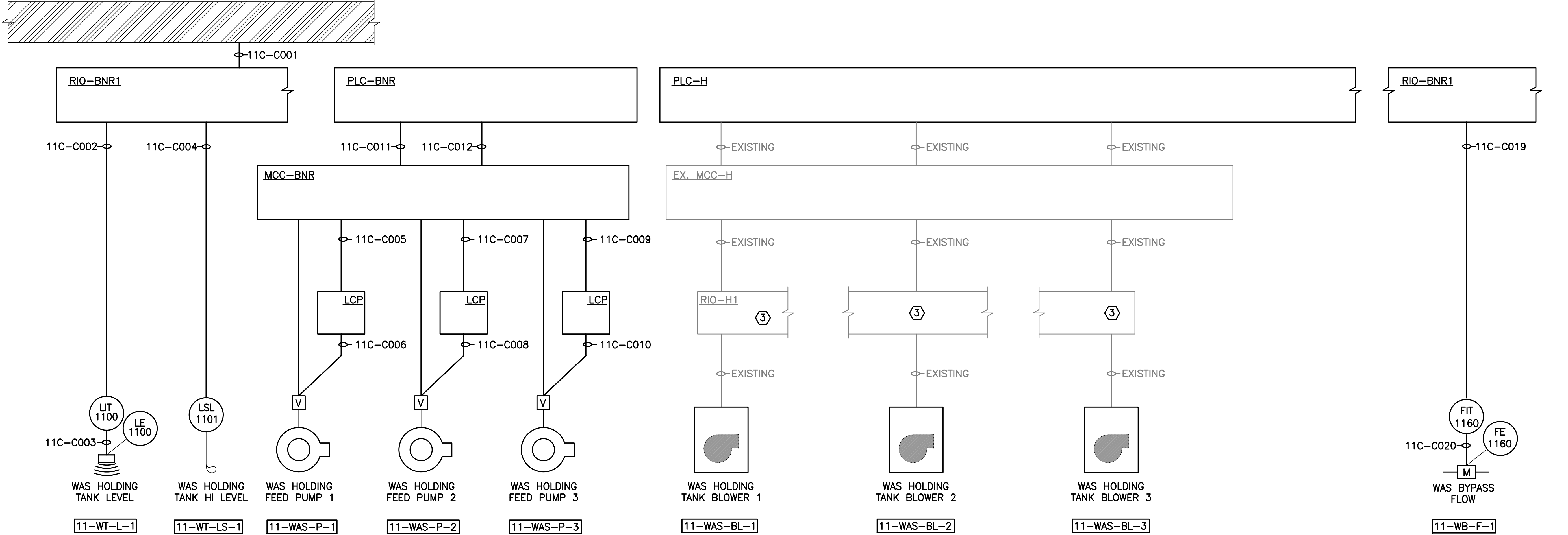
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100061831	RDW/NJZ	NCT/NJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN

REVISION	DATE

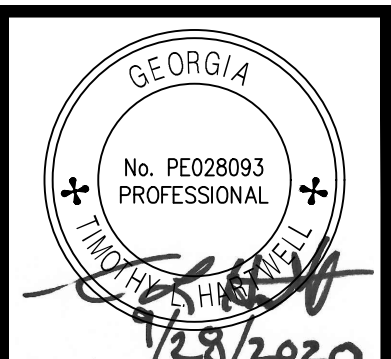
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 8

SHEET NO.
E-44

DUCT BANK (2)



- KEY NOTES**
- (1) EX. REUSE PUMPS, CONTROL PANEL, TRANSFORMER AND ASSOCIATED EQUIPMENT TO BE RELOCATED.
 - (2) REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.
 - (3) EX. LCP TO REMAIN AND MODIFY FOR RIO-H1.

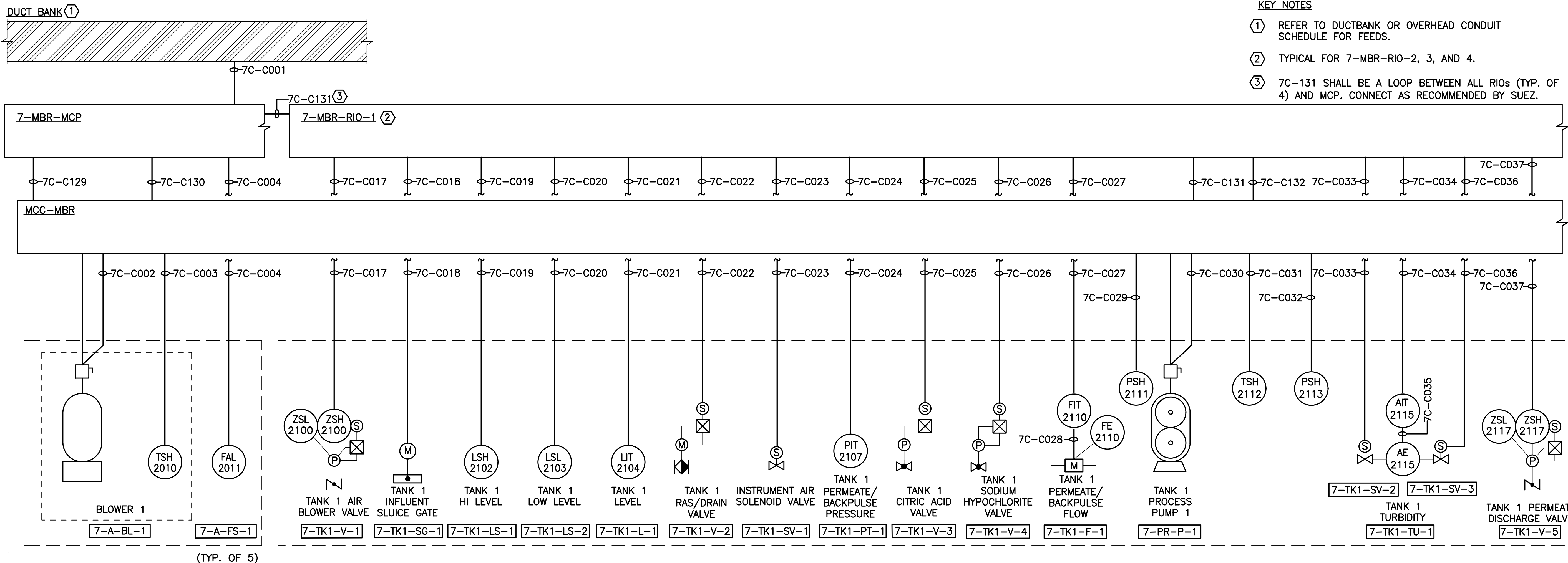


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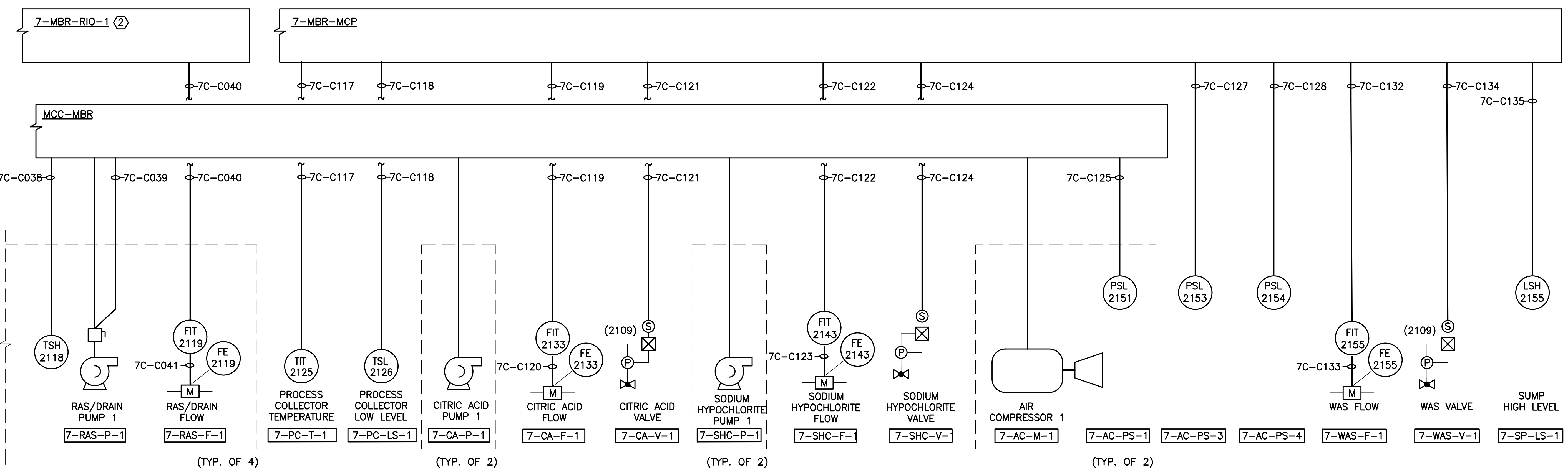
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 9



(TYP. OF 5)



(TYP. OF 4)

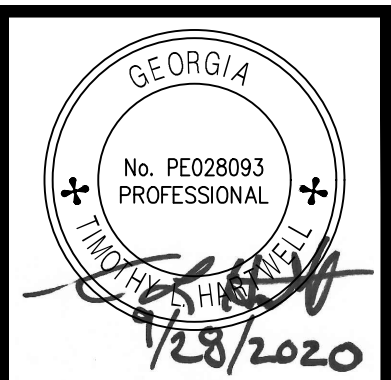
(TYP. OF 2)

(TYP. OF 2)

(TYP. OF 2)

KEY NOTES

- ① REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.
- ② TYPICAL FOR 7-MBR-RIO-2, 3, AND 4.
- ③ 7C-131 SHALL BE A LOOP BETWEEN ALL RIOs (TYP. OF 4) AND MCP. CONNECT AS RECOMMENDED BY SUEZ.



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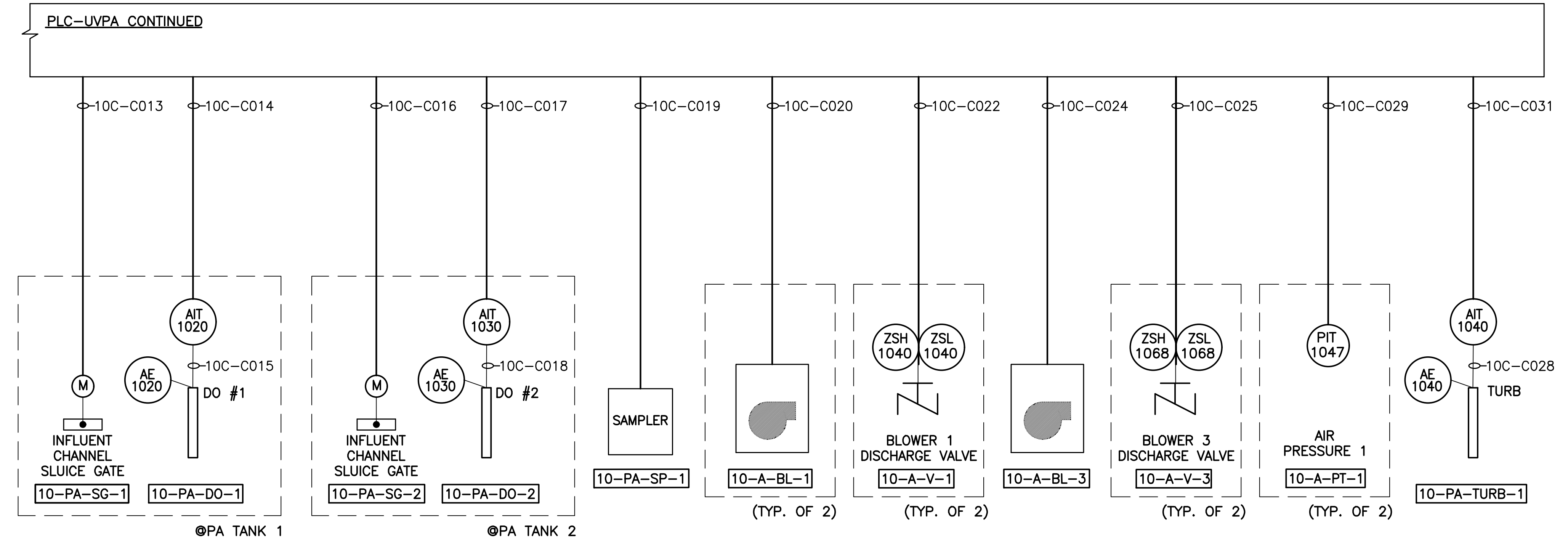
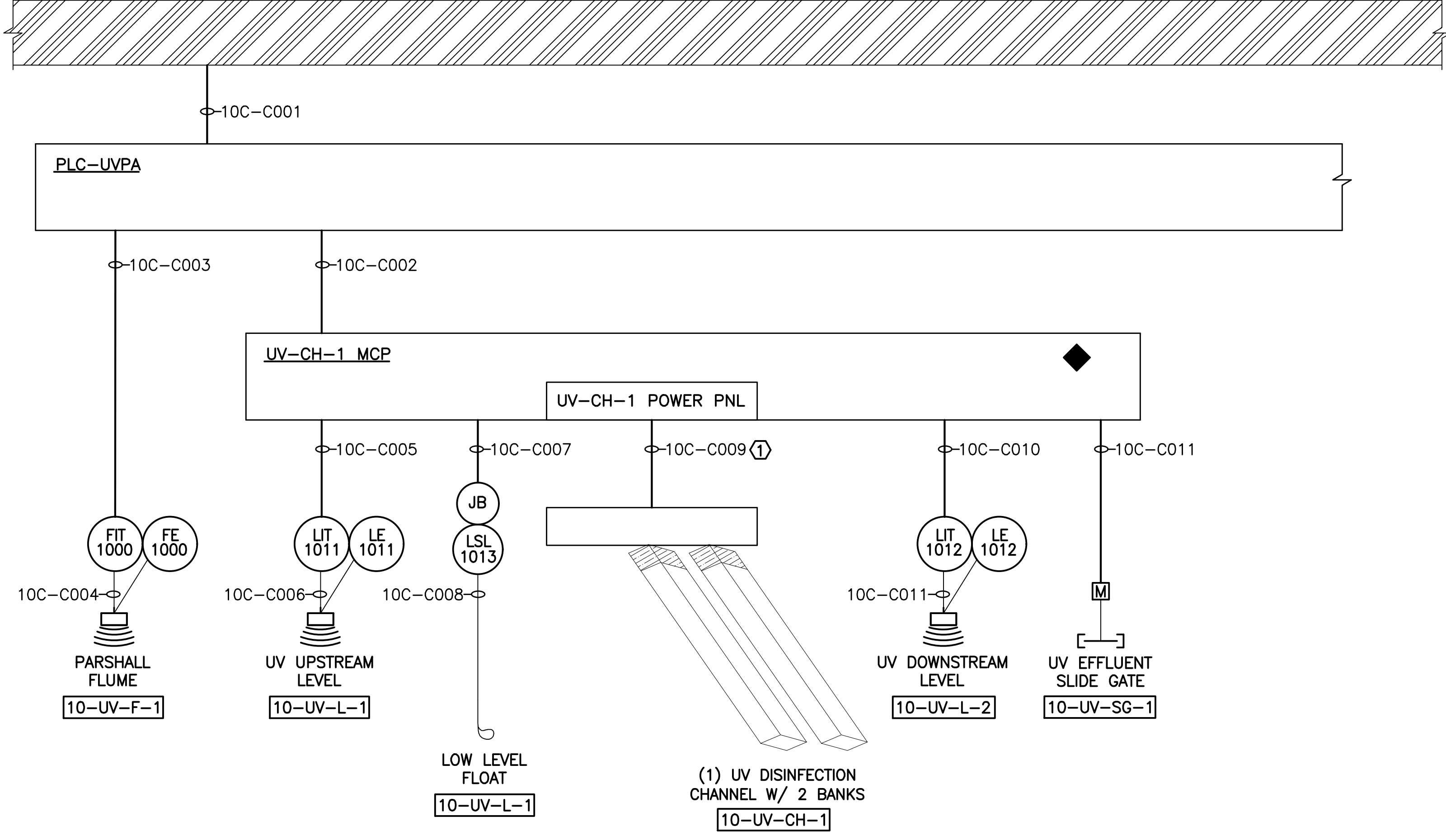
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REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 10

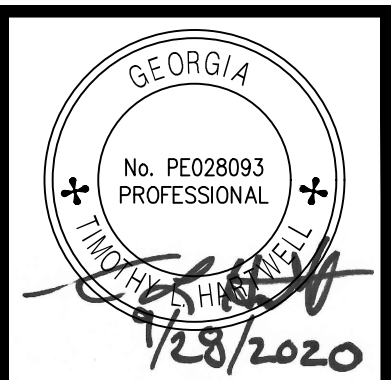
DUCT BANK ②



KEY NOTES:

① PROVIDE ALL CONNECTIONS WIRING, AND CONDUIT FOR CONNECTION OF UV BANKS AND EQUIPMENT TO MCP.

② REFER TO DUCTBANK OR OVERHEAD CONDUIT SCHEDULE FOR FEEDS.



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PROJ. NO.:	DESIGNED BY:	CERTIFICATE OF AUTHORIZATION #	EXPIRATION DATE
100061831	RDW/INJZ	PEP070723	06/30/2022
	DRAWN BY:	REVISION	DATE
	NCT/INJZ		
	CHECKED BY:		
	TLH		
	APPROVED BY:		
	DATE: SEPTEMBER 2020		
	SCALE: AS SHOWN		

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONTROL RISER DIAGRAMS 11

SHEET NO.
E-47

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
PLC-IH (GRIT REMOVAL SYSTEM)				
1C-C001	PLC-IH	PLC-MSG	2"	(2)-(6) PAIR-FO CABLE
1C-C002	PLC-IH	1-GR MCP	2"	(6) PAIR-FO CABLE
1C-C003	1-GR MCP	EX 1-GR-1 TB	1 1/2"	(20) #14 + (1) #14 EGC
1C-C004	EX 1-GR-1 TB	EX 1-GR1-M-2 (START)	3/4"	(4) #14 + (1) #14 EGC
1C-C005	EX 1-GR-1 TB	EX 1-GR1-VP-1 LCP	1"	(4) #14 + (1) #14 EGC
1C-C006	EX 1-GR-1 TB	EX 1-GR-C-1 LCP	1"	(12) #14 + (1) #14 EGC
1C-C007	1-GR MCP	1-GR2-VP-1 LCP	3/4"	(4) #14 + (1) #14 EGC
1C-C008	1-GR2-VP-1 PNL	1-GR2-SV-1	3/4"	(2) #14 + (1) #14 EGC
1C-C009	1-GR MCP	1-GR2-M-2 (START)	3/4"	(4) #14 + (1) #14 EGC
1C-C010	PLC-H	OC-MCP	2"	(6) PAIR-FO CABLE
RIO-MSG-1 - FINE SCREEN SYSTEM				
4C-C001	PLC-BNR	RIO-BNR2	2"	(6) PAIR-FO CABLE
4C-C002	RIO-BNR2	4-IFS-SG-1	1"	(12) #14 + (1) #14 EGC
4C-C003	RIO-BNR2	4-IFS-SG-2	1"	(12) #14 + (1) #14 EGC
4C-C004	RIO-BNR2	4-FS-1 MCP	1"	(2)-CAT6E CABLE
4C-C005	4-FS-1 MCP	4-FS-1 LCP	1 1/2"	(26) #14 + (1) #14 EGC
4C-C006	4-FS-1 MCP	4-FS1-WV-1	3/4"	(6) #14 + (1) #14 EGC
4C-C007	4-FS-1 MCP	4-FS1-SV-1	3/4"	(4) #14 + (1) #14 EGC
4C-C008	4-FS-1 MCP	4-FS1-L-1	3/4"	(2)-18TSP
4C-C009	4-FS1-L-1 (LIT)	4-FS1-L-1 (LE-A)	3/4"	(1) MFR CABLE
4C-C010	4-FS1-L-1 (LIT)	4-FS1-L-1 (LE-B)	3/4"	(1) MFR CABLE
4C-C011	4-FS-1-MCP	4-FS-C-1-MCP	3/4"	(4) #14 + (1) #14 EGC
4C-C012	RIO-BNR2	4-FS-2 MCP	1"	(2)-CAT6E CABLE
4C-C013	4-FS-2 MCP	4-FS-2 LCP	1 1/2"	(26) #14 + (1) #14 EGC
4C-C014	4-FS-2 MCP	4-FS2-WV-1	3/4"	(6) #14 + (1) #14 EGC
4C-C015	4-FS-2 MCP	4-FS2-SV-1	3/4"	(4) #14 + (1) #14 EGC
4C-C016	4-FS-2 MCP	4-FS2-L-1 (LIT)	3/4"	(2)-18TSP
4C-C017	4-FS2-L-1 (LIT)	4-FS2-L-1 (LE-A)	3/4"	(1) MFR CABLE
4C-C018	4-FS2-L-1 (LIT)	4-FS2-L-1 (LE-A)	3/4"	(1) MFR CABLE
4C-C019	4-FS-2 MCP	4-FS-C-2 MCP	3/4"	(4) #14 + (1) #14 EGC
4C-C020	NOT USED	-	-	-
4C-C021	NOT USED	-	-	-
4C-C022	RIO-BNR2	4-FS-C-1-MCP	3/4"	(6) #14 + (1) #14 EGC
4C-C023	4-FS-C-1-MCP	4-FS-C-1-LCP	1"	(12) #14 + (1) #14 EGC
4C-C024	4-FS-C-1-MCP	4-FS-C-A (E-STOP)	3/4"	(4) #14 + (1) #14 EGC
4C-C025	NOT USED	-	-	-
PLC-BNR				
5C-C001	PLC-MSG	PLC-BNR	2"	2-(6) PAIR - FO CABLE
5C-C002	RIO-BNR1	14-CA-MCP	2"	(2)-CAT6E CABLE
5C-C003	14-CA MCP	14-CA-M-1	1"	(10) #14 + (1) #14 EGC
5C-C004	14-CA MCP	14-CA-M-1	3/4"	(1) - #18 TSP
5C-C005	14-CA MCP	14-CA-M-2	1"	(10) #14 + (1) #14 EGC
5C-C006	14-CA MCP	14-CA-M-2	3/4"	(1) - #18 TSP
5C-C007	14-CA MCP	14-CA-RT-1	3/4"	(2) - #18 TSP
5C-C008	14-CA MCP	14-CA-DV-1	3/4"	(6) #14 + (1) #14 EGC
5C-C009	14-CA MCP	14-CA-VM-1	1"	(10) #14 + (1) #14 EGC
5C-C010	14-CA MCP	14-CA-VM-1	3/4"	(2) - #18 TSP
5C-C011	14-CA MCP	14-CA-VM-2	3/4"	(8) #14 + (1) #14 EGC
5C-C012	14-CA MCP	14-CA-VM-2	3/4"	(2) - #18 TSP
5C-C013	14-CA MCP	14-CA-VM-3	1"	(16) #14 + (1) #14 EGC
5C-C014	14-CA MCP	14-CA-VM-3	1"	(2) - #18 TSP
5C-C015	14-CA MCP	14-CA-VM-4	1"	(16) #14 + (1) #14 EGC
5C-C016	14-CA MCP	14-CA-VM-4	1"	(2) - #18 TSP
5C-C017	PLC-BNR	5-AT1-SG-1	3/4"	(4) #14 + (1) #14 EGC
5C-C018	MCC-BNR	5-AT1-P-1 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
5C-C019	5-AT1-P-1 (LCP)	5-AT1-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
5C-C020	PLC-BNR	AT1 JB1	1"	(3)-#18 TSP

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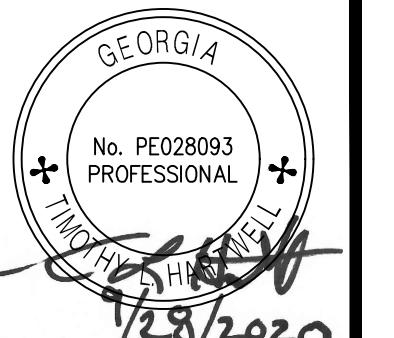
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④

PLC-BNR CONTINUED

5C-C021	AT1 JB1	5-AT1-F-6 (FIT)	3/4"	(1)-#18 TSP
5C-C022	5-AT1-F-6 (FIT)	5-AT1-F-6 (FE)	1"	(1) MFR CABLE
5C-C023	AT1 JB1	5-AT1-V-6	3/4"	(2)-#18 TSP
5C-C024	PLC-BNR	5-AT1-V-6	3/4"	(6) #14 + (1) #14 EGC
5C-C025	PLC-BNR	AT1- JB2	1 1/2"	(6)-#18TSP
5C-C026	PLC-BNR	5-IAT-SG-1	3/4"	(4) #14 + (1) #14 EGC
5C-C027	AT1- JB2	5-AT1-V-1	3/4"	(2)-#18TSP
5C-C028	PLC-BNR	8-RAS-L-1	3/4"	(2)-#18TSP
5C-C029	AT1- JB2	5-AT1-V-2	3/4"	(2)-#18TSP
5C-C030	AT1- JB2	5-AT1-AIT-1	3/4"	(2)-#18TSP
5C-C031	5-AT1-AIT-1 (DO1)	5-AT1-DO-1	1"	(1) MFR CABLE
5C-C032	5-AT1-AIT-1 (DO2)	5-AT1-DO-2	1"	(1) MFR CABLE
5C-C033	PLC-BNR	AT1 JB3	1"	(12) #14 + (1) #14 EGC
5C-C034	AT1 JB3	5-AT1-V-1	3/4"	(6) #14 + (1) #14 EGC
5C-C035	AT1 JB3	5-AT1-V-2	3/4"	(6) #14 + (1) #14 EGC
5C-C036	MCC-BNR	5-AT1-P-2 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
5C-C037	5-AT1-P-2 (LCP)	5-AT1-P-2 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
5C-C038	PLC-BNR	AT1 JB4	1"	(3)-#18TSP
5C-C039	AT1 JB4	5-AT1-F-5 (FIT)	3/4"	(1)-#18TSP
5C-C040	5-AT1-F-5 (FIT)	5-AT1-F-5 (FE)	1"	(1) MFR CABLE
5C-C041	AT1 JB4	5-AT1-V-5	3/4"	(2)-#18TSP
5C-C042	PLC-BNR	5-AT1-V-5	3/4"	(6) #14 + (1) #14 EGC
5C-C043	PLC-BNR	AT1 JB5	1 1/2"	(4)-#18TSP
5C-C044	NOT USED	-	-	-
5C-C045	AT1 JB5	5-AT1-V-3	3/4"	(2)-#18TSP
5C-C046	NOT USED	-	-	-
5C-C047	AT1 JB5	5-AT1-V-4	3/4"	(2)-#18TSP
5C-C048	PLC-BNR	AT1 JB6	1"	(12) #14 + (1) #14 EGC
5C-C049	AT1 JB6	5-AT1-V-3	3/4"	(6) #14 + (1) #14 EGC
5C-C050	AT1 JB6	5-AT1-V-4	3/4"	(6) #14 + (1) #14 EGC
5C-C051	PLC-BNR	AT1 JB7	1"	(3)-#18TSP
5C-C052	AT1 JB7	5-AT1-ORP-1 (AIT)	3/4"	(1)-#18TSP
5C-C053	5- AT1-ORP-1 (AIT)	5-AT1-ORP-1 (AE)	1"	(1) MFR CABLE
5C-C054	AT1 JB7	5-AT1-AIT-2	3/4"	(2)-#18TSP
5C-C055	5-AT1-AIT-2	5-AT1-DO-3	1"	(1) MFR CABLE
5C-C056	5-AT1-AIT-2	5-AT1-DO-4	1"	(1) MFR CABLE
5C-C057	PLC-BNR	15-DW-TS-1	3/4"	(2) #14 + (1) #14 EGC
5C-C058	PLC-BNR	15-DW-TS-2	3/4"	(2) #14 + (1) #14 EGC
5C-C059	PLC-BNR	5-PW-FS-1	3/4"	(2) #14 + (1) #14 EGC
5C-C060	MCC BNR	5-SC-PS-1	3/4"	(2) #14 + (1) #14 EGC
5C-C061	PLC BNR	5-SC-LS-1	3/4"	(2) #14 + (1) #14 EGC
5C-C062	PLC-BNR	5-AT2-SG-1	3/4"	(4) #14 + (1) #14 EGC
5C-C063	MCC-BNR	5-AT2-P-1 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
5C-C064	5-AT2-P-1 (LCP)	5-AT2-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
5C-C065	PLC-BNR	AT2 JB1	1"	(3)-#18 TSP
5C-C066	AT2 JB1	5-AT2-F-6 (FIT)	3/4"	(1)-#18 TSP
5C-C067	5-AT2-F-6 (FIT)	5-AT2-F-6 (FE)	1"	(1) MFR CABLE
5C-C068	AT2 JB1	5-AT2-V-6	3/4"	(2)-#18 TSP
5C-C069	PLC-BNR	5-AT2-V-6	3/4"	(6) #14 + (1) #14 EGC
5C-C070	PLC-BNR	AT2- JB2	1 1/2"	(6)-#18TSP
5C-C071	PLC BNR	A-RAS-LS-1	3/4"	(2) #14 + (1) #14 EGC
5C-C072	AT2- JB2	5-AT2-V-1	3/4"	(2)-#18TSP
5C-C073	NOT USED	-	-	-
5C-C074	AT2- JB2	5-AT2-V-2	3/4"	(2)-#18TSP
5C-C075	AT2- JB2	5-AT2-AIT-1	3/4"	(2)-#18TSP
5C-C076	5-AT2-AIT-1 (DO1)	5-AT2-DO-1	1"	(1) MFR CABLE
5C-C077	5-AT2-AIT-1 (DO2)	5-AT2-DO-2	1"	(1) MFR CABLE

KEY NOTES:

- ① INCLUDE CONDUIT WIRES IC-C004, IC-C005, & IC-C006.
- ② TO EXISTING SONIC START RELAY AT I-GR1-M-2.
- ③ TO EXISTING VACUUM PUMP START CIRCUIT.
- ④ TYPICAL FOR CONVEYOR 2.



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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CONDUIT AND WIRE SCHEDULE CONTROL 1

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
PLC-BNR CONTINUED				
5C-C078	PLC-BNR	AT2 JB3	1"	(12) #14 + (1) #14 EGC
5C-C079	AT2 JB3	5-AT2-V-1	3/4"	(6) #14 + (1) #14 EGC
5C-C080	AT2 JB3	5-AT2-V-2	3/4"	(6) #14 + (1) #14 EGC
5C-C081	MCC-BNR	5-AT2-P-2 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
5C-C082	5-AT2-P-2 (LCP)	5-AT2-P-2 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
5C-C083	PLC-BNR	AT2 JB4	1"	(3)-#18TSP
5C-C084	AT2 JB4	5-AT2-F-5 (FIT)	3/4"	(1)-#18TSP
5C-C085	5-AT2-F-S (FIT)	5-AT2-F-5 (FE)	1"	(1) MFR CABLE
5C-C086	AT2 JB4	5-AT2-V-5	3/4"	(2)-#18TSP
5C-C087	PLC-BNR	5-AT2-V-5	3/4"	(6) #14 + (1) #14 EGC
5C-C088	PLC-BNR	AT2 JB5	1 1/2"	(4)-#18TSP
5C-C089	PLC BNR	5-SC-L-1	3/4"	(1)-#18TSP
5C-C090	AT2 JB5	5-AT2-V-3	3/4"	(2)-#18TSP
5C-C091	NOT USED	-	-	-
5C-C092	AT2 JB5	5-AT2-V-4	3/4"	(2)-#18TSP
5C-C093	PLC-BNR	AT2 JB6	1"	(12) #14 + (1) #14 EGC
5C-C094	AT2 JB6	5-AT2-V-3	3/4"	(6) #14 + (1) #14 EGC
5C-C095	AT2 JB6	5-AT2-V-4	3/4"	(6) #14 + (1) #14 EGC
5C-C096	PLC-BNR	AT2 JB7	1"	(3)-#18TSP
5C-C097	AT2 JB7	5-AT2-ORP-1 (AIT)	3/4"	(1)-#18TSP
5C-C098	5- AT2-ORP-1 (AIT)	5-AT2-ORP-1 (AE)	1"	(1) MFR CABLE
5C-C099	AT2 JB7	5-AT2-AIT-2	3/4"	(2)-#18TSP
5C-C100	5-AT2-AIT-2	5-AT2-DO-3	1"	(1) MFR CABLE
5C-C101	5-AT2-AIT-2	5-AT2-DO-4	1"	(1) MFR CABLE
5C-C102	NOT USED	-	-	-
5C-C103	NOT USED	-	-	-
5C-C104	NOT USED	-	-	-
5C-C105	NOT USED	-	-	-
5C-C106	NOT USED	-	-	-
5C-C107	PLC-BNR	5-AT3-SG-1	3/4"	(4) #14 + (1) #14 EGC
5C-C108	MCC-BNR	5-AT3-P-1 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
5C-C109	5-AT3-P-1 (LCP)	5-AT3-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
5C-C110	PLC-BNR	AT3 JB1	1"	(3)-#18 TSP
5C-C111	AT3 JB1	5-AT3-F-6 (FIT)	3/4"	(1)-#18 TSP
5C-C112	5-AT3-F-6 (FIT)	5-AT3-F-6 (FE)	1"	(1) MFR CABLE
5C-C113	AT3 JB1	5-AT3-V-6	3/4"	(2)-#18 TSP
5C-C114	PLC-BNR	5-AT3-V-6	3/4"	(6) #14 + (1) #14 EGC
5C-C115	PLC-BNR	AT3- JB2	1 1/2"	(6)-#18TSP
5C-C116	NOT USED	-	-	-
5C-C117	AT3- JB2	5-AT3-V-1	3/4"	(2)-#18TSP
5C-C118	NOT USED	-	-	-
5C-C119	AT3- JB2	5-AT3-V-2	3/4"	(2)-#18TSP
5C-C120	AT3- JB2	5-AT3-AIT-1	3/4"	(2)-#18TSP
5C-C121	5-AT3-AIT-1 (DO1)	5-AT3-DO-1	1"	(1) MFR CABLE
5C-C122	5-AT3-AIT-1 (DO2)	5-AT3-DO-2	1"	(1) MFR CABLE
5C-C123	PLC-BNR	AT3 JB3	3/4"	(8) #14 + (1) #14 EGC
5C-C124	AT3 JB3	5-AT3-V-1	3/4"	(6) #14 + (1) #14 EGC
5C-C125	AT3 JB3	5-AT3-V-2	3/4"	(4) #14 + (1) #14 EGC
5C-C126	MCC-BNR	5-AT3-P-2 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
5C-C127	5-AT3-P-2 (LCP)	5-AT3-P-2 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
5C-C128	PLC-BNR	AT3 JB4	1"	(3)-#18TSP
5C-C129	AT3 JB4	5-AT3-F-5 (FIT)	3/4"	(1)-#18TSP
5C-C130	5-AT3-F-S (FIT)	5-AT3-F-5 (FE)	1"	(1) MFR CABLE
5C-C131	AT3 JB4	5-AT3-V-5	3/4"	(2)-#18TSP
5C-C132	PLC-BNR	5-AT3-V-5	3/4"	(6) #14 + (1) #14 EGC
5C-C133	PLC-BNR	AT3 JB5	1 1/2"	(6)-#18TSP
5C-C134	NOT USED	-	-	-
5C-C135	AT3 JB5	5-AT3-V-3	3/4"	(2)-#18TSP

PLC-BNR CONTINUED

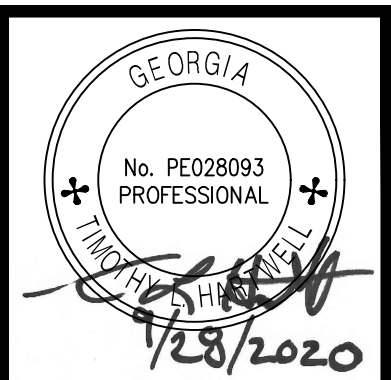
5C-C136	NOT USED	-	-	-
5C-C137	AT3 JB5	5-AT3-V-4	3/4"	(2)-#18TSP
5C-C138	PLC-BNR	AT3 JB6	1"	(12) #14 + (1) #14 EGC
5C-C139	AT3 JB6	5-AT3-V-3	3/4"	(6) #14 + (1) #14 EGC
5C-C140	AT3 JB6	5-AT3-V-4	3/4"	(6) #14 + (1) #14 EGC
5C-C141	PLC-BNR	AT3 JB7	1"	(3)-#18TSP
5C-C142	AT3 JB7	5-AT3-ORP-1 (AIT)	3/4"	(1)-#18TSP
5C-C143	5- AT3-ORP-1 (AIT)	5-AT3-ORP-1 (AE)	1"	(1) MFR CABLE
5C-C144	AT3 JB7	5-AT3-AIT-2	3/4"	(2)-#18TSP
5C-C145	5-AT3-AIT-2	5-AT3-DO-3	1"	(1) MFR CABLE
5C-C146	5-AT3-AIT-2	5-AT3-DO-4	1"	(1) MFR CABLE
5C-C147	PLC-BNR	5-EAT-SG-1	1"	(14) #14 + (1) #14 EGC
5C-C148	PLC-BNR	5-A-BL-1	1"	(1) CAT6E CABLE
5C-C149	PLC-BNR	5-A-V-1	3/4"	(6) #14 + (1) #14 EGC
5C-C150	PLC-BNR	5-A-BL-2	1"	(1) CAT6E CABLE
5C-C151	PLC-BNR	5-A-V-2	3/4"	(6) #14 + (1) #14 EGC
5C-C152	PLC-BNR	5-A-BL-3	1"	(1) CAT6E CABLE
5C-C153	PLC-BNR	5-A-V-3	3/4"	(6) #14 + (1) #14 EGC
5C-C154	PLC-BNR	5-A-BL-4	1"	(1) CAT6E CABLE
5C-C155	PLC-BNR	5-A-V-4	3/4"	(6) #14 + (1) #14 EGC
5C-C156	PLC-BNR	5-A-BL-5	1"	(1) CAT6E CABLE
5C-C157	PLC-BNR	5-A-V-5	3/4"	(6) #14 + (1) #14 EGC
5C-C158	PLC-BNR	5-A-V-6	3/4"	(6) #14 + (1) #14 EGC
5C-C159	PLC-BNR	5-A-PT-1	3/4"	(1)-#18TSP
5C-C160	PLC-BNR	MCC-BNR	2"	(12)-#18TSP
5C-C161	PLC-BNR	MCC-BNR	3"	(120) #14 + (1) #14 EGC

RIO - BNR1 - AERATION TANK 4

6C-C001	PLC-H	6-AT4-SG-1	3/4"	(4) #14 + (1) #14 EGC
6C-C002	EX MCC-H	6-AT4-P-1 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
6C-C003	6-AT4-P-1 (LCP)	6-AT4-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
6C-C004	PLC-H	AT4 JB1	1"	(3)-#18 TSP
6C-C005	AT4 JB1	6-AT4-F-6 (FIT)	3/4"	(1)-#18 TSP
6C-C006	6-AT4-F-6 (FIT)	6-AT4-F-6 (FE)	3/4"	(1) MFR CABLE
6C-C007	AT4 JB1	6-AT4-V-6	3/4"	(2)-#18 TSP
6C-C008	PLC-H	6-AT4-V-6	3/4"	(6) #14 + (1) #14 EGC
6C-C009	PLC-H	AT4- JB2	1 1/2"	(6)-#18TSP
6C-C010	NOT USED	-	-	-
6C-C011	AT4- JB2	6-AT4-V-1	3/4"	(2)-#18TSP
6C-C012	NOT USED	-	-	-
6C-C013	AT4- JB2	6-AT4-V-2	3/4"	(2)-#18TSP
6C-C014	AT4- JB2	6-AT4-AIT-1	3/4"	(2)-#18TSP
6C-C015	6-AT4-AIT-1 (DO1)	6-AT4-DO-1	1"	(1) MFR CABLE
6C-C016	6-AT4-AIT-1 (DO2)	6-AT4-DO-2	1"	(1) MFR CABLE
6C-C017	PLC-H	AT4 JB3	3/4"	(8) #14 + (1) #14 EGC
6C-C018	AT4 JB3	6-AT4-V-1	3/4"	(6) #14 + (1) #14 EGC
6C-C019	AT4 JB3	6-AT4-V-2	3/4"	(4) #14 + (1) #14 EGC
6C-C020	EX MCC-H	6-AT4-P-2 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC
6C-C021	6-AT4-P-2 (LCP)	6-AT4-P-2 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
6C-C022	PLC-H	AT4 JB4	1"	(3)-#18TSP
6C-C023	AT4 JB4	6-AT4-F-5 (FIT)	3/4"	(1)-#18TSP
6C-C024	6-AT4-F-S (FIT)	6-AT4-F-5 (FE)	1"	(1) MFR CABLE
6C-C025	AT4 JB4	6-AT4-V-5	3/4"	(2)-#18TSP
6C-C026	PLC-H	6-AT4-V-5	3/4"	(6) #14 + (1) #14 EGC
6C-C027	PLC-H	AT4 JB5	1 1/2"	(6)-#18TSP
6C-C028	NOT USED	-	-	-
6C-C029	AT4 JB5	6-AT4-V-3	3/4"	(2)-#18TSP
6C-C030	NOT USED	-	-	-
6C-C031	AT4 JB5	6-AT4-V-4	3/4"	(2)-#18TSP
6C-C032	PLC-H	AT4 JB6	1"	(12) #14 + (1) #14 EGC
6C-C033	AT4 JB6	6-AT4-V-3	3/4"	(6) #14 + (1) #14 EGC
6C-C034	AT4 JB6	6-AT4-V-4	3/4"	(6) #14 + (1) #14 EGC

KEY NOTES:

- 1 PROVIDE FEEDERS TYPICAL OF 4 PRESSURE TRANSMITTERS, PT-1, PT-2, PT-3, AND PT-4.



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PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDWINJZ	NCTINJZ	TLH	SEPTEMBER 2020	AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONDUIT AND WIRE SCHEDULE CONTROL 2

SHEET NO.
E-49

FEEDER SCHEDULE - CONTROL				
FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
RIO - BNR1 - AERATION TANK 4 (CONTINUED)				
6C-C035	PLC-H	AT4 JB7	1"	(3)-#18TSP
6C-C036	AT4 JB7	6-AT4-ORP-2 (AIT)	3/4"	(1)-#18TSP
6C-C037	5- AT4-ORP-2 (AIT)	6-AT4-ORP-2 (AE)	1"	(1) MFR CABLE
6C-C038	AT4 JB7	6-AT4-AIT-2	3/4"	(2)-#18TSP
6C-C039	6-AT4-AIT-2	6-AT4-DO-3	1"	(1) MFR CABLE
6C-C040	6-AT4-AIT-2	6-AT4-DO-4	1"	(1) MFR CABLE
6C-C041	NOT USED	-	-	-
6C-C042	NOT USED	-	-	-
6C-C043	NOT USED	-	-	-
6C-C044	NOT USED	-	-	-
6C-C045	PLC-H	MCC-H	1"	(4)-#18TSP
6C-C046	PLC-H	MCC-H	1 1/4"	(32) #14 + (1) #14 EGC
MBR MCP - MBR FACILITY				
7C-C001	PLC-BNR	7-MBR MCP	1"	(1) CAT6E CABLE
7C-C002	MCC-MBR	7-A-BL-1 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C003	MCC-MBR	7-A-BL-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C004	7-MBR MCP	7-A-FS-1	3/4"	(2) #14 + (1) #14 EGC
7C-C005	MCC-MBR	7-A-BL-2 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C006	MCC-MBR	7-A-BL-2 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C007	7-MBR MCP	7-A-FS-2	3/4"	(2) #14 + (1) #14 EGC
7C-C008	MCC-MBR	7-A-BL-3 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C009	MCC-MBR	7-A-BL-3 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C010	7-MBR MCP	7-A-FS-3	3/4"	(2) #14 + (1) #14 EGC
7C-C011	MCC-MBR	7-A-BL-4 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C012	MCC-MBR	7-A-BL-4 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C013	7-MBR MCP	7-A-FS-4	3/4"	(2) #14 + (1) #14 EGC
7C-C014	MCC-MBR	7-A-BL-5 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C015	MCC-MBR	7-A-BL-5 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C016	7-MBR MCP	7-A-FS-5	3/4"	(2) #14 + (1) #14 EGC
7C-C017	7-MBR MCP	7-TK1-V-1	3/4"	(6) #14 + (1) #14 EGC
7C-C018	7-MBR MCP	7-TK1-SG-1	3/4"	(8) #14 + (1) #14 EGC
7C-C019	7-MBR MCP	7-TK1-LS-1	3/4"	(2) #14 + (1) #14 EGC
7C-C020	7-MBR MCP	7-TK1-LS-2	3/4"	(2) #14 + (1) #14 EGC
7C-C021	7-MBR MCP	7-TK1-L-1	3/4"	(1) #18 TSP
7C-C022	7-MBR MCP	7-TK1-V-2	3/4"	(2) #14 + (1) #14 EGC
7C-C023	7-MBR MCP	7-TK1-SV-1	3/4"	(2) #14 + (1) #14 EGC
7C-C024	7-MBR MCP	7-TK1-PT-1	3/4"	(1) #18 TSP
7C-C025	7-MBR MCP	7-TK1-V-3	3/4"	(2) #14 + (1) #14 EGC
7C-C026	7-MBR MCP	7-TK1-V-4	3/4"	(2) #14 + (1) #14 EGC
7C-C027	7-MBR MCP	7-TK1-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C028	7-TK1-F-1 (FIT)	7-TK1-F-1 (FE)	1"	(1) MFR CABLE
7C-C029	MCC-MBR	7-PR-P-1 (DS)	3/4"	(2) #14 + (1) #14 EGC
7C-C030	MCC-MBR	7-PR-P-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C031	MCC-MBR	7-PR-PS-1 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C032	MCC-MBR	7-PR-PS-2 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C033	7-MBR MCP	7-TK1-SV-2	3/4"	(2) #14 + (1) #14 EGC
7C-C034	7-MBR MCP	7-TK1-TU-1 (AIT)	3/4"	(1) #18 TSP
7C-C035	7-TK1-TU-1 (AIT)	7-TK1-TU-1 (AE)	1"	(1) MFR CABLE
7C-C036	7-MBR MCP	7-TK1-SV-3	3/4"	(2) #14 + (1) #14 EGC
7C-C037	7-MBR MCP	7-TK1-V-5	3/4"	(6) #14 + (1) #14 EGC
7C-C038	MCC-MBR	7-RAS-P-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C039	MCC-MBR	7-RAS-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C040	7-MBR MCP	7-RAS-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C041	7-RAS-F-1 (FIT)	7-RAS-F-1 (FE)	1"	(1) MFR CABLE
7C-C042	7-MBR MCP	7-TK2-V-1	3/4"	(6) #14 + (1) #14 EGC
7C-C043	7-MBR MCP	7-TK2-SG-1	3/4"	(8) #14 + (1) #14 EGC
7C-C044	7-MBR MCP	7-TK2-LS-1	3/4"	(2) #14 + (1) #14 EGC

2

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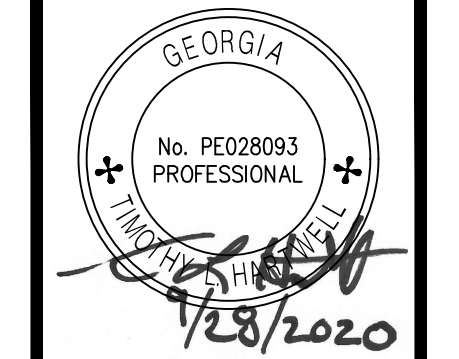
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MBR MCP - MBR FACILITY (CONTINUED)				
7C-C045	7-MBR MCP	7-TK2-LS-2	3/4"	(2) #14 + (1) #14 EGC
7C-C046	7-MBR MCP	7-TK2-L-1	3/4"	(1) #18 TSP
7C-C047	7-MBR MCP	7-TK2-V-2	3/4"	(2) #14 + (1) #14 EGC
7C-C048	7-MBR MCP	7-TK2-SV-1	3/4"	(2) #14 + (1) #14 EGC
7C-C049	7-MBR MCP	7-TK2-PT-1	3/4"	(1) #18 TSP
7C-C050	7-MBR MCP	7-TK2-V-3	3/4"	(2) #14 + (1) #14 EGC
7C-C051	7-MBR MCP	7-TK2-V-4	3/4"	(2) #14 + (1) #14 EGC
7C-C052	7-MBR MCP	7-TK2-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C053	7-TK2-F-1 (FIT)	7-TK2-F-1 (FE)	1"	(1) MFR CABLE
7C-C054	MCC-MBR	7-PR-P-2 (DS)	3/4"	(2) #14 + (1) #14 EGC
7C-C055	MCC-MBR	7-PR-P-2 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C056	MCC-MBR	7-PR-PS-3 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C057	MCC-MBR	7-PR-PS-4 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C058	7-MBR MCP	7-TK2-SV-2	3/4"	(2) #14 + (1) #14 EGC
7C-C059	7-MBR MCP	7-TK2-TU-1 (AIT)	3/4"	(1) #18 TSP
7C-C060	7-TK2-TU-1 (AIT)	7-TK2-TU-1 (AE)	1"	(1) MFR CABLE
7C-C061	7-MBR MCP	7-TK2-SV-3	3/4"	(2) #14 + (1) #14 EGC
7C-C062	7-MBR MCP	7-TK2-V-5	3/4"	(6) #14 + (1) #14 EGC
7C-C063	MCC-MBR	7-RAS-P-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C064	MCC-MBR	7-RAS-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C065	7-MBR MCP	7-RAS-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C066	7-RAS-F-1 (FIT)	7-RAS-F-1 (FE)	1"	(1) MFR CABLE
7C-C067	7-MBR MCP	7-TK3-V-1	3/4"	(6) #14 + (1) #14 EGC
7C-C068	7-MBR MCP	7-TK3-SG-1	3/4"	(8) #14 + (1) #14 EGC
7C-C069	7-MBR MCP	7-TK3-LS-1	3/4"	(2) #14 + (1) #14 EGC
7C-C070	7-MBR MCP	7-TK3-LS-2	3/4"	(2) #14 + (1) #14 EGC
7C-C071	7-MBR MCP	7-TK3-L-1	3/4"	(1) #18 TSP
7C-C072	7-MBR MCP	7-TK3-V-2	3/4"	(2) #14 + (1) #14 EGC
7C-C073	7-MBR MCP	7-TK3-SV-1	3/4"	(2) #14 + (1) #14 EGC
7C-C074	7-MBR MCP	7-TK3-PT-1	3/4"	(1) #18 TSP
7C-C075	7-MBR MCP	7-TK3-V-3	3/4"	(2) #14 + (1) #14 EGC
7C-C076	7-MBR MCP	7-TK3-V-4	3/4"	(2) #14 + (1) #14 EGC
7C-C077	7-MBR MCP	7-TK3-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C078	7-TK3-F-1 (FIT)	7-TK3-F-1 (FE)	1"	(1) MFR CABLE
7C-C079	MCC-MBR	7-PR-P-3 (DS)	3/4"	(2) #14 + (1) #14 EGC
7C-C080	MCC-MBR	7-PR-P-3 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C081	MCC-MBR	7-PR-PS-5 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C082	MCC-MBR	7-PR-PS-6 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C083	7-MBR MCP	7-TK3-SV-2	3/4"	(2) #14 + (1) #14 EGC
7C-C084	7-MBR MCP	7-TK3-TU-1 (AIT)	3/4"	(1) #18 TSP
7C-C085	7-TK3-TU-1 (AIT)	7-TK3-TU-1 (AE)	1"	(1) MFR CABLE
7C-C086	7-MBR MCP	7-TK3-SV-3	3/4"	(2) #14 + (1) #14 EGC
7C-C087	7-MBR MCP	7-TK3-V-5	3/4"	(6) #14 + (1) #14 EGC
7C-C088	MCC-MBR	7-RAS-P-3 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C089	MCC-MBR	7-RAS-P-3 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C090	7-MBR MCP	7-RAS-F-3 (FIT)	3/4"	(1) #18 TSP
7C-C091	7-RAS-F-3 (FIT)	7-RAS-F-3 (FE)	1"	(1) MFR CABLE
7C-C092	7-MBR MCP	7-TK4-V-1	3/4"	(6) #14 + (1) #14 EGC
7C-C093	7-MBR MCP	7-TK4-SG-1	3/4"	(8) #14 + (1) #14 EGC
7C-C094	7-MBR MCP	7-TK4-LS-1	3/4"	(2) #14 + (1) #14 EGC
7C-C095	7-MBR MCP	7-TK4-LS-2	3/4"	(2) #14 + (1) #14 EGC
7C-C096	7-MBR MCP	7-TK4-L-1	3/4"	(1) #18 TSP
7C-C097	7-MBR MCP	7-TK4-V-2	3/4"	(2) #14 + (1) #14 EGC

- KEY NOTES:**
- 1 CONTRACTOR SHALL COORDINATE WITH UV MANUFACTURER FOR WIRE & CONDUIT REQUIREMENTS FOR CONNECTION OF UV BANKS AND ASSOCIATED INSTRUMENTATION TO UV ENCLOSURES. (MCP & POWER PANELS.)
 - 2 PROVIDE (4) FEEDERS FROM 7-MBR-MCP TO 7-MBR-RIO-2, 3, AND 4.
 - 3 PROVIDE AN ADDITIONAL 3/4" CONDUIT WITH (2)#12+12EGC TO POWER EQUIPMENT FROM PANEL.



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PROJECT NO.:	100061831
DESIGNED BY:	RDW/INJZ
DRAWN BY:	NCT/INJZ
CHECKED BY:	TLH
APPROVED BY:	TLH
DATE:	SEPTEMBER 2020
SCALE:	AS SHOWN
CERTIFICATE OF AUTHORIZATION #:	PEP07023 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.
REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONDUIT AND WIRE SCHEDULE
CONTROL 3

SHEET NO.
E-50

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
MBR MCP - MBR FACILITY CONTINUED				
7C-C098	7-MBR MCP	7-TK4-SV-1	3/4"	(2) #14 + (1) #14 EGC
7C-C099	7-MBR MCP	7-TK4-PT-1	3/4"	(1) #18 TSP
7C-C100	7-MBR MCP	7-TK4-V-3	3/4"	(2) #14 + (1) #14 EGC
7C-C101	7-MBR MCP	7-TK4-V-4	3/4"	(2) #14 + (1) #14 EGC
7C-C102	7-MBR MCP	7-TK4-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C103	7-TK4-F-1 (FIT)	7-TK4-F-1 (FE)	1"	(1) MFR CABLE
7C-C104	MCC-MBR	7-PR-P-3 (DS)	3/4"	(2) #14 + (1) #14 EGC
7C-C105	MCC-MBR	7-PR-P-3 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C106	MCC-MBR	7-PR-PS-7 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C107	MCC-MBR	7-PR-PS-8 (PSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C108	7-MBR MCP	7-TK4-SV-2	3/4"	(2) #14 + (1) #14 EGC
7C-C109	7-MBR MCP	7-TK4-TU-1 (AIT)	3/4"	(1) #18 TSP
7C-C110	7-TK4-TU-1 (AIT)	7-TK4-TU-1 (AE)	1"	(1) MFR CABLE
7C-C111	7-MBR MCP	7-TK4-SV-3	3/4"	(2) #14 + (1) #14 EGC
7C-C112	7-MBR MCP	7-TK4-V-5	3/4"	(6) #14 + (1) #14 EGC
7C-C113	MCC-MBR	7-RAS-P-4 (TSH)	3/4"	(2) #14 + (1) #14 EGC
7C-C114	MCC-MBR	7-RAS-P-4 DS	3/4"	(2) #14 + (1) #14 EGC
7C-C115	7-MBR MCP	7-RAS-F-4 (FIT)	3/4"	(1) #18 TSP
7C-C116	7-RAS-F-4 (FIT)	7-RAS-F-4 (FE)	1"	(1) MFR CABLE
7C-C117	7-MBR MCP	7-PC-T-1	3/4"	(1) #18 TSP
7C-C118	7-MBR MCP	7-PC-LS-1	3/4"	(2) #14 + (1) #14 EGC
7C-C119	7-MBR MCP	7-CA-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C120	7-CA-F-1 (FIT)	7-CA-F-1 (FE)	1"	(1) MFR CABLE
7C-C121	7-MBR MCP	7-CA-V-1	3/4"	(2) #14 + (1) #14 EGC
7C-C122	7-MBR MCP	7-SHC-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C123	7-SHC-F-1 (FIT)	7-SHC-F-1 (FE)	1"	(1) MFR CABLE
7C-C124	7-MBR MCP	7-SHC-V-1	3/4"	(2) #14 + (1) #14 EGC
7C-C125	MCC-MBR	7-CA-PS-1	3/4"	(2) #14 + (1) #14 EGC
7C-C126	MCC-MBR	7-CA-PS-2	3/4"	(2) #14 + (1) #14 EGC
7C-C127	7-MBR MCP	7-CA-PS-3	3/4"	(2) #14 + (1) #14 EGC
7C-C128	7-MBR MCP	7-CA-PS-4	3/4"	(2) #14 + (1) #14 EGC
7C-C129	7-MBR MCP	MCC-MBR	2 1/2"	(110) #14 + (1) #14 EGC
7C-C130	7-MBR MCP	MCC-MBR	2 1/2"	(20) #18 TSP
7C-C131	7-MBR MCP	7-MBR-RIO 1, 2, 3, AND 4	2"	(6) PAIR - FO CABLE
7C-C132	7-MBR MCP	7-WAS-F-1 (FIT)	3/4"	(1) #18 TSP
7C-C133	7-WAS-F-1 (FIT)	7-WAS-F-1 (FE)	1"	(1) MFR CABLE
7C-C134	7-MBR MCP	7-WAS-V-1	3/4"	(2) #14 + (1) #14 EGC
7C-C135	7-MBR MCP	7-SP-LS-1	3/4"	(2) #14 + (1) #14 EGC
PLC-UVPA (UVPA FACILITY)				
10C-C001	PLC-A	PLC-UVPA	2"	(6) PAIR - FO CABLE
10C-C002	PLC-UVPA	UV-CH-1 MCP	1"	(1) - CAT 6E CABLE
10C-C003	PLC-UVPA	10-UV-F-1- (FIT)	3/4"	(1) - #18 TSP
10C-C004	10-UV-F-1- (FIT)	10-UV-F-1 (FE)	1"	(1) MFR CABLE
10C-C005	10-UV-CH-1-MCP	10-UV-L-1 (LIT)	3/4"	(1) - #18 TSP
10C-C006	10-UV-L-1 (LIT)	10-UV-L-1 (LE)	1"	(1) MFR CABLE
10C-C007	UV-CH-1 MCP	10-UV-LS-1 JB	3/4"	(4) #14 + (1) #14 EGC
10C-C008	10-UV-LS-1 JB	10-UV-LS-1	1"	(1) MFR CABLE
10C-C009	10-UV-CH-1 - POWER PANEL	10-UV-CH-1 BANKS	KEY NOTE #1	KEY NOTE #1
10C-C010	10-UV-CH-1-MCP	10-UV-L-2 (LIT)	3/4"	(1) - #18 TSP
10C-C011	10-UV-L-2 (LIT)	10-UV-L-2 (LE)	1"	(1) MFR CABLE
10C-C012	10-UV-CH-1 MCP	10-UV-SG-1	3/4"	(12) #14 + (1) #14 EGC
10C-C013	PLC-UVPA	10-PA-SG-1	3/4"	(12) #14 + (1) #14 EGC
10C-C014	PLC-UVPA	10-PA-DO-1 (AIT)	3/4"	(1) - #18 TSP
10C-C015	10-PA-DO-1 (AIT)	10-PA-DO-1 (AE)	1"	(1) MFR CABLE
10C-C016	PLC-UVPA	10-PA-SG-2	3/4"	(12) #14 + (1) #14 EGC
10C-C017	PLC-UVPA	10-PA-DO-2 (AIT)	3/4"	(1) - #18 TSP

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PLC-UVPA (UVPA FACILITY)

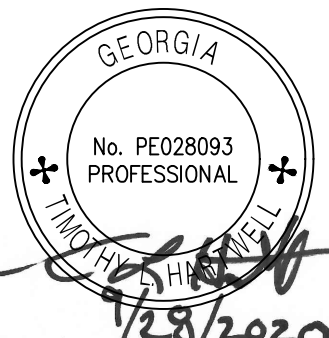
10C-C018	10-PA-DO-2 (AIT)	10-PA-DO-2 (AE)	1"	(1) MFR CABLE
10C-C019	PLC-UVPA	10-PA-SP-1	3/4"	(1) - #18 TSP
10C-C020	PLC-UVPA	10-A-BL-1	3/4"	(1) - CAT 6E CABLE
10C-C021	PLC-UVPA	10-A-BL-2	3/4"	(1) - CAT 6E CABLE
10C-C022	PLC-UVPA	10-A-V-1	3/4"	(4) #14 + (1) #14 EGC
10C-C023	PLC-UVPA	10-A-V-2	3/4"	(4) #14 + (1) #14 EGC
10C-C024	PLC-UVPA	10-A-BL-3	3/4"	(1) - CAT 6E CABLE
10C-C025	PLC-UVPA	10-A-V-3	3/4"	(4) #14 + (1) #14 EGC
10C-C026	PLC-UVPA	10-A-V-4	3/4"	(4) #14 + (1) #14 EGC
10C-C027	PLC-UVPA	10-A-F-1	3/4"	(1) - #18 TSP
10C-C028	PLC-UVPA	10-A-F-2	3/4"	(1) - #18 TSP
10C-C029	PLC-UVPA	10-A-PT-1	3/4"	(2) - #18 TSP
10C-C030	PLC-UVPA	10-A-PT-2	3/4"	(2) - #18 TSP
10C-C031	PLC-UVPA	10-PA-TURB-1	3/4"	(1) - #18 TSP
10C-C032	NOT USED	-	-	-

RIO - BNR1 - WAS HOLDING TANK AND REUSE PUMPS (CONTINUED)

11C-C001	PLC-BNR	RIO-BNR1	2"	(6) PAIR - FO CABLE
11C-C002	RIO-BNR1	11-WT-L-1 (LIT)	3/4"	(1) - #18 TSP
11C-C003	11-WT-L-1 (LIT)	11-WT-L-1 (LE)	1"	(1) MFR CABLE
11C-C004	RIO-BNR1	11-WT-LS-1	3/4"	(2) #14 + (1) #14 EGC
11C-C005	MCC-BNR	11-WAS-P-1 (LCP)	1"	(26) #14 + (1) #14 EGC
11C-C006	11-WAS-P-1 (LCP)	11-WAS-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
11C-C007	MCC-BNR	11-WAS-P-2 (LCP)	1"	(26) #14 + (1) #14 EGC
11C-C008	11-WAS-P-2 (LCP)	11-WAS-P-2 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
11C-C009	MCC-BNR	11-WAS-P-3 (LCP)	1"	(26) #14 + (1) #14 EGC
11C-C010	11-WAS-P-3 (LCP)	11-WAS-P-3 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC
11C-C011	PLC-BNR	MCC-BNR	1 1/2"	(6) - #18 TSP
11C-C012	PLC-BNR	MCC-BNR	2"	(48) #14 + (1) #14 EGC
11C-C013	NOT USED	-	-	-
11C-C014	NOT USED	-	-	-
11C-C015	NOT USED	-	-	-
11C-C016	NOT USED	-	-	-
11C-C017	NOT USED	-	-	-
11C-C018	NOT USED	-	-	-
11C-C019	RIO-BNR1	11-WAS-F-1 (FIT)	3/4"	(1) - #18 TSP
11C-C020	11-WAS-F-1 (FIT)	11-WB-F-1 (FE)	1"	(1) MFR CABLE
11C-C021	NOT USED	-	-	-
11C-C022	RIO-BNR1	11-RP MCP	1 1/2"	(20) #14 + (1) #14 EGC
11C-C023	11-RP MCP	11-RP-L-1	3/4"	(1) - #18 TSP
11C-C024	11-RP MCP	11-RP-LS-1	3/4"	(2) #14 + (1) #14 EGC
11C-C025	11-RP MCP	11-RP-LS-2	3/4"	(2) #14 + (1) #14 EGC
11C-C026	11-RP MCP	11-RP-PS-1	3/4"	(2) #14 + (1) #14 EGC
11C-C027	11-RP MCP	11-RP-PS-2	3/4"	(2) #14 + (1) #14 EGC
11C-C028	11-RP MCP	11-RP-P-1 (HTR)	3/4"	(2) #14 + (1) #14 EGC
11C-C029	11-RP MCP	11-RP-P-2 (HTR)	3/4"	(2) #14 + (1) #14 EGC
11C-C030	RIO-BNR1	11-RP-F-1 (FIT)	3/4"	(1) - #18 TSP
11C-C031	11-RP-F-1 (FIT)	11-RP-F-1 (FE)	1"	(1) - MFR CABLE
11C-C032	RIO-BNR1	11-WAS-SP-1	3/4"	(1) - #18 TSP
11C-C033	RIO-BNR1	11-R-WWLEVEL	1"	(2) - #18 TSP

KEY NOTES:

- ① CONTRACTOR SHALL COORDINATE WITH UV MANUFACTURER AND PROVIDE ALL WIRE & CONDUIT REQUIREMENTS FOR CONNECTION OF UV BANKS AND ASSOCIATED INSTRUMENTATION TO UV ENCLOSURES. (MCP & POWER PANELS.)
- ② PROVIDE AN ADDITIONAL 3/4" CONDUIT WITH (2)#12+#12EGC TO POWER EQUIPMENT FROM PANEL.



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PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJ	NCT/INJ	TLH		SEPTEMBER 2020	AS SHOWN

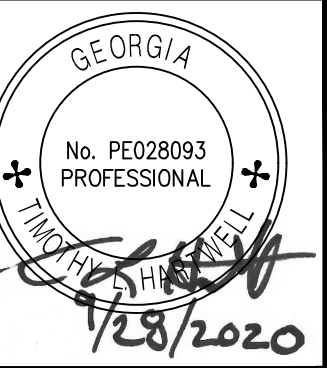
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONDUIT AND WIRE SCHEDULE CONTROL 4

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
PLC-H - AEROBIC DIGESTER				
12C-C001	PLC-BNR	PLC-H	2"	(2)-(6) PAIR - FO CABLE
12C-C002	PLC-H	12-AD-LS-1 (JUNCTION BOX)	3/4"	(2) #14 + (1) #14 EGC
12C-C003	12-AD-LS-1 JUNCTION BOX	12-AD-LS-1 (JUNCTION BOX)	1"	(1) MFR CABLE
12C-C004	PLC-H	12-AD-L-1 (LIT)	3/4"	(1) - #18 TSP
12C-C005	12-AD-L-1 (LIT)	12-AD-L-1 (LE)	1"	(1) MFR CABLE
12C-C006	PLC-H	12-AD-DO-1/2 (AIT)	3/4"	(1) - #18 TSP
12C-C007	12-AD-DO-1/2 (AIT)	12-AD-DO-1 (AE)	1"	(1) MFR CABLE
12C-C008	12-AD-DO-1/2 (AIT)	12-AD-DO-2 (AE)	1"	(1) MFR CABLE
12C-C009	PLC-H	12-AD-LS-2 (JUNCTION BOX)	3/4"	(2) #14 + (1) #14 EGC
12C-C010	12-AD-LS-2 JUNCTION BOX	12-AD-LS-2	1"	(1) MFR CABLE
12C-C011	PLC-H	10-UV-L-2 (LIT)	3/4"	(1) - #18 TSP
12C-C012	12-AD-L-2 (LIT)	12-AD-L-2 (LE)	1"	(1) MFR CABLE
12C-C013	PLC-H	12-AD-DO-3/4-(AIT)	3/4"	(1) - #18 TSP
12C-C014	12-AD-DO-3/4-(AIT)	12-AD-DO-3-(AE)	1"	(1) MFR CABLE
12C-C015	12-AD-DO-3/4-(AIT)	12-AD-DO-4-(AE)	1"	(1) MFR CABLE
12C-C016	PLC-H	12-AD-BL-1	1"	(3) PAIR - FO CABLE
12C-C017	PLC-H	12-AD-V-1	3/4"	(4) #14 + (1) #14 EGC
12C-C018	PLC-H	12-AD-BL-2	1"	(3) PAIR - FO CABLE
12C-C019	PLC-H	12-AD-V-2	3/4"	(4) #14 + (1) #14 EGC
12C-C020	PLC-H	12-AD-BL-3	1"	(3) PAIR - FO CABLE
12C-C021	PLC-H	12-AD-V-3	3/4"	(4) #14 + (1) #14 EGC
12C-C022	PLC-H	12-AD-PT-1	3/4"	(1) - #18 TSP
12C-C023	PLC-H	12-AD-PT-2	3/4"	(1) - #18 TSP
12C-C024	PLC-H	12-AD-V-4	3/4"	(4) #14 + (1) #14 EGC
12C-C025	PLC-H	12-AD-V-5	3/4"	(4) #14 + (1) #14 EGC
12C-C026	PLC-H	12-AD-V-6 & 7JB1	3/4"	(8) #14 + (1) #14 EGC
12C-C027	PLC-H	12-AD-V-6 & 7JB2	1"	(4) - #18 TSP
12C-C028	12-AD-V-6 & 7JB1	12-AD-V-6	3/4"	(4) #14 + (1) #14 EGC
12C-C029	12-AD-V-6 & 7JB1	12-AD-V-7	3/4"	(4) #14 + (1) #14 EGC
12C-C030	12-AD-V-6 & 7JB2	12-AD-V-6	3/4"	(2) - #18 TSP
12C-C031	12-AD-V-6 & 7JB2	12-AD-V-7	3/4"	(2) - #18 TSP
12C-C032	PLC-H	12-AD-V-8 & 9JB1	3/4"	(8) #14 + (1) #14 EGC
12C-C033	PLC-H	12-AD-V-8 & 9JB2	1"	(4) - #18 TSP
12C-C034	12-AD-V-8 & 9JB1	12-AD-V-8	3/4"	(4) #14 + (1) #14 EGC
12C-C035	12-AD-V-8 & 9JB1	12-AD-V-9	3/4"	(4) #14 + (1) #14 EGC
12C-C036	12-AD-V-8 & 9JB2	12-AD-V-8	3/4"	(2) - #18 TSP
12C-C037	12-AD-V-8 & 9JB2	12-AD-V-9	3/4"	(2) - #18 TSP
12C-C038	PLC-H	RIO-H1	1"	(1) - CAT 6E CABLE
PLC-MSG (SG-MAIN)				
14C-C001	PLC-MSG	PCS (NETWORK CABINET)	2"	(2)-(6) PAIR - FO CABLE
PLC-DW (DEWATERING BUILDING)				
15C-C001	PLC-MSG	PLC-DW	2"	(2) - 6 PAIR FO CABLE
15C-C002	PLC-DW	15-RDT-F-1 (FIT)	3/4"	(1)-18TSP
15C-C003	15-RDT-F-1 (FIT)	15-RDT-F-1 (FE)	1"	(1) MFR CABLE
15C-C004	PLC-DW	15-RDT-F-2 (FIT)	3/4"	(1)-18TSP
15C-C005	15-RDT-F-2 (FIT)	15-RDT-F-2 (FE)	1"	(1) MFR CABLE
15C-C006	PLC-DW	15-RDT-1 MCP	1"	(1) - CAT 6E CABLE
15C-C007	PLC-DW	15-RDT-2 MCP	1"	(2)-CAT6
15C-C008	15-DF-P-1 (LCP)	15-DF-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C009	15-DF-P-2 (LCP)	15-DF-P-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C010	15-D-P-1 (LCP)	15-D-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C011	15-D-P-2 (LCP)	15-D-P-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C012	15-D-P-3 (LCP)	15-D-P-3 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C013	15-D-P-4 (LCP)	15-D-P-4 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C014	15-D-P-5 (LCP)	15-D-P-5 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C015	15-D-P-6 (LCP)	15-D-P-6 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C016	15-D-P-7 (LCP)	15-D-P-7 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C017	15-D-P-8 (LCP)	15-D-P-8 DS	3/4"	(2) #14 + (1) #14 EGC

PLC-DW (DEWATERING BUILDING) CONTINUED

15C-C018	NOT USED	-	-	-
15C-C019	15-DP-F-1 (FIT)	15-DP-F-1 (FE)	1"	(1) MFR CABLE
15C-C020	MCC-DW	15-BFP-P-1 JB	1"	(26) #14 + (1) #14 EGC
15C-C021	15-BFP-P-1 JB	15-BFP-P-1 LCP	1"	(20) #14 + (1) #14 EGC
15C-C022	15-BFP-P-1 JB	15-BFP-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C023	15-BFP-P-1 JB	15-BFP-P-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C024	15-BFP-P-1 JB	15-BFP-PS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C025	MCC-DW	15-BFP-P-2 JB	1"	(26) #14 + (1) #14 EGC
15C-C026	15-BFP-P-2 JB	15-BFP-P-2 LCP	1"	(20) #14 + (1) #14 EGC
15C-C027	15-BFP-P-2 JB	15-BFP-P-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C028	15-BFP-P-2 JB	15-BFP-P-2 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C029	15-BFP-P-2 JB	15-BFP-PS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C030	MCC-DW	15-BFP-P-3 JB	1"	(26) #14 + (1) #14 EGC
15C-C031	15-BFP-P-3 JB	15-BFP-P-3 LCP	1"	(20) #14 + (1) #14 EGC
15C-C032	15-BFP-P-3 JB	15-BFP-P-3 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C033	15-BFP-P-3 JB	15-BFP-P-3 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C034	15-BFP-P-3 JB	15-BFP-PS-3	3/4"	(2) #14 + (1) #14 EGC
15C-C035	PLC-DW	15-BFP-PT-1	3/4"	(1)-18TSP
15C-C036	PLC-DW	15-BFP-PT-2	3/4"	(1)-18TSP
15C-C037	PLC-DW	15-BFP-PT-3	3/4"	(1)-18TSP
15C-C038	PLC-DW	15-BFP-F-1 (FIT)	3/4"	(1)-18TSP
15C-C039	15-BFP-F-1 (FIT)	15-BFP-F-1 (FE)	1"	(1) MFR CABLE
15C-C040	PLC-DW	15-BFP-F-1 (FIT)	3/4"	(1)-18TSP
15C-C041	15-BFP-F-1 (FIT)	15-BFP-F-1 (FE)	3/4"	(1) MFR CABLE
15C-C042	MCC-DW	15-BFP-BP-1 JB	1"	(18) #14 + (1) #14 EGC
15C-C043	15-BFP-BP-1 JB	15-BFP-BP-1 LCP	1"	(16) #14 + (1) #14 EGC
15C-C044	15-BFP-BP-1 JB	15-BFP-BP-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C045	MCC-DW	15-BFP-BP-2 JB	1"	(18) #14 + (1) #14 EGC
15C-C046	15-BFP-BP-2 JB	15-BFP-BP-2 LCP	1"	(16) #14 + (1) #14 EGC
15C-C047	15-BFP-BP-2 JB	15-BFP-BP-2 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C048	MCC-DW	15-BFP-BP-3 JB	1"	(18) #14 + (1) #14 EGC
15C-C049	15-BFP-BP-3 JB	15-BFP-BP-3 LCP	1"	(16) #14 + (1) #14 EGC
15C-C050	15-BFP-BP-3 JB	15-BFP-BP-3 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C051	PLC-DW	15-BFP-V-3	1"	(12) #14 + (1) #14 EGC
15C-C052	PLC-DW	15-BFP-V-4	1"	(12) #14 + (1) #14 EGC
15C-C053	PLC-DW	15-BFP-V-1	1"	(12) #14 + (1) #14 EGC
15C-C054	PLC-DW	15-BFP-V-2	1"	(12) #14 + (1) #14 EGC
15C-C055	PLC-DW	15-BFP-1 MCP	1"	(2)-CAT6E CABLE
15C-C056	PLC-DW	15-BFP-1 MCP	1"	(2)-CAT6E CABLE
15C-C057	MCC-DW	15-S-C-1 JB	1"	(26) #14 + (1) #14 EGC
15C-C058	15-S-C-1 JB	15-S-C-1 LCP	1"	(20) #14 + (1) #14 EGC
15C-C059	15-S-C-1 JB	15-S-C-1 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C060	15-S-C-1 JB	15-S-C-1 (ZS)	3/4"	(2) #14 + (1) #14 EGC
15C-C061	15-S-C-1 JB	15-S-C-1 (PULL CORD)	3/4"	(2) #14 + (1) #14 EGC
15C-C062	MCC-DW	15-S-C-2 JB	1"	(26) #14 + (1) #14 EGC
15C-C063	15-S-C-2 JB	15-S-C-2 LCP	1"	(20) #14 + (1) #14 EGC
15C-C064	15-S-C-2 JB	15-S-C-2 (TSH)	3/4"	(2) #14 + (1) #14 EGC
15C-C065	15-S-C-2 JB	15-S-C-2 (ZS)	3/4"	(2) #14 + (1) #14 EGC
15C-C066	15-S-C-2 JB	15-S-C-2 (PULL CORD)	3/4"	(2) #14 + (1) #14 EGC
15C-C067	PLC-DW	15-SC-V-1	1"	(12) #14 + (1) #14 EGC
15C-C068	PLC-DW	15-SC-V-2	1"	(12) #14 + (1) #14 EGC
15C-C069	PLC-DW	15-SC-V-3	1"	(12) #14 + (1) #14 EGC
15C-C070	PLC-DW	15-SC-V-4	1"	(12) #14 + (1) #14 EGC
15C-C071	PLC-DW	15-SC-V-5	1"	(12) #14 + (1) #14 EGC
15C-C072	PLC-DW	15-DP-L-1 & 15-DP-F-1 JB	1"	(2)-18TSP
15C-C073	15-DP-L-1 & 15-DP-F-1 JB	15-DP-L-1	3/4"	(1)-18TSP
15C-C074	15-DP-L-1 & 15-DP-F-1 JB	15-DP-F-1	3/4"	(1)-18TSP
15C-C075	MCC-DW	15-DP-P-1 JB	1"	(26) #14 + (1) #14 EGC
15C-C076	15-DP-P-1 JB	15-DP-P-1 LCP	1"	(22) #14 + (1) #14 EGC
15C-C077	15-DP-P-1 JB	15-DP-P-1 DS	1"	(2) #14 + (1) #14 EGC
15C-C078	15-DP-P-1 LCP	15-DP-P-1 (TSH&YS)	3/4"	(2)-18TSP



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CERTIFICATE OF AUTHORIZATION #PEP07023 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

PROJ. NO.: 100061831

DESIGNED BY: RDW/INJZ

DRAWN BY: NCT/INJZ

CHECKED BY: TLH

APPROVED BY: TLH

DATE: SEPTEMBER 2020

SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

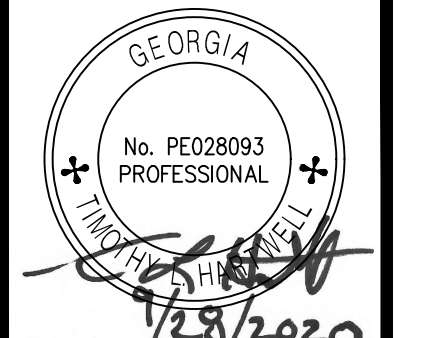
CONDUIT AND WIRE SCHEDULE
CONTROL 5

SHEET NO.

E-52

FEEDER SCHEDULE - CONTROL				
FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
PLC-DW (DEWATERING BUILDING) CONTINUED				
15C-C079	MCC-DW	15-DP-P-2 JB	1"	(26) #14 + (1) #14 EGC
15C-C080	15-DP-P-2 JB	15-DP-P-2 LCP	1"	(22) #14 + (1) #14 EGC
15C-C081	15-DP-P-2 JB	15-DP-P-2 DS	1"	(2) #14 + (1) #14 EGC
15C-C082	15-DP-P-2 LCP	15-DP-P-2 (TSH&YS)	3/4"	(2)-18TSP
15C-C083	MCC-DW	15-DP-LS-1 & 15-DP-LS-2 JB	3/4"	(8) #14 + (1) #14 EGC
15C-C084	15-DP-LS-1 & 15-DP-LS-2 JB	15-DP-LS-1	3/4"	(4) #14 + (1) #14 EGC
15C-C085	15-DP-LS-1 & 15-DP-LS-2 JB	15-DP-LS-2	3/4"	(4) #14 + (1) #14 EGC
15C-C086	PLC-DW	15-DW-GT MCP	20"	(50) #14 + (1) #14 EGC
15C-C087	15-DW-GT MCP	15-DW-GT-1 (COMB)	3/4"	(2)-#18 TSP
15C-C088	15-DW-GT MCP	15-DW-GT-2 (O2)	3/4"	(2)-#18 TSP
15C-C089	15-DW-GT MCP	15-DW-GT-3 (H2S)	3/4"	(2)-#18 TSP
15C-C090	PLC-DW	15-POLY-TK-1 LCP	3/4"	(2)-#18 TSP
15C-C091	15-POLY-TK-1 LCP	15-POLY-L-1	3/4"	(1)-#18 TSP
15C-C092	PLC-DW	15-POLY-P-1	3/4"	(10) #14 + (1) #14 EGC
15C-C093	PLC-DW	15-POLY-P-1	3/4"	(2)-#18 TSP
15C-C094	PLC-DW	15-POLY-P-2	3/4"	(10) #14 + (1) #14 EGC
15C-C095	PLC-DW	15-POLY-P-2	3/4"	(2)-#18 TSP
15C-C096	PLC-DW	15-POLY-P-3	3/4"	(10) #14 + (1) #14 EGC
15C-C097	PLC-DW	15-POLY-P-3	3/4"	(2)-#18 TSP
15C-C098	PLC-DW	15-POLY-TK-2 LCP	3/4"	(2)-#18 TSP
15C-C099	15-POLY-TK-2 LCP	15-POLY-L-2	3/4"	(1)-#18 TSP
15C-C100	PLC-DW	15-POLY-P-4	3/4"	(10) #14 + (1) #14 EGC
15C-C101	PLC-DW	15-POLY-P-4	3/4"	(2)-#18 TSP
15C-C102	PLC-DW	15-POLY-P-5	3/4"	(10) #14 + (1) #14 EGC
15C-C103	PLC-DW	15-POLY-P-5	3/4"	(2)-#18 TSP
15C-C104	PLC-DW	15-POLY-P-6	3/4"	(10) #14 + (1) #14 EGC
15C-C105	PLC-DW	15-POLY-P-6	3/4"	(2)-#18 TSP
15C-C106	PLC-DW	15-DW-FS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C107	PLC-DW	15-DW-FS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C108	PLC-DW	15-DW-FS-3	3/4"	(2) #14 + (1) #14 EGC
15C-C109	PLC-DW	MCC-DW	1-1/2"	(14)-#18 TSP
15C-C110	PLC-DW	MCC-DW	2-1/2"	(172) #14 + (1) #14 EGC
15C-C111	PLC-DW	15-DRYER-MCP	1"	(2) - CAT 6E CABLE
15C-C112	MCC-DW	15-DF-P-1 (LCP)	1"	(12) #14 + (1) #14 EGC
15C-C113	15-DRYER-MCP	15-DF-P-1 (TE)	3/4"	(2)-#18 TSP
15C-C114	15-DRYER-MCP	15-DF-PT-1	3/4"	(2)-#18 TSP
15C-C115	15-DRYER-MCP	15-DF-V-1	1"	(8) #14 + (1) #14 EGC
15C-C116	MCC-DW	15-DF-P-2 (LCP)	3/4"	(12) #14 + (1) #14 EGC
15C-C117	15-DRYER-MCP	15-DF-P-2 (TE)	3/4"	(2)-#18 TSP
15C-C118	15-DRYER-MCP	15-DF-PT-2	3/4"	(2)-#18 TSP
15C-C119	15-DRYER-MCP	15-DF-V-2	3/4"	(8) #14 + (1) #14 EGC
15C-C120	NOT USED	-	-	-
15C-C121	15-DRYER-MCP	15-NPW-V-1	3/4"	(4) #14 + (1) #14 EGC
15C-C122	15-DRYER-MCP	15-NPW-V-2	3/4"	(4) #14 + (1) #14 EGC
15C-C123	15-DRYER-MCP	15-MF1-V-1	3/4"	(8) #14 + (1) #14 EGC
15C-C124	15-DRYER-MCP	15-MF1-V-2	3/4"	(8) #14 + (1) #14 EGC
15C-C125	15-DRYER-MCP	15-MF1-PT-1	3/4"	(2)-#18 TSP
15C-C126	15-DRYER-MCP	15-NPW-V-3	3/4"	(4) #14 + (1) #14 EGC
15C-C127	15-DRYER-MCP	15-NPW-V-4	3/4"	(4) #14 + (1) #14 EGC
15C-C128	15-DRYER-MCP	15-MF2-V-1	3/4"	(8) #14 + (1) #14 EGC
15C-C129	15-DRYER-MCP	15-MF2-V-2	3/4"	(8) #14 + (1) #14 EGC
15C-C130	15-DRYER-MCP	15-MF2-PT-1	3/4"	(2)-#18 TSP
15C-C131	MCC-DW	15-D-P-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C132	15-DRYER-MCP	15-D-P-1 (TE)	3/4"	(2)-#18 TSP
15C-C133	15-DRYER-MCP	15-D-PT-1	3/4"	(2)-#18 TSP
15C-C134	MCC-DW	15-D-P-2 (LCP)	3/4"	(12) #14 + (1) #14 EGC
15C-C135	15-DRYER-MCP	15-D-P-2 (TE)	3/4"	(2)-#18 TSP
15C-C136	15-DRYER-MCP	15-D-PT-2	3/4"	(2)-#18 TSP
15C-C137	MCC-DW	15-D-P-3 (LCP)	1"	(20) #14 + (1) #14 EGC

15C-C138	15-DRYER-MCP	15-D-P-3 (TE)	3/4"	(2)-#18 TSP
15C-C139	15-DRYER-MCP	15-D-PT-3	3/4"	(2)-#18 TSP
15C-C140	MCC-DW	15-D-P-4 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C141	15-DRYER-MCP	15-D-P-4 (TE)	3/4"	(2)-#18 TSP
15C-C142	15-DRYER-MCP	15-D-PT-4	3/4"	(2)-#18 TSP
15C-C143	MCC-DW	15-D-P-5 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C144	15-DRYER-MCP	15-D-P-5 (TE)	3/4"	(2)-#18 TSP
15C-C145	15-DRYER-MCP	15-D-PT-5	3/4"	(2)-#18 TSP
15C-C146	MCC-DW	15-D-P-6 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C147	15-DRYER-MCP	15-D-P-6 (TE)	3/4"	(2)-#18 TSP
15C-C148	15-DRYER-MCP	15-D-PT-6	3/4"	(2)-#18 TSP
15C-C149	MCC-DW	15-D-P-7 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C150	15-DRYER-MCP	15-D-P-7 (TE)	3/4"	(2)-#18 TSP
15C-C151	15-DRYER-MCP	15-D-PT-7	3/4"	(2)-#18 TSP
15C-C152	MCC-DW	15-D-P-8 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C153	15-DRYER-MCP	15-D-P-8 (TE)	3/4"	(2)-#18 TSP
15C-C154	15-DRYER-MCP	15-D-PT-8	3/4"	(2)-#18 TSP
15C-C155	PLC-DW	15-DRYER-MCP	3"	(172) #14 + (1) #14 EGC
15C-C156	PLC-DW	15-DRYER-MCP	3"	(30)-#18 TSP
15C-C157	15-RDS-M-1 (ZS-A)	15-RDS-M-1 JB1	3/4"	(4) #14 + (1) #14 EGC
15C-C158	15-RDS-M-1 (ZS-C)	15-RDS-M-1 JB1	3/4"	(4) #14 + (1) #14 EGC
15C-C159	MCC-DW	15-RDS-M-1 JB1	3/4"	(4) #14 + (1) #14 EGC
15C-C160	15-DRYER-MCP	15-RDS-M-1 JB1	3/4"	(4) #14 + (1) #14 EGC
15C-C161	15-RDS-M-1 (ZS-B)	15-RDS-M-1 JB2	3/4"	(2) #14 + (1) #14 EGC
15C-C162	15-RDS-M-1 (ZS-D)	15-RDS-M-1 JB2	3/4"	(2) #14 + (1) #14 EGC
15C-C163	MCC-DW	15-RDS-M-1 JB2	3/4"	(4) #14 + (1) #14 EGC
15C-C164	MCC-DW	15-DTB-D-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C165	15-DRYER-MCP	15-DTB-SL-1	3/4"	(4) #14 + (1) #14 EGC
15C-C166	15-DRYER-MCP	15-D-PT-1	3/4"	(2)-#18 TSP
15C-C167	MCC-DW	15-RDS-M-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C168	15-DRYER-MCP	15-DTB-TS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C169	15-DRYER-MCP	15-DTB-TS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C170	15-DRYER-MCP	15-DTB-TS-3	3/4"	(2) #14 + (1) #14 EGC
15C-C171	15-DRYER-MCP	15-DTB-TS-4	3/4"	(2) #14 + (1) #14 EGC
15C-C172	15-DTB-LS-1	15-DTB-LS-1/2 JB	3/4"	(2) #14 + (1) #14 EGC
15C-C173	15-DTB-LS-2	15-DTB-LS-1/2 JB	3/4"	(2) #14 + (1) #14 EGC
15C-C174	15-DRYER-MCP	15-DTB-LS-1/2 JB	3/4"	(4) #14 + (1) #14 EGC
15C-C175	MCC-DW	15-DMTB-D-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C176	15-DRYER-MCP	15-DMTB-SL-1	3/4"	(4) #14 + (1) #14 EGC
15C-C177	15-BTM-LS-1	15-BTM-LS-1/2 JB	3/4"	(2) #14 + (1) #14 EGC
15C-C178	15-BTM-LS-2	15-BTM-LS-1/2 JB	3/4"	(2) #14 + (1) #14 EGC
15C-C179	15-DRYER-MCP	15-BTM-LS-1/2 JB	3/4"	(4) #14 + (1) #14 EGC
15C-C180	15-DRYER-MCP	15-BTM-TE-1	3/4"	(1)-#18 TSP
15C-C181	15-DRYER-MCP	15-BTM-TE-2	3/4"	(1)-#18 TSP
15C-C182	15-DRYER-MCP	15-D-T-1	3/4"	(1)-#18 TSP
15C-C183	15-DRYER-MCP	15-D-T-2	3/4"	(1)-#18 TSP
15C-C184	15-DRYER-MCP	15-D-T-3	3/4"	(1)-#18 TSP
15C-C185	15-DRYER-MCP	15-D-T-4	3/4"	(1)-#18 TSP
15C-C186	15-DRYER-MCP	15-D-TS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C187	15-DRYER-MCP	15-D-TS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C188	15-DRYER-MCP	15-D-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C189	15-DRYER-MCP	15-D-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C190	MCC-DW	15-DWZ-F-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C191	MCC-DW	15-DWZ-F-2 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C192	MCC-DW	15-DEZ-F-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C193	MCC-DW	15-DEZ-F-2 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C194	MCC-DW	15-DES-M-1 (LCP)	1"	(20) #14 + (1) #14 EGC
15C-C195	MCC-DW	15-DES-M-1 (E-STOP)	3/4"	(6) #14 + (1) #14 EGC
15C-C196	15-DRYER-MCP	15-DES-M-1 (E-STOP)	3/4"	(4) #14 + (1) #14 EGC
15C-C197	15-DES-TE-1 (TIT)	15-DES-TE-1 (TE)	3/4"	(1)-#18 TSP
15C-C198	15-DRYER-MCP	15-DES-TE-1 (TE)	3/4"	(1)-#18 TSP
15C-C199	15-DES-TE-2 (TIT)	15-DES-TE-2 (TE)	3/4"	(1)-#18 TSP
15C-C200	15-DRYER-MCP	15-DES-TE-2 (TE)	3/4"	(1)-#18 TSP



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PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJZ	NCT/INJZ	TLH	SEPTEMBER 2020		AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CONDUIT AND WIRE SCHEDULE CONTROL 6

SHEET NO.
E-53

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
PLC-DW (DEWATERING BUILDING) CONTINUED				
15C-C201	15-DES-TE-3 (TIT)	15-DES-TE-3 (TE)	3/4"	(1)-#18 TSP
15C-C202	15-DRYER-MCP	15-DES-TE-3 (TE)	3/4"	(1)-#18 TSP
15C-C203	15-DRYER-MCP	15-DES-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C204	15-DRYER-MCP	15-DES-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C205	15-DRYER-MCP	15-DES-TS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C206	15-DRYER-MCP	15-DES-TS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C207	15-DRYER-MCP	15-DES-V-1	3/4"	(10) #14 + (1) #14 EGC
15C-C208	MCC-DW	15-DRYER-MCP	3"	(65) #14 + (1) #14 EGC
15C-C209	MCC-DW	15-DRYER-MCP	3"	(20)-#18 TSP
15C-C210	15-DRYER-MCP	15-AC-T-1	3/4"	(1)-#18 TSP
15C-C211	15-DRYER-MCP	15-NPW-V-5	3/4"	(1)-#18 TSP
15C-C212	15-NPW-F-1 (FIT)	15-NPW-F-1 (FE)	1"	(1) MFR CABLE
15C-C213	15-DRYER-MCP	15-NPW-F-1 (FIT)	3/4"	(1)-#18 TSP
15C-C214	15-DRYER-MCP	15-NPW-T-1	3/4"	(1)-#18 TSP
15C-C215	15-DRYER-MCP	15-NPW-V-6	3/4"	(2) #14 + (1) #14 EGC
15C-C216	15-DRYER-MCP	15-CC-DP-1	3/4"	(1)-#18 TSP
15C-C217	15-DRYER-MCP	15-CC-DP-2	3/4"	(1)-#18 TSP
15C-C218	15-DRYER-MCP	15-CC-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C219	15-DRYER-MCP	15-CC-T-1	3/4"	(1)-#18 TSP
15C-C220	15-DRYER-MCP	15-CC-T-2	3/4"	(1)-#18 TSP
15C-C221	MCC-DW	15-DA-F-1	3/4"	(20) #14 + (1) #14 EGC
15C-C222	MCC-DW	15-V-F-1	3/4"	(20) #14 + (1) #14 EGC
15C-C223	15-DRYER-MCP	15-HE-T-1	3/4"	(1)-#18 TSP
15C-C224	15-DRYER-MCP	15-HE-T-2	3/4"	(1)-#18 TSP
15C-C225	15-DRYER-MCP	15-HE-DP-1	3/4"	(1)-#18 TSP
15C-C226	15-DRYER-MCP	15-HE-DP-2	3/4"	(1)-#18 TSP
15C-C227	15-DRYER-MCP	15-HE-T-4	3/4"	(1)-#18 TSP
15C-C228	15-DRYER-MCP	15-NPW-V-3	3/4"	(2) #14 + (1) #14 EGC
15C-C229	15-DRYER-MCP	15-NPW-PS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C230	15-DRYER-MCP	15-NPW-V-4	3/4"	(2) #14 + (1) #14 EGC
15C-C231	PLC-DW	15-DW-OC-1	1"	(1) - CAT 6E CABLE
15C-C232	15-DW-GM-MCP	15-DW-GT-4 (COMB)	3/4"	(2)-18TSP
15C-C233	15-DW-GM-MCP	15-DW-GT-5 (O2)	3/4"	(2)-18TSP
15C-C234	15-DW-GM-MCP	15-DW-GT-6 (H25)	3/4"	(2)-18TSP
15C-C235	PLC-DW	15-DW-TS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C236	PLC-DW	15-DW-TS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C237	15-DW-GM MCP	15-DW-GT-7 (CO)	3/4"	(2)-#18 TSP
15C-C238	PLC-DW	15-DW-FS-4	3/4"	(2) #14 + (1) #14 EGC
15C-C239	PLC-DW	15-DW-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C240	15-DW-GT MCP	15-DW-GT-7 (CO)	3/4"	(2)-#18 TSP
15C-C241	15-DTB-D-1 (LCP)	15-DTB-D-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C242	15-RDS-M-1 (LCP)	15-RDS-M-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C243	15-DBB-D-1 (LCP)	15-DBB-D-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C244	15-DWZ-F-1 (LCP)	15-DWZ-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C245	15-DWZ-F-2 (LCP)	15-DWZ-F-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C246	15-DEZ-F-1 (LCP)	15-DEZ-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C247	15-DEZ-F-2 (LCP)	15-DEZ-F-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C248	15-DES-M-1 (LCP)	15-DES-M-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C249	15-DA-F-1 (LCP)	15-DA-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C250	15-V-F-1 (LCP)	15-V-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C251	MCC-DW	15-DS-P-1 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C252	15-DS-P-1 (LCP)	15-DS-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C253	PLC-DW	15-DS-P-1 (TE)	3/4"	(2)-#18 TST
15C-C254	PLC-DW	15-DS-PT-3	3/4"	(2)-#18 TSP
15C-C255	MCC-DW	15-DS-P-2 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C256	15-DS-P-2 (LCP)	15-DS-P-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C257	PLC-DW	15-DS-P-2 (TE)	3/4"	(2)-#18 TST
15C-C258	PLC-DW	15-DS-PT-4	3/4"	(2)-#18 TSP
15C-C259	MCC-DW	15-BBS-M-1 (LCP)	3/4"	(22) #14 + (1) #14 EGC

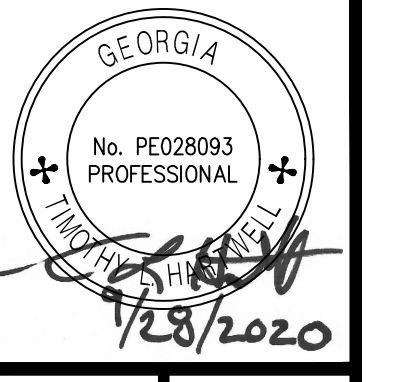
15C-C260	15-BBS-M-1 (LCP)	15-BBS-M-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C261	15-BBS-M-1 (LCP)	15-BBS-M-1 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C262	MCC-DW	15-BBS-M-2 (LCP)	3/4"	(22) #14 + (1) #14 EGC
15C-C263	15-BBS-M-2 (LCP)	15-BBS-M-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C264	15-BBS-M-2 (LCP)	15-BBS-M-2 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C265	MCC-DW	15-BLS-M-1 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C266	15-BLS-M-1 (LCP)	15-BLS-M-1 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C267	MCC-DW	15-BLS-M-2 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C268	15-BLS-M-2 (LCP)	15-BLS-M-2 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C269	MCC-DW	15-TO-P-1 (LCP)	3/4"	(18) #14 + (1) #14 EGC
15C-C270	MCC-DW	15-TO-P-2 (LCP)	3/4"	(18) #14 + (1) #14 EGC
15C-C271	MCC-DW	15-TO-F-1 (LCP)	3/4"	(18) #14 + (1) #14 EGC
15C-C272	15-HOPPER-MCP	15-WCB-W-1	3/4"	(2)-#18 TSP
15C-C273	15-HOPPER-MCP	15-WCB-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C274	15-HOPPER-MCP	15-WCB-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C275	15-HOPPER-MCP	15-WCB-LS-3	3/4"	(2) #14 + (1) #14 EGC
15C-C276	15-HOPPER-MCP	15-WCB-LS-4	3/4"	(2) #14 + (1) #14 EGC
15C-C277	15-HOPPER-MCP	MCC-DW	2"	(64) #14 + (1) #14 EGC
15C-C278	15-HOPPER-MCP	MCC-DW	1-1/2"	(6)-#18 TSP
15C-C279	15-WCB-W-1	15-WCB-W-1 (WE01)	1"	(1)-MFR CABLE
15C-C280	15-WCB-W-1	15-WCB-W-1 (WE02)	1"	(1)-MFR CABLE
15C-C281	15-WCB-W-1	15-WCB-W-1 (WE03)	1"	(1)-MFR CABLE
15C-C282	15-WCB-W-1	15-WCB-W-1 (WE04)	1"	(1)-MFR CABLE
15C-C283	15-WCB-W-1	15-WCB-W-1 (WE05)	1"	(1)-MFR CABLE
15C-C284	15-WCB-W-1	15-WCB-W-1 (WE06)	1"	(1)-MFR CABLE
15C-C285	PLC-DW	15-HOPPER-MCP	1"	(2)-CAT6e CABLE
15C-C286	PLC-DW	MCC-DW	1-1/2"	(28) #14 + (1) #14 EGC
15C-C287	PLC-DW	MCC-DW	1"	(4)-#18 TSP
15C-C288	15-HSOC-MCP	15-OC-NP-1	3/4"	(10) #14 + (1) #14 EGC
15C-C289	15-HSOC-MCP	15-OC-NP-1	3/4"	(2)-#18 TSP
15C-C290	15-HSOC-MCP	15-OC-OF-1	3/4"	(1)-#18 TSP
15C-C291	15-HSOC-MCP	15-OC-OF-2	3/4"	(1)-#18 TSP
15C-C292	15-HSOC-MCP	15-OC-SV-1	3/4"	(4) #14 + (1) #14 EGC
15C-C293	15-DRYER-MCP	15-NPW-SV-1	3/4"	(4) #14 + (1) #14 EGC
15C-C294	PLC-DW	15-CA-M-1	3/4"	(6) #14 + (1) #14 EGC
15C-C295	PLC-DW	15-CA-M-2	3/4"	(6) #14 + (1) #14 EGC

RIO-BNR2 (ALUM PUMP FACILITY)

17C-C001	RIO-BNR2	17-AL-LCP-1	3/4"	(1)-18TSP
17C-C002	17-AL-LCP-1	17-AL-L-1 (LIT)	1"	(1)-18TSP
17C-C003	RIO-BNR2	17-AL-LCP-2	3/4"	(1)-18TSP
17C-C004	17-AL-LCP-2	17-AL-L-2 (LIT)	1"	(1)-18TSP
17C-C005	RIO-BNR2	17-AL-P-1	3/4"	(2)-18TSP
17C-C006	RIO-BNR2	17-AL-P-1	3/4"	(10) #14 + (1) #14 EGC
17C-C007	RIO-BNR2	17-AL-P-2	3/4"	(2)-18TSP
17C-C008	RIO-BNR2	17-AL-P-2	3/4"	(10) #14 + (1) #14 EGC
17C-C009	RIO-BNR2	17-AL-P-3	3/4"	(2)-18TSP
17C-C010	RIO-BNR2	17-AL-P-3	3/4"	(10) #14 + (1) #14 EGC
17C-C011	RIO-BNR2	17-AL-P-4	3/4"	(2)-18TSP
17C-C012	RIO-BNR2	17-AL-P-4	3/4"	(10) #14 + (1) #14 EGC
17C-C013	RIO-BNR2	17-AL-P-5	3/4"	(2)-18TSP
17C-C014	RIO-BNR2	17-AL-P-5	3/4"	(10) #14 + (1) #14 EGC
17C-C015	RIO-BNR2	17-AL-P-6	3/4"	(2)-18TSP
17C-C016	RIO-BNR2	17-AL-P-6	3/4"	(10) #14 + (1) #14 EGC
17C-C017	RIO-BNR2	17-AL-LS-1	3/4"	(2) #14 + (1) #14 EGC
17C-C018	RIO-BNR2	17-AL-L-1 (LCP)	3/4"	(2) #14 + (1) #14 EGC
17C-C019	RIO-BNR2	17-AL-L-2 (LCP)	3/4"	(2) #14 + (1) #14 EGC

PLC-H (HEADWORKS)

23C-C001	PLC-A	PLC-H	1-1/2"	(2)-(6) PAIR - FO CABLE
23C-C002	PLC-A	23-DPS1-CP	1"	(30) #14 + (1) #14 EGC
23C-C003	PLC-A	23-DPS1-CP	1"	(1)-18TSP
23C-C004	23-PS1-P-1-VFD	23-DPS1-CP	1"	(8) #14 + (1) #14 EGC
23C-C005	23-PS1-P-2-VFD	23-DPS1-CP	1"	(8) #14 + (1) #14 EGC
23C-C006	PLC-A	23-PS1-P-1-VFD	1"	(2)-18TSP
23C-C007	PLC-A	23-PS1-P-2-VFD	1"	(2)-18TSP



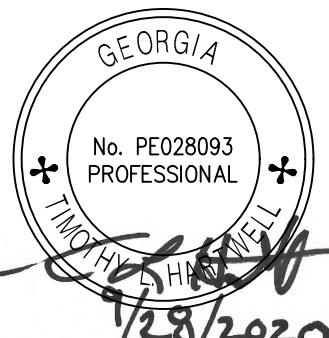
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ENGINEERS & SURVEYORS
STEVENSVILLE, MARYLAND
(410) 593-5111

PROJ. NO.	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DATE
100061831	RDW/INJ	NCT/INJ	TLH		SEPTEMBER 2020
				SCALE: AS SHOWN	

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CONDUIT AND WIRE SCHEDULE CONTROL 7



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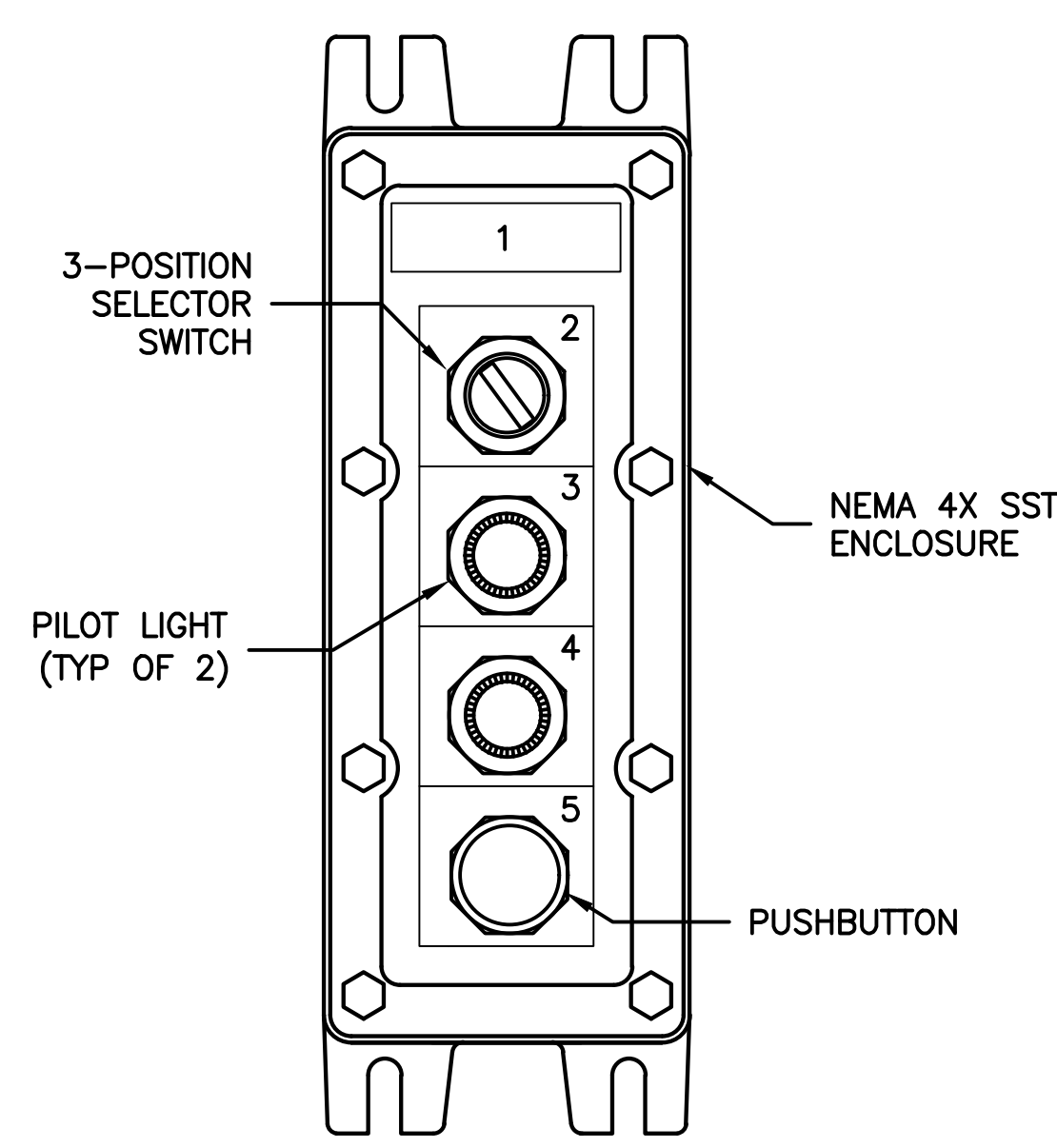
REVISION	DATE

PROJ. NO.: 100061831
 DESIGNED BY: RDW/INJZ
 DRAWN BY: NCT/INJZ
 CHECKED BY: TLH
 APPROVED BY: TLH
 DATE: SEPTEMBER 2020
 SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 PANEL LAYOUTS 1

SHEET NO.
E-55

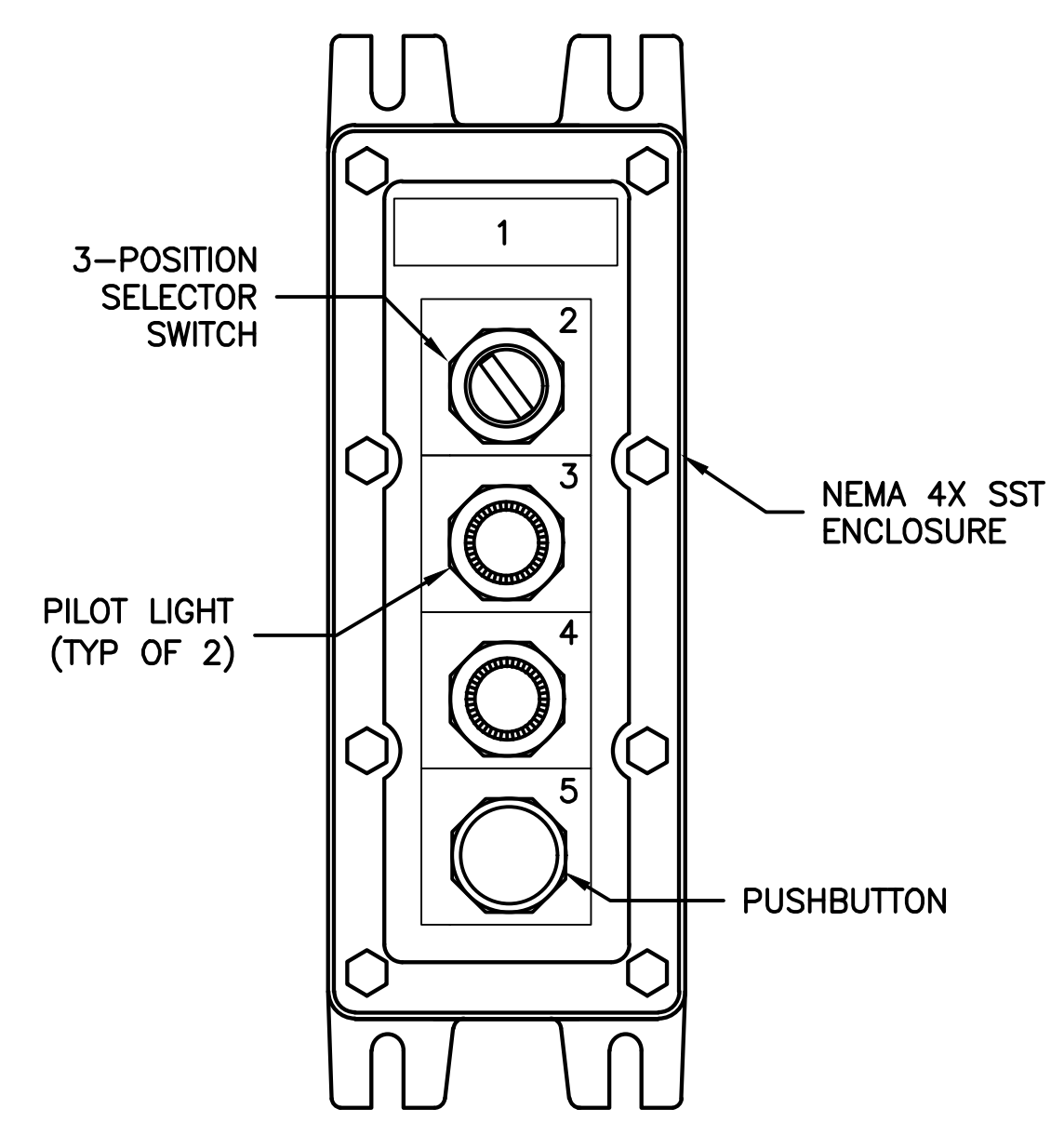
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1 SCUM PUMP LCS
 NTS

SCUM PUMP (5-SC-P-1) NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	SCUM PUMP	LOCAL CONTROL STATION
2	LOCAL OFF REMOTE	
3	RUN	
4	FAIL	
5	RESET	

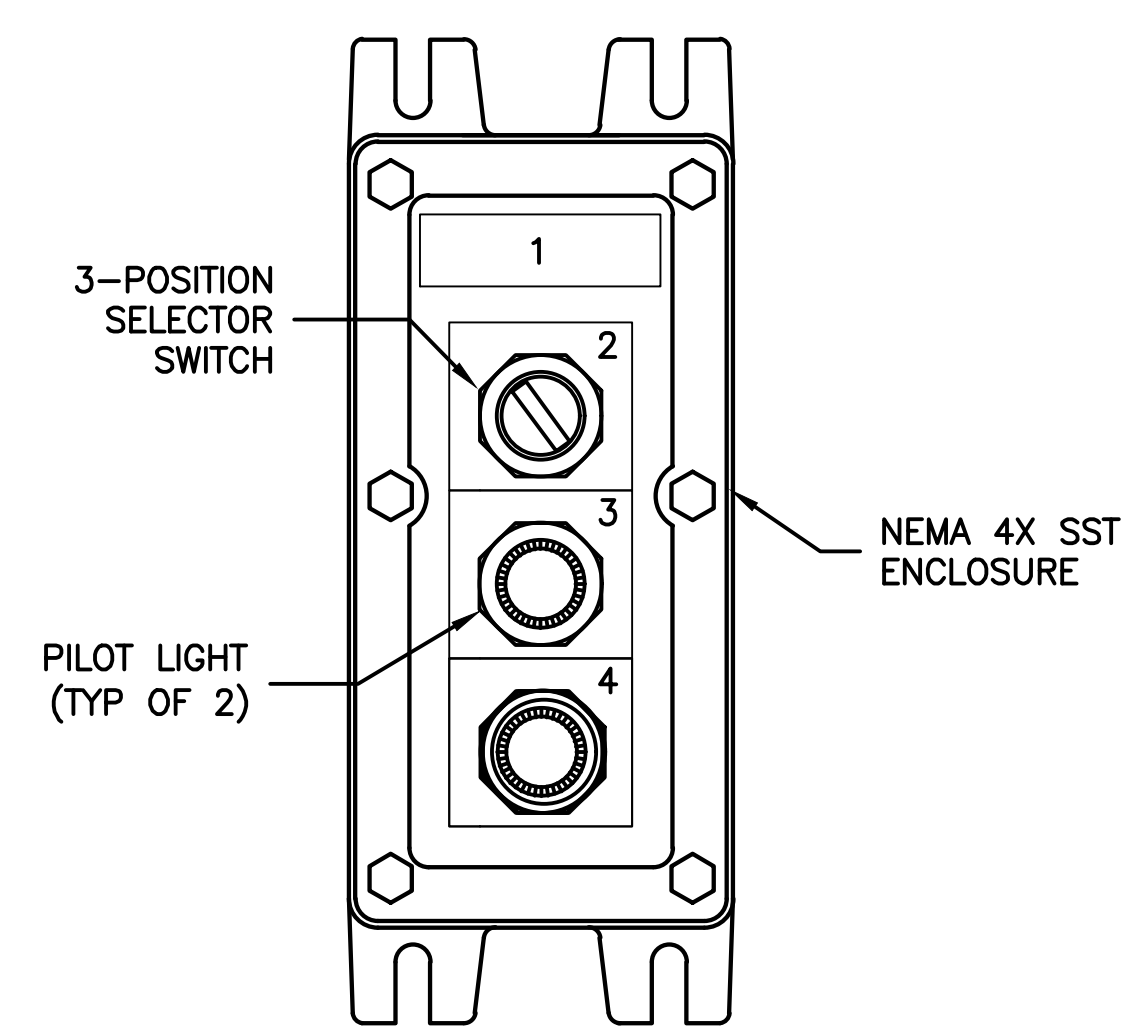
(TYPICAL OF 2: 5-SC-P-1 5-SC-P-2)



2 DEWATERED SLUDGE PUMP 1 LCS
 NTS

DEWATERED SLUDGE PUMP 1 (15-DS-P-1) NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	DEWATERED SLUDGE PUMP 1	LOCAL CONTROL STATION
2	LOCAL OFF AUTO	
3	RUN	
4	FAIL	
5	RESET	

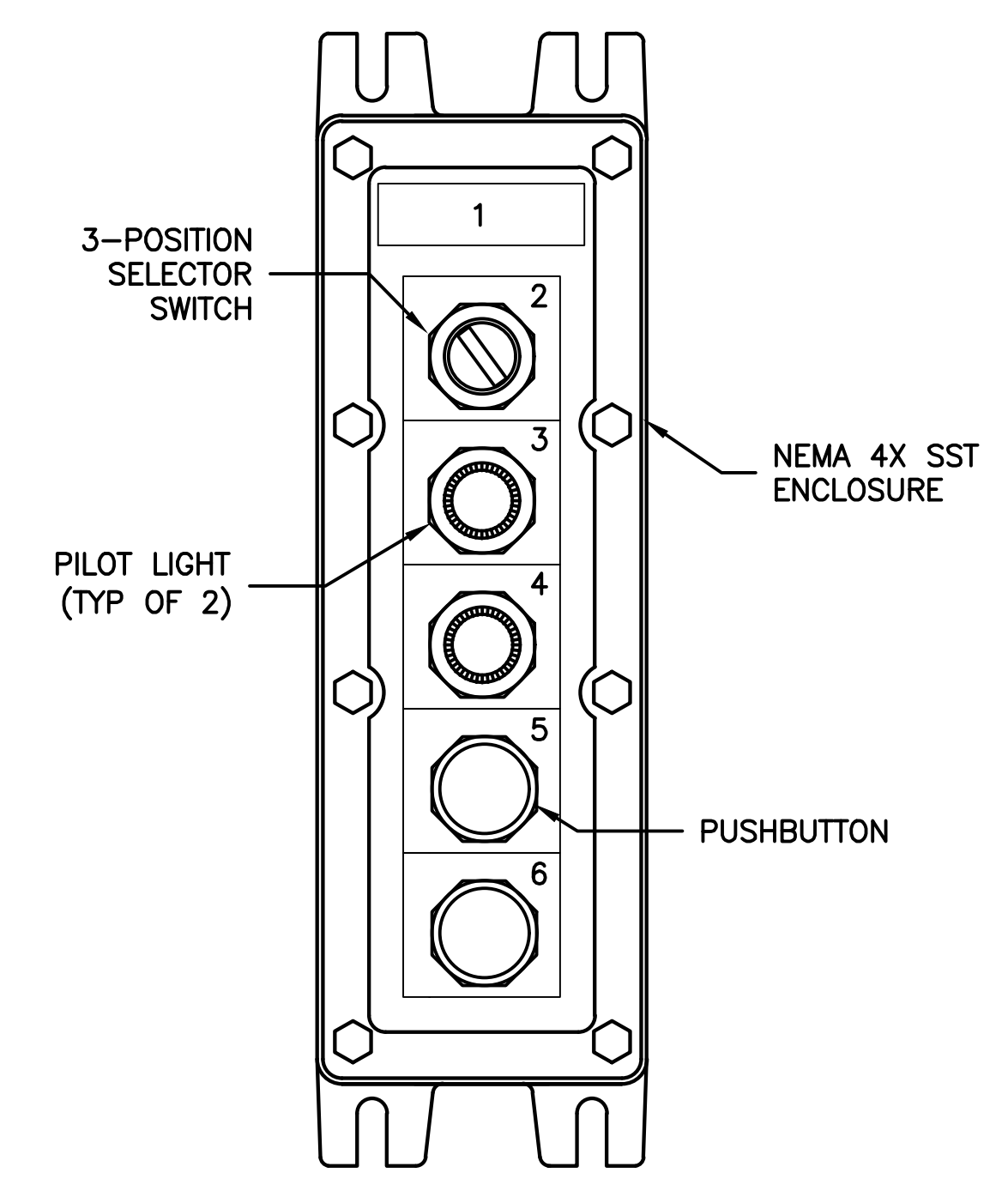
(TYPICAL OF 20: 15-DS-P-1, 15-DS-P-2, 15-DF-P-1, 15-DF-P-2, 15-D-P-1, 15-D-P-2, 15-D-P-3, 15-D-P-4, 15-D-P-5, 15-D-P-6, 15-D-P-7, 15-D-P-8, 15-DTB-D-1, 15-DBB-D-1, 15-DWZ-F-1, 15-DWZ-F-2, 15-V-F-1, 15-DES-M-1)



3 THERMAL OIL PUMP 1 LCS
 NTS

THERMAL OIL PUMP 1 (15-TO-P-1) NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	THERMAL OIL PUMP 1	LOCAL CONTROL STATION
2	LOCAL OFF AUTO	
3	RUN	
4	FAIL	

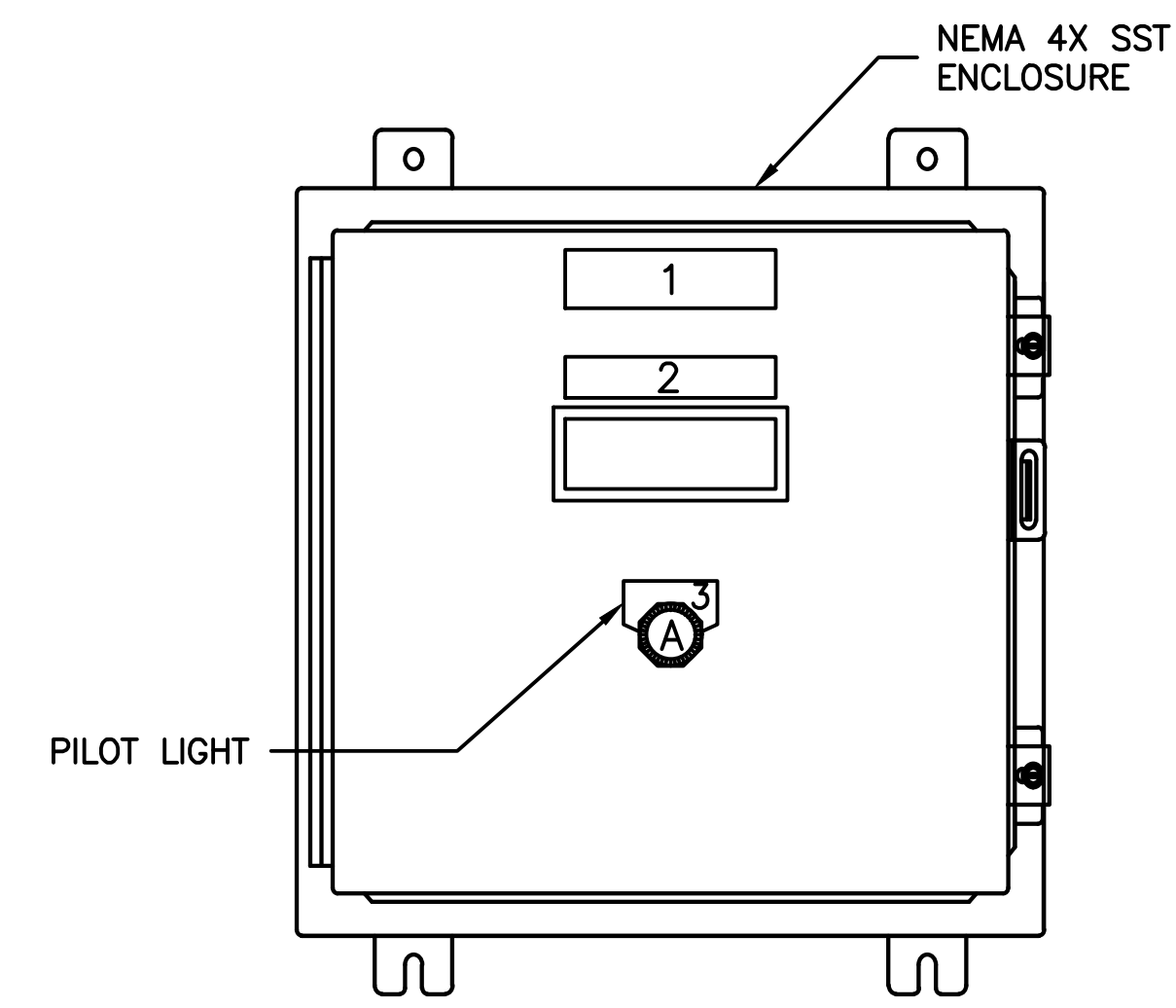
(TYPICAL OF 3: 15-TO-P-1, 15-TO-P-2, 15-TO-F-1)



4 BIN BOTTOM SCREW 1
 NTS

BIN BOTTOM SCREW 1 (5-BBS-M-1) NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	BIN BOTTOM SCREW 1	LOCAL CONTROL STATION
2	LOCAL OFF AUTO	
3	RUN	
4	FAIL	
5	RESET	
6	E-STOP	

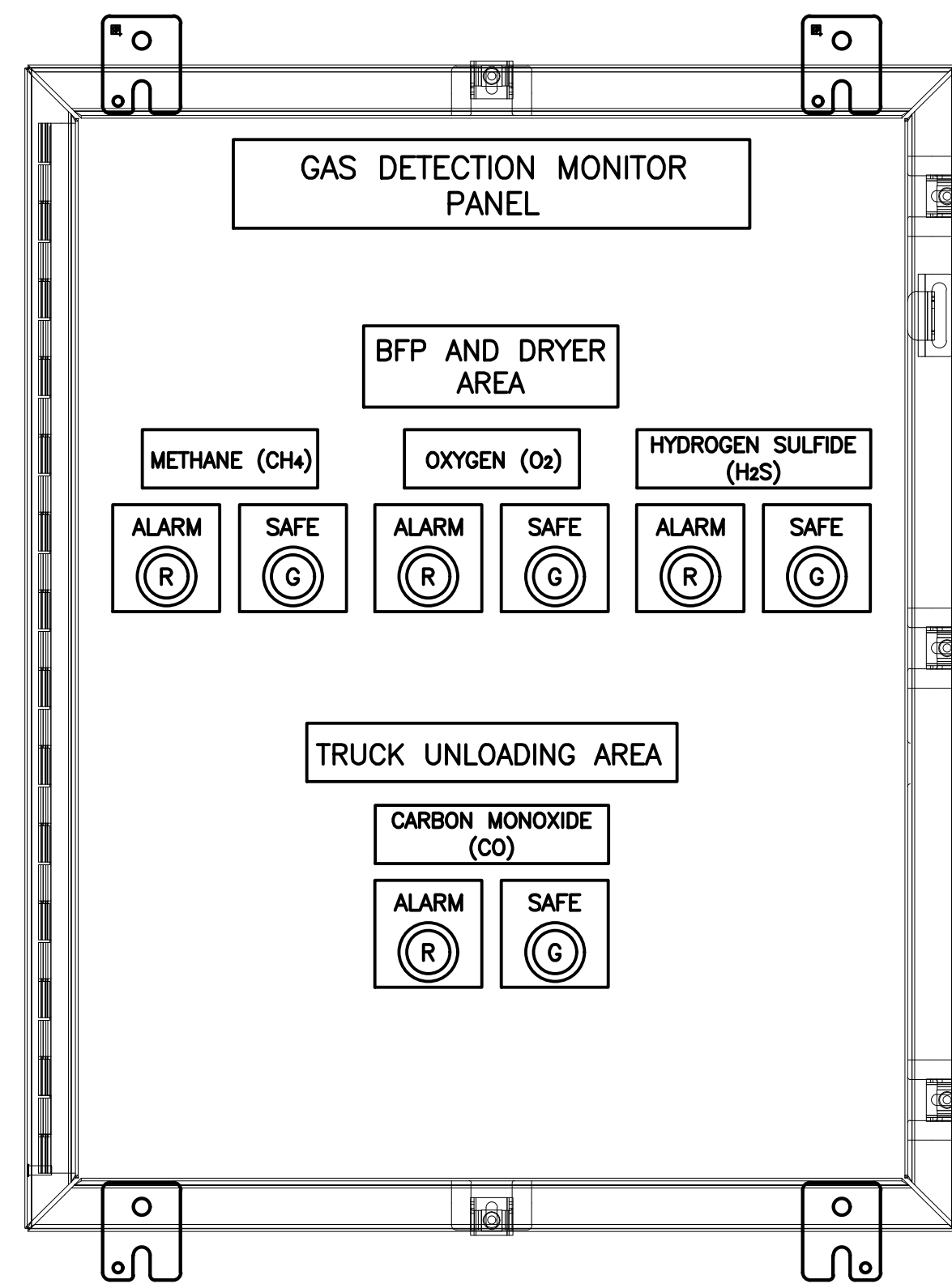
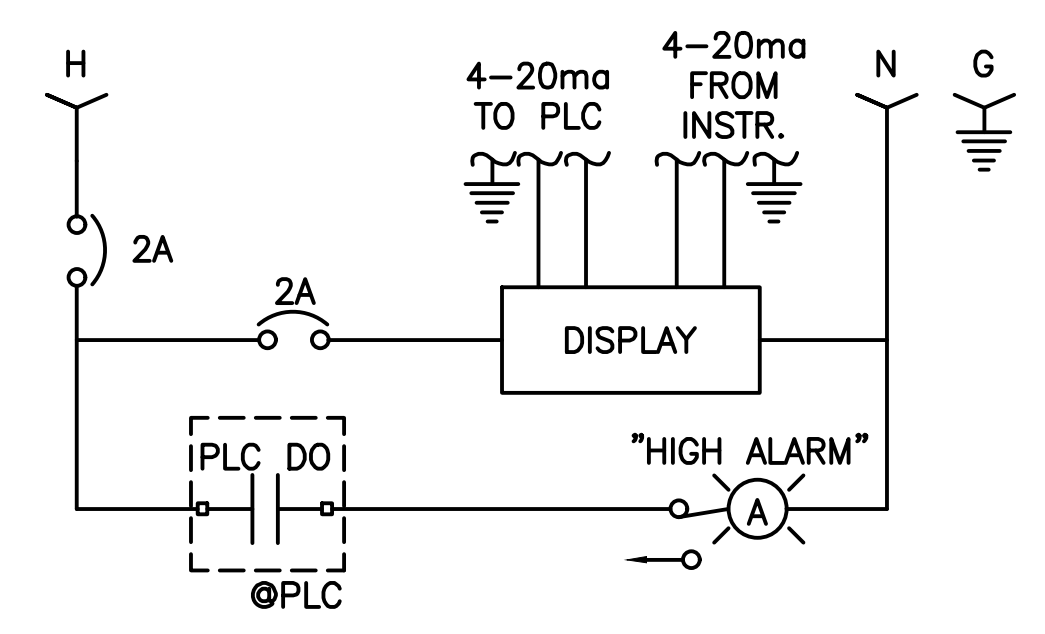
(TYPICAL OF 4: 15-BBS-M-1, 15-BBS-M-2, 15-BLS-M-1, 15-BLS-M-2)



5 ALUM TANK 1 LCP
 NTS

ALUM TANK LEVEL (17-AL-T-1 & 17-AL-T-2) NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	ALUM TANK 1	LCP
2	LEVEL	
3	HIGH ALARM	

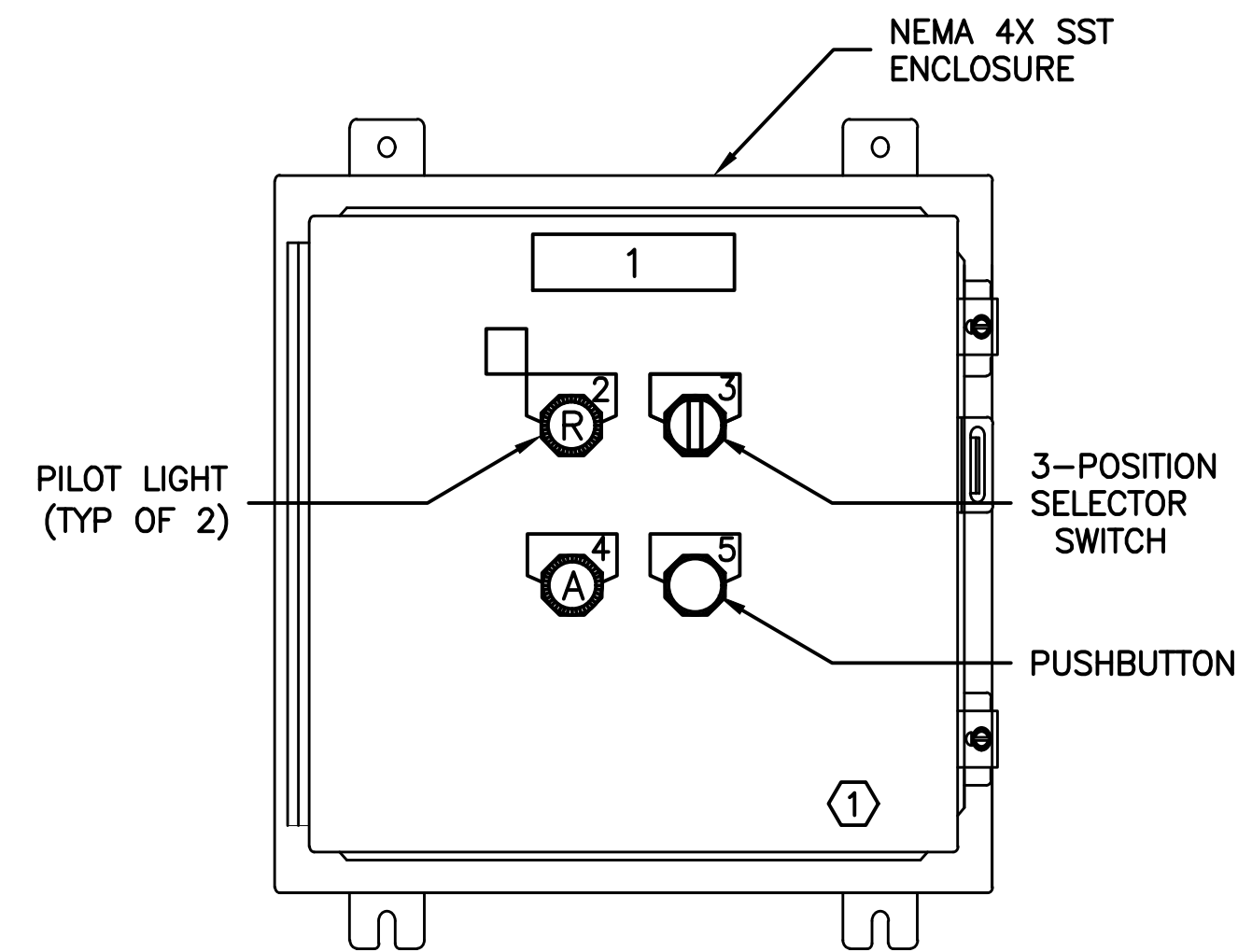
(TYPICAL OF 4: 17-AL-T-1, 17-AL-T-2, 15-POLY-T-1, 15-POLY-T-2)



6 GAS MONITOR PANEL
 NTS (SEE SCHEMATIC DRAWING E-71)

NOTES:
 1. REFER TO SPECIFICATION 16920 FOR GAS DETECTION. PROVIDE PANEL SHOWN OR SIMILAR PANEL FROM MANUFACTURER.

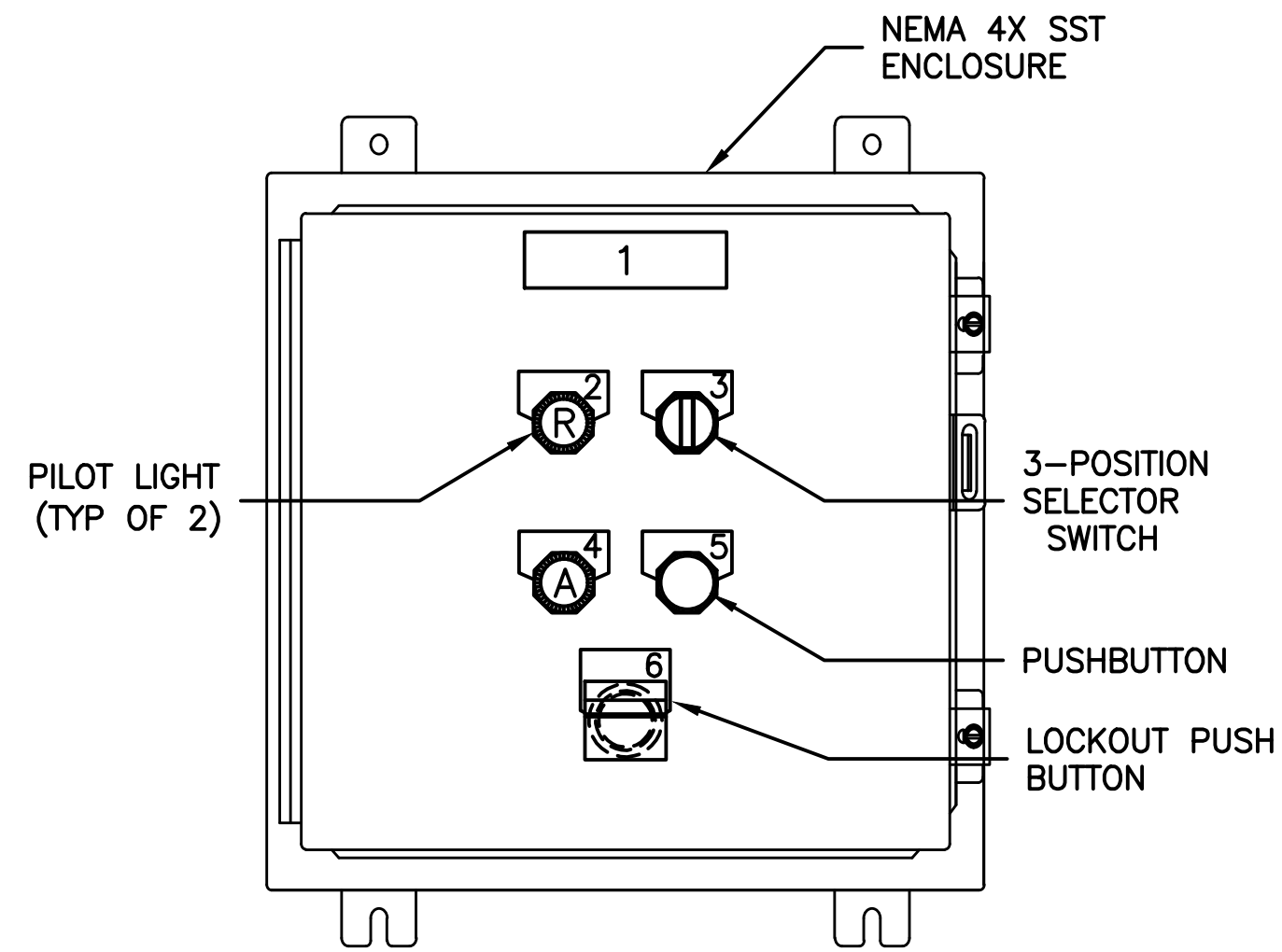
GENERAL NOTE:
 1. REFER TO NOTES DRAWING E-56.



1 BNR AX-1 PUMP 1 - 5-AT1-P-1 LCP
SCALE:NTS

5-AT1-P-1 NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	5-AT1-P-1	LOCAL CONTROL PANEL
2	RUN	
3	LOCAL OFF REMOTE	
4	FAIL	
5	RESET	

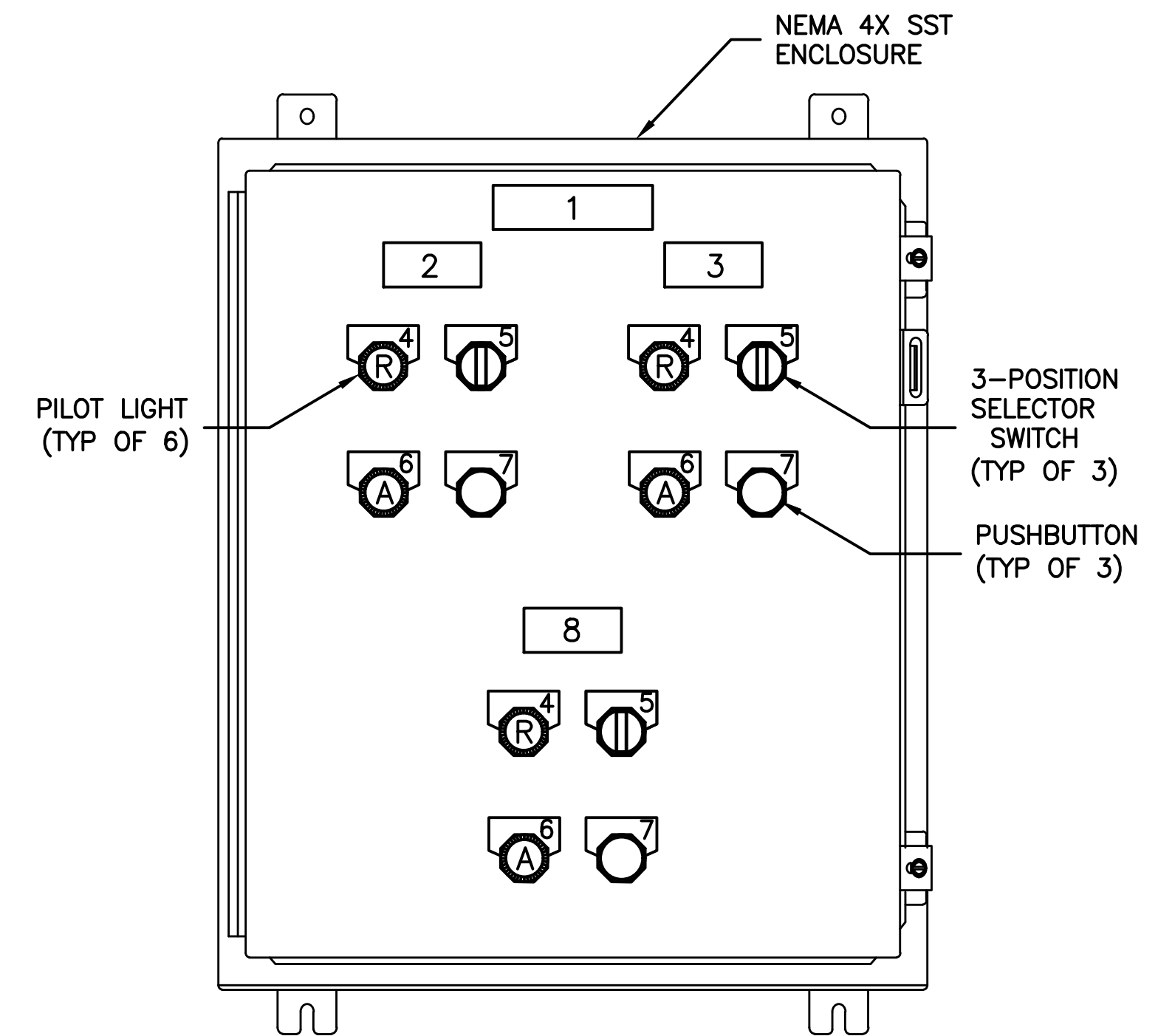
(TYPICAL OF 8: 5-AT1-P-1, 5-AT1-P-2, 5-AT2-P-1, 5-AT2-P-2, 5-AT3-P-1, 5-AT3-P-2, 6-AT4-P-1, 6-AT4-P-2, 11-SF-P-1, 11-SF-P-2, 11-SF-P-3)



2 DW SLUDGE CONVEYOR 1 - 15-S-C-1 LCP
SCALE:NTS

15-S-C-1 NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	15-S-C-1	LOCAL CONTROL PANEL
2	RUN	
3	LOCAL OFF REMOTE	
4	FAIL	
5	RESET	

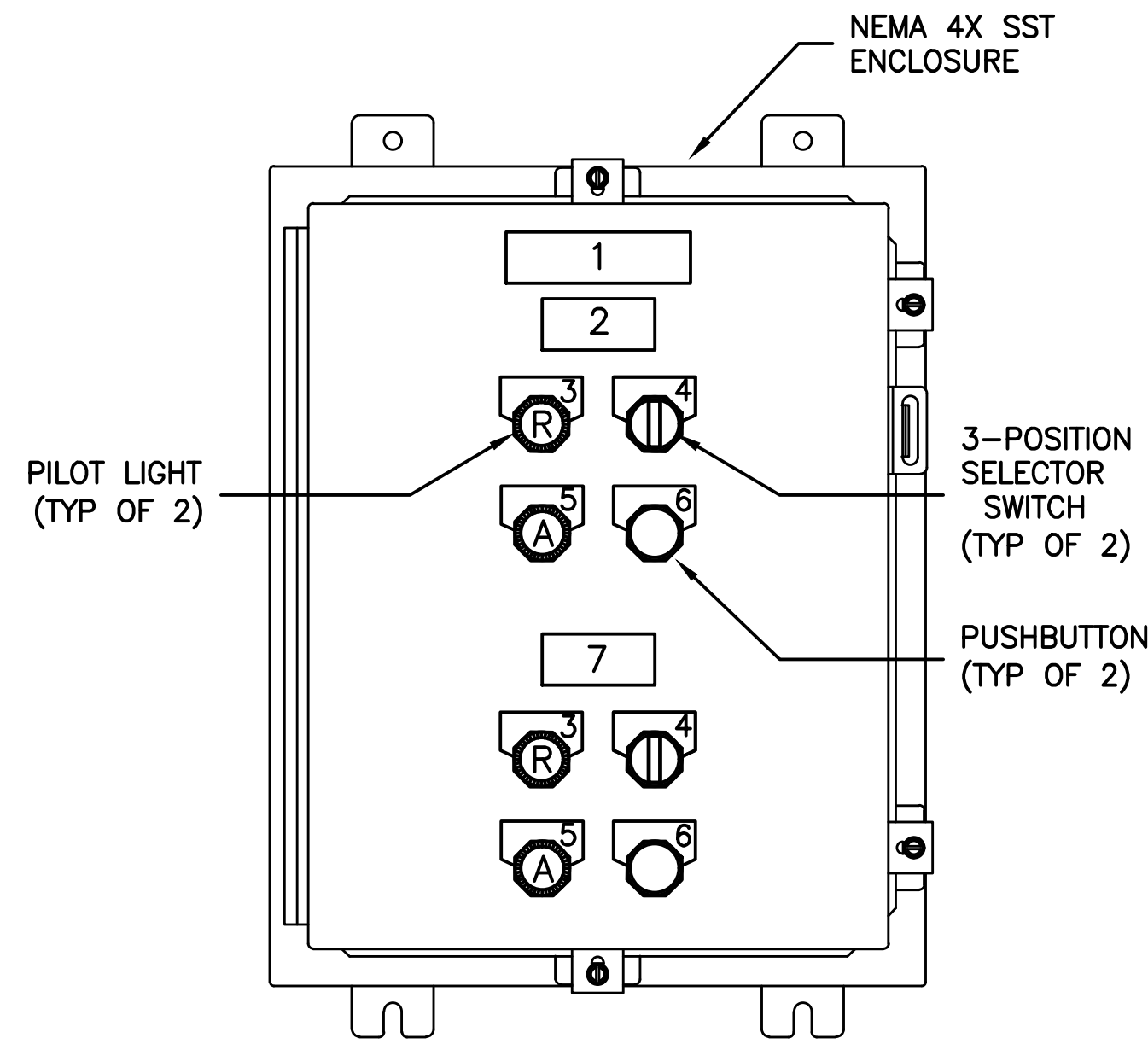
(TYPICAL OF 3: 4-FS-C-1, 15-S-C-1, 15-S-C-2)



3 DW BFP FEED PUMPS 1 THRU 3 - 15-BFP-P-1, 2 & 3 LCP
SCALE:NTS

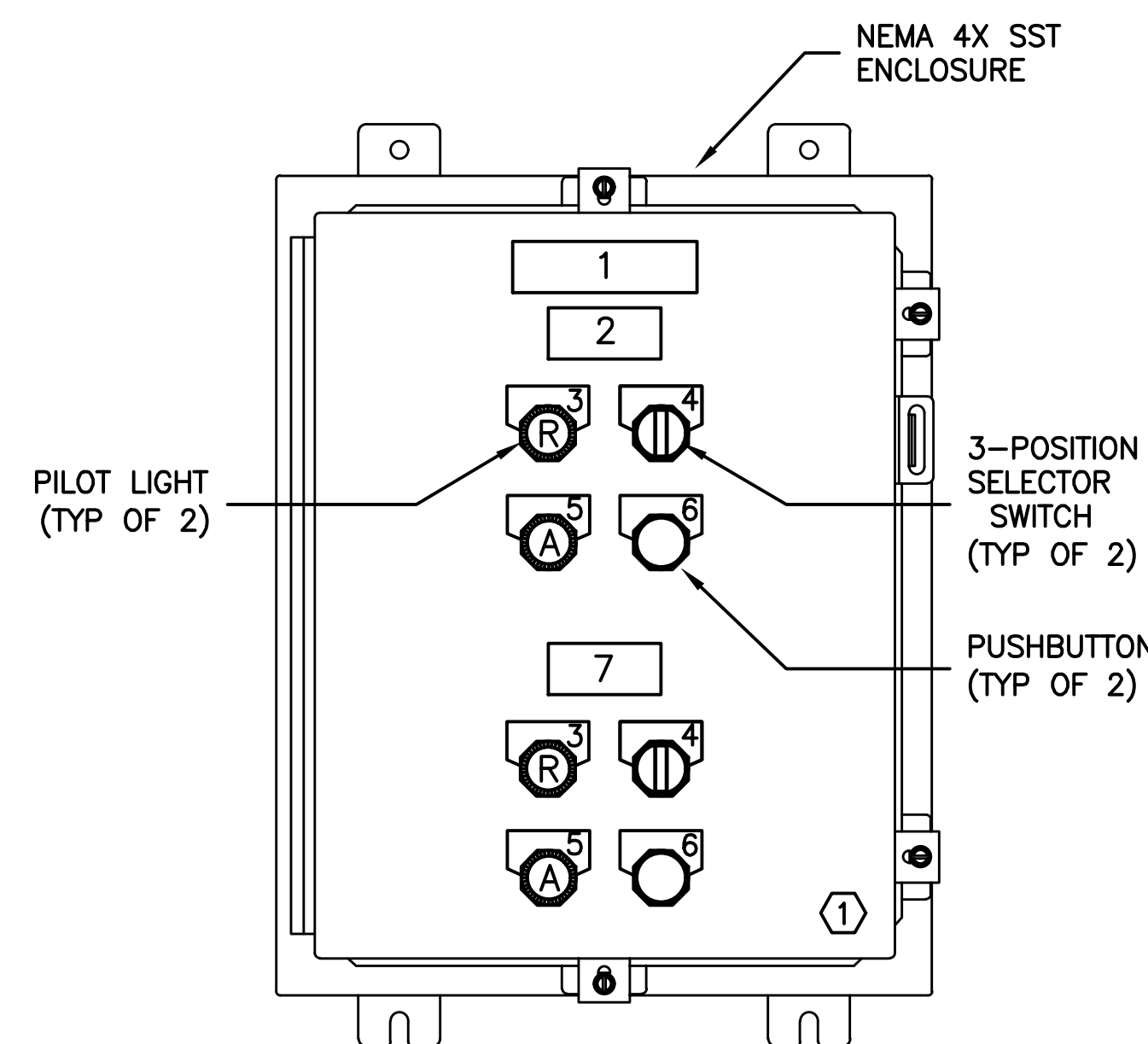
15-BFP-P-1, 2 & 3 NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	BFP FEED PUMPS	LOCAL CONTROL PANEL
2	15-BFP-P-1	
3	15-BFP-P-2	
4	RUN	
5	LOCAL OFF REMOTE	
6	FAIL	
7	RESET	
8	15-BFP-P-3	

(TYPICAL OF 2: 15-BFP-P-1, 2 & 3, 15-BFP-P-1, 2, & 3)



4 DW TWAS PUMPS 1 & 2 - 15-TW-P-1 & 2 LCP
SCALE:NTS

15-TW-P-1 & 2 NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	TWAS PUMPS 1 & 2	LOCAL CONTROL PANEL
2	15-TW-P-1	
3	RUN	
4	LOCAL OFF REMOTE	
5	FAIL	
6	RESET	
7	15-TW-P-2	



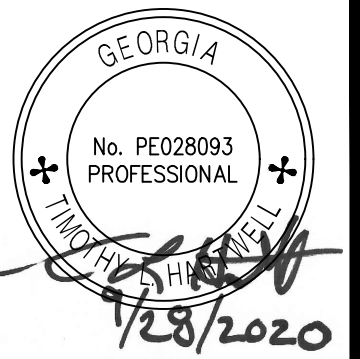
5 DW DRAIN PUMPS 1 & 2 - 15-DP-P-1 & 2 LCP
SCALE:NTS

15-DP-P-1 & 2 NAMEPLATE LEGEND TABLE		
MARK	FIRST LINE	SECOND LINE
1	DRAIN PUMPS 1 & 2	LOCAL CONTROL PANEL
2	15-DP-P-1	
3	RUN	
4	LOCAL OFF REMOTE	
5	FAIL	
6	RESET	
7	15-DP-P-2	

(TYPICAL OF 2: 15-PD1-P-1&2 & 17-PS1-P-1&2)

NOTES:

- PILOT LIGHTS
R-RED
A-AMBER
- PROVIDE MOTOR SUPERVISORY RELAY IN ENCLOSURE, REFER TO ASSOCIATED PUMP SCHEMATIC.
- SIZE ENCLOSURE BASED ON EQUIPMENT MOUNTED IN INTERIOR AND EQUIPMENT MOUNTED ON FRONT OF PANEL.

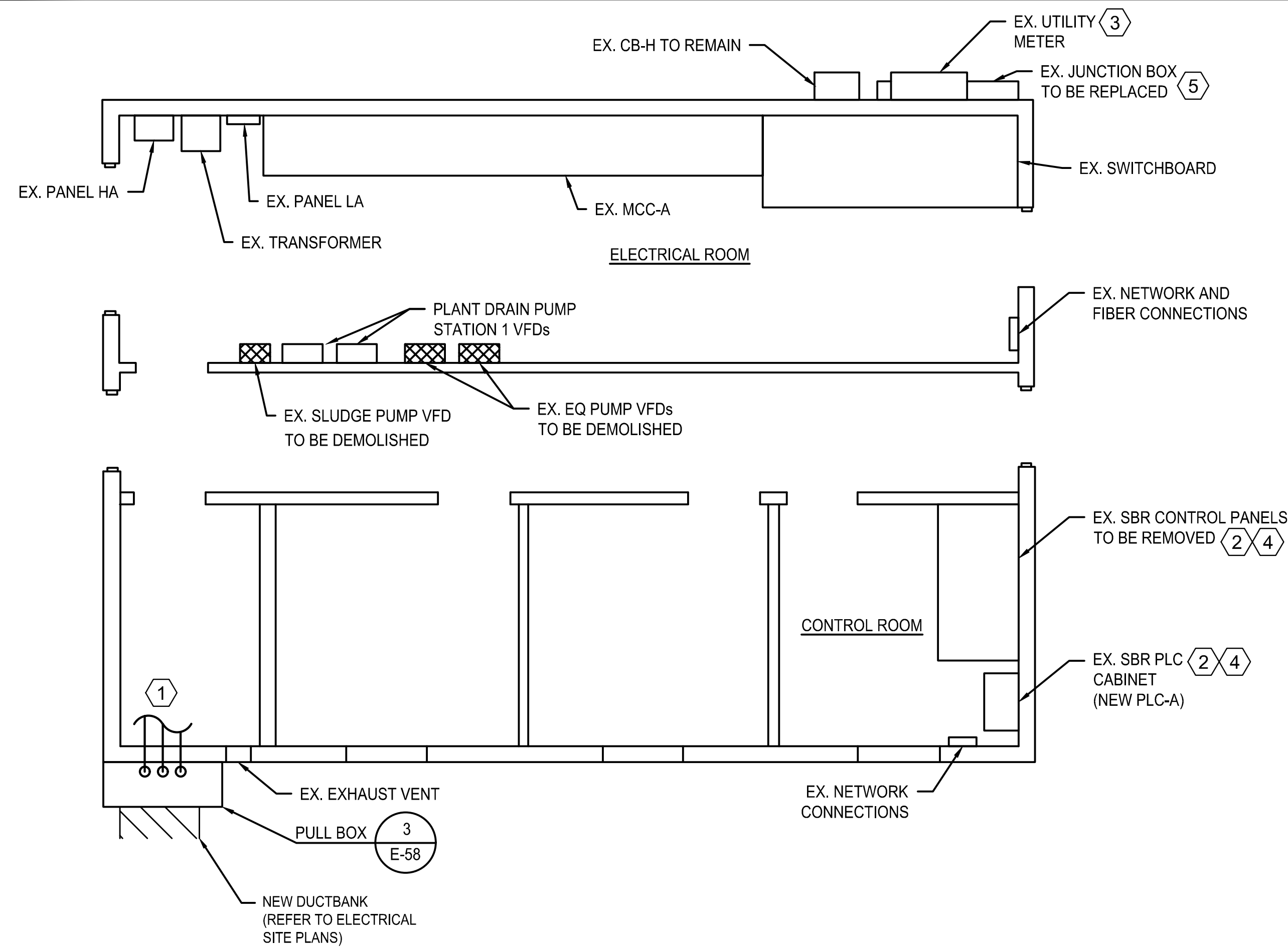


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PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	RDW/INJZ	NCT/INJZ	TLH	TLH	SEPTEMBER 2020	AS SHOWN

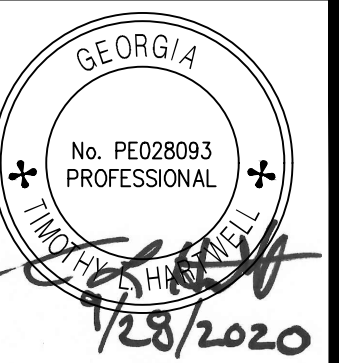
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
PANEL LAYOUTS 2



1 EX. ADMIN BUILDING LAYOUT
SCALE: NTS

KEY NOTES

- 1 ROUTE CONDUITS UP WALL THROUGH ABOVE SUSPENDED CEILING INTO ELECTRICAL ROOM.
- 2 SYSTEM INTEGRATOR SHALL PERFORM REVIEW OF ALL EXISTING I/O AND DEVELOP COMPLETE I/O LIST TO REVIEW WITH ENGINEER. REFER TO DRAWING I-2 FOR ADDITIONAL INFORMATION.
- 3 REFER TO DRAWING 14-E-1 FOR SEQUENCE OF CONSTRUCTION TO REMOVE EXISTING UTILITY SERVICE.
- 4 EX. SBR CONTROL PANELS TO BE DEMOLISHED AND PLC-A INSTALLED. USE EX. 120VAC POWER FOR PLC-A PANEL.
- 5 NEW POWER FEED FROM SG-OC TO BE INSTALLED OVERHEAD. CONTRACTOR SHALL PROVIDE NEW CONDUITS (QUANTITY AS REQUIRED BY CONDUIT AND WIRE SCHEDULE) FROM WIREWAY TO BUILDING AND NEW JUNCTION TO WALL PENETRATIONS.
- 6 CONTRACTOR SHALL REMOVE ALL EXISTING EQUIPMENT, CONDUIT, AND WIRE WHICH IS NOT USED OR ABANDONED FROM ELECTRICAL ROOM AND CONTROL ROOM.



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DUNWOODY, GA 30017

CERTIFICATE OF AUTHORIZATION #PEF07823 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

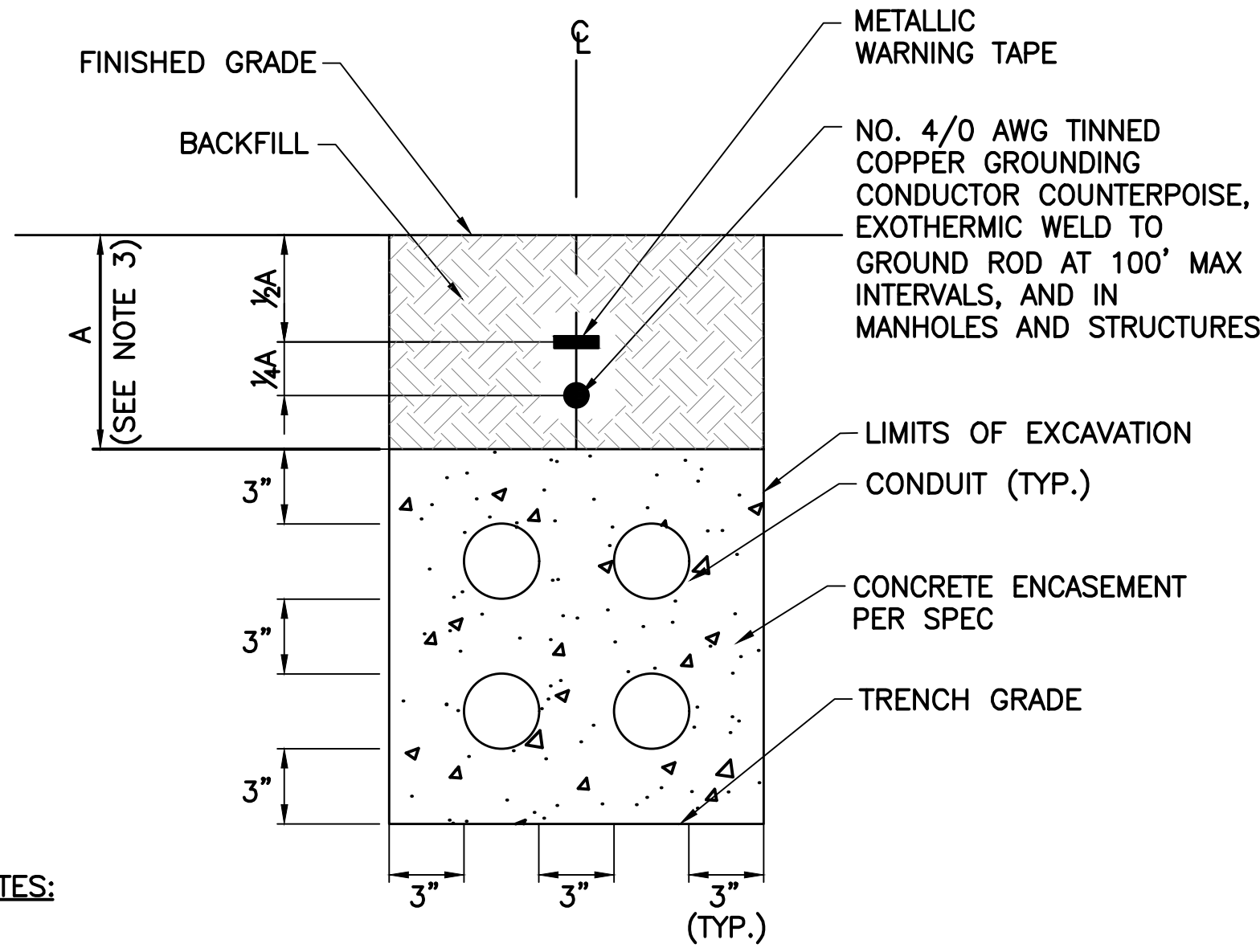
PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

ELECTRICAL DETAILS 1

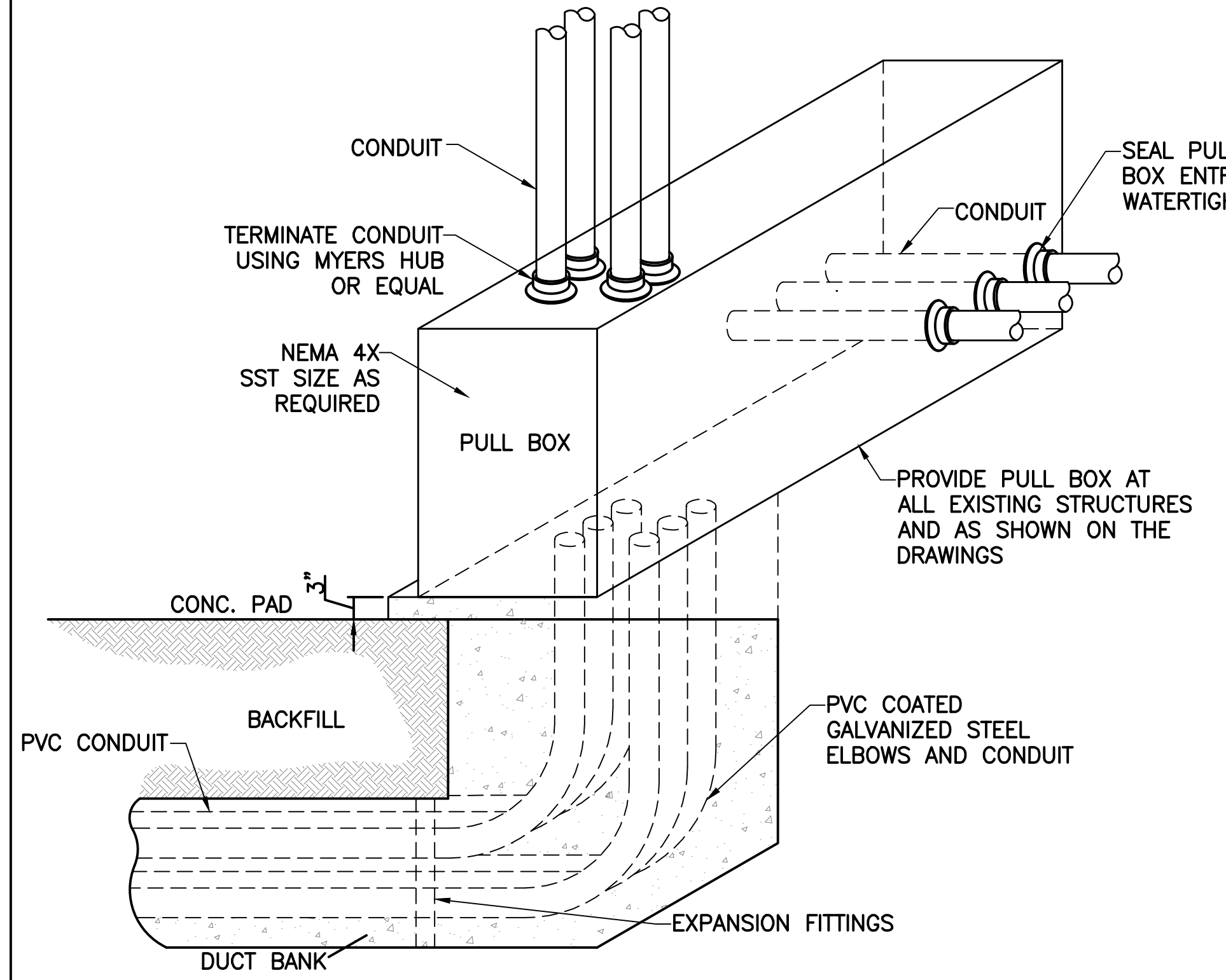
SHEET NO.

E-57

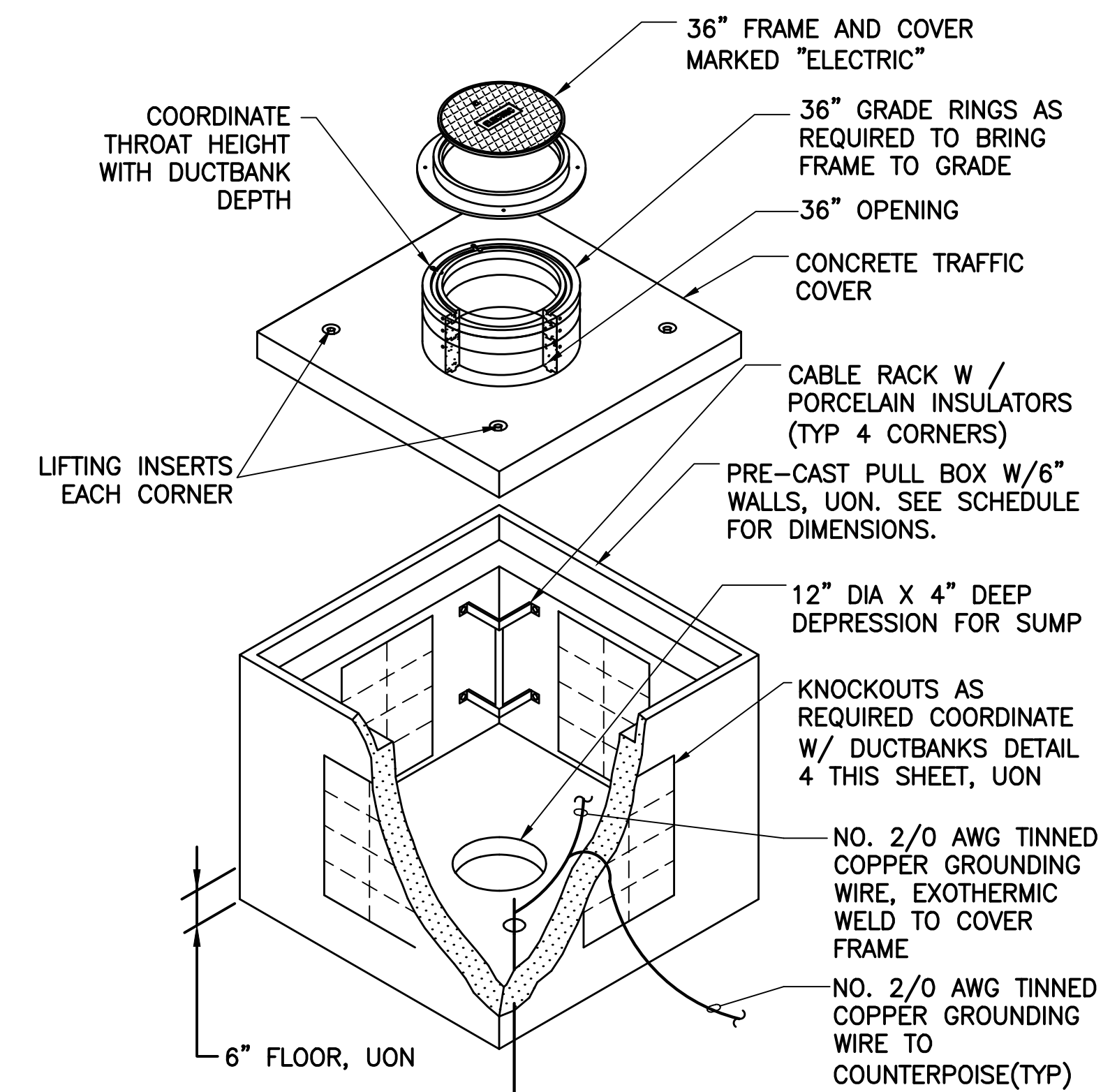


- NOTES:**
1. SEE "EARTHWORK AND TRENCHING" SPECIFICATION FOR EXCAVATION AND BACKFILL.
 2. FOUR 4" CONDUITS SHOWN FOR CLARITY. PROVIDE QUANTITY AND SIZE OF CONDUIT AS REQUIRED, REFER TO DRAWINGS E-10 TO E-11.
 3. INSTALL DUCT BANK 24" MIN. DEPTH BELOW FINISHED GRADE, UON SLOPE DUCT BANK TO MANHOLE.
 4. PROVIDE CONDUIT CHAIRS/SPACERS FOR ALL CONDUITS.

1 CONCRETE DUCTBANK BURIAL DETAIL
SCALE:NTS



3 PULL BOX DETAIL
SCALE:NTS

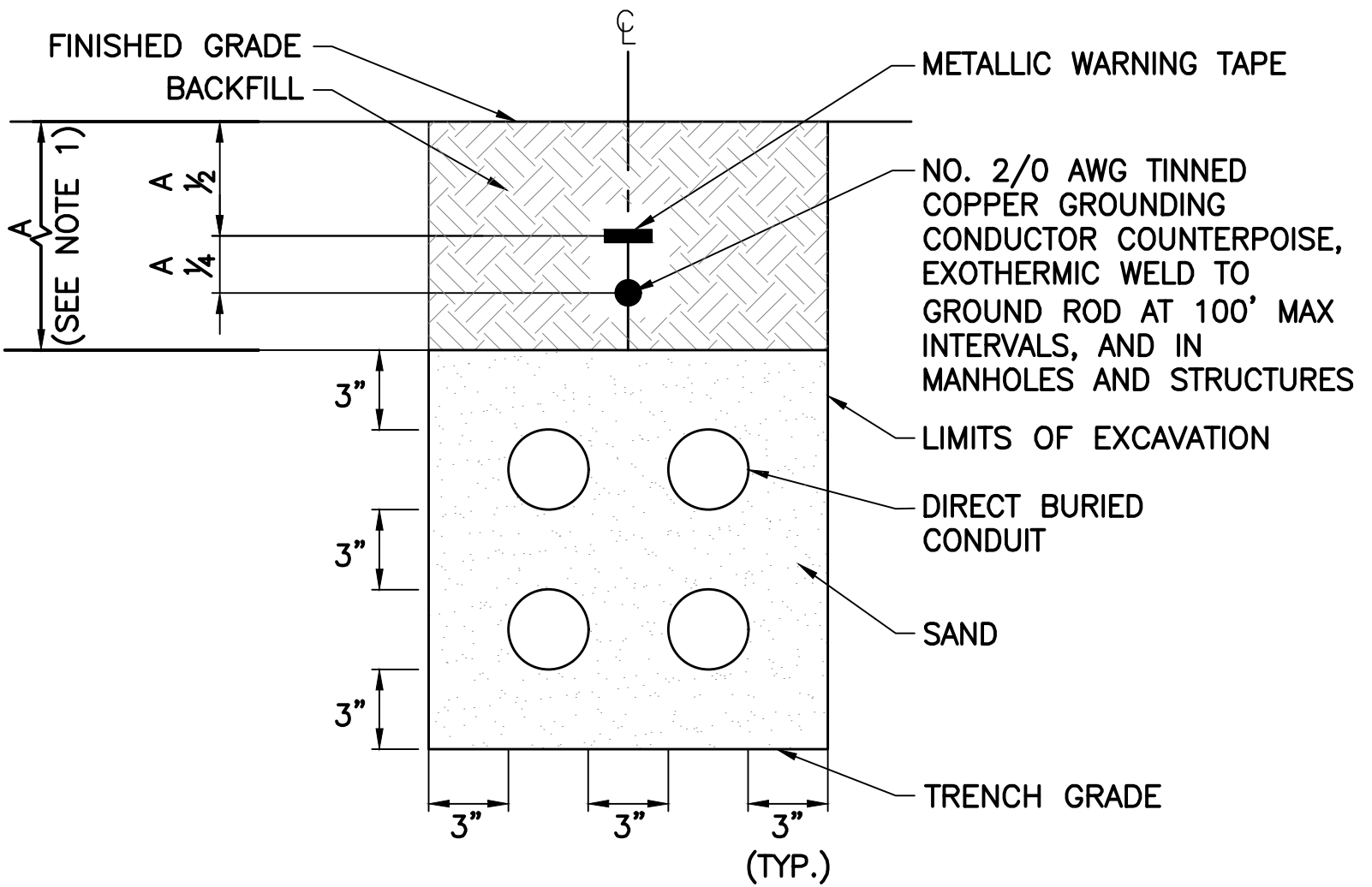


- NOTES:**
1. PROVIDE POLYPROPYLENE, STEEL ENCAPSULATED MANHOLE STEPS.
 1. MINIMUM DIMENSION SHOWN.
 2. MINIMUM MH HEIGHT IS 5 FEET. COORDINATE WITH DRAWINGS E-10 THROUGH E-11.
 3. ALL MANHOLES AND COVERS SHALL BE AASHTO H-20 RATED.

TYPICAL SIZES	
LABEL	L x W
EMH-X	72"x72"

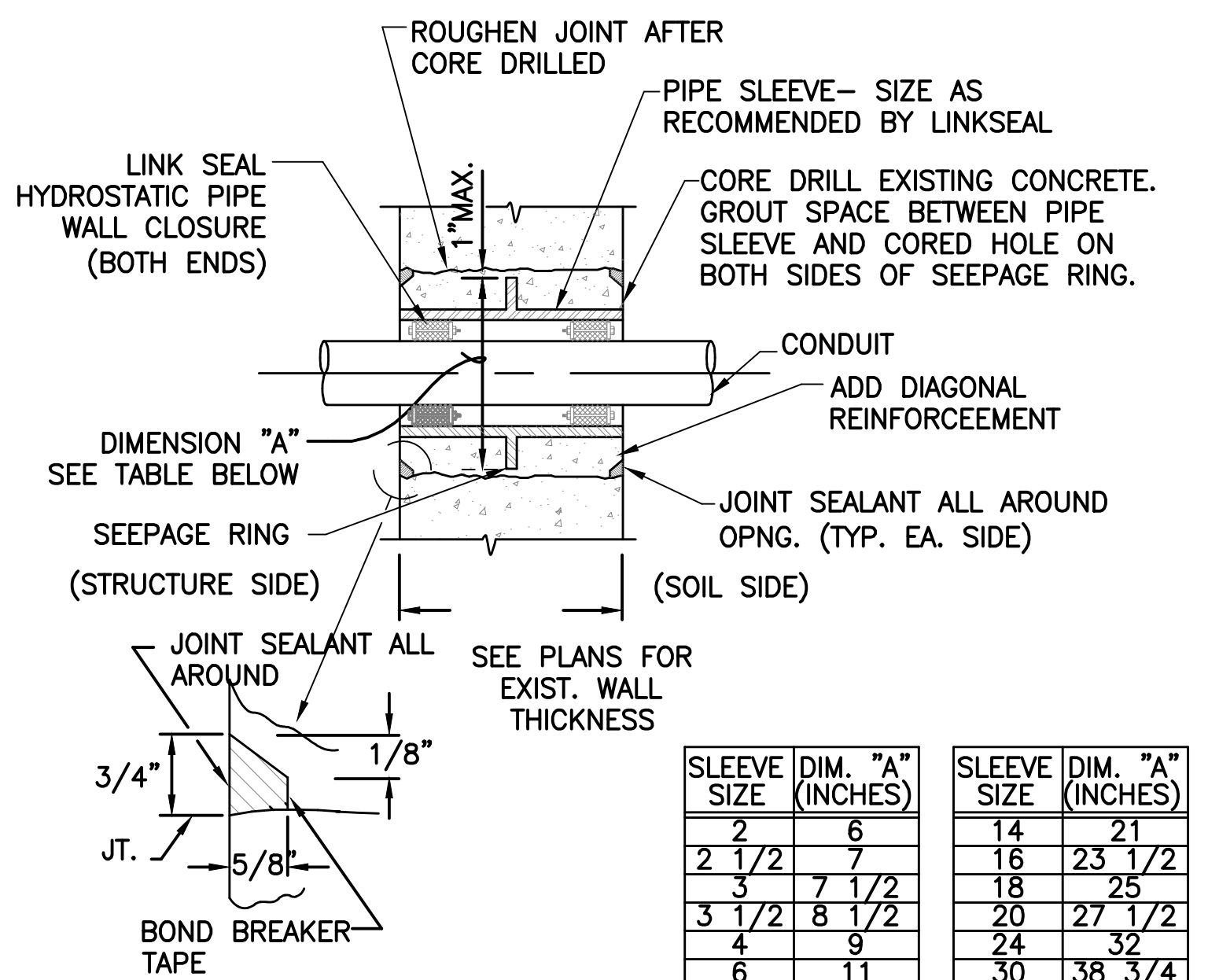
5. SIZE MANHOLES AS REQUIRED FOR APPLICATION. FIELD VERIFY.

5 MANHOLE DETAIL
SCALE:NTS



- NOTES:**
1. INSTALL DIRECT BURIED CONDUIT 24" MIN. DEPTH BELOW FINISHED GRADE, UON. SLOPE CONDUITS AWAY FROM BUILDING.
 2. FOUR CONDUITS SHOWN FOR CLARITY. PROVIDE QUANTITY AS REQUIRED.
 3. SPACER REQUIRED BY SPECIFICATION 16110.
 4. PROVIDE 12" OF CONCRETE COVER MINIMUM IN TRAFFIC AREAS.

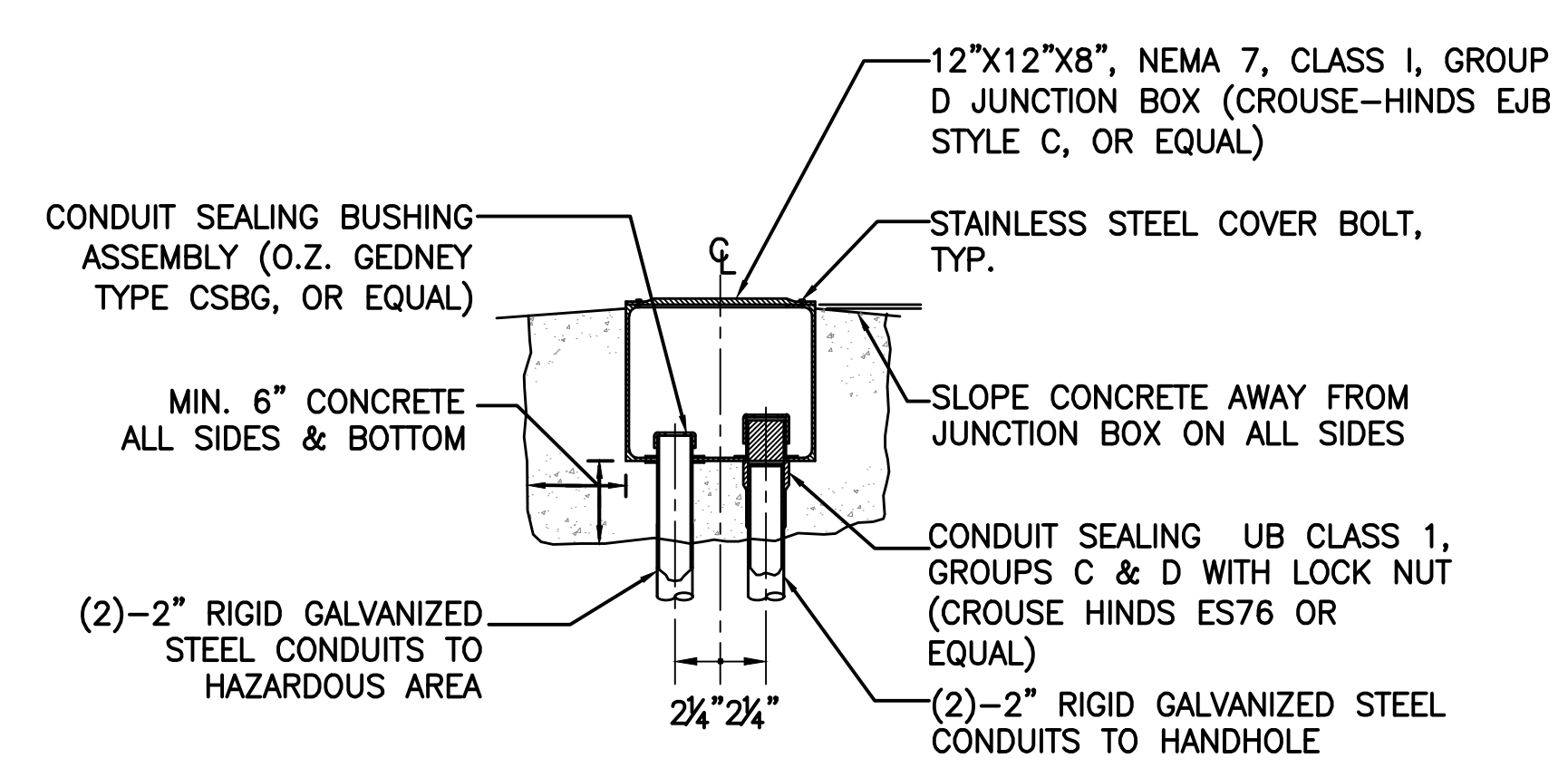
2 DIRECT BURIED CONDUIT DETAIL
SCALE:NTS



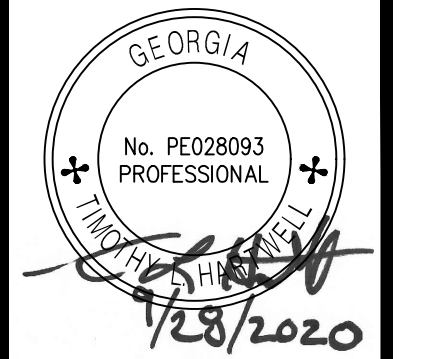
SLEEVE SIZE	DIM. "A" (INCHES)	SLEEVE SIZE	DIM. "A" (INCHES)
2	6	14	21
2 1/2	7	16	23 1/2
3	7 1/2	18	25
3 1/2	8 1/2	20	27 1/2
4	9	24	32
6	11	30	38 3/4
8	13 1/2	36	46
10	16	42	53
12	19	48	59 1/2

- NOTES:**
1. USE POLYMER MODIFIED TWO COMPONENT MORTAR ONLY.
 2. TYPICAL FOR FLOOR PENETRATION.

4 WALL PENETRATION DETAIL
SCALE:NTS



6 EXPLOSION PROOF JUNCTION BOX
SCALE:NTS



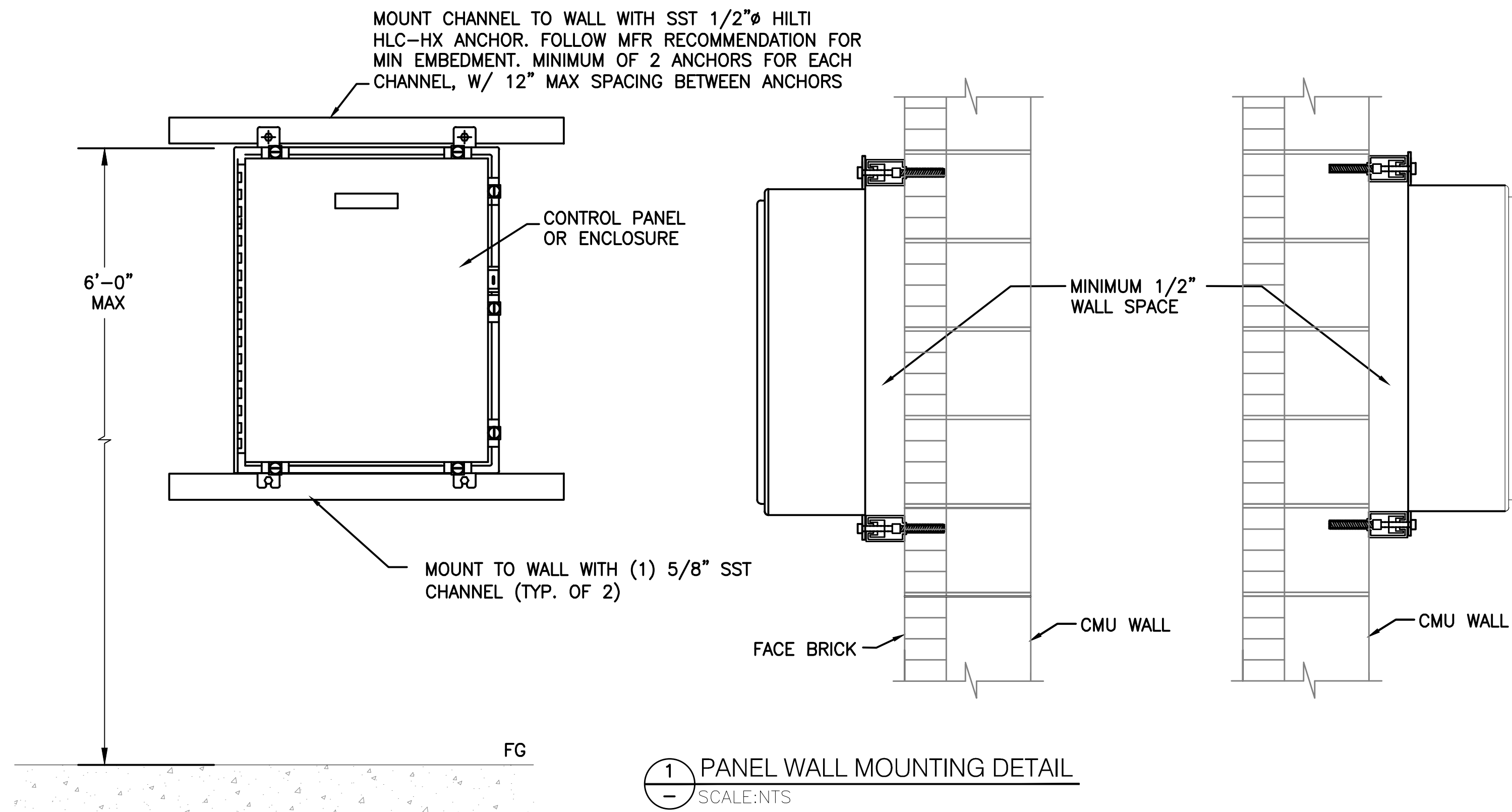
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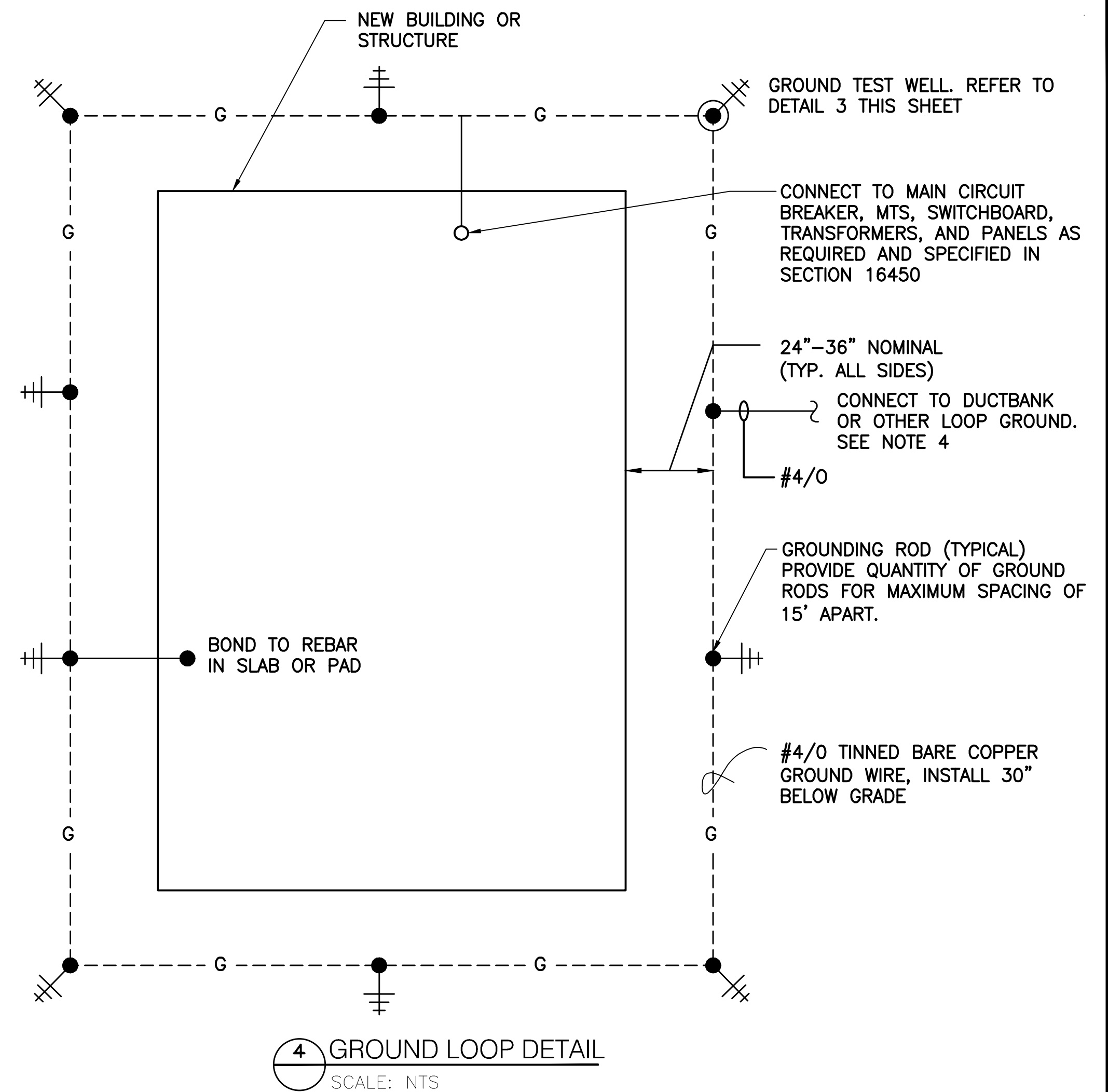
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DETAILS 2

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DETAILS 2



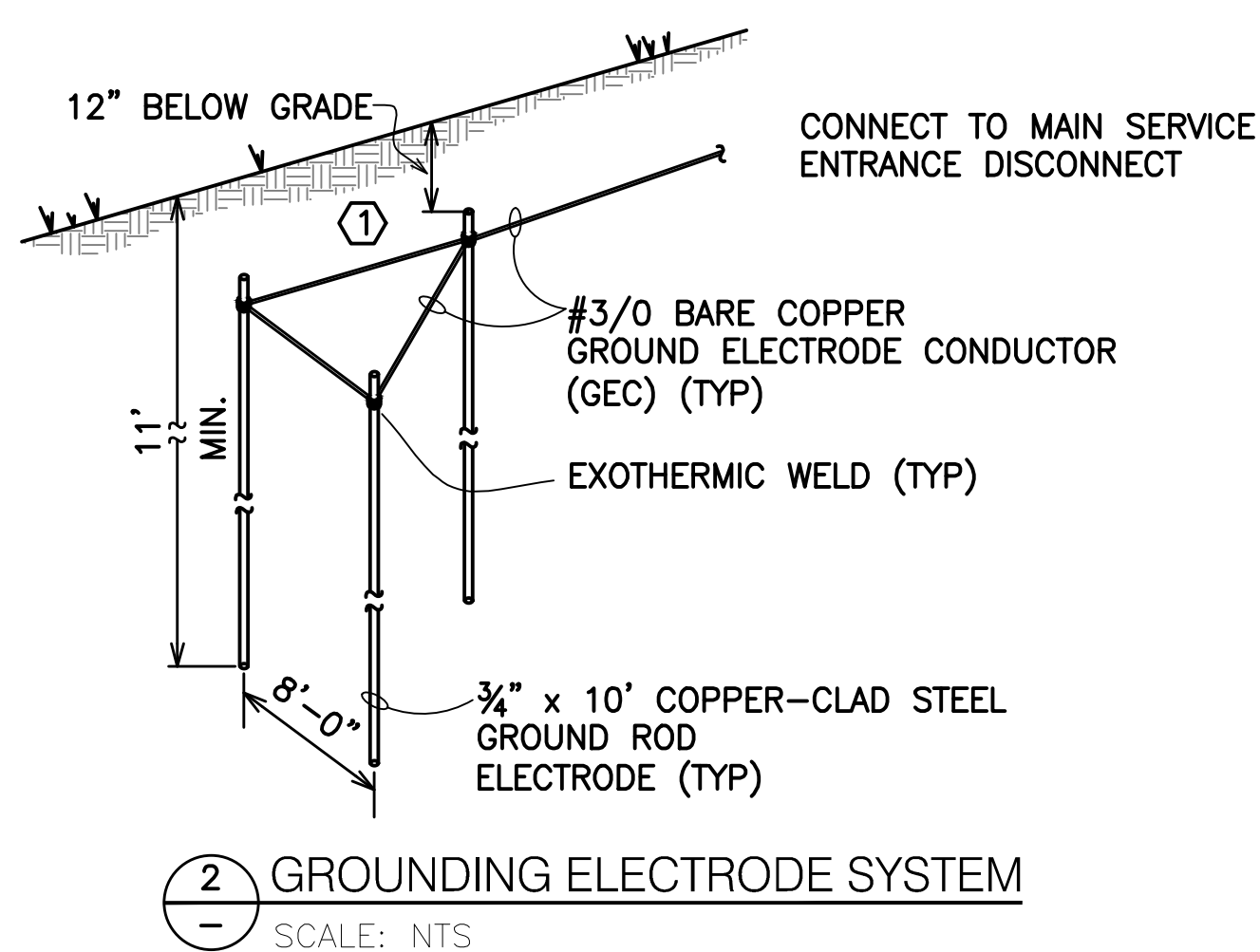
1 PANEL WALL MOUNTING DETAIL
SCALE: NTS



4 GROUND LOOP DETAIL
SCALE: NTS

NOTES:

1. INSTALL GROUND LOOP AT ALL NEW BUILDINGS, PADS, AND STRUCTURES.
2. CONNECT ALL DUCT BANK GROUND WIRES, EQUIPMENT GROUNDING WIRES, AND CONDUIT GROUNDS TO GROUND LOOP FOR CONTINUOUS GROUNDING.
3. PROVIDE MINIMUM 2 GROUND TEST WELLS PER STRUCTURE, PAD, OR BUILDING.
4. ALL GROUND LOOPS SHALL BE CONNECTED VIA THE DUCTBANK GROUND OR SEPARATELY INSTALLED #4/0 GROUND WIRE.



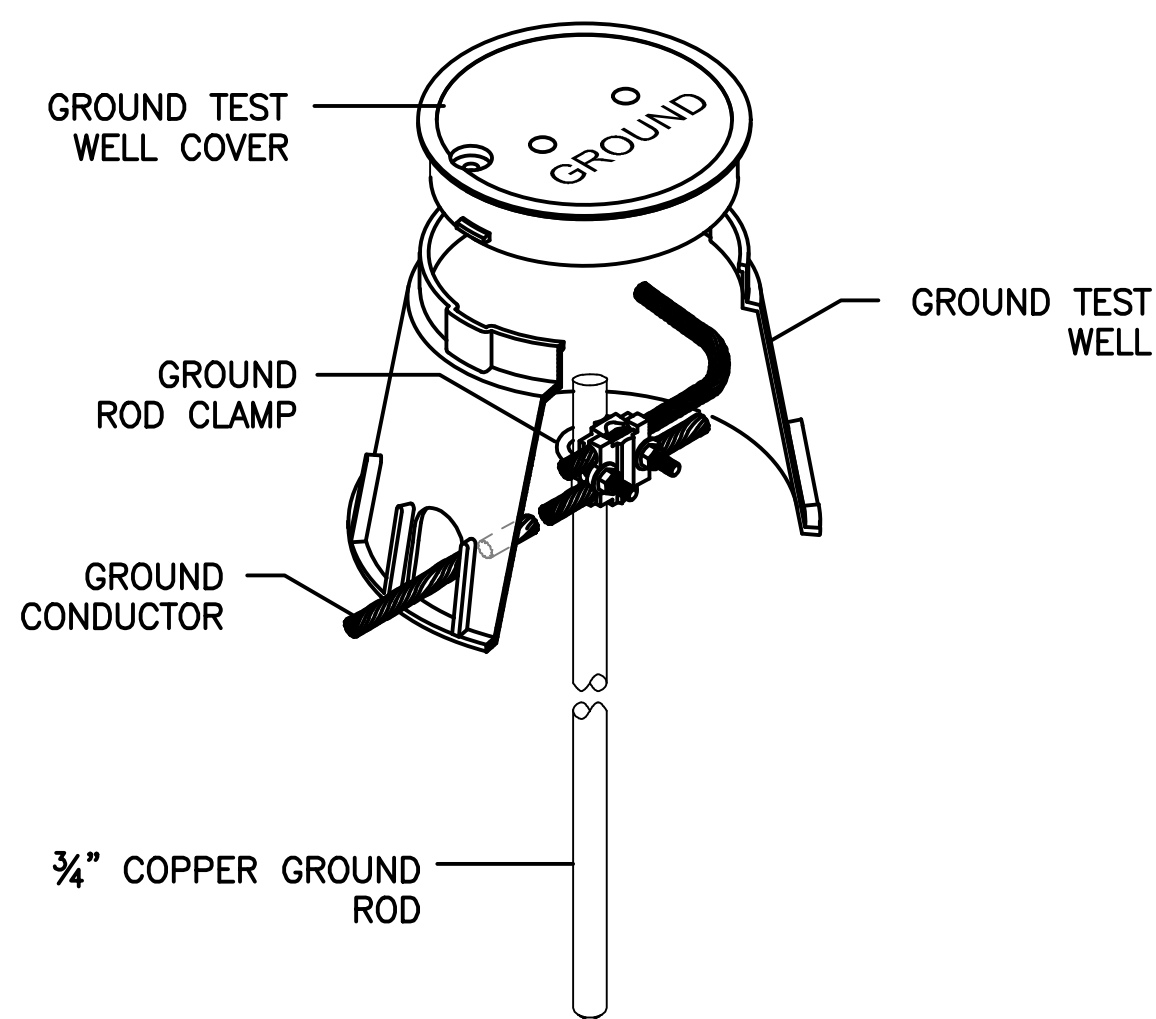
2 GROUNDING ELECTRODE SYSTEM
SCALE: NTS

NOTES:

1. GROUND SERVICE PER NEC ARTICLE 250, AND POWER UTILITY REQUIREMENTS.
2. PROVIDE GROUNDING ELECTRODE SYSTEM FOR ALL INCOMING UTILITY SERVICE.
3. CONNECT TO BUILDING STRUCTURE, PAD REINFORCING, AND COLD WIRE PIPE.

KEY NOTE:

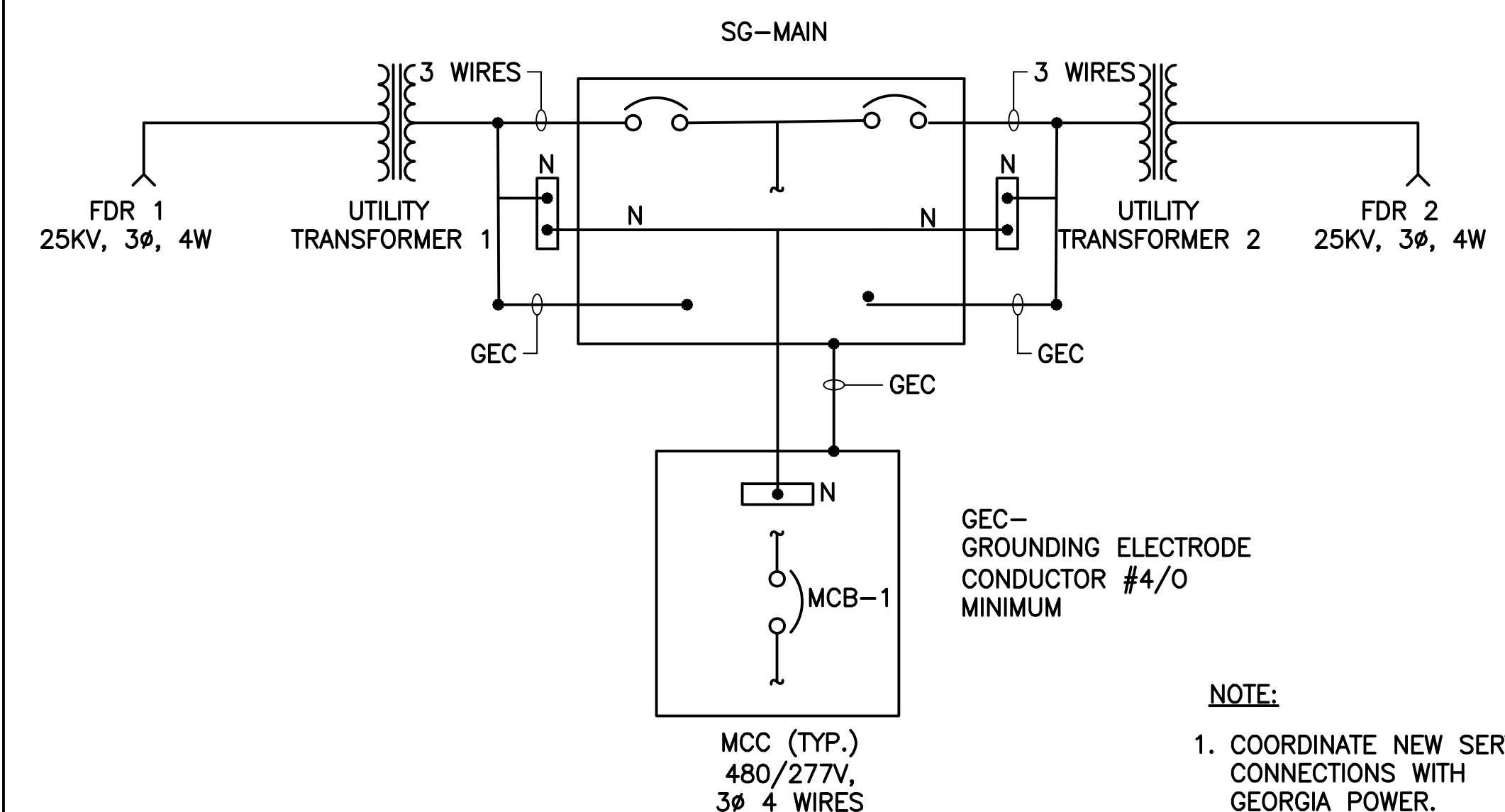
- 1 INSTALL ROD ELECTRODES AT LEAST 8' APART FROM EACH OTHER.



3 GROUND TEST WELL
SCALE: NTS

NOTES:

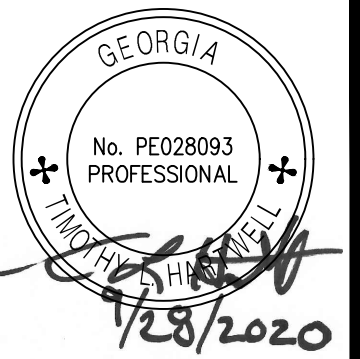
1. PROVIDE GROUND ROD DRIVEN 6-INCHES BELOW GRADE AND CONNECT TO GROUND TEST WELL WITH #4 AWG BARE COPPER WIRE.
2. GROUND TEST WELLS LOCATED IN TRAFFIC AREAS SHALL BE RATED FOR H-20 LOADING.



5 GROUNDING SEPARATELY DERIVED SYSTEM
SCALE: NTS (TYP.)

NOTE:

1. COORDINATE NEW SERVICE CONNECTIONS WITH GEORGIA POWER.



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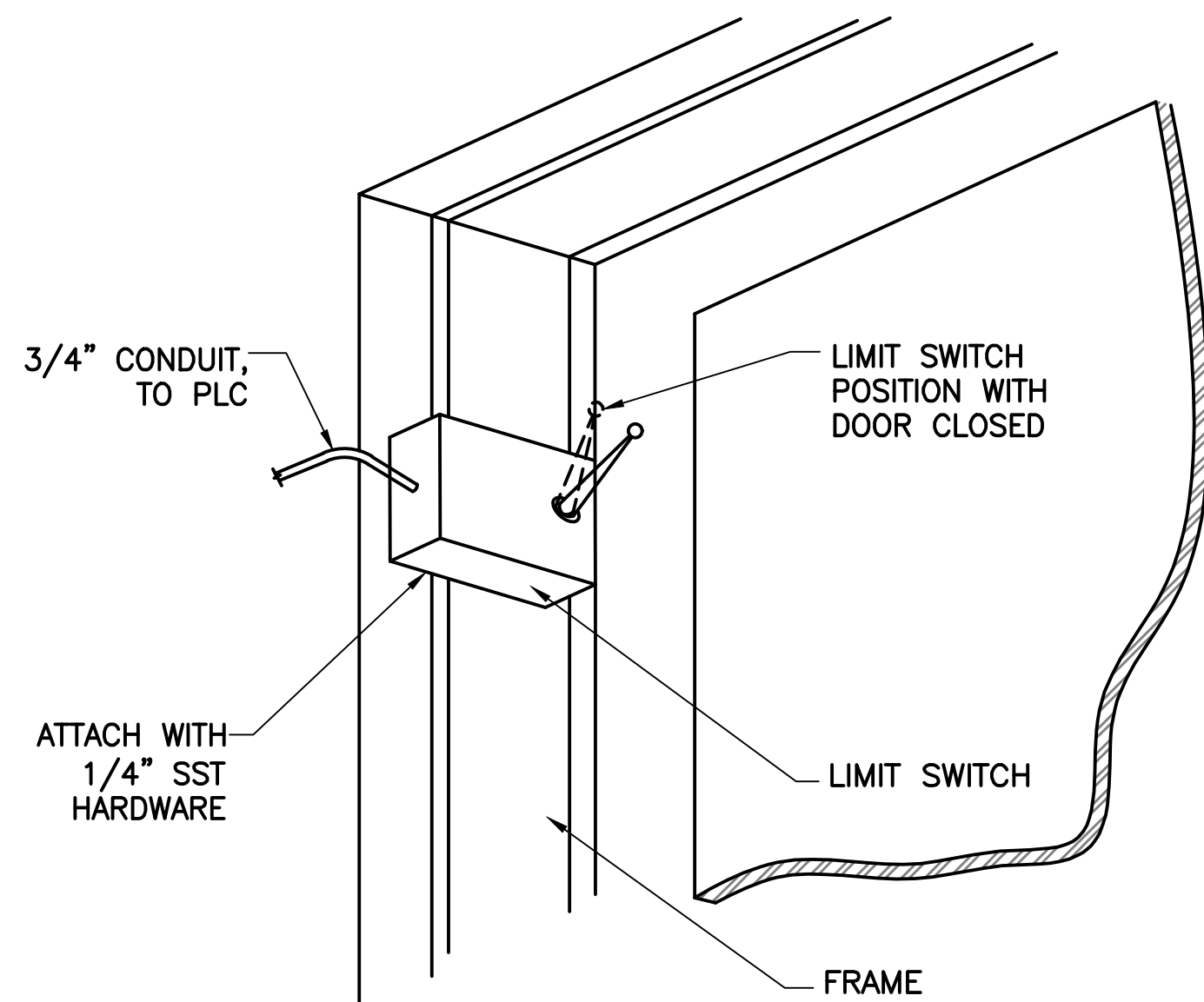
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DETAILS 3

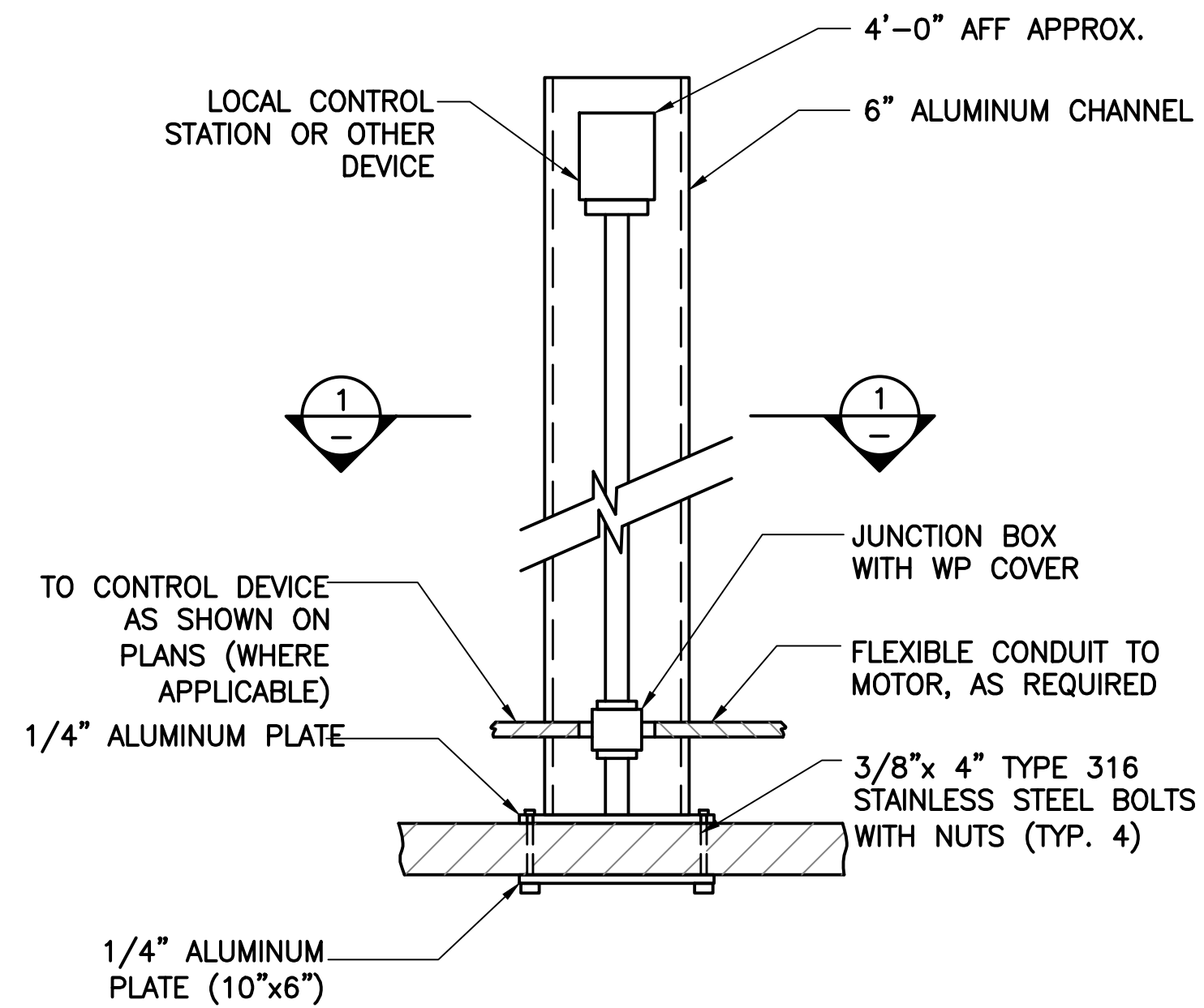
SHEET NO.
E-59



NOTES:

1. MOUNT SWITCH IN BUILDING DOOR FOR INTRUSION ALARM ON ALL EXTERIOR DOORS, AT TOP OF DOOR FRAME.

1 DOOR (INTRUSION) SWITCH
SCALE: NTS

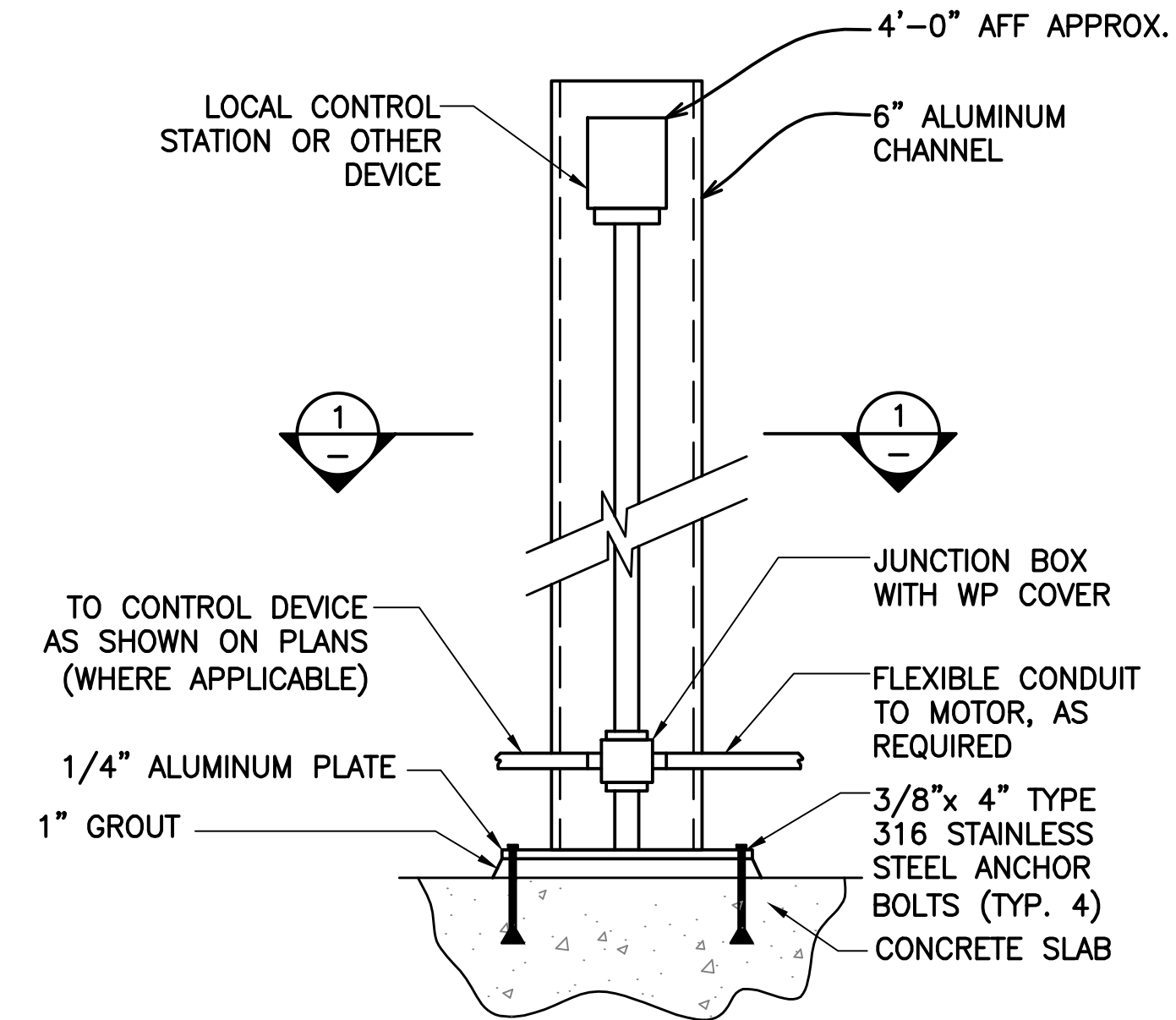


MOUNTED ON GRATING
(SEE NOTE 1)

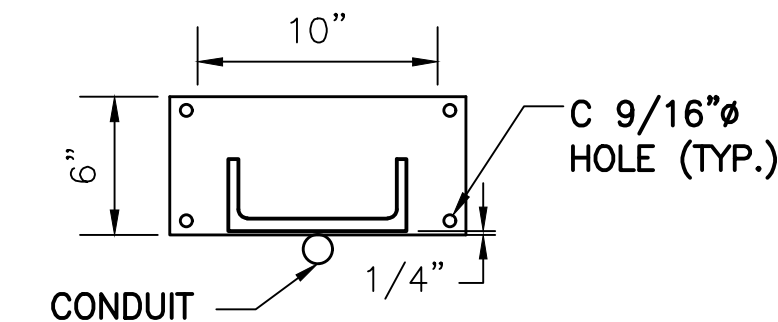
NOTES:

1. WHEN MOUNTING CONTROL STATION TO GRATING, A MINIMUM OF 1/4" ALUMINUM PLATE SHALL BE INSTALLED UNDER THE GRATING FOR SUPPORT. THE ALUMINUM PLATE SHALL THREE (3) TIMES THE SIZE OF THE CONDUIT OD.
2. PROVIDE GROUND WIRE TO SYSTEM GROUND.

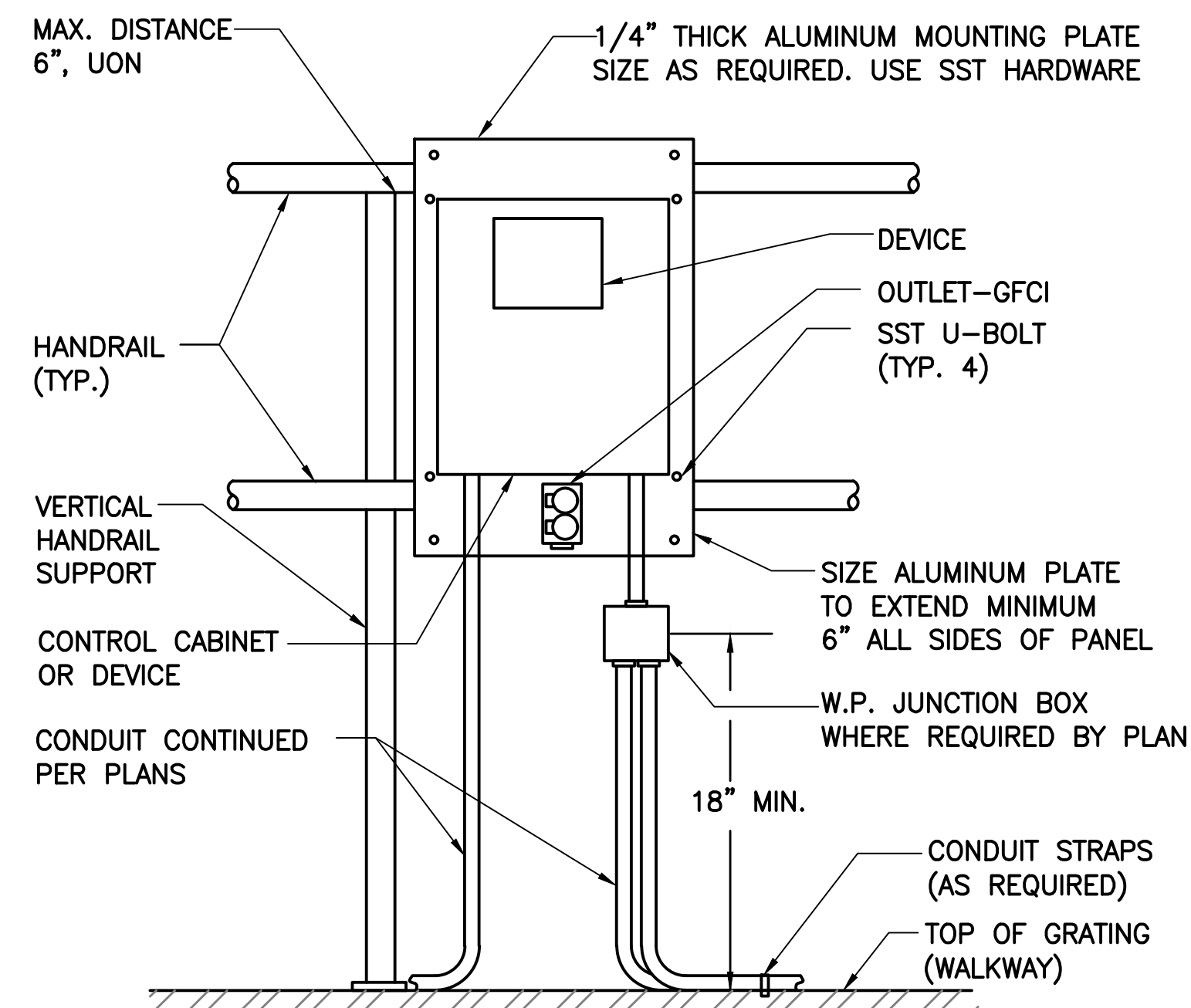
3 LOCAL CONTROL STATION MOUNTING DETAILS
SCALE: NTS



MOUNTED ON CONCRETE



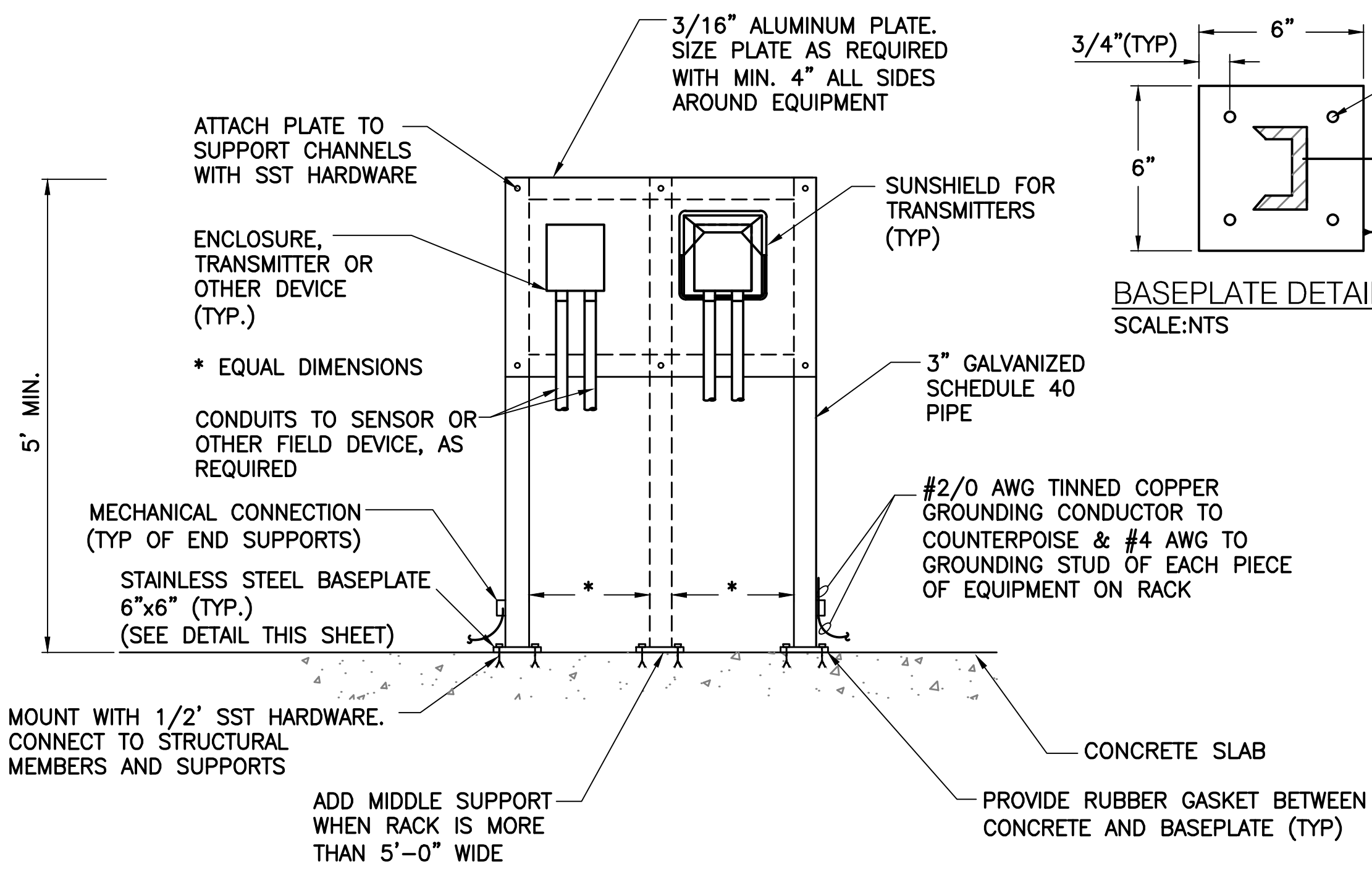
1 SECTION
SCALE: NTS



NOTES:

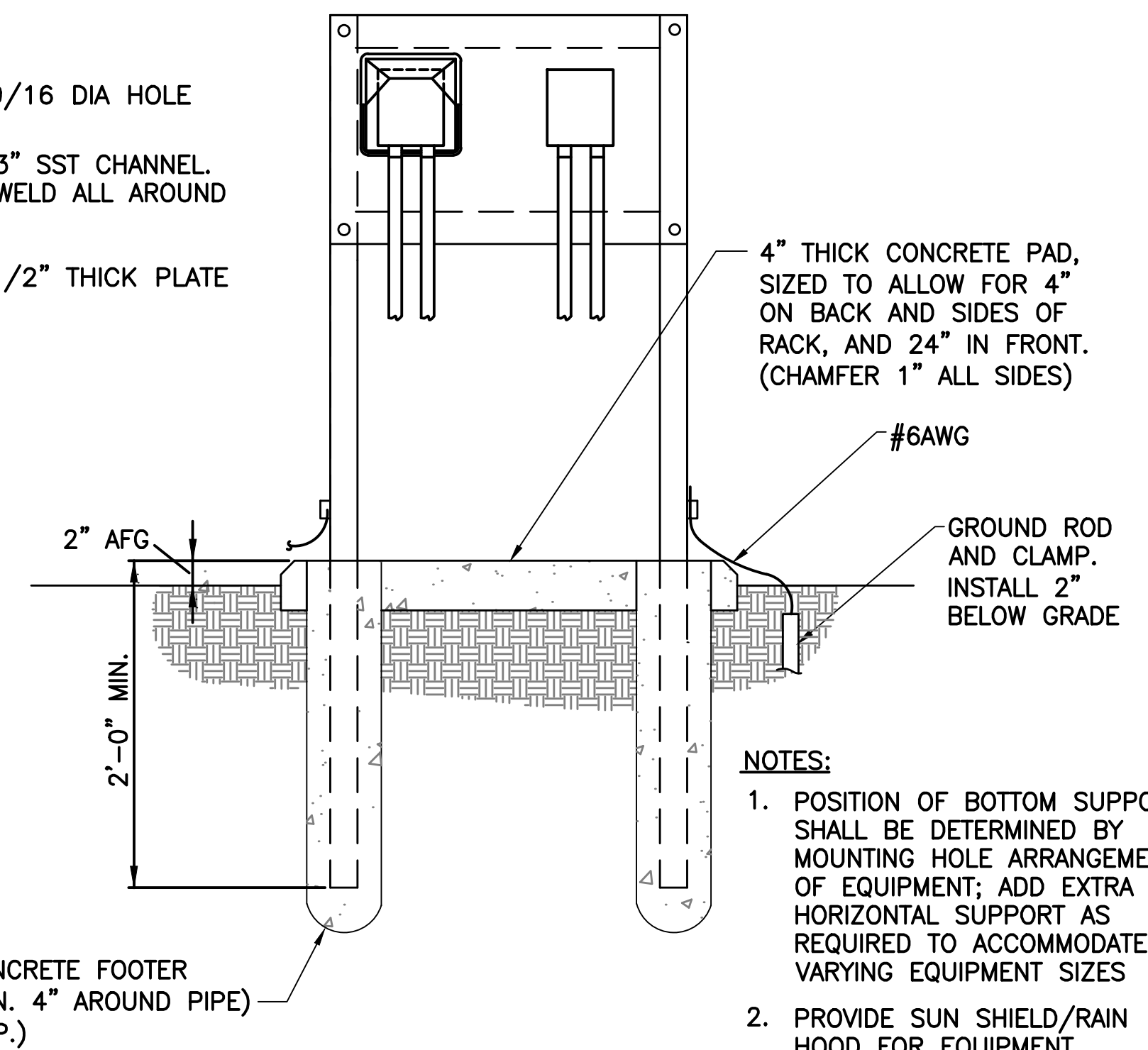
1. PROVIDE GROUND WIRE TO SYSTEM GROUND.

2 HANDRAIL MOUNTING DETAIL
SCALE: NTS



MOUNTED ON CONCRETE

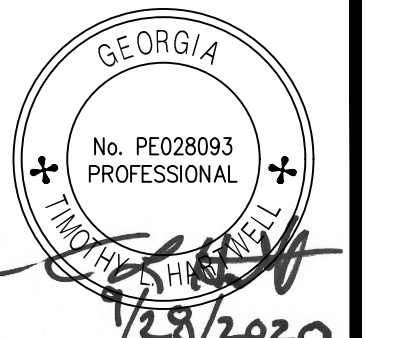
4 EQUIPMENT RACK DETAIL
SCALE: NTS



MOUNTED ON GRADE

NOTES:

1. POSITION OF BOTTOM SUPPORT SHALL BE DETERMINED BY MOUNTING HOLE ARRANGEMENT OF EQUIPMENT; ADD EXTRA HORIZONTAL SUPPORT AS REQUIRED TO ACCOMMODATE VARYING EQUIPMENT SIZES
2. PROVIDE SUN SHIELD/RAIN HOOD FOR EQUIPMENT INSTALLED OUTSIDE. REFER TO I-5 DETAIL 2 FOR SUNSHIELD DETAILS.
3. PROVIDE 120V TOGGLE SWITCH AND SURGE PROTECTION FOR ALL INSTRUMENTATION.



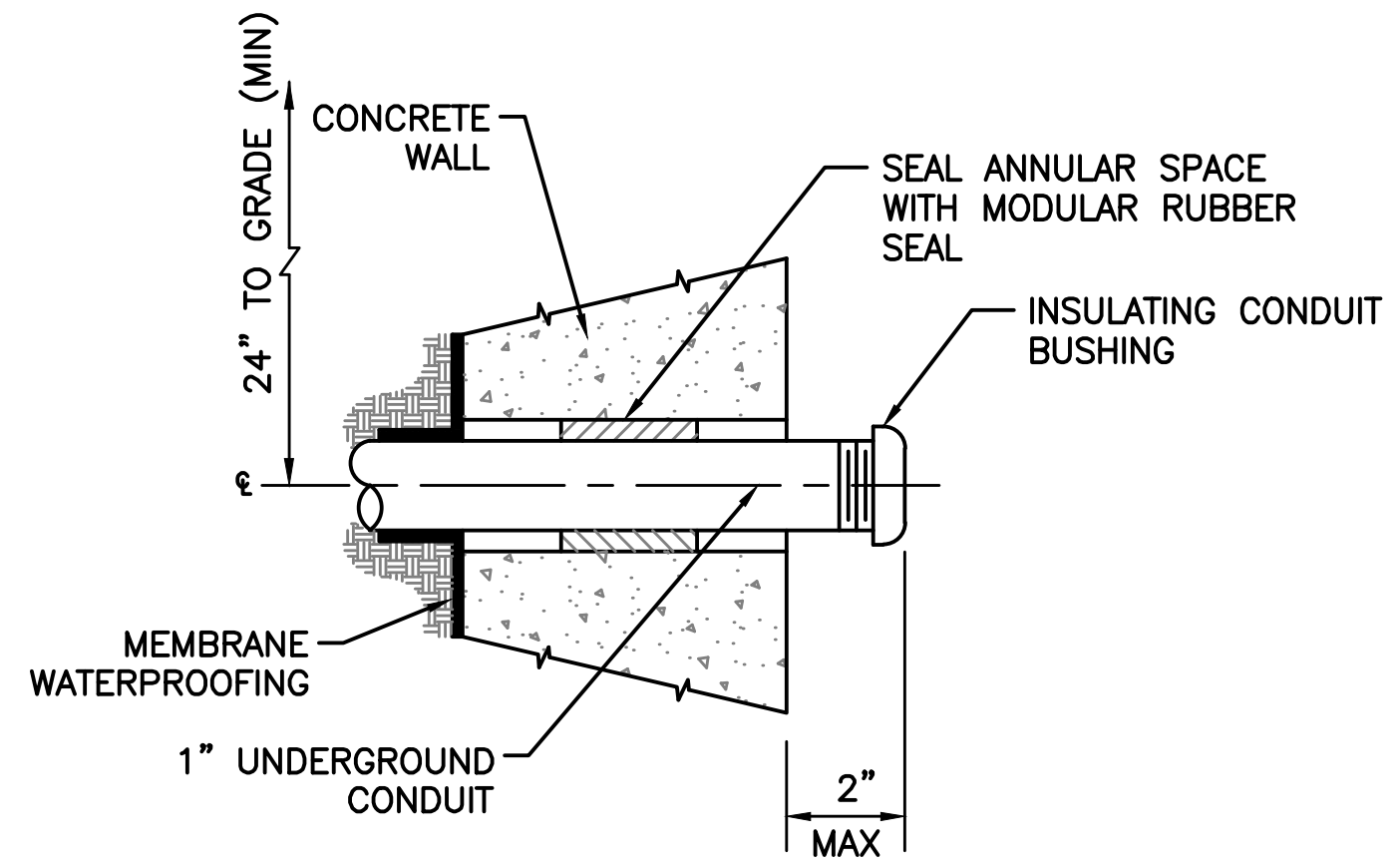
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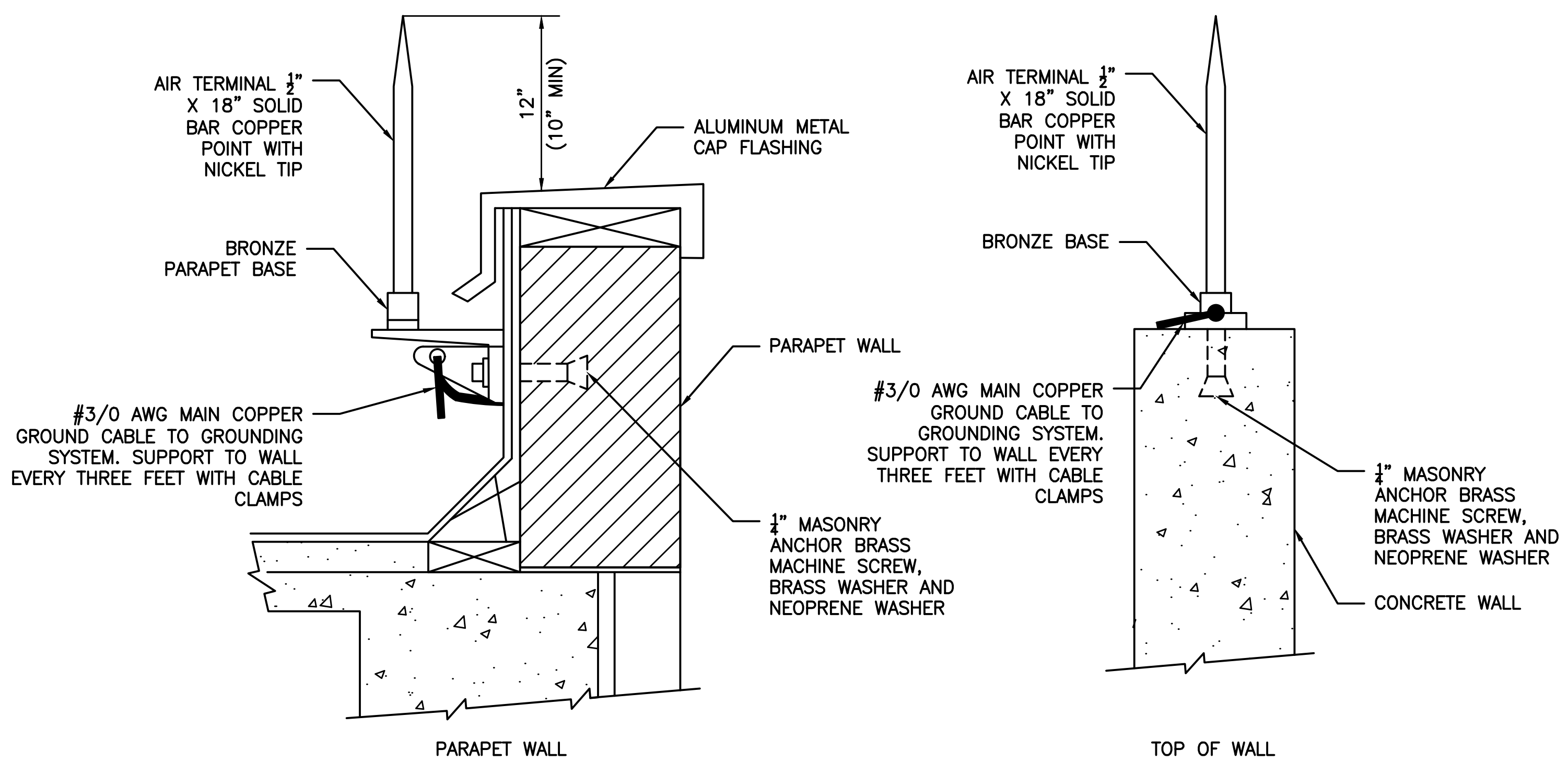
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CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DETAILS 4

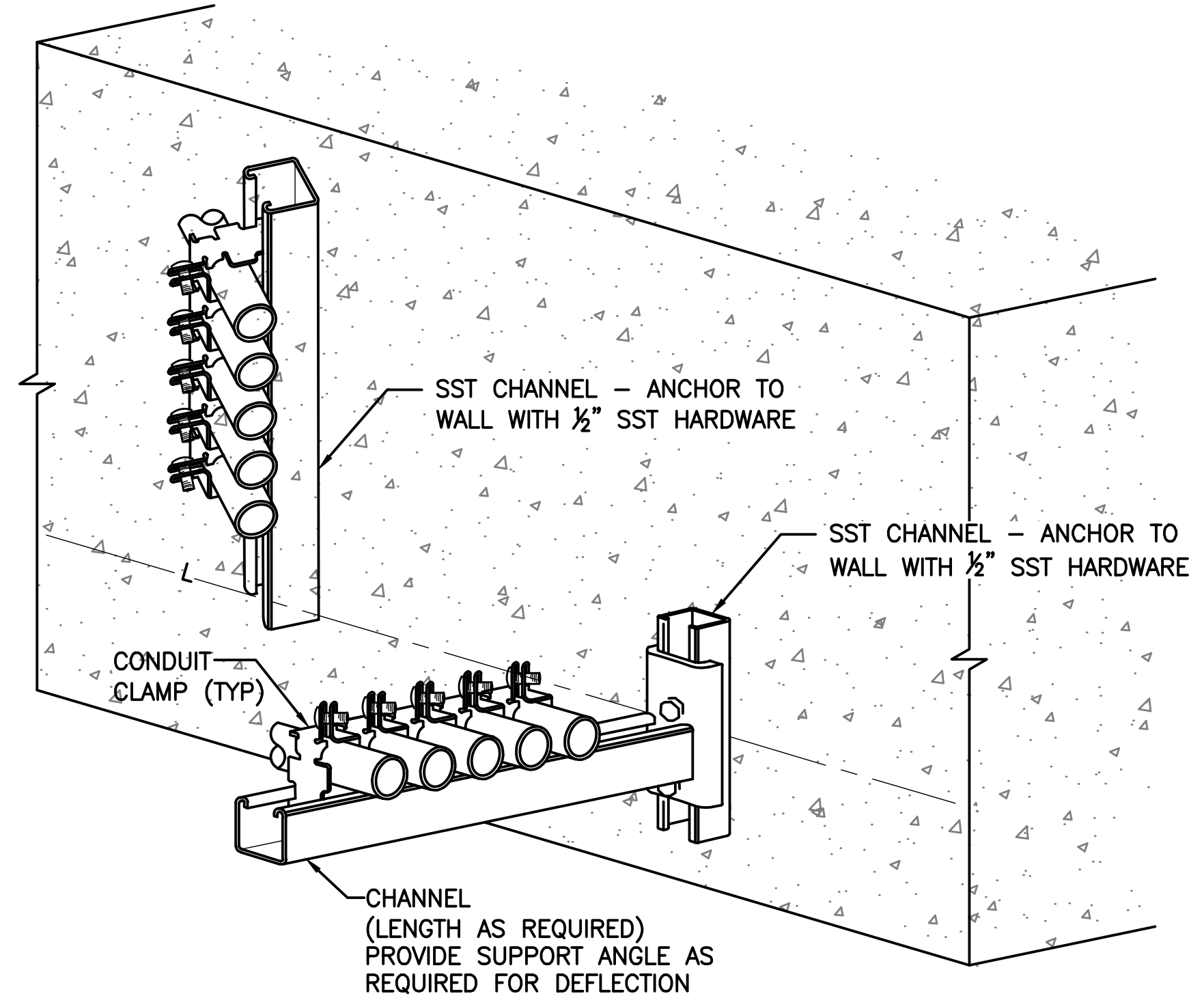


1 WET LOCATIONS CONDUIT PENETRATION
SCALE: NTS



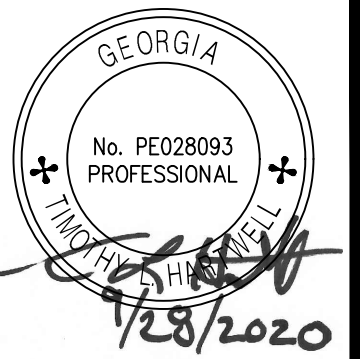
2 LIGHTNING PROTECTION AIR TERMINAL MOUNTING
SCALE: NOT TO SCALE

- NOTE:
1. PROVIDE #2 AWG BARE COPPER GROUND BETWEEN AIR TERMINALS. SUPPORT EVERY 3 FEET.
 2. REFER TO SPECIFICATION SECTION 16446 FOR REQUIREMENTS AND FACILITIES REQUIRING LIGHTNING PROTECTION.



4 WALL CONDUIT SUPPORT
SCALE: NOT TO SCALE

- NOTE:
1. SUPPORTS SHALL BE MAXIMUM 10' SPACING.
 2. WALL SUPPORT SHOWN IS PERPENDICULAR TO WALL. PARALLEL CONFIGURATION AGAINST WALL IS SIMILAR.



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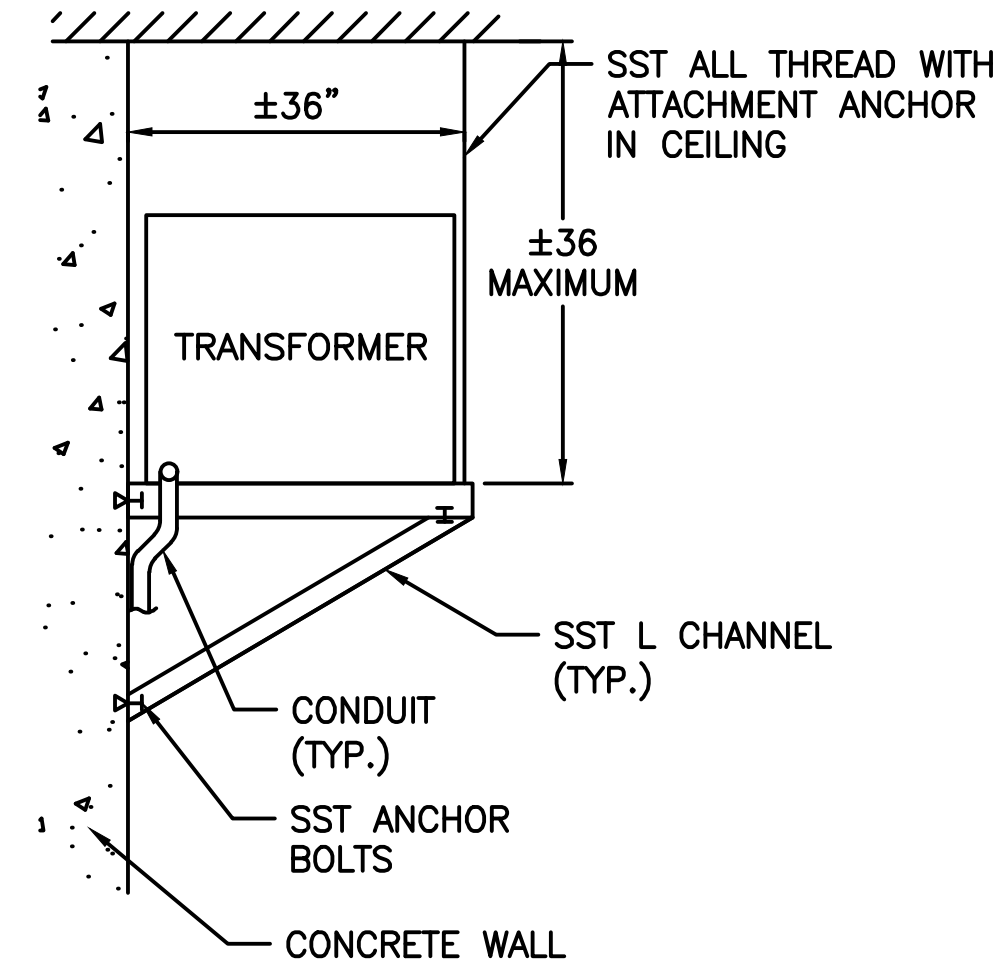
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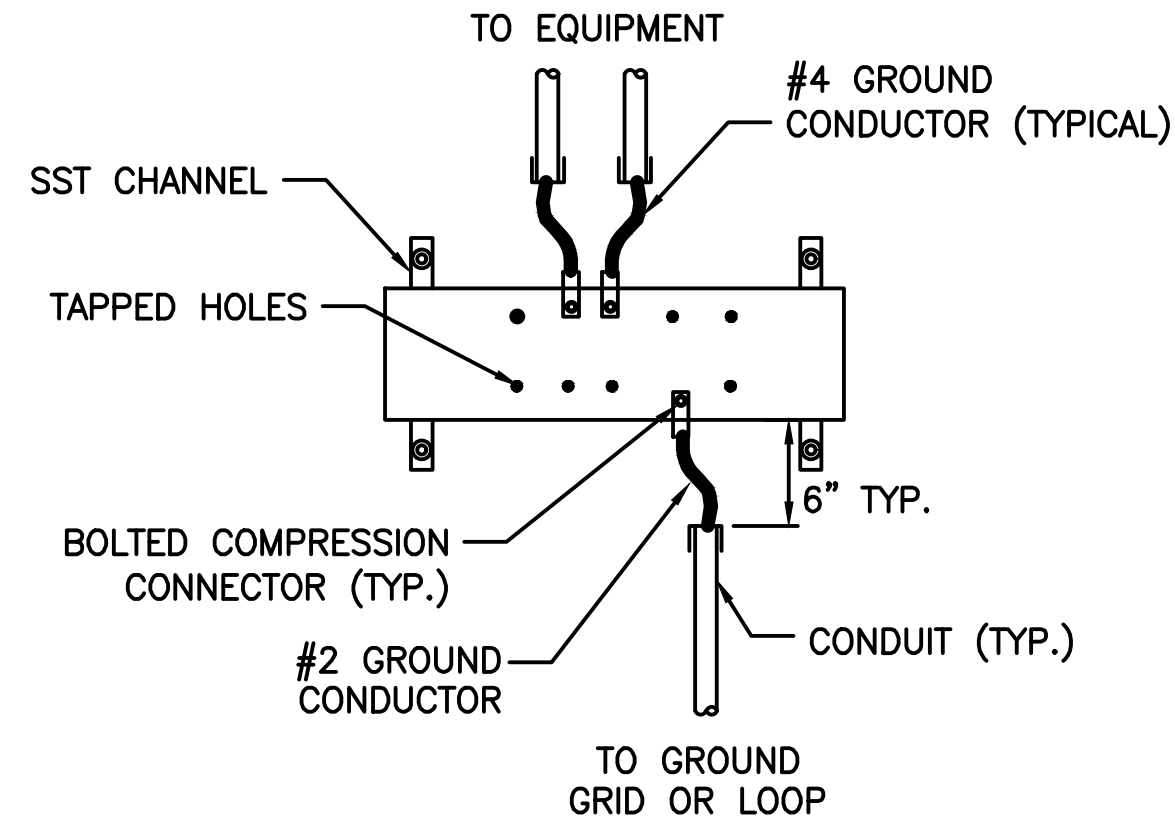
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DETAILS 5

SHEET NO.
E-61



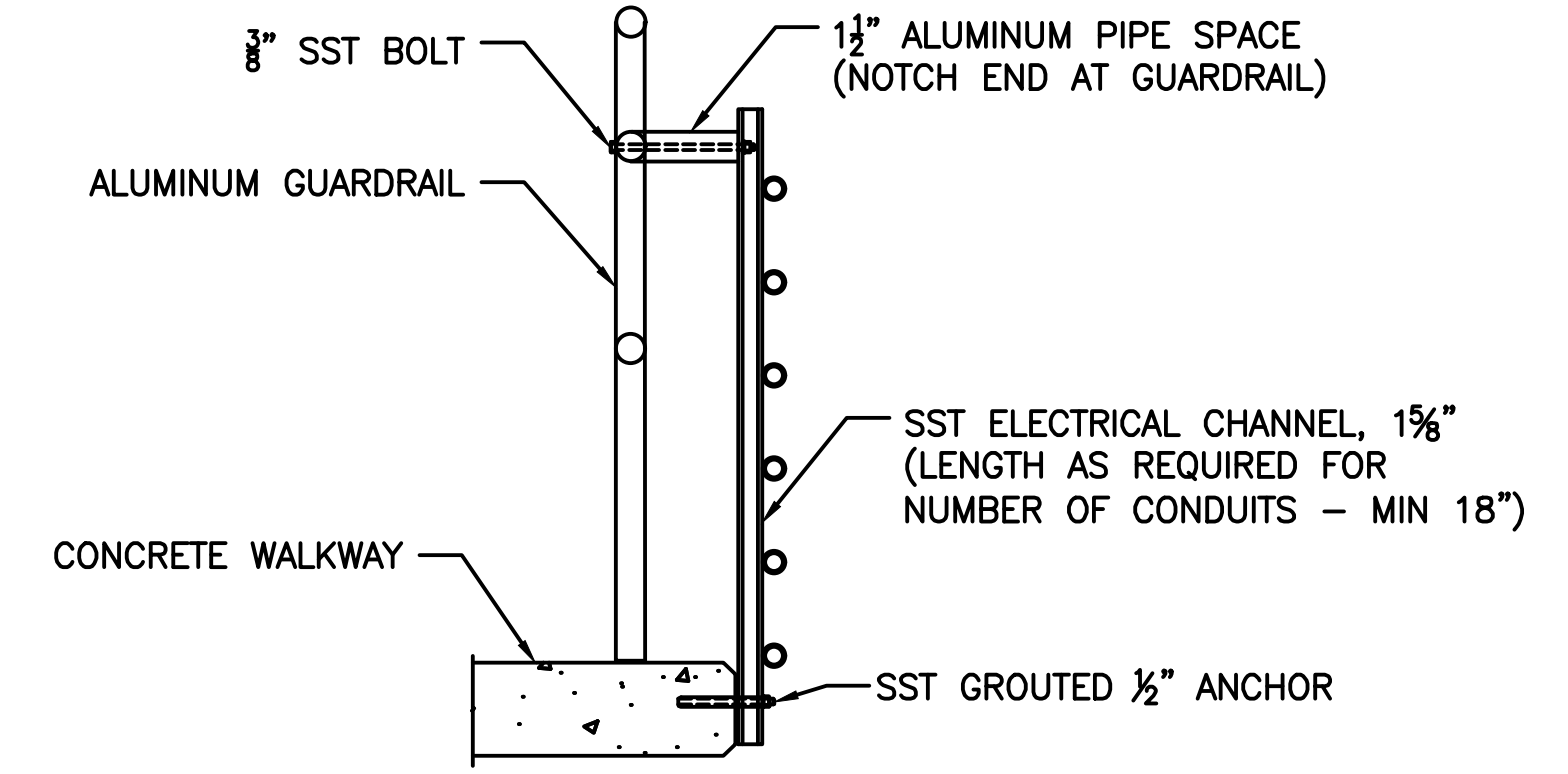
- NOTE:**
1. ALL HARDWARE SHALL BE STAINLESS STEEL.
 2. FLOOR MOUNTED TRANSFORMERS SHALL BE MOUNTED ON 4" HOUSEKEEPING PADS.

1 OVERHEAD TRANSFORMER MOUNTING DETAIL
SCALE:NTS

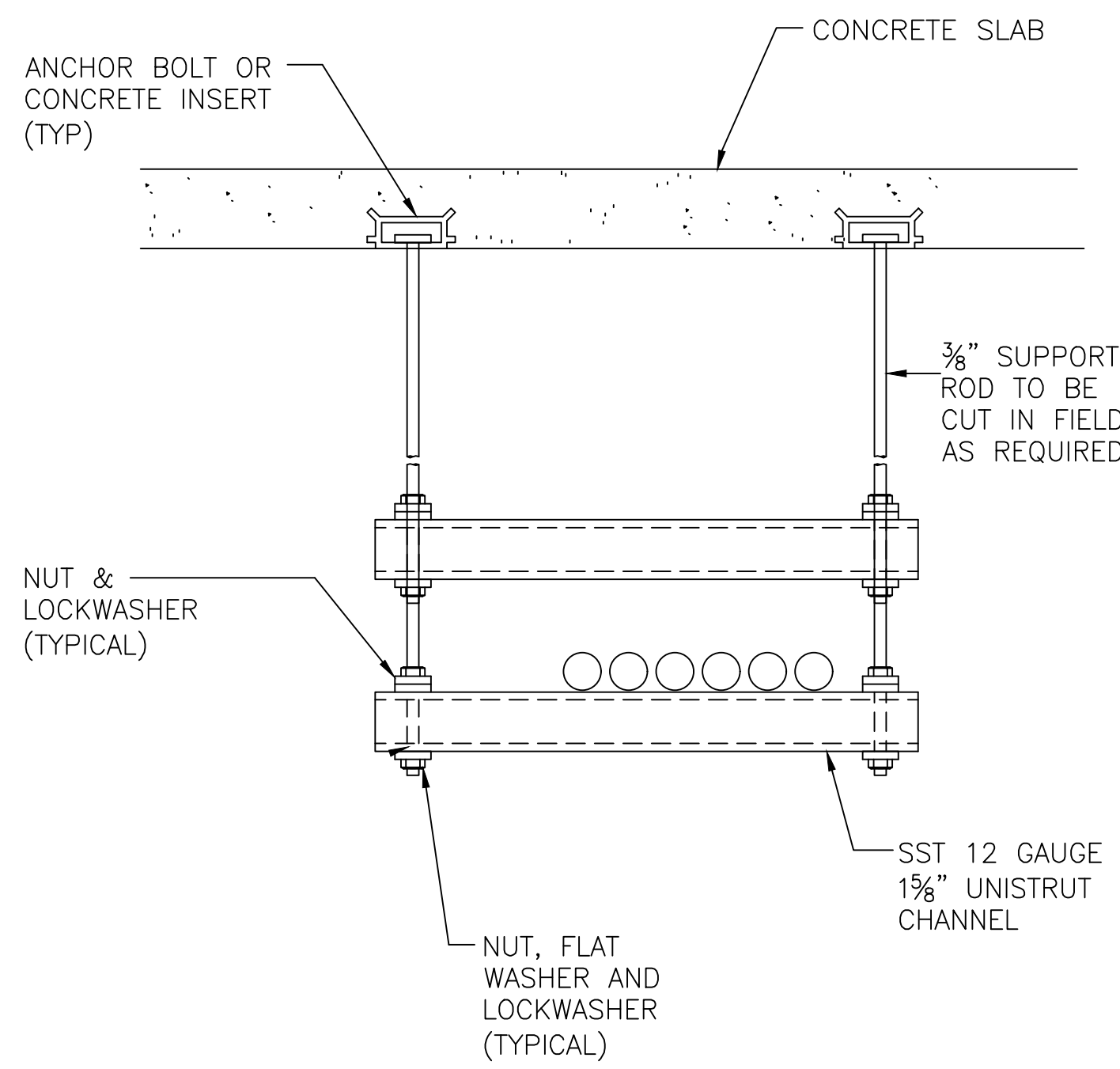


- NOTE:**
1. CONNECT ALL EQUIPMENT GROUNDING TO GROUND BAR.
 2. 1/4"x2"x1/8" COPPER GROUND BAR WITH TAPPED HOLES FOR GROUND CONNECTIONS. SECURE TO WALL VIA 1/2" STAINLESS STEEL ELECTRICAL CHANNEL.
 3. ALL FACILITIES SHALL INCLUDE A GROUND BAR IN ELECTRICAL ROOM.
 4. ALL DUCTBANK, MANHOLES, AND VAULTS SHALL INCLUDE A GROUND BAR FOR DUCTBANK AND CONDUIT GROUNDS.
 5. PROVIDE GROUND BARS IN PROCESS AREAS FOR MOTOR, BASE, AND EQUIPMENT GROUNDING.

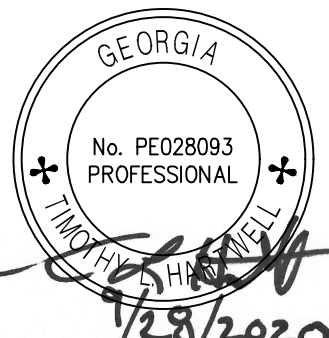
2 TYPICAL GROUND BAR DETAIL
SCALE:NTS



3 TYPICAL CONDUIT SUPPORT ALONG WALKWAYS
SCALE:NTS



4 CEILING CONDUIT SUPPORT DETAIL
SCALE:NTS



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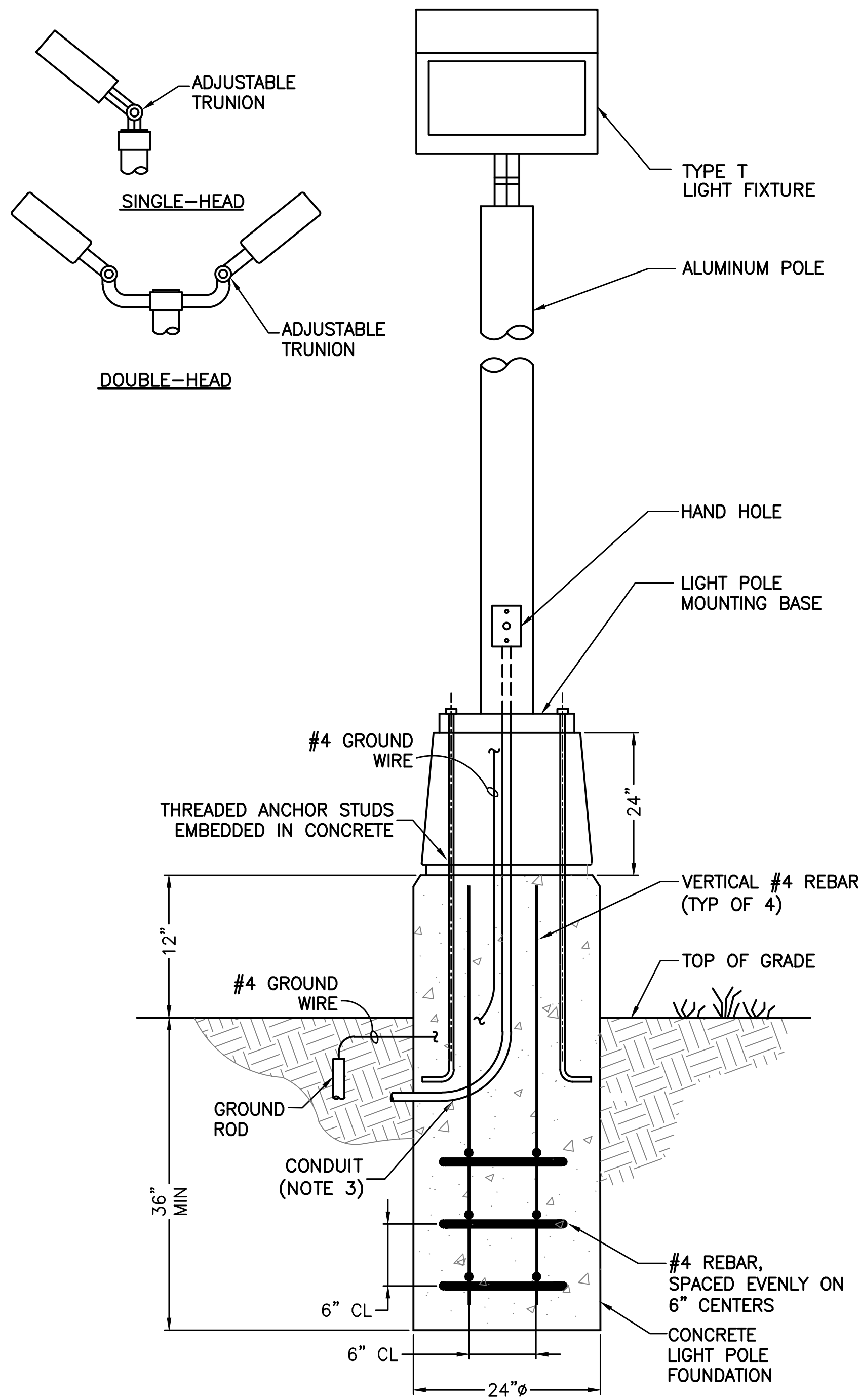
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APPROVED BY: TLH
DATE: SEPTEMBER 2020
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL DETAILS 6

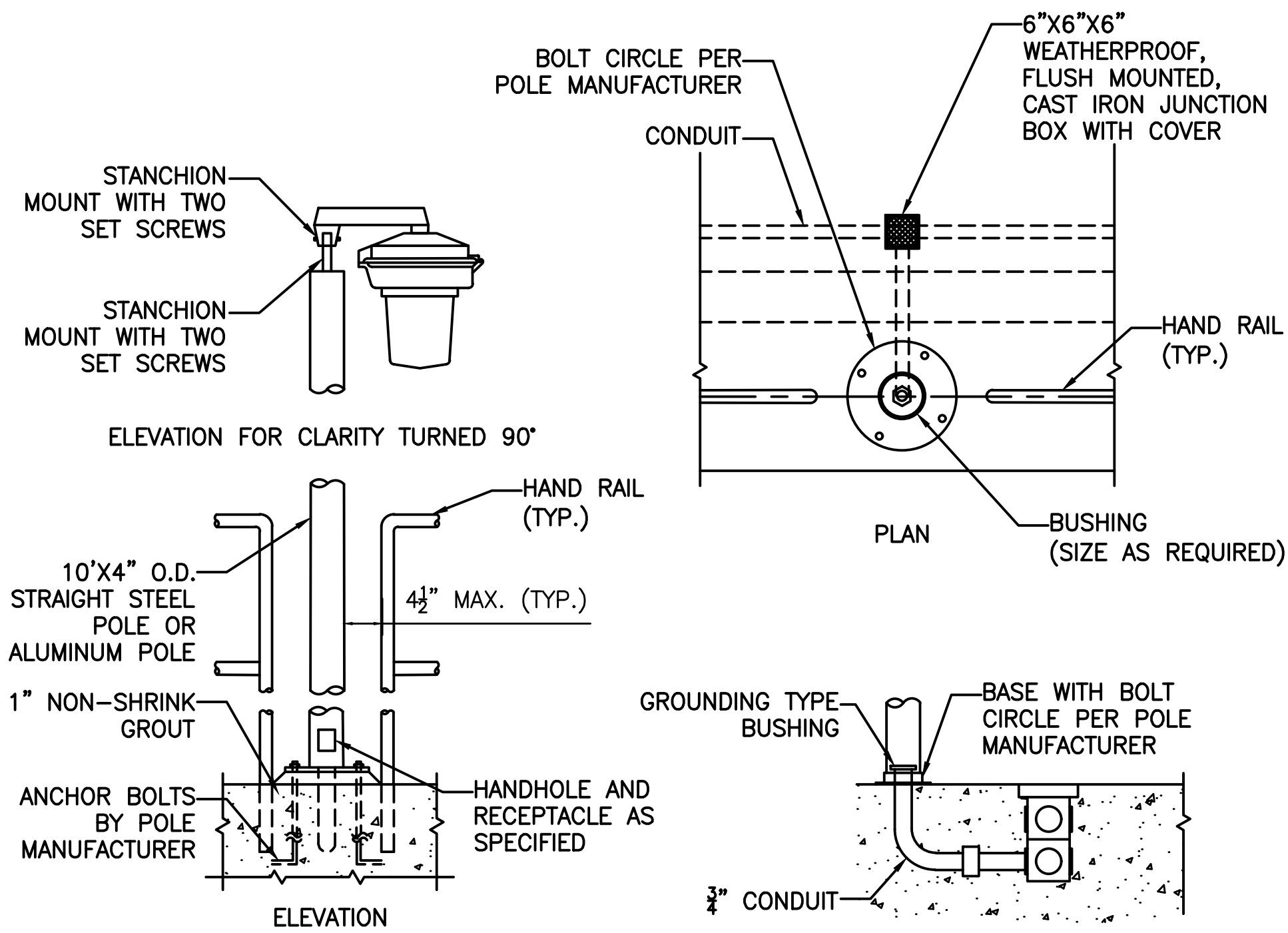
SHEET NO.
E-62



NOTES:

1. PROVIDE 2/0 TINNED COPPER GROUNDING CONDUCTOR AND #4 AWG GROUNDING STUB FOR POLE GROUNDING. CONNECT TO A GROUND ROD AND CLAMP. INSTALL GROUND ROD 2" BELOW GRADE.
2. PROVIDE MULTIPLE CONDUITS TO LIGHT POLE FOR FEED THROUGH CIRCUITS, IF REQUIRED.
3. REFER TO NOTES, DRAWING E-64.
4. COORDINATE CAMERA INSTALLATION AND CIRCUITS, PROVIDE ALL CONDUIT, WIRE, AND MOUNTING BRACKETS.

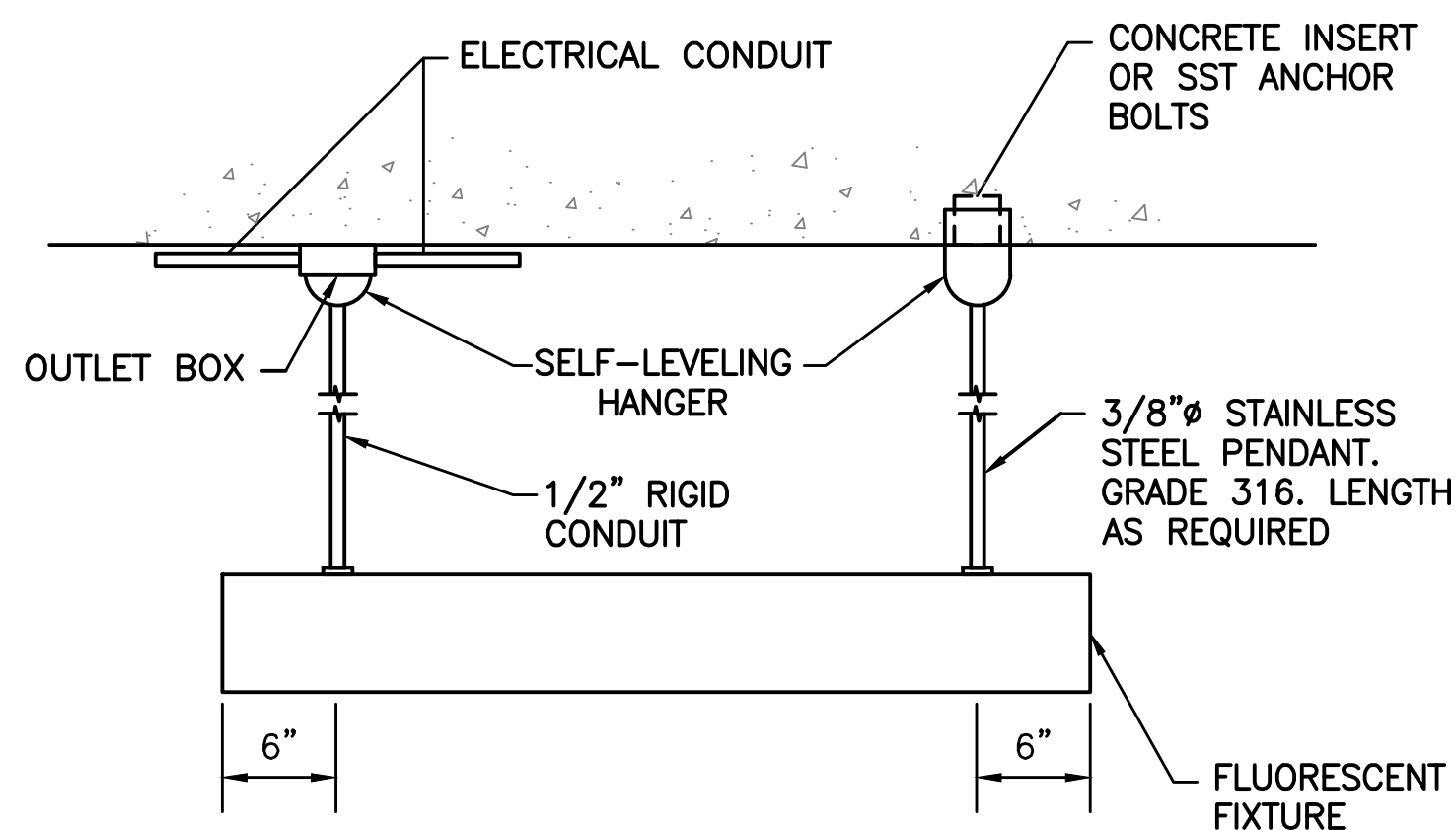
① TYPE "T" & "T-2" LIGHTING FIXTURE - POLE MOUNT
SCALE:NTS



NOTES:

1. REFER TO NOTES, DRAWING E-64.
2. PROVIDE WP BOX, COVER, AND RECEPTACLE, AND 120V CIRCUIT TO 50% OF POLES ON EACH STRUCTURE. SPACE EVENLY.

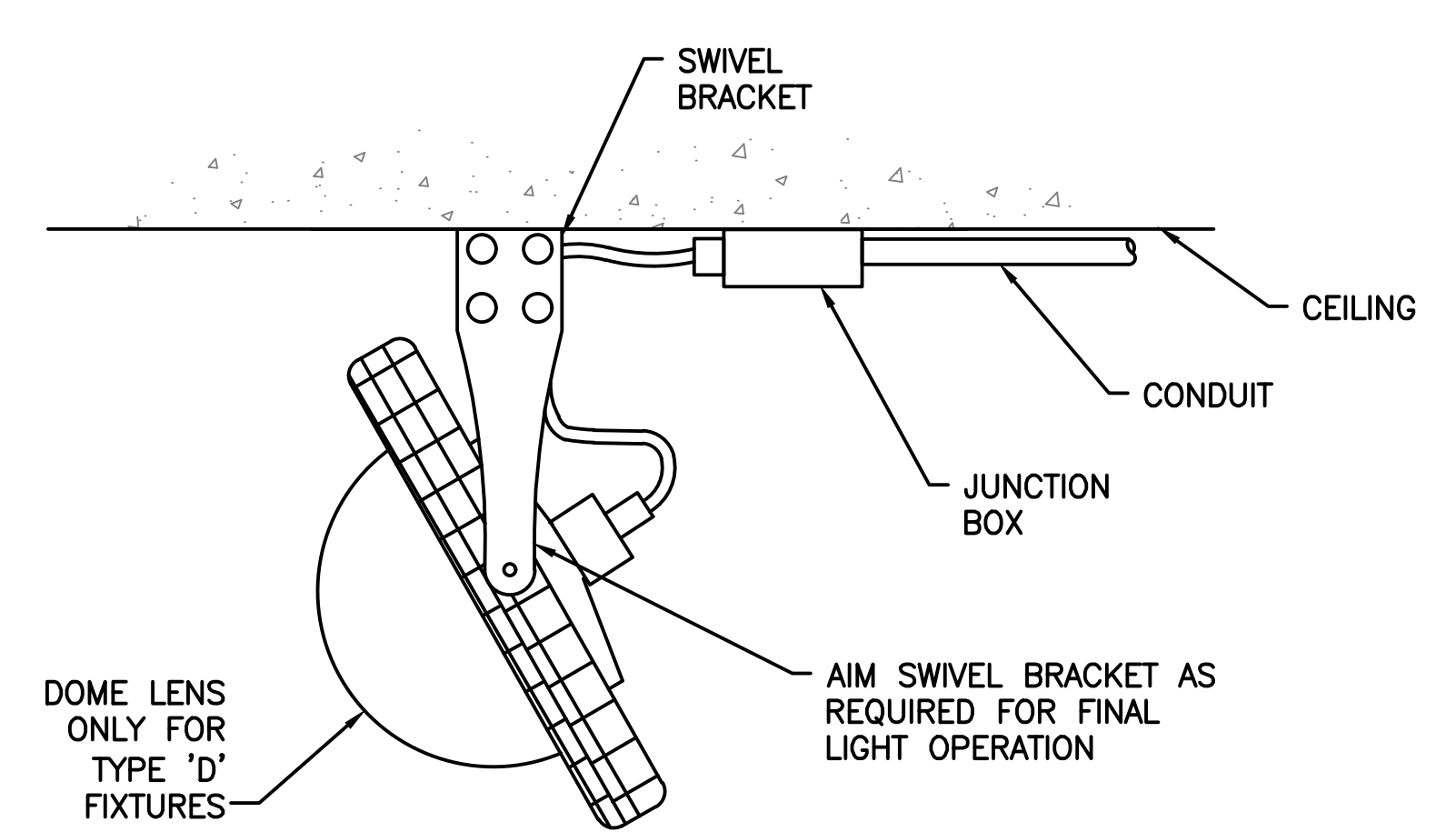
② TYPE "T-1" LIGHTING FIXTURE - RAILING MOUNT
SCALE:NTS



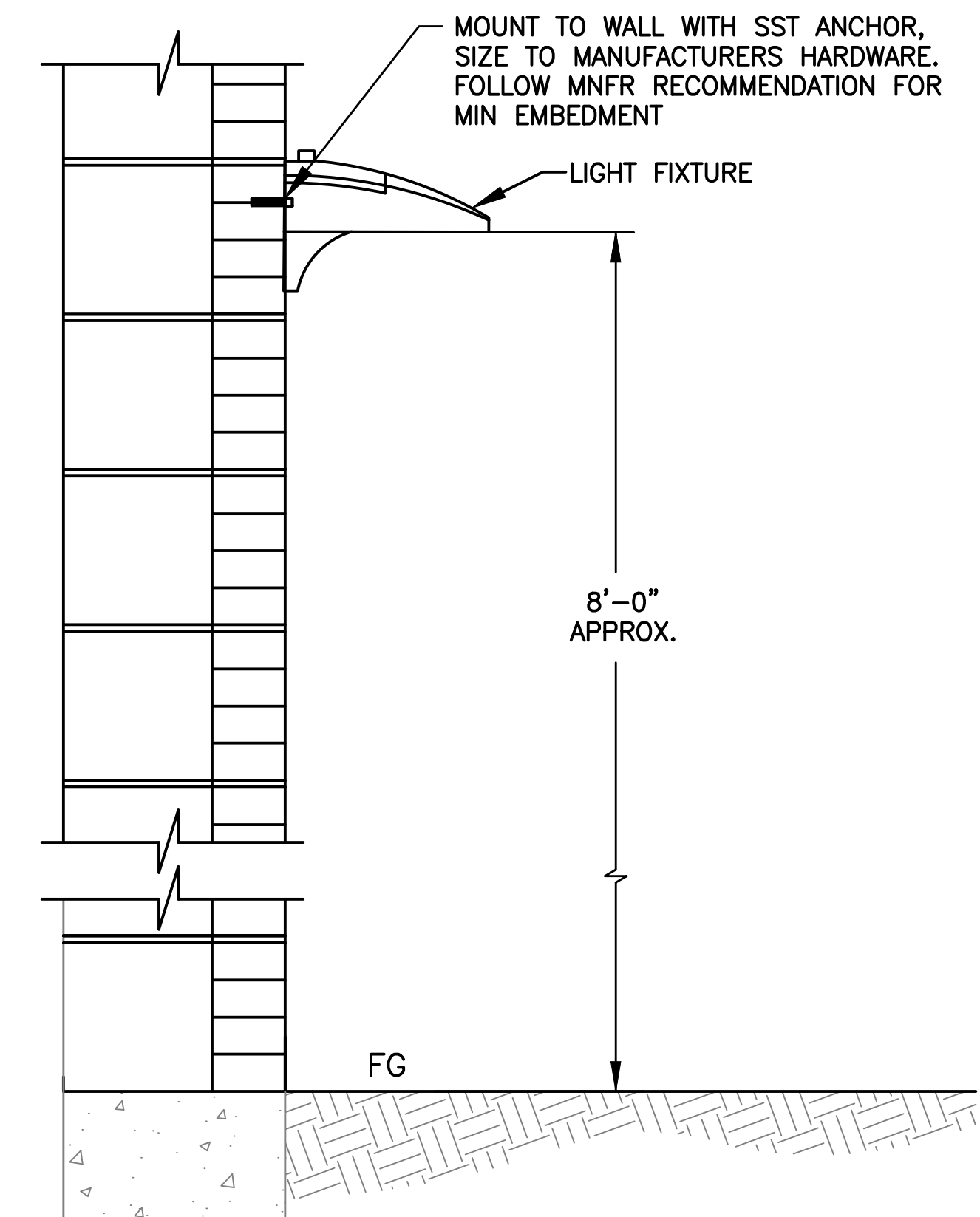
NOTES:

1. PROVIDE END CAP AT EACH END OF FIXTURE.
2. FOR WALL MOUNT FIXTURE, PROVIDE ADJUSTABLE MOUNTING BRACKET TO ALLOW FIXTURE TO BE ADJUSTED FOR EVEN LIGHT DISTRIBUTION.

③ LINEAR LED FIXTURE - TYPE B
OVERHEAD MOUNTING DETAIL
SCALE:NTS



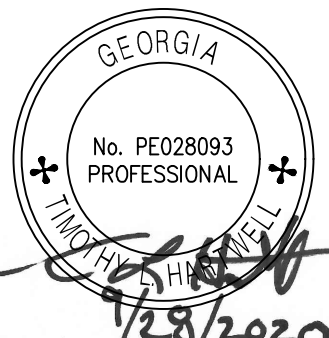
④ TYPE "C" OR "D" CEILING OR WALL-MOUNTED
LED FIXTURE WITH SWIVEL BRACKET
SCALE:NTS



NOTES:

1. REFER TO LIGHTING NOTES, DRAWING E-64.

⑤ TYPE H - WALL PACK DETAIL
SCALE:NTS



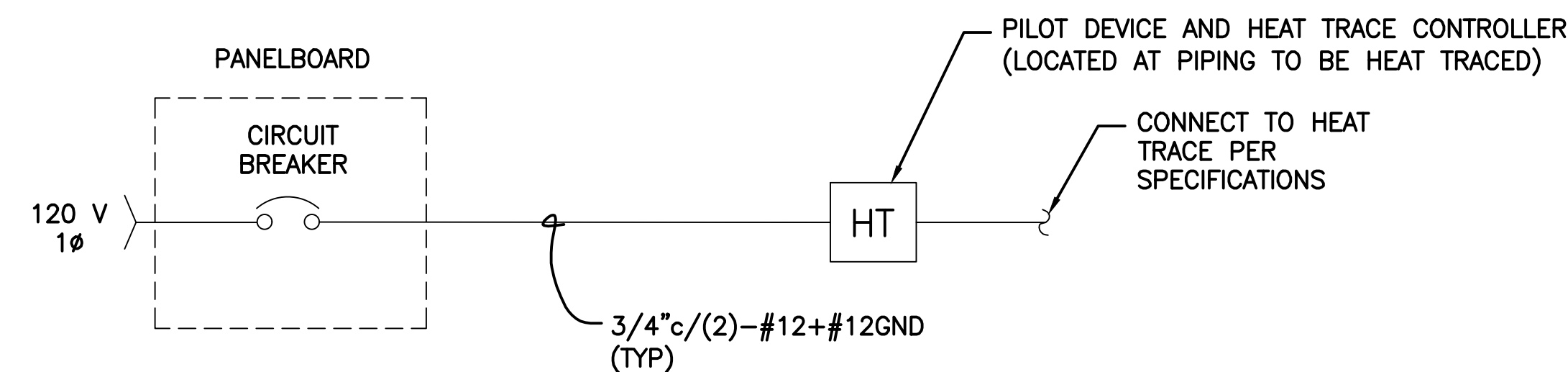
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
LIGHTING DETAILS

LIGHTING FIXTURE SCHEDULE					
FIXTURE	DESCRIPTION	VOLTAGE	LAMPS	MANUFACTURER AND CAT. #	NOTES
B	4'x1' LED, INDUSTRIAL ENCLOSED AND GASKETED CORROSION RESISTANT	120V	1-66W, LED, LUM 6,700	DIALIGHT, DUROSITE, LED LINEAR LT/LP, OR EQUAL	STRUCTURE MOUNT 10'-0" AFF, UON SST LATCHES, MOUNTING BRACKET KITS
C	VIGILANT SERIES LED HIGH BAY FOR INDOOR AND OUTDOOR INDUSTRIAL APPLICATIONS	120V	1-150W, LED, LUM 11,250	VIGILANT HCU4WC2A OR EQUAL	STRUCTURE OR WALL MOUNTED, AS SHOWN ON DRAWINGS
D	VIGILANT SERIES LED LOW BAY FOR INDOOR AND OUTDOOR INDUSTRIAL APPLICATIONS, NEMA 4X	120V	1- 56W, LED, LUM 6,000	VIGILANT SERIES LED LCULUC26 OR EQUAL	SURFACE OR WALL MOUNT AS SHOWN ON DRAWING
E	EMERGENCY LIGHT - CORROSION RESISTANT COMPLETE WITH SOLID STATE BATTERY CHARGER, WET/DRY LOCATION	120V	2-3W LED HEADS	CROUSE HINDS LED N2LPS LIGHT-PAK EMERGENCY LIGHT SYSTEM OR EQUAL	MOUNT APPROXIMATELY 8'-0" AFF, UON
E-1	EMERGENCY LIGHT - HAZARDOUS AREA - CLASS 1 DIV 2. COMPLETE WITH SOLID STATE BATTERY CHARGER	120V	2-3W LED HEADS	CROUSE HINDS LED N2LPS LIGHT-PAK EMERGENCY LIGHT SYSTEM OR EQUAL	MOUNT APPROXIMATELY 8'-0" AFF, UON.
H	LED WALL PACK, DARK BRONZE FIXTURE	120V	1-74W, LED, LUM 5,837	LITHONIA DSXW1 LED 20C 40K OR EQUAL	MOUNT APPROXIMATELY 8'-0" AFG, UON WITH BATTERY AND CHARGER
T	AREA POLE TYPE POWER FLOOD LIGHT, HEAVY-DUTY CORROSION RESISTANT HARDWARE, DARK BRONZE	277V	250W, LED, LUM 8,263	LITHONIA DSX1LED OR EQUAL	MOUNT ON 35' SQUARE DARK BRONZE POLE, LITHONIA SSA, OR EQUAL
T-1	BASIN MOUNTED AREA LIGHTS, LED NEMA 4X FIXTURE	120V	1- 100W, LED, LUM 3,500	CROUSE HINDS PRO PVM3L LED OR EQUAL	MOUNT ON 10' V-SPRING TELESCOPING POLE CROUSE HINDS V65-B-A-C WITH COMPLETE MOUNTING HARDWARE.
T-2	AREA POLE TYPE POWER FLOOD LIGHT, HEAVY-DUTY CORROSION RESISTANT HARDWARE, DARK BRONZE	277V	100W, LED, LUM 3,500	LITHONIA DSX1LED OR EQUAL	MOUNT ON 15' SQUARE DARK BRONZE POLE, LITHONIA SSA, OR EQUAL
X	LED EXIT SIGN WITH BATTERY AND CHARGER, SINGLE FACE	120V	LED LAMPS	LITHONIA LV-S-W-1-G-120-4X	WHITE HOUSING, GREEN LETTERS. CEILING/STRUCTURE OR WALL MOUNT, UON. MOUNT APPROX. 8' AFF, UON.
X-1	EXIT LIGHT - HAZARDOUS AREA - CLASS 1 DIV 2. COMPLETE WITH SOLID STATE BATTERY CHARGER.	120V	LED LAMPS	CROUSE HINDS CCH UX SERIES CCH UX70GWHSD OR EQUAL	WHITE HOUSING, GREEN LETTERS. CEILING/STRUCTURE OR WALL MOUNT, UON. MOUNT APPROX. 8' AFF, UON.



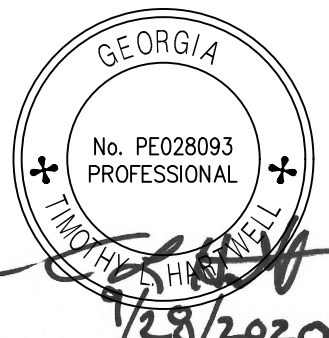
HEAT TRACE RISER DIAGRAM
(TYPICAL - SEE NOTE 1)

LIGHTING NOTES:

1. PROVIDE MOUNTING BRACKET, ACCESSORIES AND SUPPORTS FOR LIGHTING FIXTURE INSTALLATION.
2. ALL SITE LIGHTING, TYPE T, SHALL BE POWERED FROM LIGHTING CONTACTOR MOUNTED IN BNR/MBR ELECTRICAL BUILDING. PROVIDE 1" C(2)-#10+#10EGC FROM ELECTRICAL BUILDING TO SITE LIGHTS DIRECT BURIED CONDUIT. MOUNT PHOTOCCELL ON MBR/BNR ELECTRICAL BUILDING FOR CONTROL OF LIGHTS. REFER TO AREA LIGHTING CONTROL DIAGRAM DRAWING E-71.
3. TYPE H FIXTURES ABOVE DOORWAYS SHALL INCLUDE PHOTOCCELL FOR OPERATION. ALL OTHER TYPE H FIXTURES SHALL INCLUDE SINGLE POLE LIGHT SWITCH IN BUILDING FOR OPERATION.
4. CONDUIT AND WIRE NOT SHOWN FOR LIGHTING. PROVIDE NUMBER OF CONDUCTORS REQUIRED FOR OPERATION, MIN. SIZE #12, AND SIZE CONDUITS PER NEC, MIN. SIZE 3/4".
5. CONTRACTOR SHALL NOT ALLOW GREATER THAN 10 AMP LIGHTING LOAD ON ANY 20A, 1 POLE CIRCUIT.
6. CONNECT EMERGENCY FIXTURES TO NORMAL LIGHTING CIRCUIT IN BUILDINGS TO OPERATE WHEN LIGHTING POWER IS LOST AT LP PANEL.
7. T-1 FIXTURES SHALL HAVE TOGGLE SWITCHES AT STAIRS ENTERING STRUCTURES AND BASINS, AND LCP PER CONTROL DIAGRAMS 1 OR 2 AS SHOWN ON DRAWING E-71. MOUNT SWITCHES AND LCP ON RACKS SIMILAR TO DETAIL 3, DRAWING E-60.
8. REFER TO LIGHTING CONTROL DIAGRAMS ON DRAWING E-71.

HEAT TRACE NOTES:

1. HEAT TRACED FOR INSULATED PIPE IN ACCORDANCE WITH THE SPECIFICATIONS CONTAINED HEREIN AND AS SHOWN ON THE CONTRACT PROCESS MECHANICAL DRAWINGS. FURNISH AND INSTALL SYSTEM COMPLETE, READY TO OPERATE, WITH ALL REQUIRED CONTROLS, ACCESSORIES, FITTINGS AND CONNECTORS.
2. HEAT TRACING SYSTEM - THE PURPOSE OF THE HEAT TRACING SYSTEM IS TO PROVIDE FREEZE PROTECTION.
3. SHALL MAINTAIN 40 DEGREES F IN THE LINE WITH AN AMBIENT TEMPERATURE OF -20 DEGREES F. THIS WILL REQUIRE ADDITIONAL LENGTHS OF HEAT TRACING CABLE.
4. A SINGLE MANUFACTURER SHALL SUPPLY ALL EQUIPMENT AND DESIGN SERVICES REQUIRED FOR A COMPLETE ELECTRICAL HEAT TRACING SYSTEM.
5. MAKE THE FINAL CONNECTION OF POWER SUPPLY TO THE HEAT TRACING SYSTEM.
6. TYPE - PARALLEL CIRCUIT, SELF-REGULATION AND FACTORY MUTUAL OR UNDERWRITER'S LABORATORY APPROVED. TO OPERATE AT 120V, 1P, AND BE RATED FOR 5 WATTS/FOOT (W/F) OR AS CALLED FOR IN THE SPECIFICATIONS.
7. PROVIDE EXTRA HEATING CAPACITY FOR ALL VALVES, PIPE SUPPORTS, WALL PENETRATIONS AND SIMILAR HEAT SINKS.
8. CAPABLE OF CONTINUOUS OPERATION WHEN SUSPENDED IN AIR AT AVERAGE MAXIMUM AMBIENT TEMPERATURE OF 120 DEGREES F WITH DESIGN VOLTAGE APPLIED FOR 30 MINUTES.
9. PROVIDE SUITABLE FOR INSTALLATION IN OUTDOOR AND CLASSIFIED AREAS CLASS 1 DIV 2 AS REQUIRED.
10. PROVIDE EACH HEAT TRACING RUN WITH WITH INDIVIDUAL THERMOSTAT CONTROLS.
11. PROVIDE ALL POWER CONNECTION KITS, SPLICE KITS, TERMINATION KITS, ADHESIVE BACKED TAPES, AND ALL OTHER ACCESSORIES AS RECOMMENDED BY MANUFACTURER.
12. HEAT TRACE AND INSULATION SHALL EXTEND BELOW FINISHED GRADE APPROXIMATELY 24 INCHES.
13. PROVIDE AND INSTALL ALL PIPE HEAT TRACING AS REQUIRED IN SPECIFICATION 16855 AND 15250.
14. HEAT TRACE NOT SHOWN ON ELECTRICAL PLANS. REFER TO MECHANICAL PLANS FOR LOCATIONS OF PIPING TO BE HEAT TRACED.
15. CONTRACTOR SHALL DETERMINE LOCATION OF HEAT TRACE CONTROLLER.



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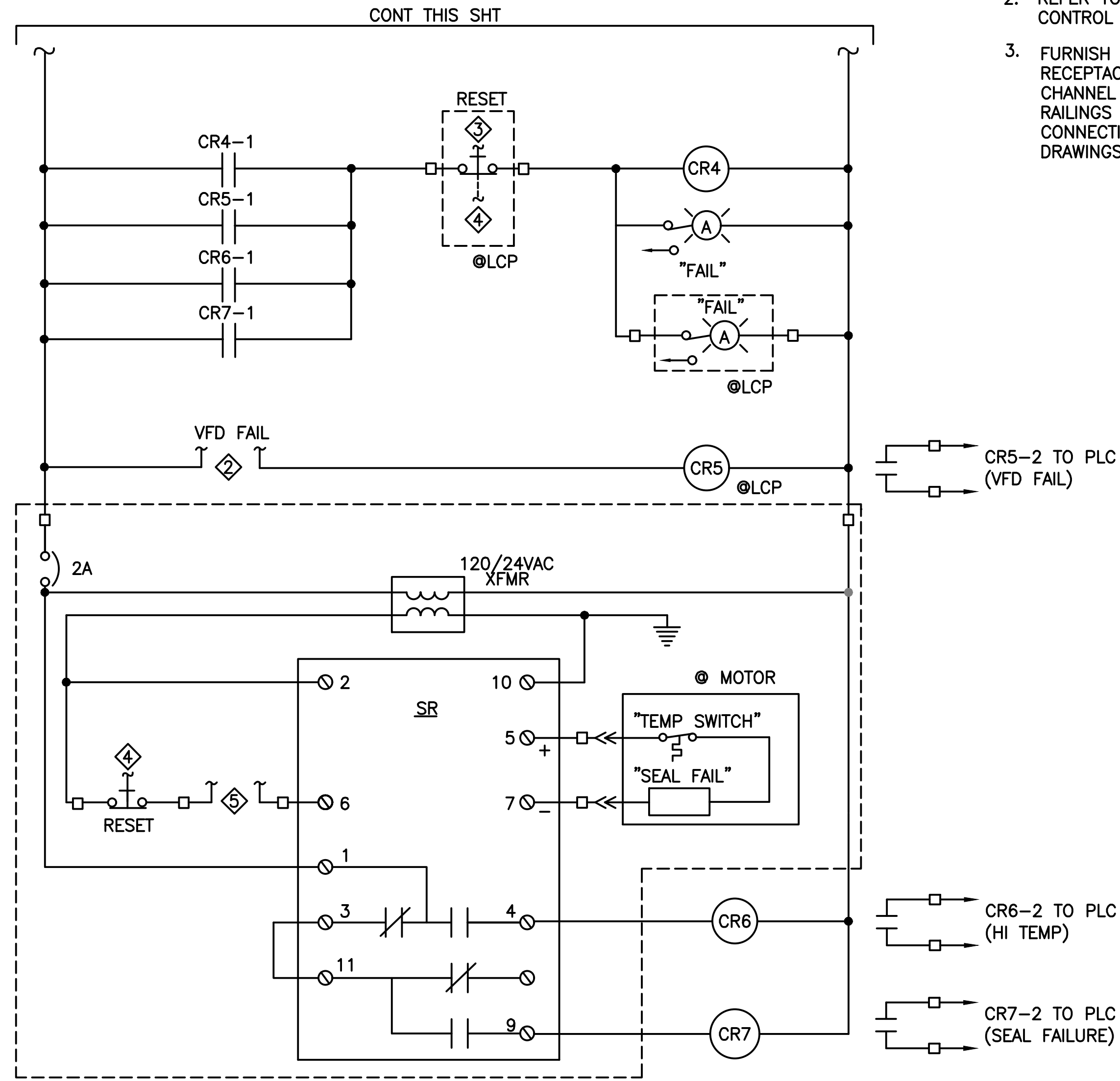
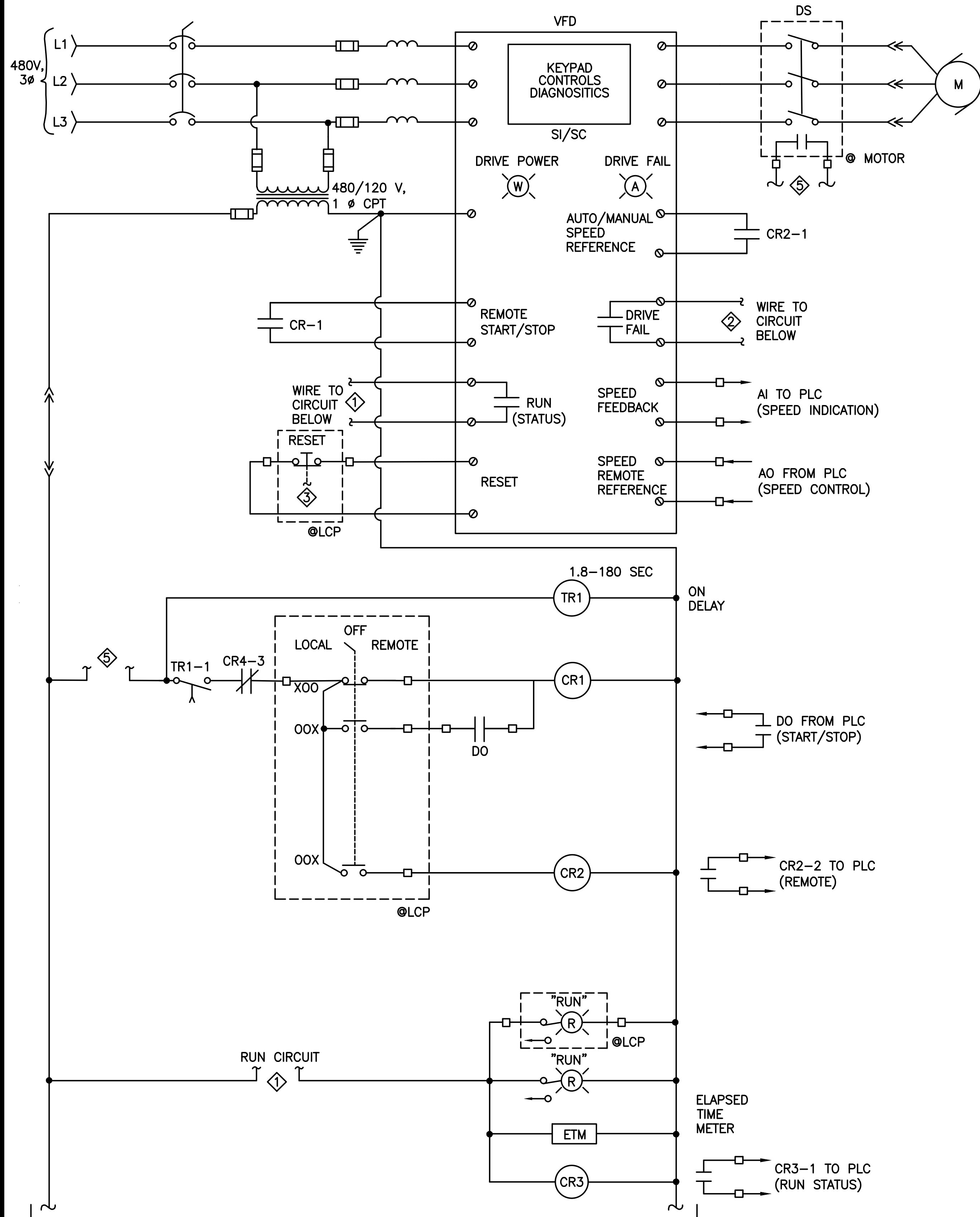
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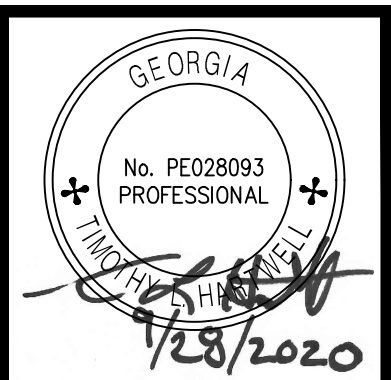
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
LIGHTING SCHEDULE
AND HEAT TRACE

SHEET NO.
E-64



BNR RECYCLE PUMPS AND WAS SLUDGE FEED PUMPS
 (TYPICAL OF 11: 5-AT1-P-1, 5-AT1-P-2, 5-AT2-P-1, 5-AT2-P-2, 5-AT3-P-1, 5-AT3-P-2, 6-AT4-P-1, 6-AT4-P-2, 11-SF-P-1, 11-SF-P-2, 11-SF-P-3)

- NOTES:**
- SUPERVISORY RELAY (SR) TO BE PROVIDED WITH THE MOTOR BY THE MANUFACTURER.
 - REFER TO DRAWING E-40 FOR LOCAL CONTROL PANEL LAYOUT.
 - FURNISH AND INSTALL 7-PRONG RECEPTACLE JUNCTION BOX COMBINATION CHANNEL MOUNTED ON WALKWAY RAILINGS FOR POWER AND CONTROL CONNECTIONS AS INDICATED ON DRAWINGS.



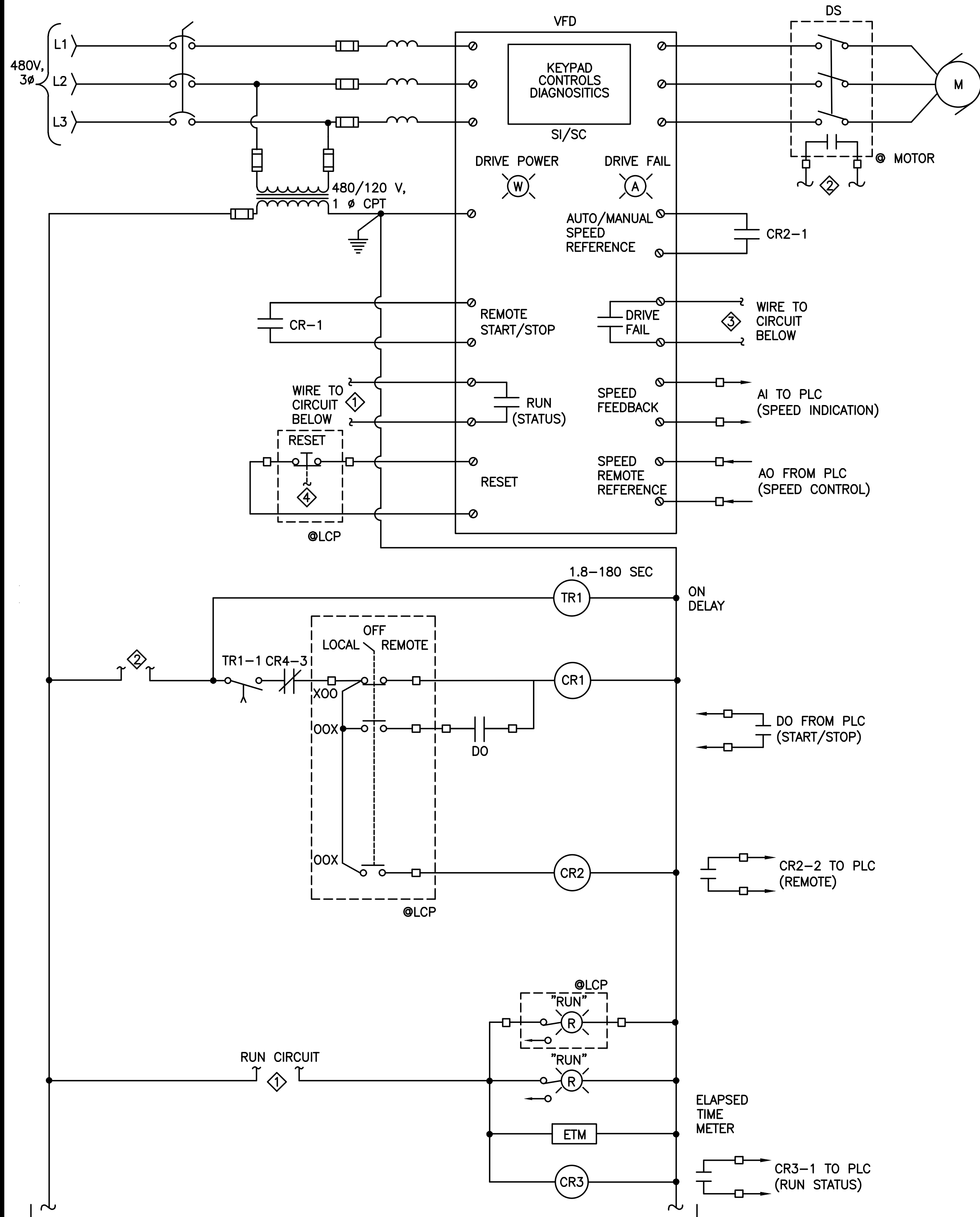
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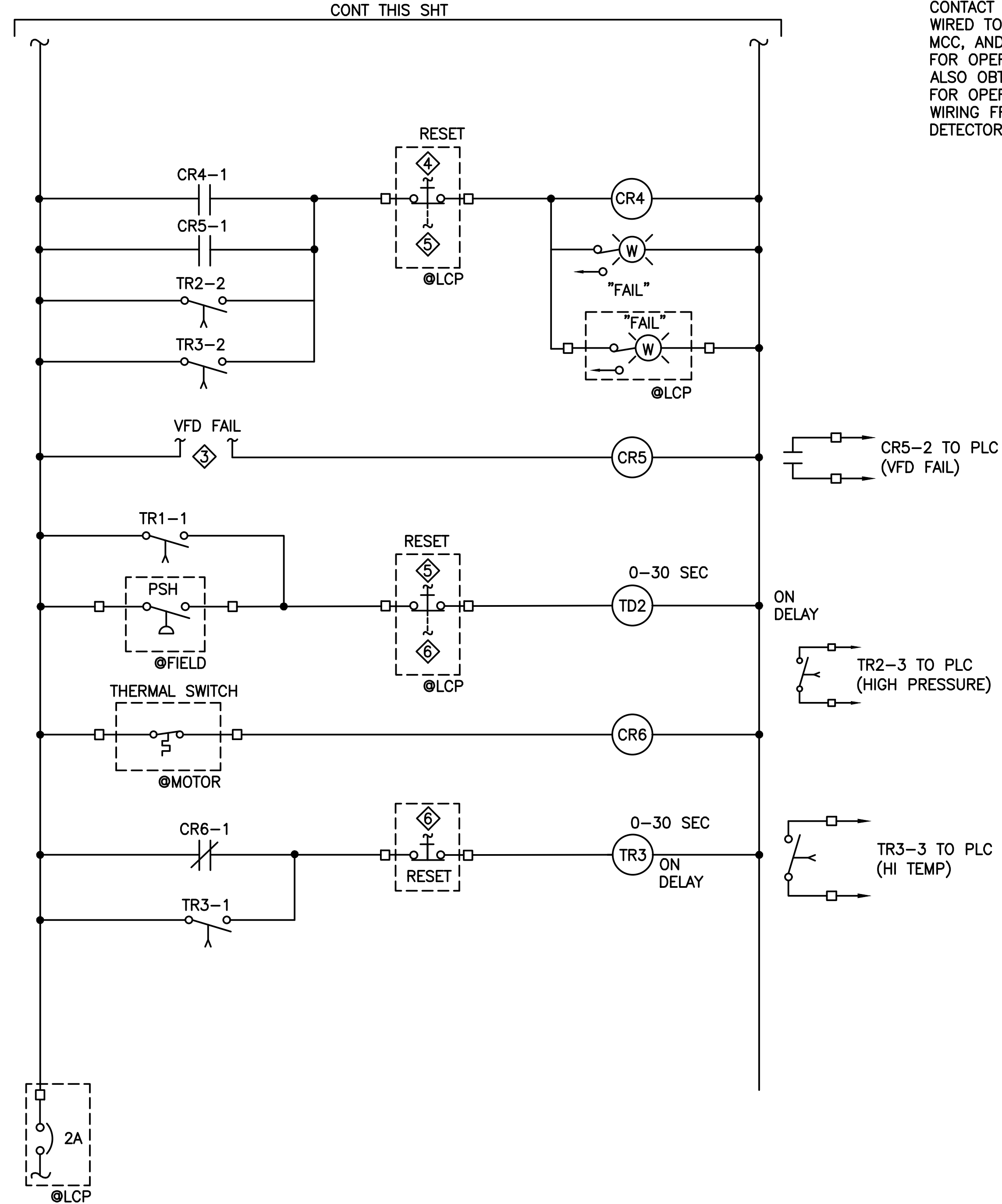
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 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 1



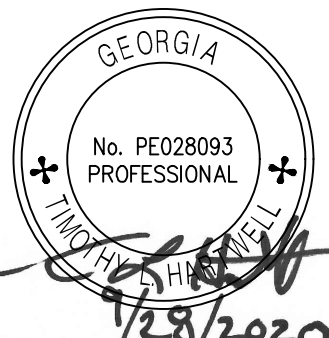
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THICKENED SLUDGE TRANSFER PUMPS AND BFP FEED PUMPS
(TYPICAL OF 4: 15-TS-P-1, 15-TS-P-2, 15-BFP-P-1, 15-BFP-P-2, 15-BFP-3)

NOTES:

1. PUMPS 15-BFP-1, PS, & P3, 15-DS-P1&P2 ARE PROGRESSIVE GRAVITY PUMPS WITH A FLANGE MOUNTED "PRESENCE" DETECTOR. THE CONTACT AR THE DETECTOR SHALL BE WIRED TO THE FAIL CIRCUIT AT THE MCC, AND REQUIRE A MANUAL RESET FOR OPERATION. THE DETECTOR SHALL ALSO OBTAIN 120V FROM THE LCP FOR OPERATION. PROVIDE ADDITIONAL WIRING FROM THE MCC FOR THE DETECTOR.



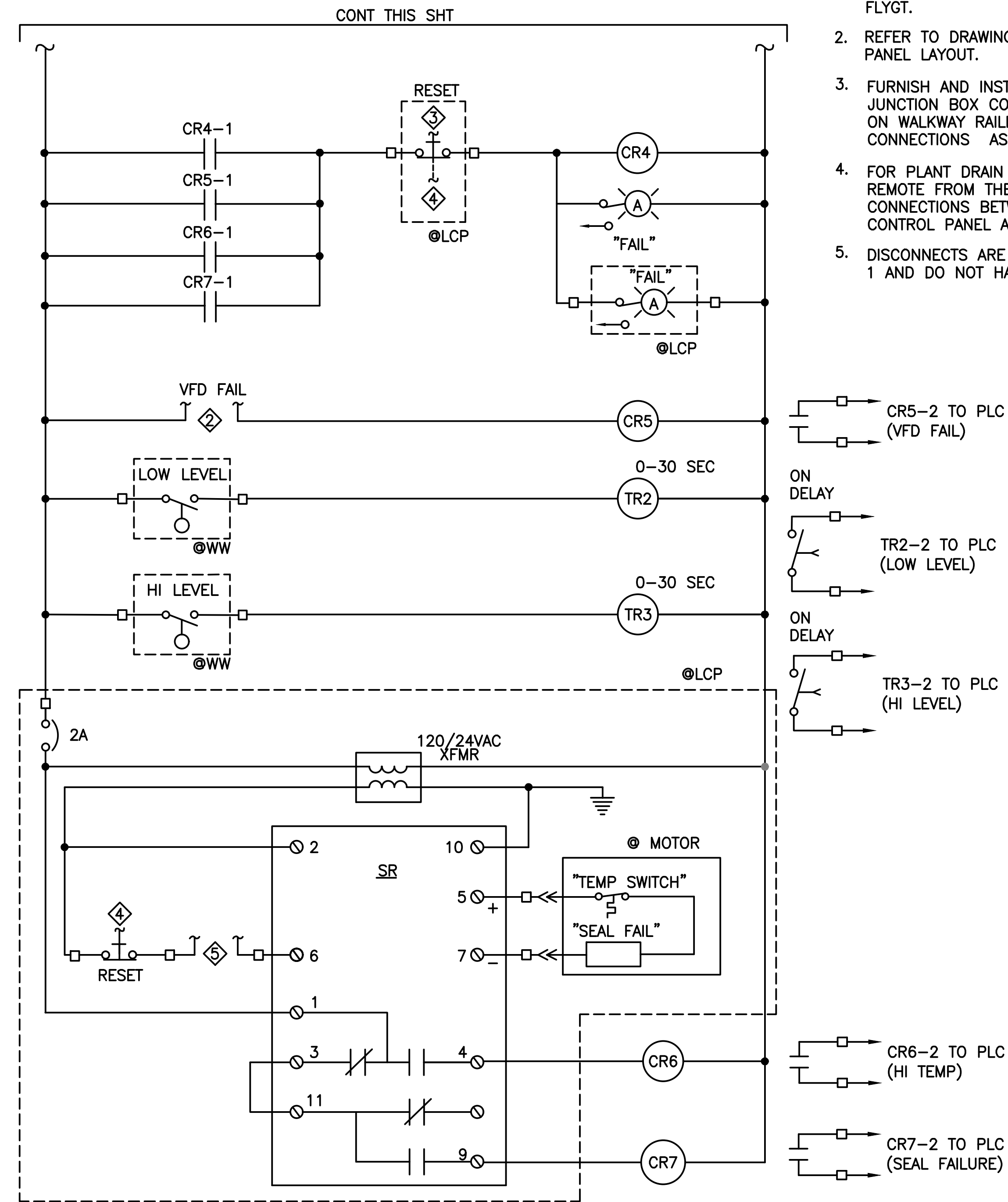
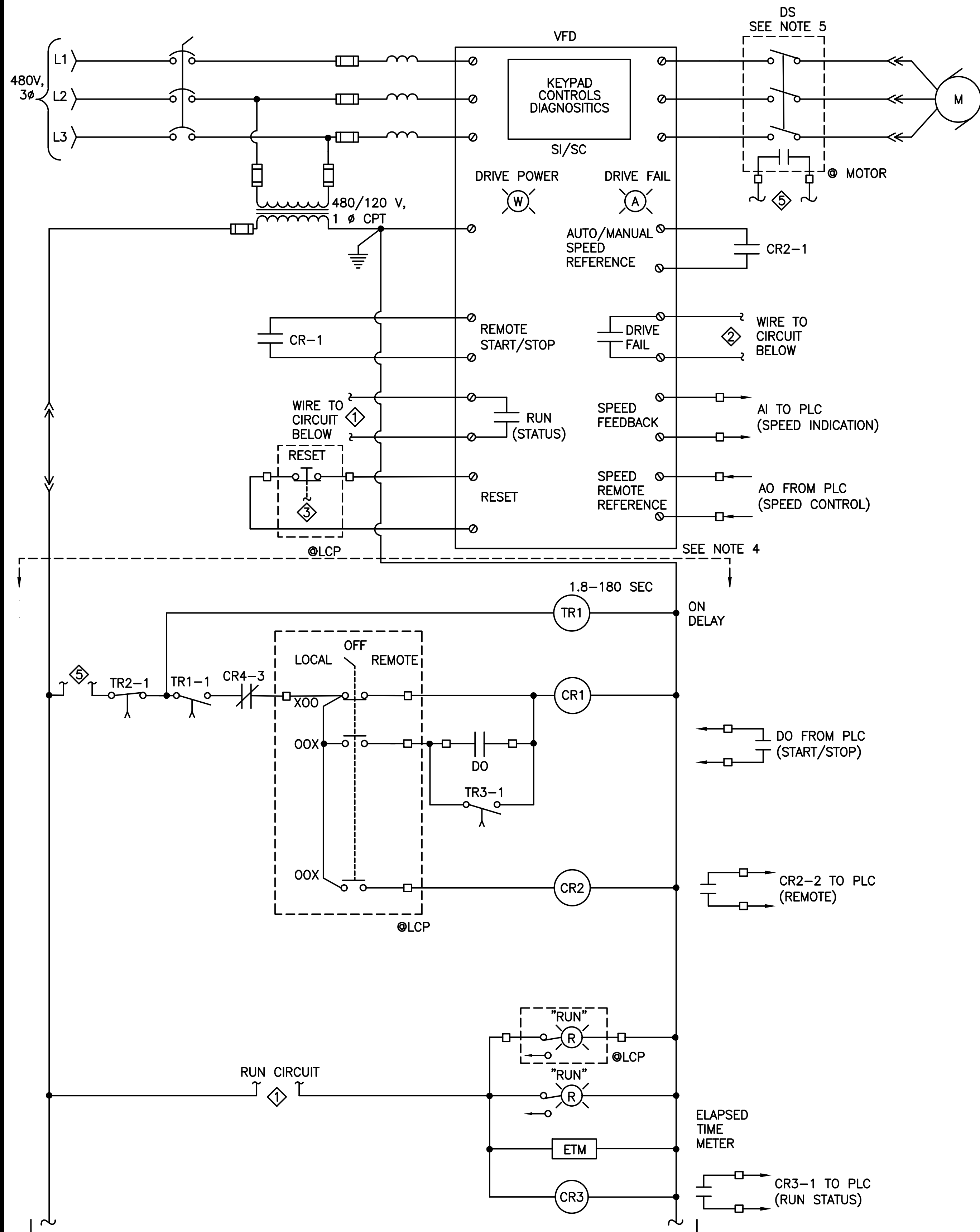
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 2

SHEET NO.
E-66



DEWATERING DRAIN PUMPS AND PLANT DRAIN PS 1 PUMPS
(TYPICAL OF 4: 15-DP-P-1, 15-DP-P-2, 17-DP-P-1, 17-DP-P-2)

- NOTES:**
1. SUPERVISORY RELAY (SR) TO BE PROVIDED WITH THE MOTOR BY THE MANUFACTURER. EXCEPT FOR PLANT DRAIN PS 1 WHICH IS EXISTING. SYSTEM SUPPLIER TO PROVIDE SUPERVISORY RELAYS FROM FLYGT.
 2. REFER TO DRAWING E-40 FOR LOCAL CONTROL PANEL LAYOUT.
 3. FURNISH AND INSTALL 7-PRONG RECEPTACLE JUNCTION BOX COMBINATION CHANNEL MOUNTED ON WALKWAY RAILINGS FOR POWER AND CONTROL CONNECTIONS AS INDICATED ON DRAWINGS.
 4. FOR PLANT DRAIN PS 1, THE EXISTING VFDs ARE REMOTE FROM THE CONTROL PANEL. PROVIDE CONNECTIONS BETWEEN THE NEW PUMP STATION CONTROL PANEL AND THE VFDs.
 5. DISCONNECTS ARE EXISTING FOR PLANT DRAIN PS 1 AND DO NOT HAVE CONTACTS FOR DS POSITION.

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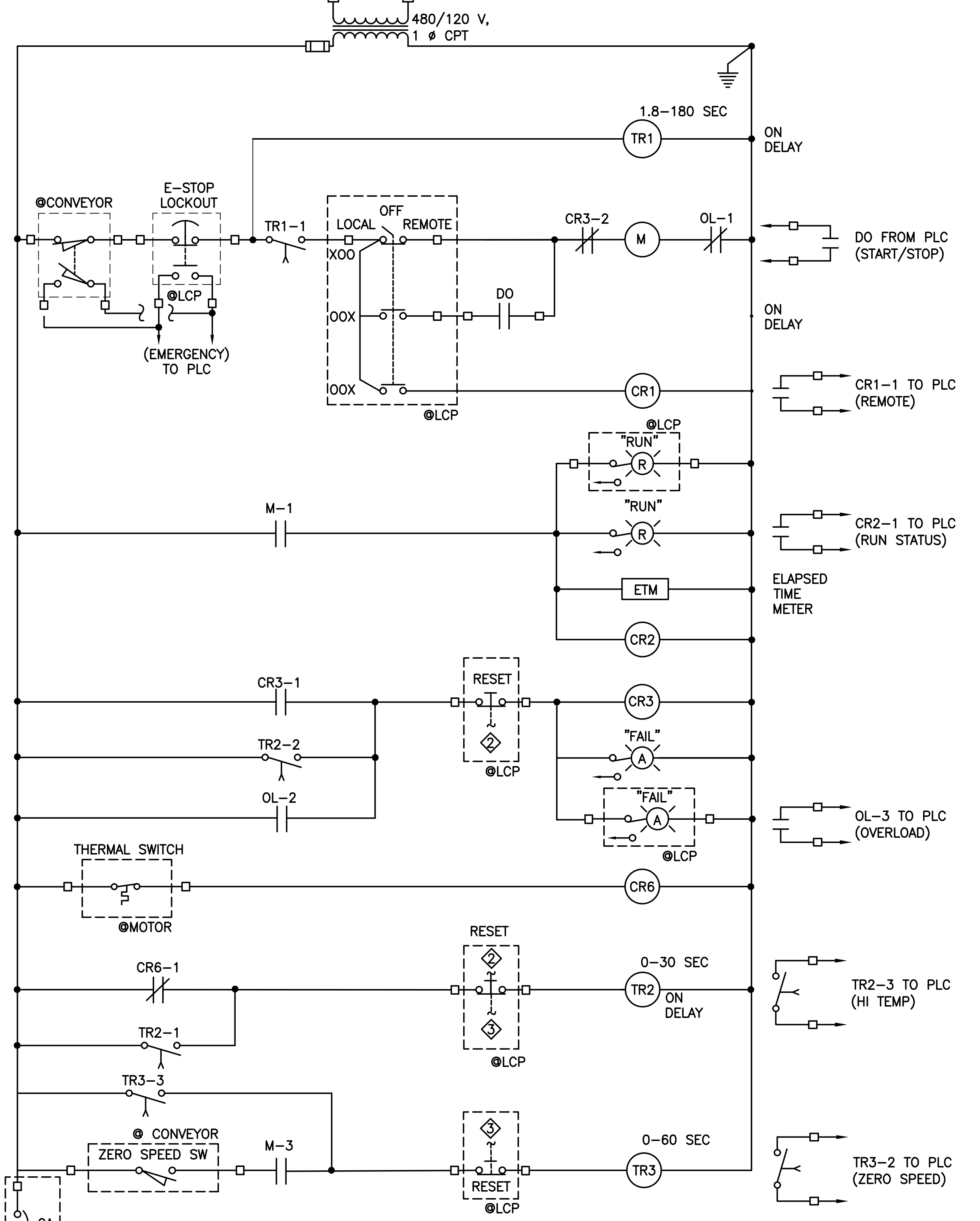
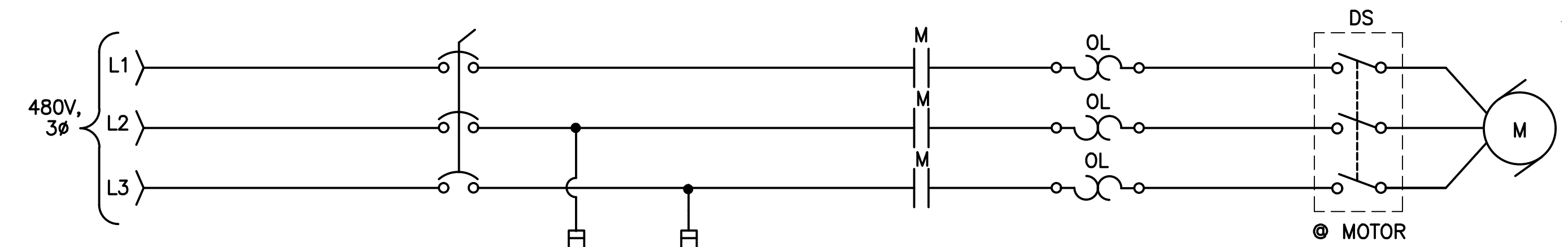
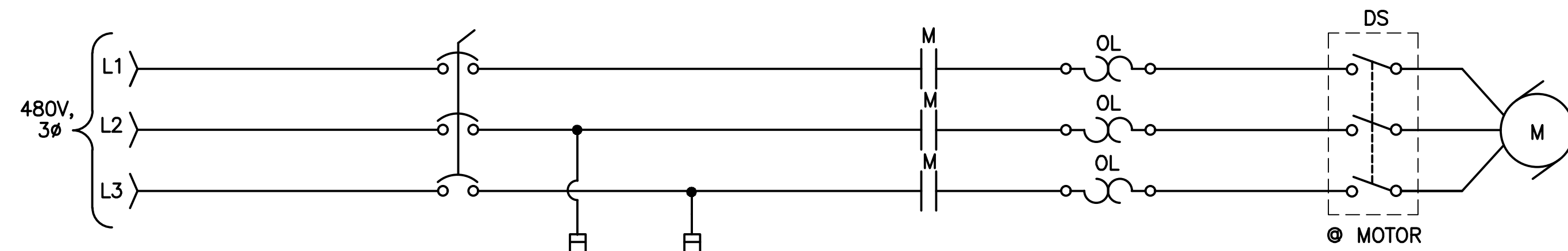
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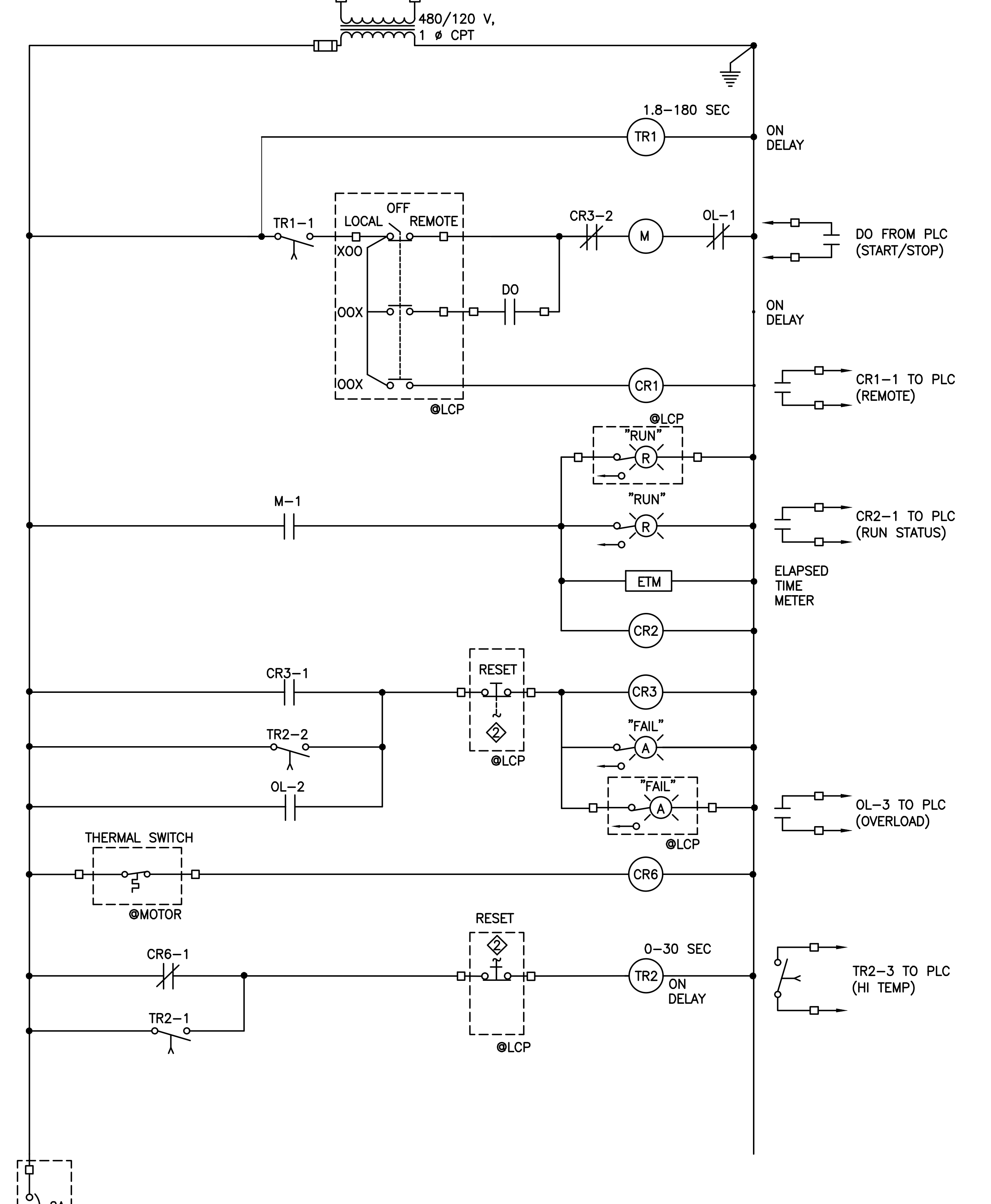
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 3

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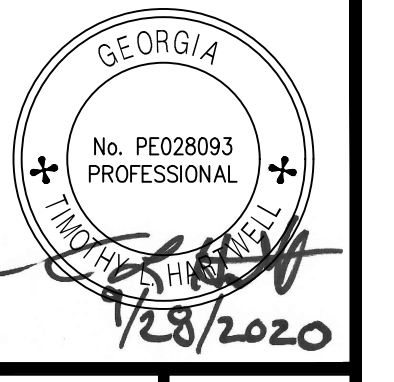
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INCLINED SCREW CONVEYOR AND HORIZONTAL CONVEYOR
 (TYPICAL FOR 3: 4-FS-C-1, 15-S-C-1, 15-S-C-2)



BFP WATER BOOSTER PUMPS
 (TYPICAL FOR 3: 15-BFP-BP-1, 15-BFP-BP-2, 15-BFP-BP-3)



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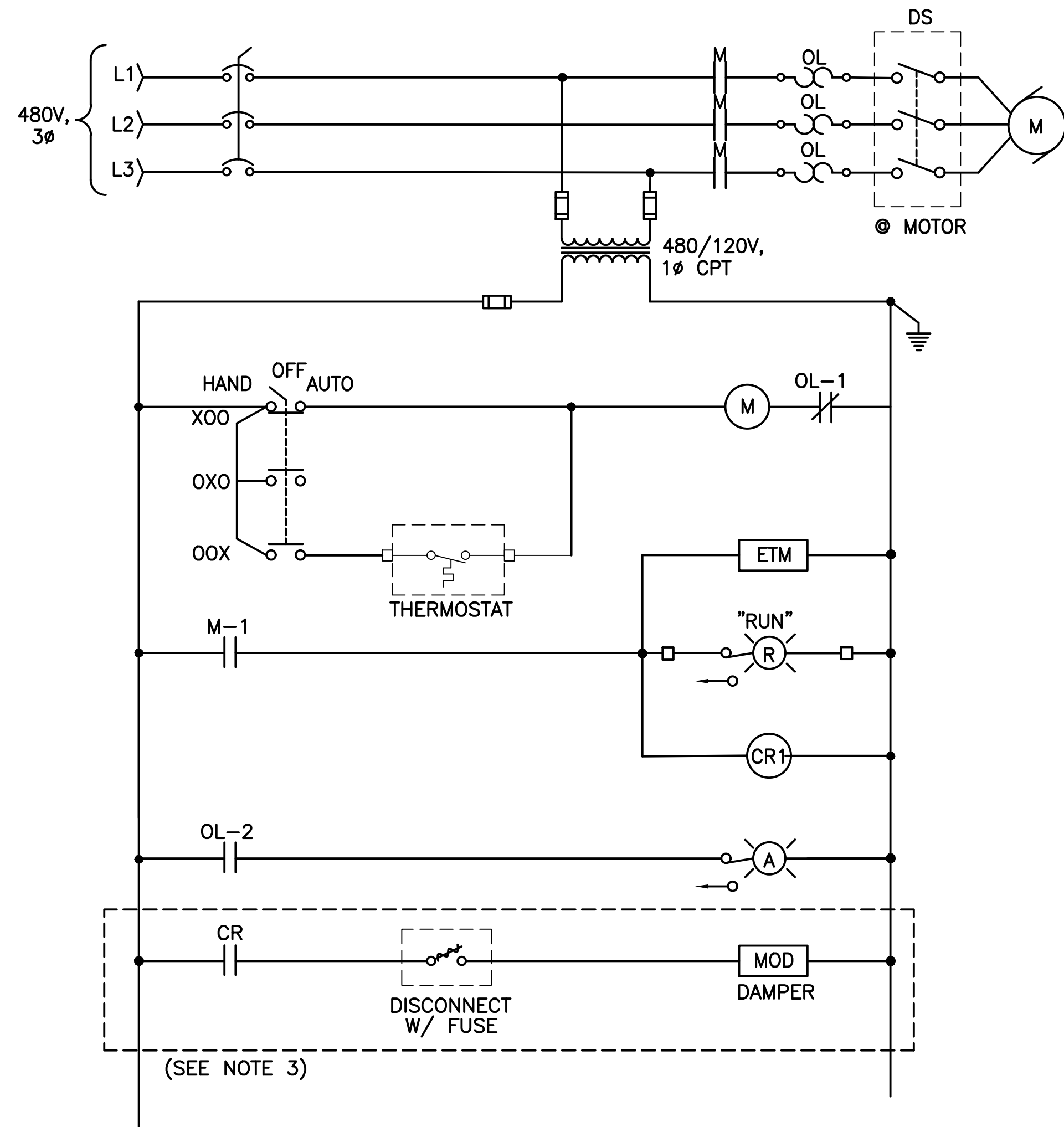
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 4

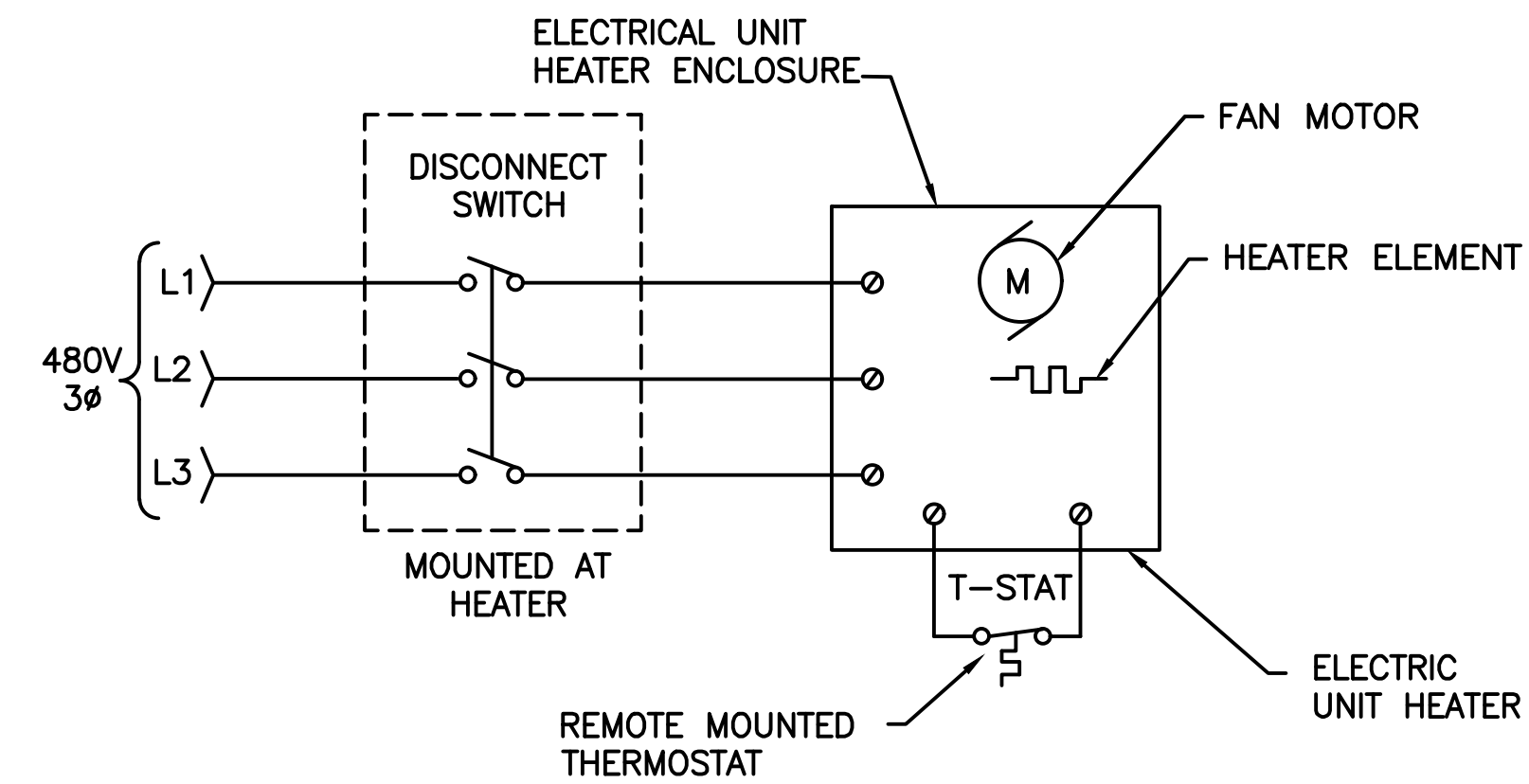
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TYPICAL EXHAUST AND SUPPLY FAN SCHEMATIC

NOTES:

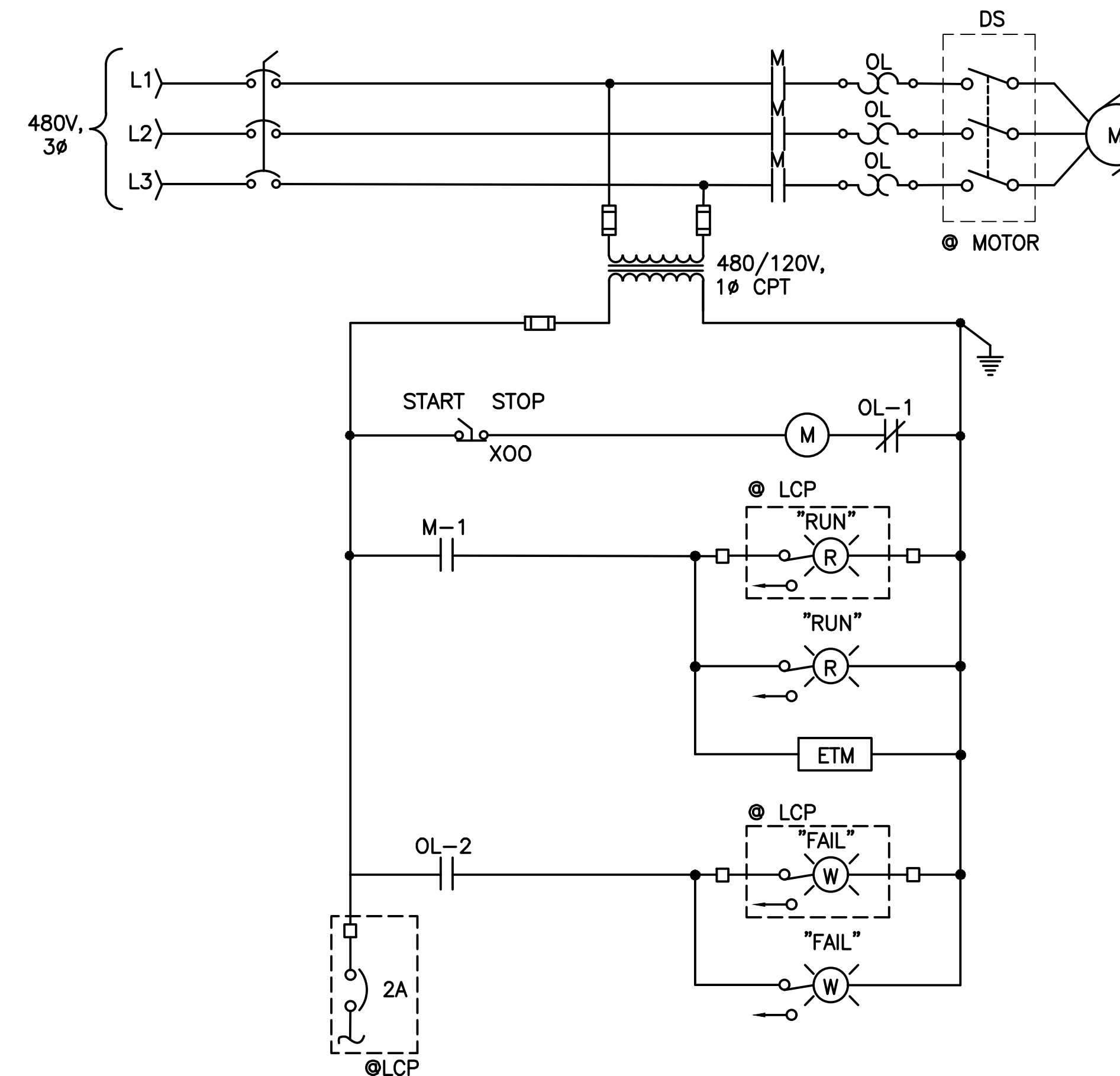
1. COORDINATE SCHEMATIC WITH FANS AND MOTORIZED DAMPERS PROVIDED IN THE SOLIDS HANDLING FACILITY AND THE MBR FACILITY. REFER HVAC DRAWINGS AND SPECIFICATIONS.
2. INTERLOCK SUPPLY AND EXHAUST TO SINGLE 2 POLE THERMOSTAT IF REQUIRED.
3. MOTORIZED DAMPERS SHALL BE WIRED AS INDICATED. COORDINATE SIZE OF CPT FOR LOADS REQUIRED. PROVIDE A SEPERATE 120V 1 PHASE 20 AMP CIRCUIT FROM PANEL LP IF LOAD EXCEEDS MAXIMUM CPT RATING. PROVIDE 3/4"C/(2)-#12+#12GND TO ALL LOUVERS. INCLUDE LOCAL DISCONNECTING MEANS AT LOUVER.
4. PROVIDE REMOTE MOUNTED THERMOSTAT AT LOCATIONS SHOWN ON HVAC DRAWINGS OR AS SPECIFIED, CONNECT WITH 3/4"C/(2)-#12+#12GND.



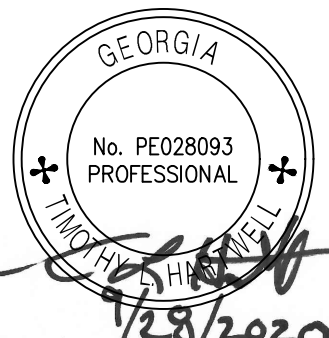
ELECTRIC UNIT HEATER (UH) SCHEMATIC
(TYPICAL FOR ALL UNIT HEATERS)

NOTES:

1. PROVIDE CONDUIT AND WIRE PER NEC AS REQUIRED TO T-STAT AND DISCONNECT SWITCH.
2. REFER TO MECHANICAL DRAWINGS FOR LOCATION OF UNIT HEATERS.
3. PROVIDE FUSED D/S AS REQUIRED TO MEET MANUFACTURER'S MAXIMUM CURRENT RATINGS.



POLY RECIRCULATION PUMPS (15-D-SF-1)
(TYPICAL OF 2: 15-POLY-RP-1, 15-POLY-RP-2)



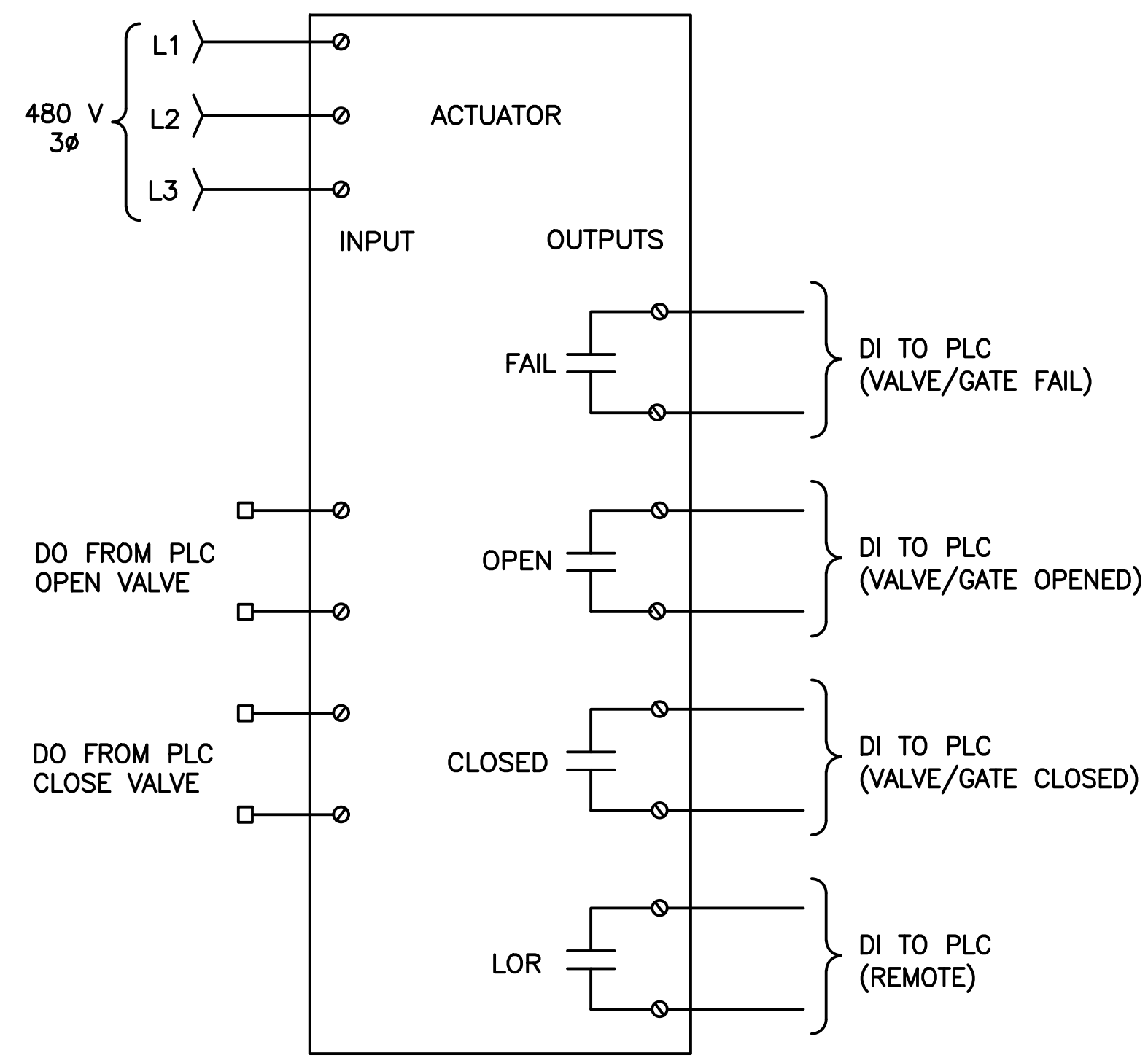
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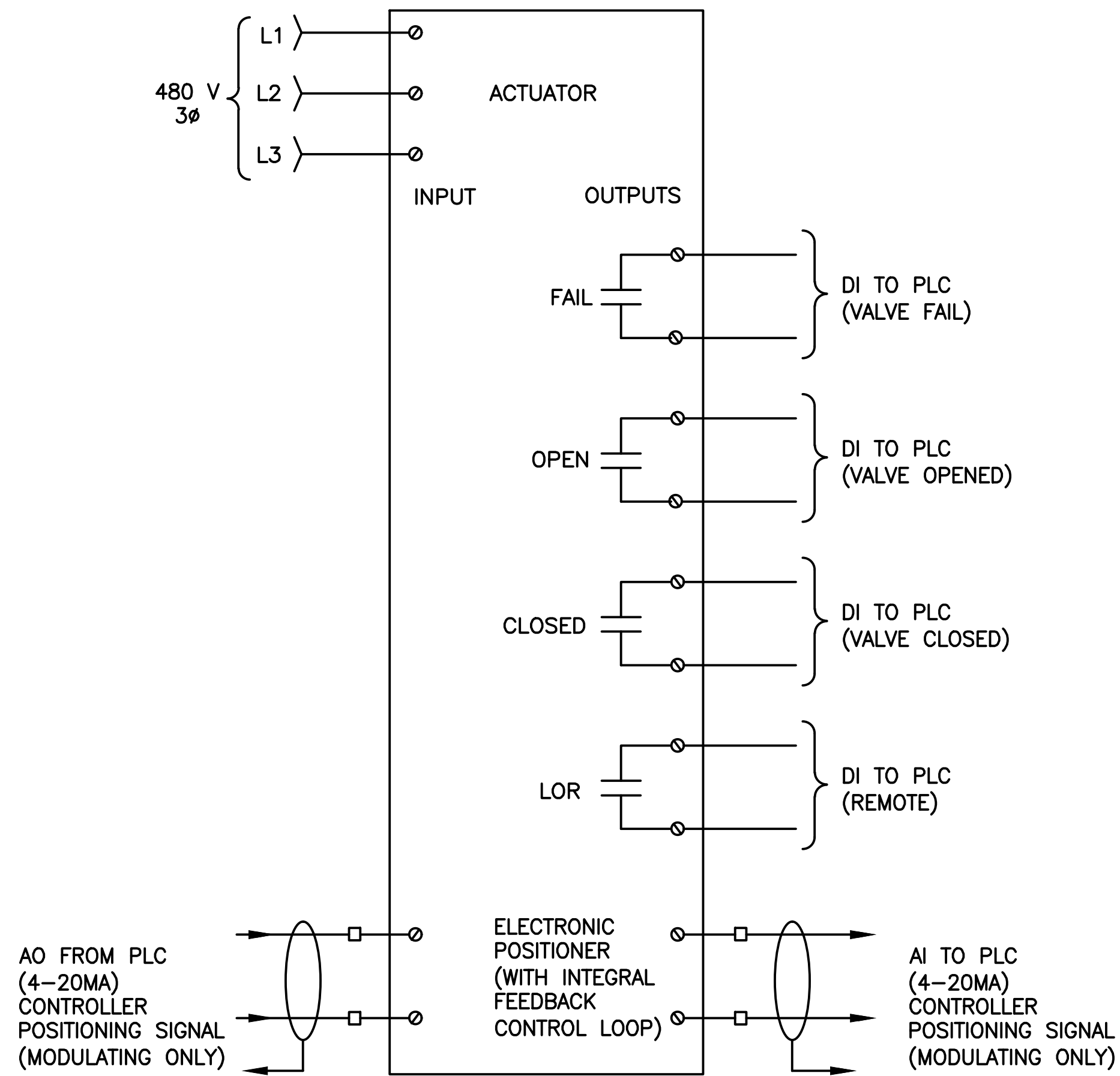
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 5

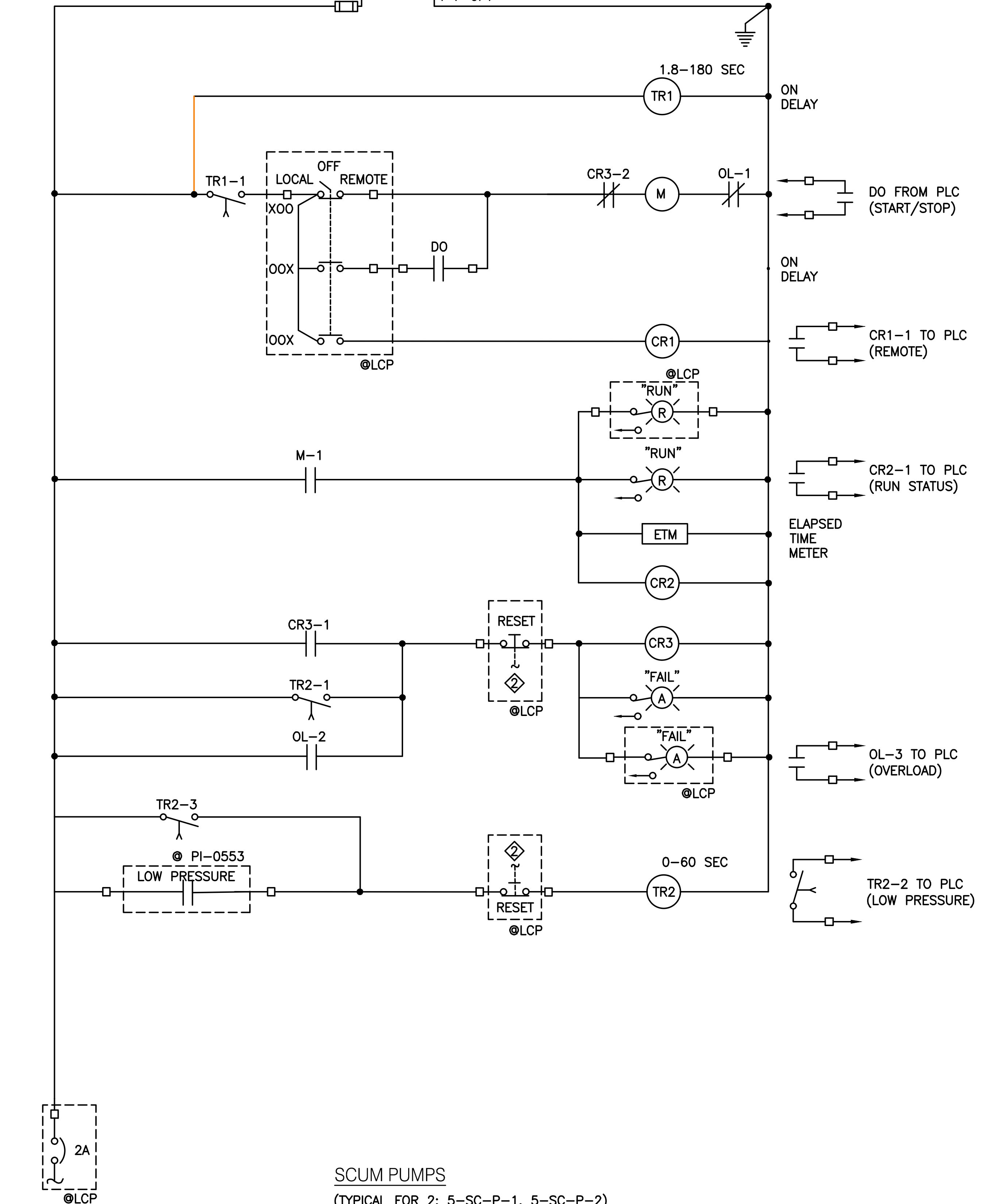
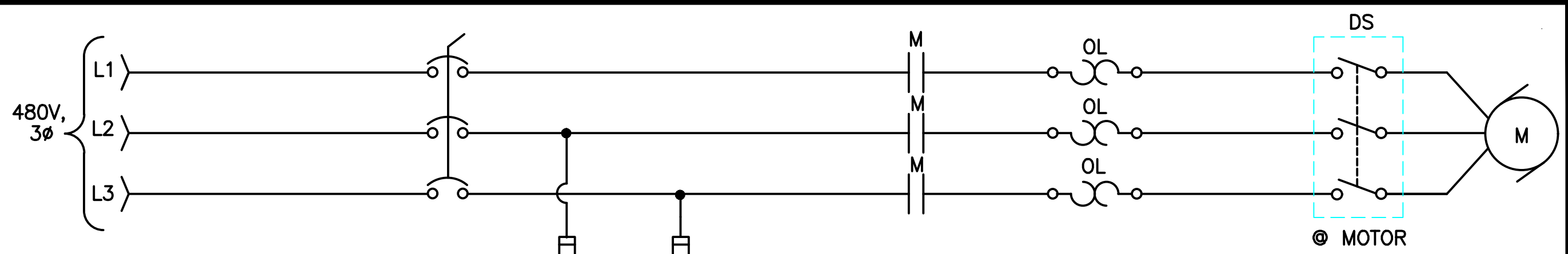
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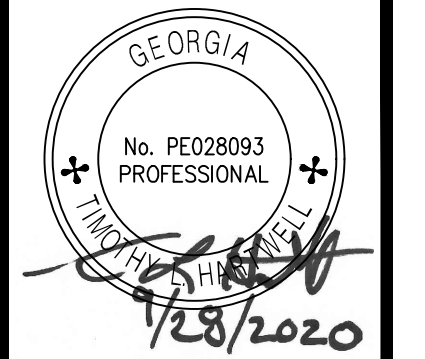
MOTOR OPERATED GATE/ VALVE - OPEN/CLOSE
(TYPICAL)



MOTOR OPERATED VALVE - MODULATING
(TYPICAL)



SCUM PUMPS
(TYPICAL FOR 2: 5-SC-P-1, 5-SC-P-2)



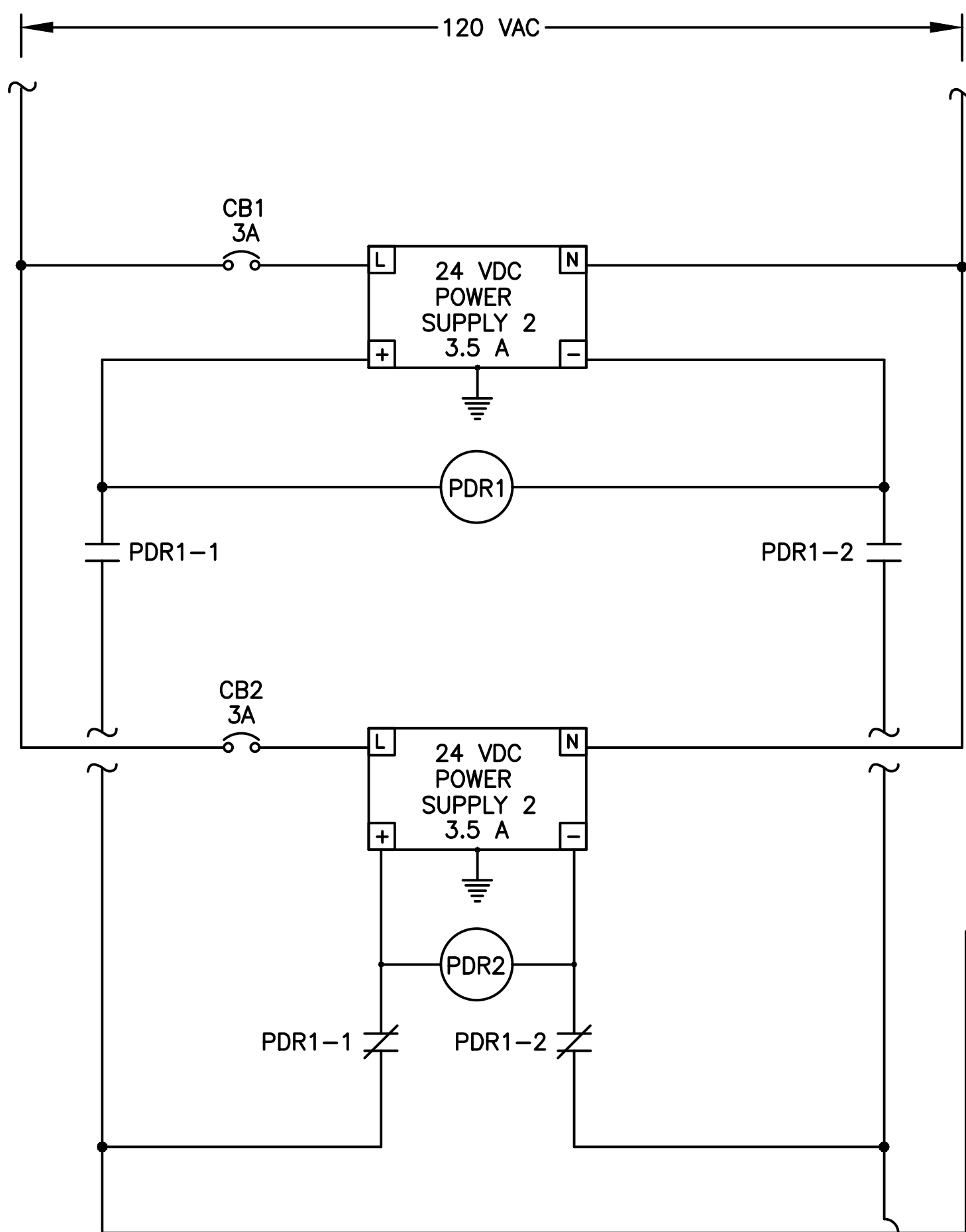
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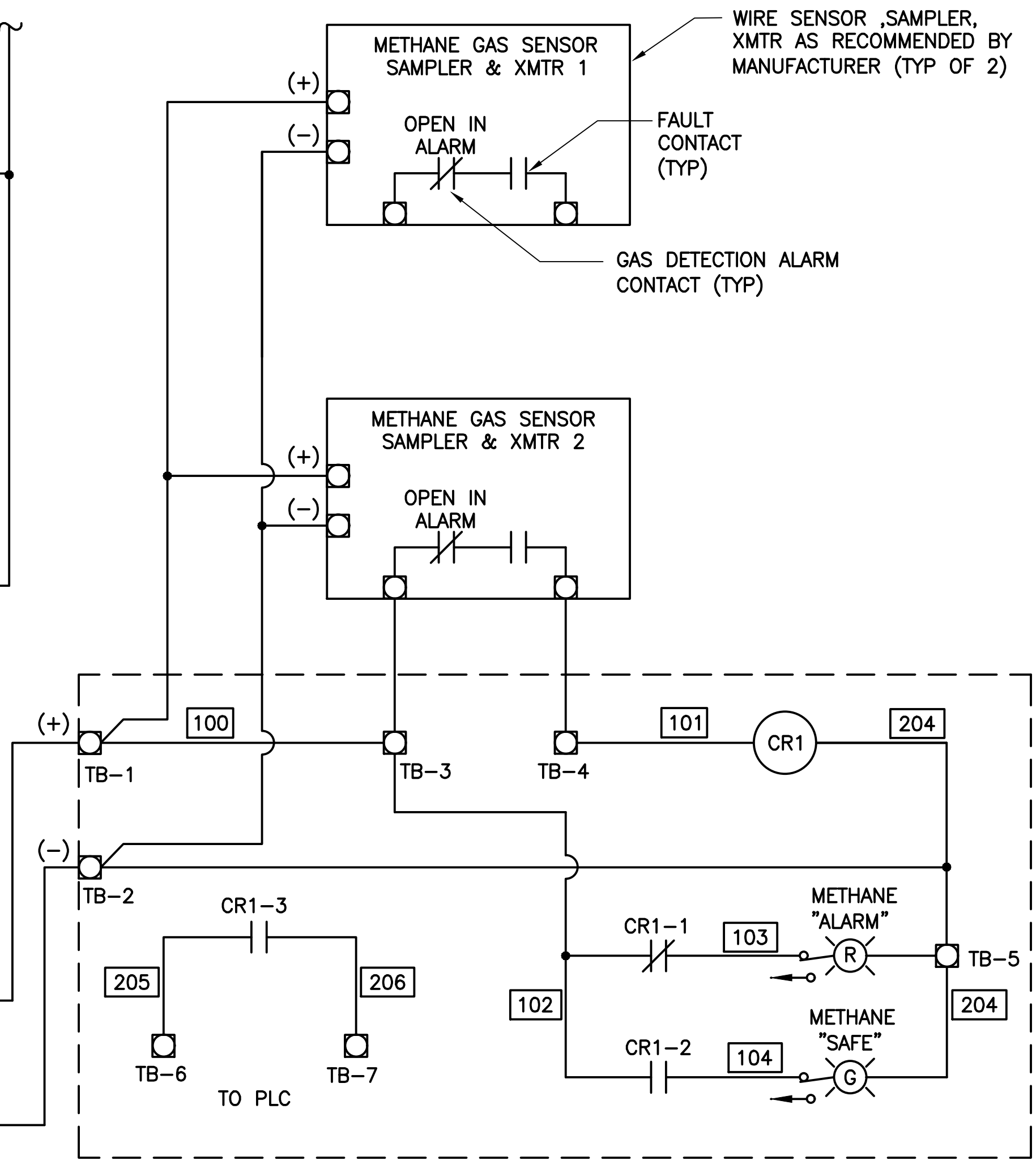
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 6

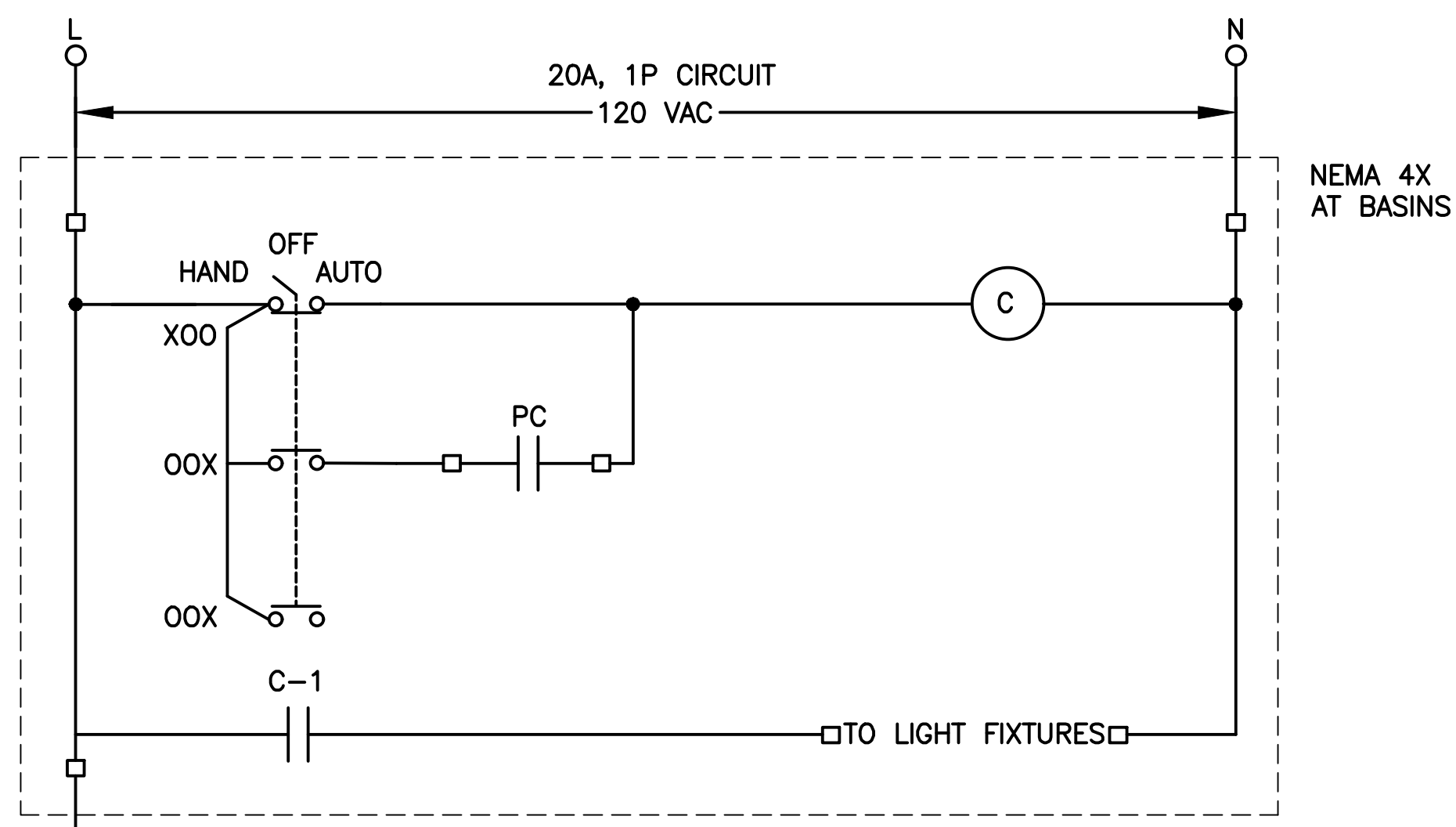
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- NOTES:**
1. PROVIDE GAS DETECTION PANEL TO PROVIDE MULTIPLE INPUTS INCLUDING LEL, H₂s, O₂, AND CARBON MONOXIDE AS SHOWN ON THE P&ID'S. THIS PANEL IS TYPICAL FOR ALL GASES.
 2. PROVIDE THREE SENSOR SYSTEMS. BELT FILTER PRESS (3 SENSORS) DRYER (3 SENSORS) TRUCK LOADING (1 SENSOR).

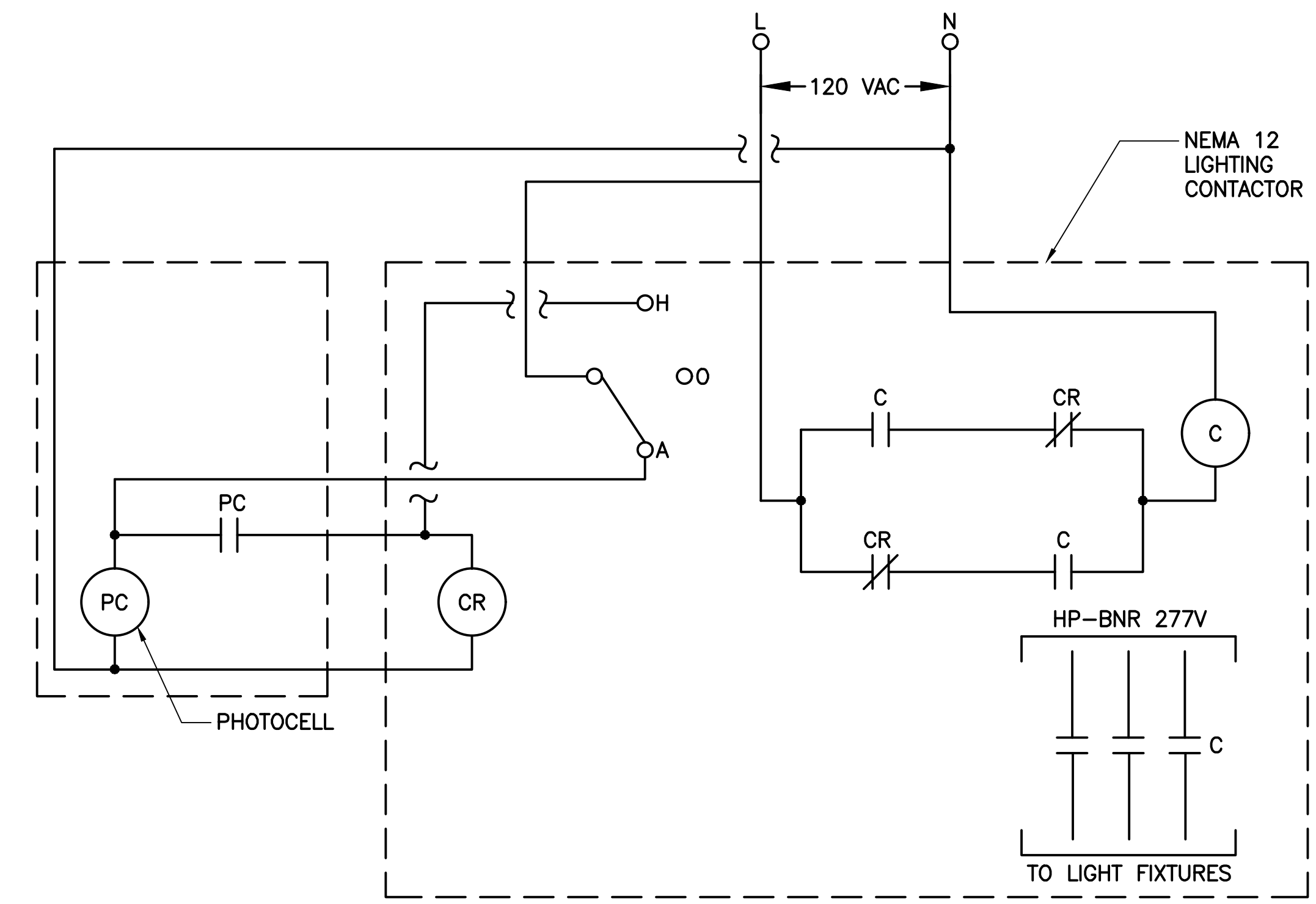


METHANE GAS DETECTION SYSTEM
(OXYGEN & HYDROGEN SULFIDE SIMILAR)



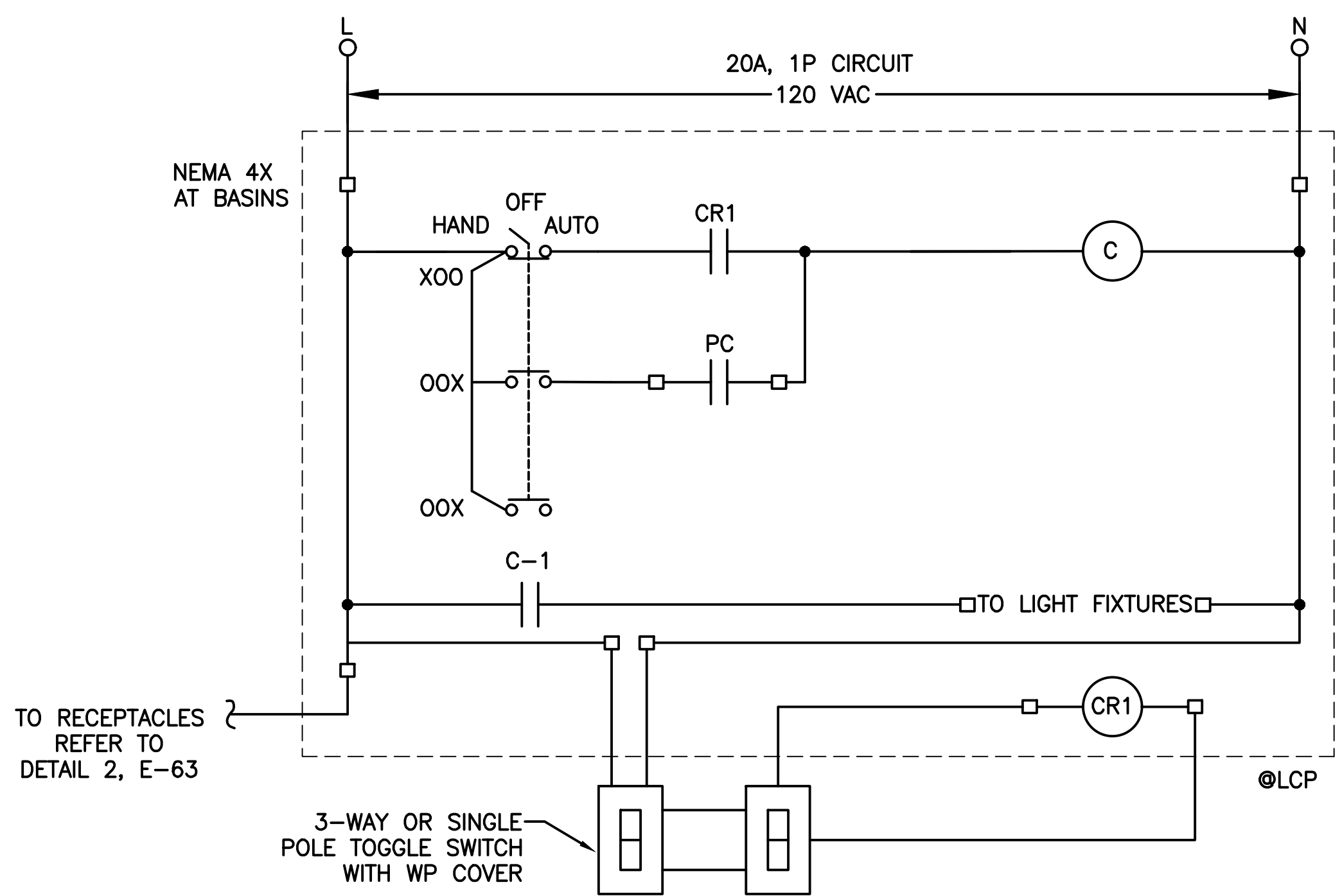
BASIN LIGHTING CONTROL DIAGRAM 1
(TYPICAL)

- NOTES:**
1. CONTACTOR CONTACTS AND TERMINALS TO LIGHT FIXTURES SHALL BE RATED FOR 20A.



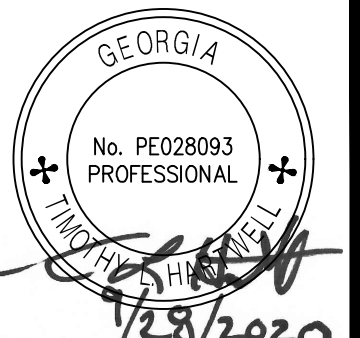
AREA LIGHTING CONTROL DIAGRAM
(TYPICAL)

- NOTES:**
1. PROVIDE QUANTITY OF CIRCUITS (RC) AS SHOWN ON PANEL SCHEDULES FOR SITE AND AREA LIGHTING.
 2. PROVIDE LIGHTING CONTACTOR FOR AREA AND ROAD WAY 277V LIGHTING LOCATED IN BNR/MBR ELECTRICAL BUILDING, FOR HP-BNR.
 3. PROVIDE ALL WIRING AND CONDUIT FOR PHOTOCELL. MOUNT PC ON BUILDING EXTERIOR.



BASIN LIGHTING CONTROL DIAGRAM 2
(TYPICAL)

- NOTES:**
1. POWER RELAY CONTACTS AND TERMINALS TO LIGHT FIXTURES SHALL BE RATED FOR 20A.
 2. PROVIDE THREE WAY TOGGLE SWITCHES WITH 3/4" CONDUIT WITH (3)#12+#12EGC BETWEEN EACH TOGGLE SWITCH AND PROVIDE 3/4" CONDUIT WITH (2)#12+#12EGC BETWEEN EACH TOGGLE SWITCH AND THE LCP, LOCATE AT STAIRS.
 3. MOUNT THE PHOTOCELL (PC) CONTACT ABOVE THE LCP FACING SOUTH AND PROVIDE 3/4" CONDUIT WITH (2)#12+#12EGC.



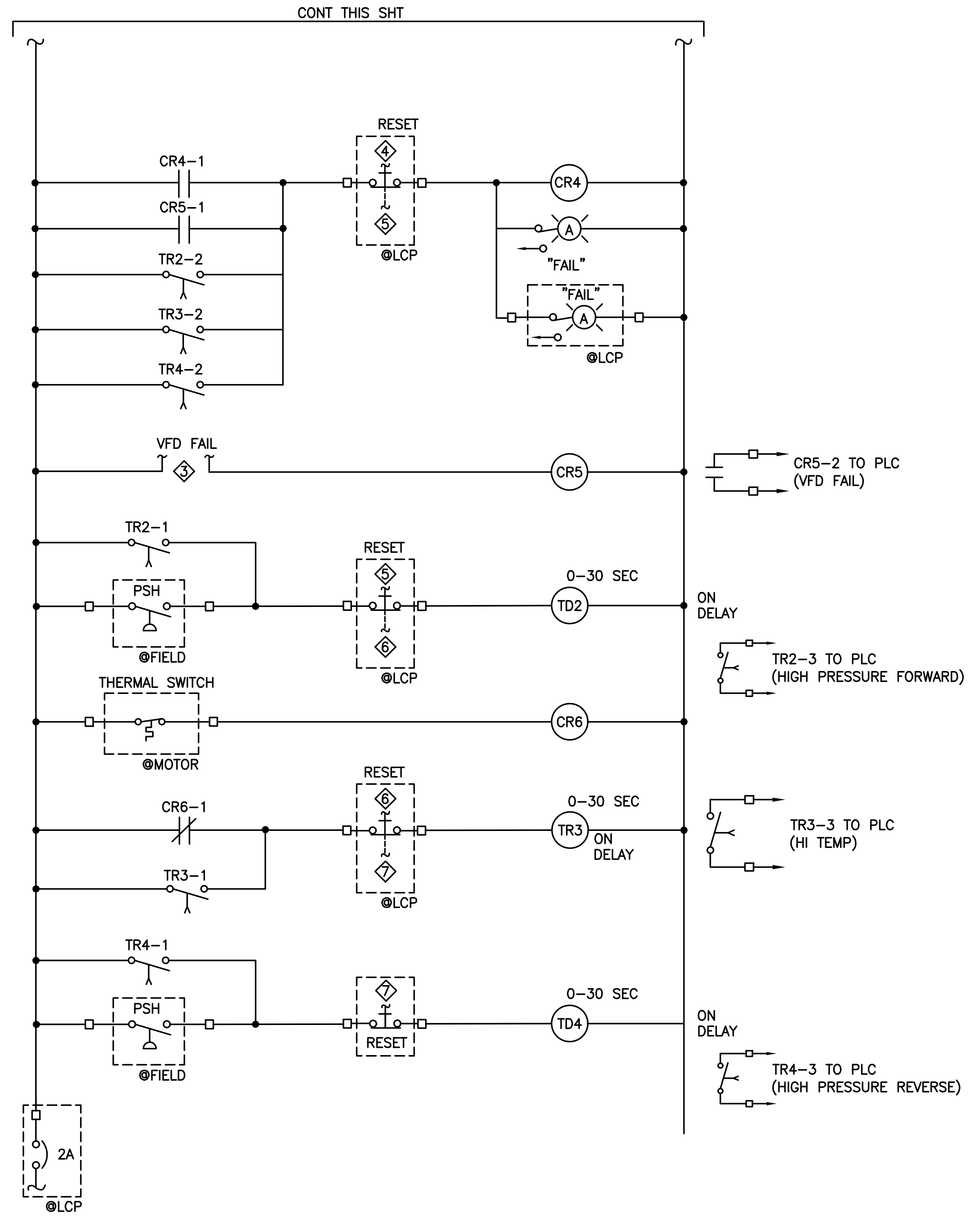
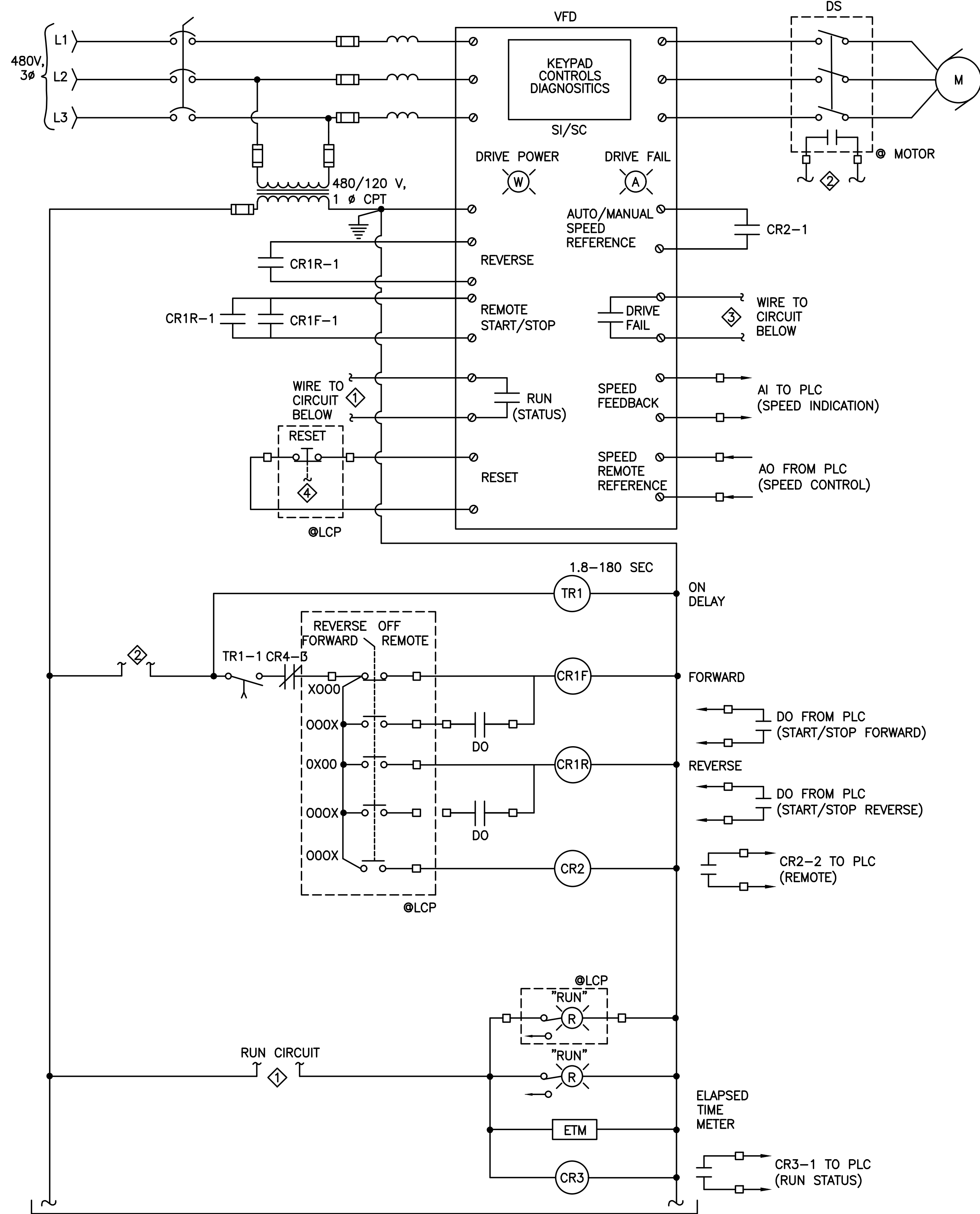
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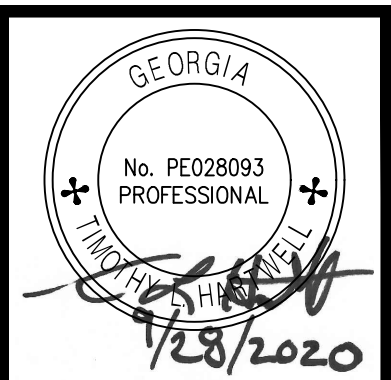
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 7

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 7



MEMBRANE PROCESS PUMPS
(TYPICAL OF 4: 20-P-301-1, 20-P-301-2, 20-P-301-3, 20-P-301-4)



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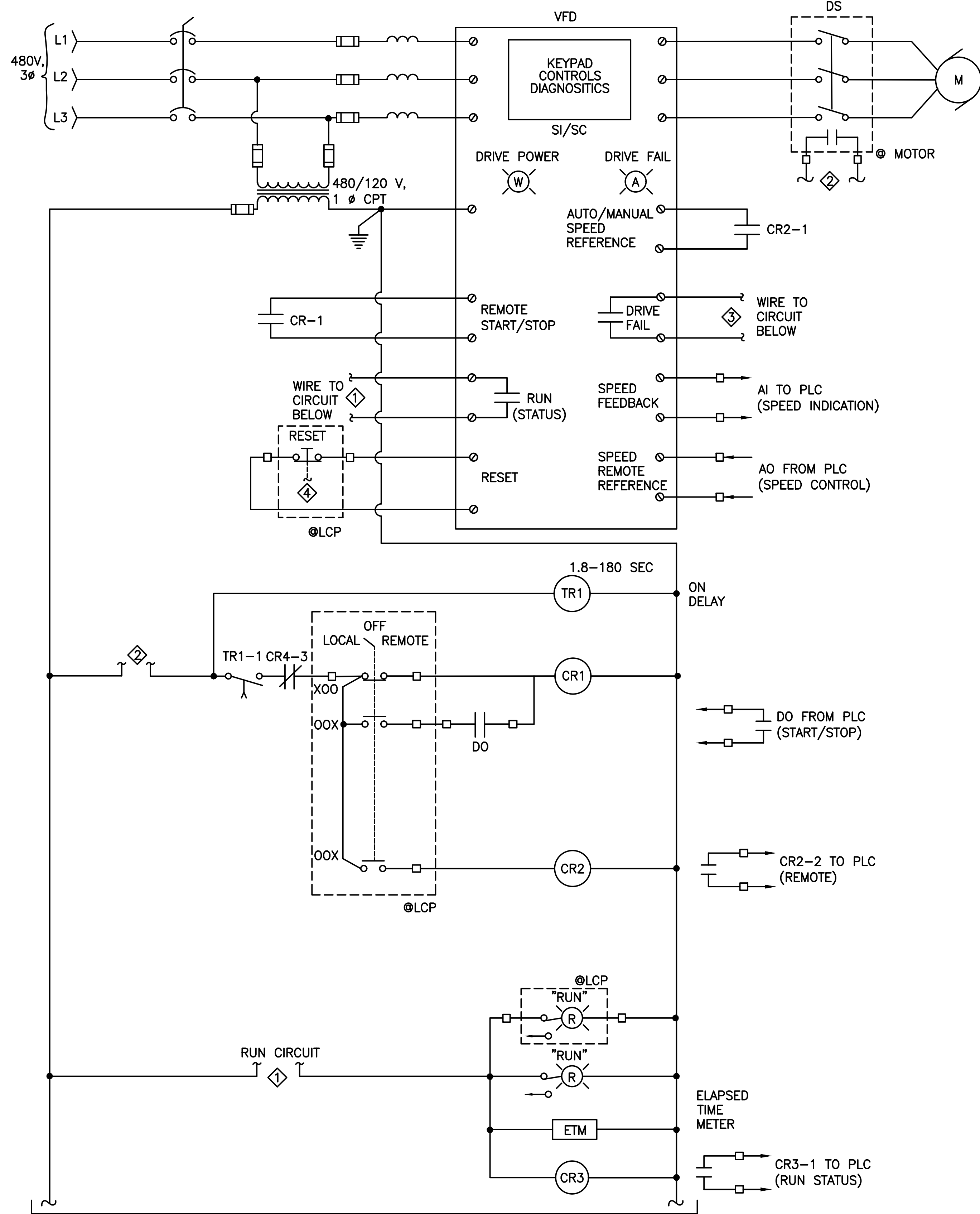
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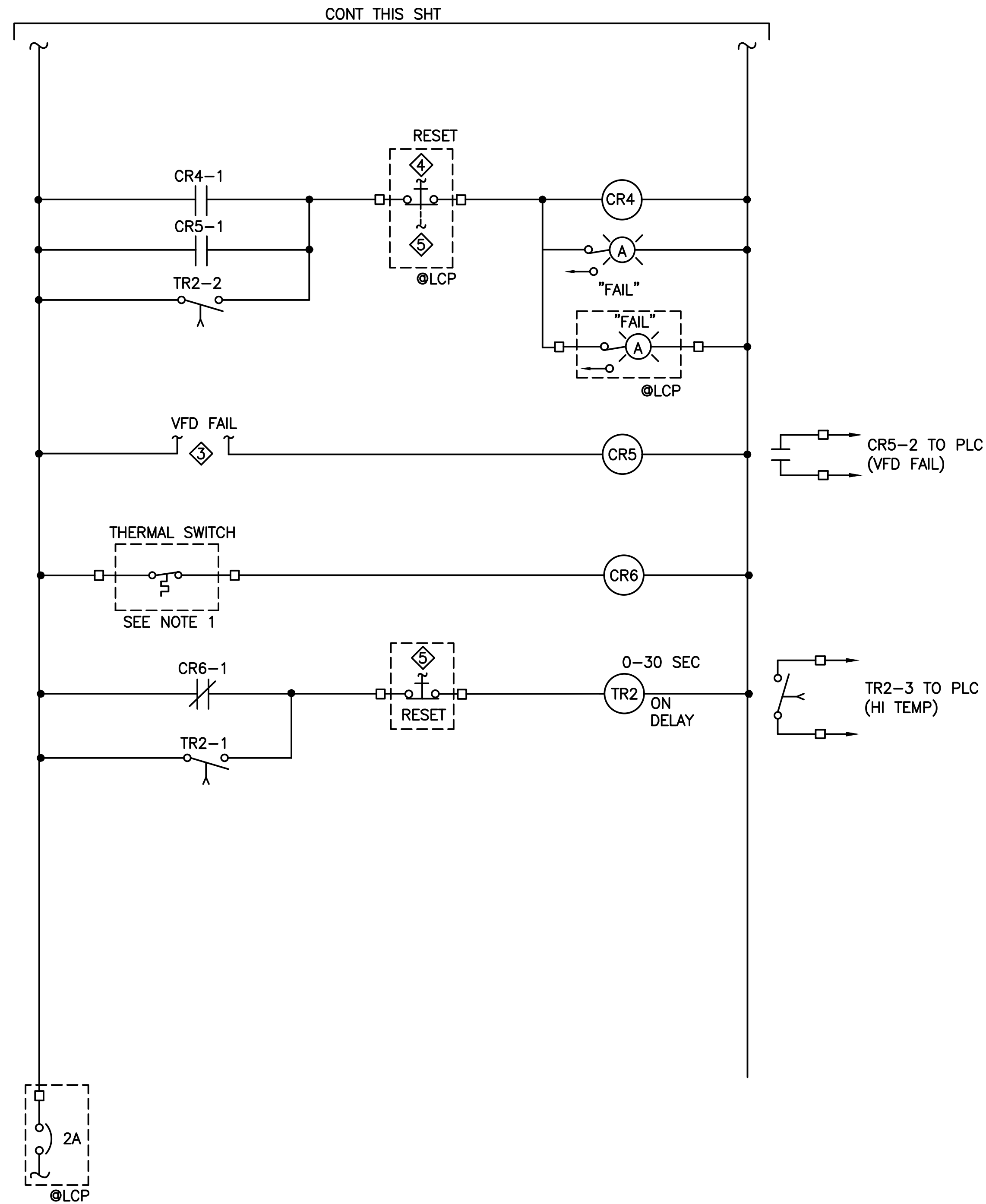
REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 8

SHEET NO.
E-72

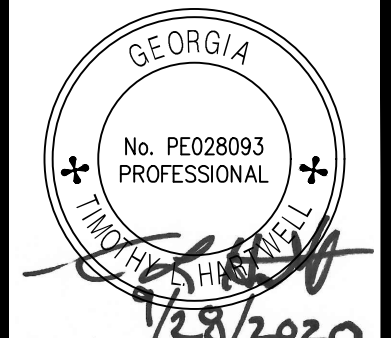


CONT THIS SHT



MEMBRANE RAS PUMPS AND MEMBRANE BLOWERS
 (TYPICAL OF 9: 20-P-501-1, 20-P-501-2, 20-P-501-3, 20-P-501-4, 20-B-201-A, 20-B-201-B, 20-B-201-C, 20-B-201-D, 20-B-201-E)

- NOTES:
1. THERMAL SENSOR FOR THE BLOWERS ARE LOCATED AT INLET PIPE AND THE THERMAL SENSORS FOR THE RAS PUMPS ARE LOCATED AT MOTOR.



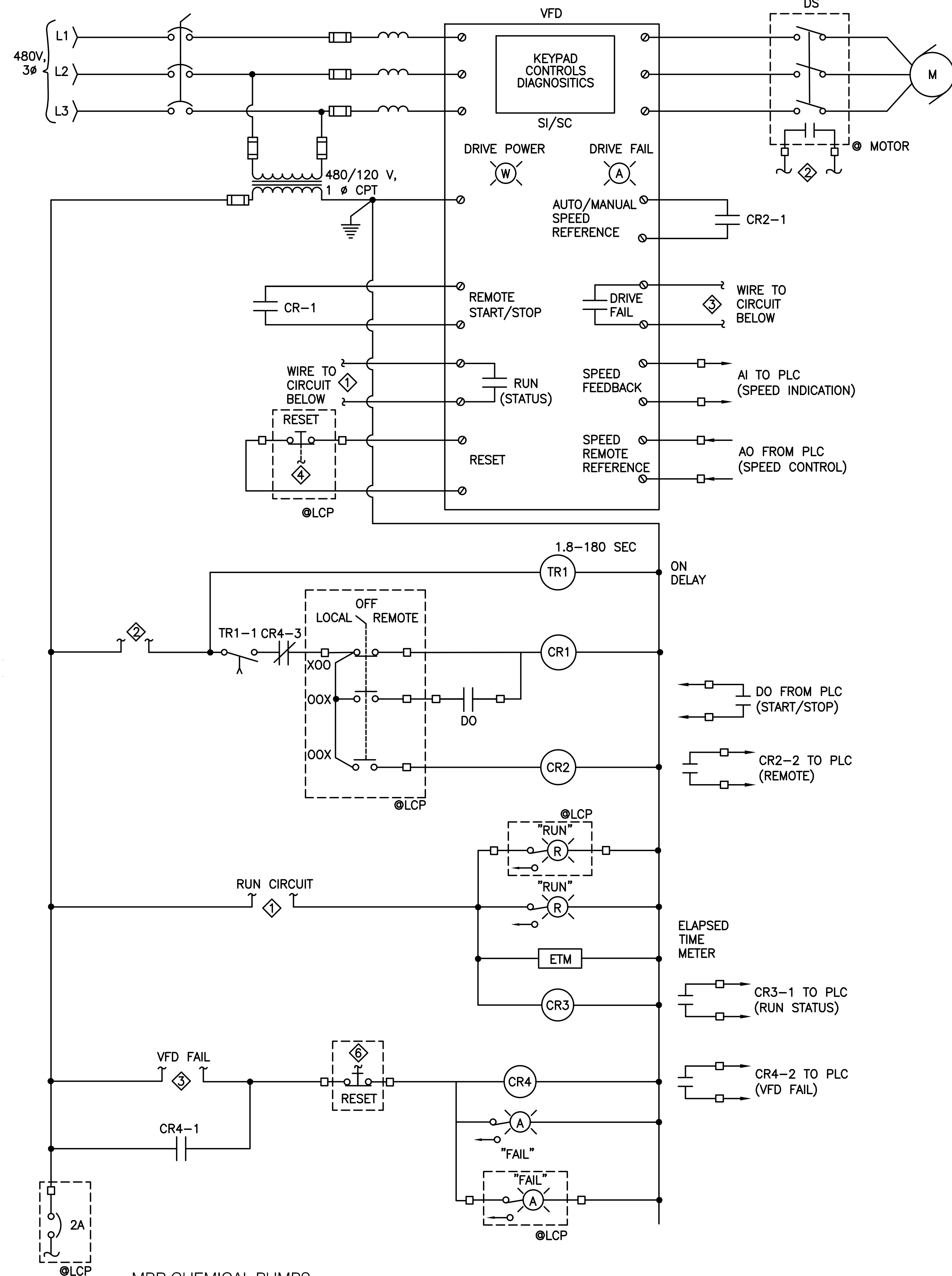
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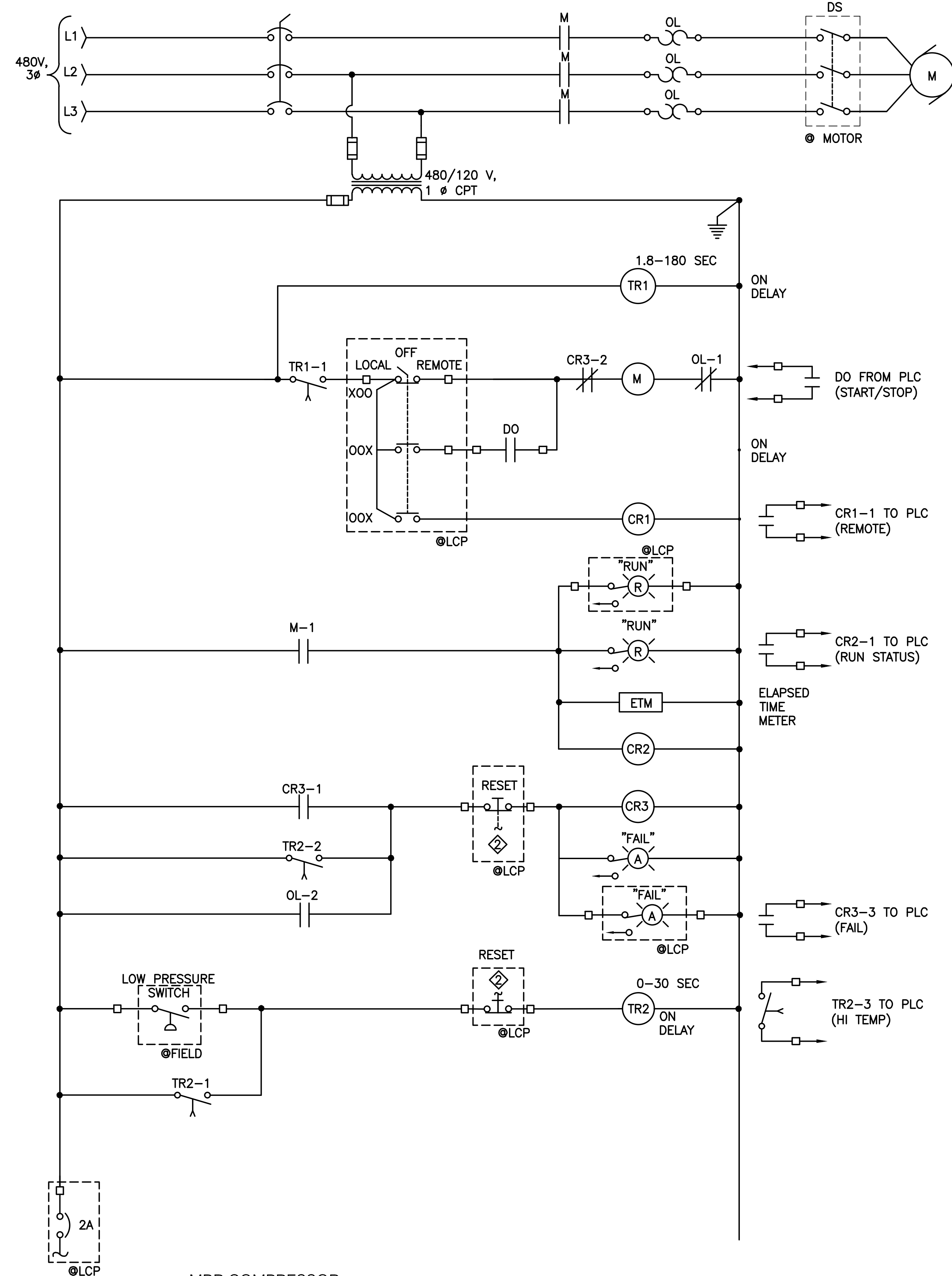
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100061831	RDW/INJ	NCT/INJ	TLH		SEPTEMBER 2020	AS SHOWN

CERTIFICATE OF AUTHORIZATION #	EXPIRATION DATE	REVISION	DATE
PEP070823	06/30/2022		

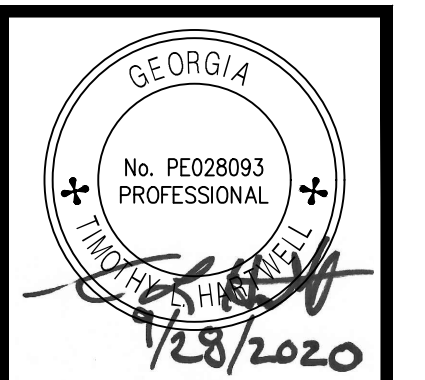
CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 9



MBR CHEMICAL PUMPS
 (TYPICAL OF 4: 23-P-101-A, 23-P-101-B, 23-P-301-A, 23-P-301-B)



MBR COMPRESSOR
 (TYPICAL FOR 2: 90-AC-001-A, 90-AC-001-B)



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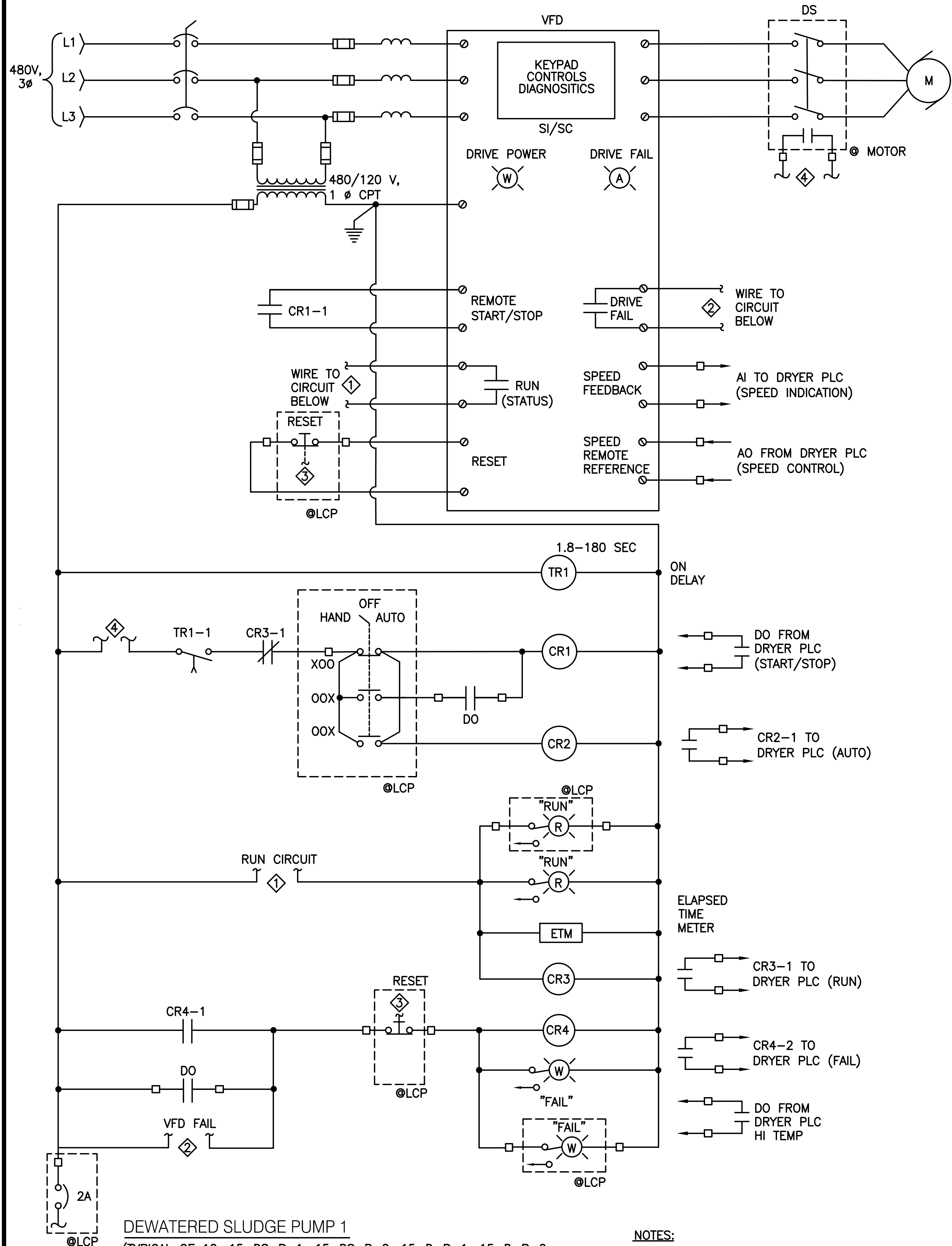
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	DRAWN BY: NCT/NJZ	APPROVED BY: TLH	SCALE: AS SHOWN

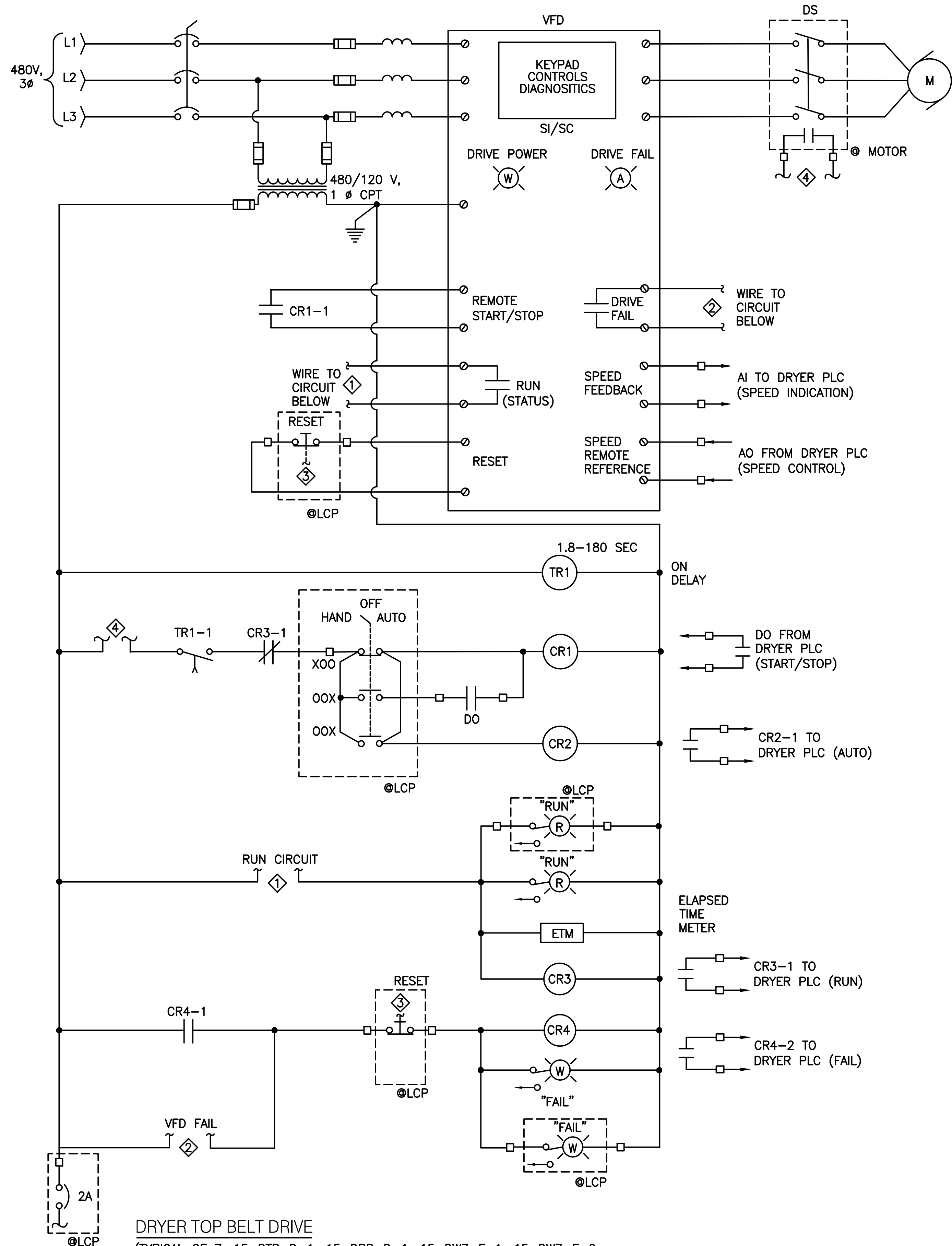
CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

ELECTRICAL SCHEMATICS 10

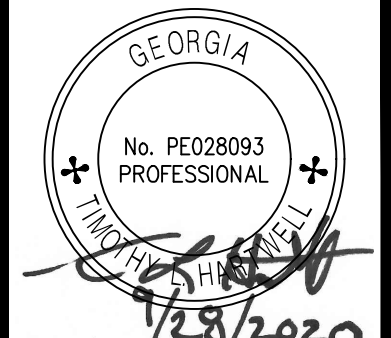


DEWATERED SLUDGE PUMP 1
 (TYPICAL OF 12: 15-DS-P-1, 15-DS-P-2, 15-D-P-1, 15-D-P-2, 15-D-P-3, 15-D-P-4, 15-D-P-5, 15-D-P-6, 15-D-P-7, 15-D-P-8, 15-DF-P-1, 15-DF-P-2)

NOTES:
 1. FOR 15-DS-P1 & P2 REFER TO DRAWING E-66, NOTE 1.



DRYER TOP BELT DRIVE
 (TYPICAL OF 7: 15-DTB-D-1, 15-DBB-D-1, 15-DWZ-F-1, 15-DWZ-F-2, 15-DEZ-F-1, 15-DEZ-F-2, 15-DES-M-1)

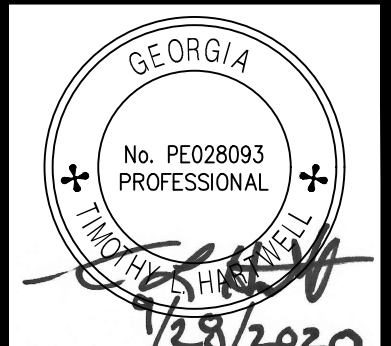
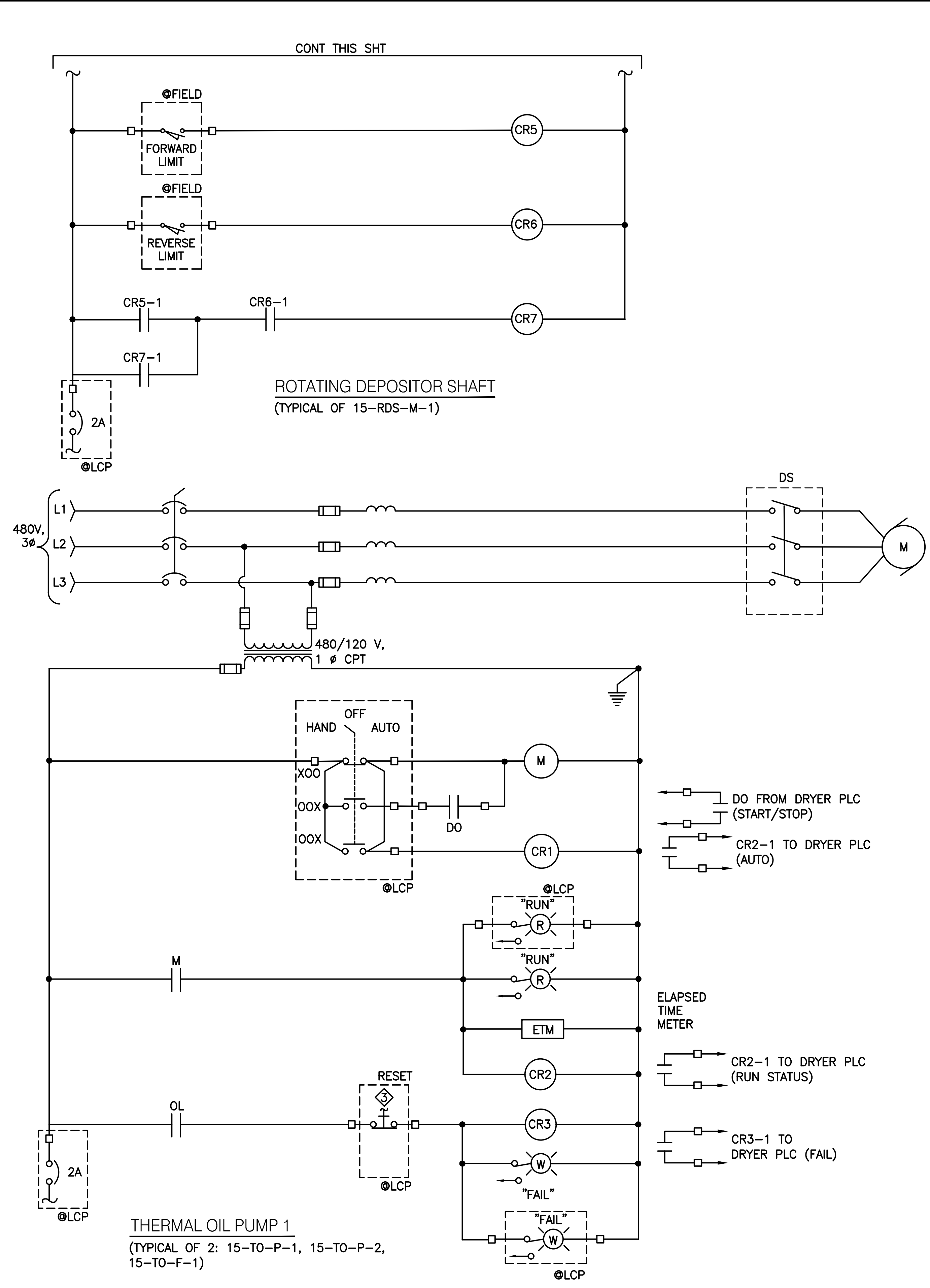
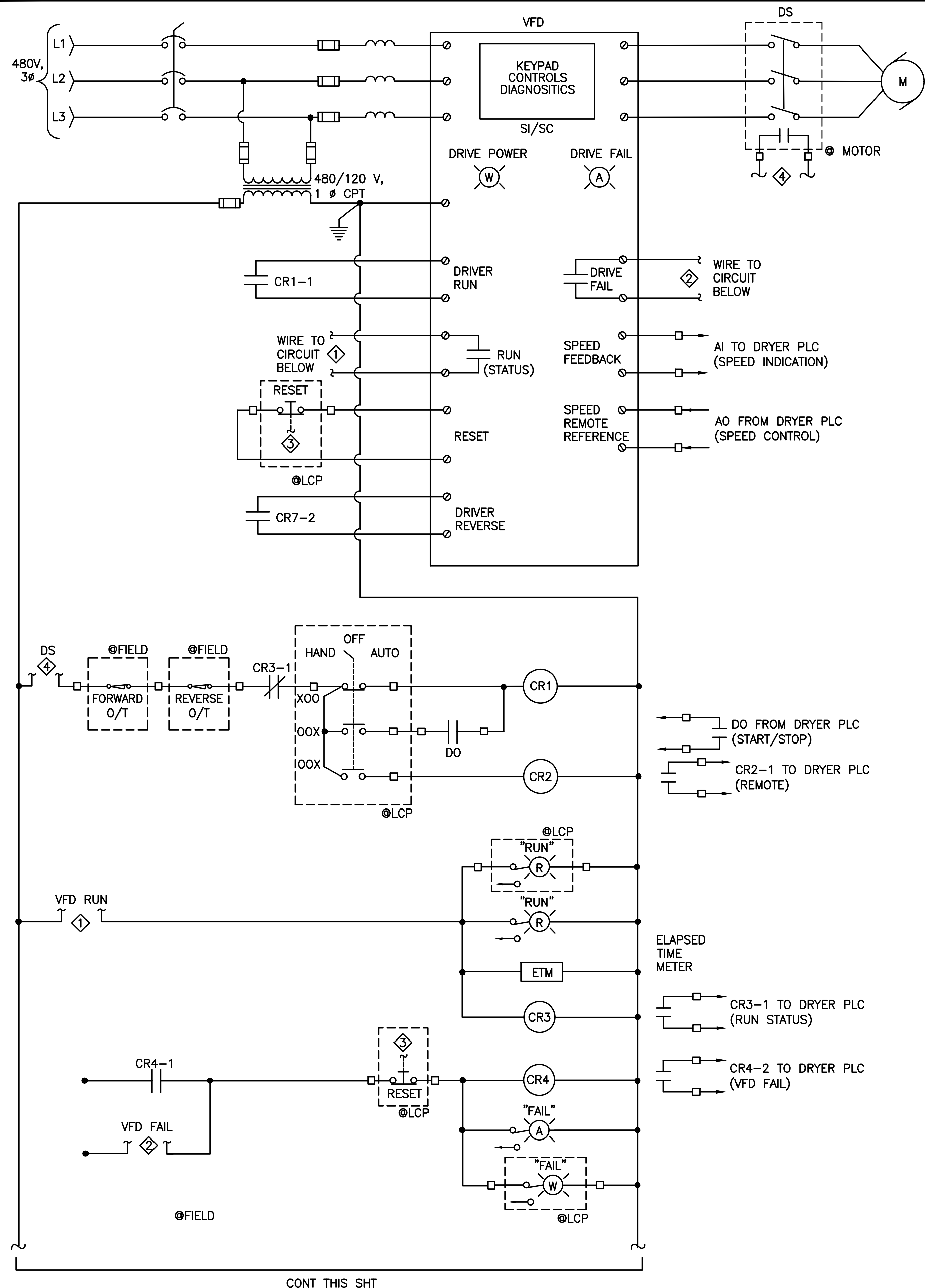


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	DRAWN BY: NCT/INJ	ELECTRICAL SCHEMATICS 11
	CHECKED BY: TLH	
	APPROVED BY: TLH	
	DATE: SEPTEMBER 2020	
	SCALE: AS SHOWN	
	CERTIFICATE OF AUTHORIZATION #PE028093 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.	
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	DATE	

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ELECTRICAL SCHEMATICS 11



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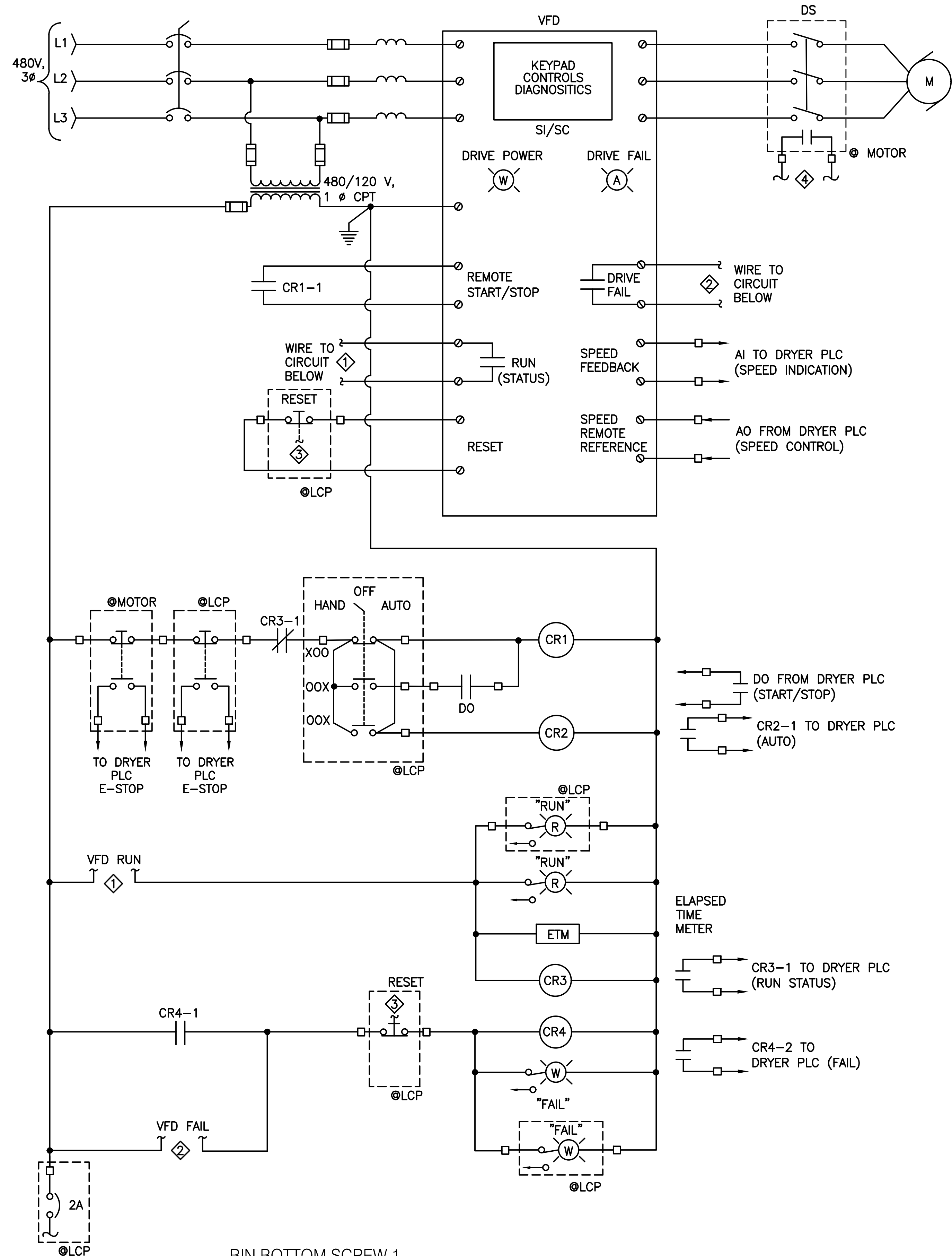
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PROJ. NO.:	DATE
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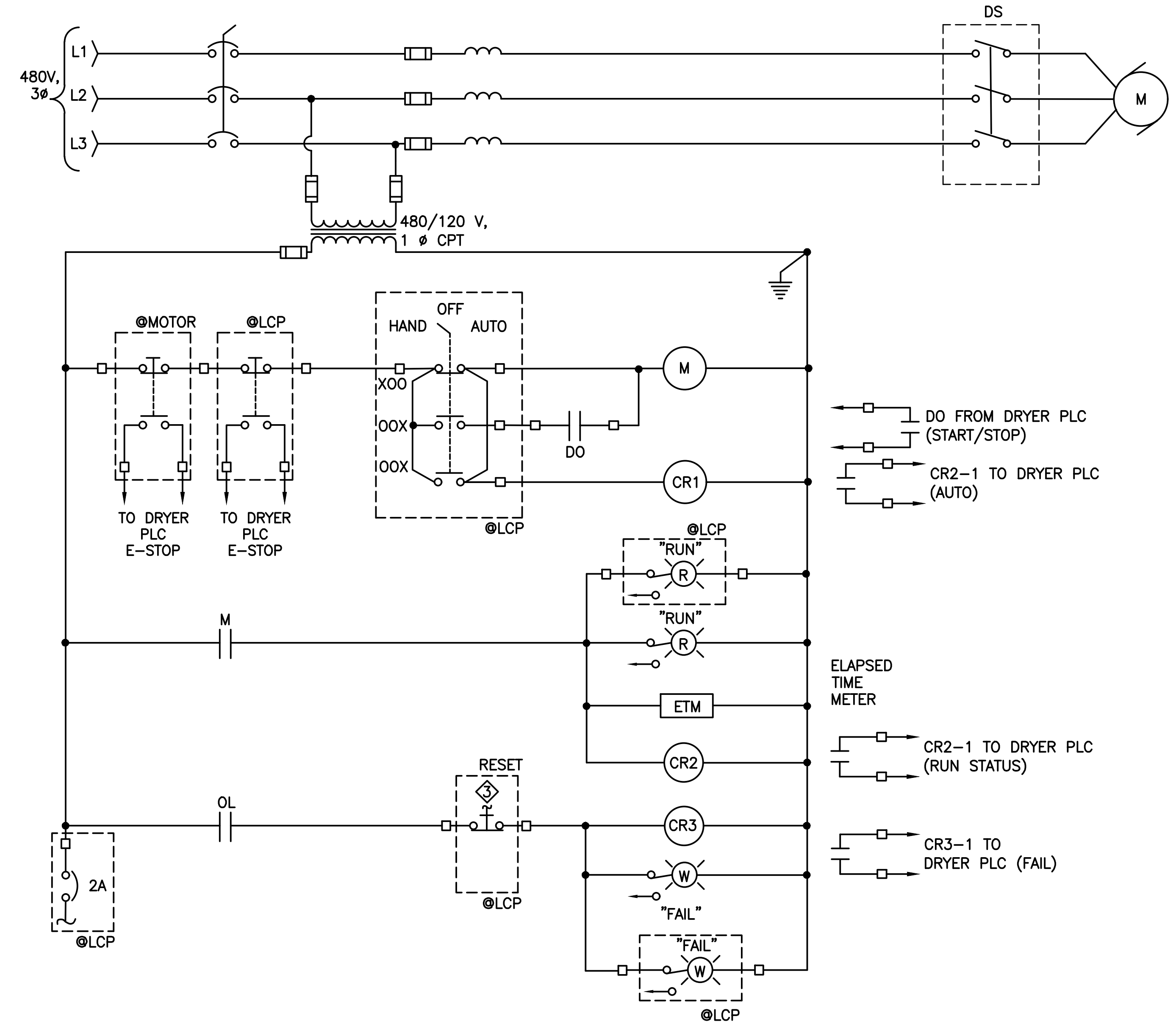
DESIGNED BY:	REVISION
RDW/INJ	
DRAWN BY: NCT/INJ	
CHECKED BY: TLH	
APPROVED BY: TLH	
DATE: SEPTEMBER 2020	
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 12

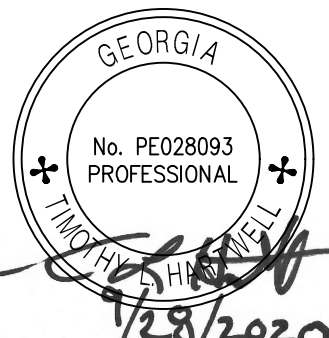
SHEET NO.
E-76



BIN BOTTOM SCREW 1
(TYPICAL OF 2: 15-BBS-M-1, 15-BBS-M-2)



BIN LEVELING SCREW 1
(TYPICAL OF 2: 15-BLS-M-1, 15-BLS-M-2)



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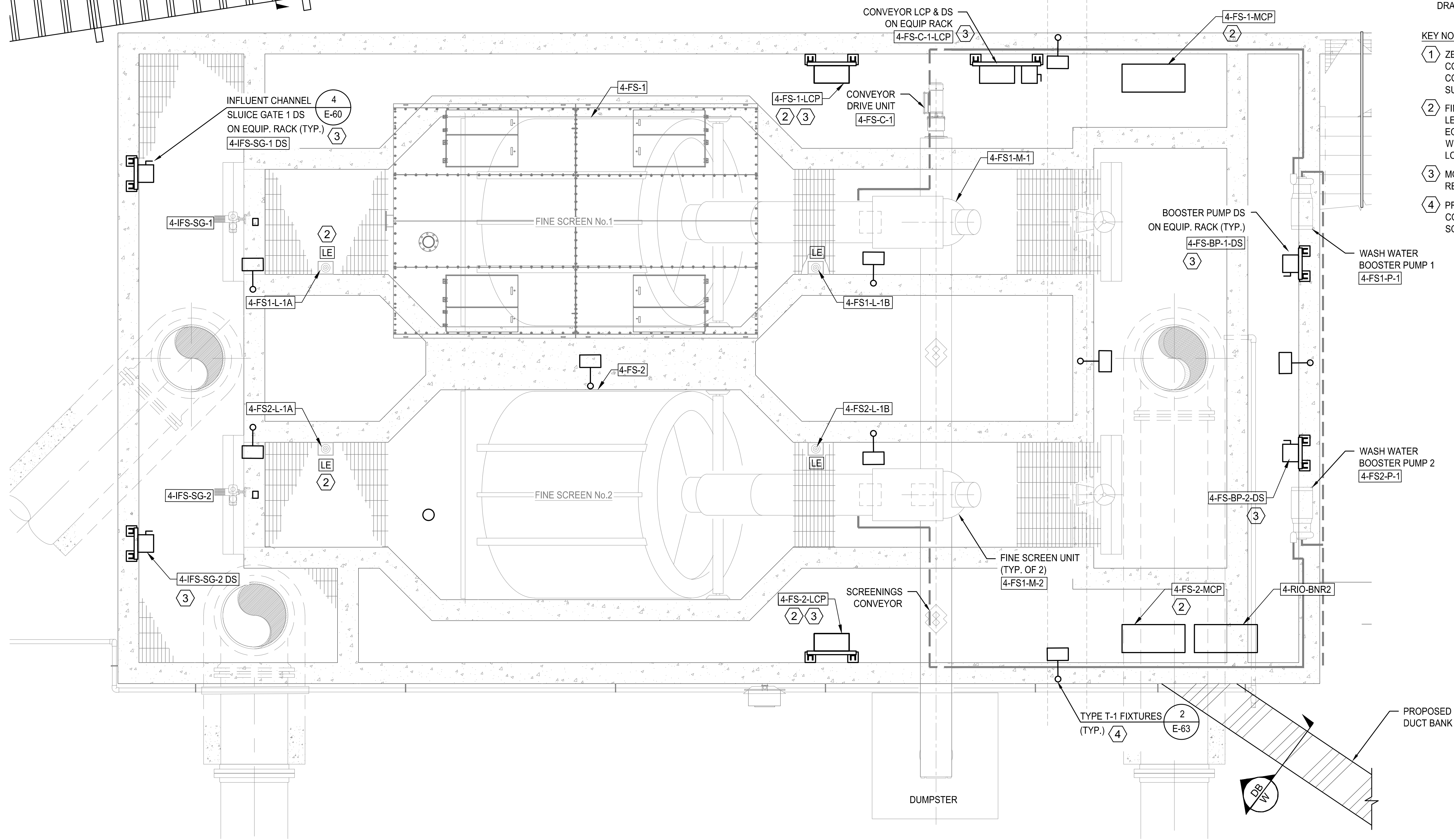
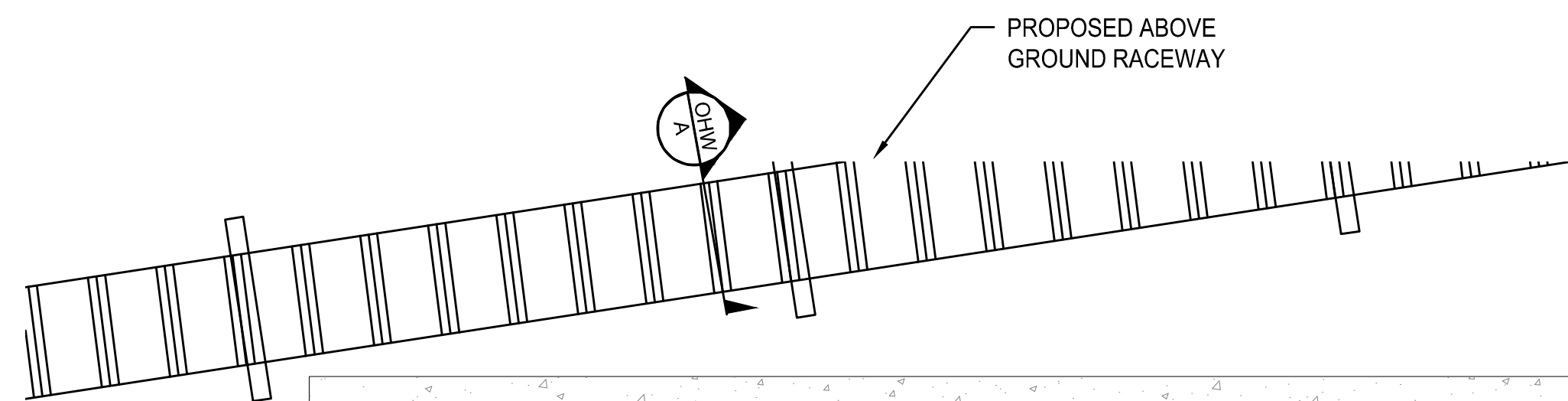
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
ELECTRICAL SCHEMATICS 13

SHEET NO.
E-77

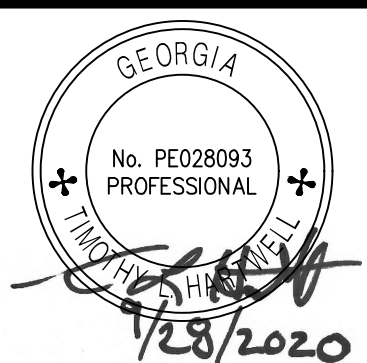


PLAN
SCALE: 3/8"=1'-0"



- NOTES:
1. ROUTE ALL CONDUIT MIN 18" ABOVE HIGH WATER LINE AND SEAL CONDUIT ENTRIES PER NEC REQUIREMENTS.
 2. REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
 3. PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

- KEY NOTES
- 1 ZERO SPEED AND EMERGENCY PULL CORD TO BE PROVIDED WITH CONVEYOR, COORDINATE WITH SUPPLIER.
 - 2 FINE SCREENING SYSTEM MCP, LCP, LEVEL XMTR TO BE PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE WITH SUPPLIER INSTALLATION AND LOCATION REQUIREMENTS.
 - 3 MOUNT PANEL ON EQUIPMENT RACK. REFER TO DETAIL 4 DRAWING E-60.
 - 4 PROVIDE LIGHTING LCP, INCLUDING ALL CONDUIT AND WIRE, PER NOTE 4 AND SCHEDULE DRAWING E-64.



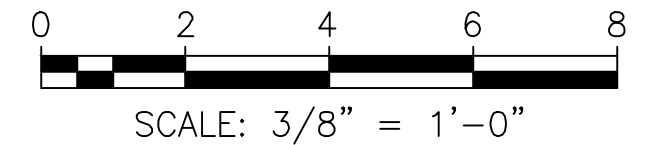
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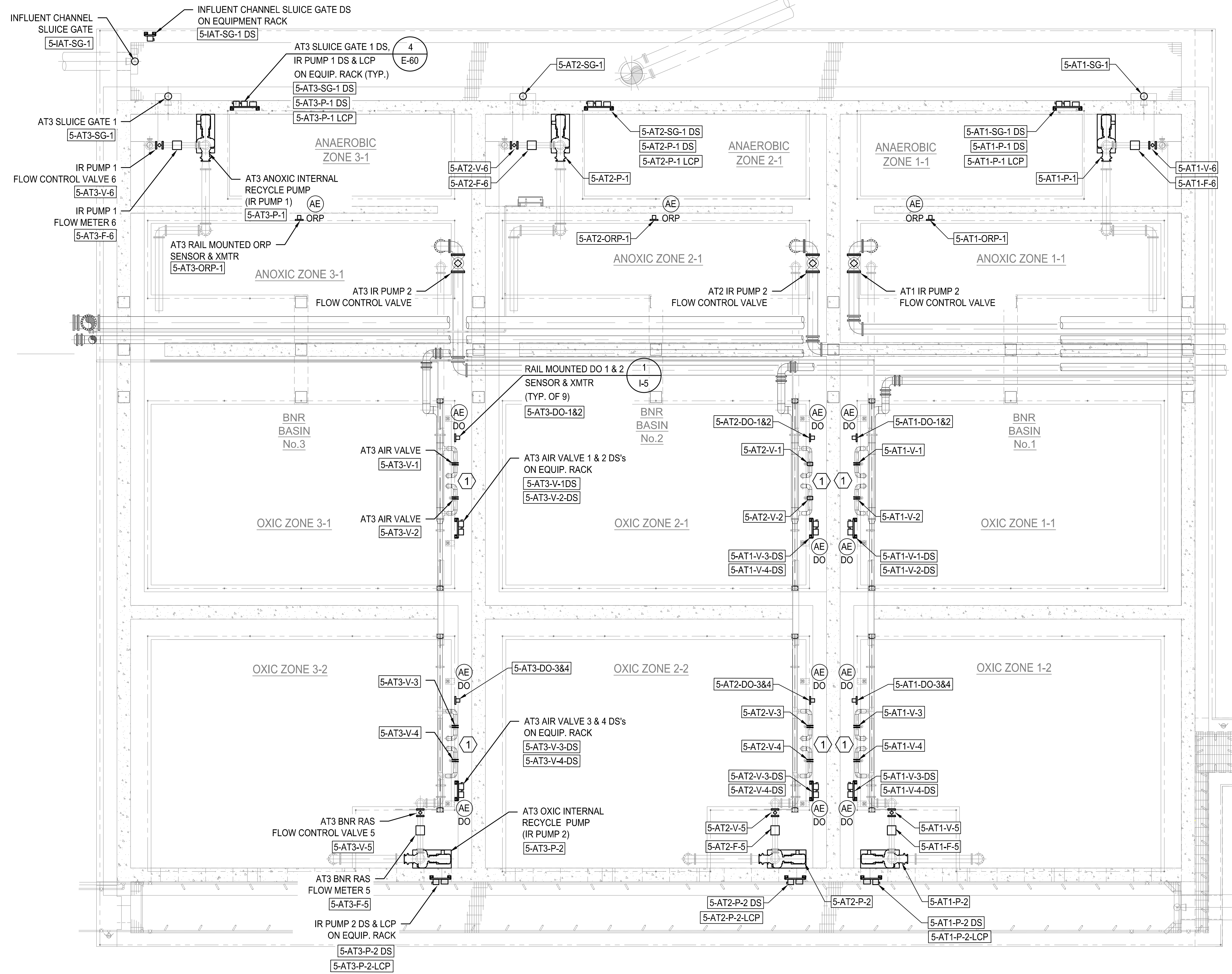
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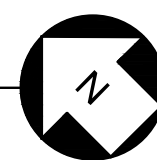
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
FINE SCREENINGS FACILITY
ELECTRICAL PLAN

SHEET NO.
4-E-1





OVERALL UPPER PLAN
SCALE: 1/8" = 1'-0"

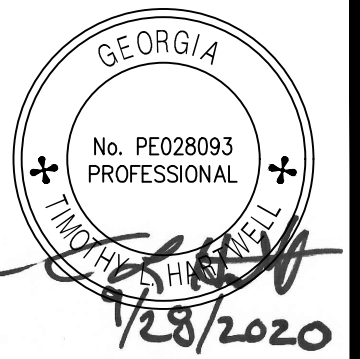


NOTES:

- REFER TO DETAILS FOR HANDRAIL MOUNTING.
- CONDUIT ROUTING SHALL BE ON STRUCTURAL SUPPORTS FOR PIPING. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO MEET NEC REQUIREMENTS.
- STRUCTURE IS PRECAST, CONDUIT AND SUPPORTS ARE EXPOSED. MOUNT ALL CONDUIT ON WALL AND MOUNT SUPPORTS MINIMUM 18" ABOVE HIGH WATER LEVEL. IF SUPPORTS ARE ABOVE WALKWAYS. MOUNT MIN 96" ABOVE WALKWAY. ANCHORS PENETRATIONS IN STRUCTURES ARE ONLY ALLOWED BY APPROVAL OF PRE-CAST MANUFACTURER.
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
- PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

KEY NOTES

- 1 AIR VALVES LOCATED ON AIR PIPE. REFER TO MECHANICAL DRAWING 5-M-11 FOR LOCATION.



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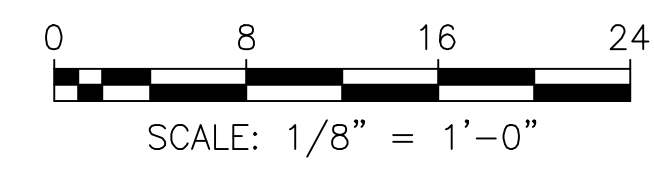
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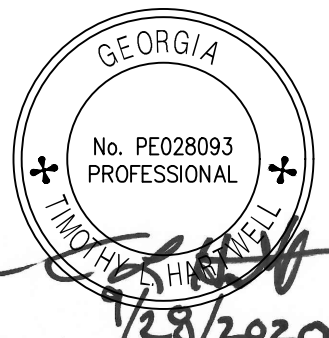
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
BNR BASINS 1-3
ELECTRICAL PLAN

SHEET NO.
5-E-1





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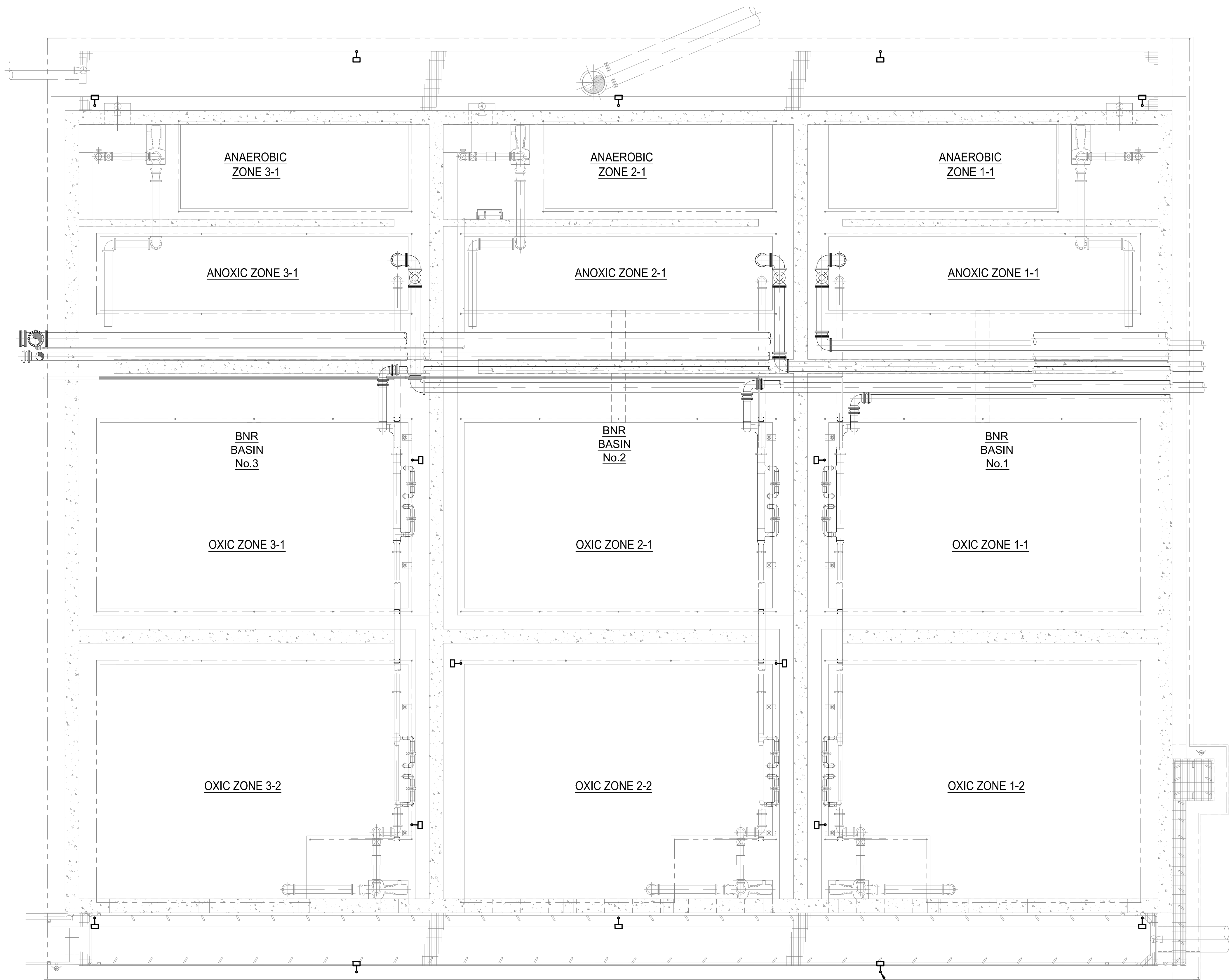
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 BNR BASINS 1-3
 LIGHTING PLAN

SHEET NO.
5-E-2

File Name: C:\PW_WORK\ATKINACA01\NICKY.TODD\DM535907\1005.01 - 5-E-2.DWG | Tab: 5-E-2 | Plotted: September 24, 2020 5:16pm



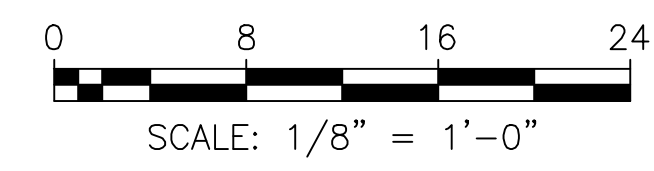
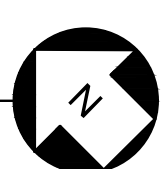
- NOTES:**
1. PROVIDE LIGHTING CONTROLS PER LIGHTING SCHEMATIC DRAWINGS.
 2. STRUCTURE IS PRECAST, CONDUIT AND SUPPORTS ARE EXPOSED. MOUNT ALL CONDUIT ON WALL AND MOUNT SUPPORTS MINIMUM 18" ABOVE HIGH WATER LEVEL. IF SUPPORTS ARE ABOVE WALKWAYS, MOUNT MIN 96" ABOVE WALKWAY. ANCHORS PENETRATIONS IN STRUCTURES ARE ONLY ALLOWED BY APPROVAL OF PRE-CAST MANUFACTURER.
 3. REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.

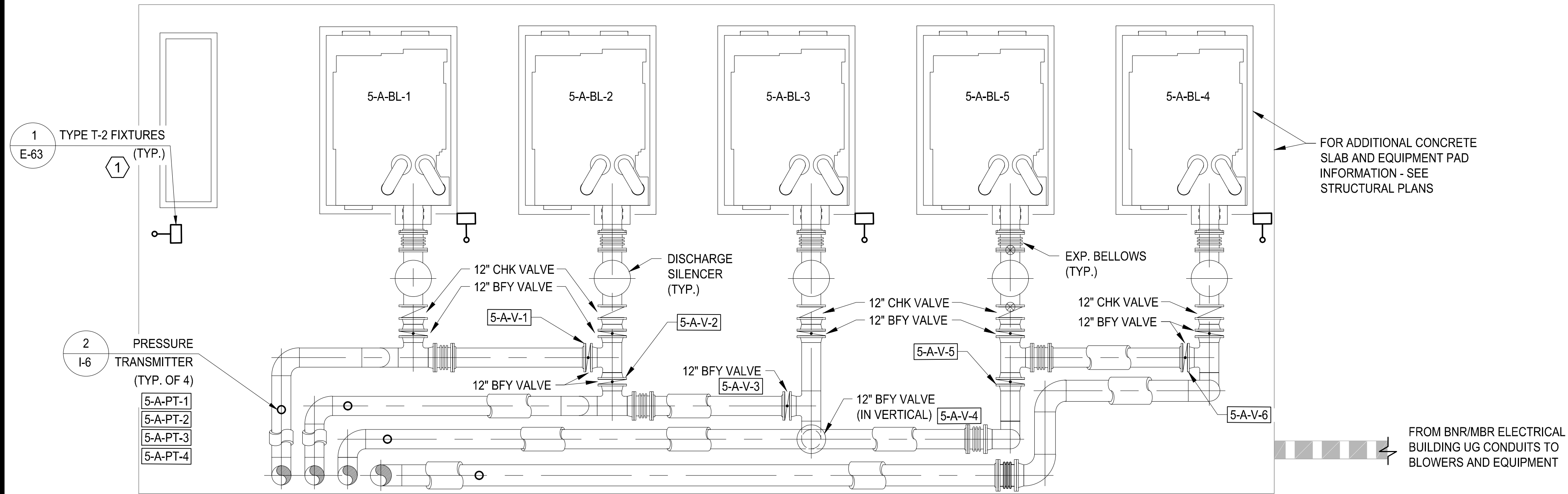
- KEY NOTES**
- ① PROVIDE LIGHTING LCP, INCLUDING ALL CONDUIT AND WIRE, PER NOTE 4 AND SCHEDULE DRAWING E-64.

TYPE T-1 FIXTURES (TYP.) ①

② E-63

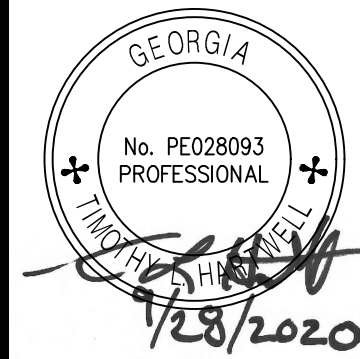
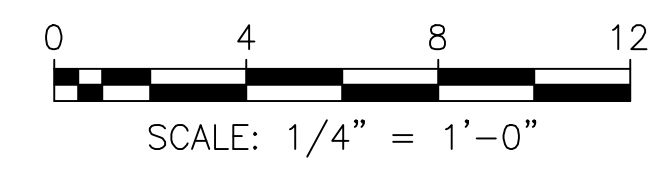
OVERALL UPPER PLAN
 SCALE: 1/8" = 1'-0"





- NOTES:**
- BLOWERS PROVIDED WITH VFDs AND DISCONNECTS.
 - PRESSURE TRANSMITTERS TAGS:
 - PIT-601
 - PIT-602
 - PIT-603
 - PIT-604
 REFER TO DRAWING 5-I-3
 - PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.
- KEY NOTES**
- PROVIDE LIGHTING LCP, INCLUDING ALL CONDUIT AND WIRE, PER NOTE 4 AND SCHEDULE DRAWING E-64.

PLAN
SCALE: 1/4" = 1'-0"



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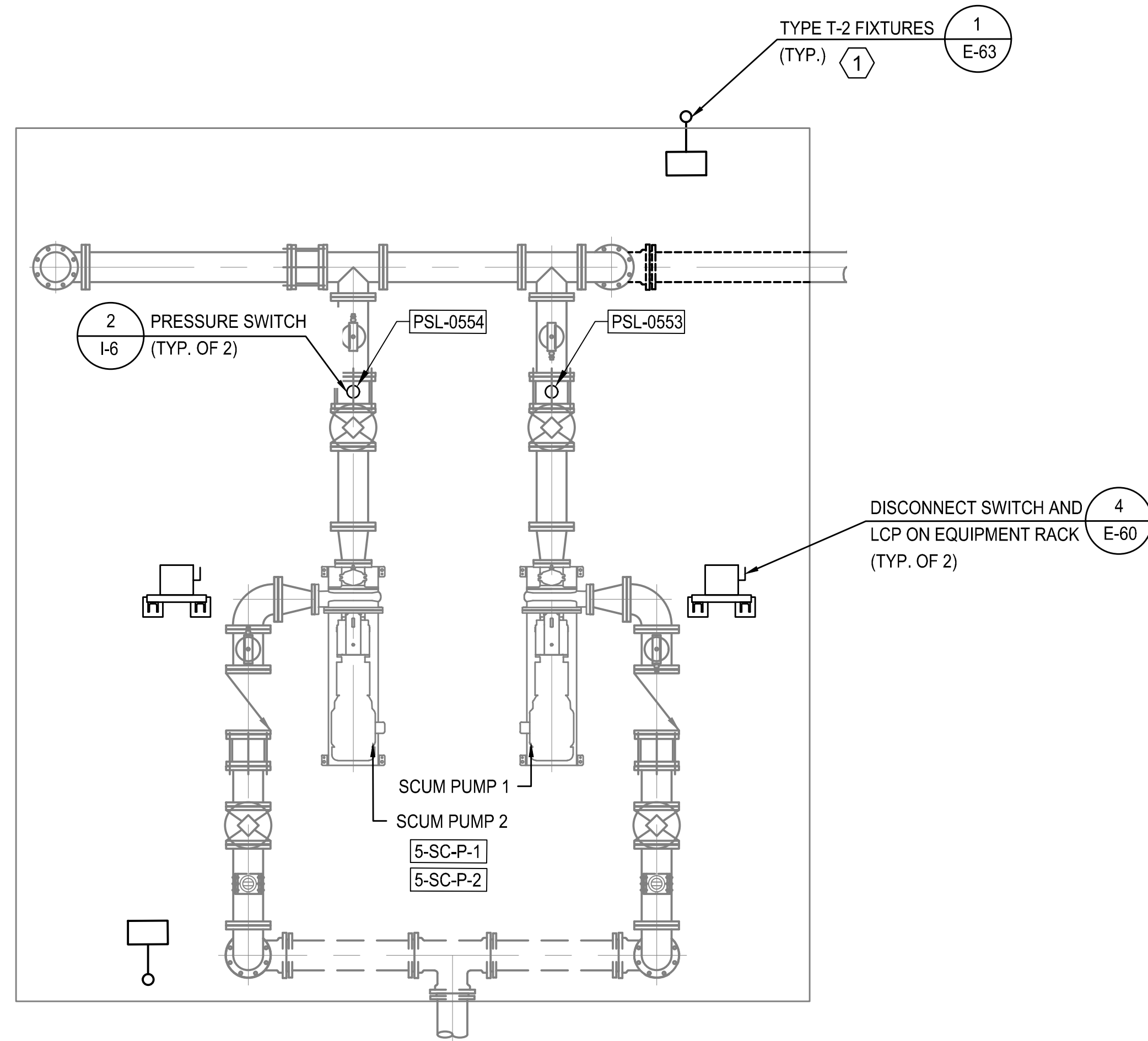
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

**BNR BLOWERS
ELECTRICAL PLAN**

SHEET NO.
5-E-3



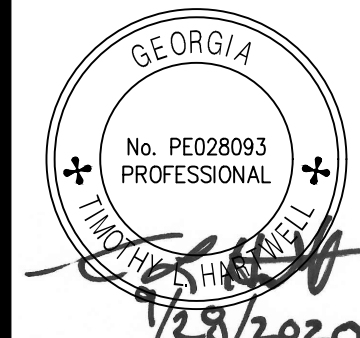
PLAN
SCALE: 3/8" = 1'-0"
ORIENTATION TBD

NOTES:

- REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.

KEY NOTES

- PROVIDE LIGHTING LCP, INCLUDING ALL CONDUIT AND WIRE, PER NOTE 4 AND SCHEDULE DRAWING E-64.



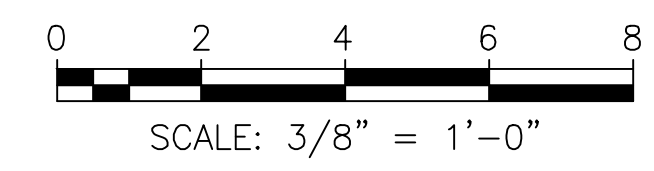
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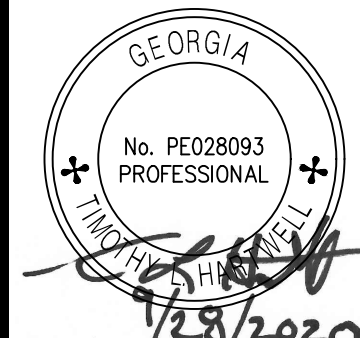
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	CHECKED BY: TLH				
	APPROVED BY: TLH				
	DATE: SEPTEMBER 2020				
	SCALE: AS SHOWN				

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**SCUM PUMPING
ELECTRICAL PLAN**

SHEET NO.
5-E-4





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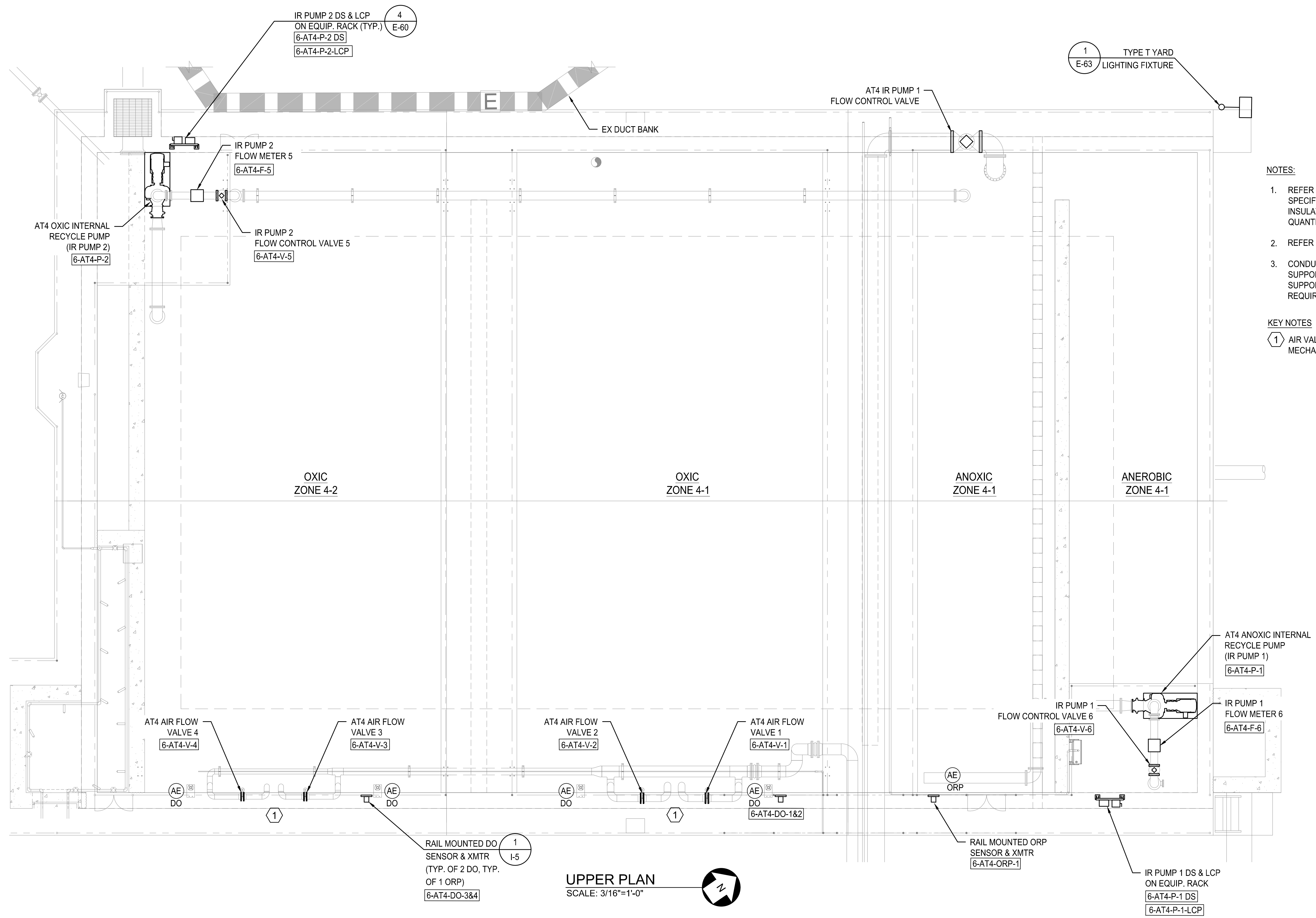
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100061831	RDWINJZ	NCTINJZ	TLH	SEPTEMBER 2020	AS SHOWN

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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

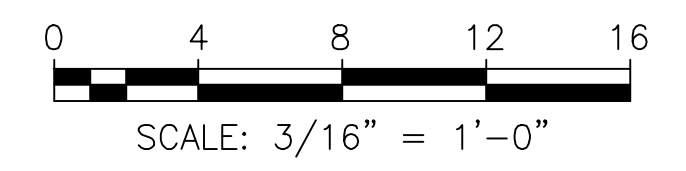
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 ELECTRICAL PLAN**

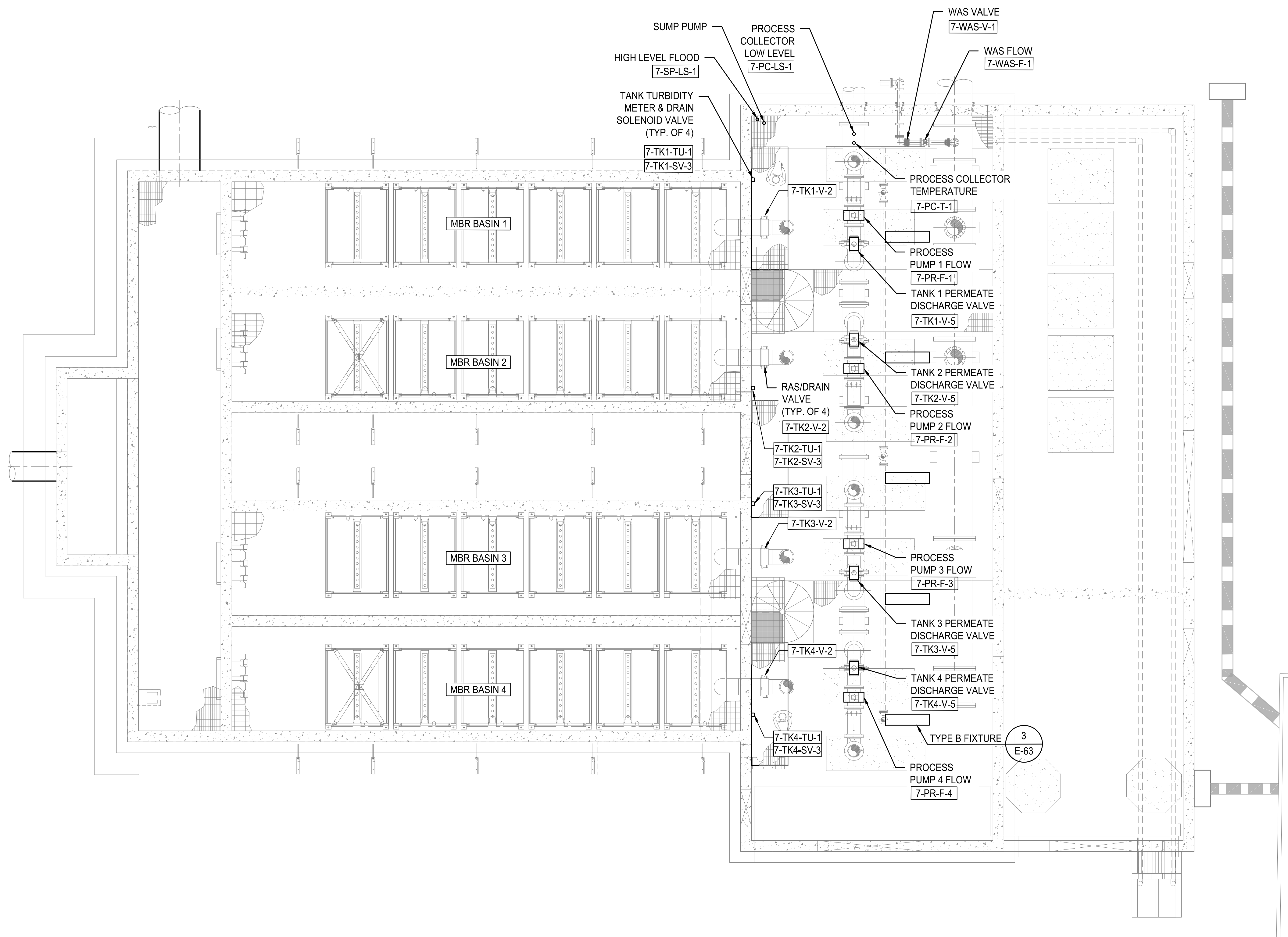
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6-E-1



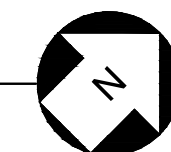
- NOTES:**
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
 - REFER TO DETAILS FOR HANDRAIL MOUNTING.
 - CONDUIT ROUTING SHALL BE ON STRUCTURAL SUPPORTS FOR PIPING. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO MEET NEC REQUIREMENTS.
- KEY NOTES**
- 1 AIR VALVES LOCATED ON AIR PIPE. REFER TO MECHANICAL DRAWING 6-M-3 FOR LOCATION.

UPPER PLAN
 SCALE: 3/16"=1'-0"



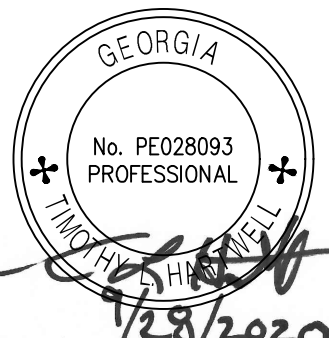


LOWER PLAN
SCALE: 3/16"=1'-0"



NOTES

- FOR LIGHT FIXTURE DETAILS REFER TO DRAWING E-63.
- STRUCTURE IS PRECAST. CONDUIT AND SUPPORTS ARE EXPOSED. MOUNT ALL CONDUIT ON WALL AND MOUNT SUPPORTS MINIMUM 18" ABOVE HIGH WATER LEVEL. IF SUPPORTS ARE ABOVE HIGH WALKWAYS. MOUNT MIN 96" ABOVE WALKWAY. ANCHORS PENETRATIONS IN STRUCTURES ARE ONLY ALLOWED BY APPROVAL OF PRE-CAST MANUFACTURER.
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
- REFER TO DETAILS FOR EQUIPMENT MOUNTING.
- REFER TO SUEZ MEMBRANE SYSTEM REQUIREMENTS FOR EQUIPMENT INSTALLATION.
- FIXTURES MOUNTED IN PIPE GALLERY PROVIDE 3-WAY SWITCHES AT TOP OF STAIRS.
- PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.



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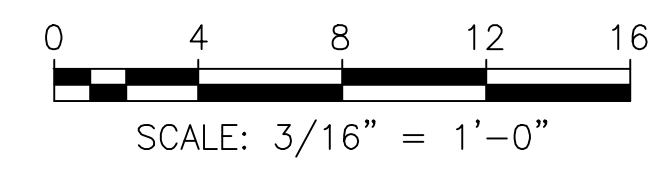
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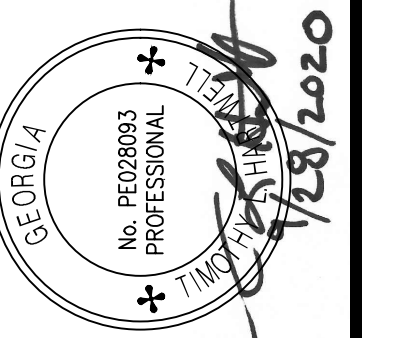
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REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**MEMBRANE FACILITY
LOWER ELECTRICAL PLAN**

SHEET NO.
7-E-1





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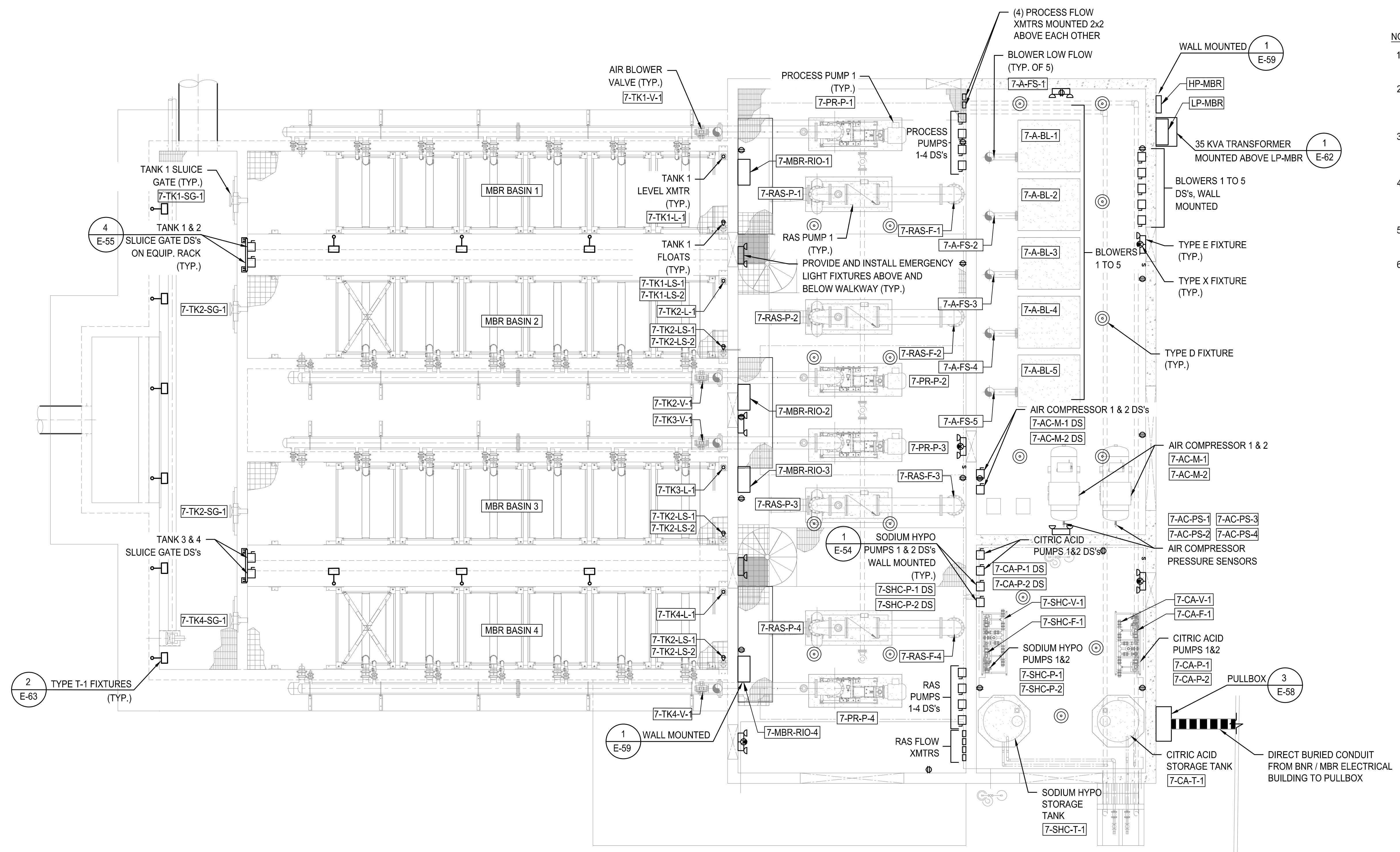
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**MEMBRANE FACILITY
UPPER ELECTRICAL PLAN**

SHEET NO.
7-E-2

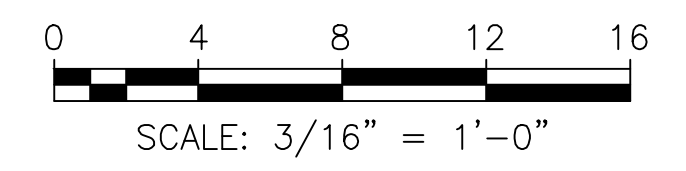
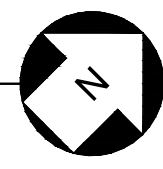
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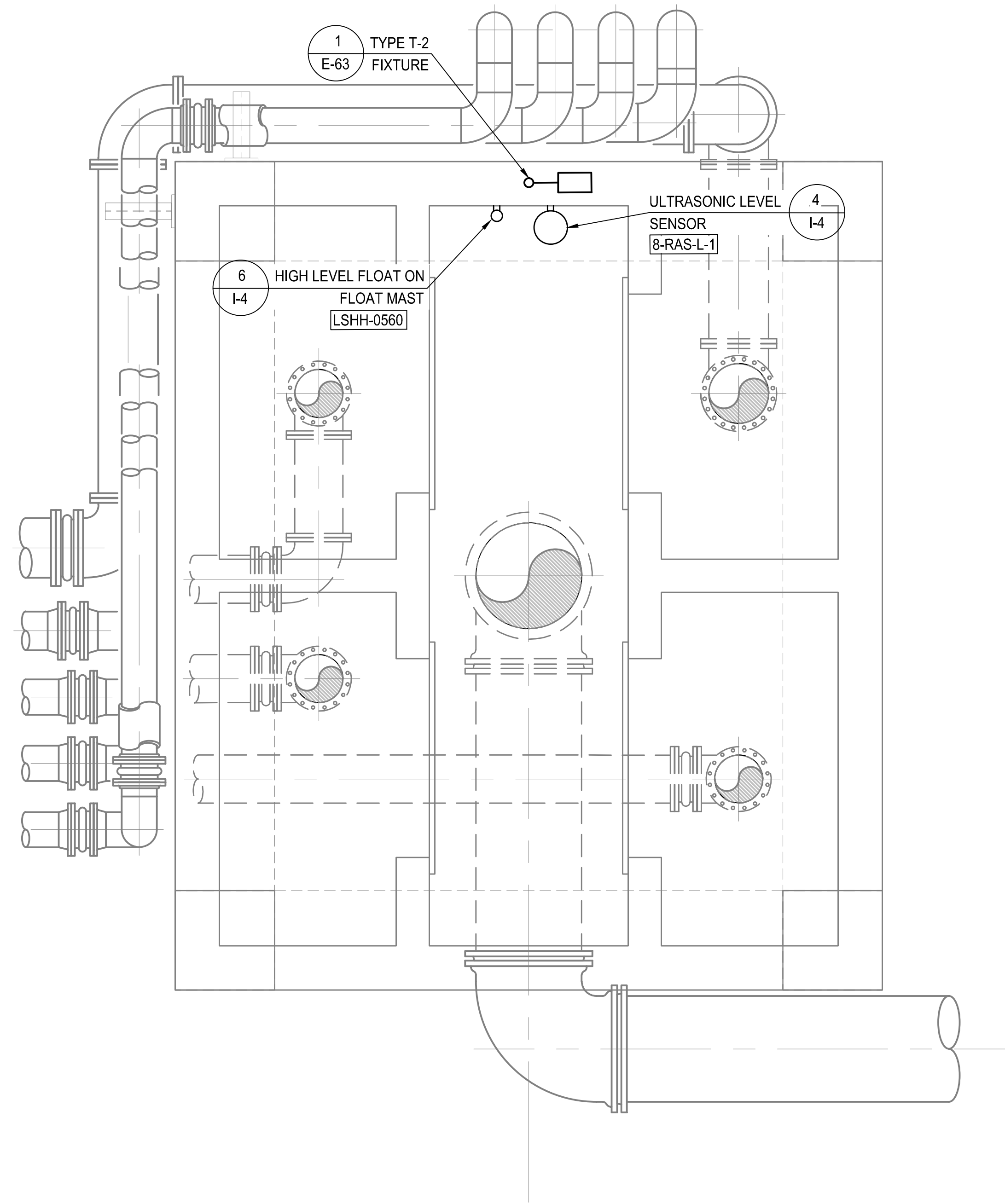


NOTES

- FOR LIGHT FIXTURE DETAILS REFER TO DRAWING E-63.
- RIO PANELS SHALL BE LOCATED ON THE UPPER LEVEL BELOW THE WALKOVER LANDING.
- PROVIDE 3-WAY TOGGLE SWITCHES AT EACH DOOR RELATED TO THE PROCESS AREA FOR LIGHTING.
- PROVIDE 3-WAY TOGGLE SWITCH AT ENTRANCE TO MBR BASIN FOR T-1 LIGHTING.
- REFER TO DRAWING E-64 FOR LIGHTING NOTES.
- HEATING AND VENTILATION EQUIPMENT NOT SHOWN, REFER TO HVAC DRAWINGS. PROVIDE AND INSTALL ALL EQUIPMENT PER HVAC DRAWINGS AND SPECIFICATIONS. PROVIDE AND INSTALL ALL CONDUIT, WIRE, FUSED DISCONNECTS, OVERCURRENT PROTECTION, THERMOSTATS, AND OTHER EQUIPMENT FOR A COMPLETE SYSTEM.

UPPER PLAN
SCALE: 3/16"=1'-0"

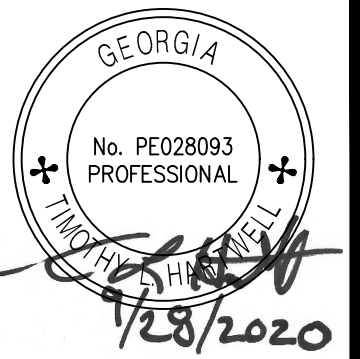




PLAN
SCALE: 3/8" = 1'-0"

NOTES :

1. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
2. PROVIDE WALL PIPES PER STANDARD DETAIL 400 FOR RAS SPLITTER BOX PIPE PENETRATIONS.
3. REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
4. PROVIDE TOGGLE SWITCH AT INGRESS FOR FIXTURE OPERATION.



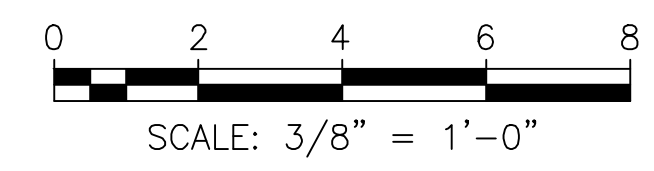
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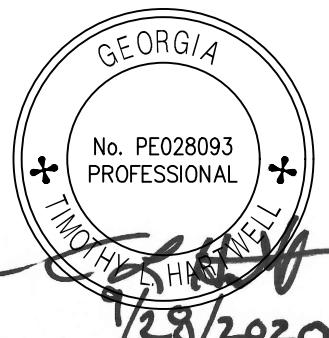
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**RAS SPLITTER BOX
ELECTRICAL PLAN**

SHEET NO.
8-E-1





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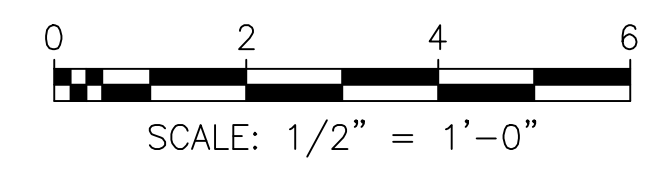
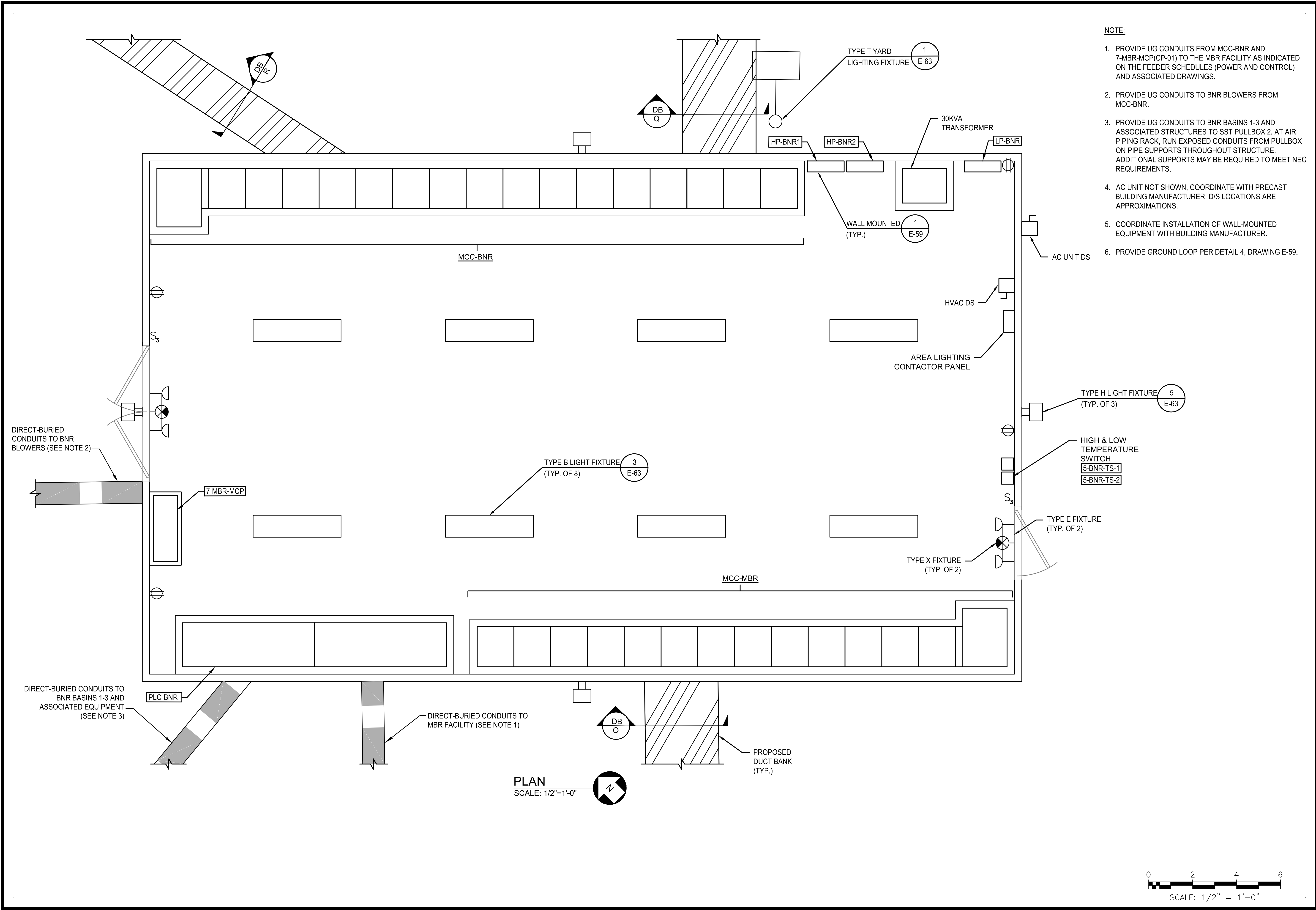
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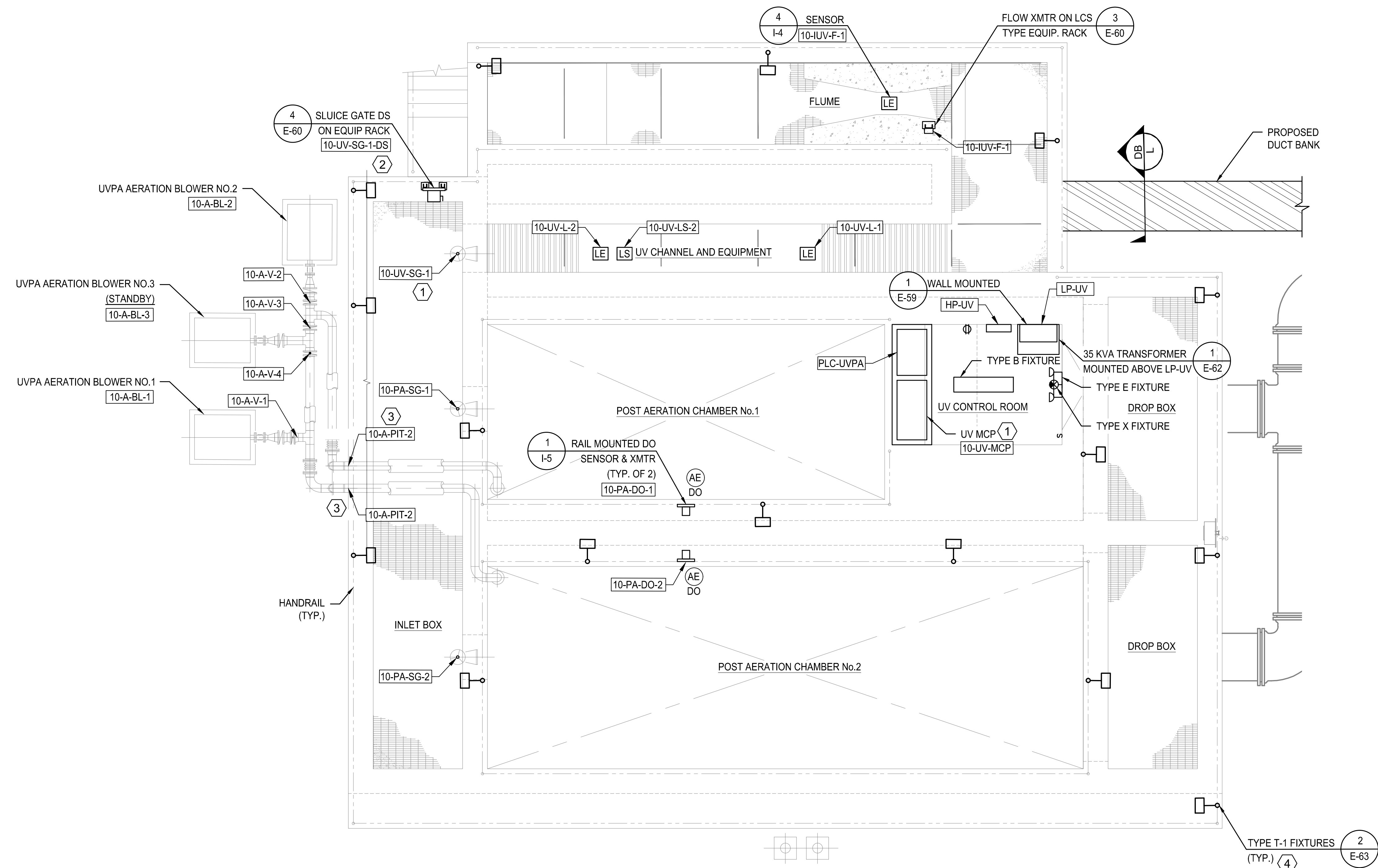
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
BNR/MBR
ELECTRICAL BUILDING PLAN

SHEET NO.
9-E-1

- NOTE:
1. PROVIDE UG CONDUITS FROM MCC-BNR AND 7-MBR-MCP(CP-01) TO THE MBR FACILITY AS INDICATED ON THE FEEDER SCHEDULES (POWER AND CONTROL) AND ASSOCIATED DRAWINGS.
 2. PROVIDE UG CONDUITS TO BNR BLOWERS FROM MCC-BNR.
 3. PROVIDE UG CONDUITS TO BNR BASINS 1-3 AND ASSOCIATED STRUCTURES TO SST PULLBOX 2. AT AIR PIPING RACK, RUN EXPOSED CONDUITS FROM PULLBOX ON PIPE SUPPORTS THROUGHOUT STRUCTURE. ADDITIONAL SUPPORTS MAY BE REQUIRED TO MEET NEC REQUIREMENTS.
 4. AC UNIT NOT SHOWN, COORDINATE WITH PRECAST BUILDING MANUFACTURER. D/S LOCATIONS ARE APPROXIMATIONS.
 5. COORDINATE INSTALLATION OF WALL-MOUNTED EQUIPMENT WITH BUILDING MANUFACTURER.
 6. PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

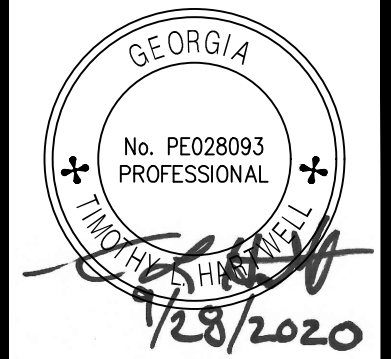
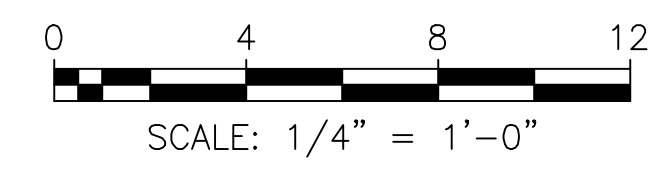




UPPER PLAN
SCALE: 1/4"=1'-0"

- NOTES**
- INSTALL CONDUIT SUPPORT ATTACHED ALONG THE EDGE OF THE WALKWAY. REFER TO DRAWING E-45 DETAIL 5. SUBMIT LOADING CALCULATIONS FOR CONDUIT SUPPORTS PRIOR TO FABRICATION.
 - STRUCTURE IS PRECAST, CONDUIT AND SUPPORTS ARE EXPOSED. MOUNT ALL CONDUIT ON WALL AND MOUNT SUPPORTS MINIMUM 18" ABOVE HIGH WATER LEVEL. IF SUPPORTS ARE ABOVE WALKWAYS, MOUNT MIN 96" ABOVE WALKWAY. ANCHORS PENETRATIONS IN STRUCTURES ARE ONLY ALLOWED BY APPROVAL OF PRE-CAST MANUFACTURER.
 - REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
 - HVAC EQUIPMENT TO BE PROVIDED BY BUILDING MANUFACTURER. PROVIDE ALL CONDUIT, WIRING, AND DISCONNECTING MEANS, THERMOSTATS, AND OVERCURRENT PROTECTION AS REQUIRED.
 - PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

- KEY NOTES**
- UV CHANNEL & EQUIPMENT (MCP W/ PLC & OIT, POWER PANEL, LEVEL XMTR, LEVEL SWITCH, & SLUICE GATE TO BE PROVIDED BY UV SYSTEM SUPPLIER. COORDINATE WITH UV SYSTEM SUPPLIER FOR INSTALLATION REQUIREMENTS.
 - MOUNT PANEL ON EQUIPMENT RACK.
 - AIR PRESSURE TRANSMITTER ON AIR PIPE. REFER TO MECHANICAL DRAWINGS FOR LOCATION.
 - PROVIDE LIGHT SWITCH IN BUILDING FOR T-1 LIGHTS.



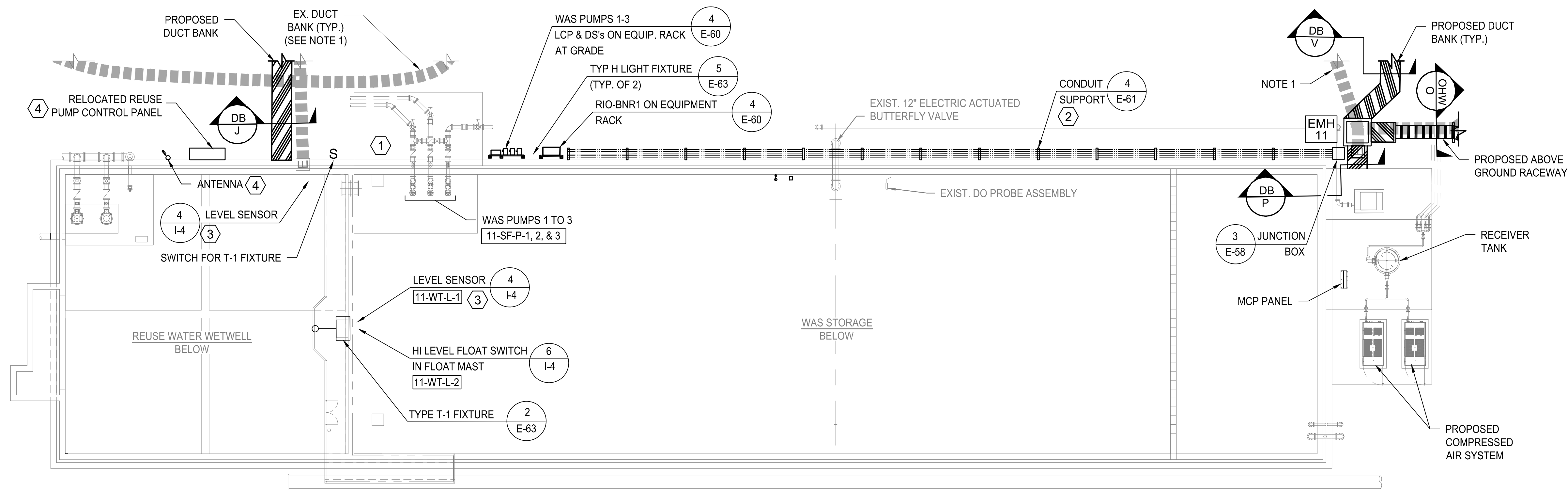
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
UVPA FACILITY
ELECTRICAL PLAN

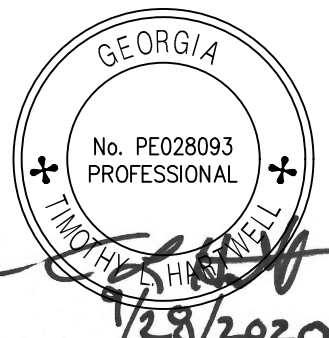
SHEET NO.
10-E-1



REUSE WATER WETWELL & WAS STORAGE UPPER PLAN
 SCALE: 3/32" = 1'-0"

- NOTE:
- EXISTING DUCTBANK TO BE REMOVED OR ABANDONED IN PLACE. CONTRACTOR SHALL LOCATE EXISTING CONDUCTORS AND SUBMIT EXISTING DB LAYOUT AND FEEDER STUDY PRIOR TO DEMOLITION AND NEW INSTALLATION.
 - DEMOLISH ALL EXISTING CONDUITS, RACEWAYS, ELECTRICAL EQUIPMENT, SUPPORTS, AND CONDUCTORS ON EXISTING STRUCTURE.
 - REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.

- KEY NOTES
- REFER TO MECHANICAL DRAWINGS FOR SLUDGE BYPASS FLOW METER LOCATION.
 - ROUTE CONDUITS ON WALL TO SLUDGE PUMP LCP & DISCONNECTS. REFER TO SCHEMATIC ON DRAWING E-44.
 - PROVIDE AND INSTALL NEW ULTRASONIC LEVEL TRANSMITTER IN LOCATION OF EXISTING. PROVIDE NEW MOUNTING HARDWARE.
 - MOUNT RELOCATED REUSE PUMP CONTROL PANEL ON NEW CONCRETE HOUSE KEEPING PAD. APPROXIMATE DIMENSION OF CONTROL PANEL IS 72"HX72"WX24"D. RELOCATE ANTENNA FOR COMMUNICATIONS. REFER TO DRAWING I-2 FOR ADDITIONAL NOTES.



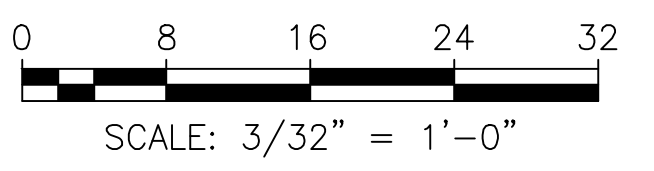
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**WAS HOLDING & REUSE PS
 ELECTRICAL PLAN**



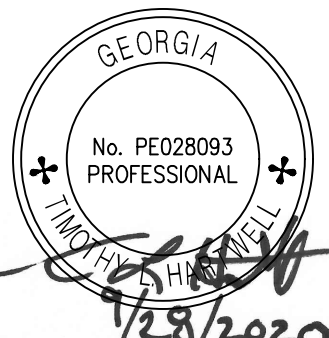
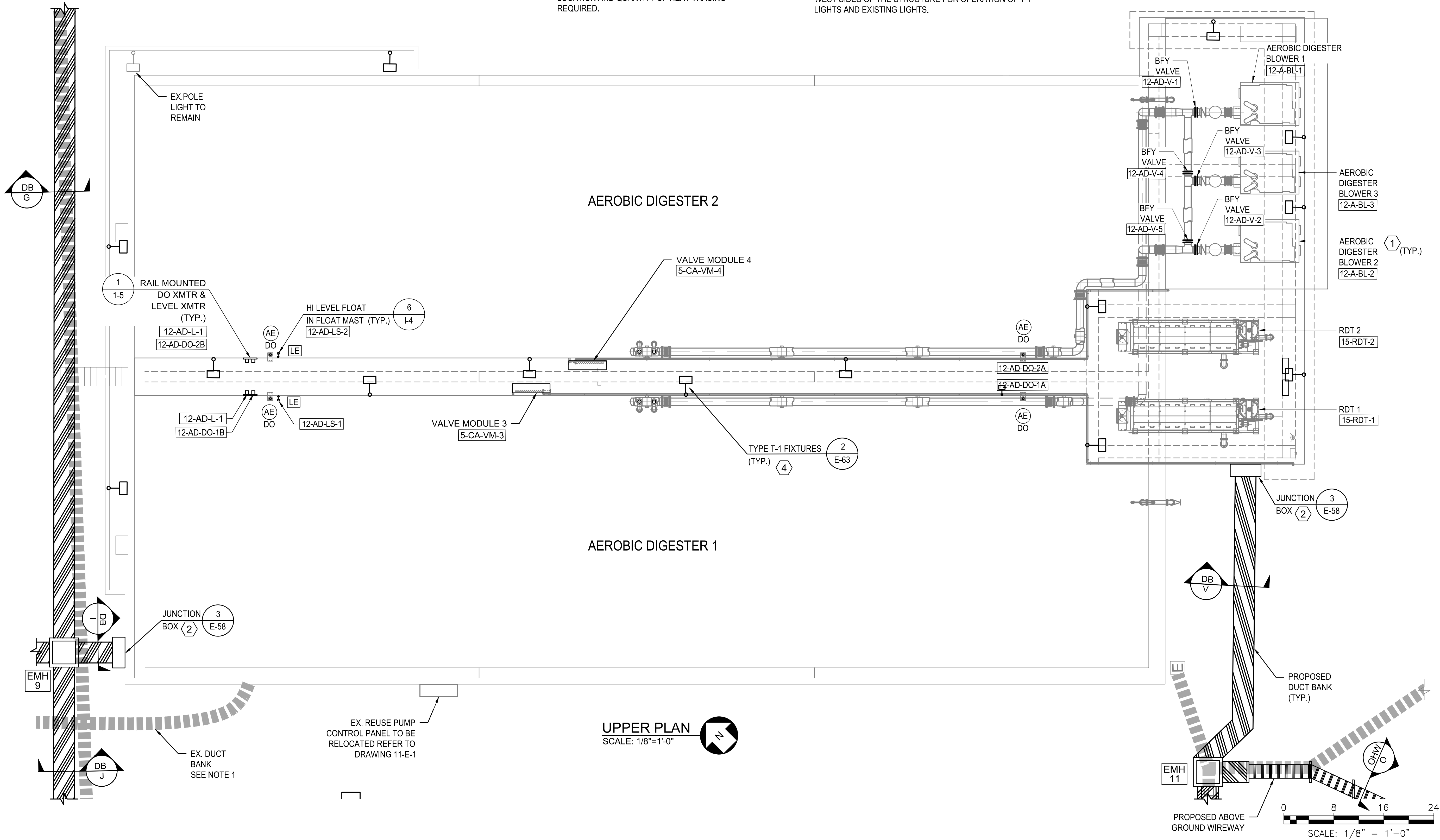
SHEET NO.
11-E-1

NOTE:

- EXISTING DUCTBANK TO BE REMOVED OR ABANDONED IN PLACE. CONTRACTOR SHALL LOCATE EXISTING CONDUCTORS AND SUBMIT EXISTING DB LAYOUT AND FEEDER STUDY PRIOR TO DEMOLITION AND NEW INSTALLATION.
- DEMOLISH ALL EXISTING CONDUITS, RACEWAYS, ELECTRICAL EQUIPMENT, SUPPORTS, AND CONDUCTORS ON EXISTING STRUCTURES, EXCEPT LIGHTING CIRCUITS. RECONNECT LIGHTING TO NEW CIRCUITS.
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.

KEY NOTES:

- BLOWER WITH INTEGRATED CIRCUIT BREAKER, VFD, PRESSURE SENSOR, AND ETHERNET CONNECTION.
- CONDUITS ARE BELOW GROUND AND SHALL BE STUBBED UP TO THE JUNCTION BOX INSTALLED ON THE RAISED BASIN/PLATFORM. CONDUITS TO CONTINUE TO EQUIPMENT AND SHALL BE ROUTED ALONG HANDRAILS AND THE SIDE OF BASIN/PLATFORM TO DEVICES WITHOUT IMPEDING THE WALKWAYS.
- CONTRACTOR TO CHECK EXISTING CONDUIT CIRCUITS FOR EXISTING LIGHTS AND VERIFY THEY ARE OPERATIONAL FOR REUSE.
- PROVIDE 3-WAY SWITCHES AT BOTH THE EAST AND WEST SIDES OF THE STRUCTURE FOR OPERATION OF T-1 LIGHTS AND EXISTING LIGHTS.



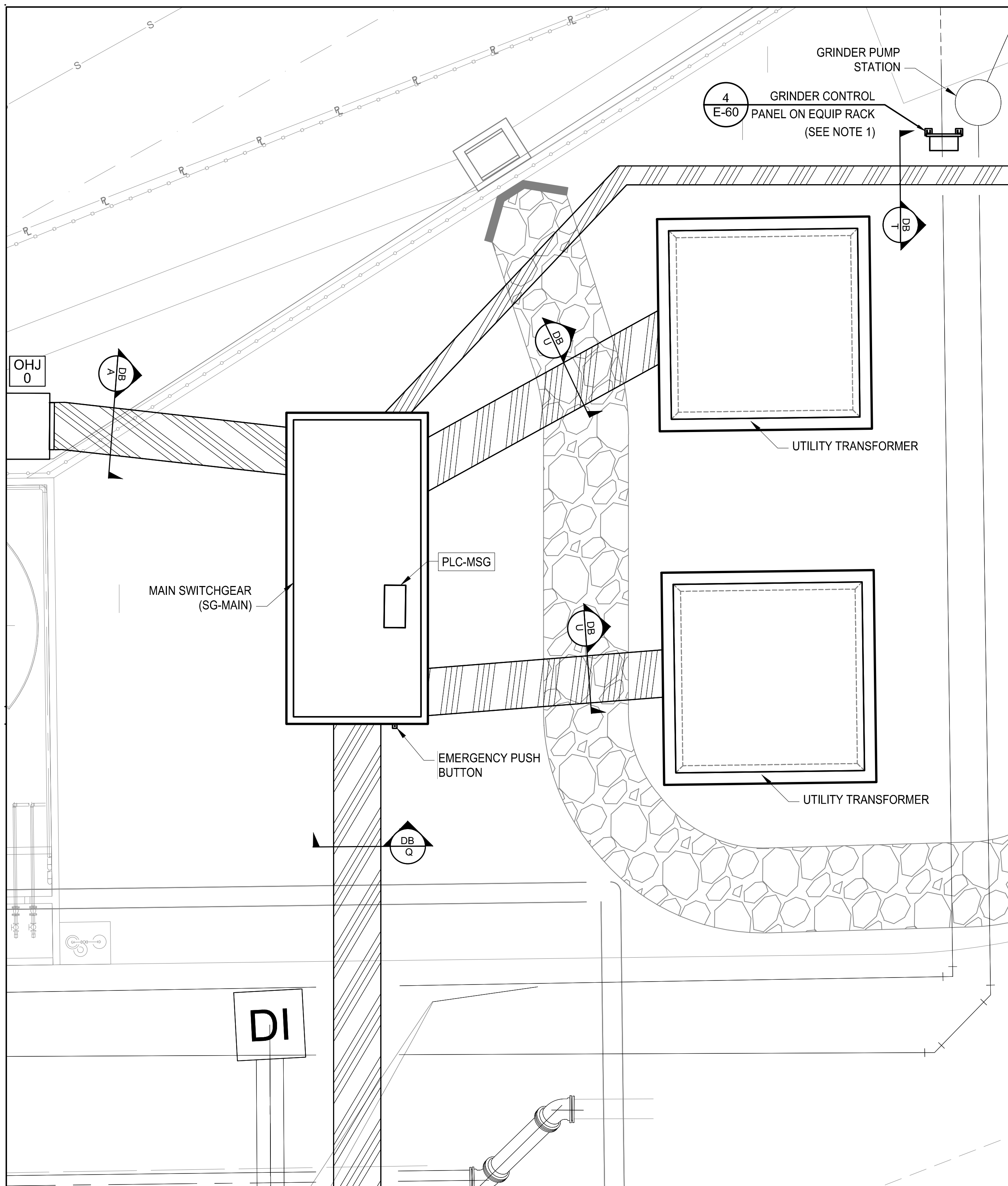
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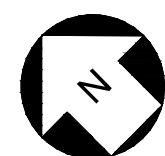
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
AEROBIC DIGESTER ELECTRICAL PLAN

SHEET NO.
12-E-1



SWITCHGEAR SG-MAIN ELECTRICAL PLAN
SCALE: 1"=5'



SUGGESTED CONSTRUCTION PHASING FOR CONNECTIONS OF POWER DISTRIBUTION:

ELECTRICAL PHASE A FOR CONSTRUCTION PHASE 1 TO 2:

THE INTENT OF ELECTRICAL PHASE A IS TO PROVIDE THE ELECTRICAL EQUIPMENT REQUIRED FOR THE IMPLEMENTATION OF THE PROCESS PHASES 1 THROUGH 2. WORK IN ELECTRICAL PHASE A SHALL BE COORDINATED WITH THE PROCESS CONSTRUCTION SCHEDULE AND WORK DEFINED IN SPECIFICATION SECTION 01015.

NEW SERVICE AND MAIN SWITCHGEAR (SG-MAIN):

1. COORDINATION WITH GA POWER FOR NEW 480/277VOLT, 3 PHASE SERVICE INTO MAIN SWITCHGEAR
2. INSTALLATION OF MAIN SWITCHGEAR (SG-MAIN)
3. INSTALLATION OF ODOR CONTROL SWITCHGEAR (SG-OC)
4. INSTALLATION OF FEEDERS FROM SG-MAIN TO SG-OC
5. INSTALLATION OF FEEDER TO HEADWORKS GRIT SYSTEM
6. INSTALLATION OF FEEDERS FROM SG-MAIN TO ALL ASSOCIATED EQUIPMENT
7. INSTALLATION OF NEW SECONDARY FEEDERS FROM UTILITY TRANSFORMER
8. ENERGIZE NEW GEORGIA POWER SERVICE TO SG-MAIN
9. ENERGIZE SG-OC, MCC-BNR, AND MCC-MBR
10. ENERGIZE ADMINISTRATION BUILDING
11. ENERGIZE HEADWORKS GRIT SYSTEM

ODOR CONTROL SWITCHGEAR (SG-OC):

1. INSTALLATION OF FEEDER TO EX. REUSE PUMP CONTROL PANEL
2. ENERGIZE EX. REUSE PUMP CONTROL PANEL
3. INSTALLATION OF NEW FEEDER TO /EX. SWITCHBOARD/MCC-A (NOTE: EXISTING GEORGIA POWER SERVICE TO REMAIN ENERGIZED TO EX. SWITCHBOARD UNTIL SG-OC IS ENERGIZED AND NEW FEEDER IS INSTALLED. COORDINATE WITH GEORGIA POWER FOR REMOVAL OF EXISTING SERVICE.
4. ENERGIZE EX. SWITCHBOARD/MCC-A WITH NEW FEEDER. DEMOLISH EXISTING GEORGIA POWER SERVICE.

MODIFICATIONS TO EX. MCC-A:

1. INSTALLATION OF FEEDER TO UVPA FACILITY AND DRAIN PS 1
2. INSTALLATION OF NEW CIRCUIT BREAKER FOR UVPA FACILITY ENERGIZE UVPA FACILITY
3. DEMOLITION OF BUCKETS AND FEEDERS AS COORDINATED WITH CONSTRUCTION

MODIFICATIONS TO EX. MCC-H:

1. INSTALLATION OF FEEDER TO BNR 4 RECYCLE PUMPS
2. INSTALLATION OF VFDS FOR BNR 4 RECYCLE PUMPS
3. REPURPOSE EX. SBR BLOWER RVSS TO WAS BLOWERS
4. DEMOLITION OF BUCKETS AND FEEDERS AS COORDINATED WITH CONSTRUCTION

MOTOR CONTROL CENTERS AND PANELBOARDS:

1. INSTALLATION OF MCC-BNR AND ASSOCIATED PANELS
2. INSTALLATION OF MCC-MBR AND ASSOCIATED PANELS
3. INSTALLATION OF HP-UV PANEL IN UV ELECTRICAL BUILDING
4. INSTALLATION OF ALL FEEDERS FROM MCC-BNR, MCC-MBR, AND HP-UV

AT THE COMPLETION OF ELECTRICAL PHASE A, ALL ELECTRICAL WORK FOR PLANT PROCESS PHASES 1 AND 2 SHOULD BE COMPLETE AND TESTED, PRIOR TO WORK COMMENCING ON ELECTRICAL PHASE B.

ELECTRICAL PHASE B FOR CONSTRUCTION PHASE 3 AND 4:

THE INTENT OF ELECTRICAL PHASE B IS TO PROVIDE THE ELECTRICAL EQUIPMENT REQUIRED FOR THE IMPLEMENTATION OF THE PROCESS PHASES 3 AND 4. WORK IN ELECTRICAL PHASE B SHALL BE COORDINATED WITH THE PROCESS CONSTRUCTION SCHEDULE AND WORK DEFINED IN SPECIFICATION SECTION 01015.

ODOR CONTROL SWITCHGEAR (SG-OC):

1. INSTALLATION OF FEEDER TO MCC-DW
2. ENERGIZE MCC-DW

MOTOR CONTROL CENTERS AND PANELBOARDS:

1. DEMOLITION OF EXISTING MCC-1.
2. INSTALLATION OF MCC-DW AND ASSOCIATED PANELS
3. INSTALLATION OF ALL FEEDERS FROM MCC-DW

AT THE COMPLETION OF ELECTRICAL PHASE B, ALL ELECTRICAL WORK FOR PLANT PROCESS PHASES 3 AND 4 SHOULD BE COMPLETE AND TESTED, PRIOR TO WORK COMMENCING ON ELECTRICAL PHASE C.

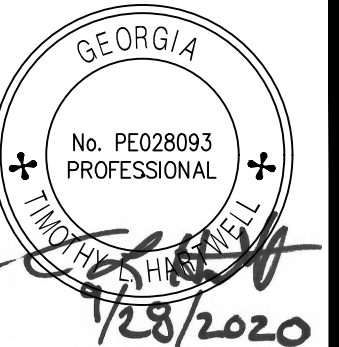
ELECTRICAL PHASE C FINAL DEMOLITION AND REMOVAL OF UNUSED CONDUCTORS:

PRIOR TO PROJECT SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL REMOVED ALL UNUSED CONDUCTORS, BOTH POWER AND CONTROL, FROM EXISTING DUCTBANK; AND CONCEALED AND EXPOSED CONDUITS/RACEWAYS. ALL EMPTY EXISTING EXPOSED CONDUITS SHALL BE REMOVED.

FOR TRANSFER FROM EXISTING SERVICE TO NEW FEEDER TO MCC-A FROM SG-OC. MAXIMUM DOWNTIME SHALL BE 8 HOURS. CONTRACTOR SHALL PROVIDE TEMPORARY GENERATOR DURING THIS PERIOD FOR POWER TO MCC-A. EXISTING GENERATOR WILL BE SECONDARY (EMERGENCY) POWER SOURCE.

NOTE:

1. REFER TO NOTE 4, DRAWING E-11.
2. ROUTING OF CONDUITS UNDER SWITCHGEAR SHALL BE COORDINATED BY THE CONTRACTOR. REFER TO NOTE 34, DRAWING E-2.
3. PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.
4. PROVIDE GROUNDING ELECTRODE SYSTEMS PER DETAIL 2, DRAWING E-59.



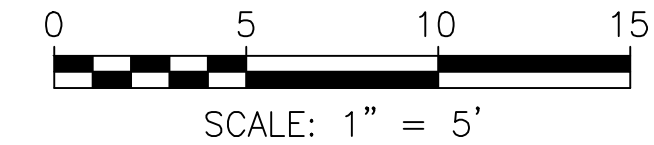
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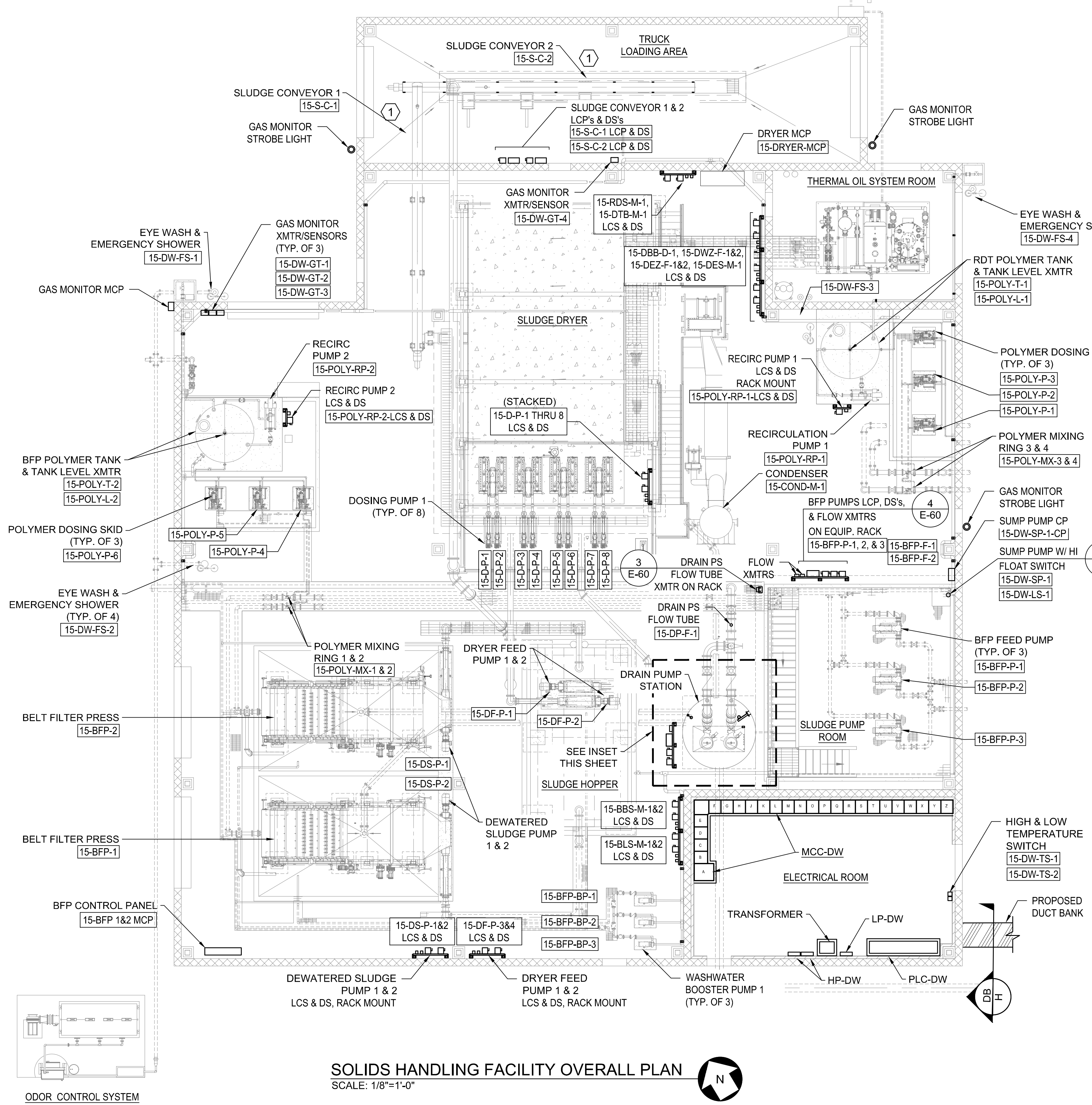
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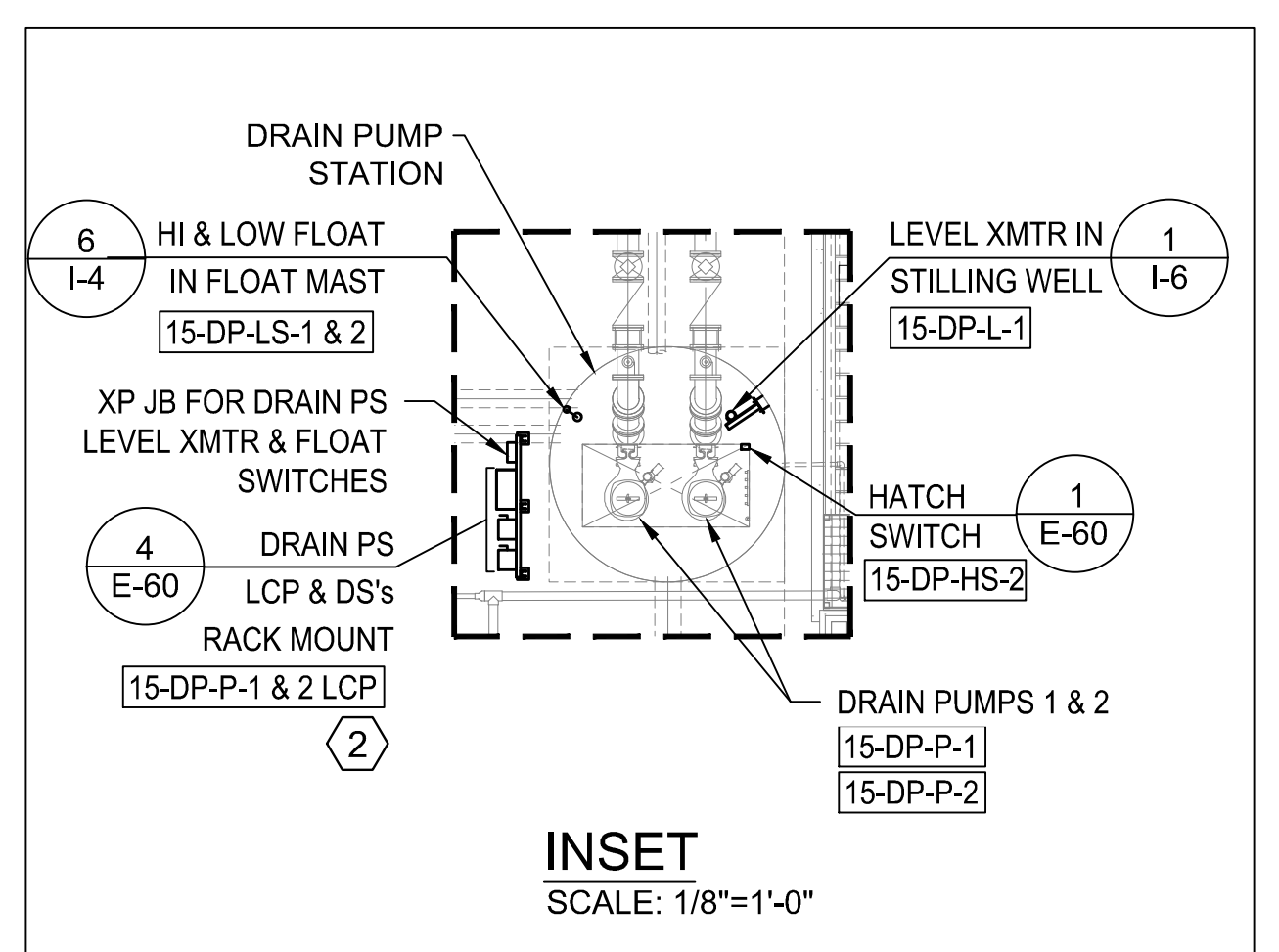
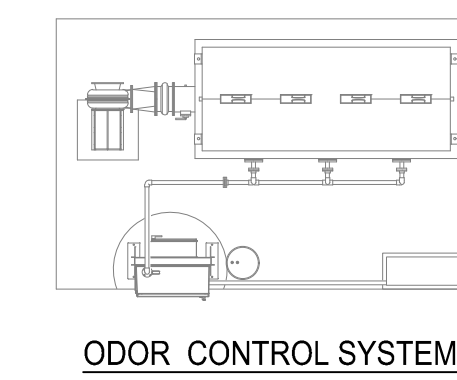
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WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
SWITCHGEAR SG-MAIN ELECTRICAL PLAN

SHEET NO.
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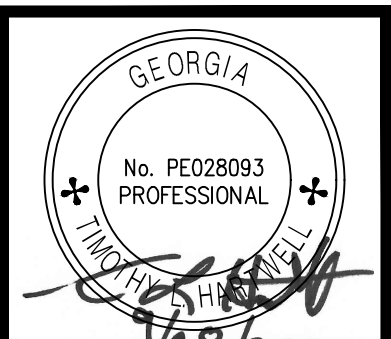




SOLIDS HANDLING FACILITY OVERALL PLAN
SCALE: 1/8"=1'-0"



- NOTES:**
- ALL PANELS ARE WALL MOUNTED UNLESS OTHERWISE NOTED.
 - REFER TO DRAWING 15-E-2 FOR LIGHTING AND POWER.
 - REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
 - COORDINATE WITH DRYER MANUFACTURER FOR ELECTRICAL REQUIREMENTS. PROVIDE ALL CONDUIT, WIRE AND EQUIPMENT FOR A COMPLETE SYSTEM.
 - AC UNIT IN ELECTRICAL ROOM AND HEATING AND VENTILATION IN PROCESS AREA NOT SHOWN. REFER TO HVAC DRAWINGS. PROVIDE AND INSTALL ALL EQUIPMENT PER HVAC DRAWINGS AND SPECIFICATIONS. PROVIDE AND INSTALL ALL CONDUIT, WIRE, FUSED DISCONNECTS, OVERCURRENT PROTECTION, THERMOSTATS, AND OTHER EQUIPMENT FOR A COMPLETE SYSTEM.
 - PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.
- KEY NOTES**
- ZERO SPEED AND EMERGENCY PULL CORD TO BE PROVIDED WITH CONVEYOR, COORDINATE WITH SUPPLIER.
 - WETWELL IS A CLASS 1, DIV. 1 AREA.



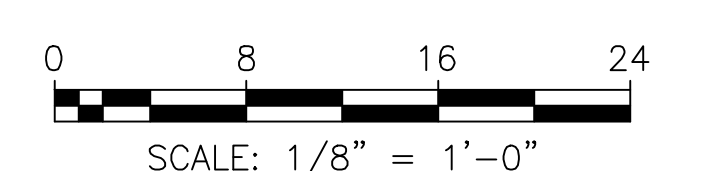
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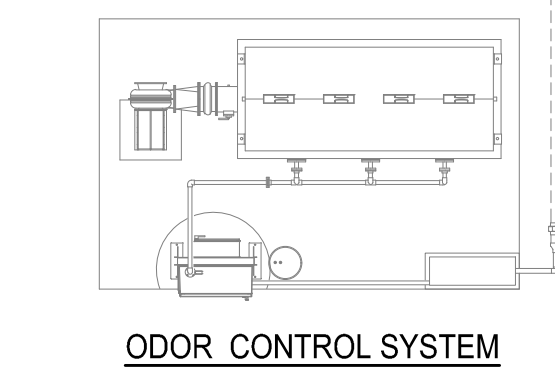
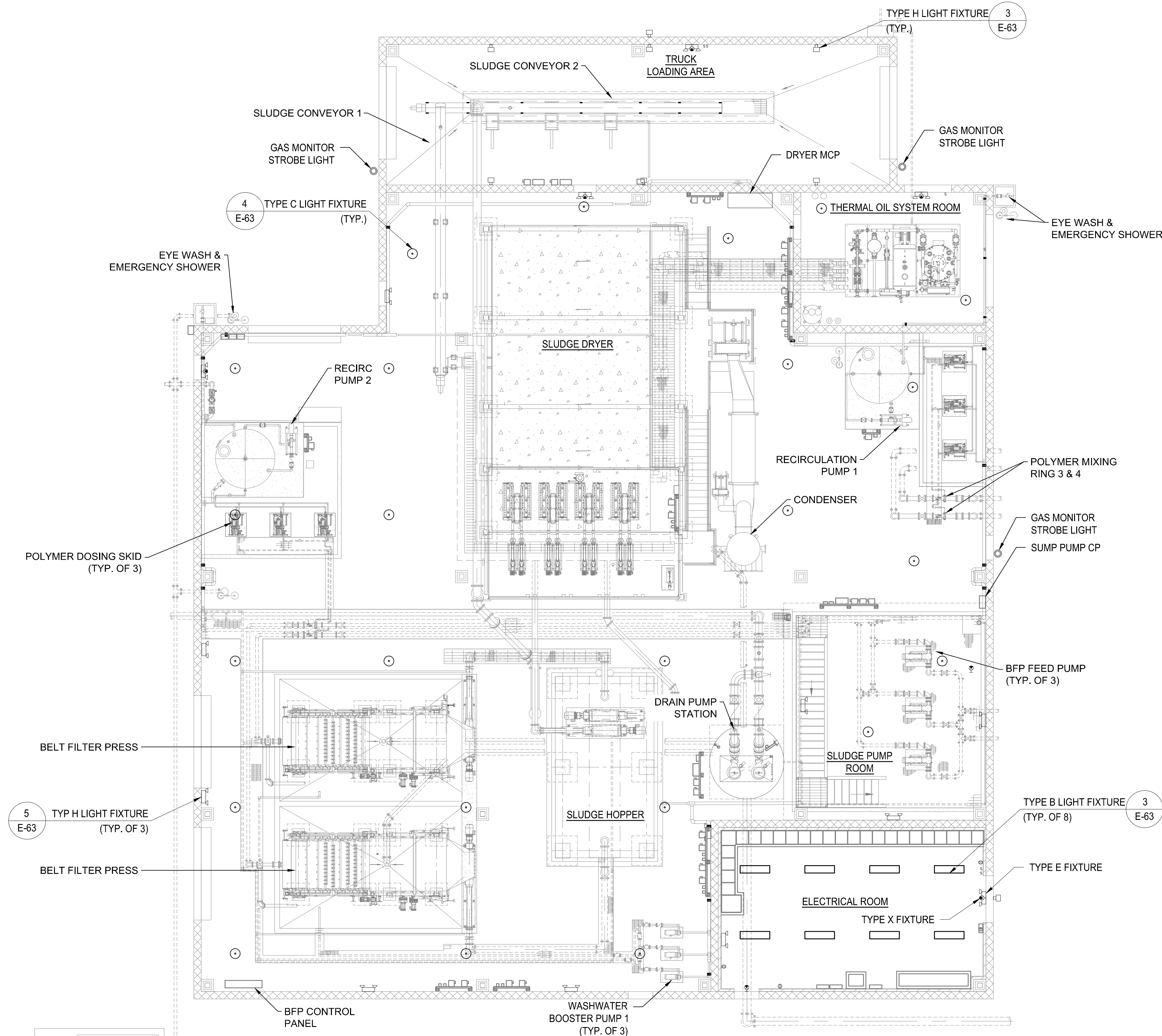
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REVISION	DATE	REVISION	DATE	REVISION	DATE

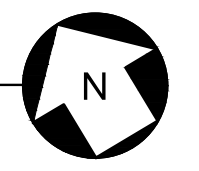
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
SOLIDS HANDLING FACILITY ELECTRICAL PLAN

SHEET NO.
15-E-1

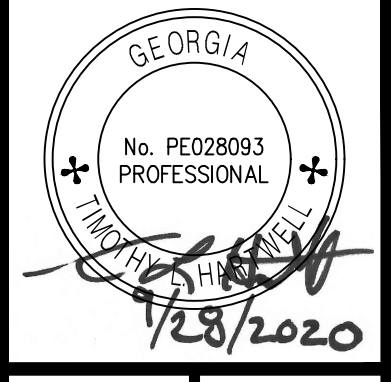




SOLIDS HANDLING FACILITY OVERALL PLAN
SCALE: 1/8"=1'-0"



- NOTES:
- LIGHTING SHALL BE PROVIDED WITH SWITCHES AT DOOR LOCATIONS. PROVIDE OPERATION OF LIGHTS THROUGH MULTIPLE TOGGLE SWITCHES TO OPERATE IN AREAS CONSISTING OF WEST, CENTER, AND EAST IN THE PROCESS AREA.
 - FOR ELECTRICAL ROOM, PROVIDE SWITCHES AT BOTH INGRESS LOCATIONS.
 - CONTROL TYPE H FIXTURES PER DRAWING E-64.



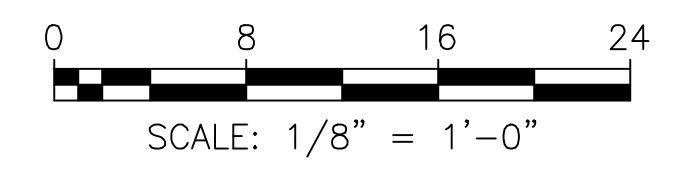
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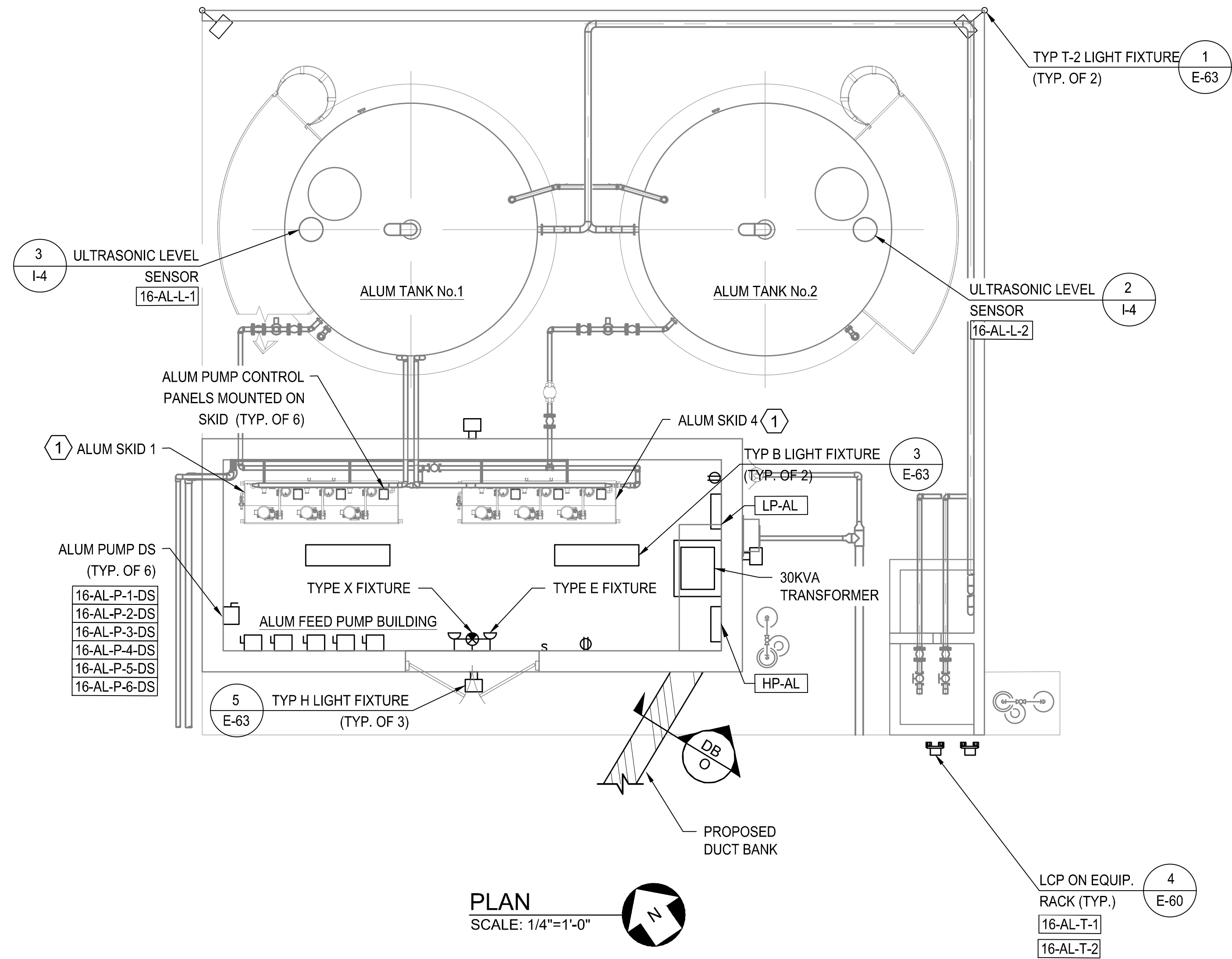
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	APPROVED BY: TLH				
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	SCALE: AS SHOWN				

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
SOLIDS HANDLING FACILITY LIGHTING PLAN

SHEET NO.
15-E-2



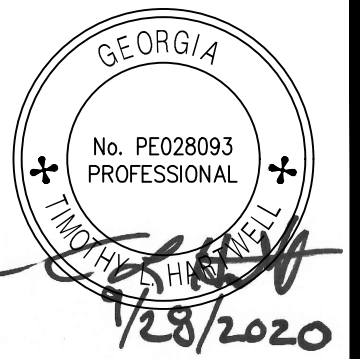


NOTES:

1. LOCATION OF DUCTBANK AND CONDUITS INTO BUILDING IS APPROXIMATE. CONTRACTOR SHALL COORDINATE DUCTBANK WITH OTHER UTILITIES AND DISCIPLINES. EXTEND CONDUITS FROM DUCTBANK TO EQUIPMENT WITH CONDUITS PER SCHEDULES AND CONTRACT DOCUMENTS.
2. REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
3. CONTROL TYPE T-2 FIXTURES AND NORTH H-FIXTURE VIA SWITCH INSIDE BUILDING.
4. HVAC EQUIPMENT TO BE PROVIDED BY BUILDING MANUFACTURER. PROVIDE ALL CONDUIT, WIRING, AND DISCONNECTING MEANS, THERMOSTATS, AND OVERCURRENT PROTECTION AS REQUIRED.
5. PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

KEY NOTES

- 1 ALUM PUMPS 1, 2, AND 3 ON SKID 1. PUMPS 4, 5, AND 6 ON SKID 4.



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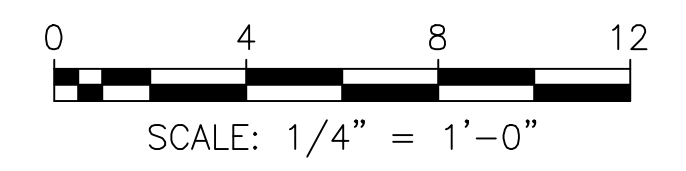
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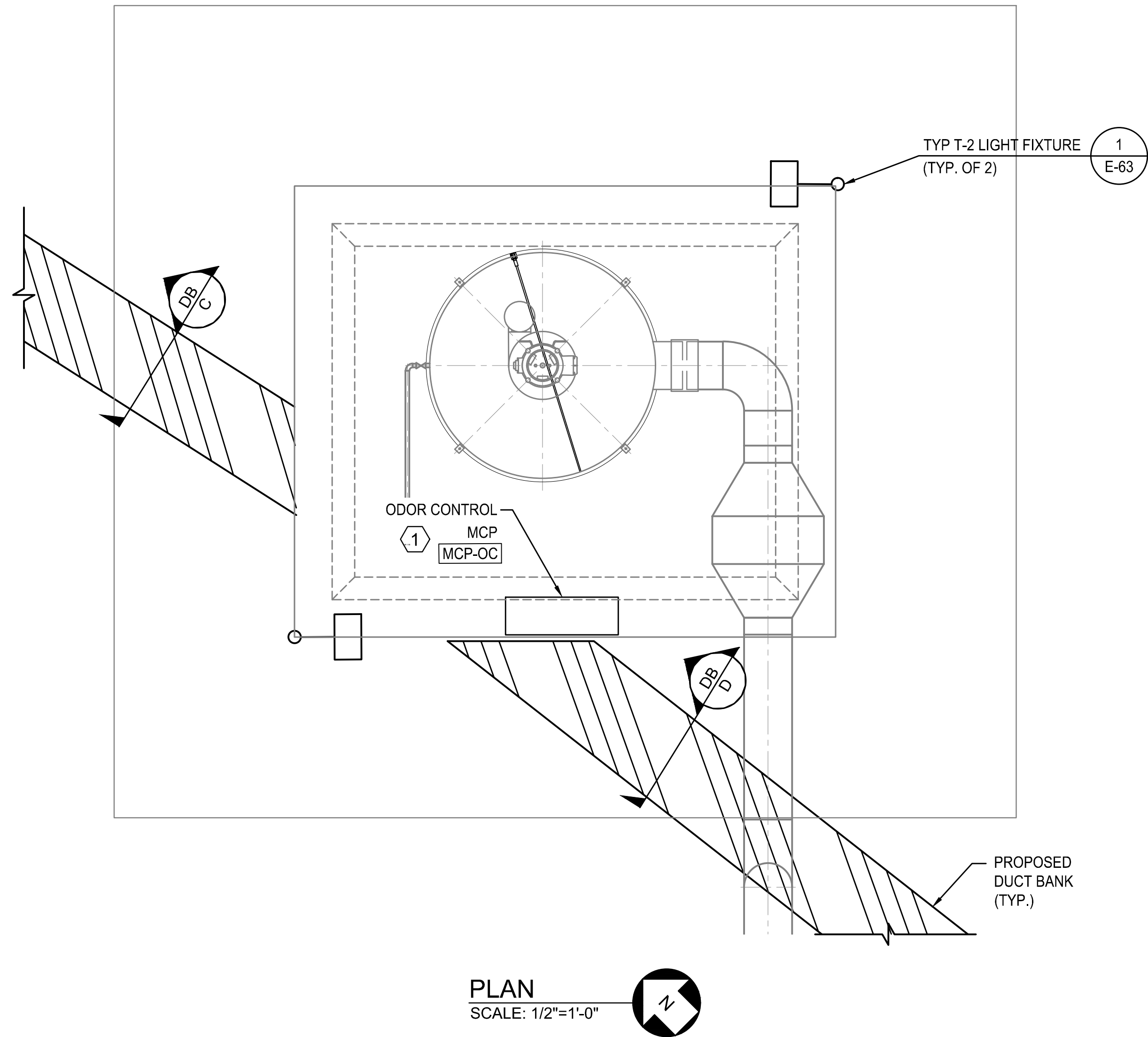
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**ALUM FEED FACILITY
 ELECTRICAL PLAN**

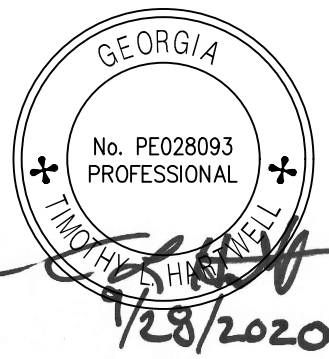
SHEET NO.
17-E-1





- NOTES:
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
 - PROVIDE TOGGLE SWITCH FOR TYPE T-2 FIXTURE OPERATION.
 - PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

- KEY NOTES
- PROVIDE CONNECTIONS TO ALL ODOR CONTROL EQUIPMENT AS REQUIRED BY THE MANUFACTURER. PROVIDE ALL WIRING AND CONDUIT FOR A COMPLETE SYSTEM.



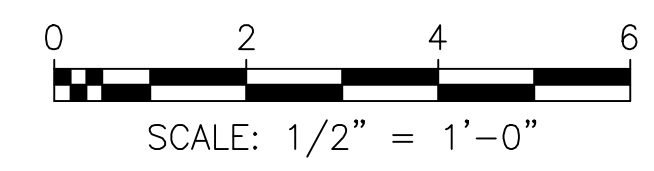
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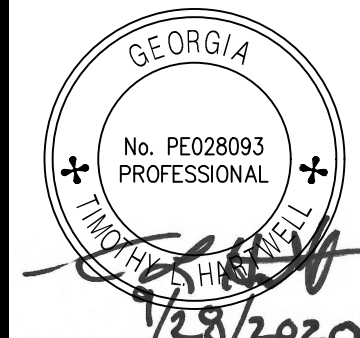
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 ODOR CONTROL FACILITY
 ELECTRICAL PLAN

SHEET NO.
18-E-1





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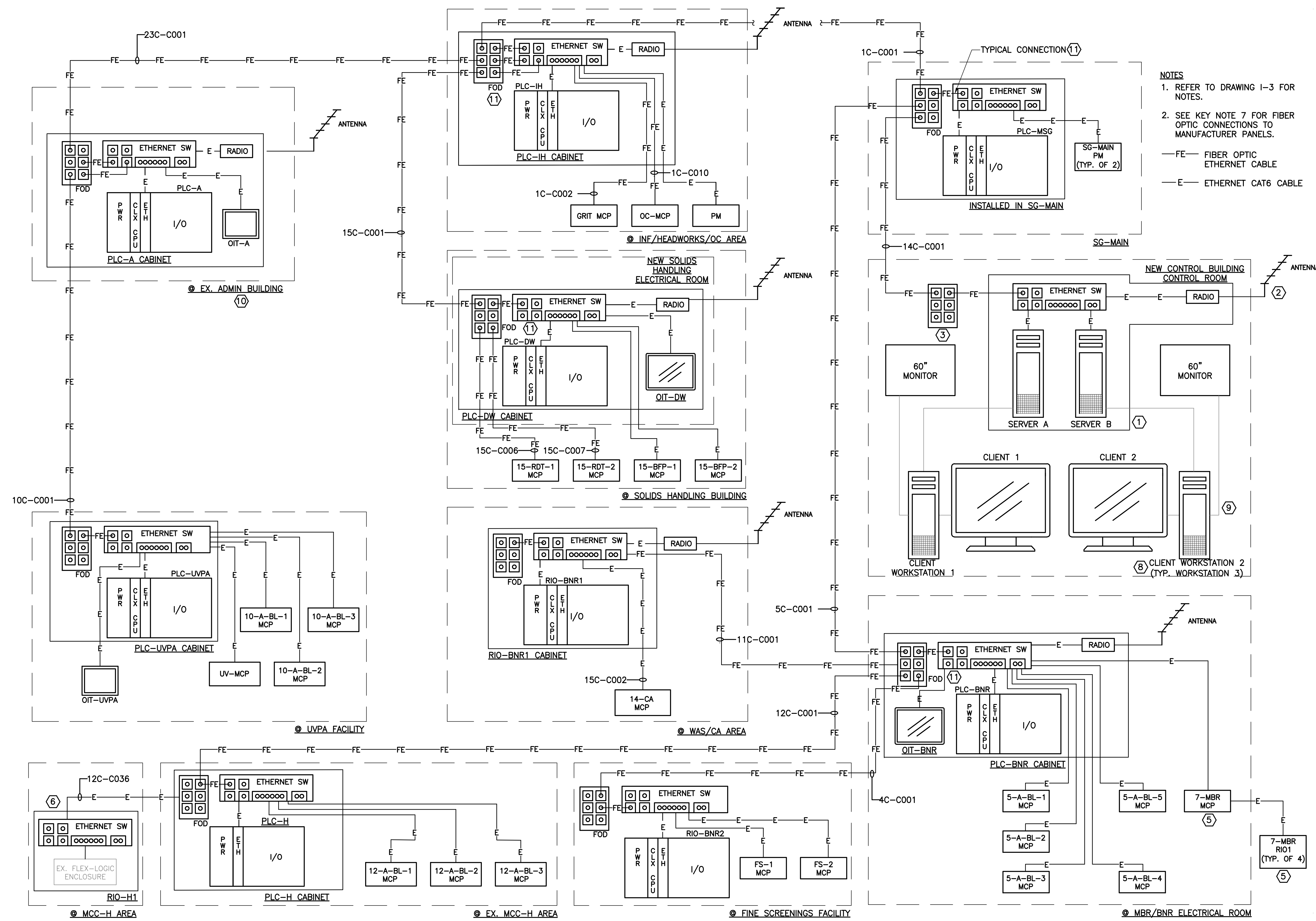
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
**PLANT CONTROL SYSTEM (PCS)
BLOCK DIAGRAM**

SHEET NO.

1-2

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- NOTES**
- REFER TO DRAWING 1-3 FOR NOTES.
 - SEE KEY NOTE 7 FOR FIBER OPTIC CONNECTIONS TO MANUFACTURER PANELS.
- FE— FIBER OPTIC ETHERNET CABLE
—E— ETHERNET CAT6 CABLE

GENERAL NOTES:

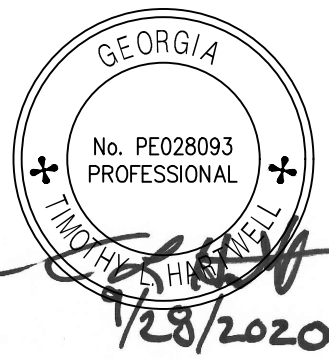
1. REFER TO DRAWING E-1 FOR ELECTRICAL ABBREVIATIONS.
2. DRAWING I-1 IS A GENERAL P&ID SYMBOL SHEET. SOME SYMBOLS OR NOTATIONS MAY NOT BE USED ON THIS PROJECT.
3. ALL SOLENOID VALVES TO INCLUDE BYPASS PIPING AROUND VALVE INCLUDING TEES, AND FITTING WITH A BALL VALVE INSTALLED IN THE BYPASS LINE. THIS IS NOT SHOWN ON P&IDS FOR CLARITY.
4. PROVIDE ISOLATION, BLOCK, AND BLEED VALVES (SST) ON ALL PRESSURE TRANSMITTERS, SWITCHES, AND GAUGES INSTALLED ON AIR, WATER, OR PROCESS LINES.
5. PROVIDE DIAPHRAGM SEALS ON ALL PRESSURE TRANSMITTERS, SWITCHES, AND GAUGES ON PROCESS LINES THAT ARE NOT UTILITY, AIR, OR NPW LINES.
6. THE CONTRACTOR AND SYSTEM INTEGRATOR SPECIFIED IN SECTION 16900 SHALL FIELD VERIFY ALL CONNECTIONS TO EXISTING RIO PANELS AND THE EXISTING PCS SYSTEM WHICH IS MODIFIED, REPLACES, CONNECTED TO, OR OTHERWISE MADE A PART OF THE PROJECT, AND SUBMIT DETAILED LOOP DRAWINGS AND SYSTEM SCHEMATICS WITH THE SHOP DRAWINGS, TO IDENTIFY AND VERIFY AS BUILT CONDITIONS. THE CONTRACTOR SHALL INCLUDE AMPLE TIME IN HIS BID TO PERFORM ALL FIELD VERIFICATION. ALL FIELD VERIFICATION SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO PERFORMING FIELD INSTALLATION, OR FABRICATION OF NEW EQUIPMENT AND NEW PLC AND RIO PANELS.
7. EXISTING REUSE PUMP STATION COMMUNICATES VIA RADIO TO THE REMOTE RTU AT THE POND ON THE GOLF COURSE TO MONITOR THE LEVEL FOR AUTOMATIC OPERATION. THE SYSTEM INTEGRATOR SHALL INVESTIGATE BOTH THE REUSE PS CONTROL PANEL EQUIPMENT AND RADIO COMMUNICATION, AND THE CONTROL PANEL AT THE POND (APPROXIMATELY 5 MILES FROM THE PLANT). PERFORM A RADIO FIELD TEST TO VERIFY COMMUNICATIONS AND TEST THE LEVEL INSTRUMENTATION AND EQUIPMENT AT THE POND. INCLUDE A MINIMUM OF 48 MANHOURS FOR THIS WORK AND DEVELOP A SUBMITTAL FOR REPAIR OF THE EXISTING SYSTEM.
8. ALL FIBER OPTIC TERMINATIONS SHALL BE TYPE LC. THE SYSTEM INTEGRATOR SHALL COORDINATE WITH AND MANUFACTURERS AND EQUIPMENT TO PROVIDE REQUIRED EQUIPMENT.

PCS BLOCK DIAGRAM KEY NOTES:

- ① PROVIDE NETWORK 19" RACK CABINET IN ADMINISTRATION BUILDING FOR SERVER EQUIPMENT. INCLUDE RACK MOUNTED UPS (3500VA MINIMUM) TO PROVIDE POWER TO ALL RACK EQUIPMENT MOUNTED IN RACK.
- ② PERFORM RADIO COMMUNICATIONS PATH STUDY AND MOUNT ANTENNAS ON MASTS FOR LINE OF SIGHT COMMUNICATIONS. RADIOS SHALL PROVIDE WIFI COMMUNICATIONS FOR THROUGHOUT THE PLANT.
- ③ IN ALL INTERIOR LOCATIONS IN BUILDINGS MOUNT FOD OUTSIDE PLC CABINET TO TRANSITION FROM EXTERIOR FO CABLE TO INTERIOR FO CABLE.
- ④ EX. LCP-H LOCATED ADJACENT TO MCC-H SHALL BE RENAMED RIO-H. CONTRACTOR SHALL VERIFY ALL EXISTING I/O INTO RIO-H.
- ⑤ MBR SYSTEM PROVIDED BY MBR MANUFACTURER, SUEZ. REFER TO DRAWING 7-I-1.
- ⑥ EX. LCP-H WITH EXISTING PLC TO REMAIN FOR CONNECTION OF EXISTING POINTS TO NEW SYSTEM. RENAMED AS RIO-H1.
- ⑦ FOR MANUFACTURERS AND VENDOR PANELS WITH ETHERNET CONNECTIONS, WHICH REQUIRE UNDERGROUND CABLE TO THE ASSOCIATED PLCs, PROVIDE AND INSTALL FIBER OPTIC CABLE AND FIBER OPTIC ETHERNET TO MM FO CONVERTERS AT EACH END OF FIBER OPTIC CABLE. COORDINATE WITH PANEL MANUFACTURERS FOR INSTALLATION OF CONVERTER AND POWER REQUIREMENTS. PROVIDE AND INSTALL ONE END OF CONVERTER IN ASSOCIATED PLC-RIO CABINET.
- ⑧ PROVIDE SCADA NETWORK CONNECTIONS FOR CLIENT WORKSTATIONS IN THE FOLLOWING AREAS IN THE NEW ADMINISTRATION BUILDING:
 - 2-RJ45 ETHERNET JACKS - OPERATORS AREA WITH 2 CLIENT WORKSTATIONS, 2 STANDARD MONITORS AND 1 60" MONITOR.
 - 1-RJ45 ETHERNET JACK - CONFERENCE ROOM WITH 60" MONITOR AND THE ABILITY TO CONNECT A WORKSTATION.
 - 1-RJ45 ETHERNET JACK - PLANT SUPERINTENDENT'S OFFICE WITH 1 CLIENT WORKSTATION, 1 STANDARD MONITOR.
- ⑨ ALL CLIENT WORKSTATIONS SHALL BE PROVIDED WITH 2000VA UPS TO POWER CLIENT WORKSTATION AND MONITOR.
- ⑩ REFER TO DRAWING I-8 FOR DEMOLITION OF EXISTING SYSTEM AND INTERFACING OF NEW PLC-A.
- ⑪ NETWORK SWITCHES SHALL HAVE A MINIMUM OF (2)-TX/RX PORTS FOR FIBER OPTIC CONNECTIONS. FOR PANELS WITH MORE THAN (2)-FIBER OPTIC CONNECTIONS, PROVIDE AND INSTALL FIBER OPTIC TO ETHERNET CONVERTERS IN THE PANEL.

PCS/PLC CONTROL PANELS:

1. NETWORK CABINET IN ADMINISTRATION/CONTROL BUILDING.
2. PLC-MSG MOUNTED IN SG-MAIN. COORDINATE SPACE WITH SWITCHGEAR MANUFACTURER.
3. PLC-IH RACK MOUNTED ADJACENT TO SG-OC SWITCHBOARD.
4. PLC-A MOUNTED IN EX. ADMIN BUILDING FOR MCC-A I/O AND EXISTING I/O.
5. PLC-UVPA MOUNTED INSIDE UV CONTROL BLDG AT UVPA FACILITY.
6. PLC-BNR MOUNTED IN BNR/MBR ELECTRICAL BUILDING.
7. RIO-BNR1 RACK MOUNTED AT WAS HOLDING TANK/COMPRESSOR AIR AREA.
8. RIO-BNR2 RACK MOUNTED AT FINE SCREEN FACILITY.
9. PLC-H RACK MOUNTED AT MCC-H.
10. RIO-H1 EXISTING LCP TO BE MODIFIED FOR NEW AND EXISTING I/O.
11. PLC-DW MOUNTED IN SOLIDS HANDLING BUILDING ELECTRICAL ROOM.



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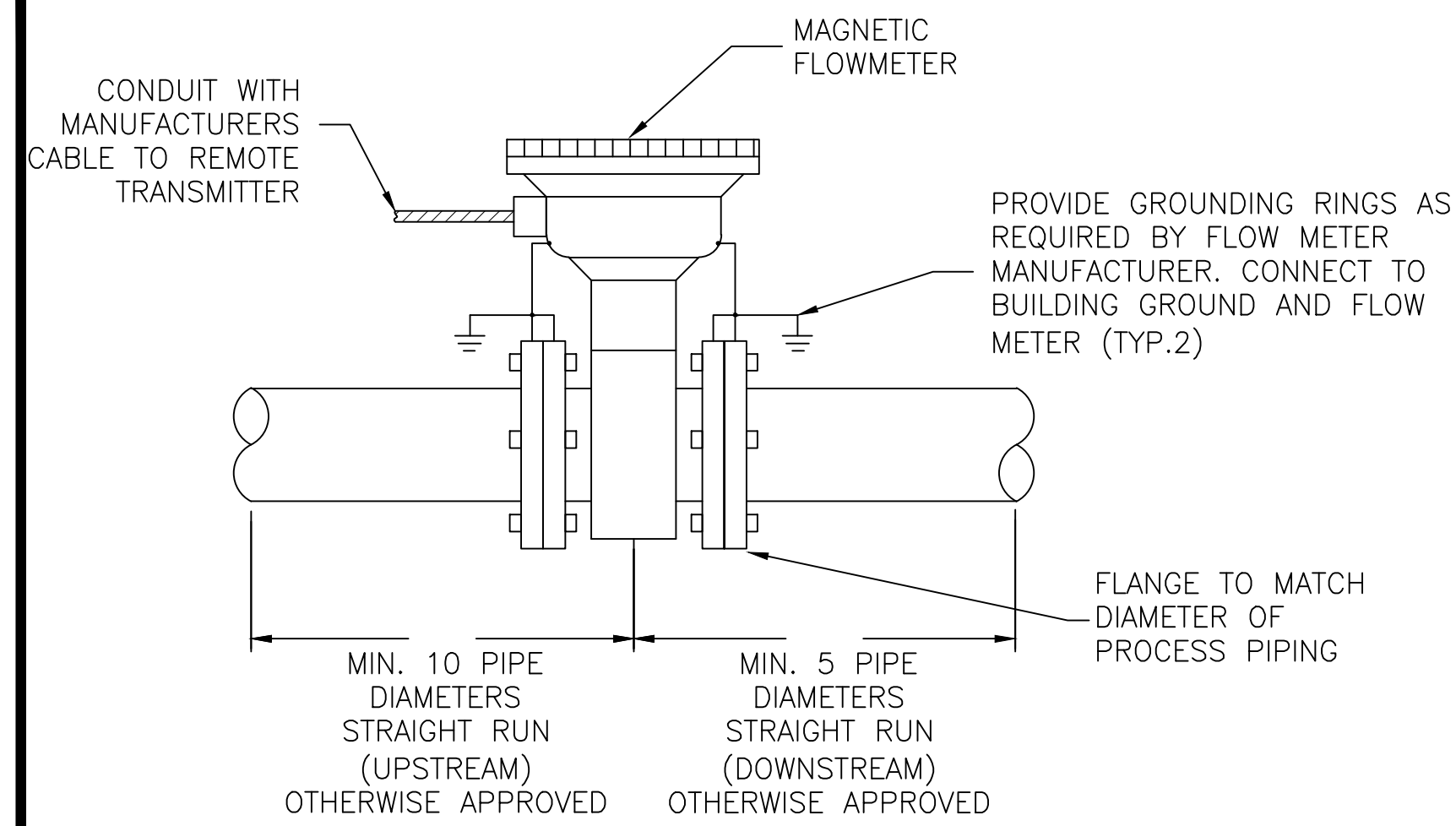
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

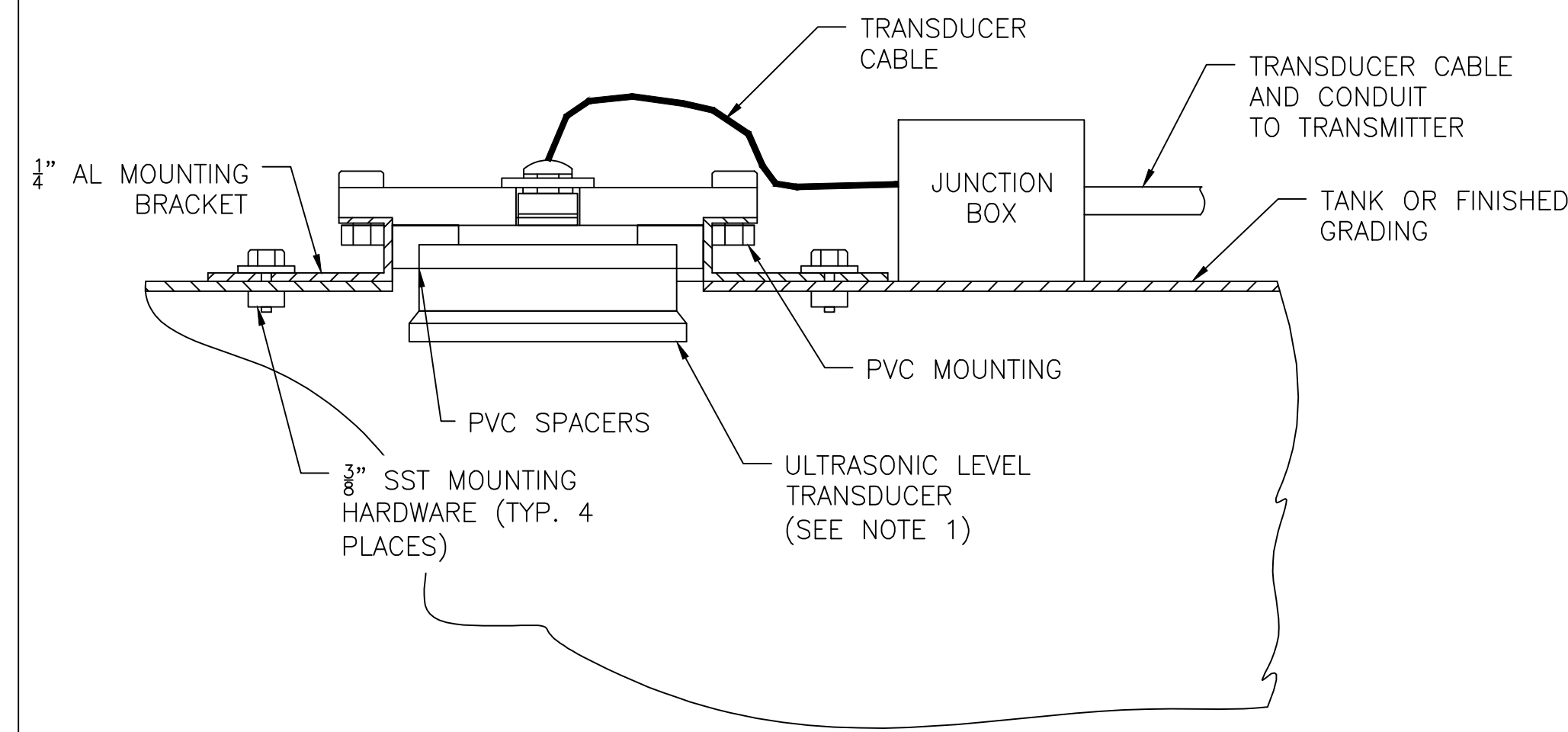
INSTRUMENTATION NOTES

SHEET NO.
I-3



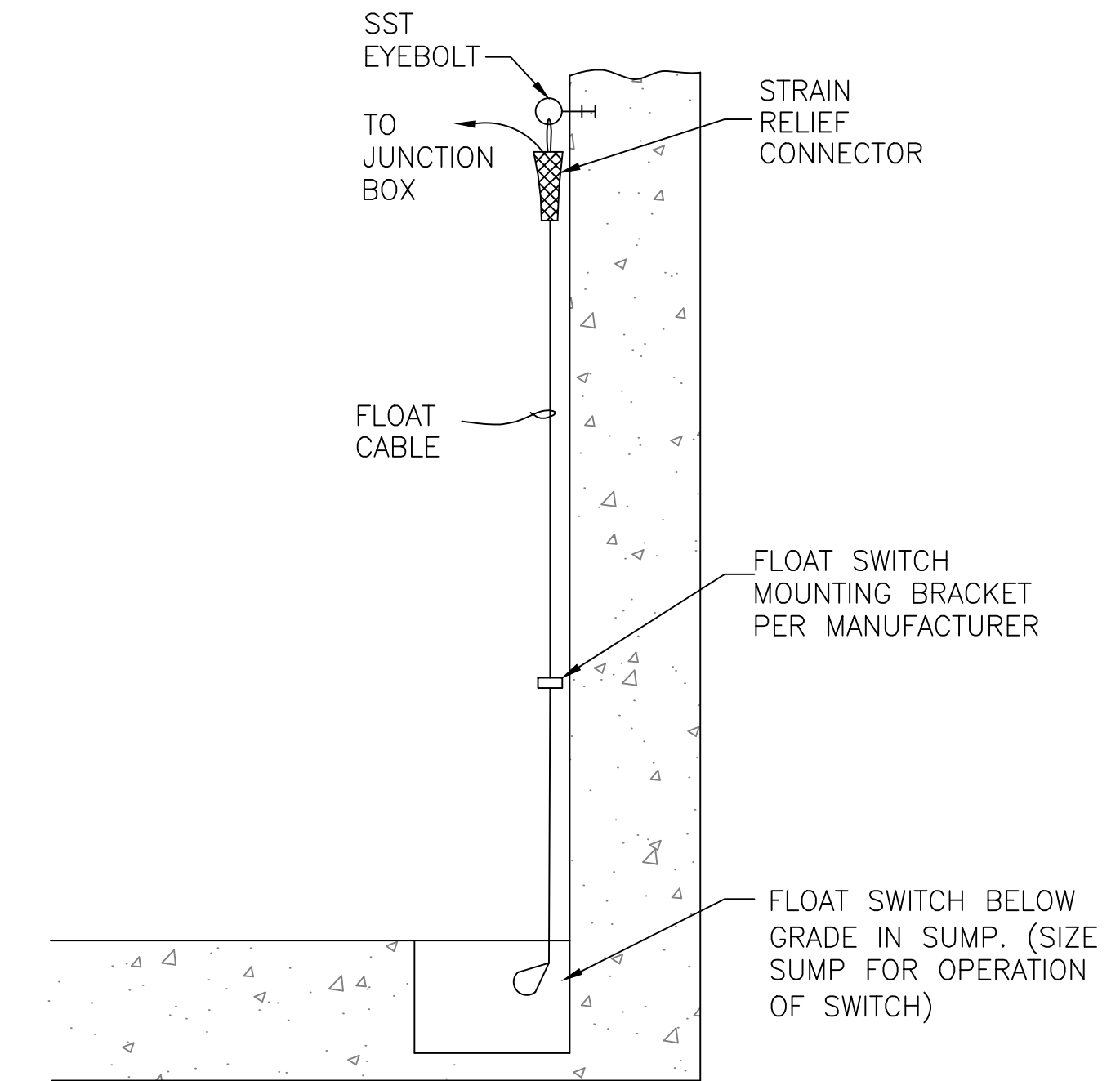
- NOTES:**
1. REFER TO ELECTRICAL DETAILS AND DETAIL 2, E-5 FOR TRANSMITTER MOUNTING.

1 MAGNETIC FLOW METER MOUNTING DETAIL
SCALE:NTS

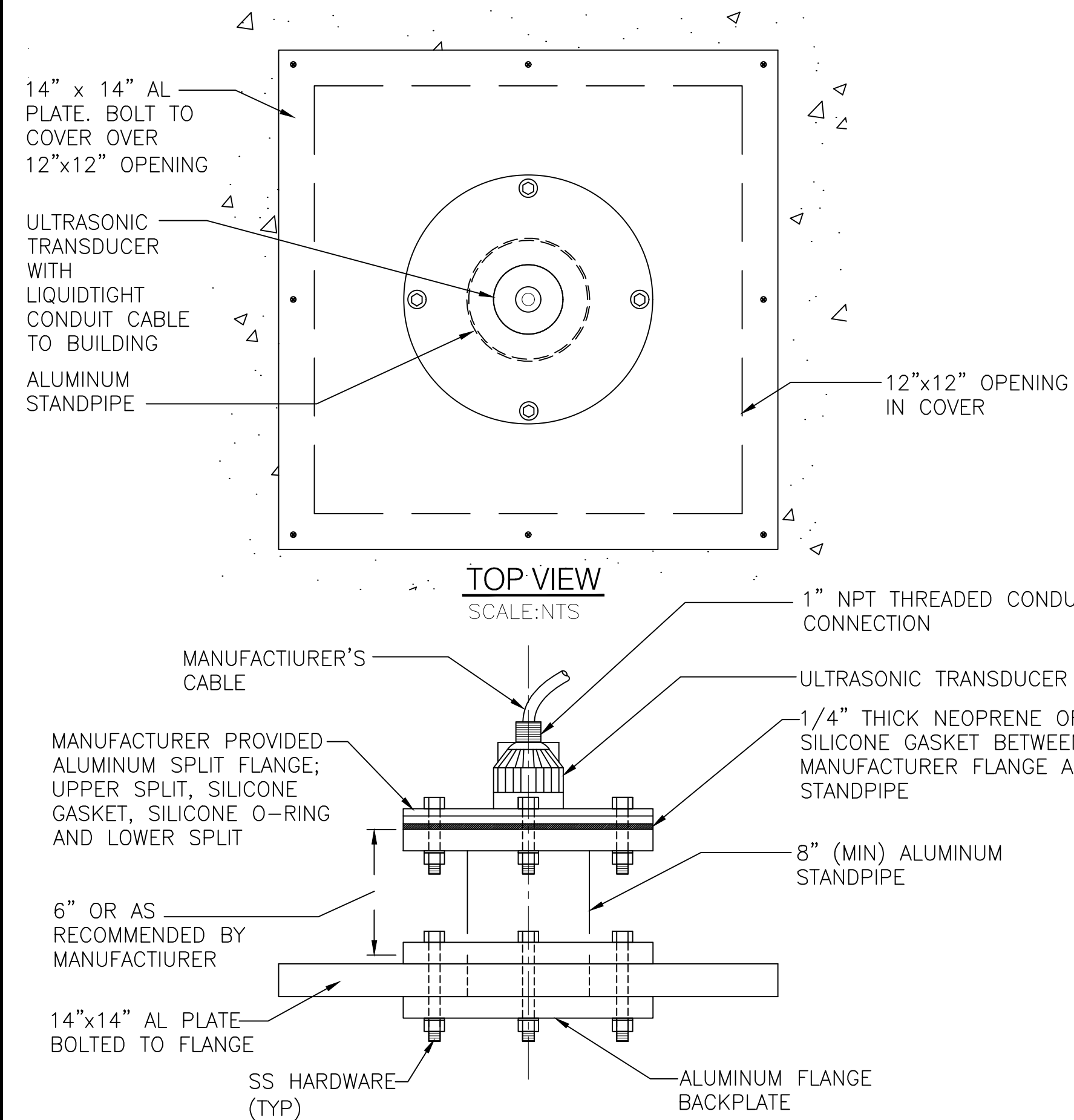


- NOTES:**
1. WHEN MOUNTING ON TANK, COORDINATE TANK OPENING WITH TANK MANUFACTURER TO ALLOW BEAM TO REACH THE FULL DEPTH OF TANK.
 2. WHEN MOUNTING TO FINISHED GRADE, PROVIDE AND INSTALL AN ENCLOSURE OVER TRANSDUCER TO PREVENT DAMAGE.
 3. INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.

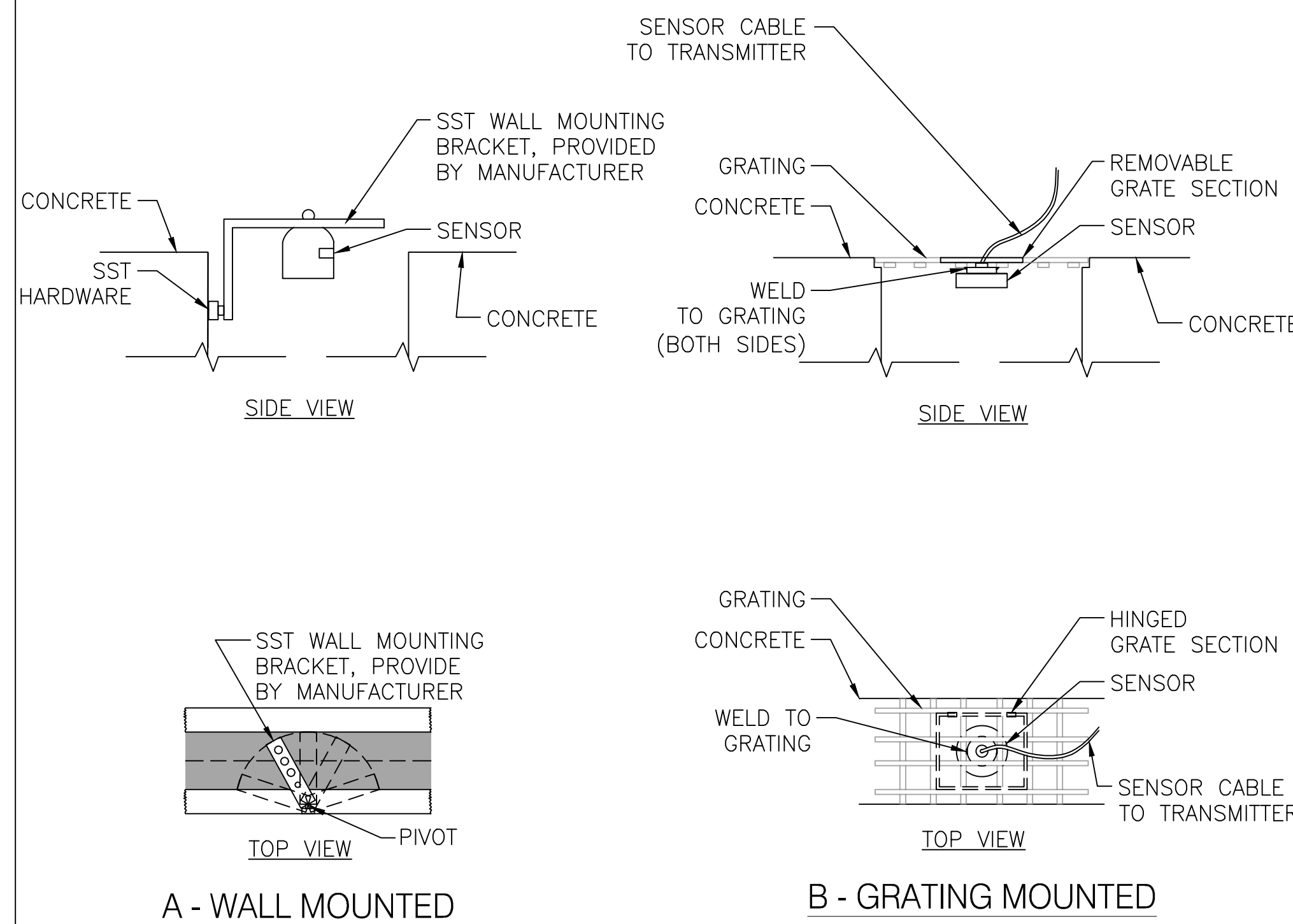
3 ULTRASONIC LEVEL TRANSDUCER TANK MOUNTING DETAIL
SCALE:NTS



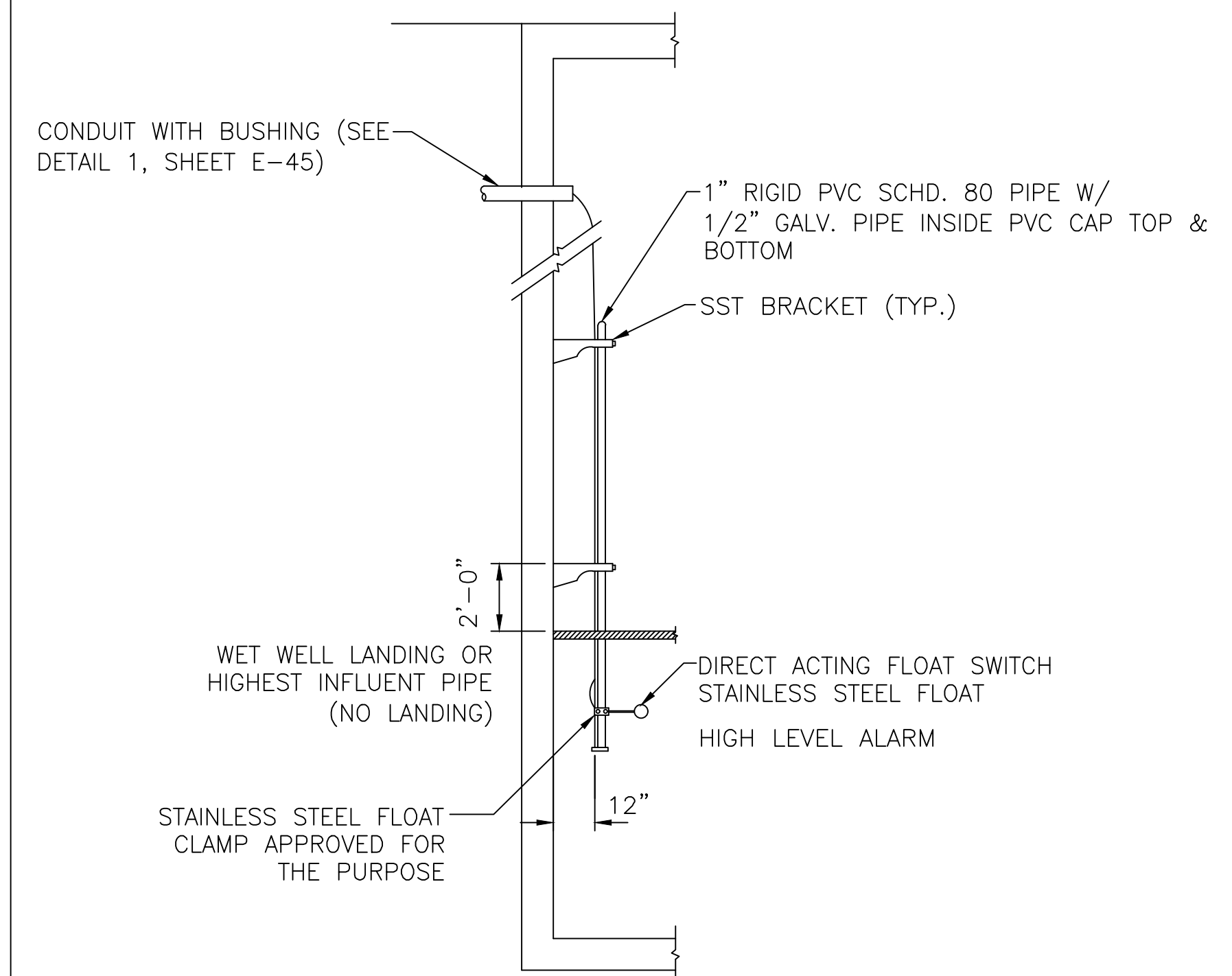
5 BUILDING HIGH LEVEL FLOAT SWITCH
SCALE: NTS



2 ULTRASONIC TRANSDUCER STANDPIPE MOUNTING DETAIL
SCALE:NTS

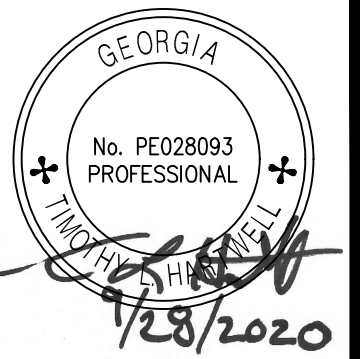


4 ULTRASONIC LEVEL SENSOR MOUNTING DETAIL
NTS



- NOTES:**
1. FLOAT MAST GREATER THAN 12" FROM WALL AND MOUNTED SO NO OBSTRUCTION WILL INTERFERE WITH FLOAT MOVEMENT.
 2. FLOAT MAST AND CONDUIT ENTRY SHALL BE LOCATED MAXIMUM 18" FROM ACCESS OPENING.

6 FLOAT MAST
SCALE:NTS



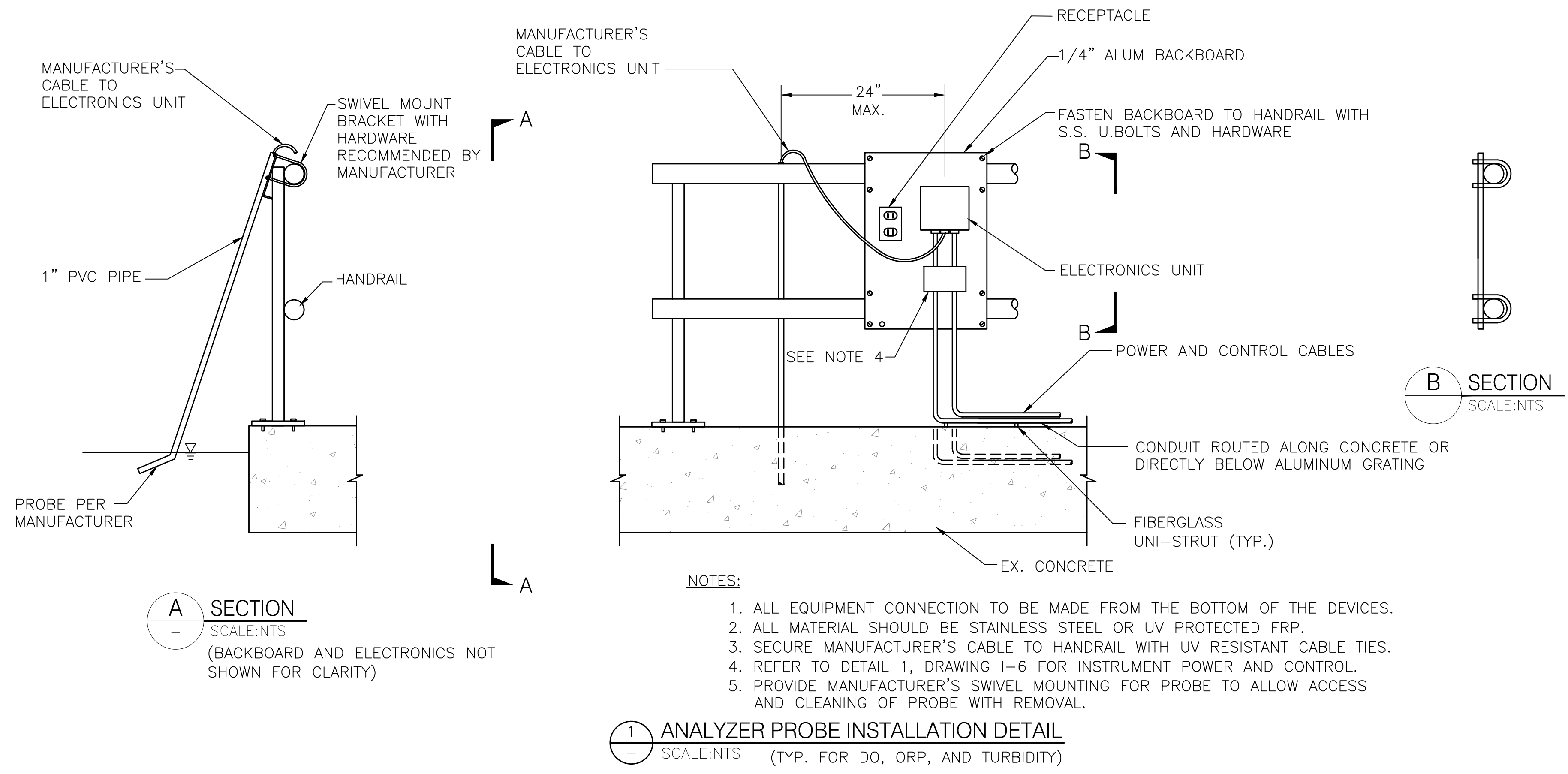
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
INSTRUMENTATION DETAILS 1

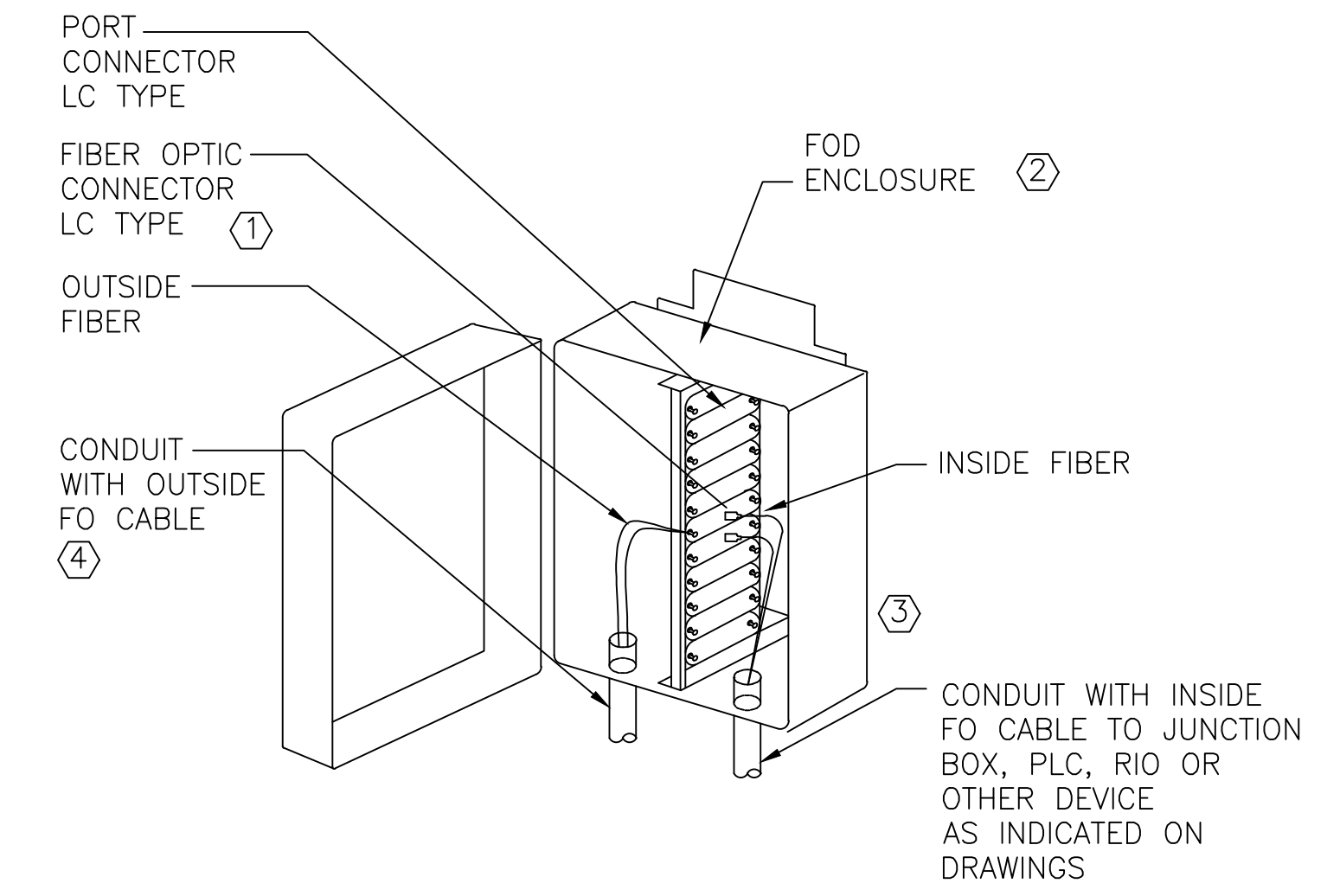


A SECTION
SCALE:NTS
(BACKBOARD AND ELECTRONICS NOT SHOWN FOR CLARITY)

B SECTION
SCALE:NTS

1 ANALYZER PROBE INSTALLATION DETAIL
SCALE:NTS (TYP. FOR DO, ORP, AND TURBIDITY)

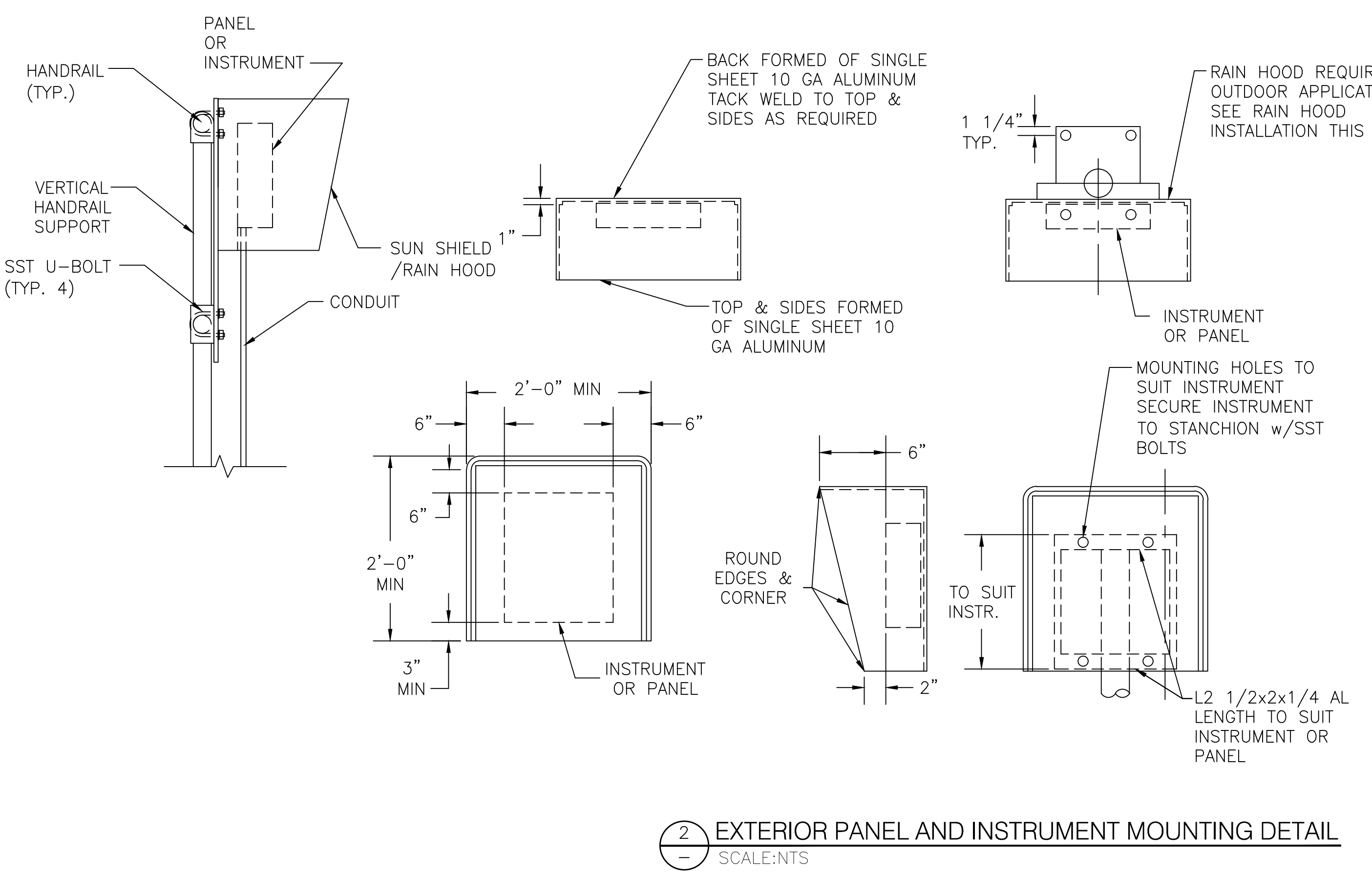
- NOTES:**
1. ALL EQUIPMENT CONNECTION TO BE MADE FROM THE BOTTOM OF THE DEVICES.
 2. ALL MATERIAL SHOULD BE STAINLESS STEEL OR UV PROTECTED FRP.
 3. SECURE MANUFACTURER'S CABLE TO HANDRAIL WITH UV RESISTANT CABLE TIES.
 4. REFER TO DETAIL 1, DRAWING I-6 FOR INSTRUMENT POWER AND CONTROL.
 5. PROVIDE MANUFACTURER'S SWIVEL MOUNTING FOR PROBE TO ALLOW ACCESS AND CLEANING OF PROBE WITH REMOVAL.



KEY NOTES:

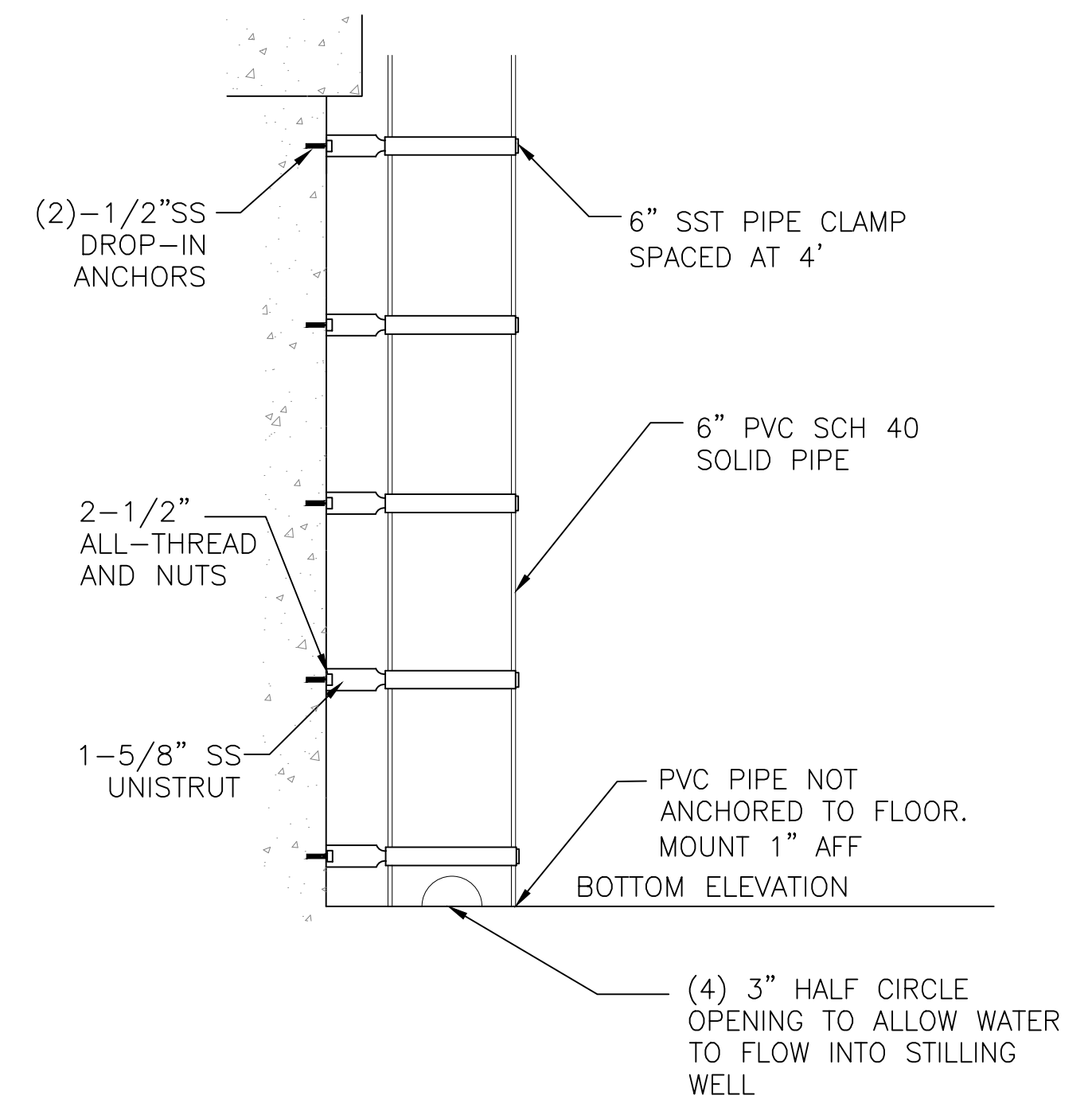
- 1 PROVIDE PORT ADAPTERS AS REQUIRED AND TERMINATE ALL SPARE FIBER OPTIC CABLE.
- 2 ENCLOSURE TO BE INSTALLED ON WALL, UON.
- 3 REFER TO SPECIFICATION SECTION 16125 FOR FIBER OPTIC CABLES AND ACCESSORIES.
- 4 ALL CONDUITS 1" MINIMUM.

3 FIBER DISTRIBUTION BOX (FOD) DETAIL
SCALE:NTS

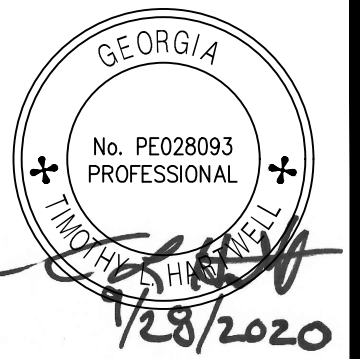


2 EXTERIOR PANEL AND INSTRUMENT MOUNTING DETAIL
SCALE:NTS

- NOTES:**
1. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
 2. ROUND-OFF ALL EXPOSED EDGES AND CORNERS.
 3. ALL EXPOSED EDGES TO BE GRIND SMOOTH AND BURR FREE.
 4. MOUNT RAIN HOOD BETWEEN INSTRUMENT OR PANEL AND MOUNTING BRACKET. DRILL HOLES IN RAIN HOOD AS PER MOUNTING HOLES FOR INSTRUMENT.
 5. POSITION INDICATOR SHALL BE VISIBLE.
 6. SIZE SHOWN IS APPROXIMATE. SIZE AS REQUIRED.
 7. ALL EXTERIOR INSTRUMENTS AND CONTROL PANELS WITH LCD, LED, OR OTHER DISPLAYS SHALL HAVE A RAIN HOOD/SUN SHIELD.



4 STILLING WELL DETAIL
SCALE:NTS



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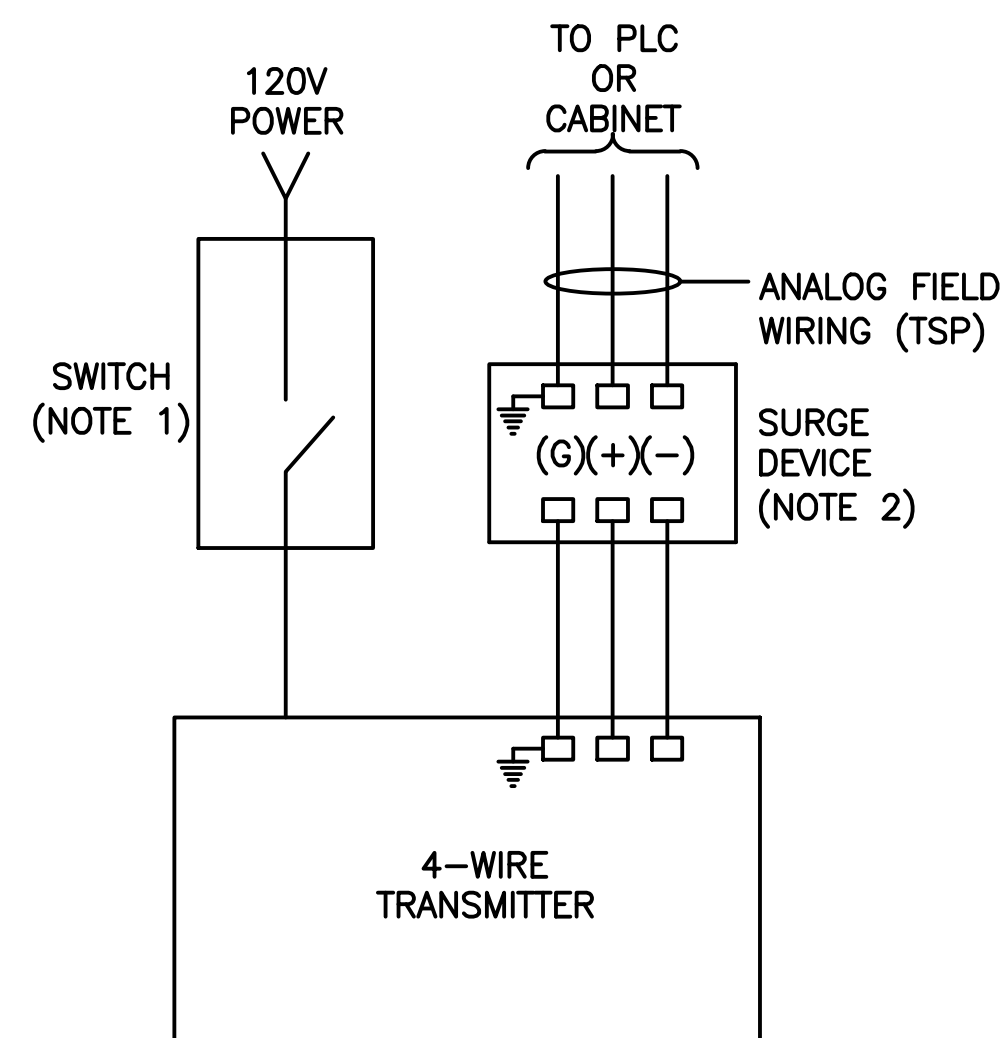
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
INSTRUMENTATION DETAILS 2

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INSTRUMENTATION DETAILS 2

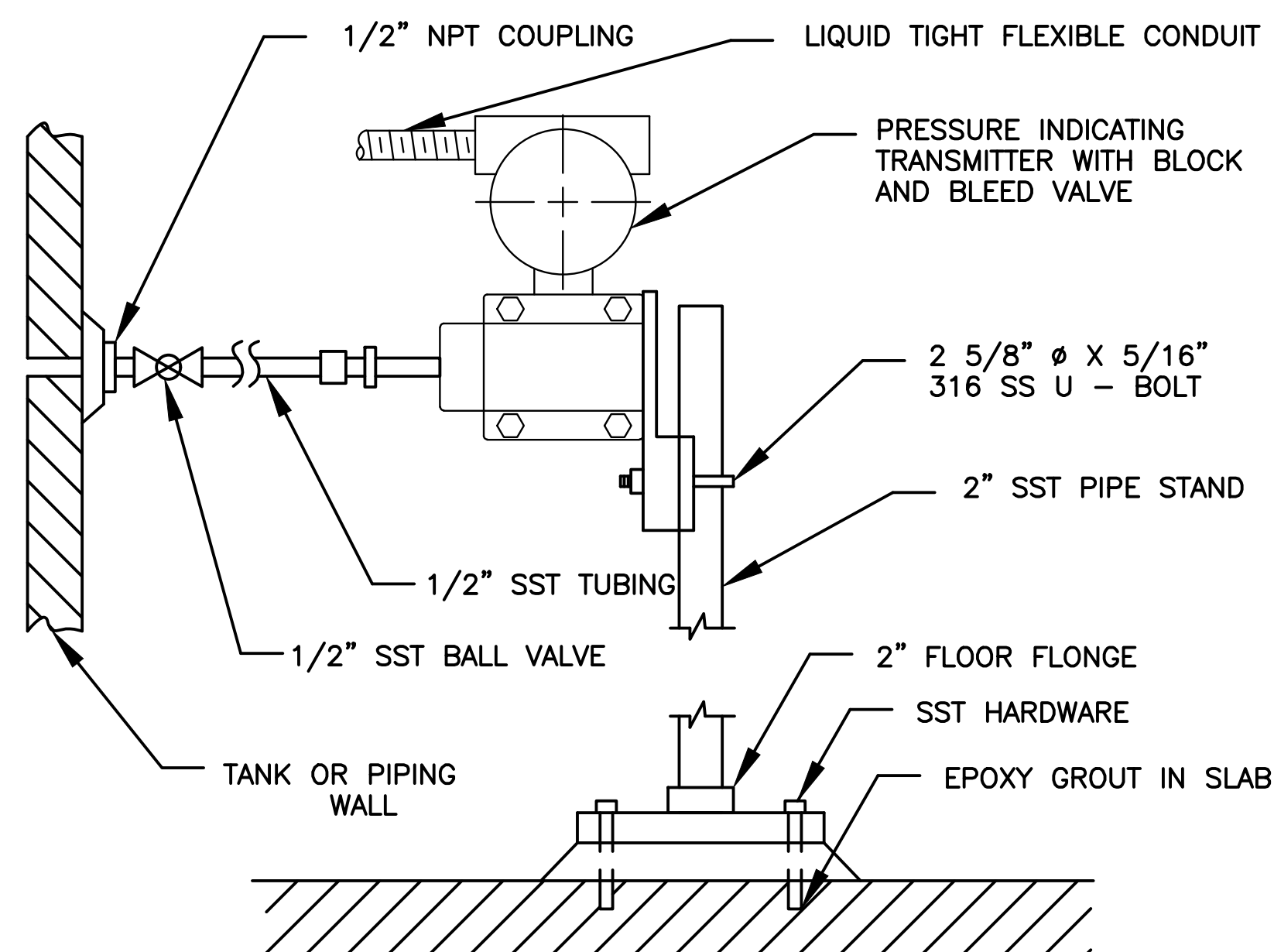
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INSTRUMENTATION DETAILS 2



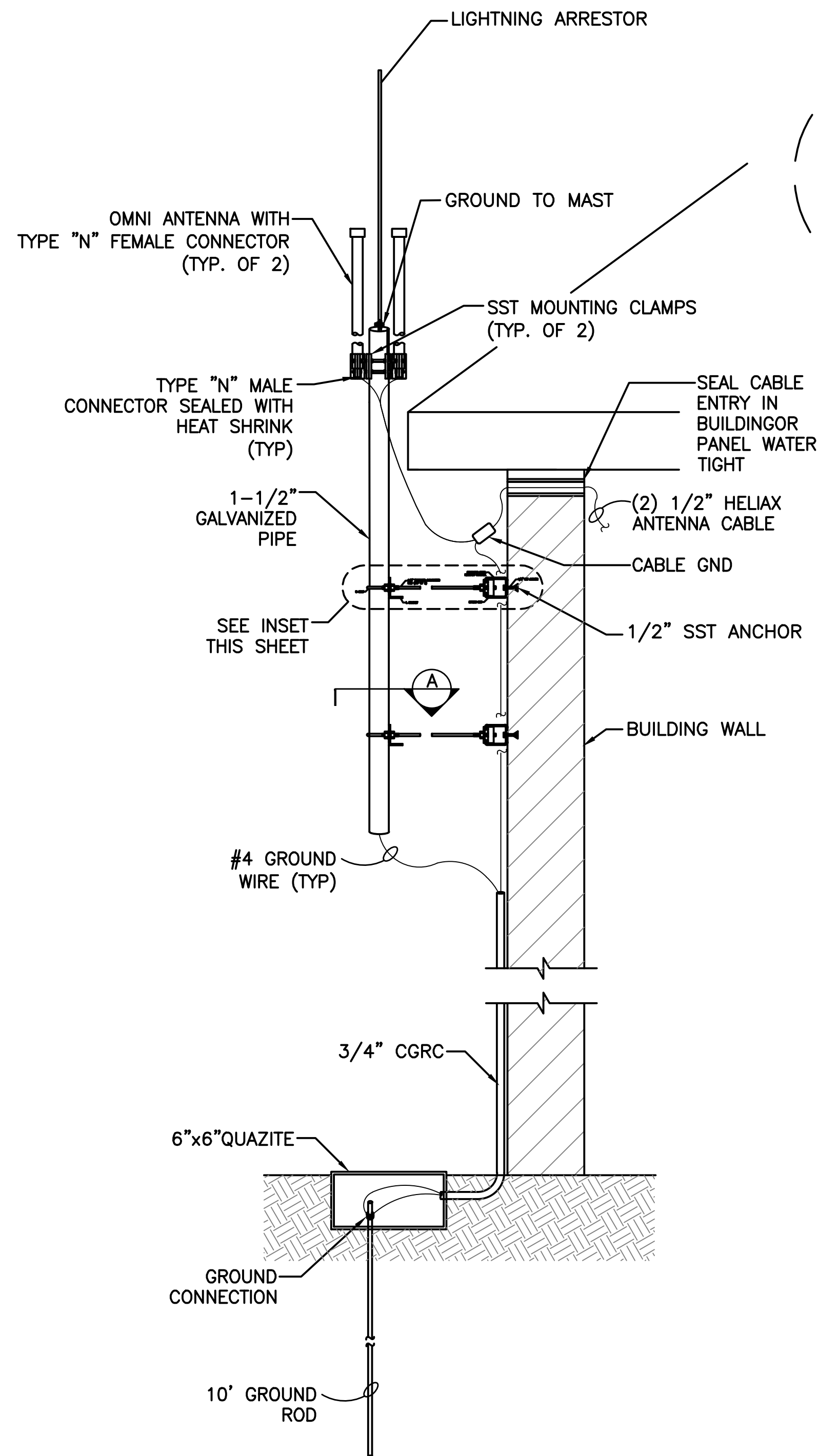
- NOTES:**
1. PROVIDE 20A, 1 POLE TOGGLE SWITCH FOR ALL INSTRUMENTS REQUIRING 120V POWER FOR OPERATION.
 2. PROVIDE SURGE PROTECTION FOR ALL INSTRUMENTS WITH 4-20mA SIGNALS. SURGE PROTECTION SHALL BE MOUNTED MAXIMUM 12" FROM TRANSMITTER.

1 INSTRUMENT POWER
SCALE: NTS

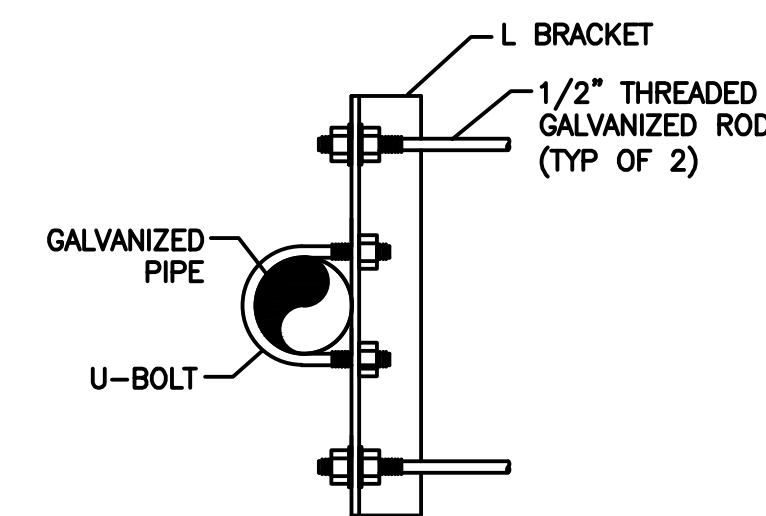
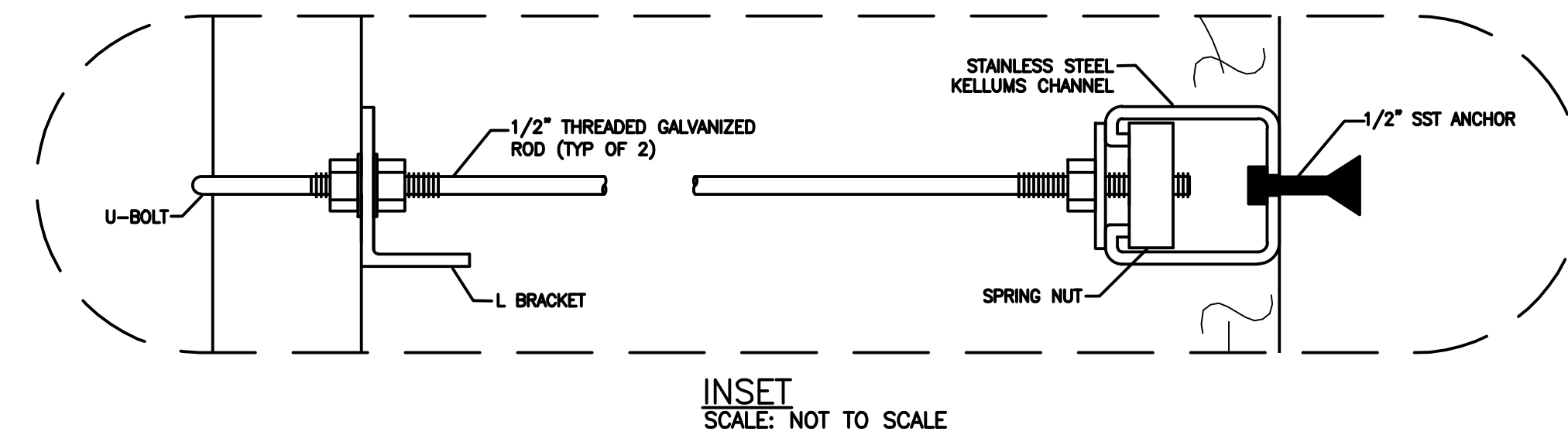


- NOTES:**
1. PRESSURE TRANSMITTER MOUNTING SHOWN FOR CLARITY. POSITION TRANSMITTER INDICATOR TO BE VISIBLE, WHEN FACING PIPE.
 2. REFER TO ELECTRICAL DETAILS FOR MOUNTING PIPE STAND ON GRATING.
 3. PRESSURE SWITCH MOUNTING SHALL BE SIMILAR.

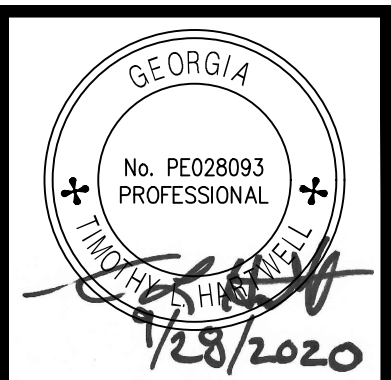
2 PRESSURE TRANSMITTER MOUNTING DETAIL
SCALE: NTS



3 ANTENNA/CAMERA MOUNTING
SCALE: NTS



- NOTES:**
1. ANTENNA MOUNTING SHOWN FOR BUILDING IF CABINET MOUNTED USE SIMILAR METHOD WITH SST HARDWARE TO CABINET AND SUBMIT DETAILED DRAWING.
 2. CONNECT GROUND WIRE TO GROUND ROD, MOUNTING PIPE, ANTENNAS, AND LIGHTNING ARRESTOR.
 3. SEE NOTE DRAWING I-3. HEIGHT OF ANTENNAS SHALL BE DEFINED IN RADIO PATH STUDY.
 4. MOUNT CAMERA ON BUILDINGS AS SHOWN ON THE SITE PLAN. SIMILAR MOUNTING AS ANTENNA.



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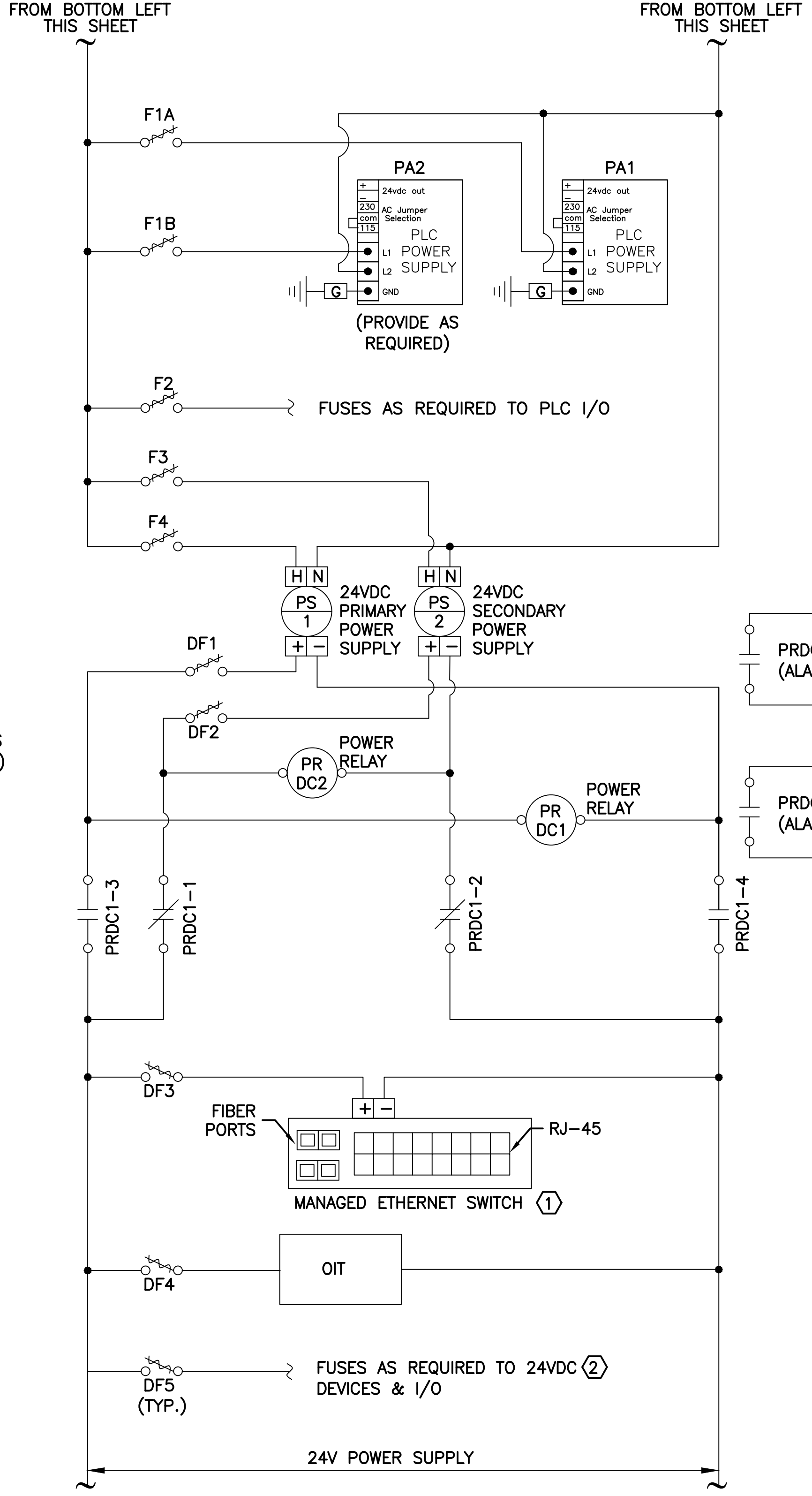
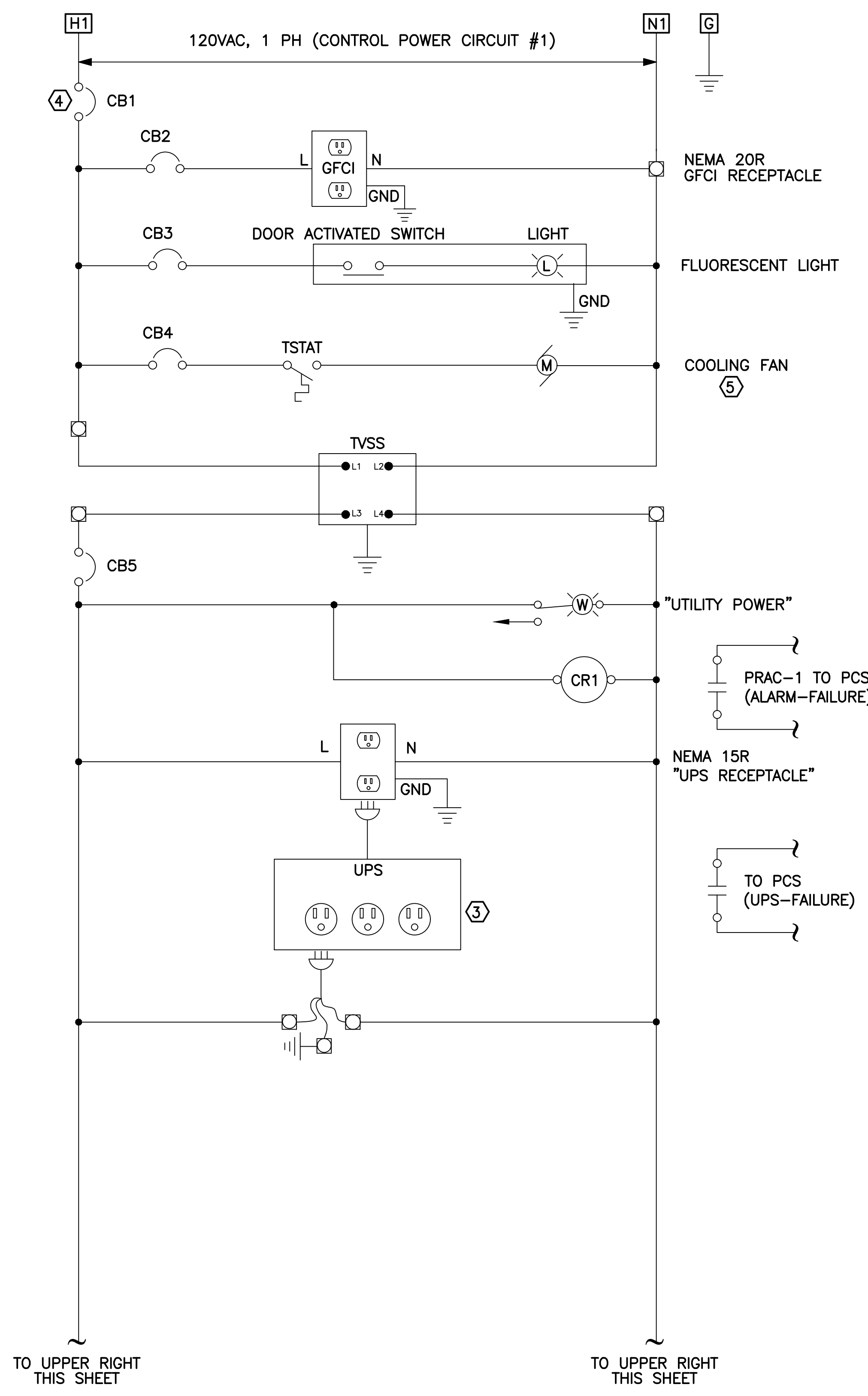
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
INSTRUMENTATION DETAILS 3

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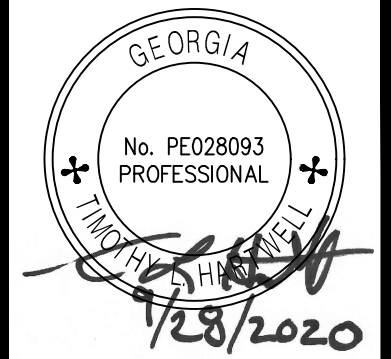
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SHEET NO.
I-6



1 PCS CONTROL POWER DIAGRAM (TYPICAL)

- KEY NOTES**
- 1 REFER TO SPECIFICATION 16900 FOR ETHERNET SWITCH REQUIREMENTS.
 - 2 RADIO NOT SHOWN FOR CLARITY. RADIO SHALL BE POWERED FROM 24VDC.
 - 3 PROVIDE UPS WITH I/O CARD FOR INTERFACE TO PLC.
 - 4 SIZE MAIN BREAKER IN PCS FOR LOAD. ALL PLC AND RIO CABINETS INSTALLED IN EXTERIOR LOCATIONS SHALL BE FED WITH 30 AMP, 120VOLT, CIRCUITS.
 - 5 ALL EXTERIOR MOUNTED PLC AND RIO CONTROL PANELS SHALL HAVE AIR CONDITIONING UNITS IN PLACE OF COOLING FANS.



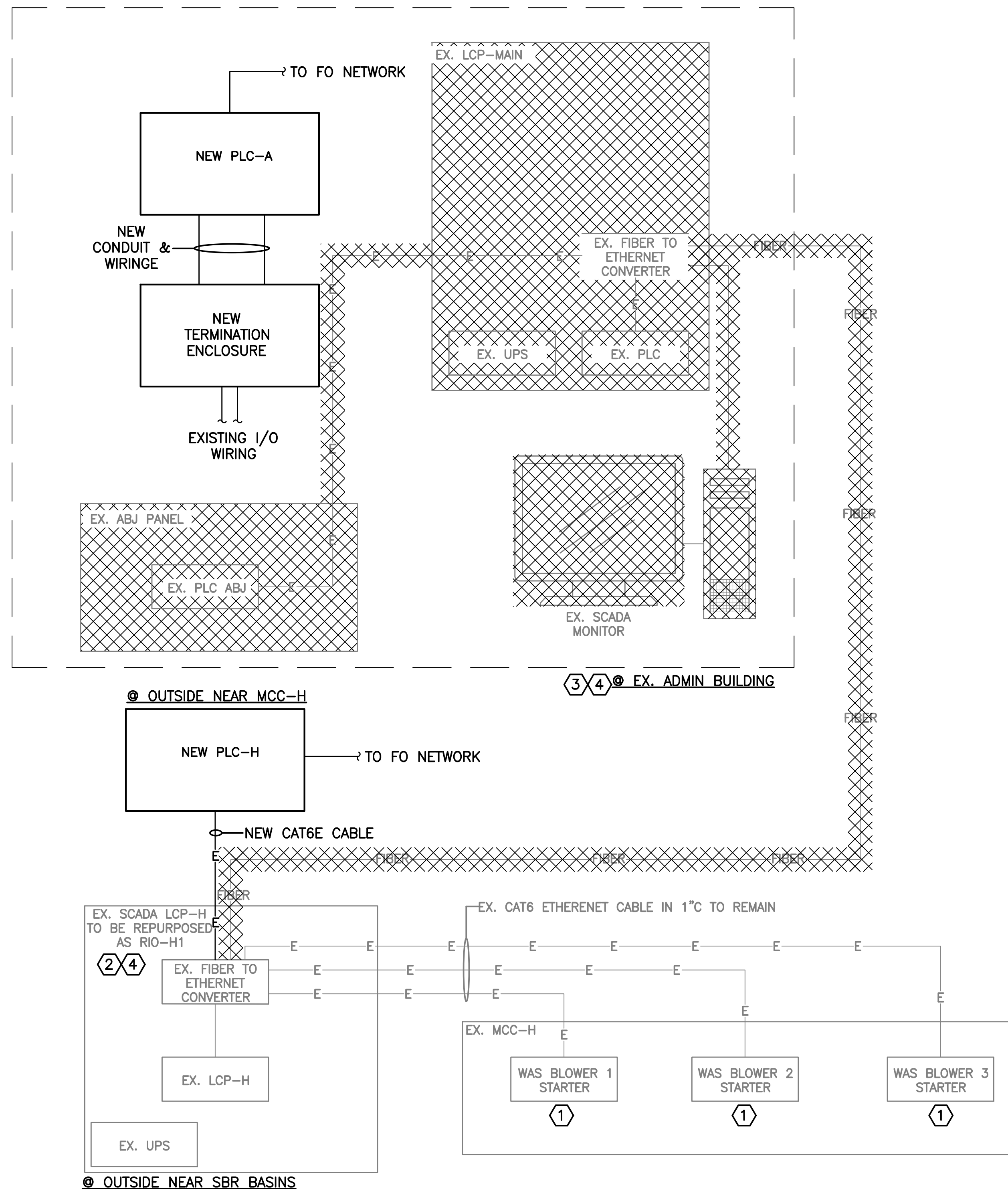
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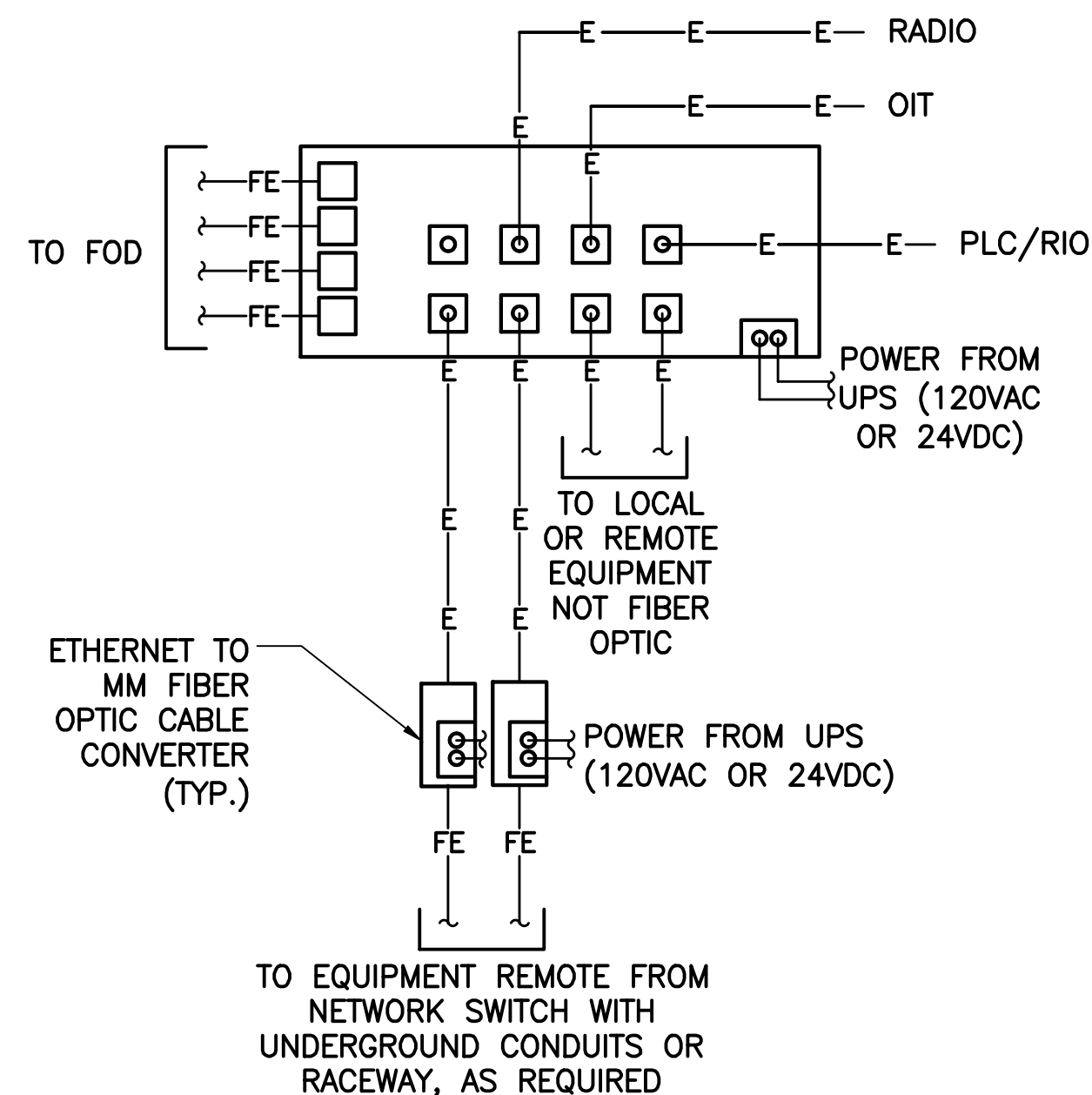
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INSTRUMENTATION DETAILS 4



1 SCADA SYSTEM EXISTING BLOCK DIAGRAM

CODED NOTES

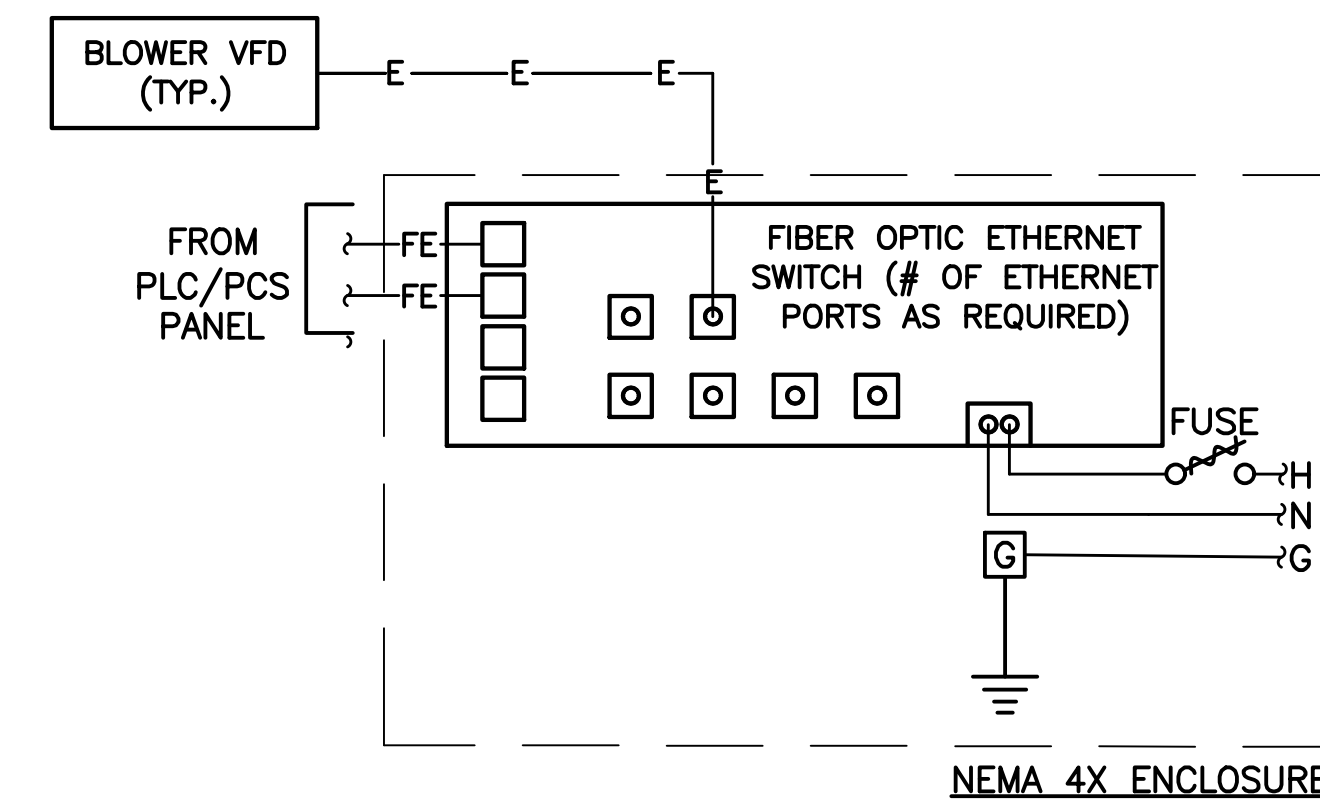
- 1 EX. BLOWERS AND RVSS UNITS TO REMAIN. REPURPOSE AS WAS BLOWERS 1, 2, AND 3.
- 2 EX. SCADA LCP-H TO REMAIN AND BE RENAMED RIO-H1. SYSTEM INTEGRATOR IDENTIFY FIELD WIRING AS INDICATED IN CODED NOTE 3 AND REMOVE ALL EXISTING WIRING AND CONNECTIONS IN RIO-H1.
- 3 EX. LCP-MAIN AND LCP-ABJ TO BE REMOVED. NEW PLC-A SHALL BE INSTALLED IN APPROXIMATE LOCATION OF THIS EQUIPMENT.
- 4 SYSTEM INTEGRATOR SHALL VERIFY ALL FIELD WIRING AND I/O POINTS PRIOR TO ANY DEMOLITION OR WORK ON THE EXISTING SYSTEM. PROVIDE DETAILED INTERCONNECT AND I/O DRAWINGS FOR REVIEW AND APPROVAL. EXISTING I/O TO BE CONNECTED TO THE NEW SYSTEM WILL BE IDENTIFIED AND LABELED. PROVIDE AND INSTALL A TERMINATION ENCLOSURE IN PLACE OF EX. LCP-MAIN AND LCP-ABJ, EXTEND EXISTING WIRING TO THE TERMINATION ENCLOSURE AND PROVIDE NEW CONDUIT AND WIRING TO PLC-A.
- 5 PROVIDE AND INSTALL MIN (2)-2" CONDUITS WITH (60)-#14+#12GND IN ONE CONDUIT AND (20)-#18TSP IN SECOND CONDUIT. CONNECT TO NEW PLC-A AND TERMINATION ENCLOSURE.



2 NETWORK SWITCH (TYP. FOR ALL PCS PANELS)

NOTES:

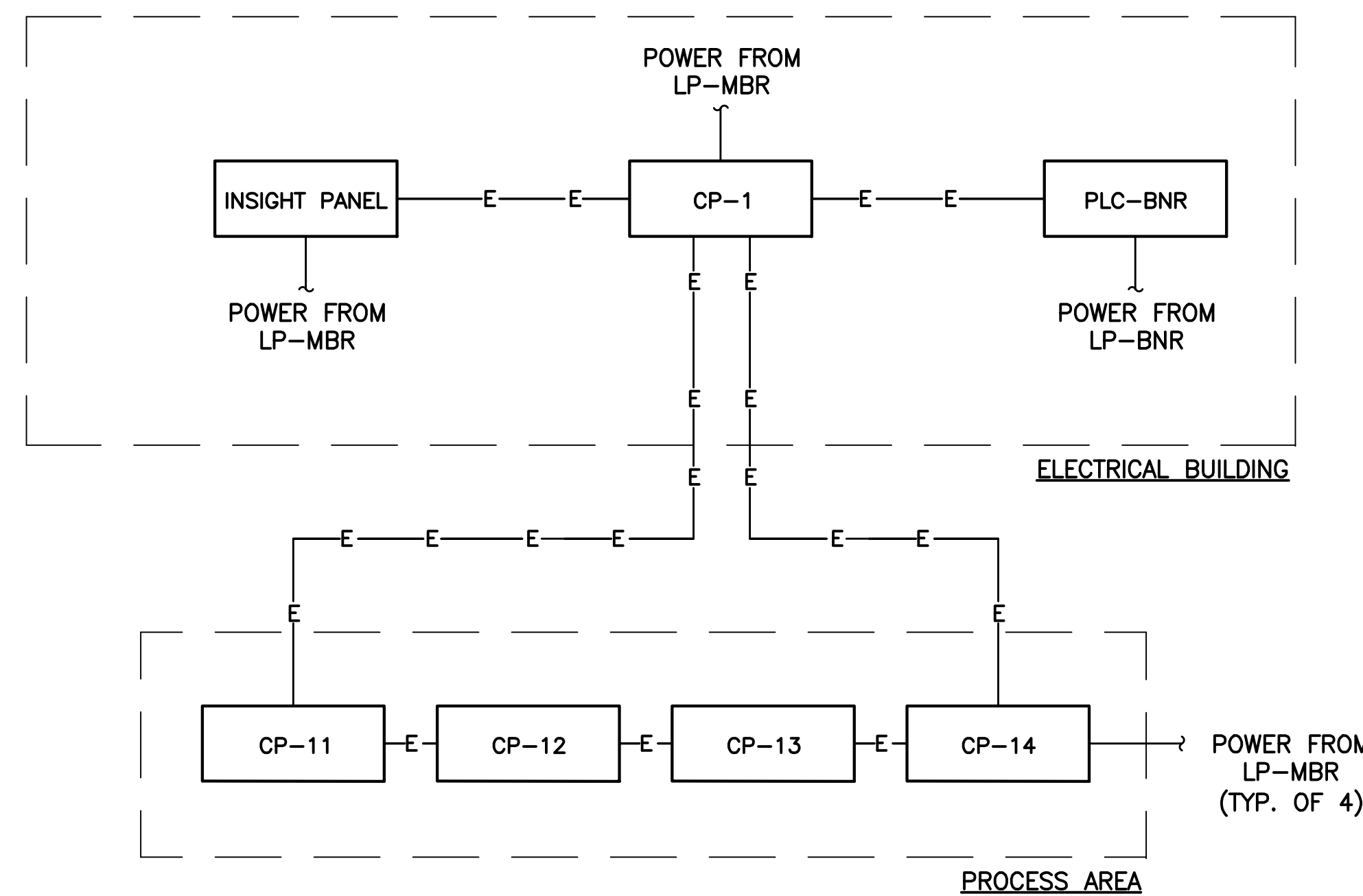
- 1. SYSTEM INTEGRATOR SHALL PROVIDE ETHERNET TO FO OPTIC CONVERTERS FOR ALL EQUIPMENT AT BOTH ENDS AS REQUIRED.



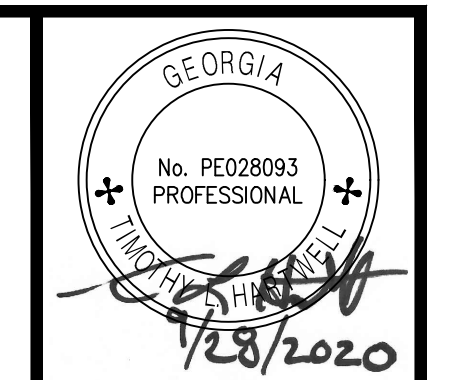
3 BLOWER NETWORK (TYP.)

NOTES:

- 1. MOUNT ADJACENT TO BLOWERS ON EQUIPMENT RACK.
- 2. PROVIDE HIGH TEMPERATURE INDUSTRIAL NETWORK SWITCH IN NEMA 4X ENCLOSURE.
- 3. PROVIDE OVERCURRENT PROTECTION FOR SWITCH.
- 4. PROVIDE SUNSHIELD OVER CABINET.
- 5. ROUTE ETHERNET CAT62 CABLE ABOVE GROUND TO EACH BLOWER IN CONDUIT.



4 MBR NETWORK DIAGRAM

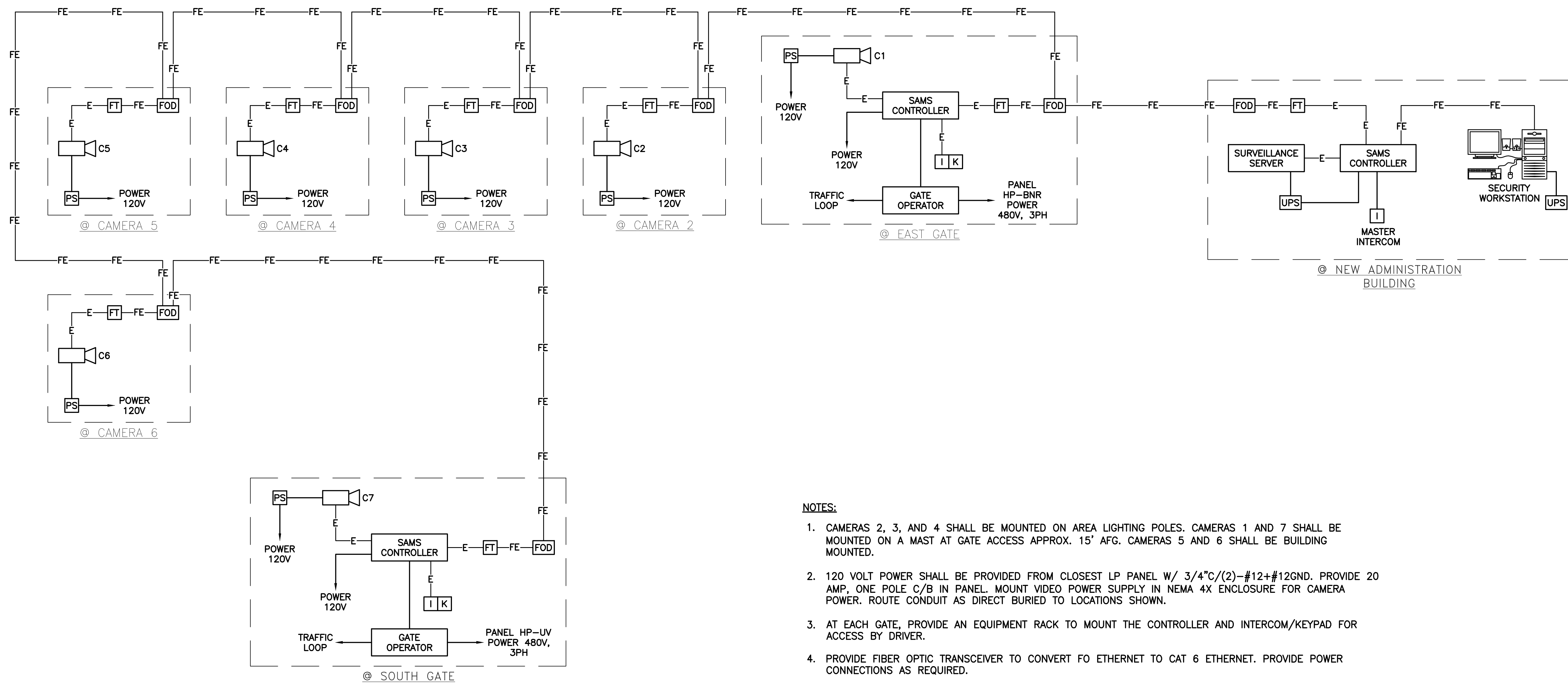
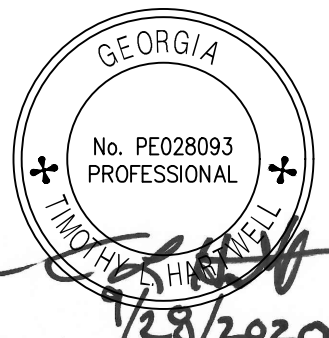


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 INSTRUMENTATION DETAILS 5



LEGEND:

FIBER OPTIC CABLE	—FE—	FIBER OPTIC TRANSCEIVER	[FT]
CAT6 SHIELDED ETHERNET CABLE	—E—	FIBER OPTIC DISTRIBUTION BOX	[FOD]
INTERCOM WITH KEYPAD	[I K]	IP VIDEO CAMERA	[C (X)]
POWER SUPPLY	[PS]		
INTERCOM	[I]		

NOTES:

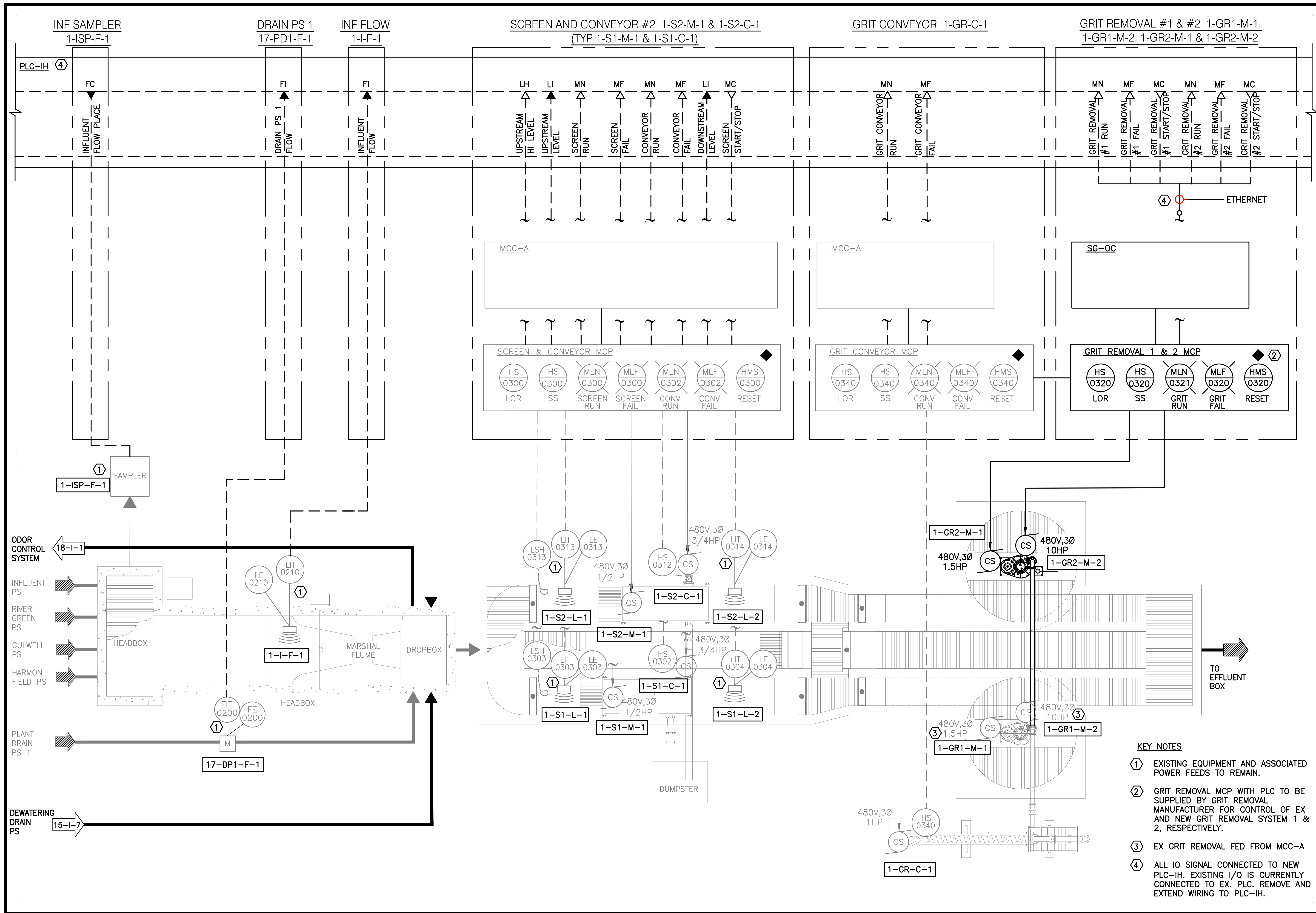
- CAMERAS 2, 3, AND 4 SHALL BE MOUNTED ON AREA LIGHTING POLES. CAMERAS 1 AND 7 SHALL BE MOUNTED ON A MAST AT GATE ACCESS APPROX. 15' AFG. CAMERAS 5 AND 6 SHALL BE BUILDING MOUNTED.
- 120 VOLT POWER SHALL BE PROVIDED FROM CLOSEST LP PANEL W/ 3/4"C/(2)-#12+#12GND. PROVIDE 20 AMP, ONE POLE C/B IN PANEL. MOUNT VIDEO POWER SUPPLY IN NEMA 4X ENCLOSURE FOR CAMERA POWER. ROUTE CONDUIT AS DIRECT BURIED TO LOCATIONS SHOWN.
- AT EACH GATE, PROVIDE AN EQUIPMENT RACK TO MOUNT THE CONTROLLER AND INTERCOM/KEYPAD FOR ACCESS BY DRIVER.
- PROVIDE FIBER OPTIC TRANSCEIVER TO CONVERT FO ETHERNET TO CAT 6 ETHERNET. PROVIDE POWER CONNECTIONS AS REQUIRED.
- FIBER OPTIC CABLE SHALL BE SINGLE MODE AND SUITABLE FOR OUTDOOR INSTALLATION. PROVIDE NUMBER OF STRANDS AS REQUIRED FOR A COMPLETE SYSTEM. PROVIDE AND INSTALL IN 1" MIN. CONDUIT. THE USE OF NEW AND EXISTING DUCTBANKS IS ACCEPTABLE, IF AVAILABLE.
- THE EQUIPMENT IN THE NEW ADMINISTRATION BUILDING SHALL BE PROVIDED AND INSTALLED AS INDICATED:
 - INTERCOM AND SECURITY WORKSTATION IN OPERATORS AREA WITH PLANT CONTROL SYSTEM.
 - SERVER AND CONTROLLER IN THE ELECTRICAL ROOM IN A 19" RACK SYSTEM.
- THE SECURITY SYSTEMS INTEGRATOR IS RESPONSIBLE TO PROVIDE A COMPLETE OPERATION SYSTEM, INCLUDING ALL CONDUIT, WIRE, FIBER OPTIC CABLE, ACCESS EQUIPMENT, GATE OPERATOR, CAMERAS, KEYPADS, WORKSTATIONS, SERVERS, CONTROLLER, AND SYSTEM INTEGRATION. THE RISER DIAGRAM PROVIDES GENERAL INFORMATION. ALSO, REFER TO SPECIFICATIONS 16720 AND 16792.

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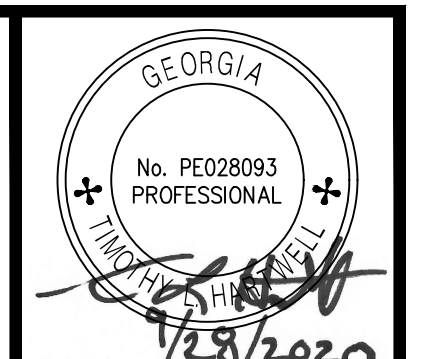
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ACCESS AND VIDEO RISER DIAGRAM



- KEY NOTES**
- ① EXISTING EQUIPMENT AND ASSOCIATED POWER FEEDS TO REMAIN.
 - ② GRIT REMOVAL MCP WITH PLC TO BE SUPPLIED BY GRIT REMOVAL MANUFACTURER FOR CONTROL OF EX AND NEW GRIT REMOVAL SYSTEM 1 & 2, RESPECTIVELY.
 - ③ EX GRIT REMOVAL FED FROM MCC-A
 - ④ ALL IO SIGNAL CONNECTED TO NEW PLC-IH. EXISTING I/O IS CURRENTLY CONNECTED TO EX. PLC. REMOVE AND EXTEND WIRING TO PLC-IH.



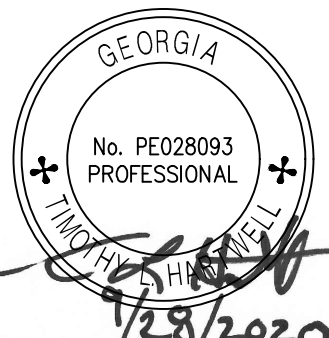
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 P&ID
 HEADWORKS

SHEET NO.
1-1-1



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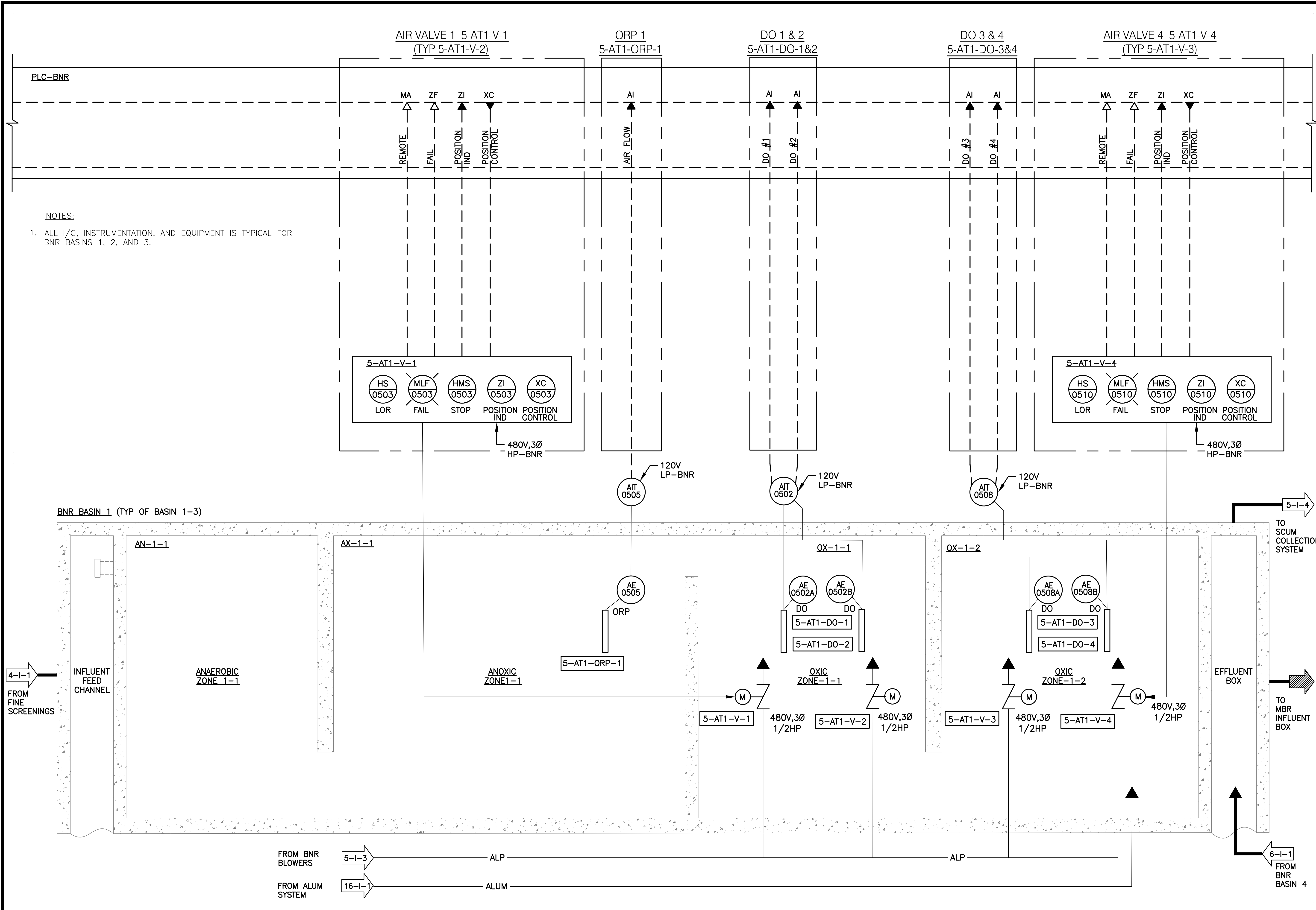
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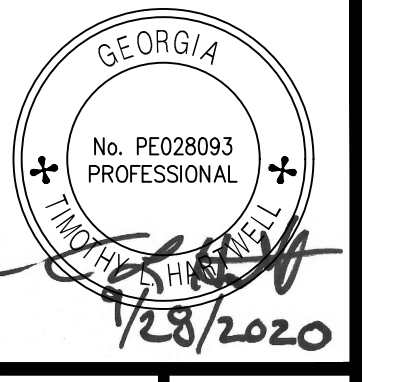
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 BNR BASINS 1-3
 INSTRUMENTATION

SHEET NO.
5-1-1





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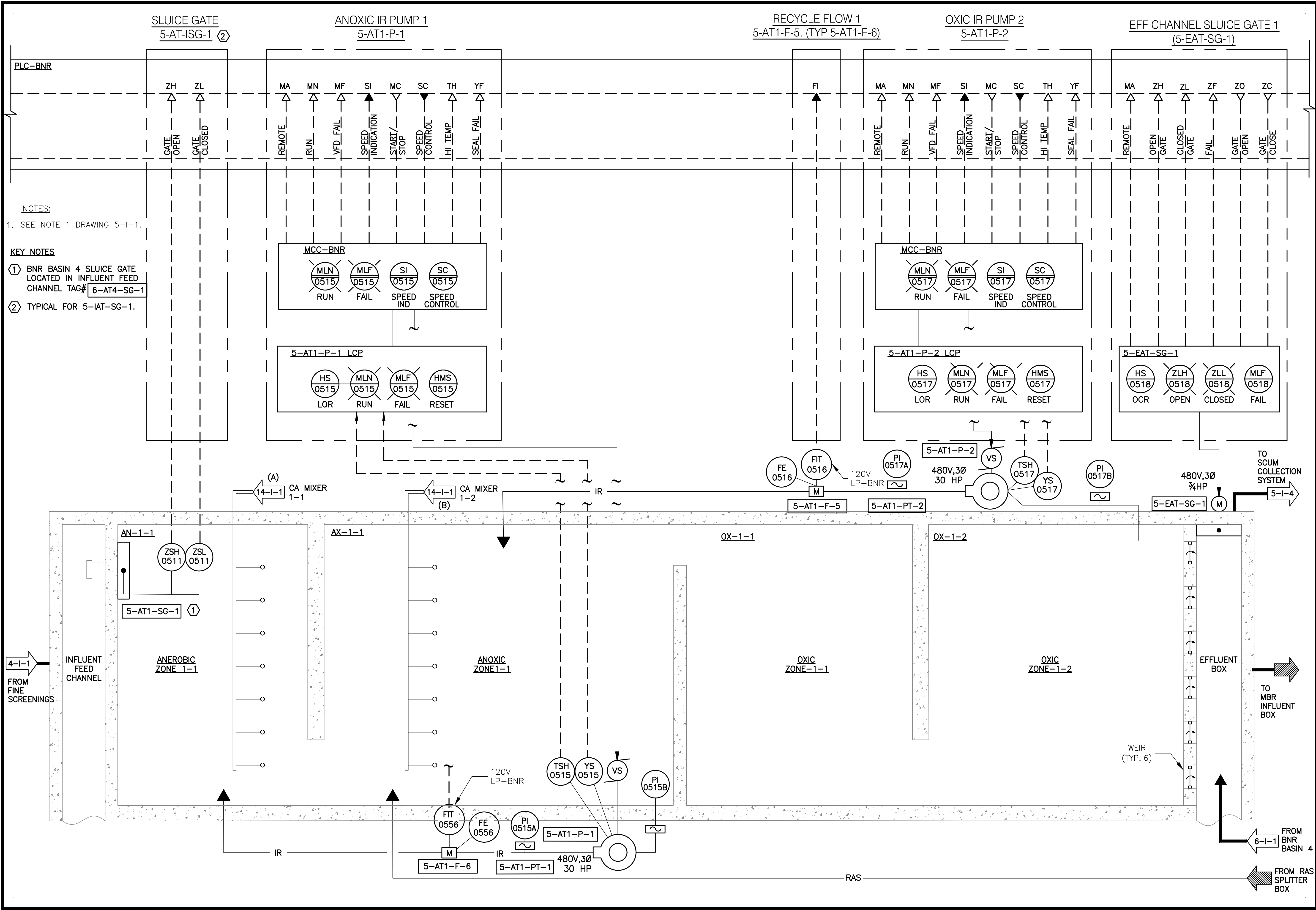
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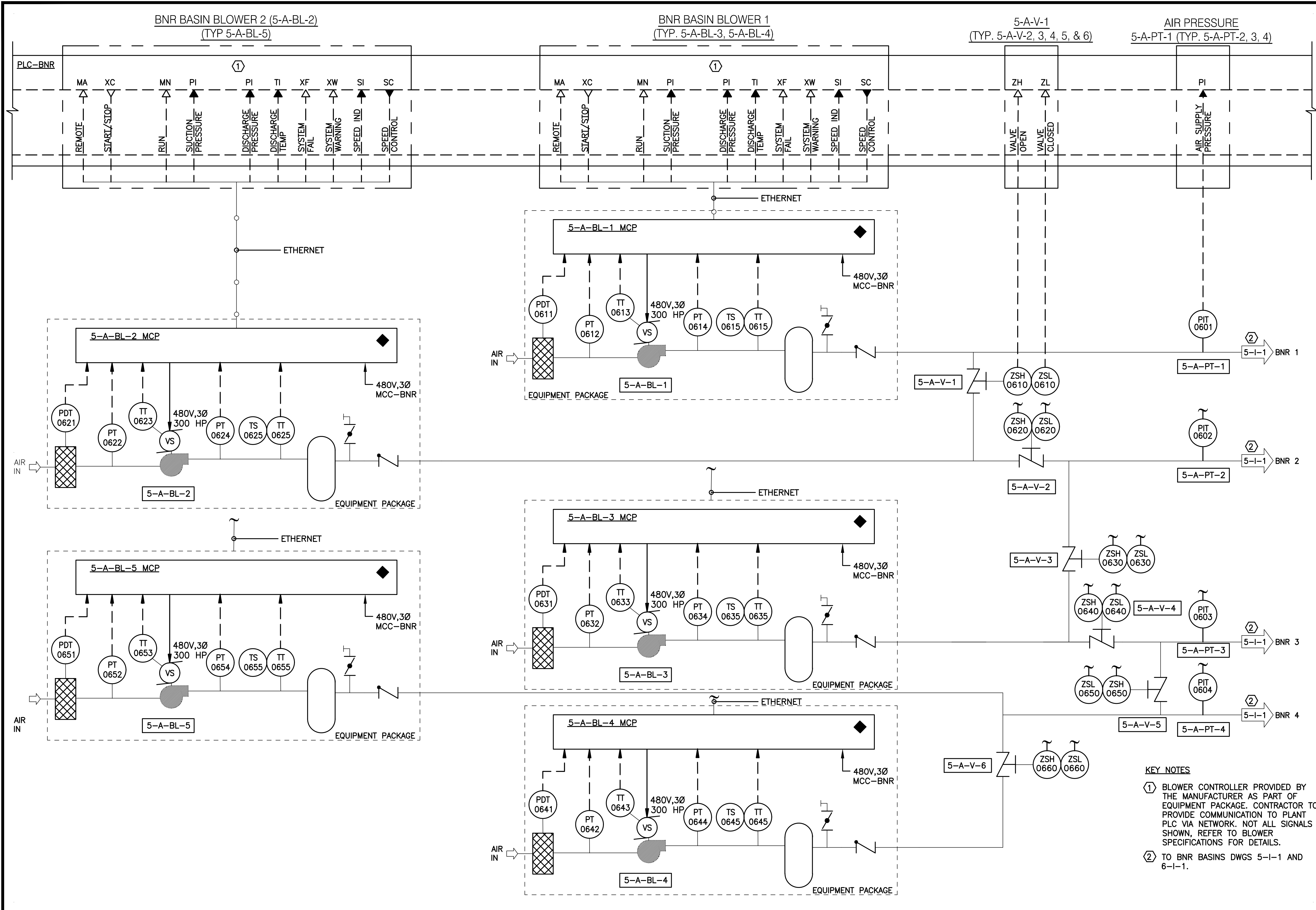
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 P&ID
 BNR BASINS 1-3
 MOTORS

SHEET NO.
5-1-2



NOTES:
 1. SEE NOTE 1 DRAWING 5-1-1.

KEY NOTES
 ① BNR BASIN 4 SLUICE GATE LOCATED IN INFLUENT FEED CHANNEL TAG# 6-AT4-SG-1
 ② TYPICAL FOR 5-IAT-SG-1.



KEY NOTES

① BLOWER CONTROLLER PROVIDED BY THE MANUFACTURER AS PART OF EQUIPMENT PACKAGE. CONTRACTOR TO PROVIDE COMMUNICATION TO PLANT PLC VIA NETWORK. NOT ALL SIGNALS SHOWN, REFER TO BLOWER SPECIFICATIONS FOR DETAILS.

② TO BNR BASINS DWGS 5-I-1 AND 6-I-1.



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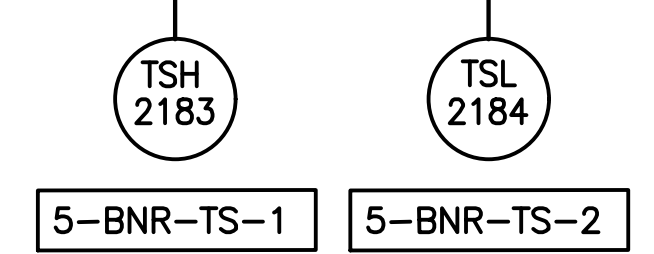
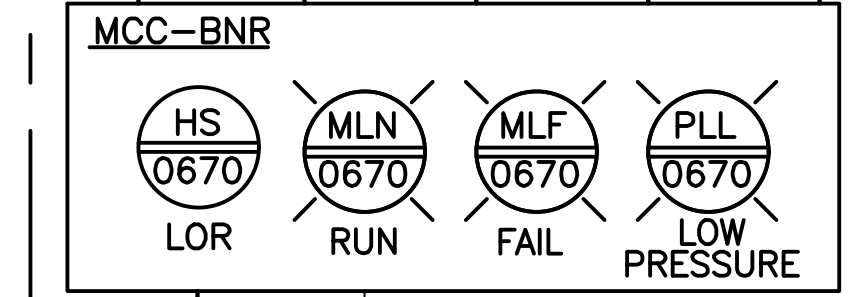
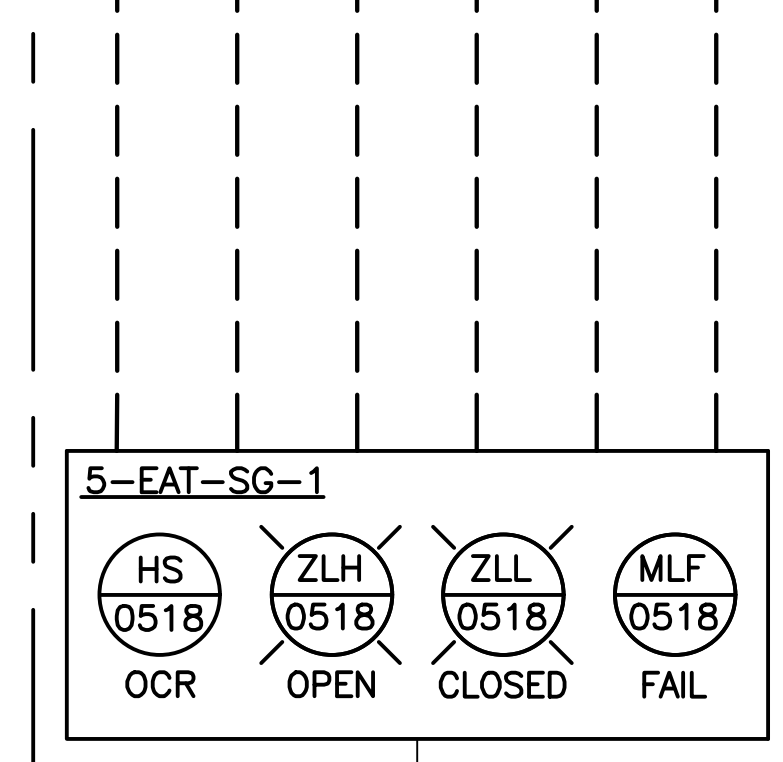
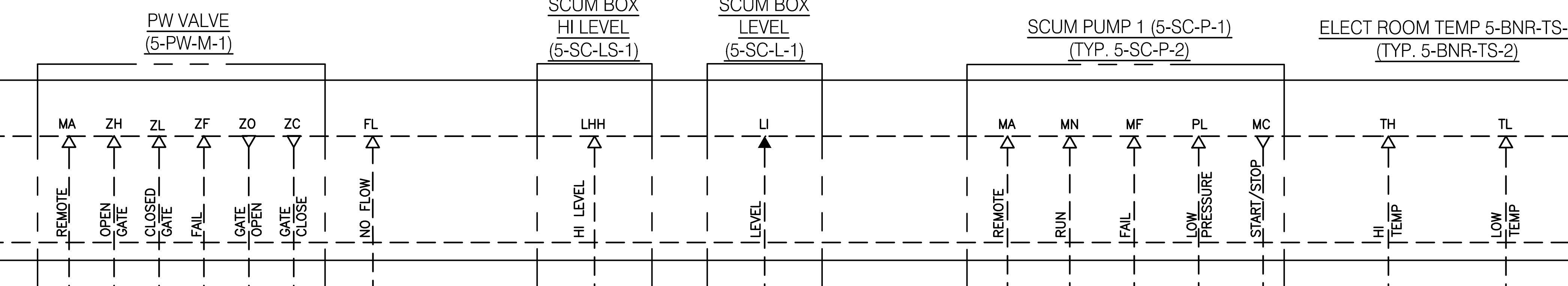
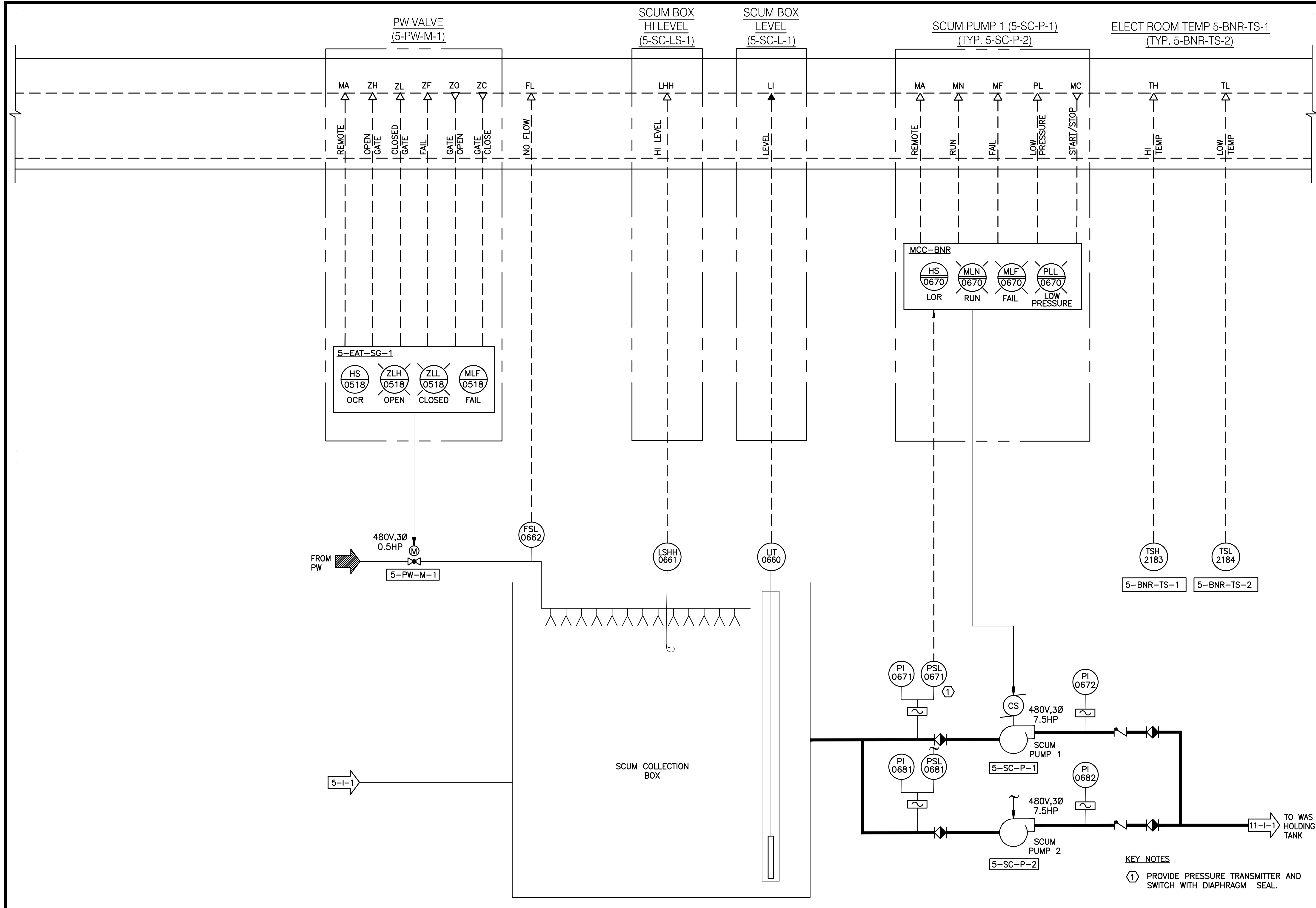
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BNR BLOWERS

SHEET NO.
5-I-3



KEY NOTES
 (1) PROVIDE PRESSURE TRANSMITTER AND SWITCH WITH DIAPHRAGM SEAL.

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DATE: SEPTEMBER 25, 2020

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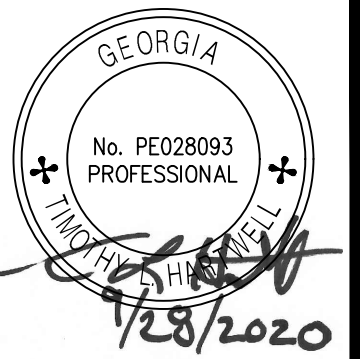
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SCUM COLLECTION SYSTEM

SHEET NO.

5-1-4

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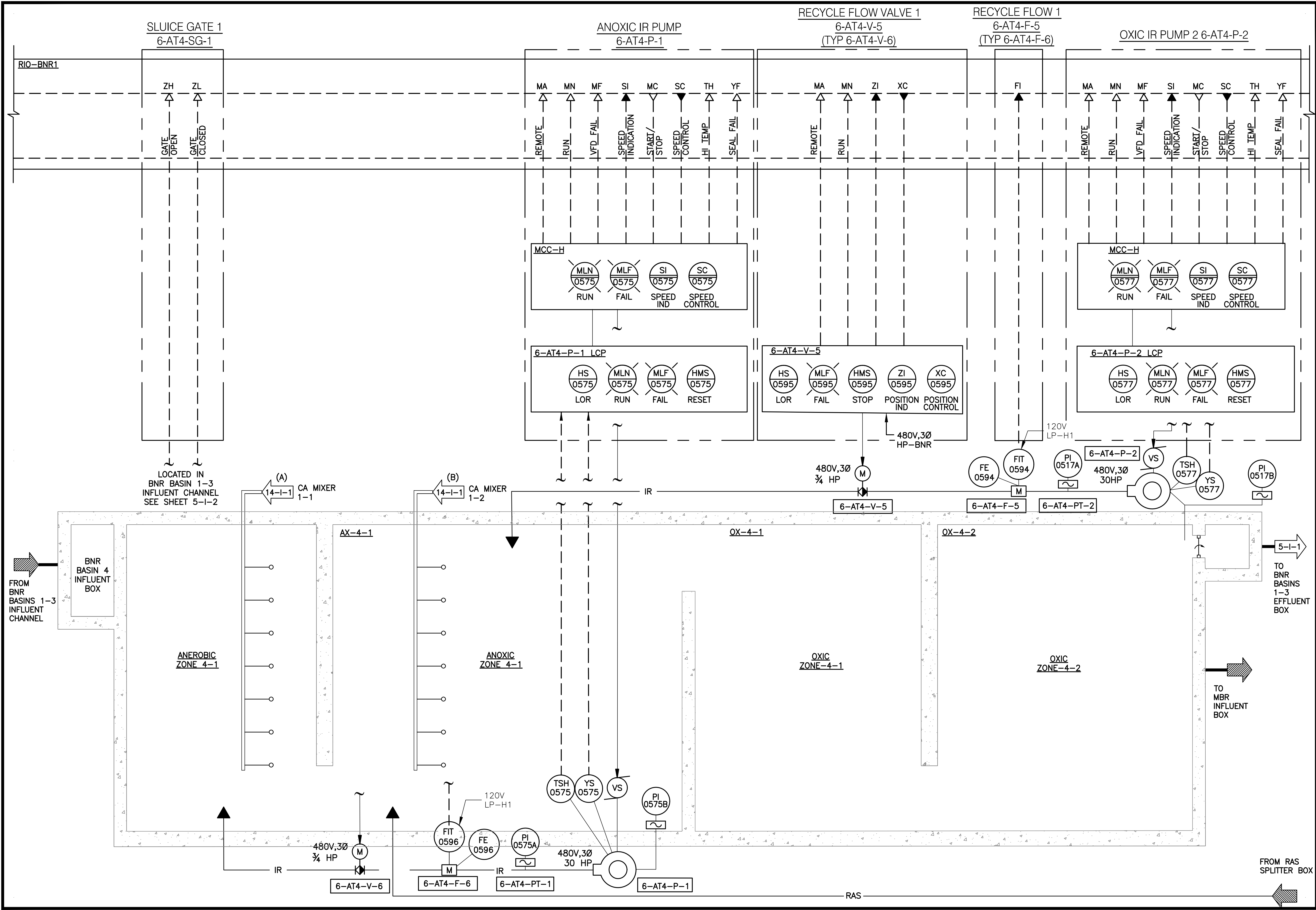
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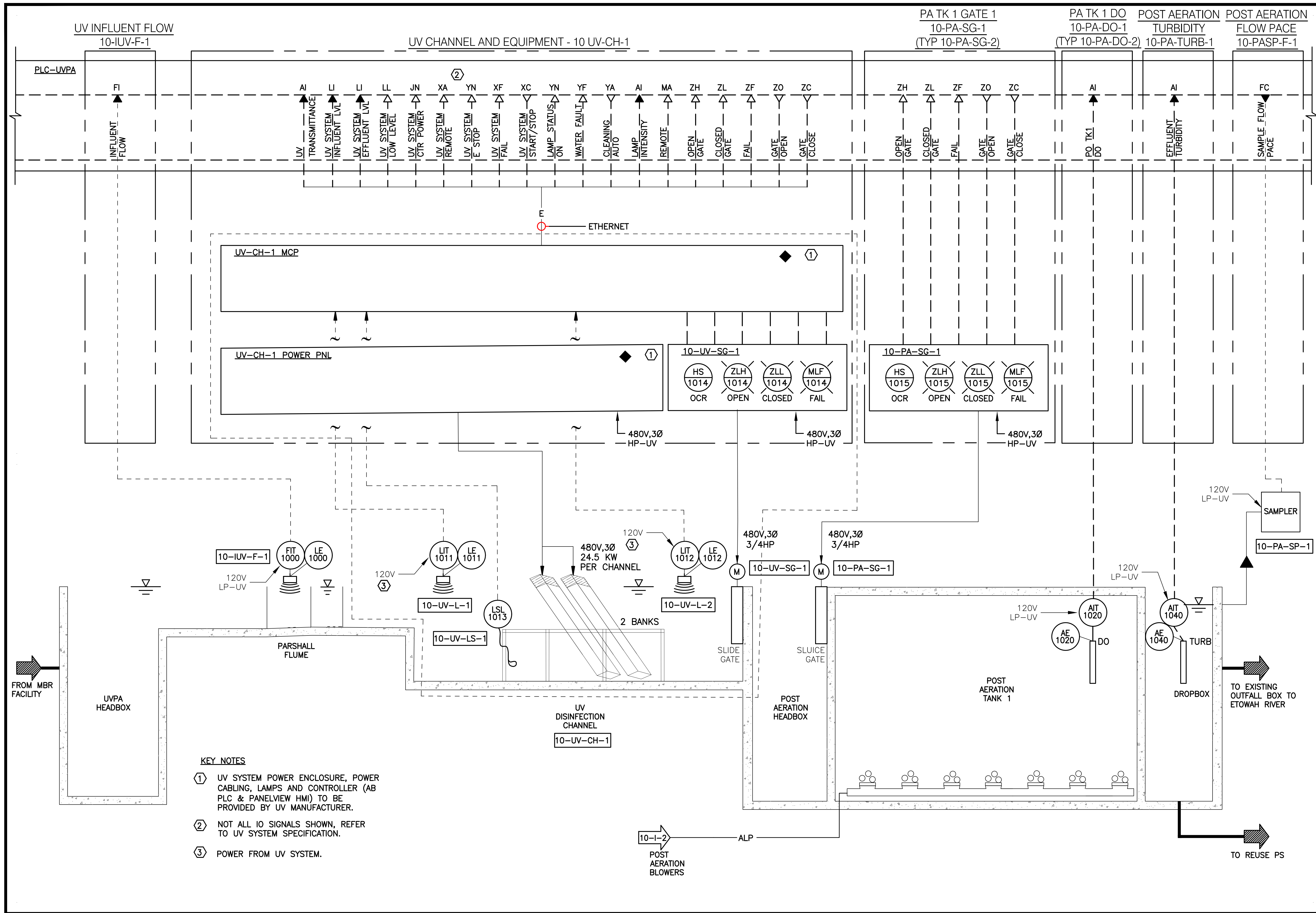
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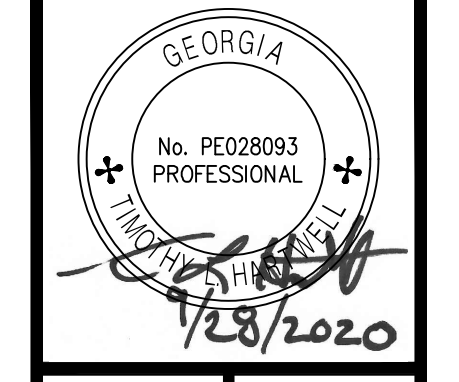
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 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 P&ID
 BNR BASIN 4
 MOTORS

SHEET NO.
6-I-2





- KEY NOTES**
- ① UV SYSTEM POWER ENCLOSURE, POWER CABLING, LAMPS AND CONTROLLER (AB PLC & PANELVIEW HMI) TO BE PROVIDED BY UV MANUFACTURER.
 - ② NOT ALL IO SIGNALS SHOWN, REFER TO UV SYSTEM SPECIFICATION.
 - ③ POWER FROM UV SYSTEM.



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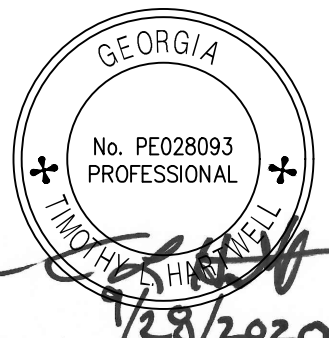
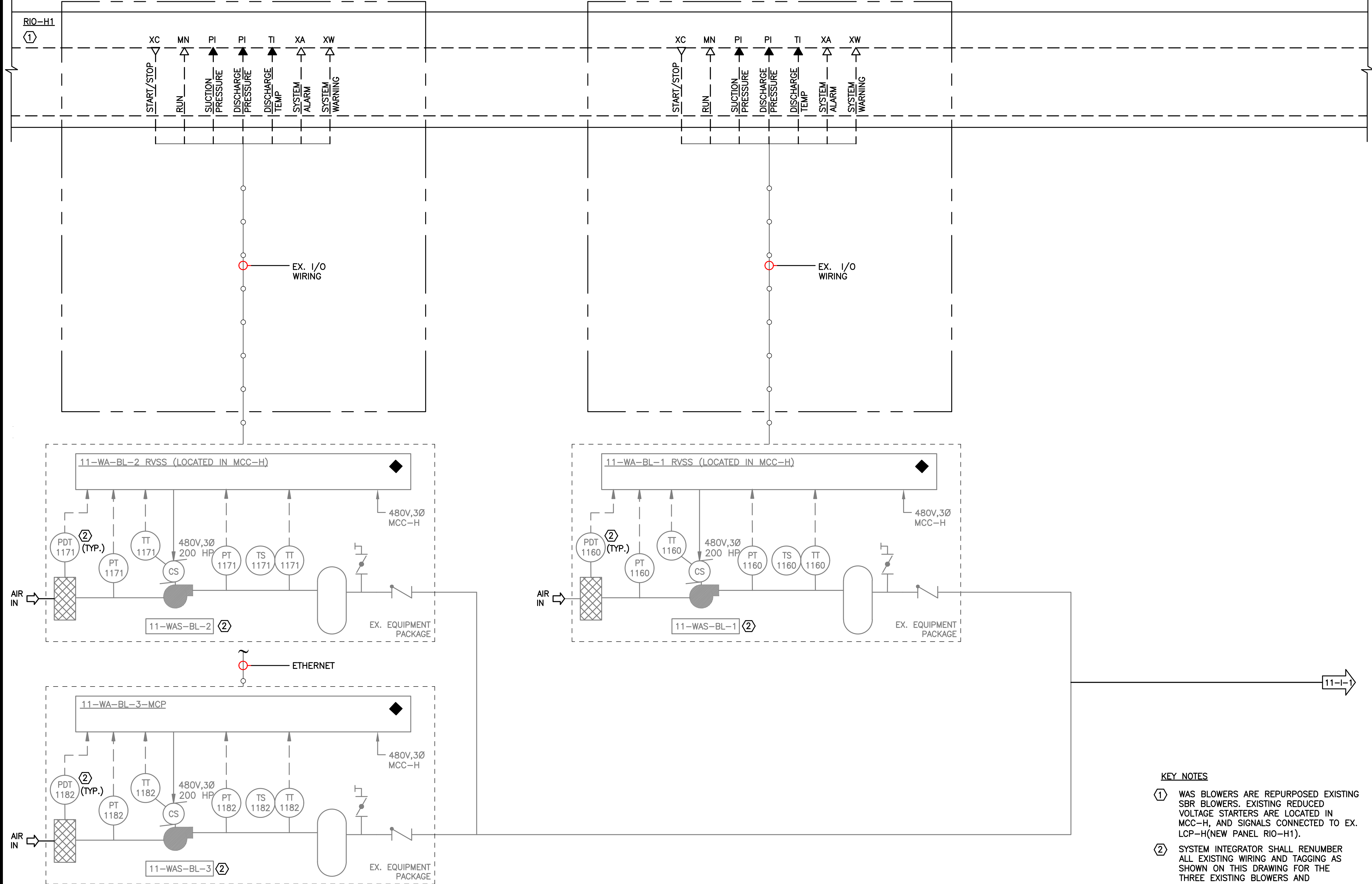
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 P&ID
 UVPA FACILITY

SHEET NO.
10-I-1

WAS STORAGE BLOWER 2 (11-WAS-BL-2) (1)
(TYP 11-WAS-BL-3)

WAS STORAGE BLOWER 1 (11-WAS-BL-1) (1)



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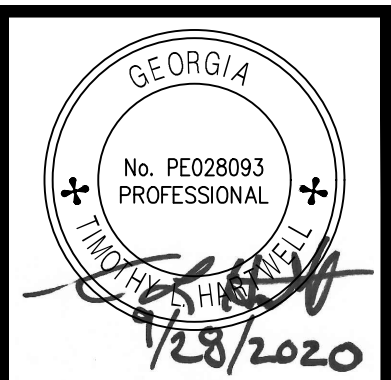
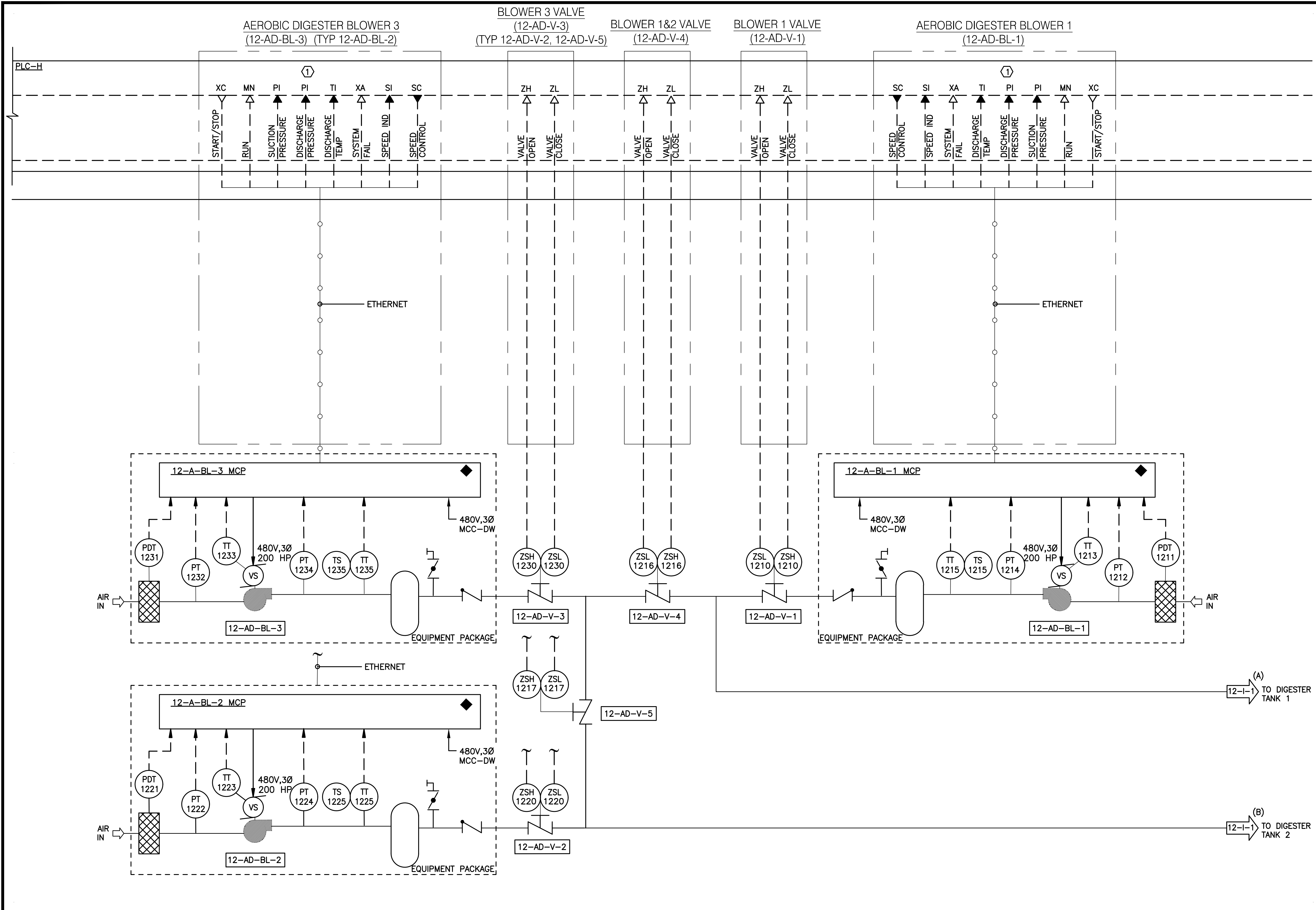
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P&ID
WAS STORAGE BLOWERS

- KEY NOTES**
- (1) WAS BLOWERS ARE REPURPOSED EXISTING SBR BLOWERS. EXISTING REDUCED VOLTAGE STARTERS ARE LOCATED IN MCC-H, AND SIGNALS CONNECTED TO EX. LCP-H(NEW PANEL RIO-H1).
 - (2) SYSTEM INTEGRATOR SHALL RENUMBER ALL EXISTING WIRING AND TAGGING AS SHOWN ON THIS DRAWING FOR THE THREE EXISTING BLOWERS AND ASSOCIATED EQUIPMENT.

SHEET NO.
11-I-2



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P&ID
AEROBIC DIGESTER BLOWERS

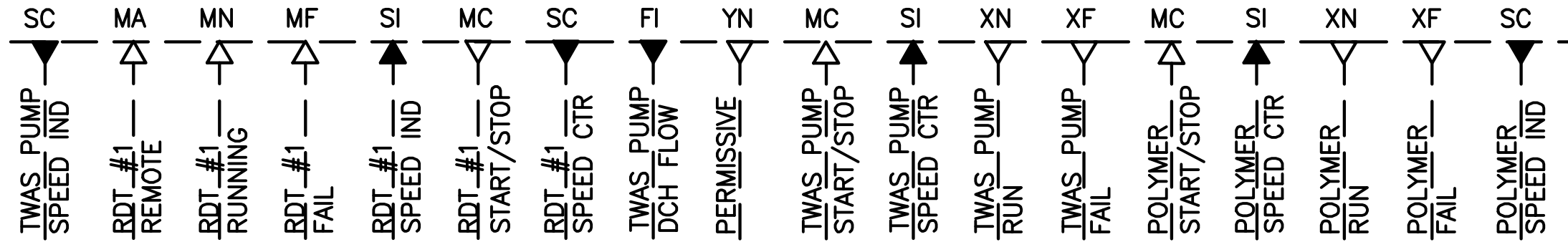
SHEET NO.
12-I-2

RDT1 INF FLOW 15-RDT1-F-1
(TYP 15-RDT2-F-1)

ROTARY DRUM THICKENER 1
15-RDT-1 (TYP 15-RDT-2)

PLC-DW

RDT #1
INF FLOW

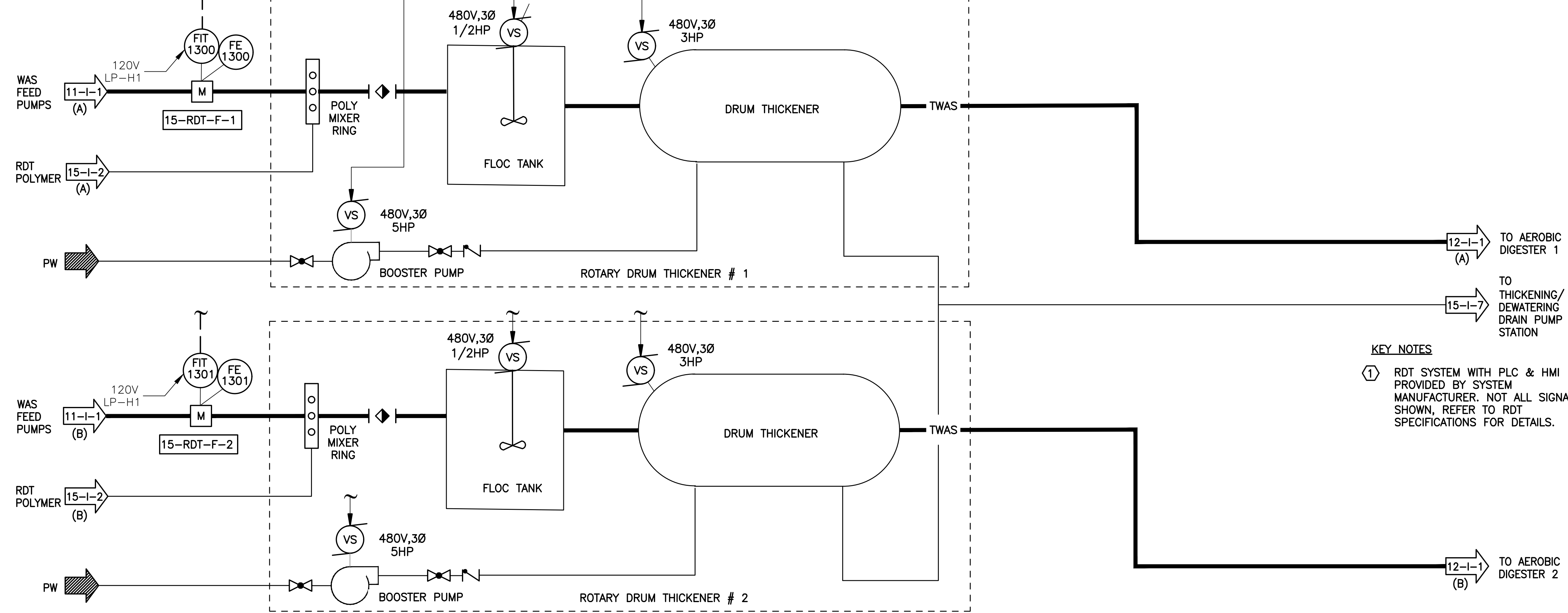


MCC-DW

ETHERNET

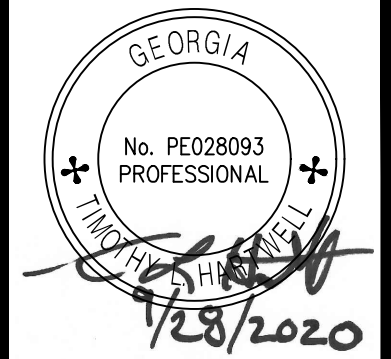
15-RDT-1 MCP

HMI



KEY NOTES

- ① RDT SYSTEM WITH PLC & HMI PROVIDED BY SYSTEM MANUFACTURER. NOT ALL SIGNALS SHOWN, REFER TO RDT SPECIFICATIONS FOR DETAILS.



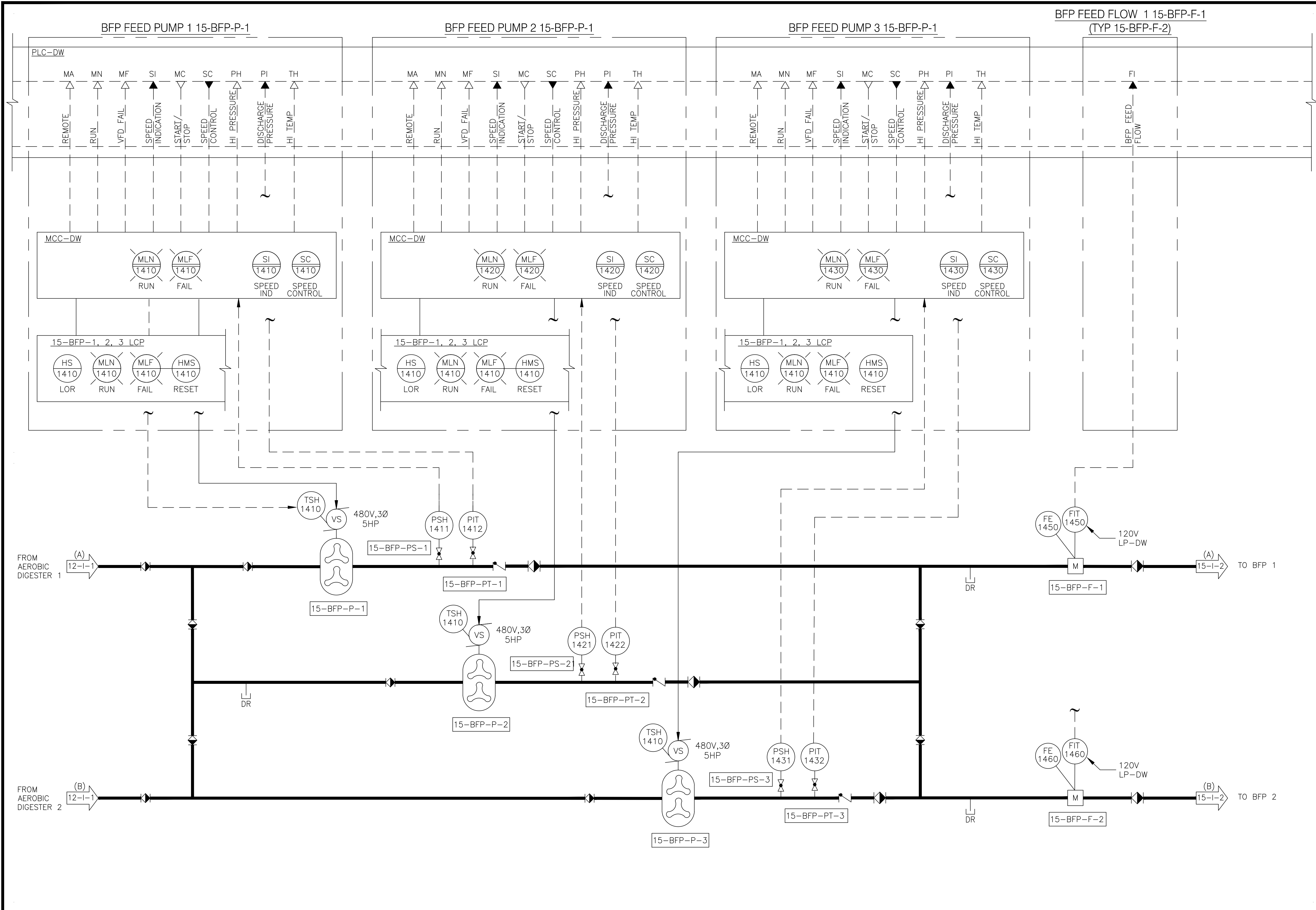
ATKINS
1600 RiverEdge Parkway, N.W., Suite 700
Atlanta, GA 30328
P: 770-993-0260

HARTWELL ENGINEERING, INC.
ENGINEERS & REGULATORS
STEVENSVILLE, MARYLAND
(410) 596-2111

PROJ. NO.	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DATE	SCALE
100061831	RDWIN/JZ	NCT/NJZ	TLH	TLH	SEPTEMBER 2020	NTS

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
ROTARY DRUM THICKENER

SHEET NO.
15-1-1



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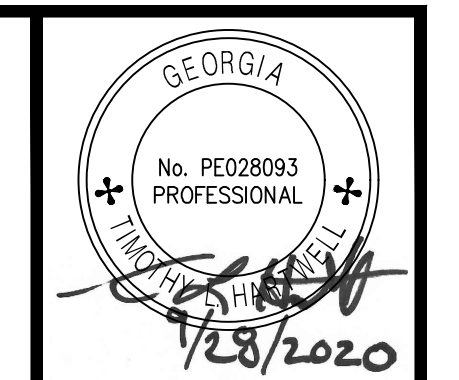
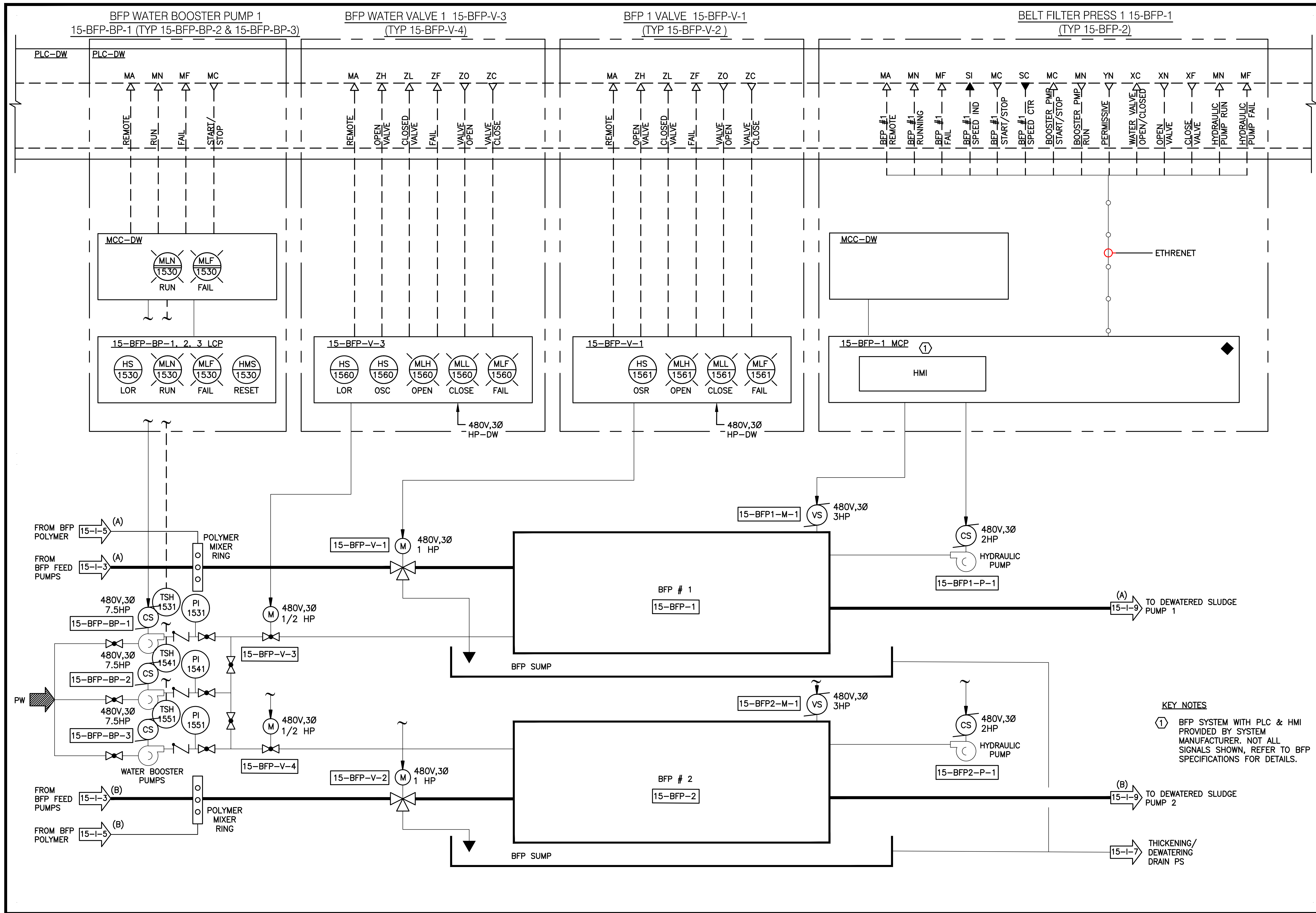
HARTWELL ENGINEERING, INC.
 ENGINEERS & REGULATORS
 STEVENSON, GA
 (770) 262-1111

DATE	REVISION

PROJ. NO.: 100061831
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 DRAWN BY: NCT/INJZ
 CHECKED BY: TLH
 APPROVED BY: TLH
 DATE: SEPTEMBER 2020
 SCALE: NTS

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
BFP FEED PUMPS

SHEET NO.
15-I-3



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 (410) 541-1111

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100061831	RDWINJZ	NCTANJZ	TLH	TLH	SEPTEMBER 2020	NTS
REVISION	DATE	REVISION	DATE			

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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
BELT FILTER PRESS
BFP

SHEET NO.
15-I-4

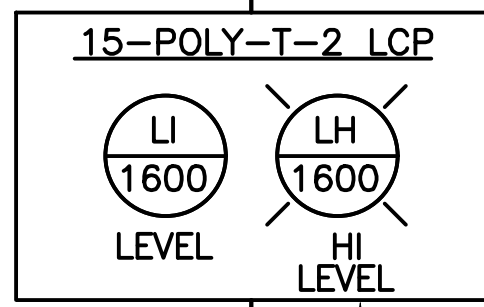
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BFP POLYMER TANK 2 15-POLY-T-2

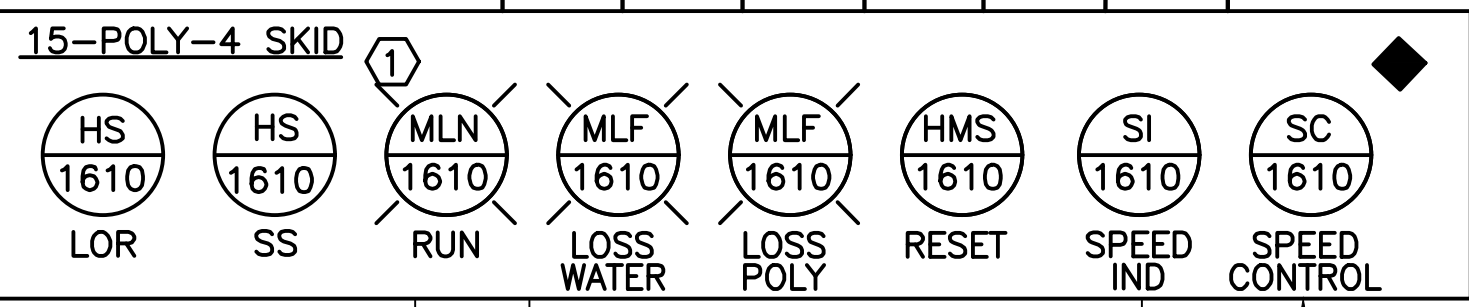
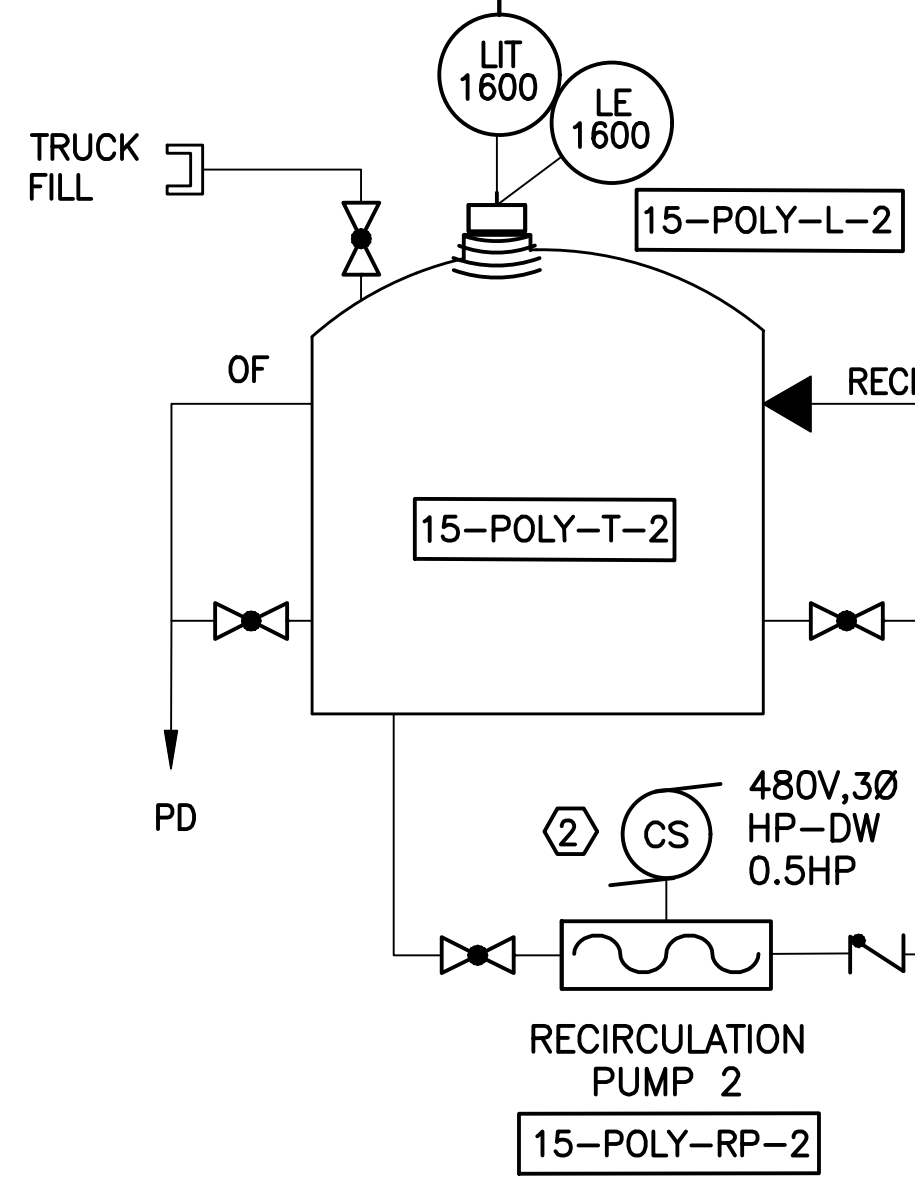
BFP POLYMER SKID 4 15-POLY-P-4
(TYP 15-POLY-P-5 & 15-POLY-P-6)

PLC-DW

POLY TANK 2
LEVEL

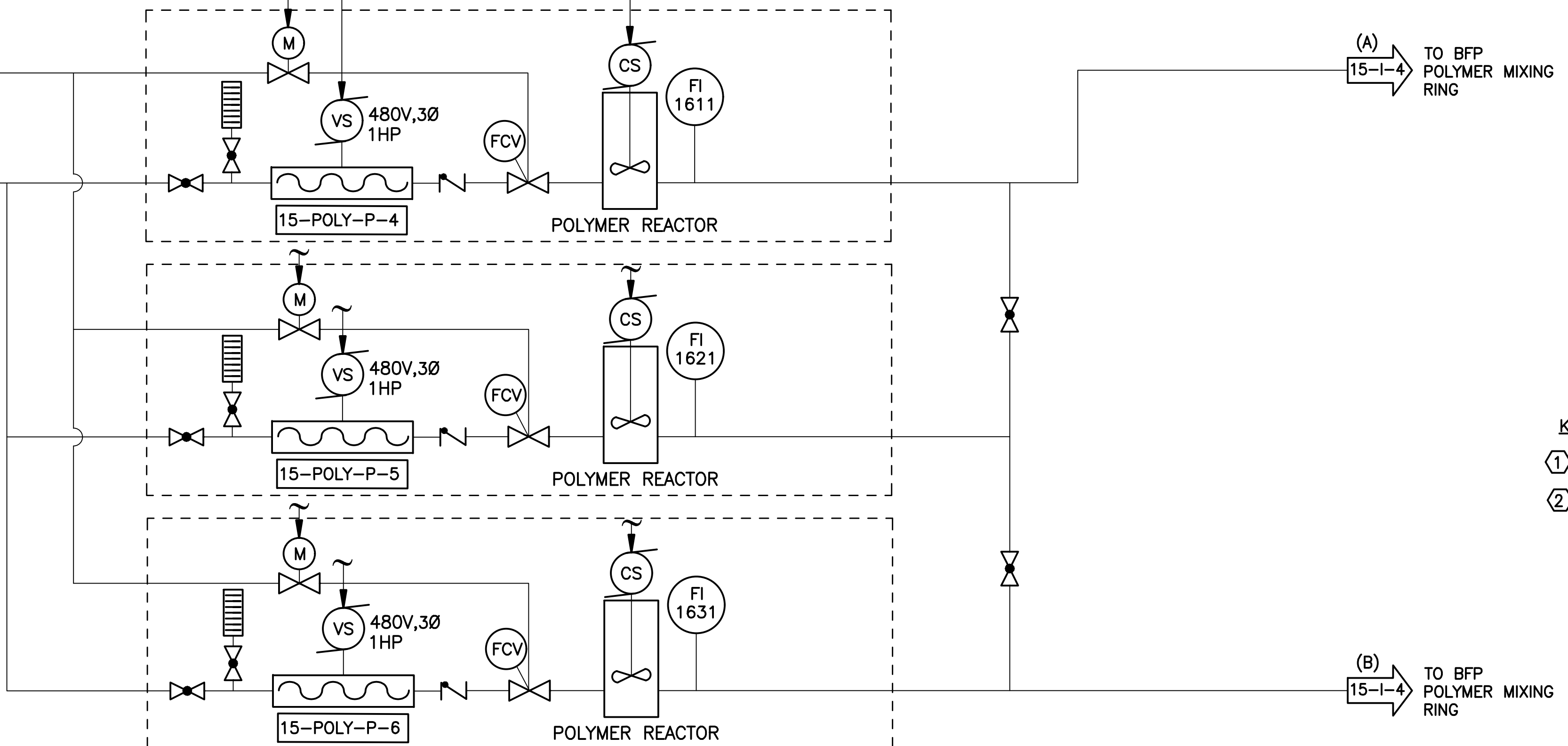


120V LP-DW



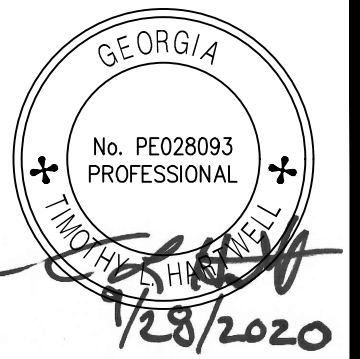
480V, 3Ø HP-DW

FROM POTABLE WATER



KEY NOTES

- ① POLYMER SKID
- ② MANUAL OPERATION



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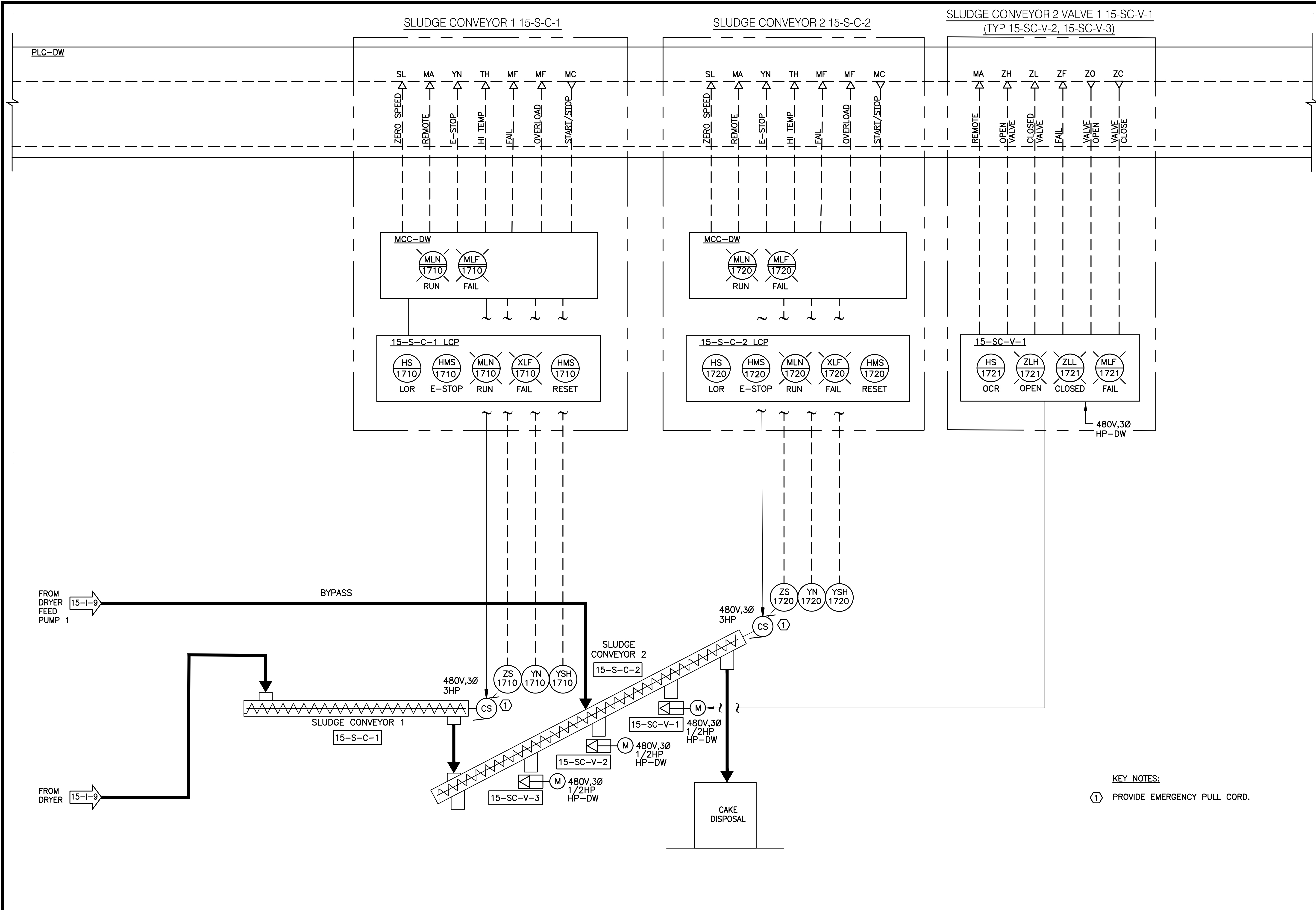
REVISION	DATE

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APPROVED BY: TLH
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
BFP POLYMER

SHEET NO.
15-I-5



KEY NOTES:
 (1) PROVIDE EMERGENCY PULL CORD.



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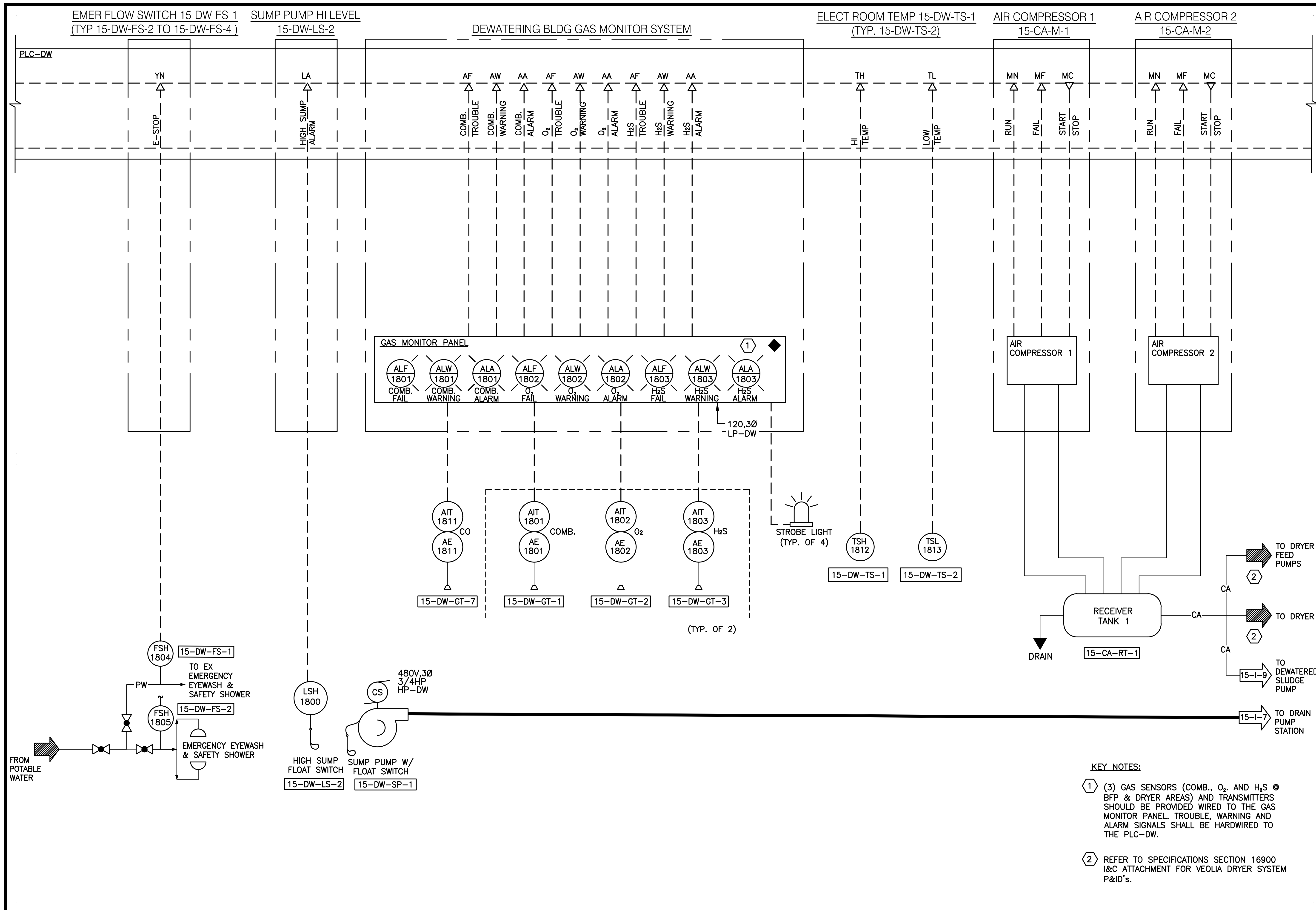
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CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
SLUDGE CONVEYORS

SHEET NO.
15-I-6



- KEY NOTES:**
- ① (3) GAS SENSORS (COMB., O₂, AND H₂S @ BFP & DRYER AREAS) AND TRANSMITTERS SHOULD BE PROVIDED WIRED TO THE GAS MONITOR PANEL. TROUBLE, WARNING AND ALARM SIGNALS SHALL BE HARDWIRED TO THE PLC-DW.
 - ② REFER TO SPECIFICATIONS SECTION 16900 I&C ATTACHMENT FOR VEOLIA DRYER SYSTEM P&ID's.

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(410) 581-1111

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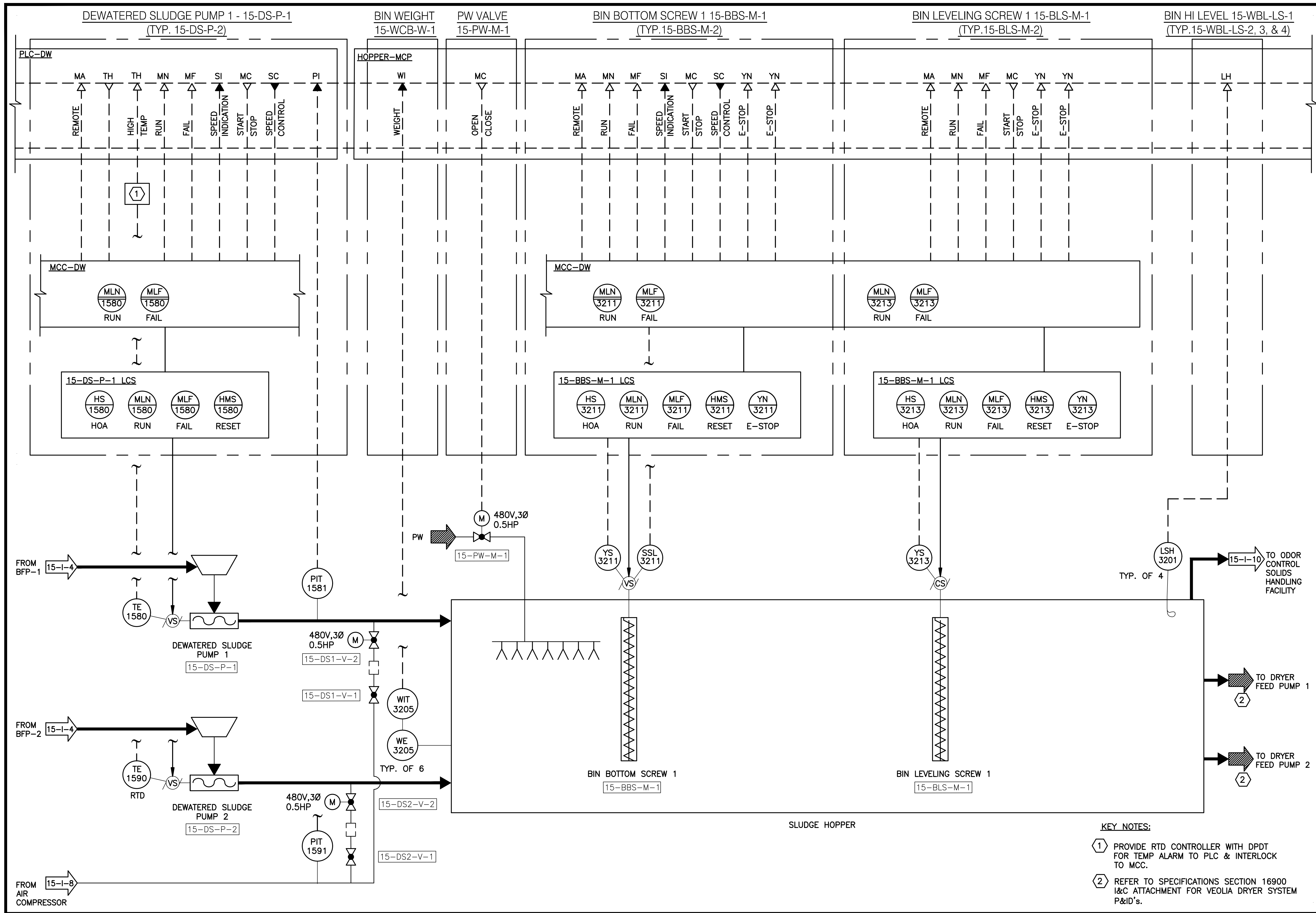
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SCALE: NTS	

PROJ. NO.: 100061831

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
SOLIDS HANDLING FACILITY
MISCELLANEOUS

SHEET NO.
15-1-8

File Name: C:\P_WORK\ATKNA001\NICKY.TODD\DWG\35909\3015.08 - 15-1-8.DWG Tab: 15-1-8 Plotted: September 25, 2020 9:46am



- KEY NOTES:**
- ① PROVIDE RTD CONTROLLER WITH DPDT FOR TEMP ALARM TO PLC & INTERLOCK TO MCC.
 - ② REFER TO SPECIFICATIONS SECTION 16900 I&C ATTACHMENT FOR VEOLIA DRYER SYSTEM P&ID's.

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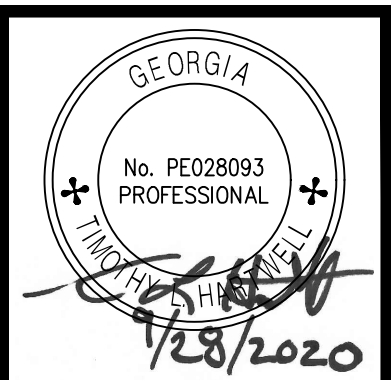
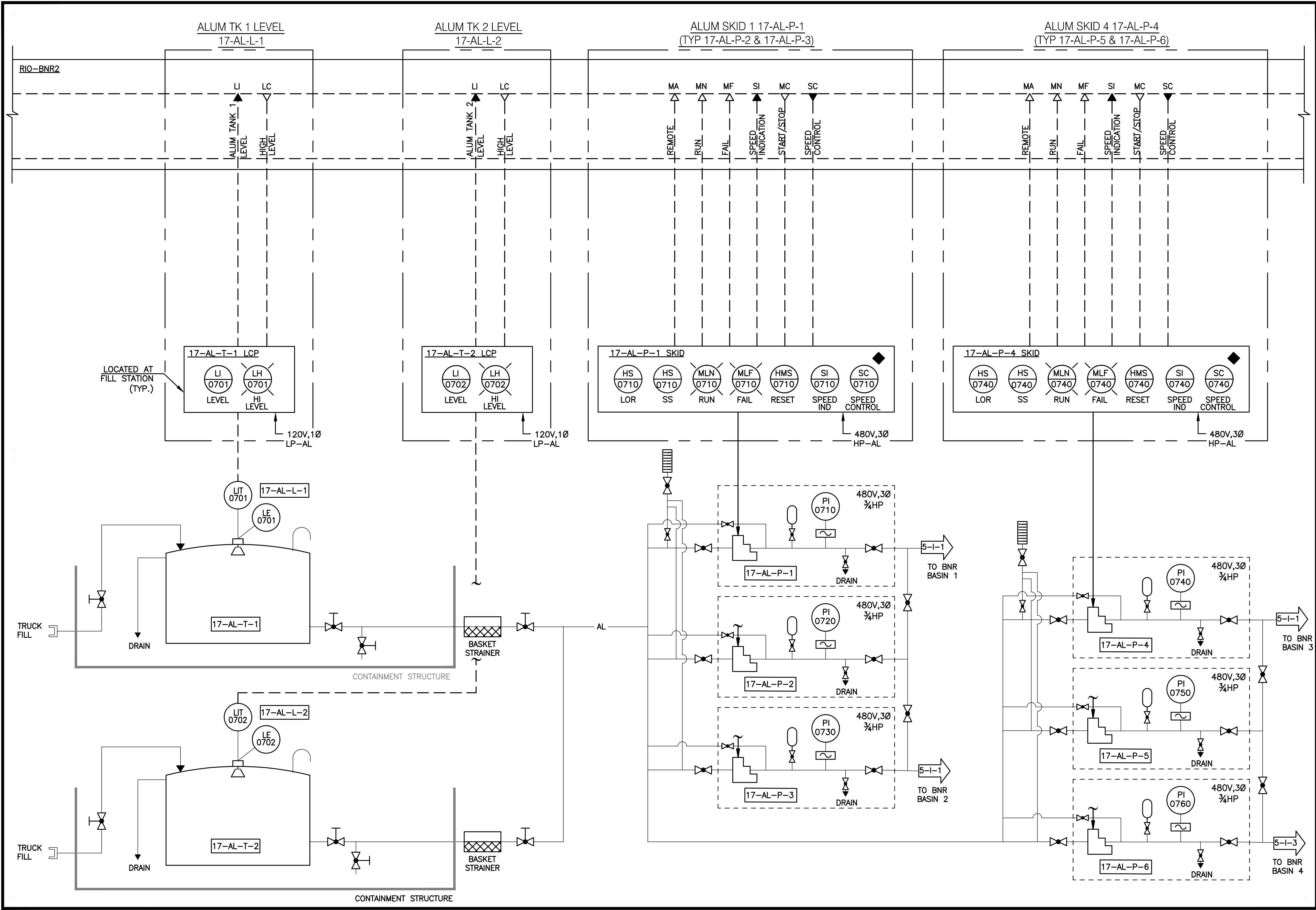
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REVISION	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
SLUDGE HOPPER

SHEET NO.
15-I-9

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100061831	RDWIN/JZ	NCT/ANZ	TLH	TLH	SEPTEMBER 2020	NTS

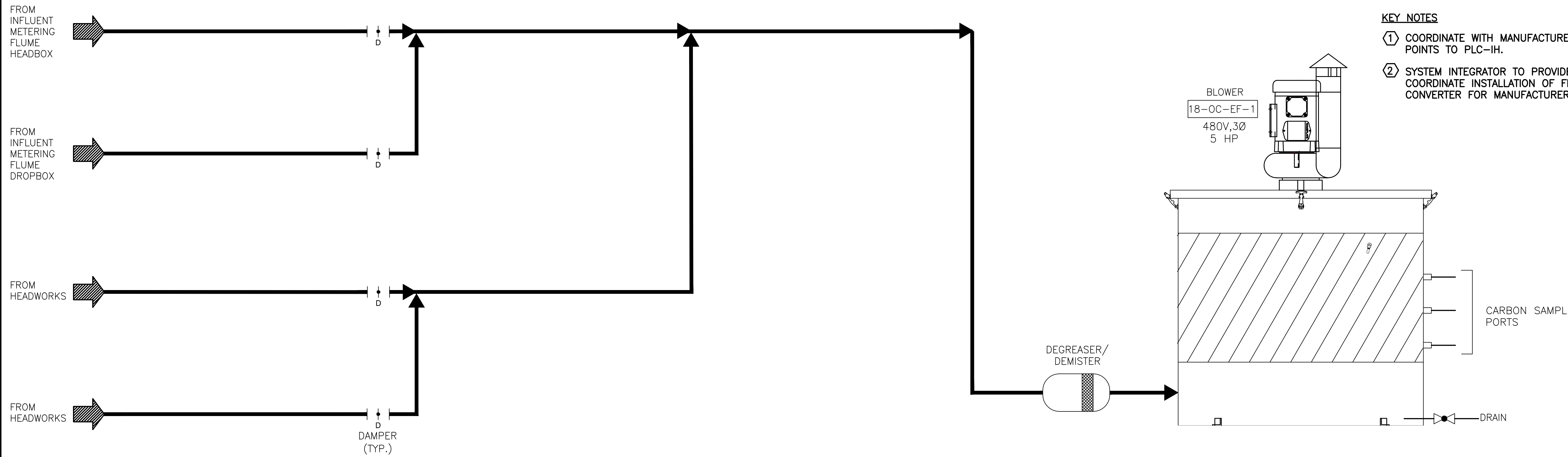
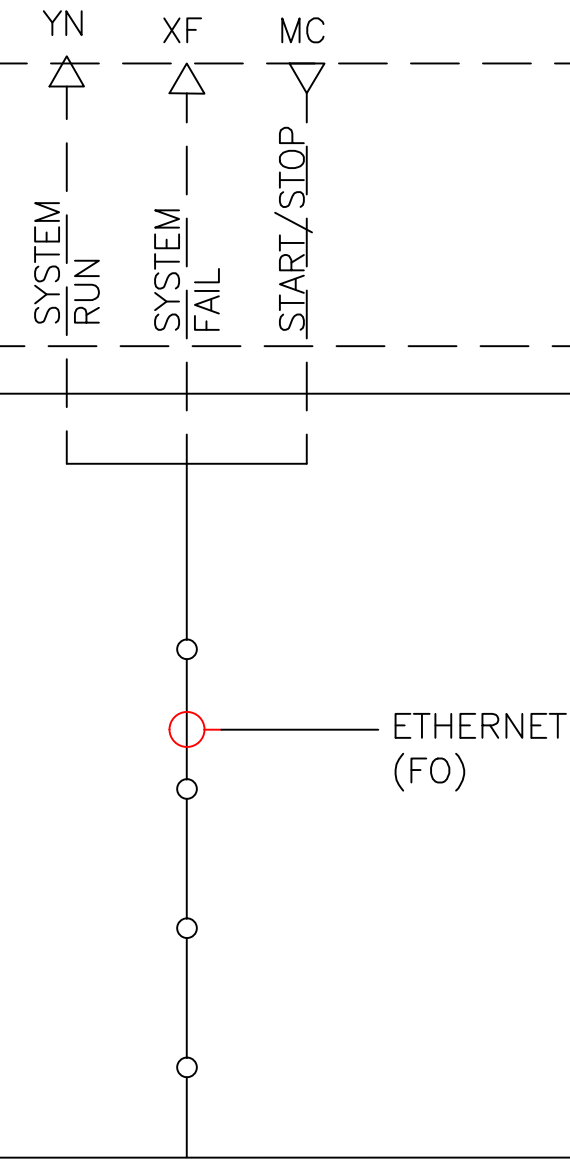
REVISION	DATE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
BNR ALUM

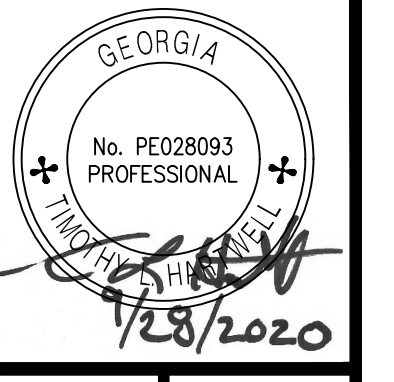
SHEET NO.
17-I-1

ODOR CONTROL SYSTEM 18-OC-1

PLC-MSG



- KEY NOTES**
- ① COORDINATE WITH MANUFACTURER FOR DATA POINTS TO PLC-IH.
 - ② SYSTEM INTEGRATOR TO PROVIDE AND COORDINATE INSTALLATION OF FIBER OPTIC CONVERTER FOR MANUFACTURERS PANEL.



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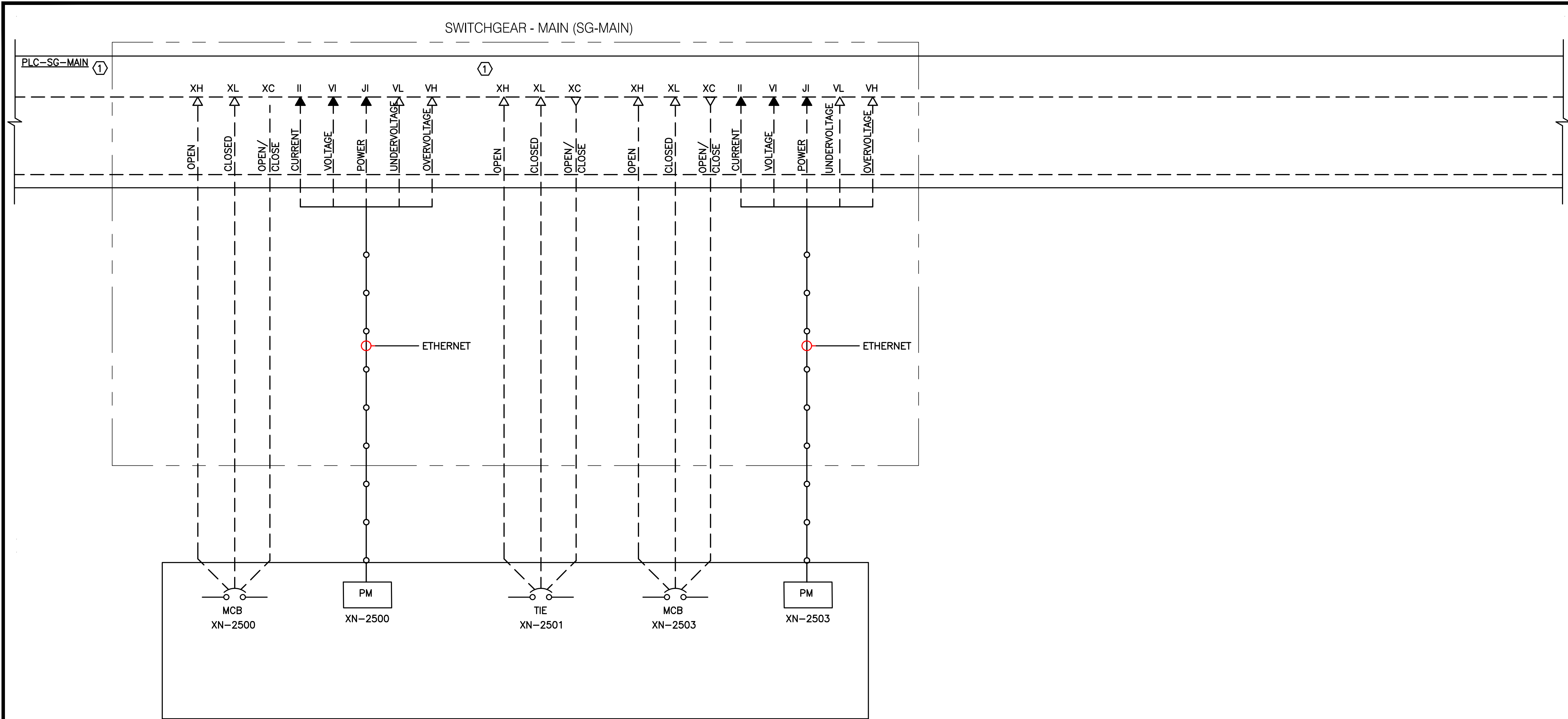
REVISION	DATE

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APPROVED BY: TLH
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SCALE: NTS

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
P&ID
HEADWORKS ODOR CONTROL

SHEET NO.
18-I-1



SWITCHGEAR - MAIN (SG-MAIN)

SWITCHGEAR - MAIN (SG-MAIN)

KEY NOTES
 ① PLC MOUNTED IN SWITCHGEAR BY SYSTEM INTEGRATOR. THIS PLC IS FOR PLANT CONTROL SYSTEM NOT SWITCHGEAR OPERATION. SWITCHGEAR CONTROLS TO BE PROVIDED BY SWITCHGEAR MANUFACTURER.



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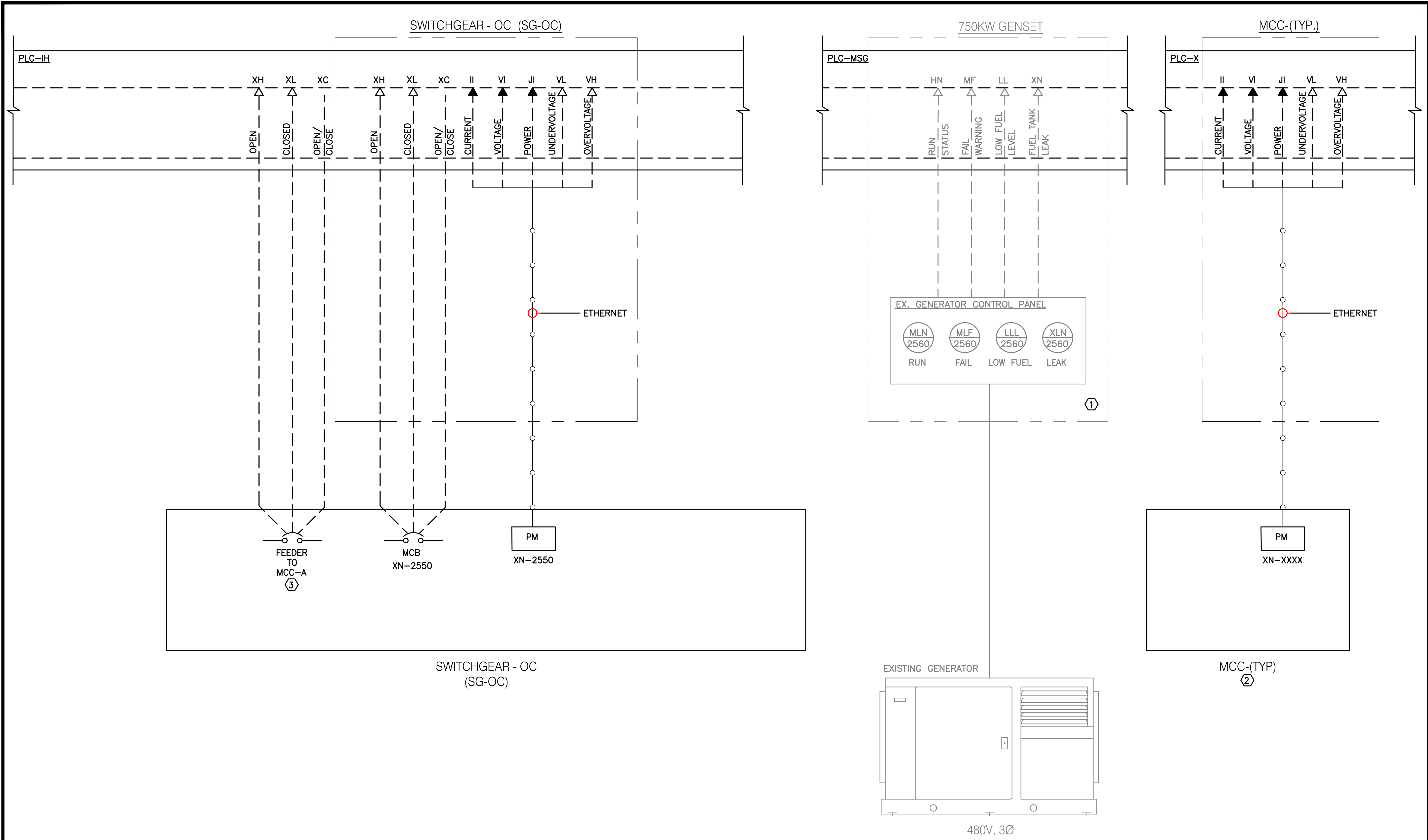
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 ENGINEERS AND SYSTEM INTEGRATORS
 STEVENSONVILLE, MARYLAND
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DATE: SEPTEMBER 2020					
SCALE: NTS					

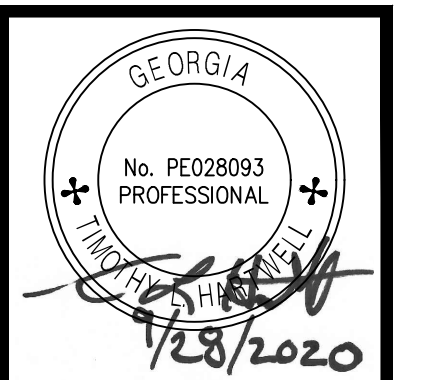
CERTIFICATE OF AUTHORIZATION #PE07023 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.	REVISION	DATE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 P&ID
 SWITCHGEAR SG-MAIN

SHEET NO.
 20-I-1



- KEY NOTES**
- ① CONTROL PANEL LOCATED IN GENERATOR. GENERATOR IS CURRENTLY CONTROLLED BY EX. PLC IN MCC-A. VERIFY WITH MANUFACTURER EXISTING MONITORING POINTS IN GENERATOR CONTROL PANEL.
 - ② CONNECT PM IN MCC-DW, MCC-BNR, & MCC-MBR TO ASSOCIATED PLC VIA NETWORK CONNECTION.
 - ③ FEEDER BREAKER FOR MCC-A SHALL BE AUTOMATICALLY CONTROLLED AND MONITORED TO ALLOW GENERATOR TO OPERATE IF REQUIRED BY PCS.



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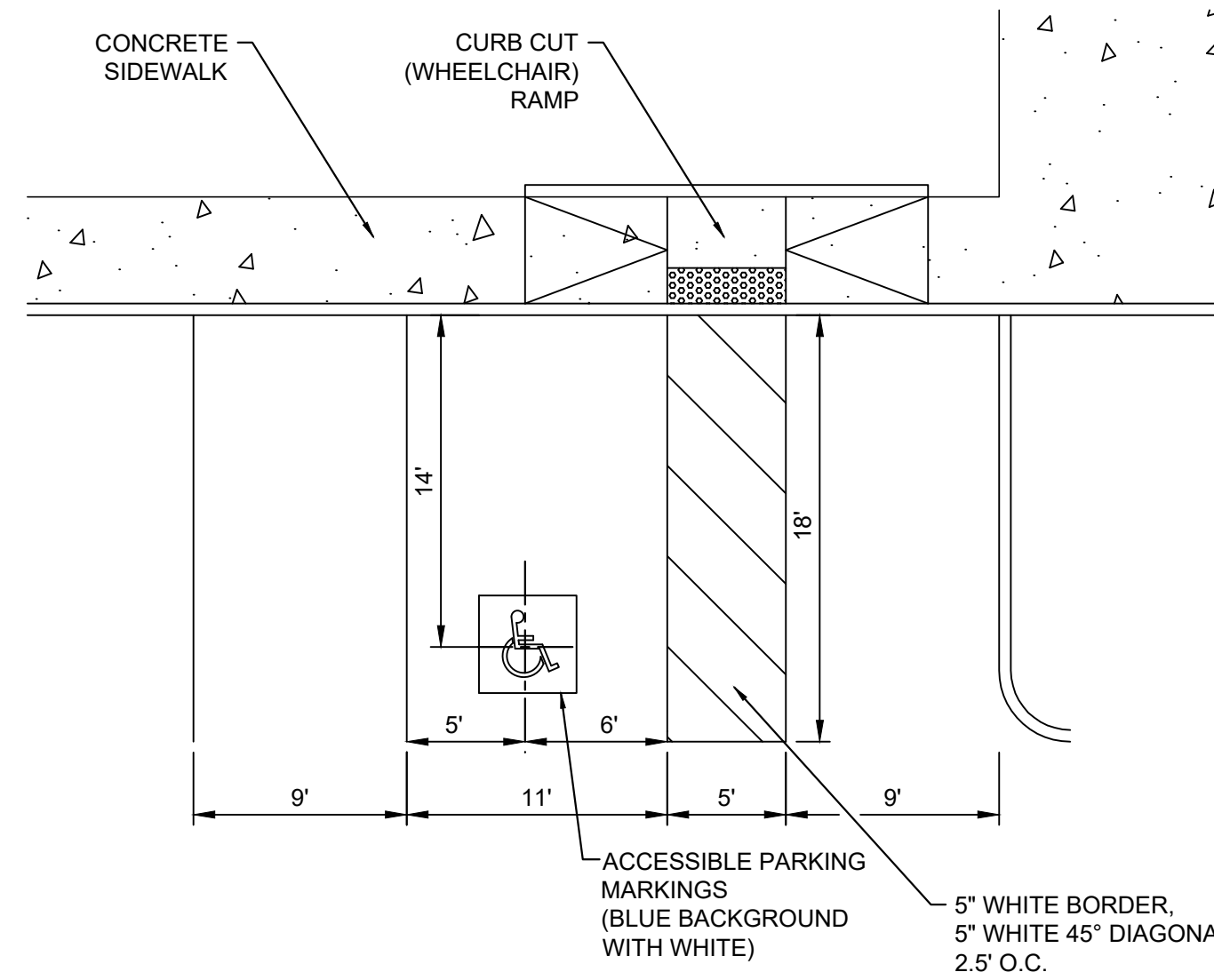
HARTWELL ENGINEERING, INC.
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REVISION	DATE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 P&ID
 SWITCHGEAR SG-OC

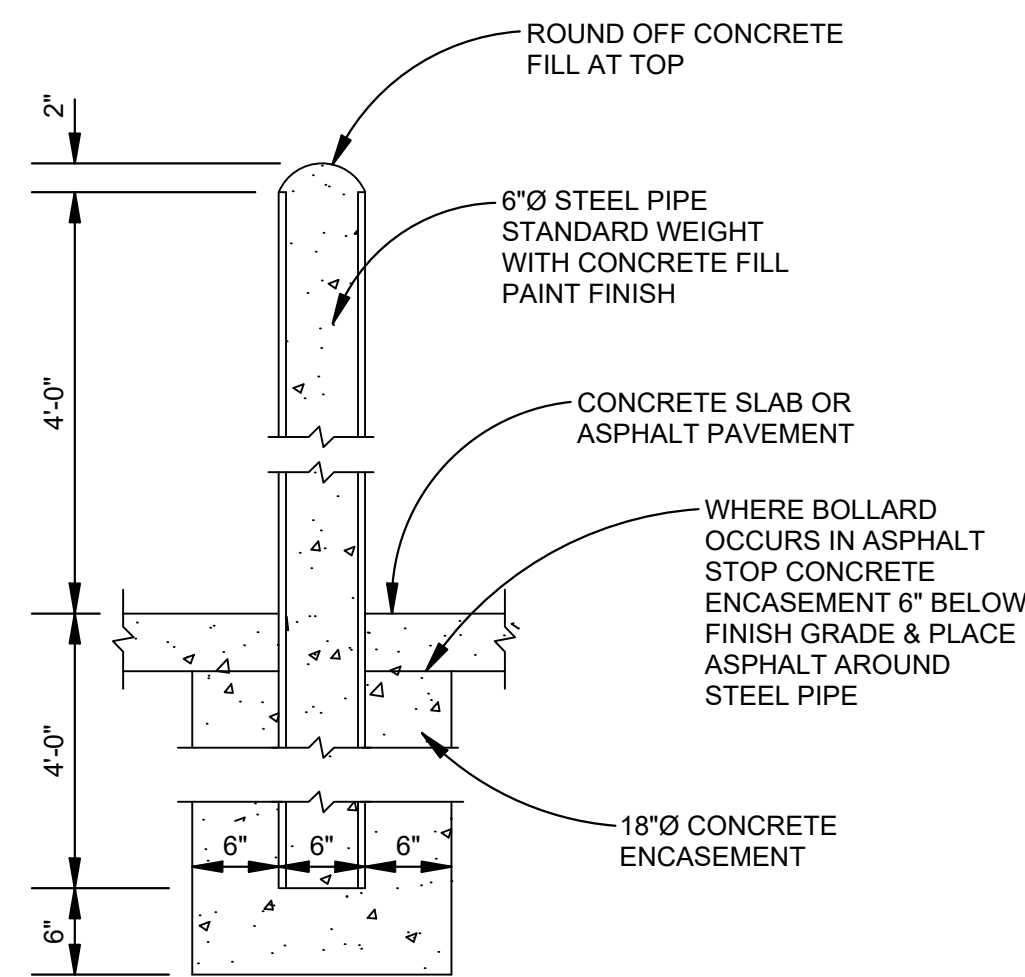
SHEET NO.
20-I-2



ACCESSIBLE PARKING LAYOUT

NTS

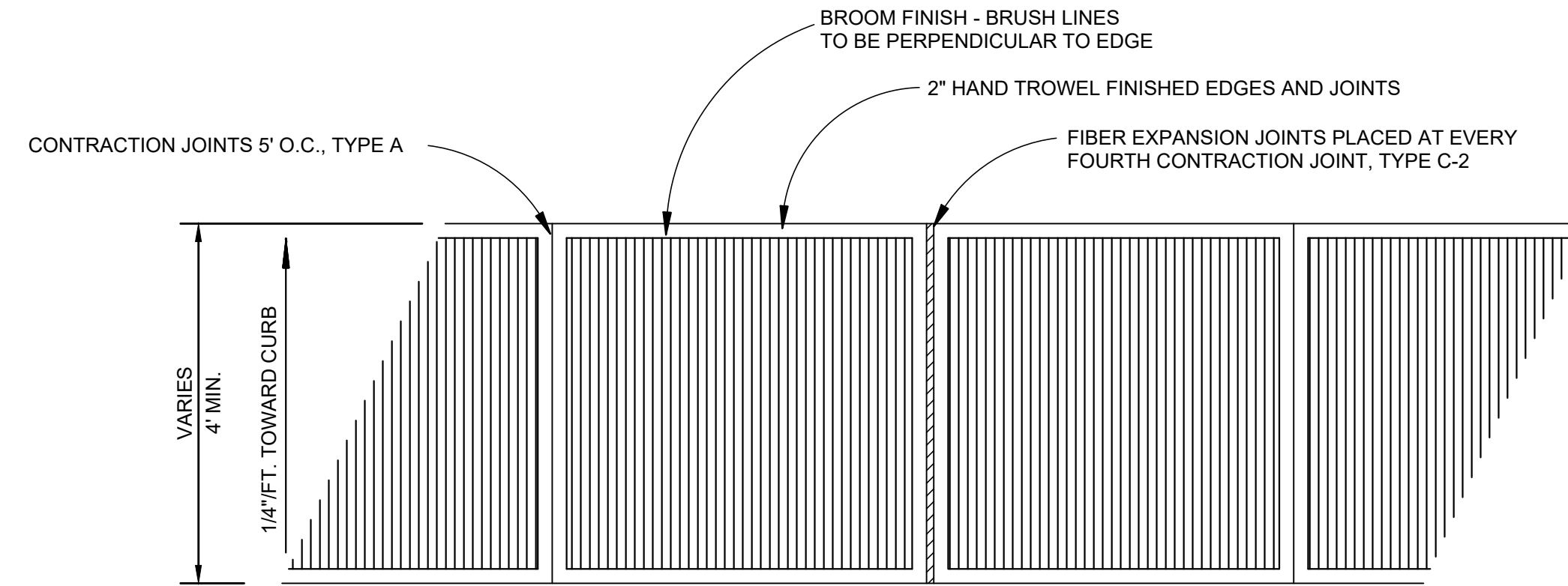
107



STEEL PIPE BOLLARD

NTS

106



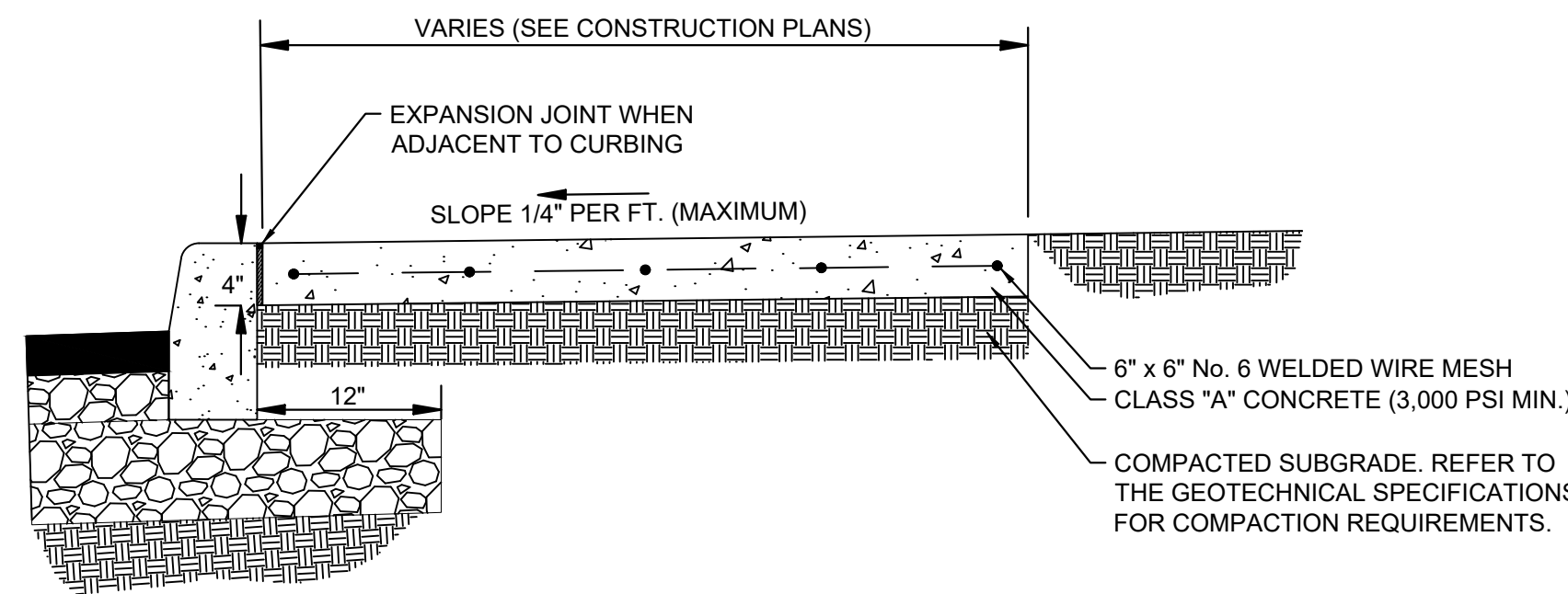
NOTE: PROPOSED SIDEWALK SHALL BE 4" THICK

THE CONSTRUCTION AND MATERIALS OF CONCRETE SIDEWALK SHALL MEET THE REQUIREMENTS OF SPECIFICATIONS SECTION 441 OF THE "DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATIONS, CONSTRUCTION OF ROADS AND BRIDGES, 2001 EDITION."

CONCRETE WALK - BROOM FINISH

NTS

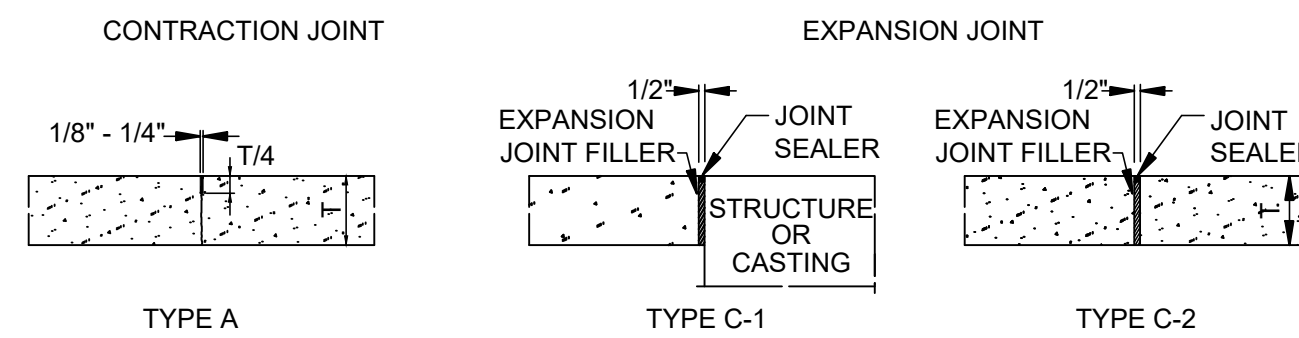
105



TYPICAL SECTION - SIDEWALK

NTS

104



TRANSVERSE CONTRACTION OR LONGITUDINAL JOINT, SAWED OR PREFORMED

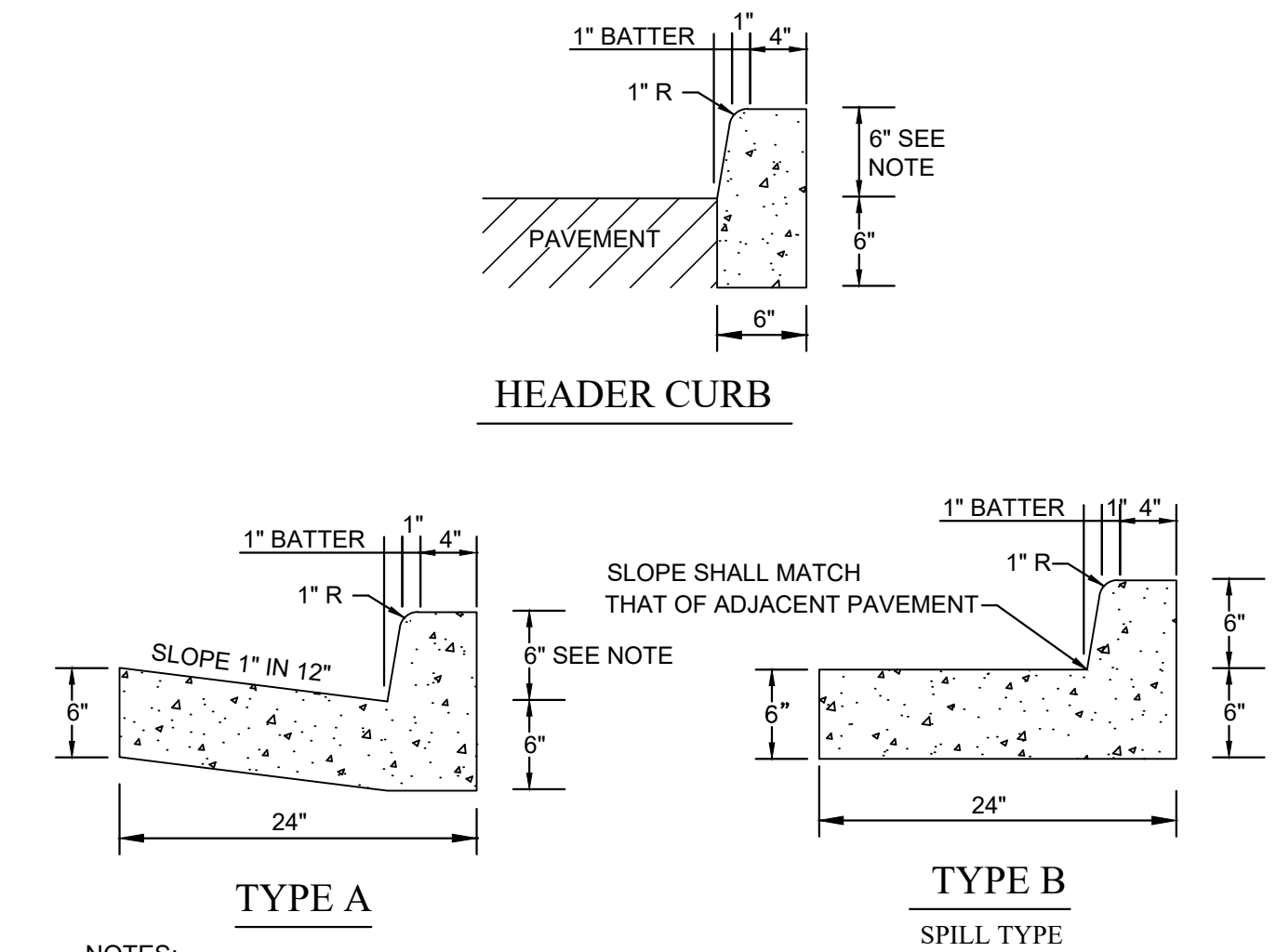
CONCRETE PAVEMENT NOTES:

1. CONCRETE SPECIFICATION SHALL MEET THE REQUIREMENTS OF SECTION 430 FOR CONCRETE PAVING JOBS OF 50,000 SQ YDS OR LESS OF THE GA DEPT. OF TRANSPORTATION, STANDARD SPECIFICATIONS, CONSTRUCTION OF ROADS AND BRIDGES, 2001, AND THE SUPPLEMENT IN EFFECT AT THE TIME OF BID OPENING. EXCEPTIONS ARE NOTED IN NOTES BELOW.
2. MAXIMUM JOINT SPACING SHALL BE 17 FEET. JOINTS SHALL BE FORMED AS TO PROVIDE SLABS THAT ARE AS NEAR TO SQUARE AS PRACTICALLY POSSIBLE.
3. CONCRETE SHALL BE 4000 PSI @ 28 DAYS. AIR ENTRAINMENT SHALL BE 5.0% WITH A FIELD TOLERANCE OF 1.5%.
4. EXPANSION JOINTS ARE TO BE INSTALLED BETWEEN POURED CONCRETE AND ANY IMMOVABLE OBJECT. IMMOVABLE OBJECTS INCLUDE, BUT ARE NOT LIMITED TO: BUILDING SLABS, FOOTINGS, RETAINING WALLS & DRAINAGE STRUCTURES.
5. EXPANSION JOINTS ARE TO BE INSTALLED PERPENDICULAR TO BUILDING AT A MAXIMUM SPACING OF 60'.
6. CRACKING CONTROL JOINTS ARE TO BE INSTALLED PERPENDICULAR TO BUILDING AT A MAXIMUM SPACING OF 20'.
7. AN EXPANSION JOINT MAY BE USED IN PLACE OF A CRACKING CONTROL JOINT, MUST BE INSTALLED AT THE CRACKING CONTROL JOINT INTERVAL.
8. EXPANSION JOINTS ARE TO BE INSTALLED AT A MAXIMUM SPACING OF 60' IN 2 DIRECTIONS.

CONCRETE JOINTS

NTS

103

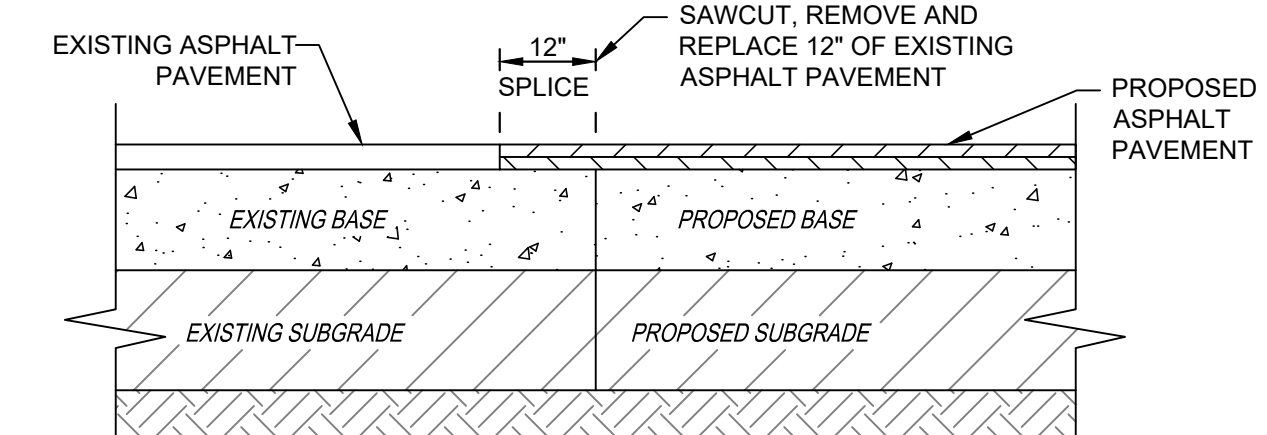


- NOTES:
1. WHERE SQUARE BACK CURB TO BE USED, 6" SQUARE BACK CURB UNLESS OTHERWISE NOTED.
 2. SEE CONCRETE JOINT DETAIL #103.

SQUARE BACK CURB AND GUTTER DETAIL

NTS

102



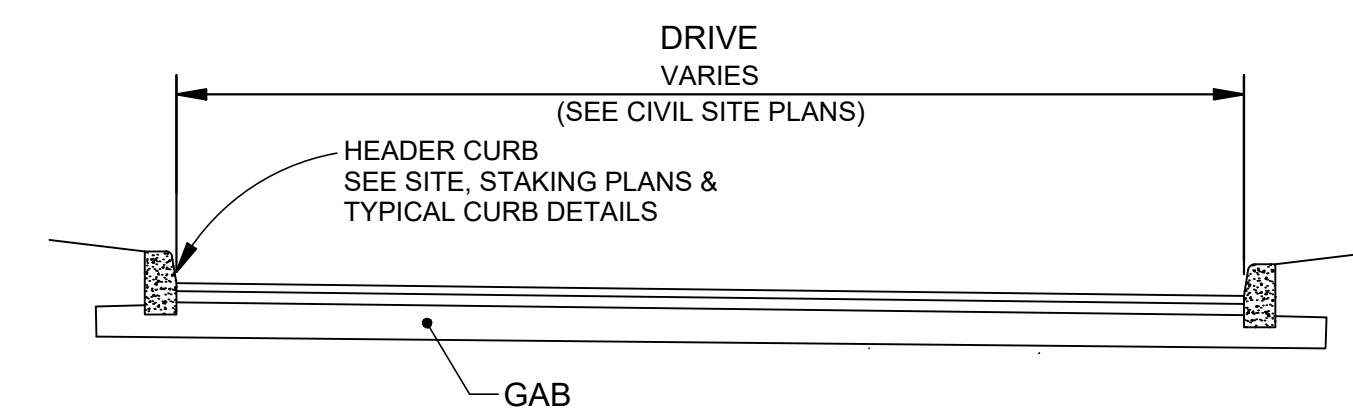
NOTES:

1. PROVIDE ASPHALT SPLICE AT ALL TRANSITIONS BETWEEN NEW AND EXISTING PAVEMENT SECTIONS.
2. ASPHALT MILL AND OVERLAY DEPTH VARIES (1.5" TO 2.5")
3. CONTRACTOR SHALL INSTALL TACK COAT TO THE EXISTING PAVEMENT AND VERTICAL EDGE CREATED BY SAWCUT PRIOR TO INSTALLATION OF PROPOSED ASPHALT

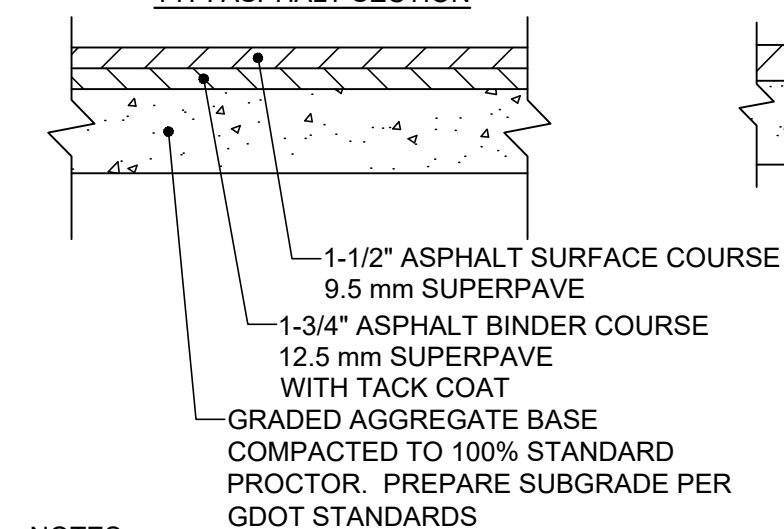
ASPHALT PAVEMENT SPLICE

NTS

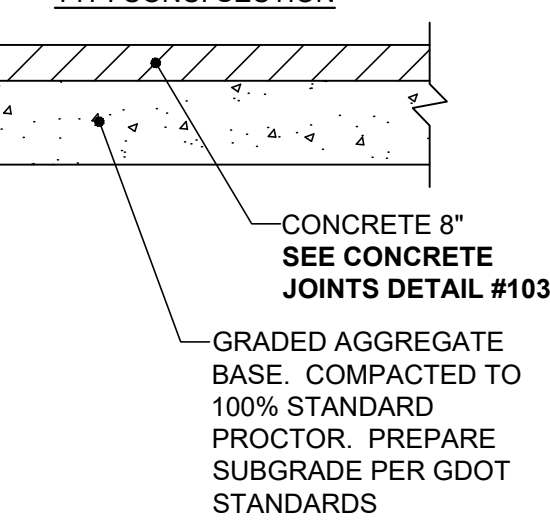
101



TYP. ASPHALT SECTION



TYP. CONC. SECTION



NOTES:

- PAVEMENT SECTIONS TAKEN FROM PREVIOUS PLANS TITLED "CANTON WRF IMPROVEMENTS" (SHEET NO. C-12), PREPARED BY ESI, LAST DATED SEPTEMBER 2014.
- NO PAVEMENT DESIGN WAS PERFORMED BY ATKINS FOR THE CURRENT PROJECT.
- CONTRACTOR TO VERIFY AND MATCH EXISTING PAVEMENT SECTIONS.

ASPHALT PAVEMENT

NTS

100



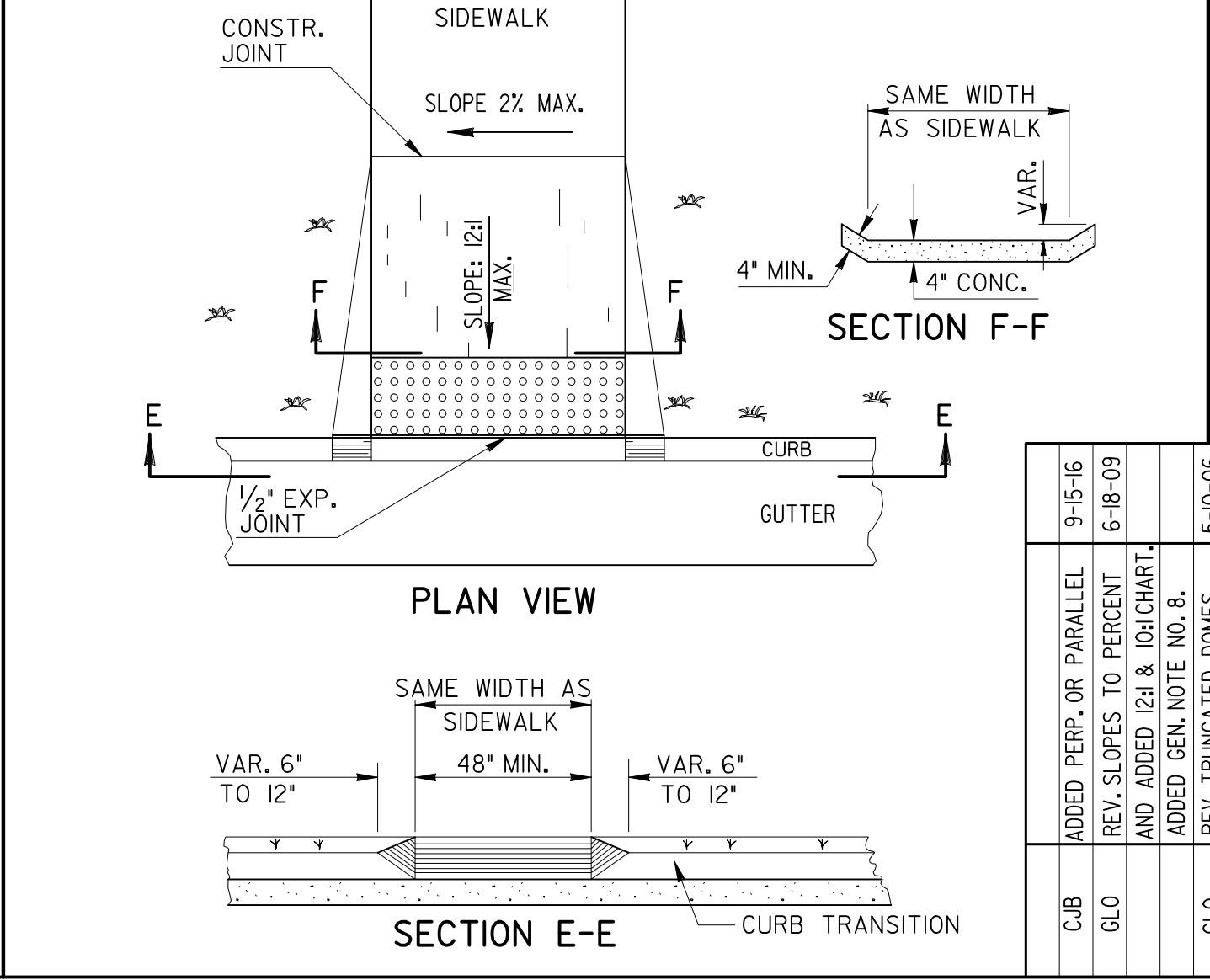
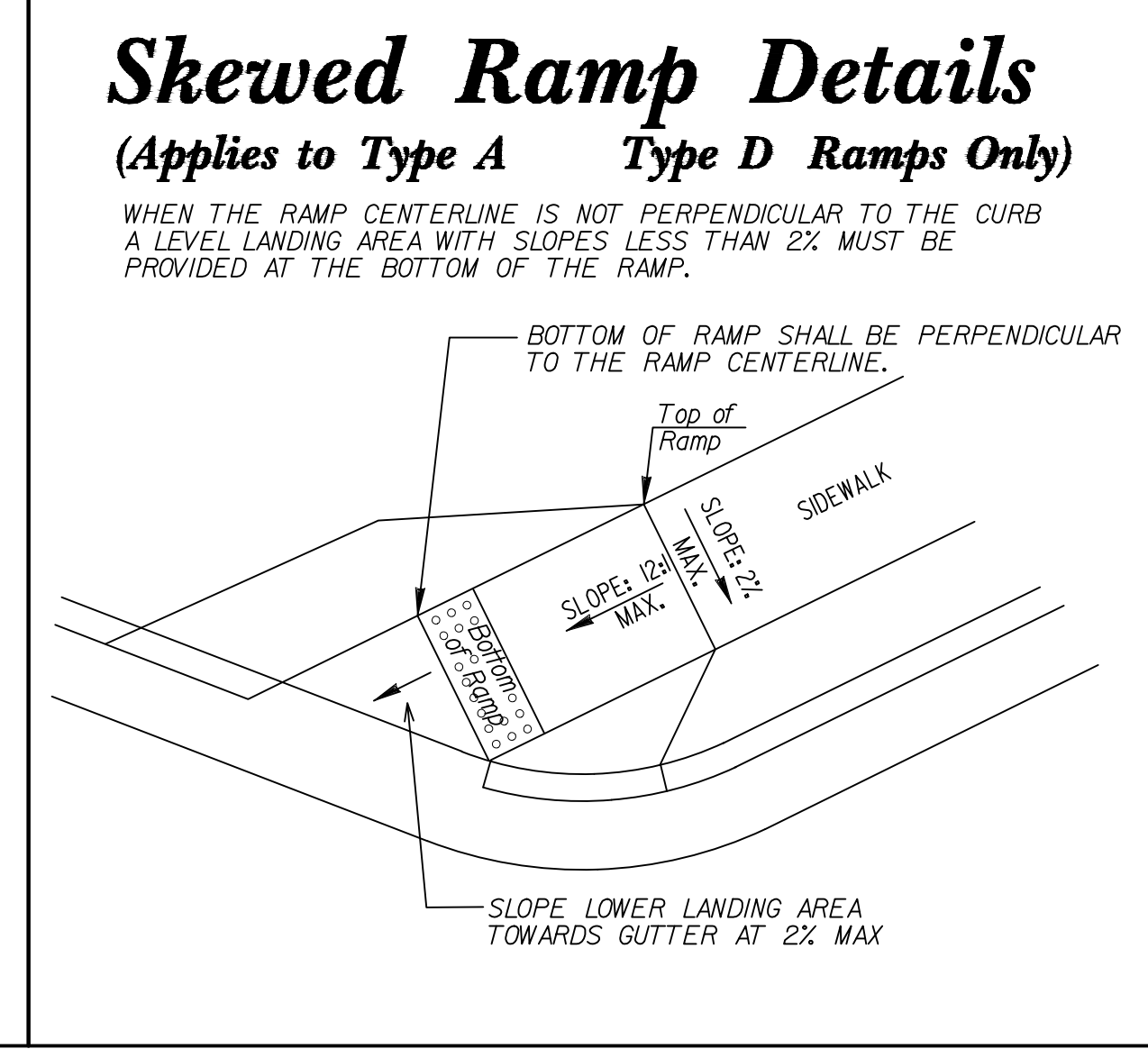
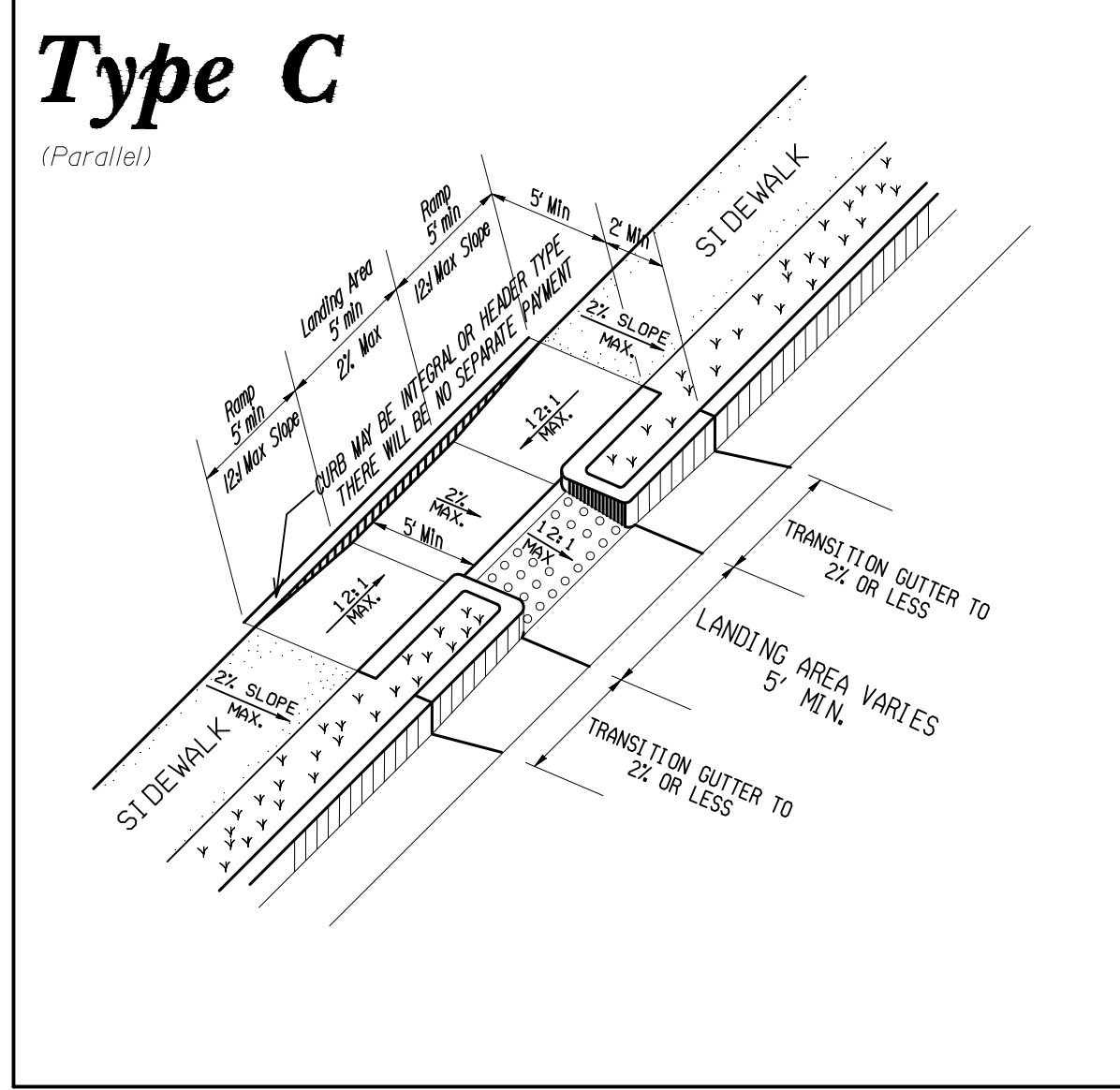
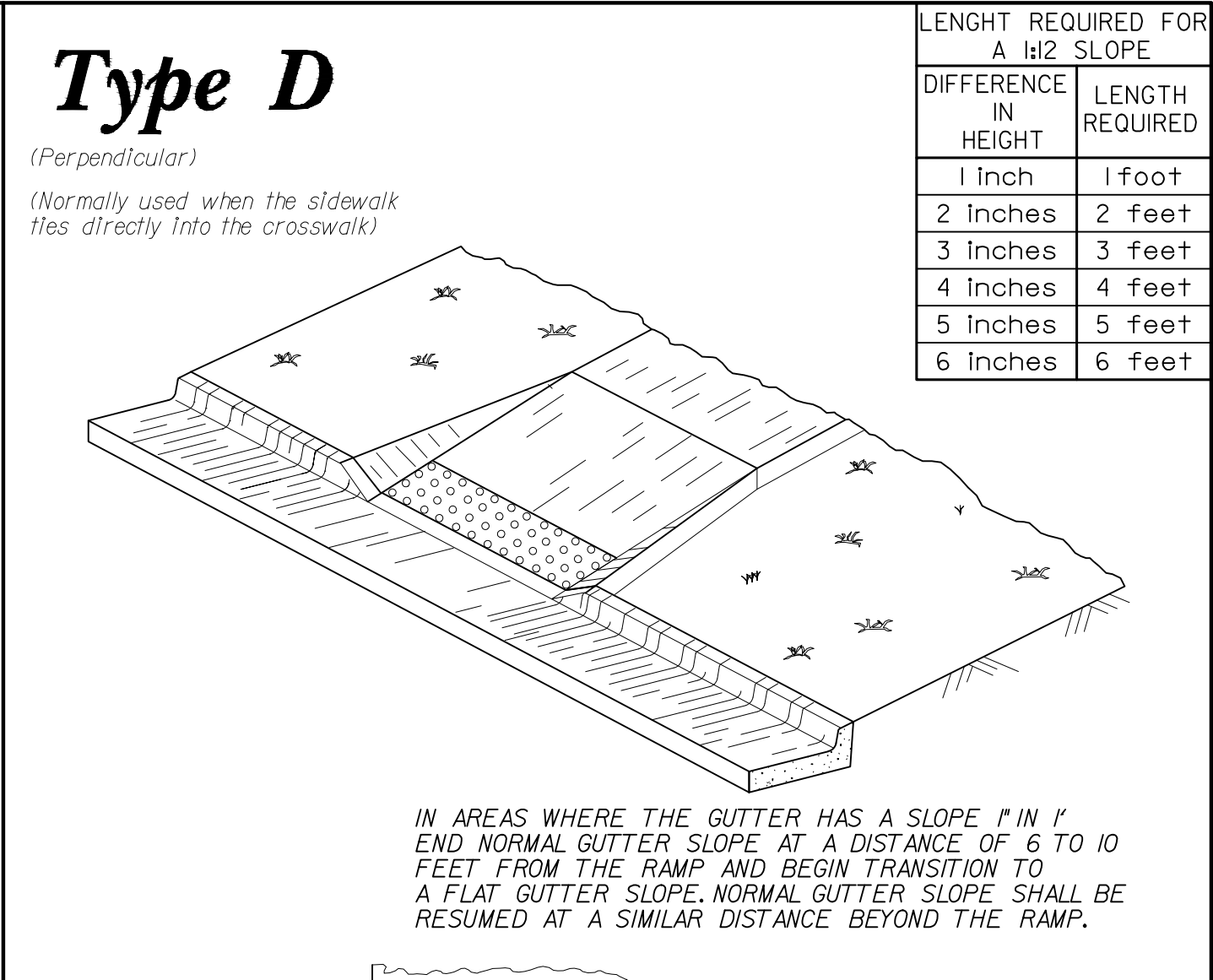
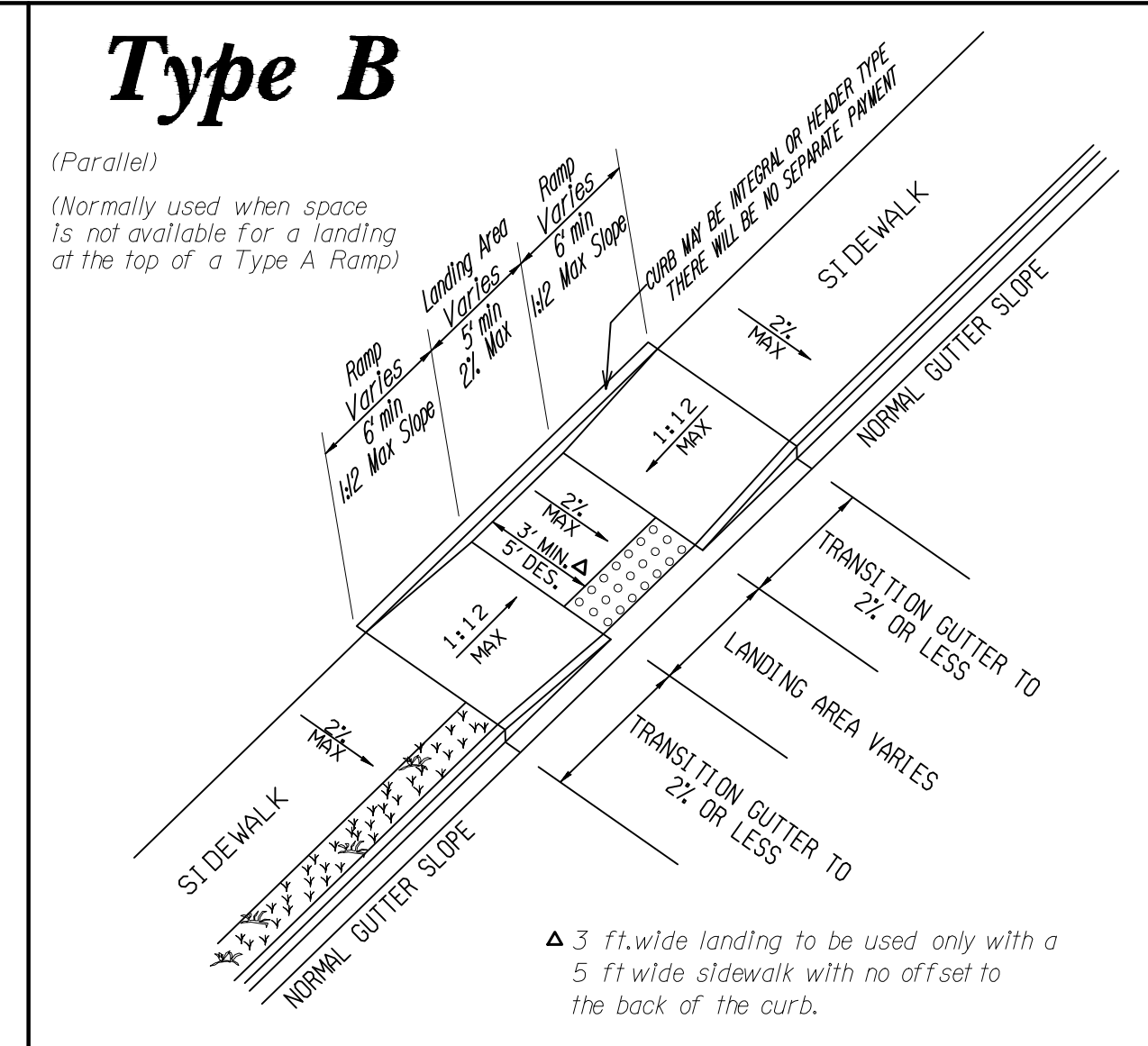
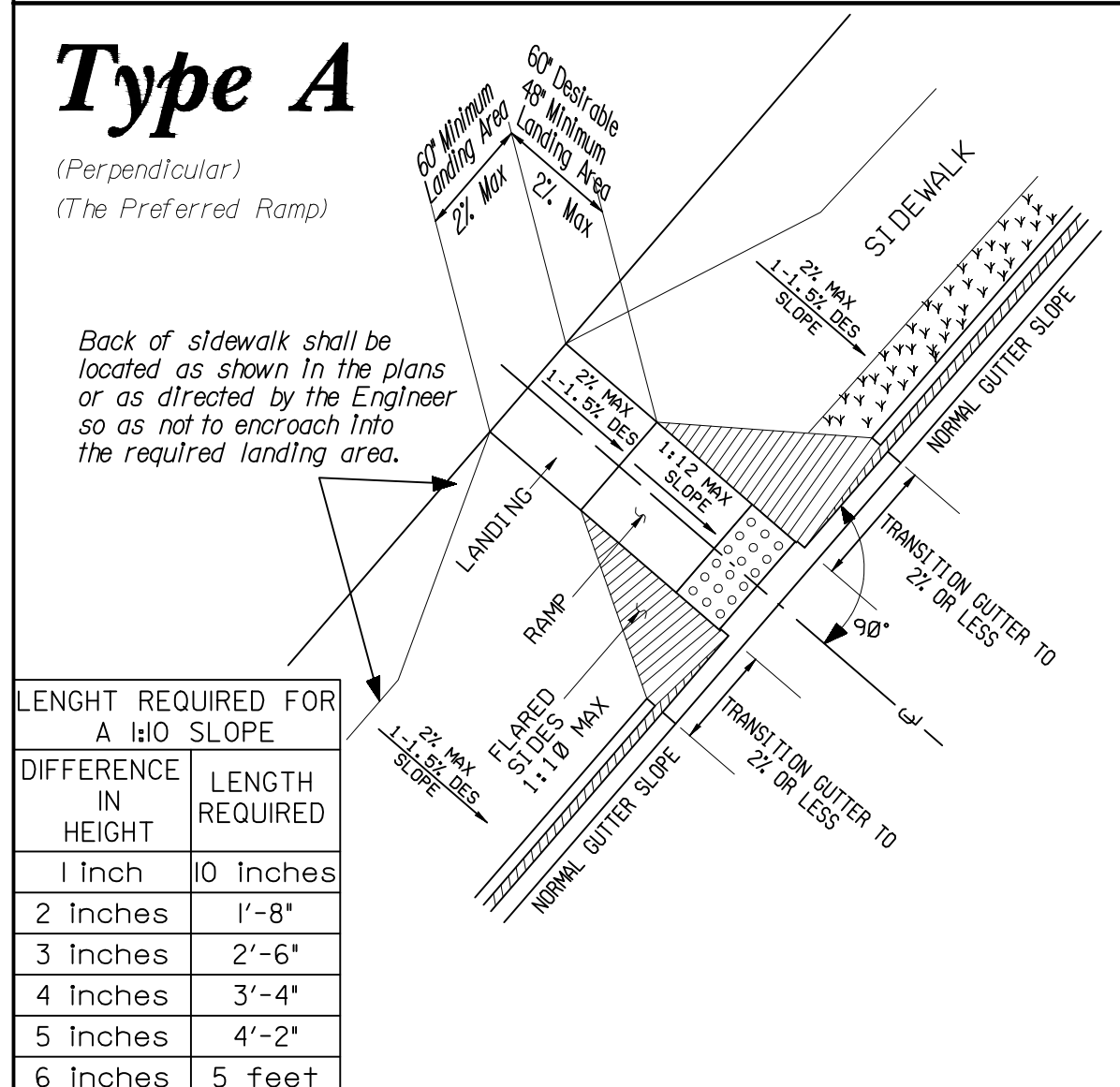
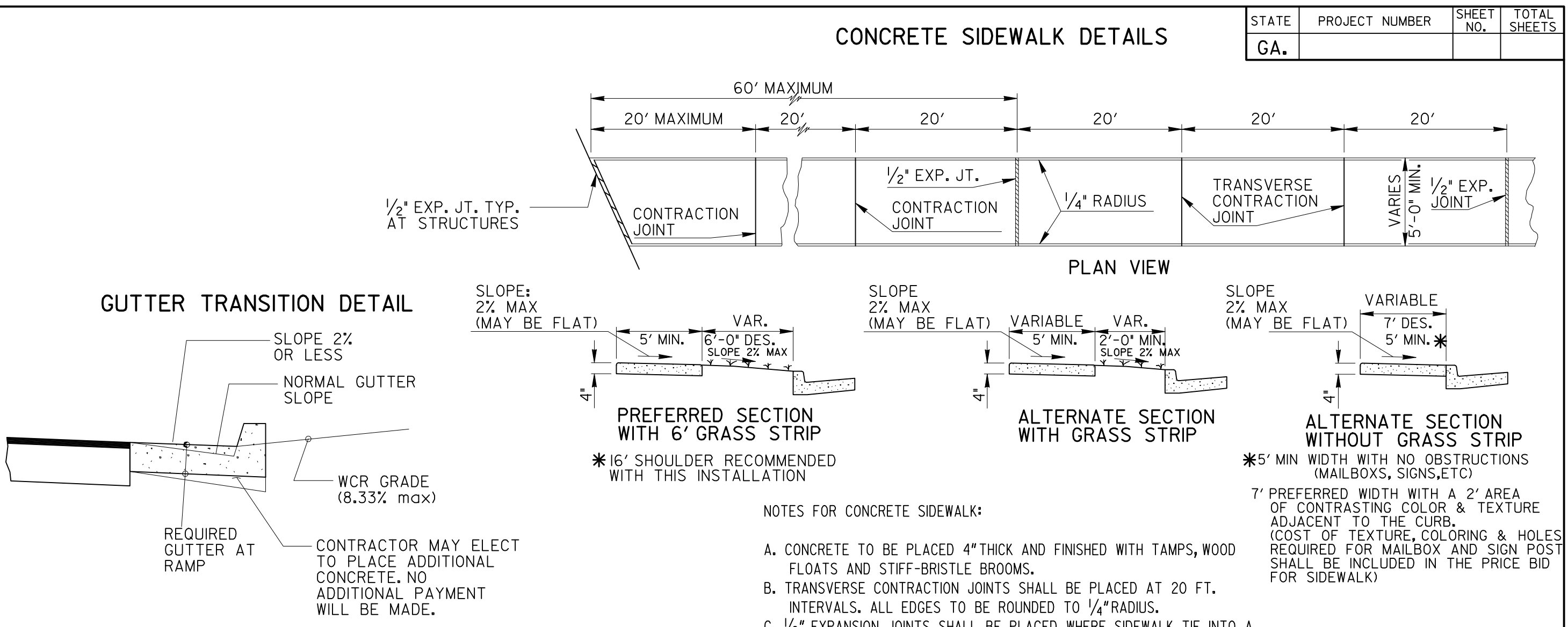
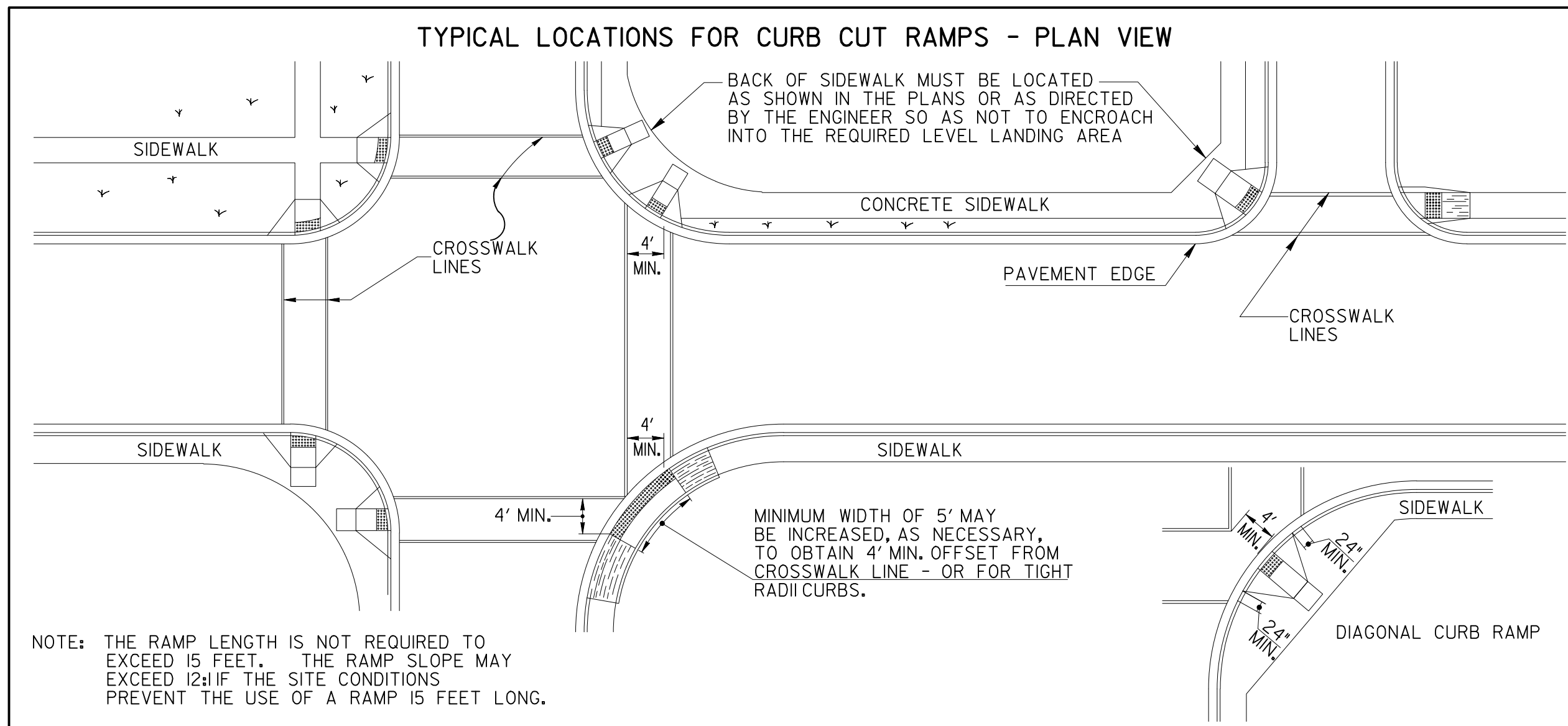
ATKINS
1800 RiverEdge Parkway, NW, Suite 700
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P: 770-933-0280

HARTWELL ENGINEERING, INC.
REGISTERED PROFESSIONAL ENGINEER
STATE OF GEORGIA
NO. 24251
P. 770-933-0280

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100061831	JMR	RM	GK	SEPTEMBER 2020	AS SHOWN
	DRAWN BY:				
	RAJ				
REVISION	DATE	DATE	DATE	DATE	DATE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CIVIL STANDARD DETAILS

SHEET NO.
DC-1



This Detail Replaces Ga Standard 9031W
Guidelines For Usage On Metric Projects

When these details are incorporated into plans and or projects that are being prepared or constructed in metric units, exact or precise conversion to metric units is not required. The dimensions shown that are in feet and inches may be converted to corresponding metric units using the following "Rounded-Off" conversion factors: 1"=25mm, 4"=100mm, and 12"=300mm. All measurement notes that refer to linear feet and square yards shall be interpreted to mean linear meters and square meters.

REVISION	DATE
ADDED PERP. OR PARALLEL	9-15-16
REV. SLOPES TO PERCENT	6-18-09
AND ADDED 12:1 & 10:1 CHART.	
ADDED GEN. NOTE NO. 8.	
REV. TRUNCATED DOMES	5-10-06
REVISED	2-21-03
REVISED	2-10-03
REVISED	7-29-02
REVISED	5-29-02
REVISED	5-23-02
REVISED	5-13-02
REVISED	4-29-02
REVISED	4-11-02
REVISED	4-3-02
REVISED	3-28-02

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL DETAIL
CONCRETE SIDEWALK DETAILS
CURB CUT (WHEELCHAIR) RAMPS

NO SCALE

MARCH 12, 2002

NUMBER
A3

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

ATKINS
1600 RiverEdge Parkway, N.W., Suite 700
Atlanta, GA 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS & INTEGRATORS
STEVENSVILLE, MARYLAND
(410) 286-5111

DATE	REVISION

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

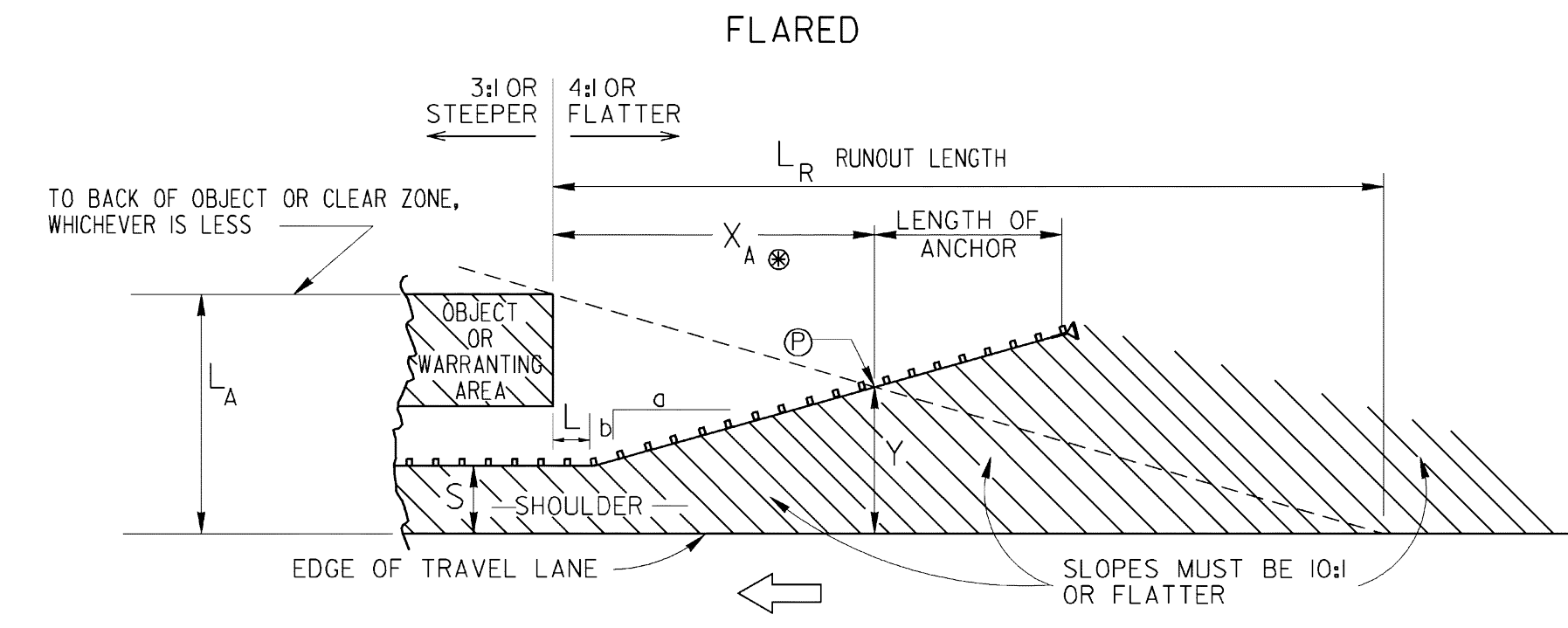
CIVIL
STANDARD DETAILS

SHEET NO.
DC-2

File Name: C:\P_WORK\ATKINA01\SIM06864\XMS35914\DC-02.DWG\Tab:DC-2\Plotted: September 24, 2020 2:31pm

LENGTH OF GUARDRAIL ADVANCEMENT AT FIXED OBJECTS OR AT WARRANTING FILL SLOPES (TYPICAL)

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



DESIGN SPEED (mph)	SHY-LINE OFFSET (ft)	(a/b)	
		BARRIER INSIDE SHY-LINE	BARRIER AT OR BEYOND SHY-LINE
70	9	30	15
60	8	26	14
55	7	24	12
50	6.5	21	11
45	6	18	10
40	5	16	8
30	4	13	7

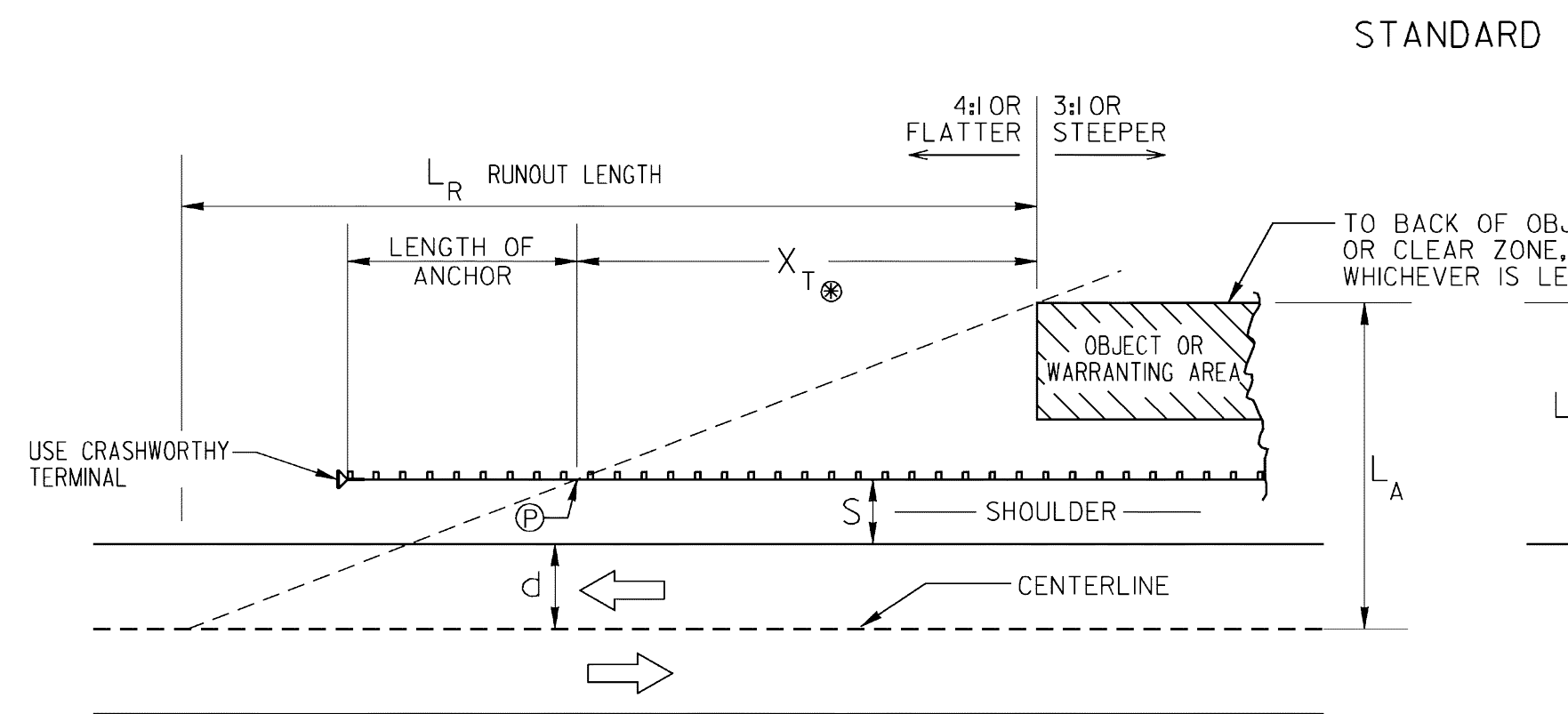
$$Y = L_A - \frac{L_A}{L_R} (X_A)$$

$$X_A = \frac{L_A + (b/a)L - S}{b/a + (L_A/L_R)}$$

WHERE 'S' IS LESS THAN THE SHY-LINE OFFSET, USE FLATTER RATES GIVEN IN TABLE.

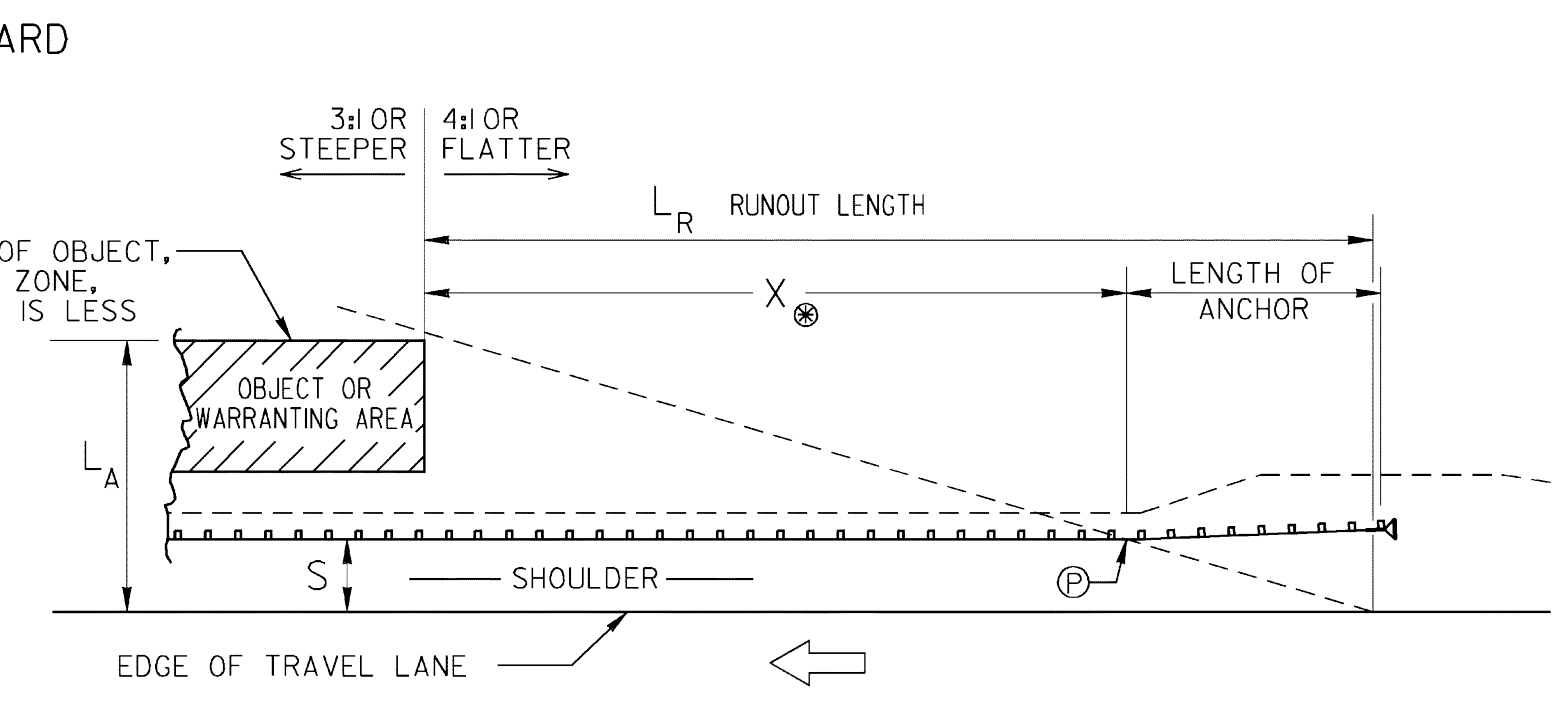
DESIGN SPEED (MPH)	OVER 10000 (A.D.T.)	5000-10000 (A.D.T.)	1000-5000 (A.D.T.)	UNDER 1000 (A.D.T.)
80	470	430	380	330
70	360	330	290	250
60	300	250	210	200
50	230	190	160	150
40	160	130	110	100
30	110	90	80	70

S = NORMAL WIDTH OF USABLE SHOULDER PLUS 2 FT (TYP.)
 P = BEGINNING OF TERMINAL (TYP.)
 X_A, X_T, AND X MEASURED TO THE END OF W-BEAM, WHERE TERMINAL BEGINS



$$X_T = L_R \times \frac{L_A - (S+d)}{L_A}$$

(TRAILING END)



$$X = L_R \times \frac{L_A - S}{L_A}$$

(APPROACH END)

CLEAR ZONE DISTANCES

CLEAR ZONE DISTANCES (FT) CHART

DESIGN SPEED	DESIGN ADT	FORESLOPES			BACKSLOPES		
		IV:6H OR FLATTER	IV:5H TO IV:4H	IV:3H	IV:3H	IV:5H TO IV:4H	IV:6H OR FLATTER
40 M.P.H. OR LESS	UNDER 750	7-10	7-10	**	7-10	7-10	7-10
	750-1500	10-12	12-14	**	12-14	12-14	12-14
	1500-6000	12-14	14-16	**	14-16	14-16	14-16
45-50 M.P.H.	OVER 6000	14-16	16-18	**	16-18	16-18	16-18
	UNDER 750	10-12	12-14	**	8-10	8-10	10-12
	750-1500	14-16	16-20	**	10-12	12-14	14-16
55 M.P.H.	1500-6000	16-18	20-26	**	12-14	14-16	16-18
	OVER 6000	20-22	24-28	**	14-16	18-20	20-22
	UNDER 750	12-14	14-18	**	8-10	10-12	10-12
60 M.P.H.	750-1500	16-18	20-24	**	10-12	14-16	16-18
	1500-6000	20-22	24-30	**	14-16	16-18	20-22
	OVER 6000	22-24	26-32*	**	16-18	20-22	22-24
65-70 M.P.H.	UNDER 750	16-18	20-24	**	10-12	12-14	14-16
	750-1500	20-24	26-32*	**	12-14	16-18	20-22
	1500-6000	26-30	32-40*	**	14-18	18-22	24-26
	OVER 6000	30-32*	36-44*	**	20-22	24-26	26-28
	UNDER 750	18-20	20-26	**	10-12	14-16	14-16
	750-1500	24-26	28-36*	**	12-16	18-20	20-22
	1500-6000	28-32*	34-42*	**	16-20	22-24	26-28
	OVER 6000	30-34*	38-46*	**	22-24	26-30	28-30

* WHEN A SITE-SPECIFIC INVESTIGATION INDICATES A HIGH PROBABILITY OF CONTINUING CRASHES OR WHEN SUCH OCCURRENCES ARE INDICATED BY CRASH HISTORY, THE DESIGNER MAY PROVIDE CLEAR-ZONE DISTANCES GREATER THAN THE CLEAR ZONE SHOWN ABOVE. CLEAR ZONES MAY BE LIMITED TO 30 FT. FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLATE IF PREVIOUS EXPERIENCE WITH SIMILAR PROJECTS OR DESIGNS INDICATES SATISFACTORY PERFORMANCE.

** BECAUSE RECOVERY IS LESS LIKELY ON THE UNSHIELDED, TRAVERSABLE IV:3H FILL SLOPES, FIXED OBJECTS SHOULD NOT BE PRESENT IN THE VICINITY OF THE TOE OF THESE SLOPES. RECOVERY OF HIGH-SPEED VEHICLES THAT ENCR OACH BEYOND THE EDGE OF THE SHOULDER MAY BE EXPECTED TO OCCUR BEYOND THE TOE OF SLOPE. DETERMINATION OF THE WIDTH OF THE RECOVERY AREA AT THE TOE OF SLOPE SHOULD CONSIDER RIGHT-OF-WAY AVAILABILITY, ENVIRONMENTAL CONCERNS, ECONOMIC FACTORS, SAFETY NEEDS, AND CRASH HISTORIES. ALSO, THE DISTANCE BETWEEN THE EDGE OF THE THROUGH TRAVELED LAND AND THE BEGINNING OF THE IV:3H SLOPE SHOULD INFLUENCE THE RECOVERY AREA PROVIDED AT THE TOE OF SLOPE. A 10-FT RECOVERY AREA AT THE TOE OF SLOPE SHOULD BE PROVIDED FOR ALL TRAVERSABLE, NON RECOVERABLE FILL SLOPES.

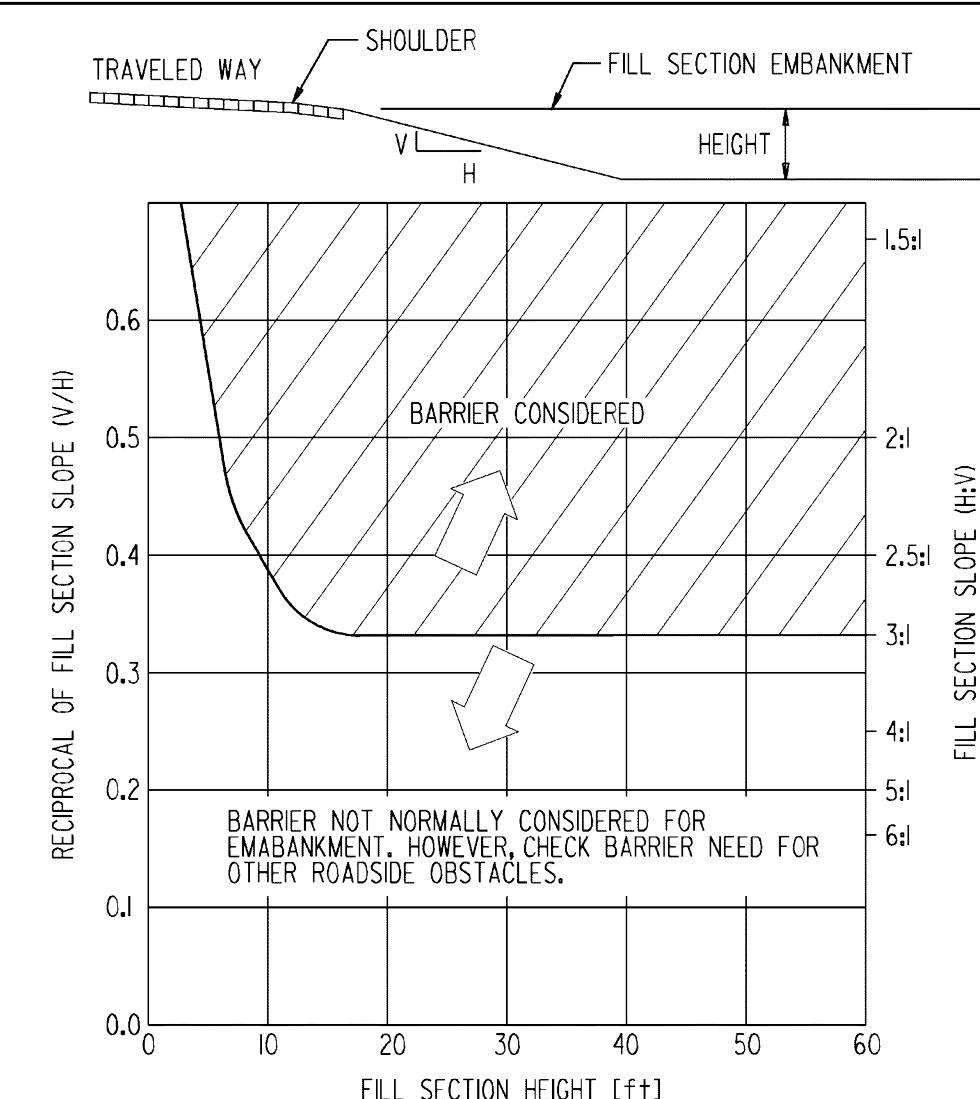
HORIZONTAL CURVE ADJUSTMENTS

RADIUS (FEET)	K _{CZ} (CURVE CORRECTION FACTOR)					
	DESIGN SPEED (MPH)					
	40	45	50	55	65	70
2950	1.1	1.1	1.1	1.2	1.2	1.2
2300	1.1	1.1	1.2	1.2	1.2	1.3
1970	1.1	1.2	1.2	1.2	1.3	1.4
1640	1.1	1.2	1.2	1.3	1.3	1.4
1475	1.2	1.2	1.3	1.3	1.4	1.5
1315	1.2	1.2	1.3	1.3	1.4	1.5
1150	1.2	1.2	1.3	1.4	1.5	1.5
985	1.2	1.3	1.4	1.5	1.5	
820	1.3	1.3	1.4	1.5		
660	1.3	1.4	1.5			
495	1.4	1.5				
330	1.5					

CZ_C = (L_C) (K_{CZ})
 Where:
 CZ_C = CLEAR ZONE ON OUTSIDE OF CURVATURE, FEET
 L_C = CLEAR ZONES DISTANCE, FEET (SEE CHART AT LEFT)
 K_{CZ} = CURVE CORRECTION FACTOR

NOTE:
 THE CURVE CORRECTION FACTOR IS APPLIED TO THE OUTSIDE OF CURVES ONLY. CORRECTIONS ARE TYPICALLY MADE ONLY TO CURVES LESS THAN 2,950-FT RADIUS.

COMPARATIVE BARRIER CONSIDERATION FOR EMBANKMENTS



DEPARTMENT OF TRANSPORTATION
 STATE OF GEORGIA

STANDARD
 GUARDRAIL WARRANT GUIDES
 LENGTHS OF ADVANCEMENT
 CLEAR ZONE DISTANCES
 FILL HEIGHT EMBANKMENTS

NOT TO SCALE
 DEC., 1999

DES. (SUBMITTED) [Signature]
 STATE DESIGN POLICY ENGINEER
 TR. (APPROVED) [Signature]
 MARGARET B. PATEL
 CHIEF ENGINEER

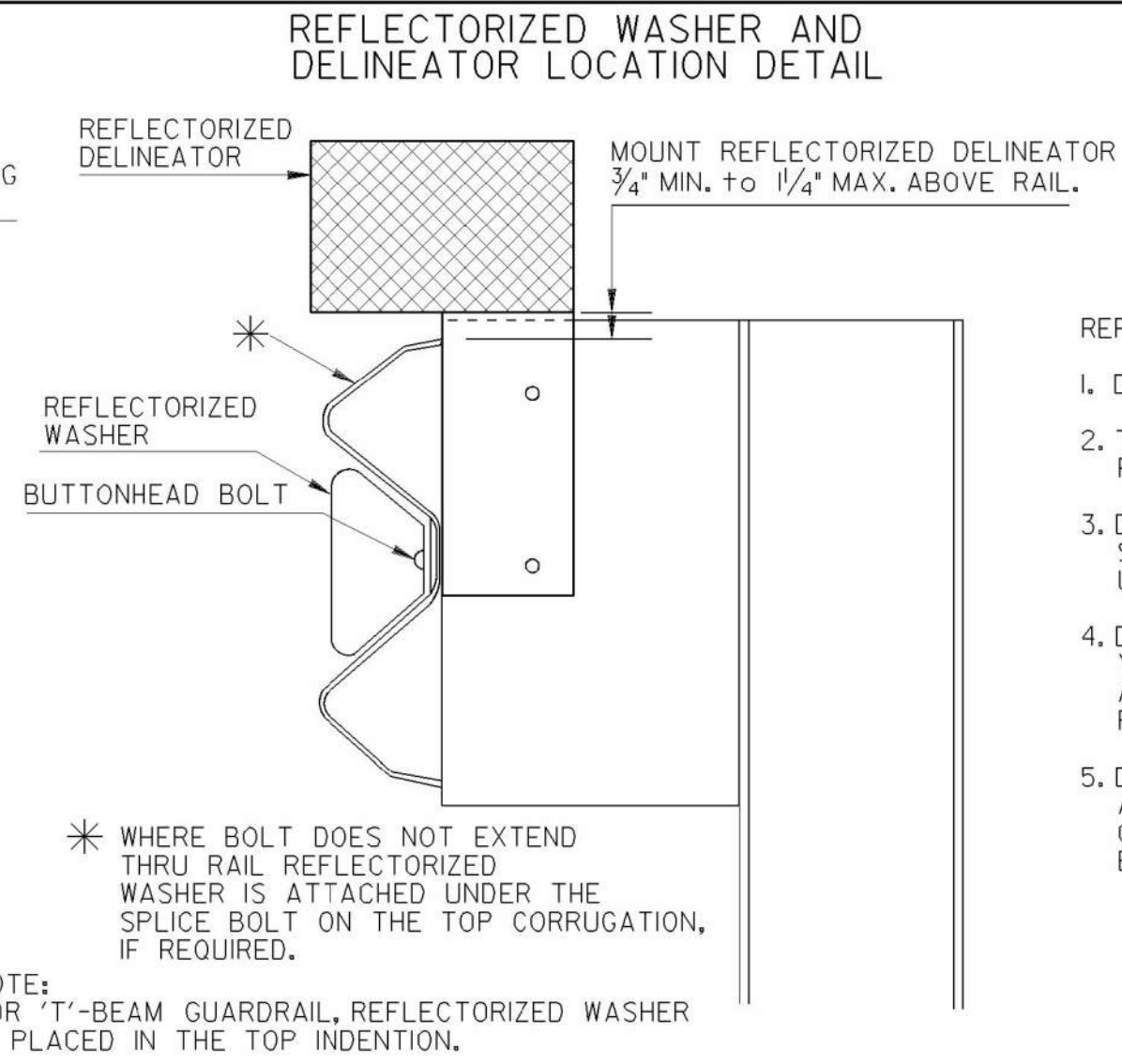
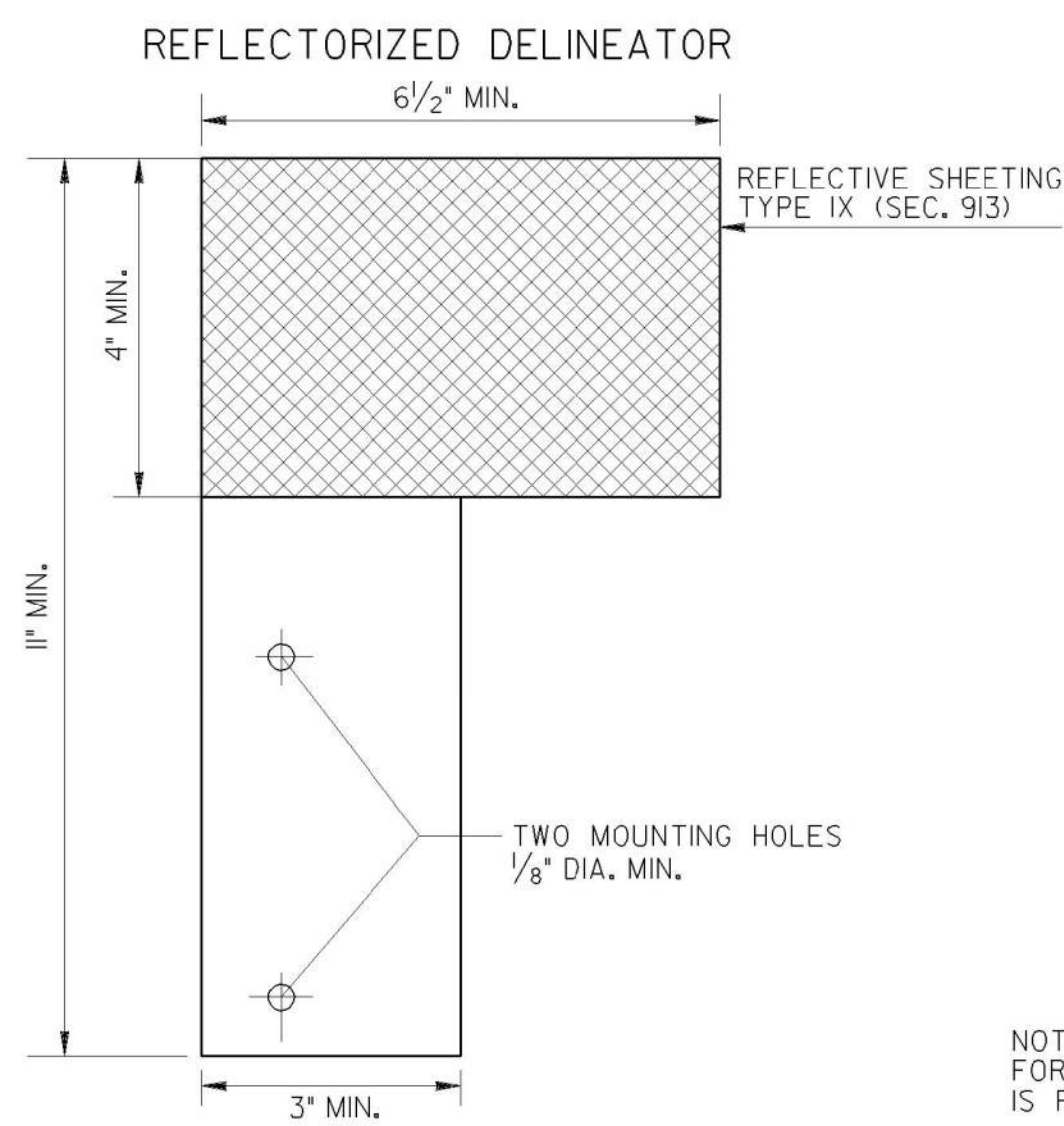
NUMBER
 4000W

ATKINS
 1600 RiverEdge Parkway, NW, Suite 700
 Atlanta, GA 30328
 P: 770-933-0260

HARTWELL ENGINEERS & ARCHITECTS
 1000 STEVENSON AVENUE, SUITE 100
 STEVENSON, ALABAMA 35671
 (205) 266-1111

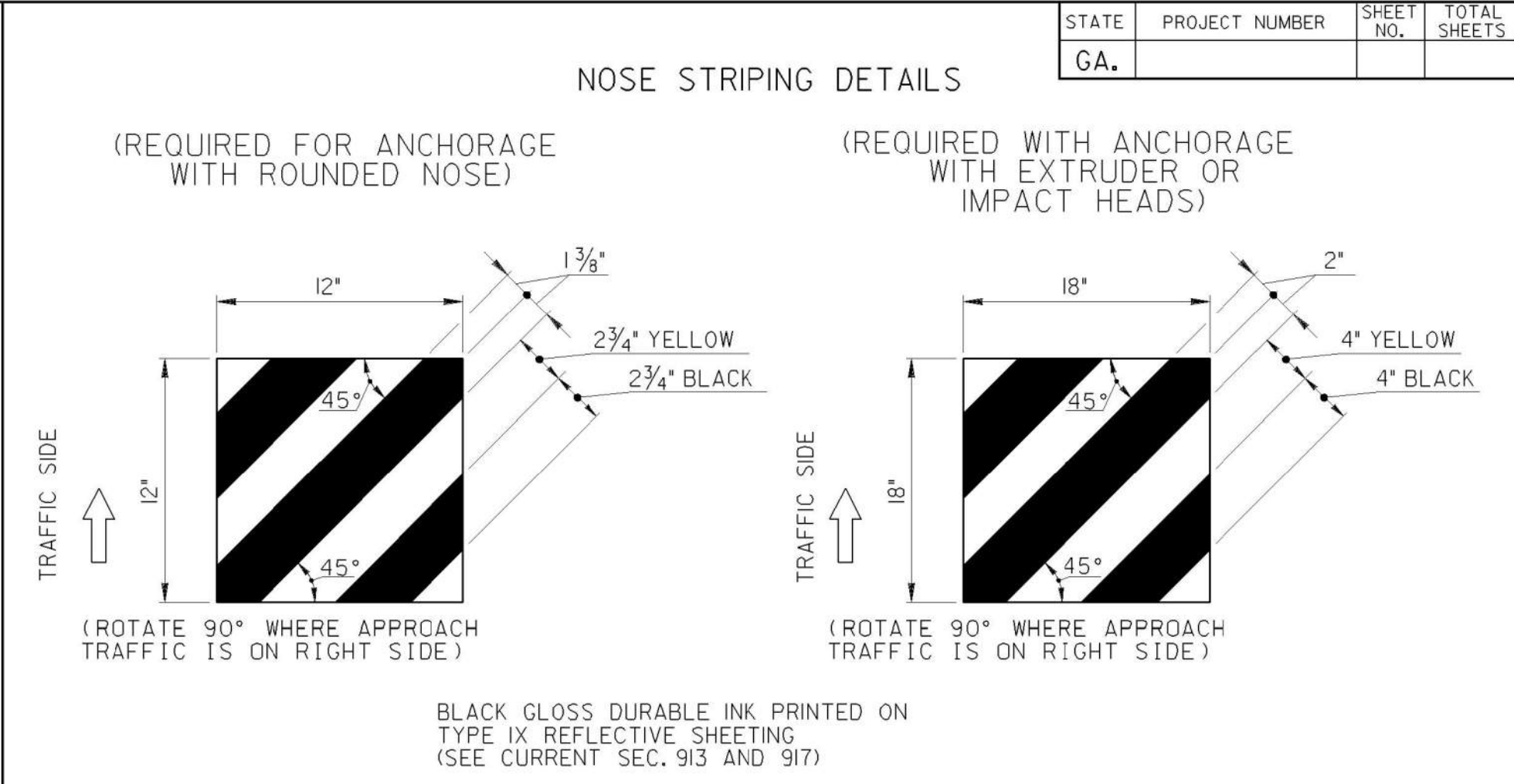
CITY OF CANTON, GEORGIA	DESIGNED BY: JMR	DATE
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD	DRAWN BY: RAR	REVISION
	CHECKED BY: RM	
	APPROVED BY: GNK	
	DATE: SEPTEMBER 2020	
	SCALE: AS SHOWN	

CIVIL
 STANDARD DETAILS



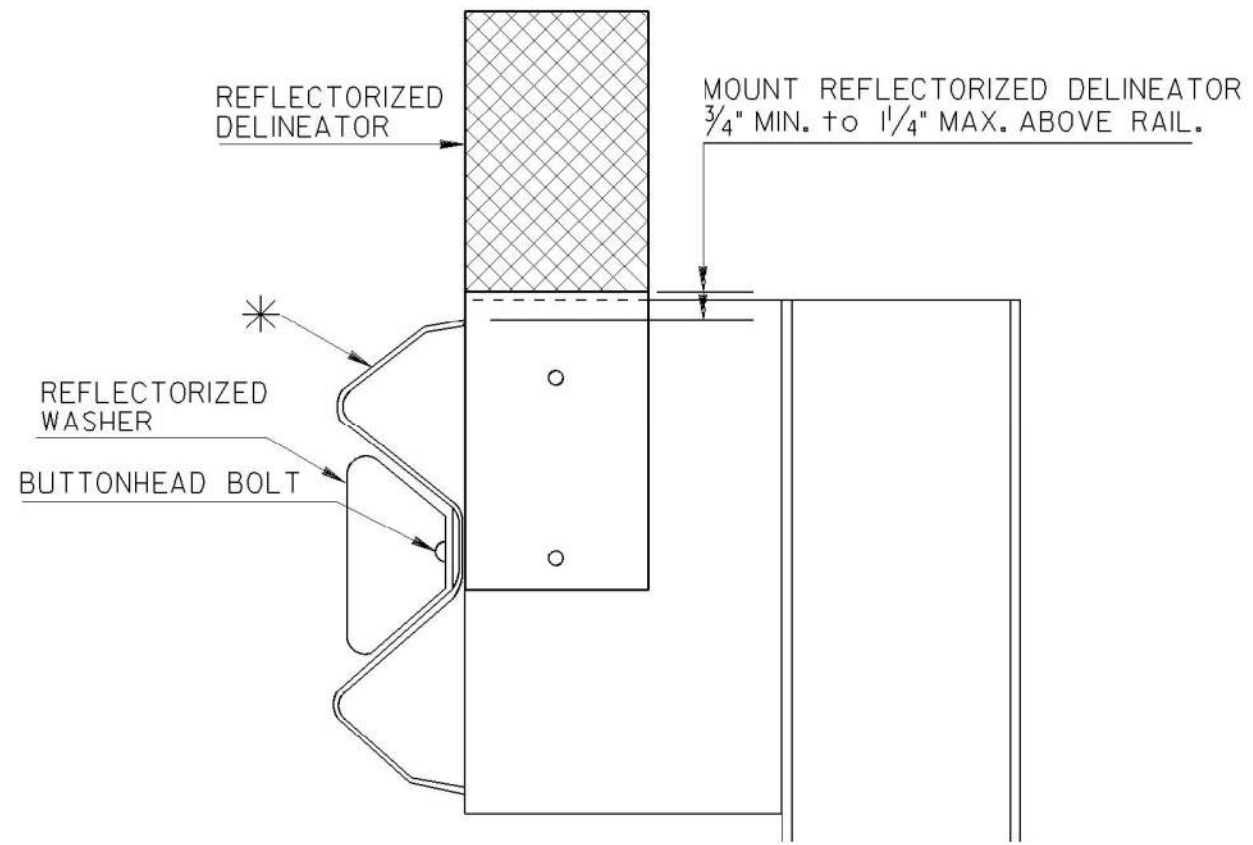
- REFLECTIVE GUARDRAIL DELINEATORS:
1. DELINEATOR SHALL HAVE A MINIMUM THICKNESS OF 0.125 INCHES.
 2. THE DELINEATOR SHALL BE BLACK, HIGH-DENSITY POLYETHYLENE PANEL THAT IS STABILIZED AGAINST ULTRAVIOLET DEGRADATION.
 3. DELINEATOR SHALL HAVE A MINIMUM REFLECTIVE AREA OF 26 SQUARE INCHES FOR RIGHT AND LEFT DELINEATOR AND WILL USE TYPE IX REFLECTIVE SHEETING.
 4. DELINEATOR SHALL MEET THE FOLLOWING COLOR REQUIREMENTS: YELLOW IN THE MEDIAN, WHITE OF THE OUTSIDE SHOULDER AND RED ON THE REVERSE SIDE OF THE DELINEATOR AT RAMP LOCATIONS.
 5. DELINEATOR SHALL HAVE PREDRILLED HOLES IN THE PANEL TO ALLOW THE DELINEATOR TO BE ATTACHED TO WOOD, PLASTIC OR STEEL GUARDRAIL OFFSET BLOCKS WITH SCREWS, NAILS, EPOXY ADHESIVE OR AS PER MANUFACTURER'S RECOMMENDATIONS.

NOTE: FOR 'T'-BEAM GUARDRAIL, REFLECTORIZED WASHER IS PLACED IN THE TOP INDENTION.

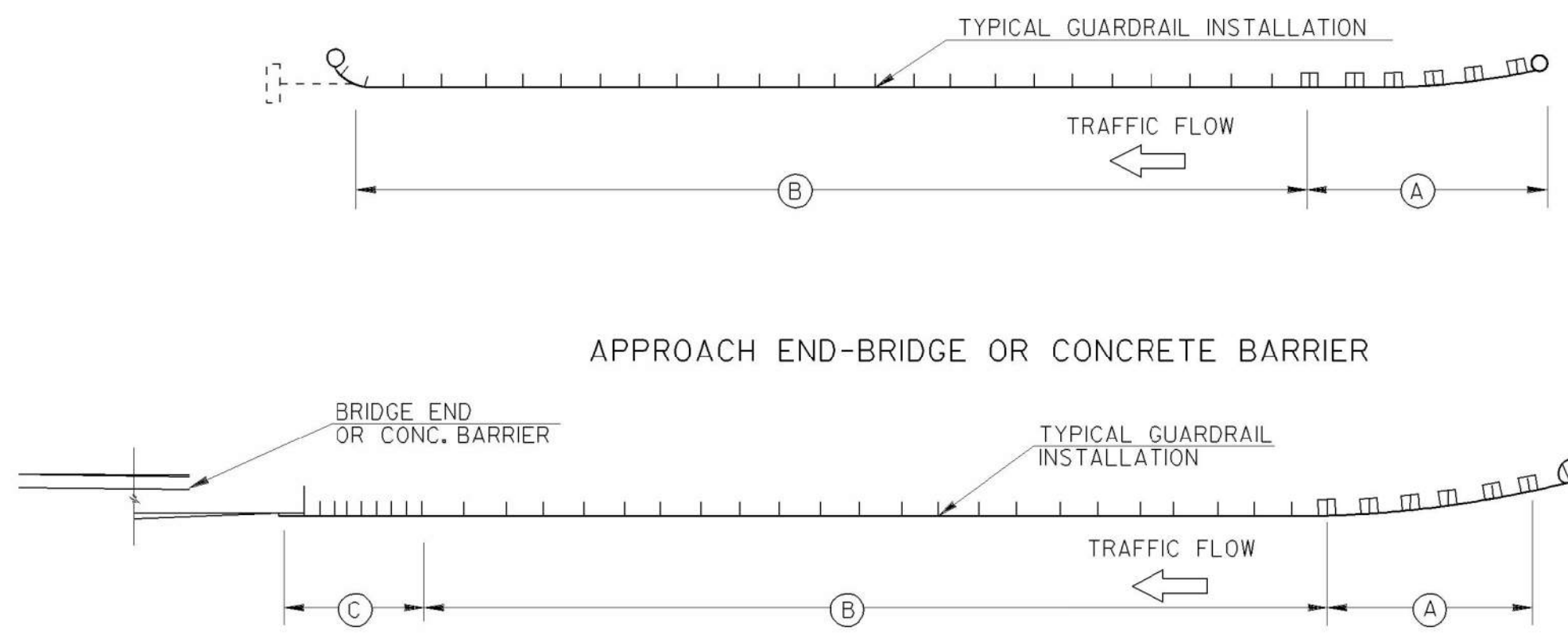


BLACK GLOSS DURABLE INK PRINTED ON TYPE IX REFLECTIVE SHEETING (SEE CURRENT SEC. 913 AND 917)

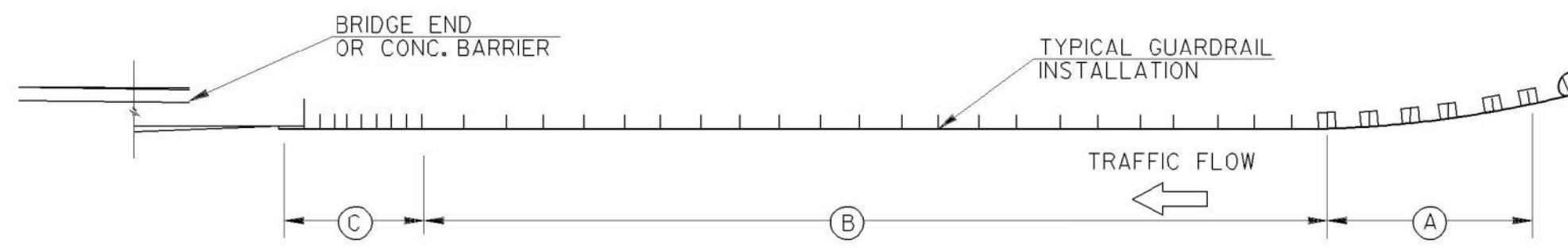
ALTERNATE DELINEATOR LOCATION DETAIL



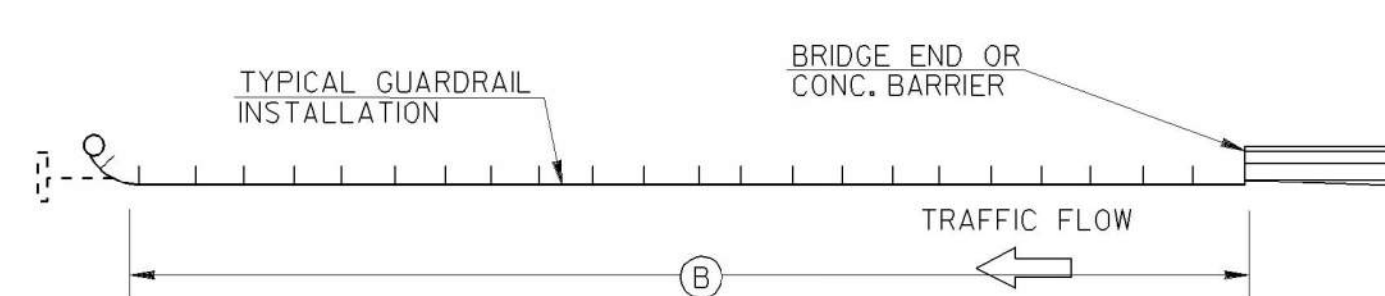
ALONG ROADSIDE



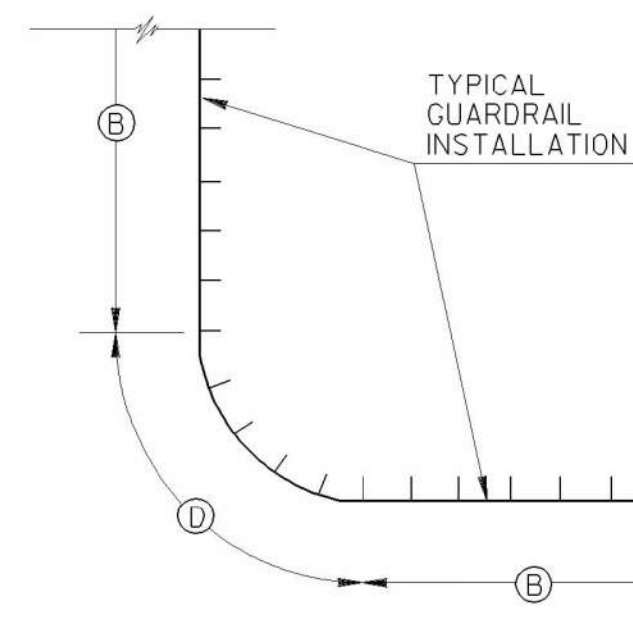
APPROACH END-BRIDGE OR CONCRETE BARRIER



TRAILING END-BRIDGE OR CONCRETE BARRIER



AT TURNOUTS



SPACING OF REFLECTORIZED WASHERS AND DELINEATORS

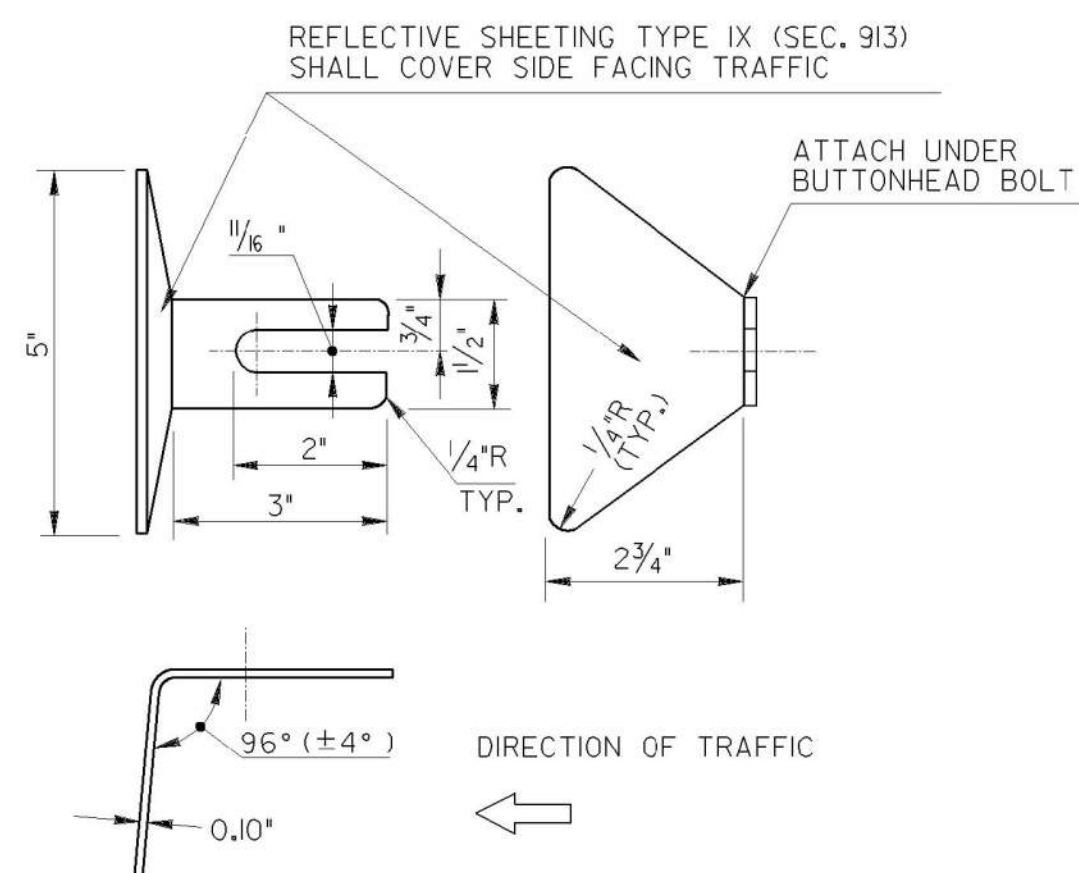
- (A) -AT ANCHORAGES:
 - TWO (2) REFLECTORIZED WASHERS ARE REQUIRED ON THE RAIL UNDER SPLICE BOLTS AS DIRECT BY THE ENGINEER FOR ELLIPTICALLY FLARED ANCHORAGES WITH ROUNDED END PIECES.
 - NO REFLECTORIZED WASHERS OR DELINEATOR WILL BE USED FOR TANGENTIALLY ALIGNED OR STRAIGHT TAPERED ANCHORAGE WITH EXTRUDER OR IMPACT HEADS;
- (B) -AT 75 FT. SPACINGS FOR INTERMEDIATE SECTIONS;
- (C) -THREE WASHERS AT 6'-3" SPACING AT CONNECTIONS TO CONCRETE FACE ON THE APPROACH END;
- (D) -AT 12'-6" SPACINGS AROUND RADII TURNS.

NOTE: THE SPACING WILL BE USED TO INSTALL THE DELINEATOR ON NEW GUARDRAIL, EXISTING GUARDRAIL WITH EXISTING GUARDRAIL WASHERS AND EXISTING GUARDRAIL WITHOUT EXISTING GUARDRAIL WASHERS.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION, & SUPPLEMENTS THERETO.
2. SEE SEPARATE STANDARDS FOR DETAILS OF GUARDRAIL INSTALLATIONS, CONNECTING HARDWARE, AND ANCHORAGES.
3. PAYMENT FOR REFLECTORIZED WASHERS, DELINEATORS AND NOSE STRIPING WILL BE INCLUDED IN THE PAVEMENT FOR GUARDRAIL AND ANCHORS IF INDIVIDUALS PAY ITEMS ARE NOT SHOWN IN THE CONTRACT.
4. ADJUSTMENTS OF SPACINGS AND/OR REQUIREMENTS FOR REFLECTIVE WASHERS AND DELINEATORS MAY BE DIRECTED BY THE ENGINEER TO SUIT INDIVIDUAL LOCATIONS.
5. WHERE DOUBLE FACED GUARDRAIL IS LOCATED ON THE INSIDE SHOULDER OF MEDIANS, REFLECTORIZED WASHERS AND DELINEATORS SHALL BE REQUIRED ONLY ON THE SIDE WHICH IS NEAREST TO TRAFFIC, UNLESS SPECIFIED OTHERWISE.
6. WHEN DOUBLE FACED GUARDRAIL IS LOCATED IN THE CENTER OF THE MEDIAN, REFLECTORIZED WASHER AND DELINEATORS SHALL BE REQUIRED ON BOTH SIDES.

REFLECTORIZED WASHER DETAILS



MATERIALS: ALUMINUM (ASTM B 209 ALLOY 5052-H32 OR 12 GAUGE GALVANIZED STEEL (ASTM A 653/A653M) WITH REFLECTIVE SHEETING, AS APPROVED BY THE OFFICE OF MATERIALS AND RESEARCH.

COLORS: YELLOW IN MEDIANS AND WHITE ON OUTSIDE SHOULDERS

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA			
STANDARD REFLECTORIZED GUARDRAIL WASHERS, DELINEATOR AND ANCHORAGE NOSE STRIPING			
NO SCALE		REV. & REDR. APRIL, 1999	
DES. (SUBMITTED)	BY	STATE DESIGN POLICY ENGINEER	NUMBER
DRWN. (APPROVED)	BY	CHIEF ENGINEER	4360
CHK.	BY		

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, GA 30328
P: 770-933-0260

HARTWELL ENGINEERING, INC.
ENGINEERS & INTEGRATORS
1000 STEVENSON AVENUE, SUITE 100
ATLANTA, GA 30308
(404) 242-5111

CERTIFICATE OF AUTHORIZATION #	PERFORMING EXPIRATION DATE	PROJECT NUMBER	DATE
100061831	06/30/2022	ATKINS NORTH AMERICA INC.	
DESIGNED BY: JMR	REVISION		
DRAWN BY: RAR			
CHECKED BY: RM			
APPROVED BY: GSK			
DATE: SEPTEMBER 2020			
SCALE: AS SHOWN			

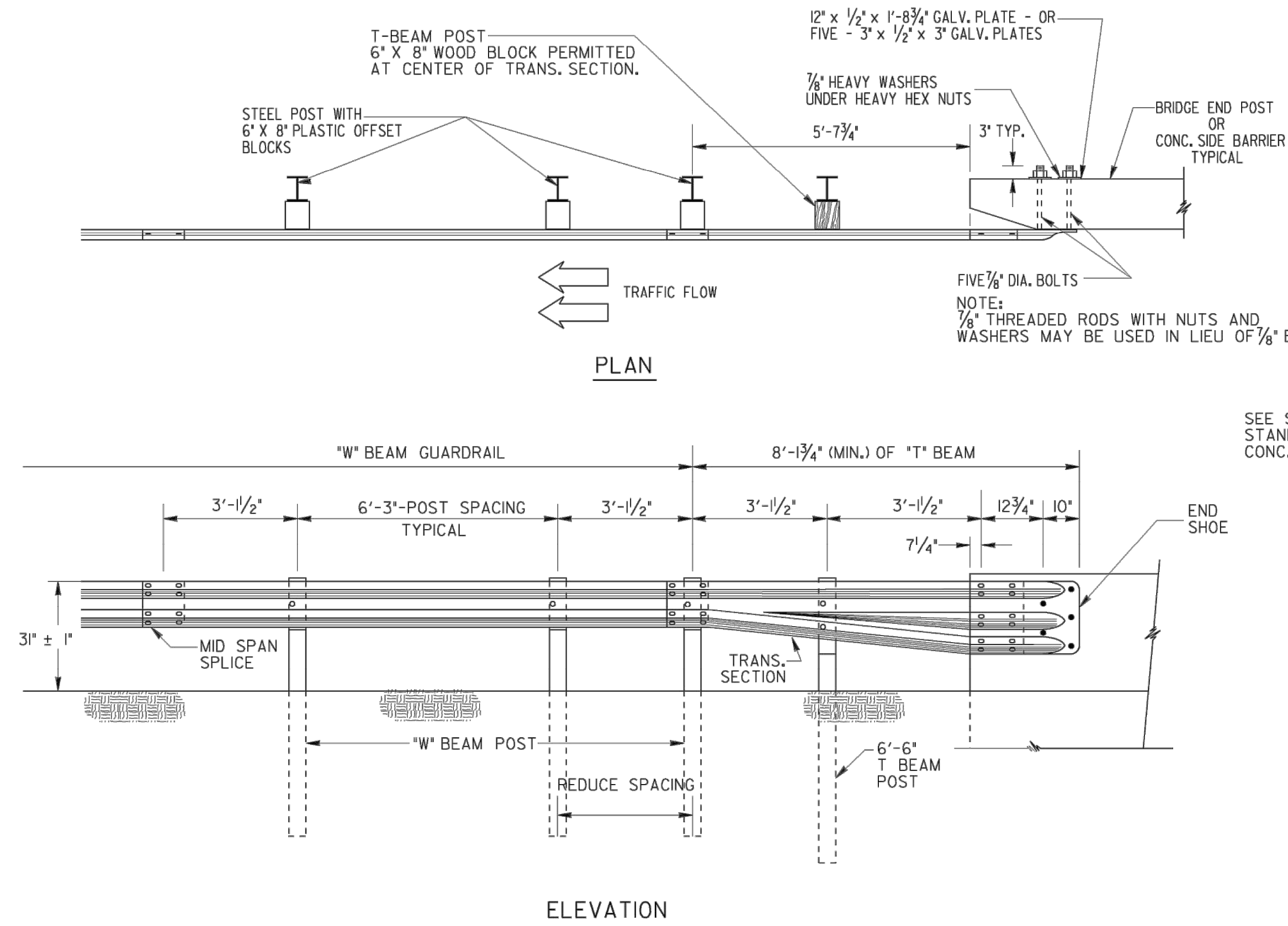
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CIVIL
STANDARD DETAILS

SHEET NO.
DC-4

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

31 INCH HIGH GUARDRAIL CONNECTION AT TRAILING ENDS
(SEE NOTE AT BOTTOM LEFT)



NOTE:
DETAILS AT TOP LEFT ARE APPLICABLE FOR CONNECTIONS AT THE TRAILING ENDS OF ONE-WAY TRAFFIC OR AT THE TRAILING END OF MULTI-LANE (4 OR MORE) FACILITIES.

NOTE:
DETAILS AT TOP RIGHT ARE APPLICABLE FOR CONNECTIONS AT THE APPROACH ENDS OF BRIDGES OR CONCRETE SIDE BARRIERS OR AT ALL FOUR ENDS FOR TWO-LANE, TWO WAY TRAFFIC.

GENERAL NOTES:

- SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
- FOR DETAILS OF GUARDRAIL HARDWARE, POST, OFFSET BLOCKS, END SHOE, TRANSITION SECTION, ETC., SEE SEPARATE STANDARDS AS APPLICABLE.
- GUARDRAIL INSTALLATIONS, INCLUDING ANCHORAGES AND CONNECTIONS, ARE TO BE COMPLETED BEFORE BEING SUBJECT TO TRAFFIC UNLESS OTHERWISE APPROVED.
- OFFSET BLOCKS SHALL BE PLASTIC UNLESS SPECIFIED OTHERWISE. OFFSET BLOCKS ARE REQUIRED AT ALL POSTS.
- THE COST FOR DRILLING HOLES FOR THE END SHOE CONNECTION SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE GUARDRAIL.

GUARDRAIL CONNECTION AT BRIDGE END (OR CONCRETE BARRIER)

(DETAILS ARE ILLUSTRATED WITH APPROACH SLAB, SPILLWAY, ETC. FOR TYPICAL BRIDGE END, POST SPACINGS AND END SHOE CONNECTION APPLIES TO ROADWAY CONCRETE BARRIER AS WELL AS BRIDGE ENDS.)

NOTE:
7/8\"/>

7/8\"/>

5\"/>

3\"/>

2\"/>

TRAFFIC FLOW

END SHOE

SEE SEPARATE STANDARD FOR CONC. FACE

20'-7 3/4\"/>

10\"/>

12 3/4\"/>

1'-6 3/4\"/>

1'-6 3/4\"/>

1'-6 3/4\"/>

1'-6 3/4\"/>

3'-1/2\"/>

3'-1/2\"/>

3'-1/2\"/>

3'-1/2\"/>

6'-3\"/>

3'-1/2\"/>

TRANS. SECTION

31\"/>

6'-6\"/>

W BEAM POST

REDUCED SPACING

6'-3\"/>

3'-1/2\"/>

3'-1/2\"/>

3'-1/2\"/>

3'-1/2\"/>

3'-1/2\"/>

3'-1/2\"/>

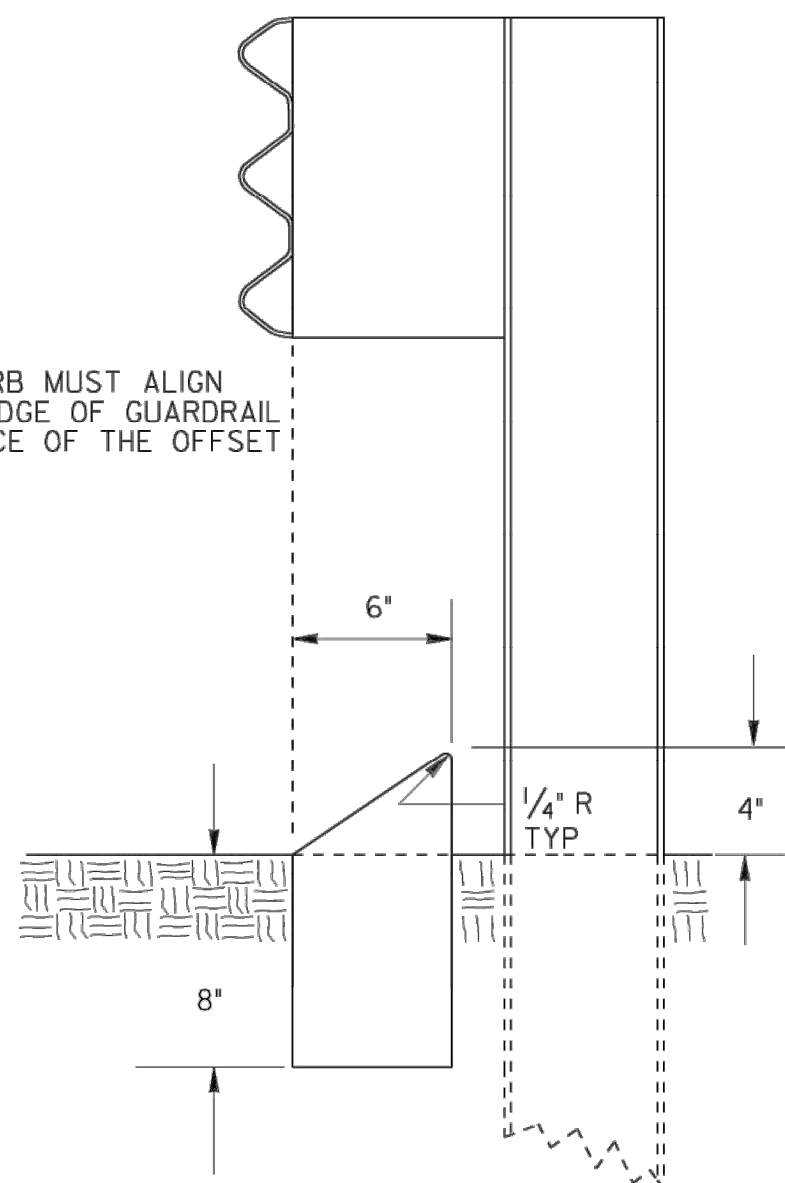
3'-1/2\"/>

ELEVATION

NOTES FOR GUARDRAIL CONNECTION:

- WHERE GREATER THAN THE MINIMUM LENGTH OF T-BEAM GUARDRAIL IS REQUIRED, ADDITIONAL POSTS REMAIN AS SHOWN WITHIN THE FIRST 20'-7 3/4\"/>
 - PAYMENT FOR GUARDRAIL TYPE T INCLUDES ALL ADDITIONAL POST, ALL ADDITIONAL OFFSET BLOCKS, THE SPECIAL END SHOE CONNECTION WITH ACCOMPANY HARDWARE, THE EXTRA SECTION OF T-BEAM RAIL NESTED INSIDE THE OTHER, AND THE T-BEAM TO W-BEAM TRANSITION SECTION.
 - WHERE GUARDRAIL POSTS ARE ERECTED THRU SPILLWAY, CONCRETE CAP OR PAVING UNDER GUARDRAIL, PAYMENT FOR GUARDRAIL, OF ANY TYPE SHALL INCLUDE REPLACING THE BLOCKED OUT CONCRETE AND/OR REMOVING AND REPLACING PORTIONS OF SPILLWAY, CONCRETE, OR GROUT AS NECESSARY FOR POST INSTALLATIONS.
- * * * FOR CURB DETAILS ASSOCIATED WITH APPROACH SLAB, SEE APPROACH SLAB STANDARD. FOR GUARDRAIL INSTALLATION LOCATIONS WHERE AN APPROACH SLAB IS NOT USED, PROVIDE A CONCRETE CURB IN ACCORDANCE WITH SECTION "A-A". CONCRETE CURB SHALL BE PAID FOR PER LINEAR FOOT.

NOTE: POST SPACINGS SHOWN ARE TYPICAL AVERAGE WITH NORMAL CONSTRUCTION TOLERANCES ALLOWED.



SECTION A-A * *

REV W-BM BLOCK TO 8"		DATE		DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REV		DATE		STANDARD	
BY		DATE		GUARDRAIL CONNECTION AT BRIDGE END OR AT CONCRETE BARRIER END FOR 31 INCH HIGH GUARDRAIL	
NO SCALE		AUGUST 2011		NUMBER	
DES. G.L.O. (SUBMITTED)		STATE DESIGN POLICY ENGINEER		4382	
DRW. G.L.O.		CHS ENGINEER			
CHK. B.R.E. (APPROVED)		CHS ENGINEER			
REVIEW B.A.S.					

ATKINS
1600 RiverEdge Parkway, N.W., Suite 700
Atlanta, GA 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS & INTEGRATORS
STEVENSVILLE, MARYLAND
(410) 286-5111

DATE	REVISION

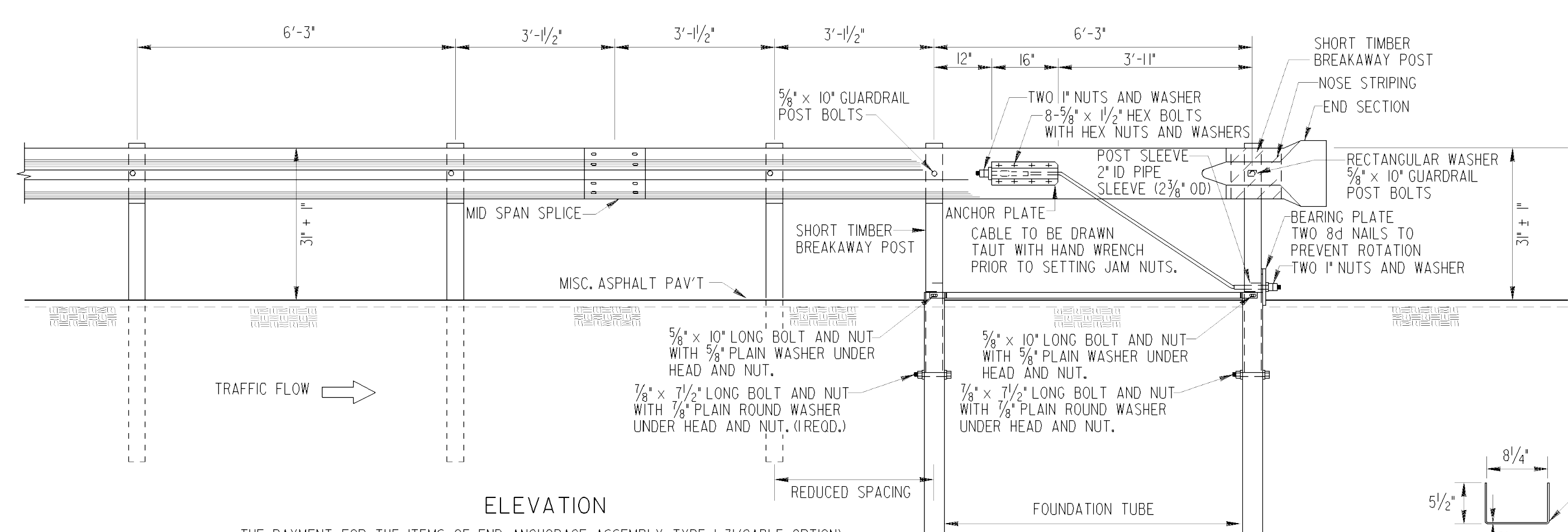
DESIGNED BY: JMR	CHECKED BY: RM
DRAWN BY: JWS	APPROVED BY: GSK
	DATE: SEPTEMBER 2020
	SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CIVIL
STANDARD DETAILS

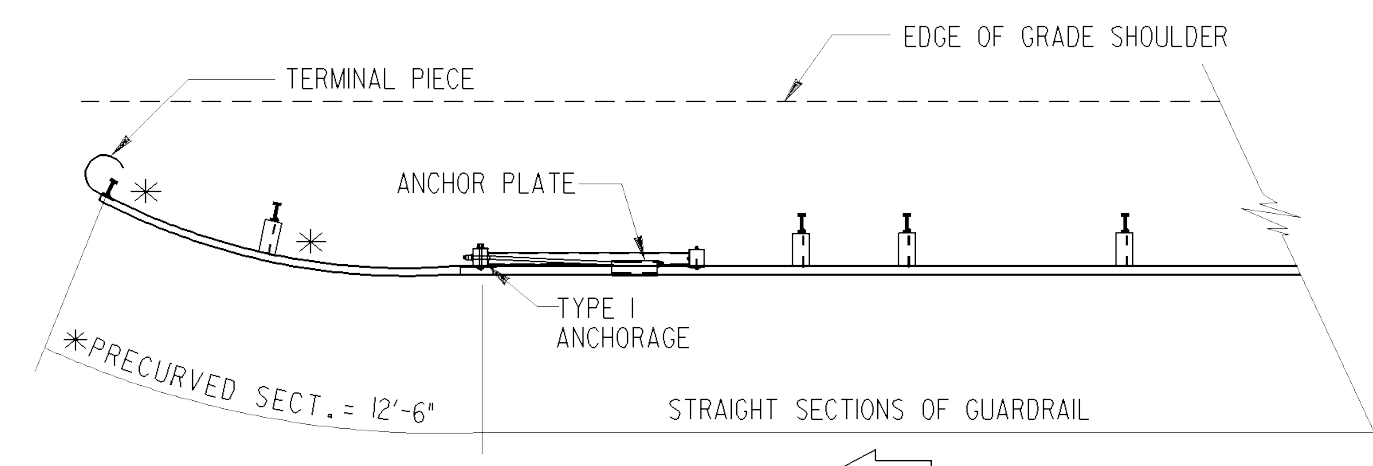
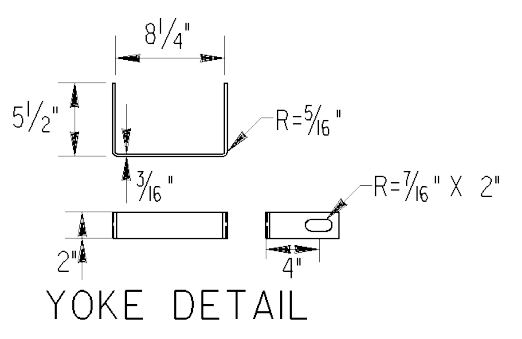
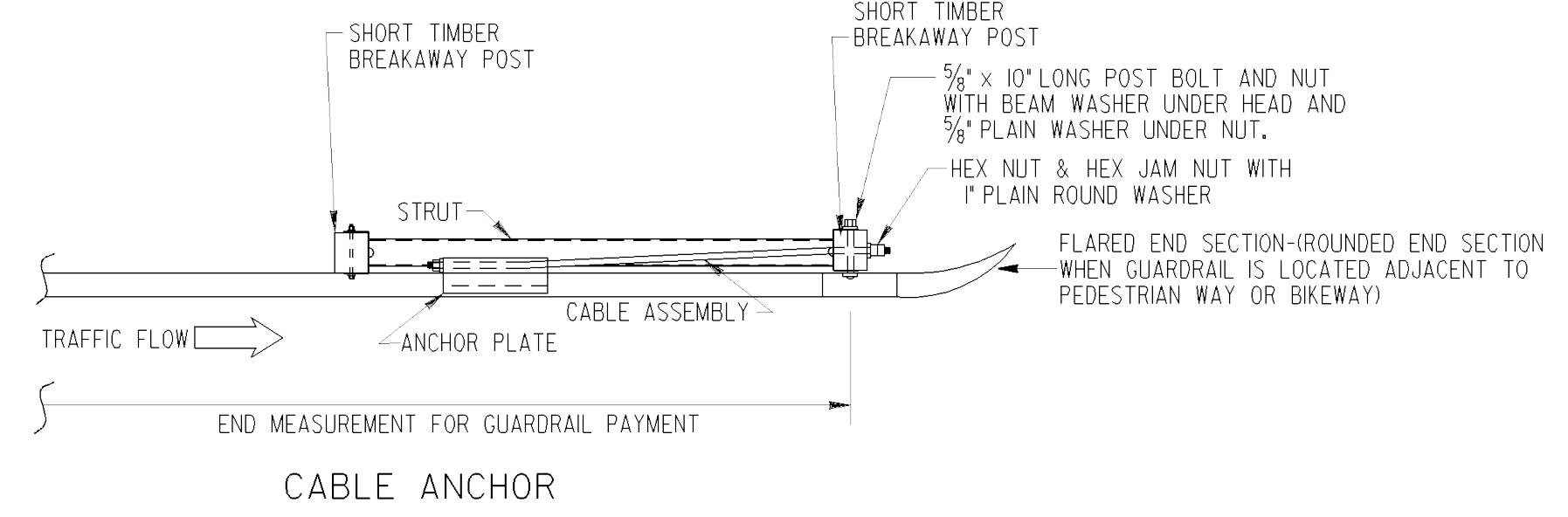
SHEET NO.

DC-7

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

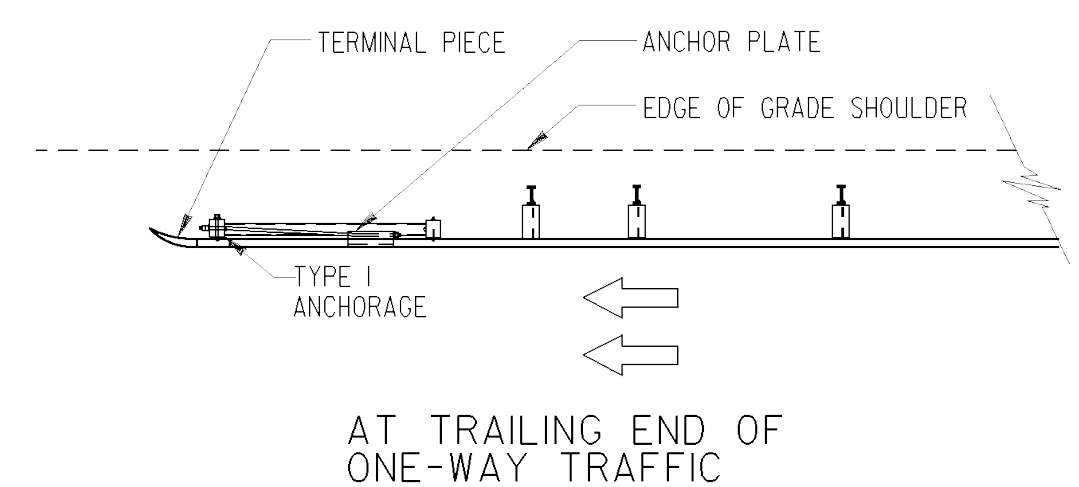


THE PAYMENT FOR THE ITEMS OF END ANCHORAGE ASSEMBLY TYPE I-31(CABLE OPTION) SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING EITHER THE ROUND OR THE BUFFER END SECTION, THE BEAM ANCHOR PLATE, CABLE ASSEMBLY, PIPE SLEEVE, SOIL PLATE, STEEL TUBE, BEARING PLATE, SHORT TIMBER BREAKAWAY POST, OFFSET BLOCKS AND THE NECESSARY HARDWARE.

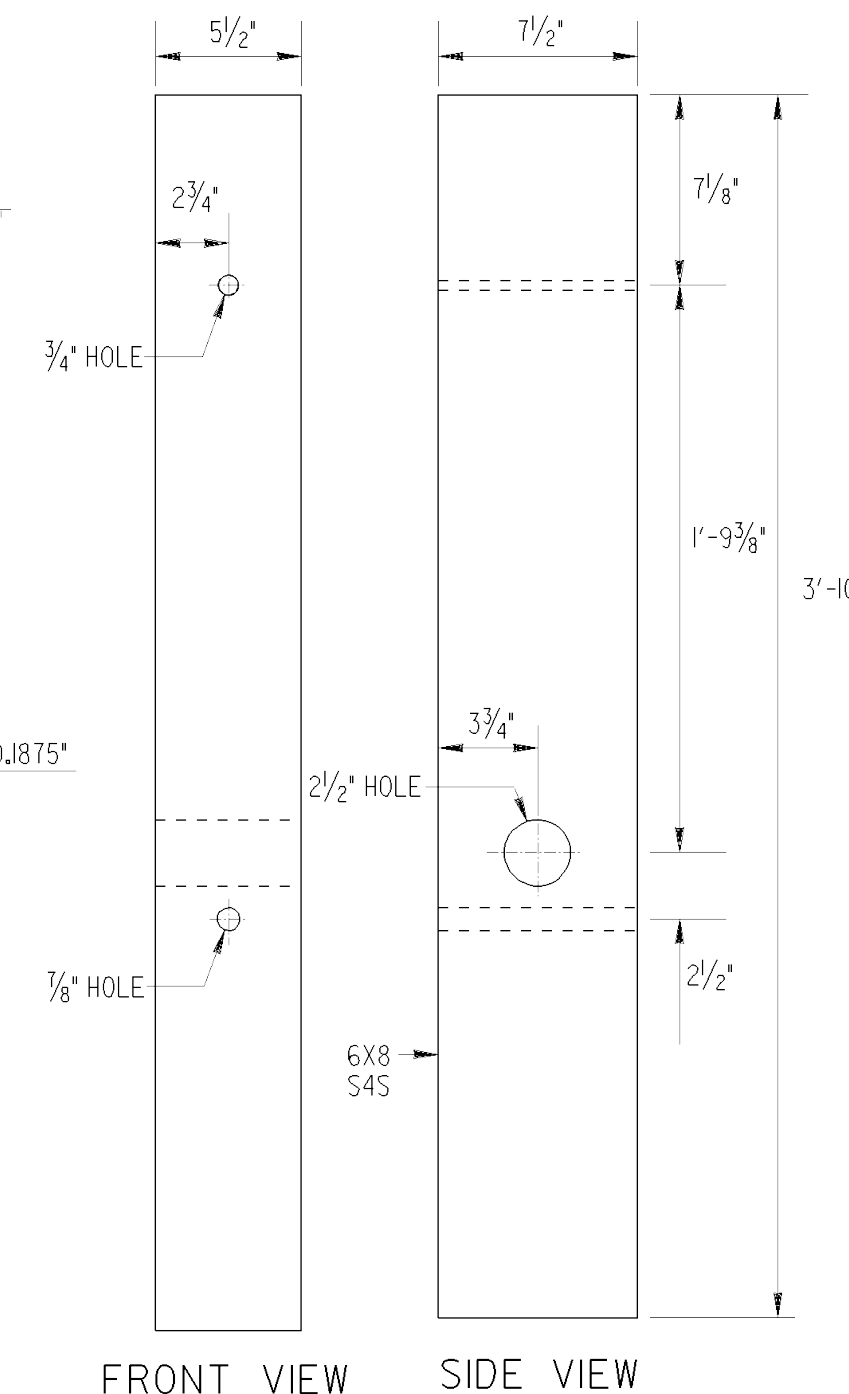
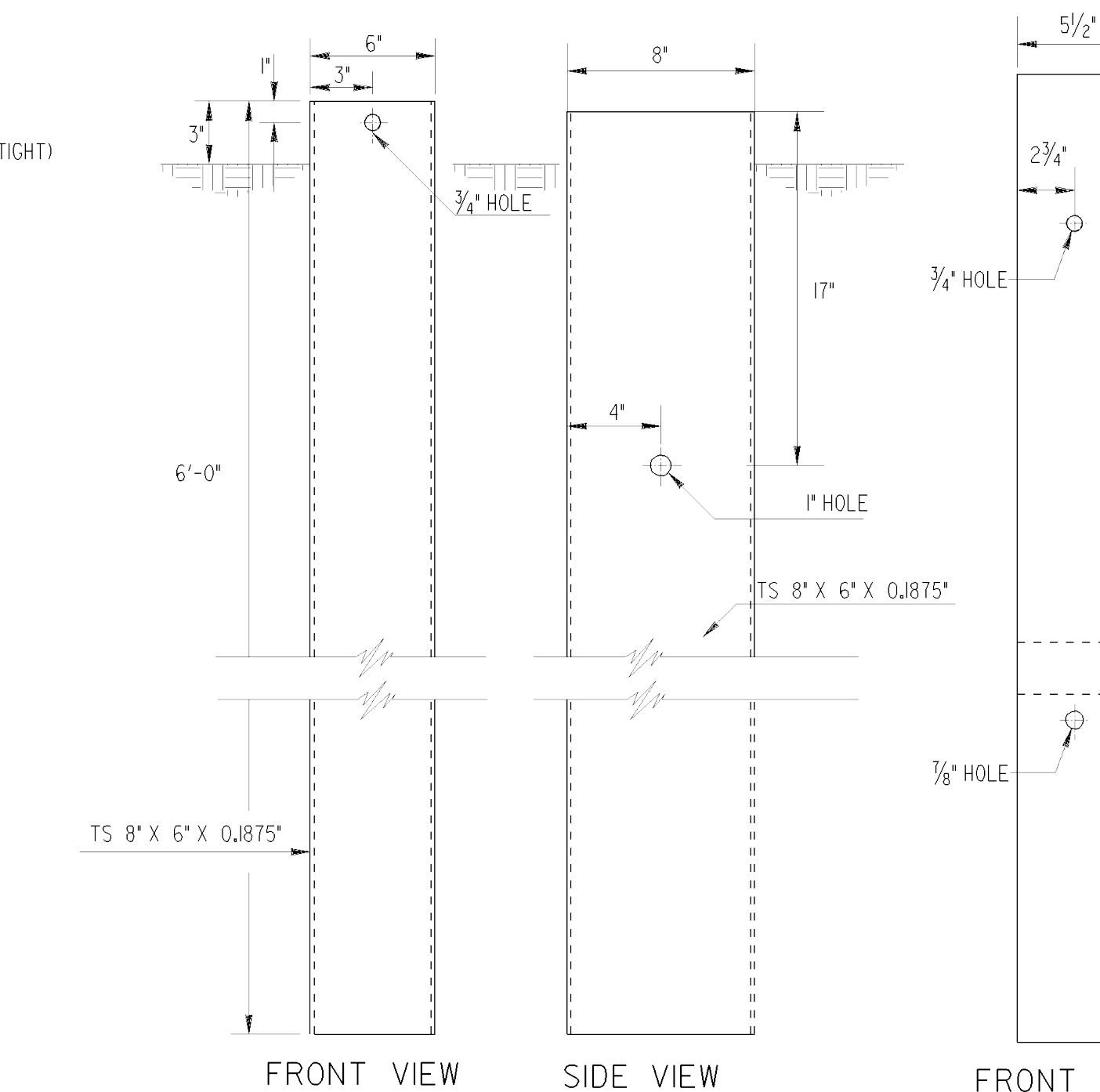
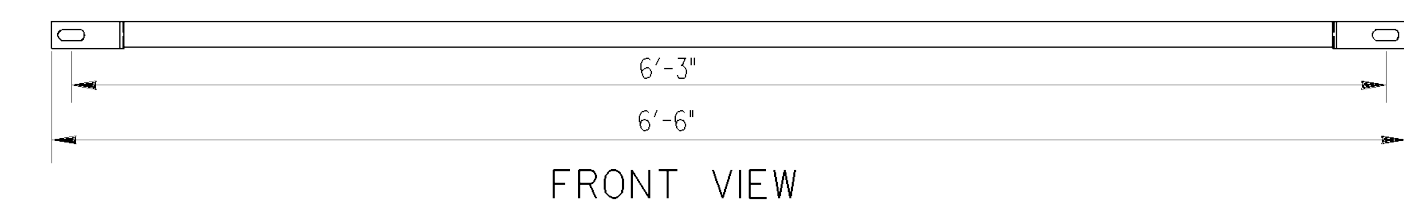
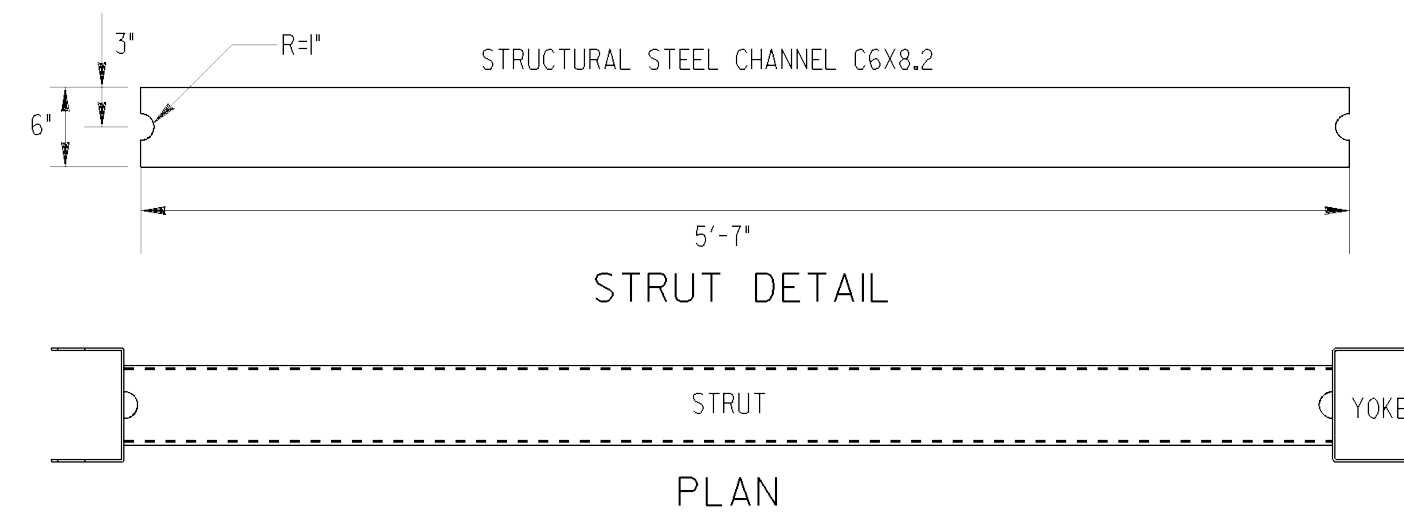
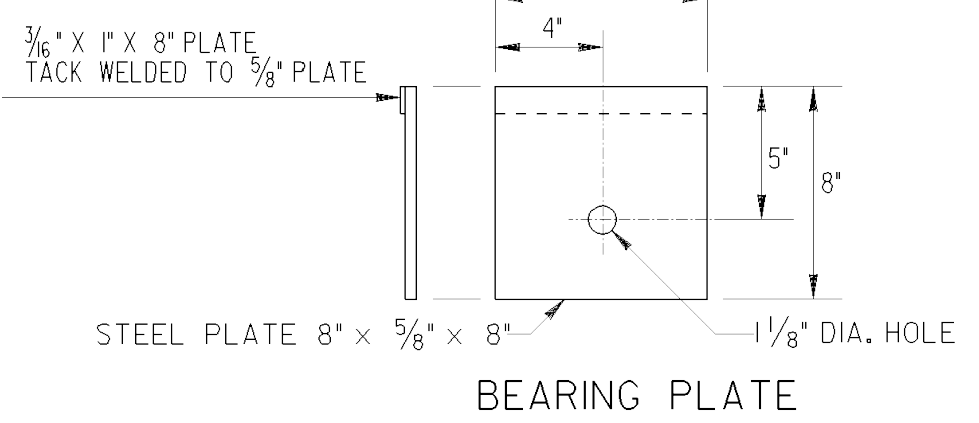
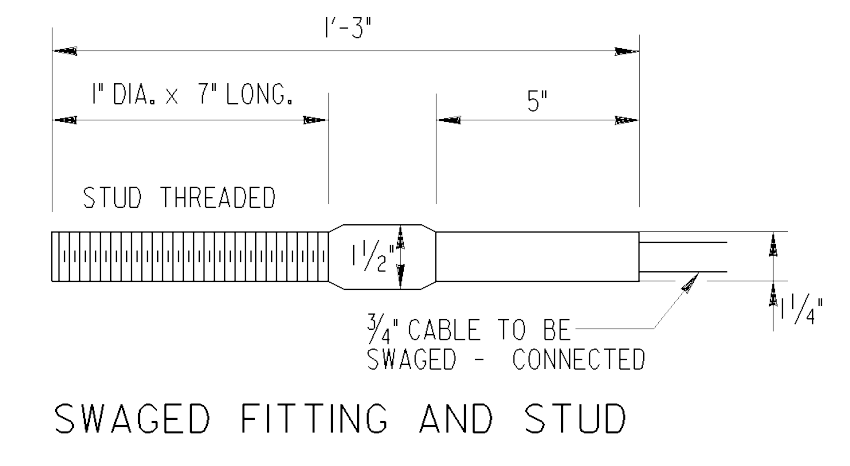


* PRECURVED SECTION SHALL UTILIZE POST OF THE SAME LENGTH AS REQUIRED FOR THE ADJOINING STRAIGHT SECTIONS, REGARDLESS OF DISTANCE TO GRADED SHOULDER EDGE.

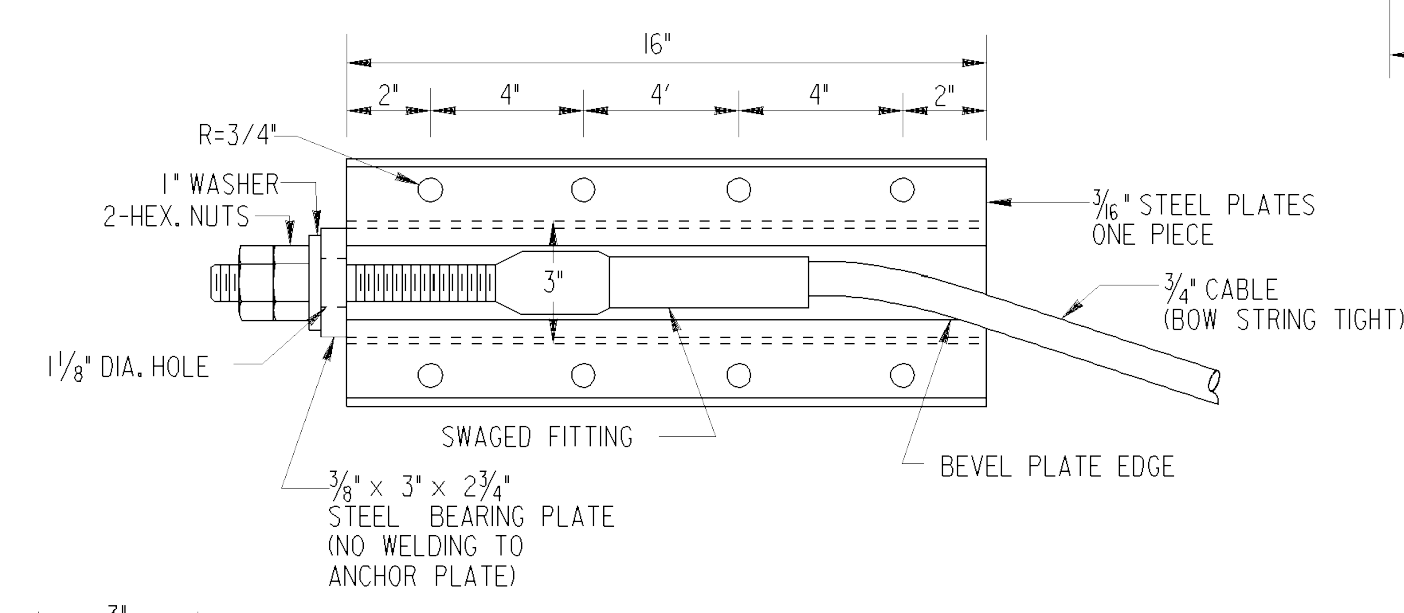
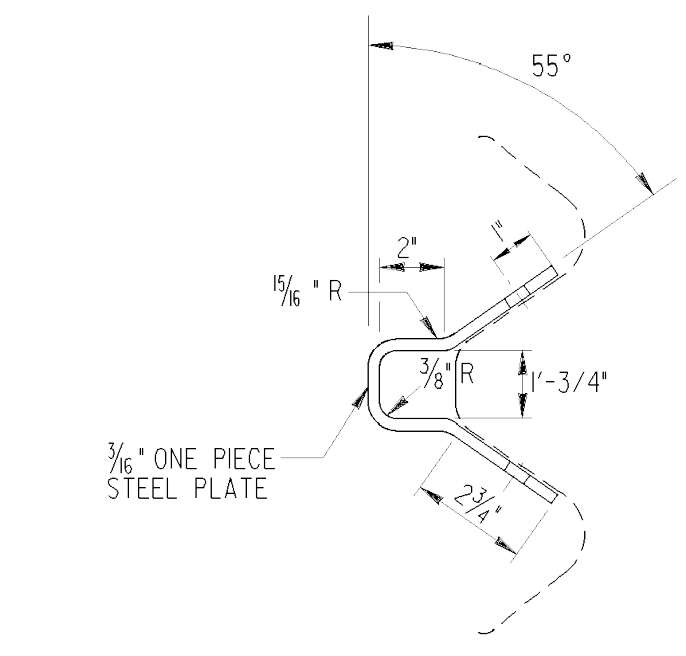
AT TRAILING END OF TWO-WAY TRAFFIC (WHICH FALLS OUTSIDE CLEAR ZONE OF OPPOSING TRAFFIC)



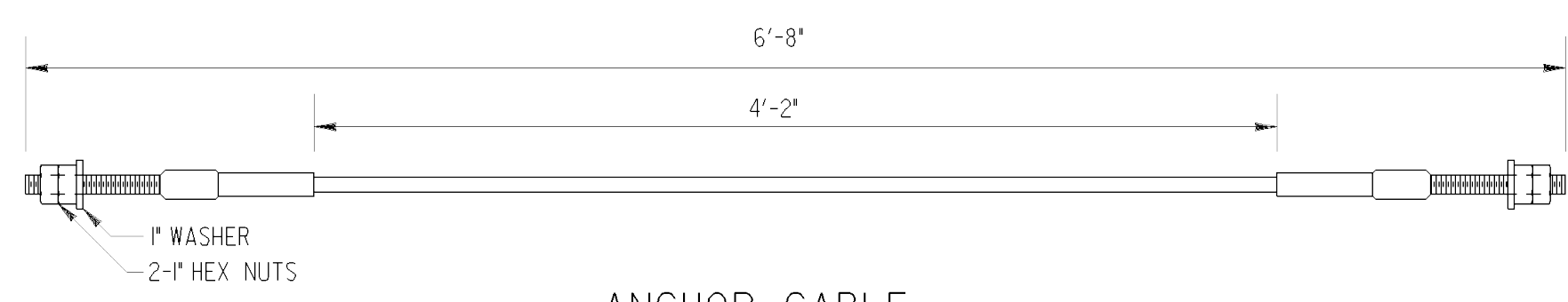
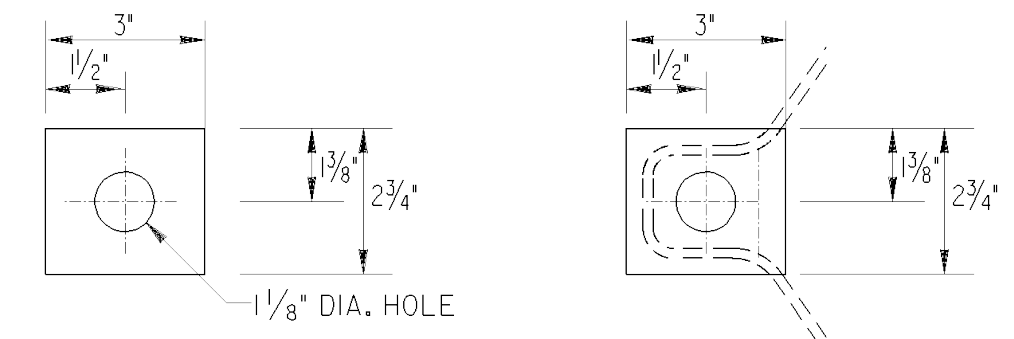
NOTE: SEE STD. 4388 OR OTHER APPLICABLE DETAILS FOR REQUIREMENT FOR TYPE I2 ANCHORAGE ON THE TRAILING END.



NOTE: SEE STANDARD 4382 FOR GUARDRAIL CONNECTION TO CONCRETE FACE.



NOTE: ANCHOR PLATES SHOWN HERE WITH GUARDRAIL (TYPE "1") ATTACHMENT TO GUARDRAIL (TYPE "1") WILL BE THE SAME EXCEPT THAT THE ANCHOR PLATE WILL BE LOCATED BETWEEN THE BOTTOM AND MIDDLE CORRUGATIONS.



- GENERAL NOTES:
- SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERE TO.
 - FOR DETAILS OF GUARDRAIL HARDWARE, POST, OTHER TYPE ANCHORAGE, LOCATION, ETC. SEE SEPARATE STANDARDS AS APPLICABLE.
 - GUARDRAIL INSTALLATIONS, INCLUDING ANCHORAGES AND CONNECTIONS, ARE TO BE COMPLETED BEFORE BEING SUBJECT TO TRAFFIC UNLESS OTHERWISE APPROVED.
 - PAYMENT FOR ANCHORAGE INCLUDES ANCHOR PLATE; 3/4" CABLE; BREAKAWAY POSTS; FOUNDATION TUBES; STRUT AND ALL ACCOMPANYING HARDWARE.

DATE		DEPARTMENT OF TRANSPORTATION	
STATE OF GEORGIA		STATE OF GEORGIA	
REVISION		STANDARD	
NO SCALE		GUARDRAIL ANCHORAGE TYPE I	
AUGUST 2011		3 INCH GUARDRAIL HEIGHT	
BY	DES. G.L.O. (SUBMITTED)	NO. 4383	
DRW. G.L.O.	CHK. B.R.E. (APPROVED)		
REVIEW B.A.S.	REVIEW B.A.S.		

ATKINS
 1600 RiverEdge Parkway, NW, Suite 700
 Atlanta, GA 30328
 P: 770-933-0280

HARTWELL ENGINEERING, INC.
 ENGINEERS & INTEGRATORS
 STEVENSONVILLE, MARYLAND
 (410) 286-5111

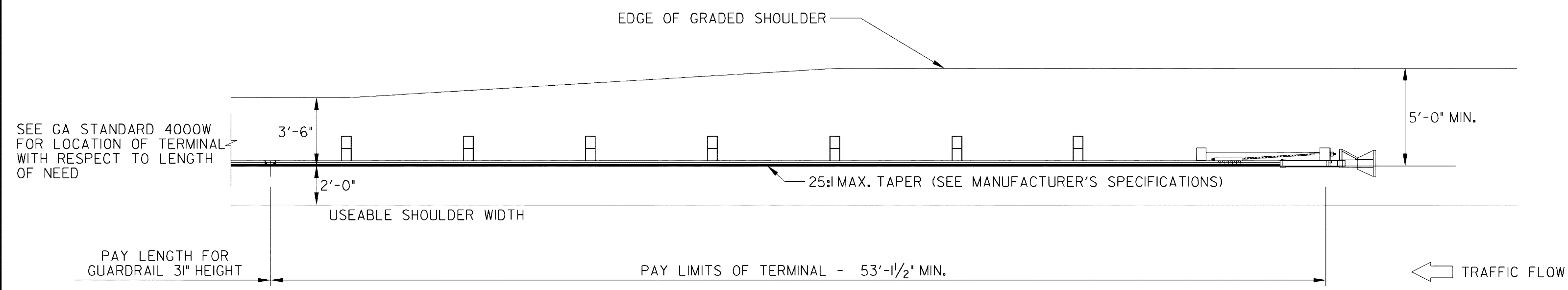
CERTIFICATE OF AUTHORIZATION #	EXPIRATION DATE	PROJECT NO.	DATE
0600022	ATKINS NORTH AMERICA INC.		
DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
JMR	RAR	RM	GNK
DATE:	SCALE:	REVISION	
SEPTEMBER 2020	AS SHOWN		

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CIVIL
 STANDARD DETAILS

PROJ. NO.: 100061831
 DESIGNED BY: JMR
 DRAWN BY: RAR
 CHECKED BY: RM
 APPROVED BY: GNK
 DATE: SEPTEMBER 2020
 SCALE: AS SHOWN

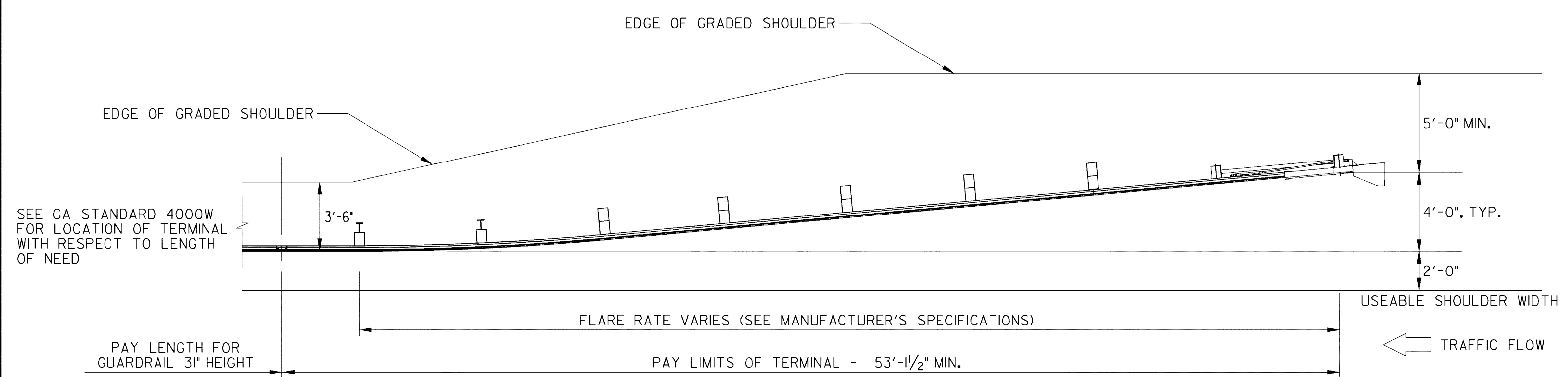
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



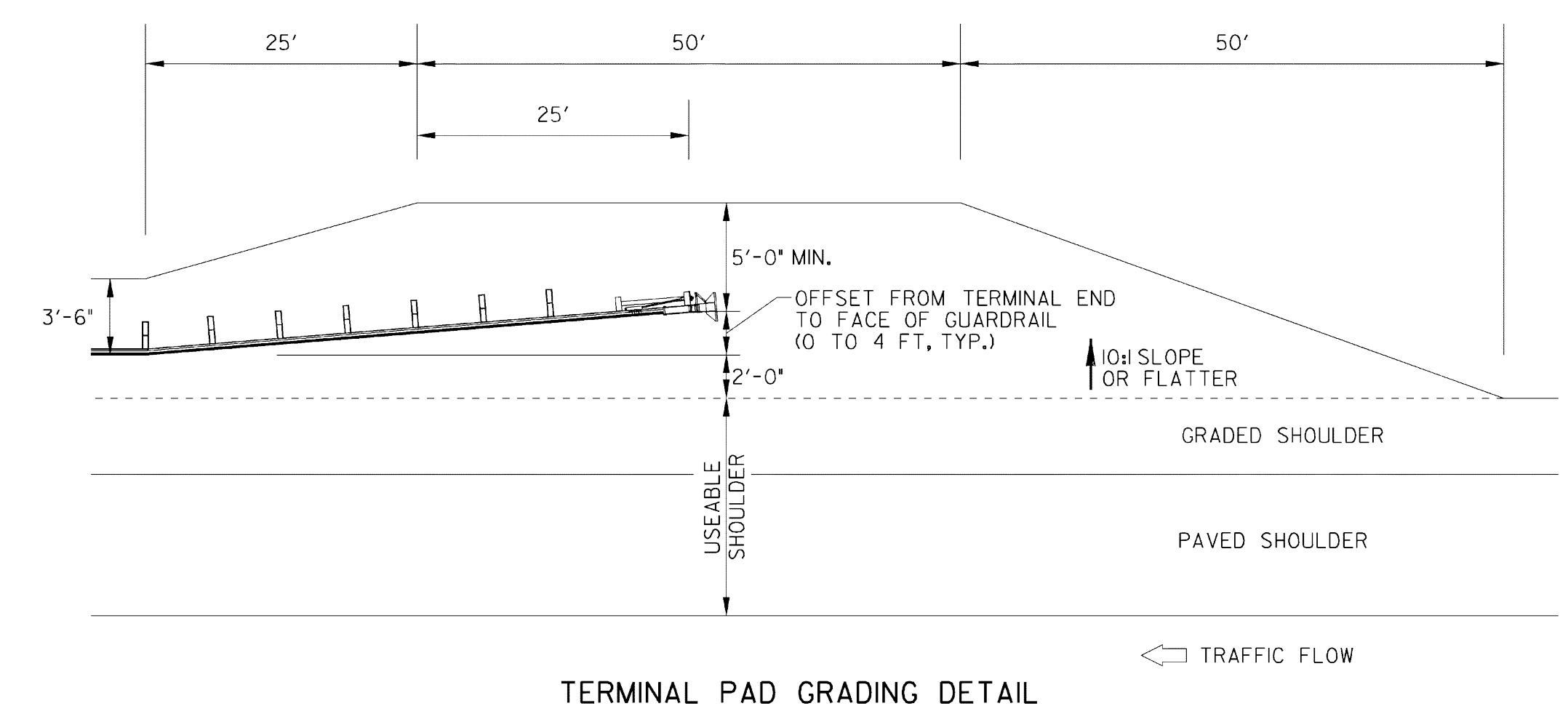
**TYPE I2A - 3' GUARDRAIL TERMINAL
(TANGENT, ENERGY-ABSORBING)**

- GENERAL NOTES:
- SPECIFICATIONS: GEORGIA STANDARD CURRENT EDITION, AND SUPPLEMENTS THERETO.
 - SEE GDOT OPL 64 FOR APPROVED PRODUCTS.
 - THIS SHEET DEPICTS THE PAY LIMITS FOR GUARDRAIL AND TYPE I2 TERMINALS. TYPE I2 TERMINALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - W-BEAM INSTALLATIONS LESS THAN 150 FEET IN ADVANCE OF ANY SHIELDED OBJECT OR TOTAL LENGTH OF W-BEAM INSTALLATION IS LESS THAN ABOUT 150 FEET, AN ENGERGY-ABSORBING TERMINAL SHOULD BE SELECTED.

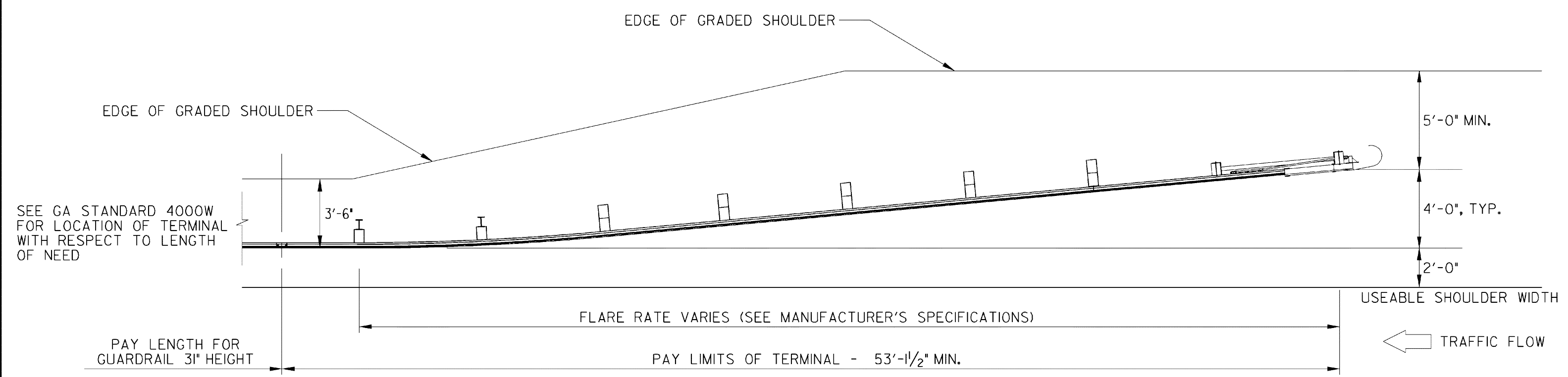
ITEM NO.	UNITS	DESCRIPTION
64I-5015	EA	GUARDRAIL TERMINAL, TP I2A - 3', TANGENT, ENERGY-ABSORBING
64I-5020	EA	GUARDRAIL TERMINAL, TP I2B - 3', FLARED, ENERGY-ABSORBING
64I-5025	EA	GUARDRAIL TERMINAL, TP I2C - 3', FLARED, NON-ENERGY-ABSORBING



**TYPE I2B - 3' GUARDRAIL TERMINAL
(FLARED, ENERGY-ABSORBING)**



TERMINAL PAD GRADING DETAIL



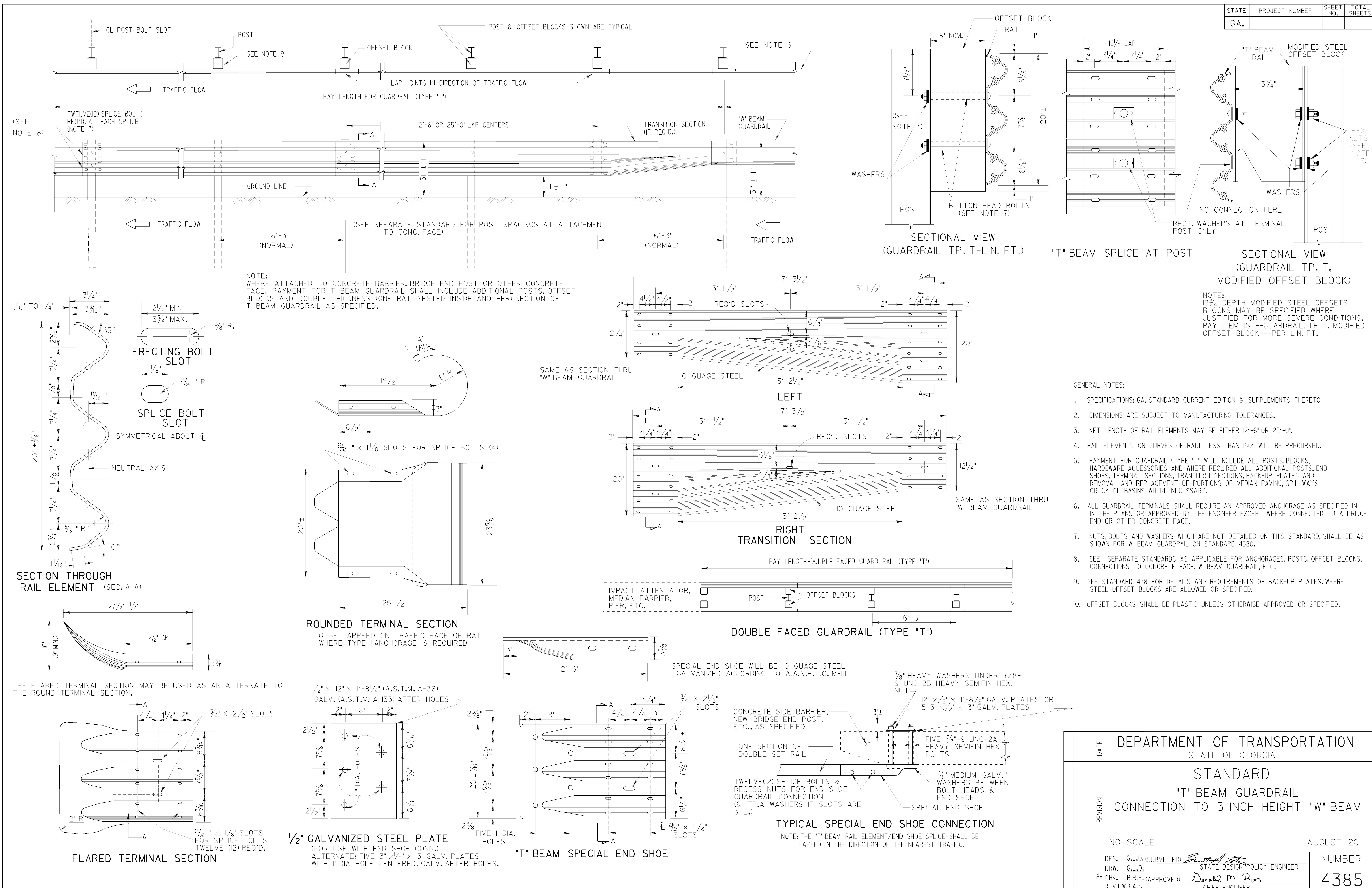
**TYPE I2C - 3' TERMINAL
(FLARED, NON-ENERGY-ABSORBING)**

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
STANDARD GUARDRAIL TERMINALS, TYPE I2A, I2B, AND I2C 31 INCH GUARDRAIL HEIGHT	
NO SCALE	AUGUST 2011
DES. G.L.O. (SUBMITTED) DRW. G.L.O. CHK. B.R.E. (APPROVED) REVIEW B.A.S.	NUMBER 4384
STATE DESIGN POLICY ENGINEER MARGARET B. PAVEL CHIEF ENGINEER	

DATE	REVISION

PROJ. NO.: 100061831
 DESIGNED BY: JMR
 DRAWN BY: RAR
 CHECKED BY: RM
 APPROVED BY: GNK
 DATE: SEPTEMBER 2020
 SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 CIVIL
 STANDARD DETAILS



NOTE:
 WHERE ATTACHED TO CONCRETE BARRIER, BRIDGE END POST OR OTHER CONCRETE FACE, PAYMENT FOR T BEAM GUARDRAIL SHALL INCLUDE ADDITIONAL POSTS, OFFSET BLOCKS AND DOUBLE THICKNESS (ONE RAIL NESTED INSIDE ANOTHER) SECTION OF T BEAM GUARDRAIL AS SPECIFIED.

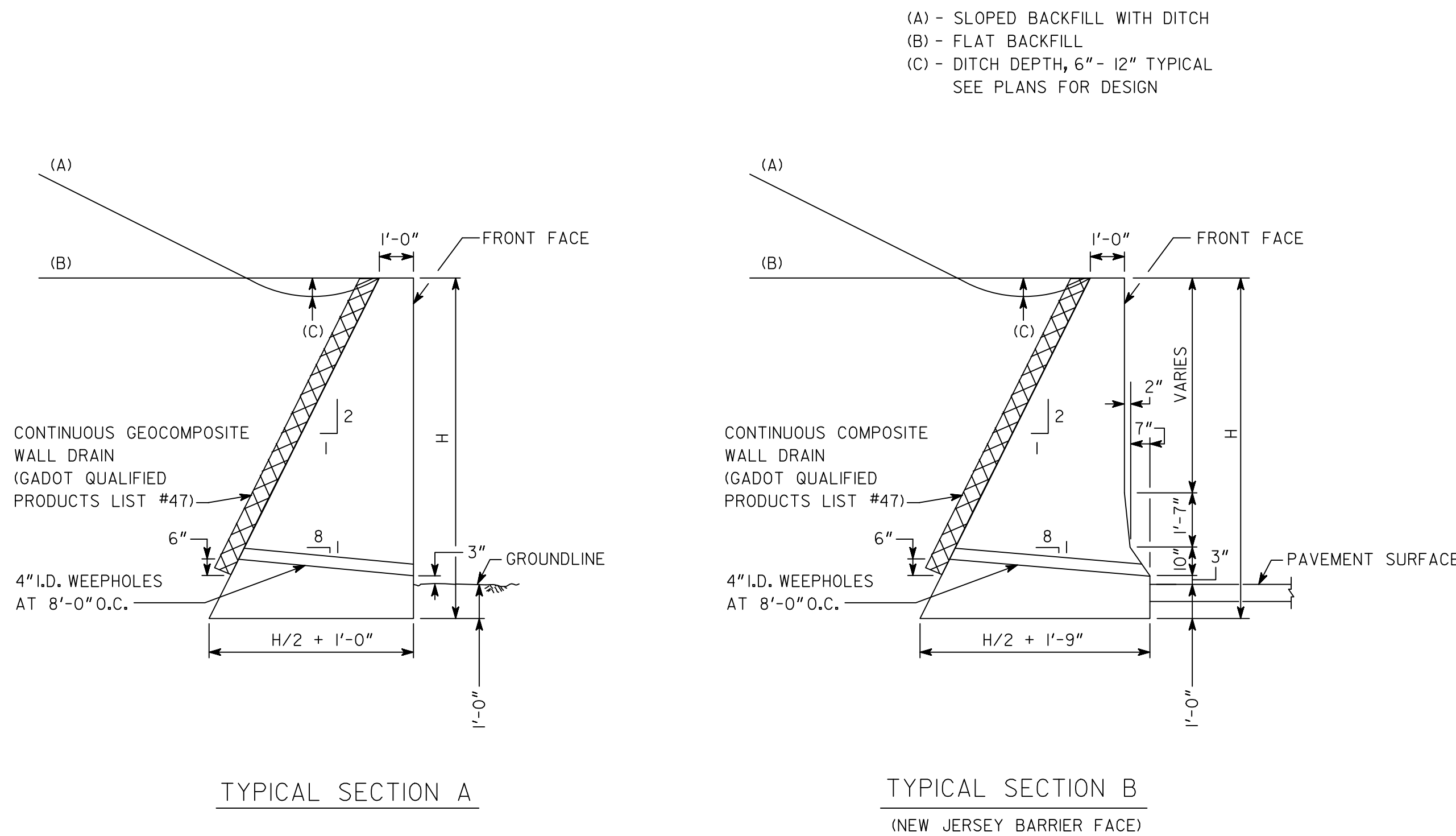
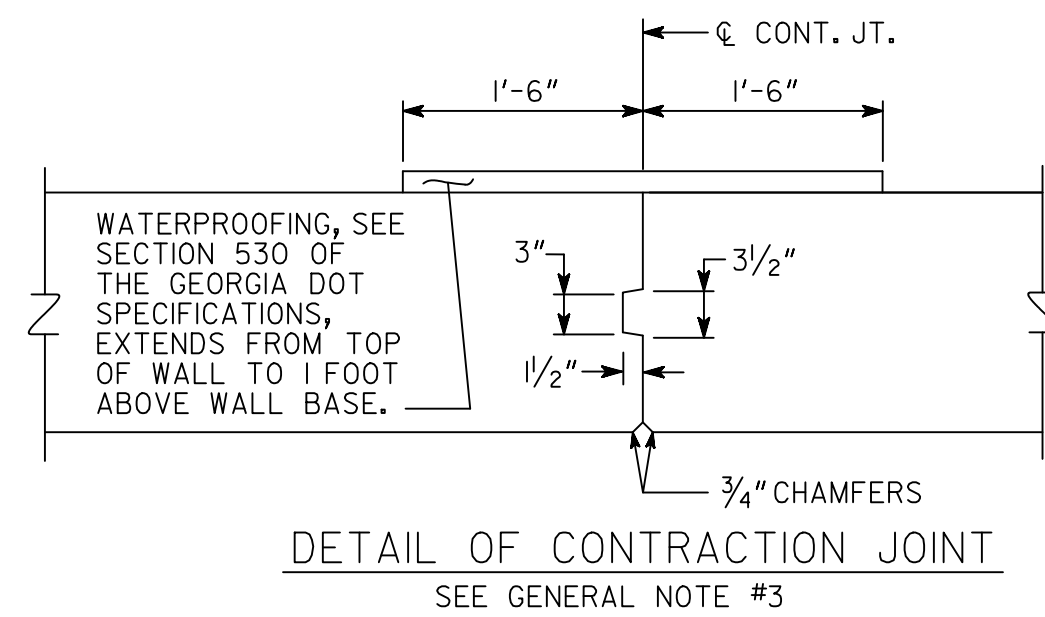
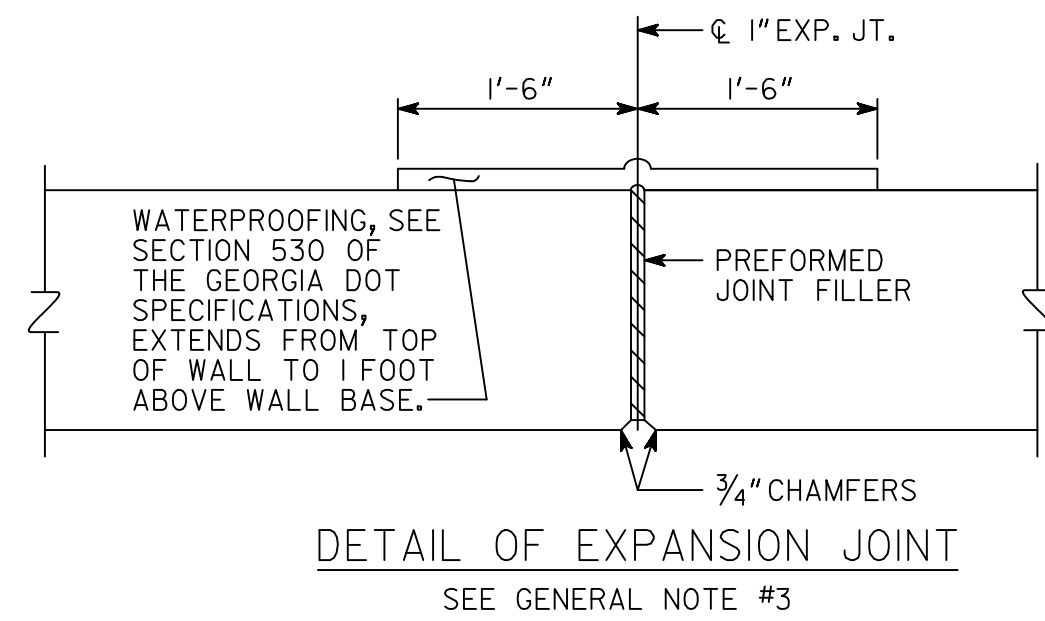
NOTE:
 13 3/4" DEPTH MODIFIED STEEL OFFSETS BLOCKS MAY BE SPECIFIED WHERE JUSTIFIED FOR MORE SEVERE CONDITIONS. PAY ITEM IS -- GUARDRAIL, TP T, MODIFIED OFFSET BLOCK--PER LIN. FT.

- GENERAL NOTES:
- SPECIFICATIONS: GA, STANDARD CURRENT EDITION & SUPPLEMENTS THERETO
 - DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
 - NET LENGTH OF RAIL ELEMENTS MAY BE EITHER 12'-6" OR 25'-0".
 - RAIL ELEMENTS ON CURVES OF RADI LESS THAN 150' WILL BE PRECURVED.
 - PAYMENT FOR GUARDRAIL (TYPE "T") WILL INCLUDE ALL POSTS, BLOCKS, HARDWARE ACCESSORIES AND WHERE REQUIRED ALL ADDITIONAL POSTS, END SHOES, TERMINAL SECTIONS, TRANSITION SECTIONS, BACK-UP PLATES AND REMOVAL AND REPLACEMENT OF PORTIONS OF MEDIAN PAVING, SPILLWAYS OR CATCH BASINS WHERE NECESSARY.
 - ALL GUARDRAIL TERMINALS SHALL REQUIRE AN APPROVED ANCHORAGE AS SPECIFIED IN THE PLANS OR APPROVED BY THE ENGINEER EXCEPT WHERE CONNECTED TO A BRIDGE END OR OTHER CONCRETE FACE.
 - NUTS, BOLTS AND WASHERS WHICH ARE NOT DETAILED ON THIS STANDARD, SHALL BE AS SHOWN FOR W BEAM GUARDRAIL ON STANDARD 4380.
 - SEE SEPARATE STANDARDS AS APPLICABLE FOR ANCHORAGES, POSTS, OFFSET BLOCKS, CONNECTIONS TO CONCRETE FACE, W BEAM GUARDRAIL, ETC.
 - SEE STANDARD 4381 FOR DETAILS AND REQUIREMENTS OF BACK-UP PLATES, WHERE STEEL OFFSET BLOCKS ARE ALLOWED OR SPECIFIED.
 - OFFSET BLOCKS SHALL BE PLASTIC UNLESS OTHERWISE APPROVED OR SPECIFIED.

DATE	REVISION	NO SCALE	AUGUST 2011
DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA STANDARD "T" BEAM GUARDRAIL CONNECTION TO 3 INCH HEIGHT "W" BEAM			
DES. G.L.O. (SUBMITTED)	BY	NUMBER	4385
DRW. G.L.O.	CHK. B.R.E. (APPROVED)	REVIEW B.A.S.	

ATKINS 1600 RiverEdge Parkway, NW, Suite 700 Atlanta, GA 30328 P. 770-953-0280		HARTWELL ENGINEERS & INTEGRATORS STEVENSON, MARIETTA, GA (770) 248-5111	
CITY OF CANTON, GEORGIA	WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD	CIVIL	STANDARD DETAILS
DESIGNED BY: JMR	DRAWN BY: RAR	CHECKED BY: RM	APPROVED BY: GNK
DATE: 10/06/13	DATE: SEPTEMBER 2020	SCALE: AS SHOWN	

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



BACKSLOPE	MAXIMUM "H"*		
	TYP. SECTION A	TYP. SECTION B **	TYP. SECTION C **
FLAT	8'-6"	10'-0"	10'-0"
SLOPE TO 4H	6'-3"	7'-0"	7'-0"
SLOPE TO 2H	4'-6"	4'-9"	4'-9"

* GREATER "H" PERMITTED IF APPROVED BY BRIDGE DESIGN.
** TYPICAL SECTION B SHALL HAVE A MINIMUM H OF 3'-8"
TYPICAL SECTION C SHALL HAVE A MINIMUM H OF 4'-6"

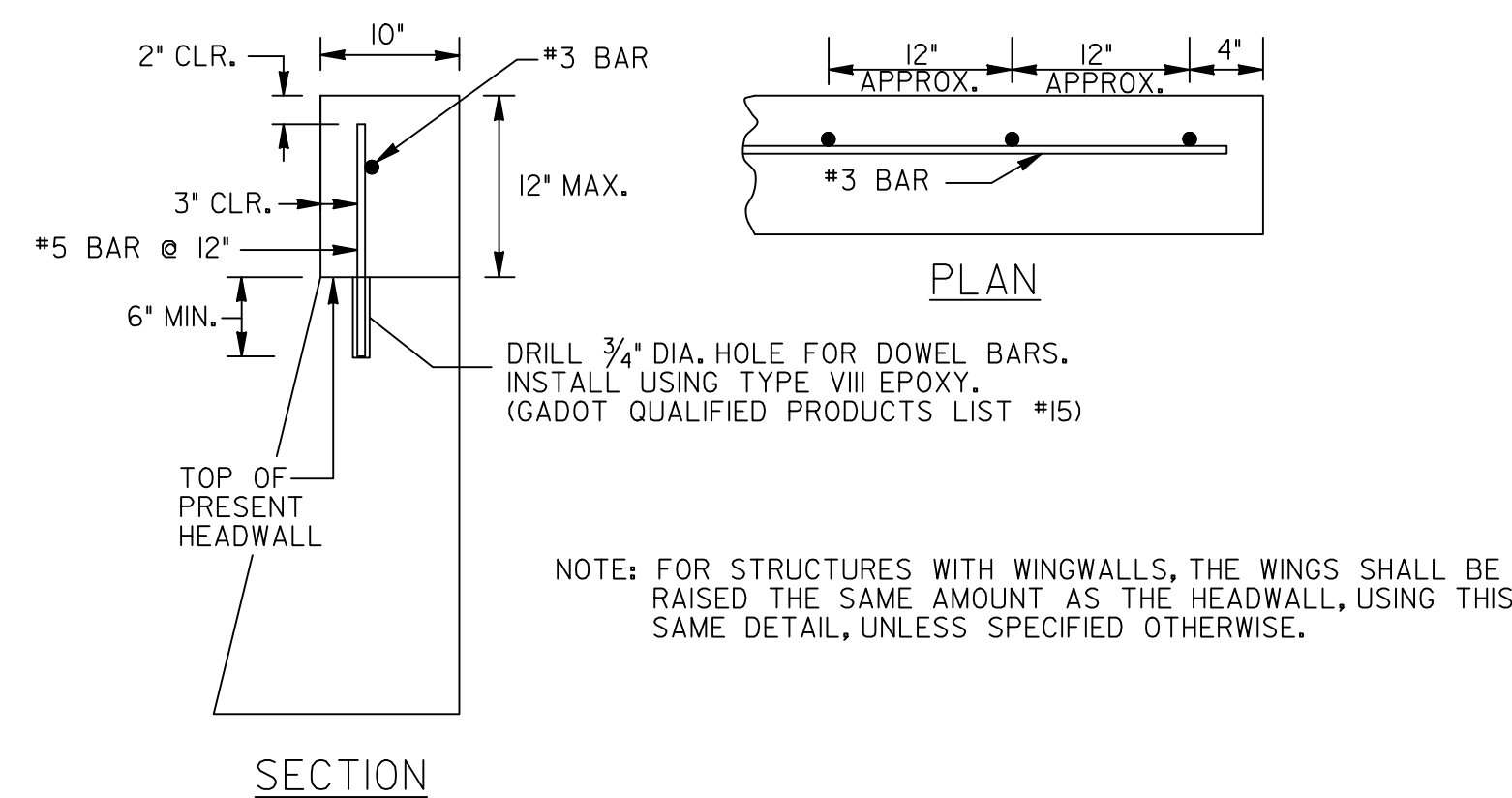
GENERAL NOTES:

- GRAVITY WALLS SHALL NOT BE USED WHEN HORIZONTAL DISTANCE FROM EDGE OF TRAVEL WAY TO FRONT FACE OF WALL IS LESS THAN (H + 1'-0").
- GRAVITY WALLS DESIGNED FOR THE FOLLOWING SOIL PROPERTIES:

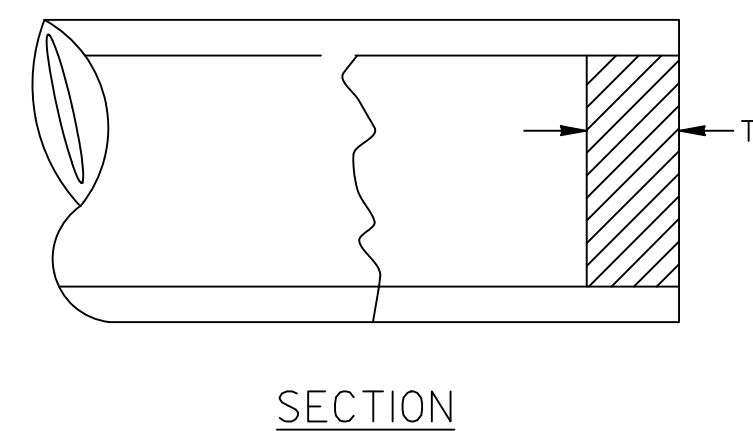
	FOUNDATION	BACKFILL
COHESION =	0 PSF	0 PSF
θ =	28°	28°
UNIT WEIGHT =	120 PCF	120 PCF
- EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF 90'-0" AND EXTEND THROUGH THE WALL. CONTRACTION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF 30'-0".
- GRAVITY WALLS WITH A VERTICAL FRONT FACE SHALL BE PAID FOR AS "CLASS B CONCRETE OR MORTAR RUBBLE MASONRY, RETAINING WALL". GRAVITY WALLS WITH A BARRIER FRONT FACE SHALL BE PAID FOR AS "CLASS A CONCRETE, RETAINING WALL". WATERPROOFING, JOINT FILLER, WALL DRAIN, AND OTHER INCIDENTAL ITEMS SHALL BE INCLUDED IN OVERALL BID SUBMITTED.

- A CONCRETE DITCH DETAIL FOR THE TOP OF THE WALL SHOULD BE INCLUDED IN THE ROADWAY PLANS WHEN WATER IS FLOWING TOWARDS THE BACK OF THE WALL. SEE CONSTRUCTION DETAIL D-49.
- FINISH EXPOSED SURFACES OF THE WALL WITH A TYPE III FINISH.
- APPLY GRAFFITI PROOF COATING AS PER SECTIONS 500 AND 838 OF THE GEORGIA DOT SPECIFICATIONS.
- ALL NECESSARY FENCE AND HANDRAIL SHOULD BE INCLUDED IN THE ROADWAY PLANS WHEN APPROPRIATE.
- GRAVITY WALL TYPICAL SECTIONS A, B, AND C HAVE BEEN DESIGNED PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014.

DETAIL FOR RAISING HEADWALL



TYPICAL PIPE PLUG



D	T (MIN)	PIPE PLUG (CU. YDS.)
12"	8"	0.0194
15"	8"	0.0303
18"	8"	0.0436
24"	8"	0.0776
30"	8"	0.1212
36"	8"	0.1745
42"	8"	0.2376
48"	8"	0.3103
54"	12"	0.5890
60"	12"	0.7272
66"	12"	0.8799
72"	12"	1.0472

NOTE: PLAN PAY QUANTITIES ARE TO REFLECT PIPE PLUGS AS CU. YDS. OF CL. B CONCRETE. ON CONSTRUCTION PLUGS MAY BE BUILT WITH BRICK MASONRY, MORTAR RUBBLE MASONRY, CL. A CONC., OR CL. B CONC. WITH NO ADJUSTMENT IN PAYMENT MADE FOR ALTERNATES.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
GRAVITY WALL TYPICAL SECTIONS,
RAISING HEADWALL, AND
TYPICAL PIPE PLUG

NO SCALE: REV. & REDR. SEPT, 2016

BY	REV. & C.E.W. REDR. (SUBMITTED)	STATE ROAD & AIRPORT DESIGN ENGR.	NUMBER 9031L
CHK. D.D.E.	(APPROVED)	STATE HIGHWAY ENGINEER	SHEET 1 OF 2

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, GA 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS & INTEGRATORS
STEVENSONVILLE, MARYLAND
(410) 286-5111

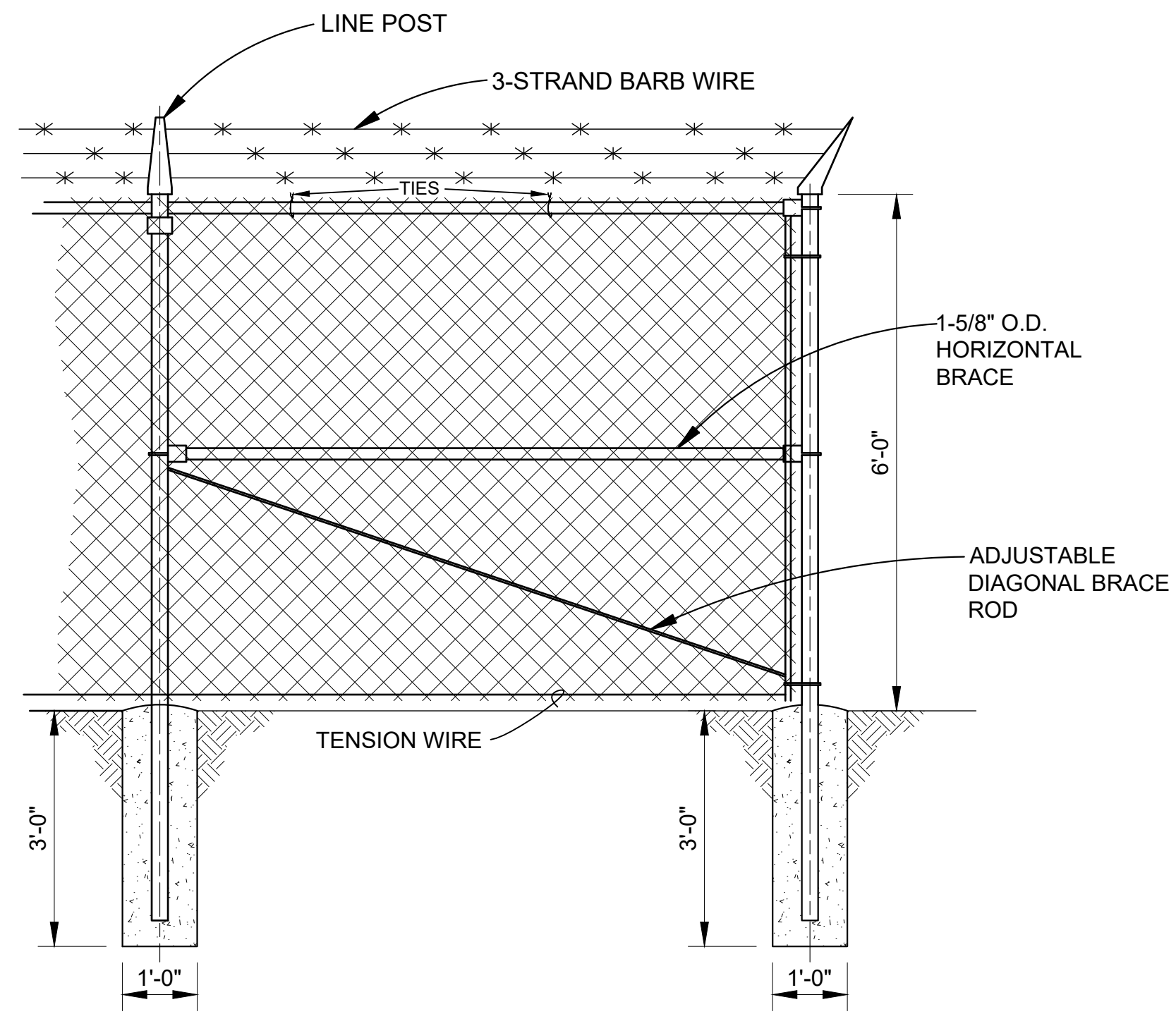
PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	JMR	RAR	RM	GK	SEPTEMBER 2020	AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CIVIL
STANDARD DETAILS

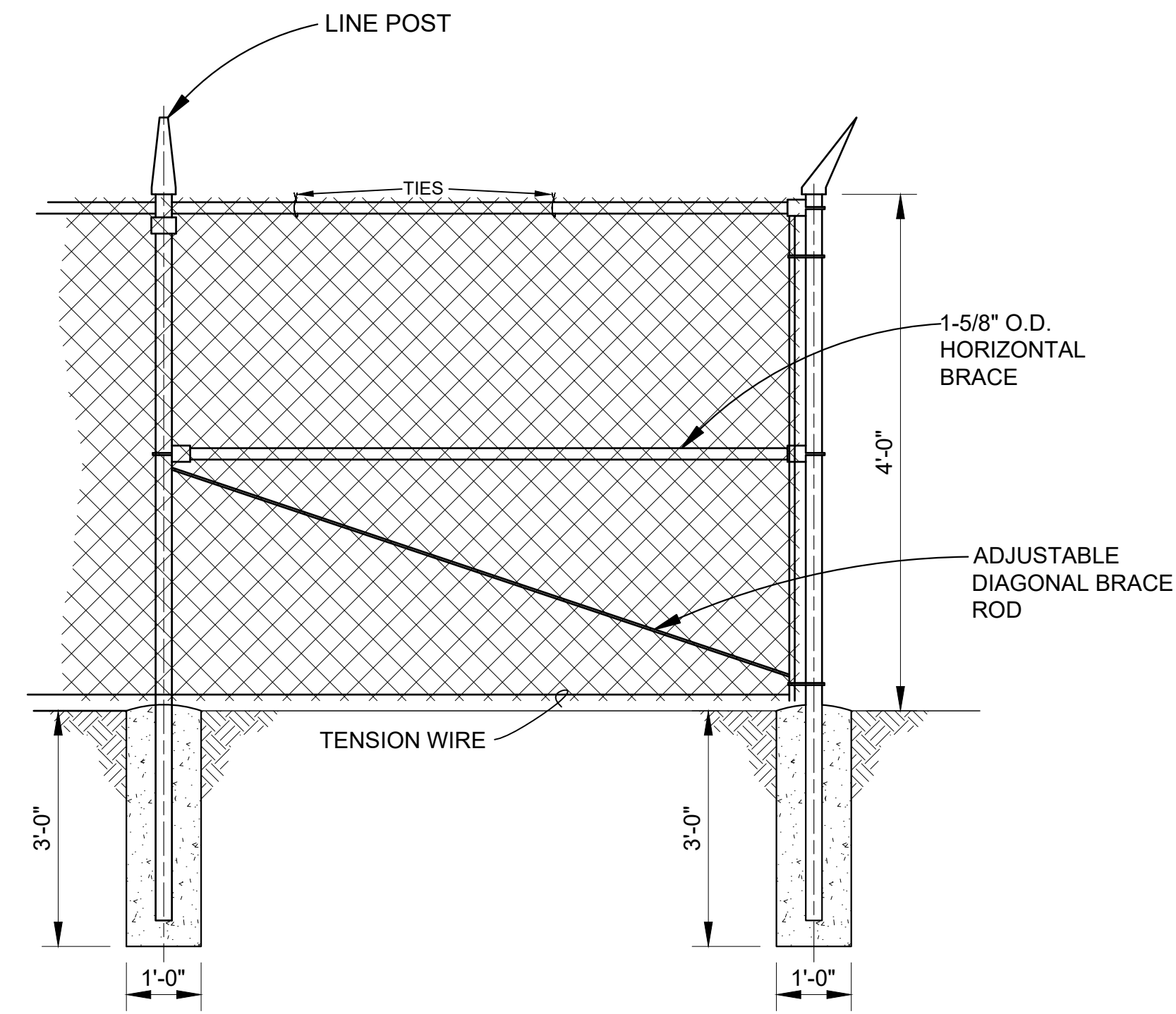
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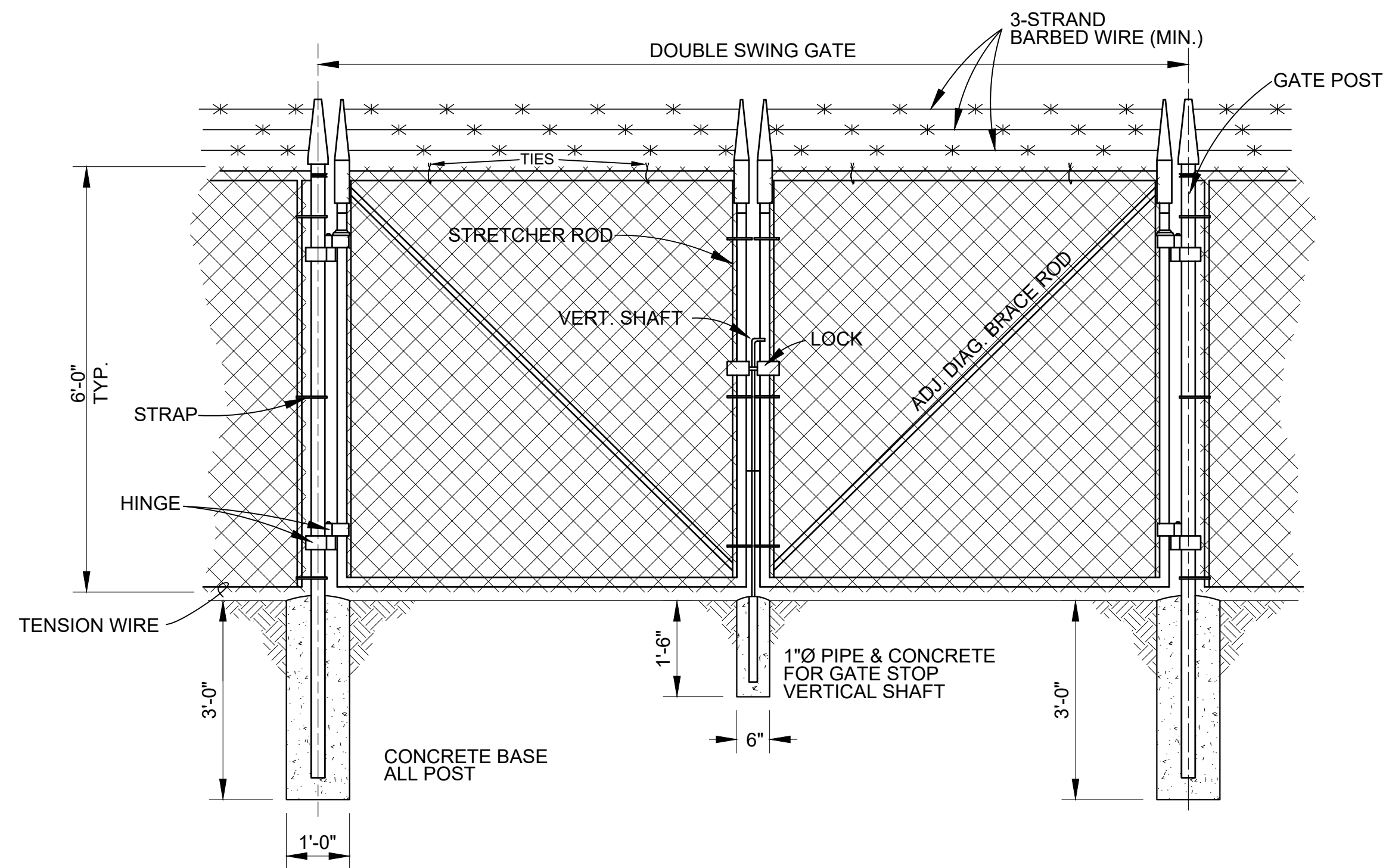
VINYL COATED FENCE DETAIL

NTS



4' VINYL COATED FALL PROTECTION FENCE DETAIL

NTS



VINYL COATED GATE DETAIL

NTS

ATKINS

1600 RiverEdge Parkway, NW, Suite 700
Atlanta, GA 30328
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HARTWELL
ENGINEERS & INTEGRATORS
STEVENSVILLE, MARYLAND
(410) 284-5111

CERTIFICATE OF AUTHORIZATION #PEF00000 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA, INC.

PROJ. NO.: 100061831

DESIGNED BY: JMR

DRAWN BY: RAR

CHECKED BY: RM

APPROVED BY: GNK

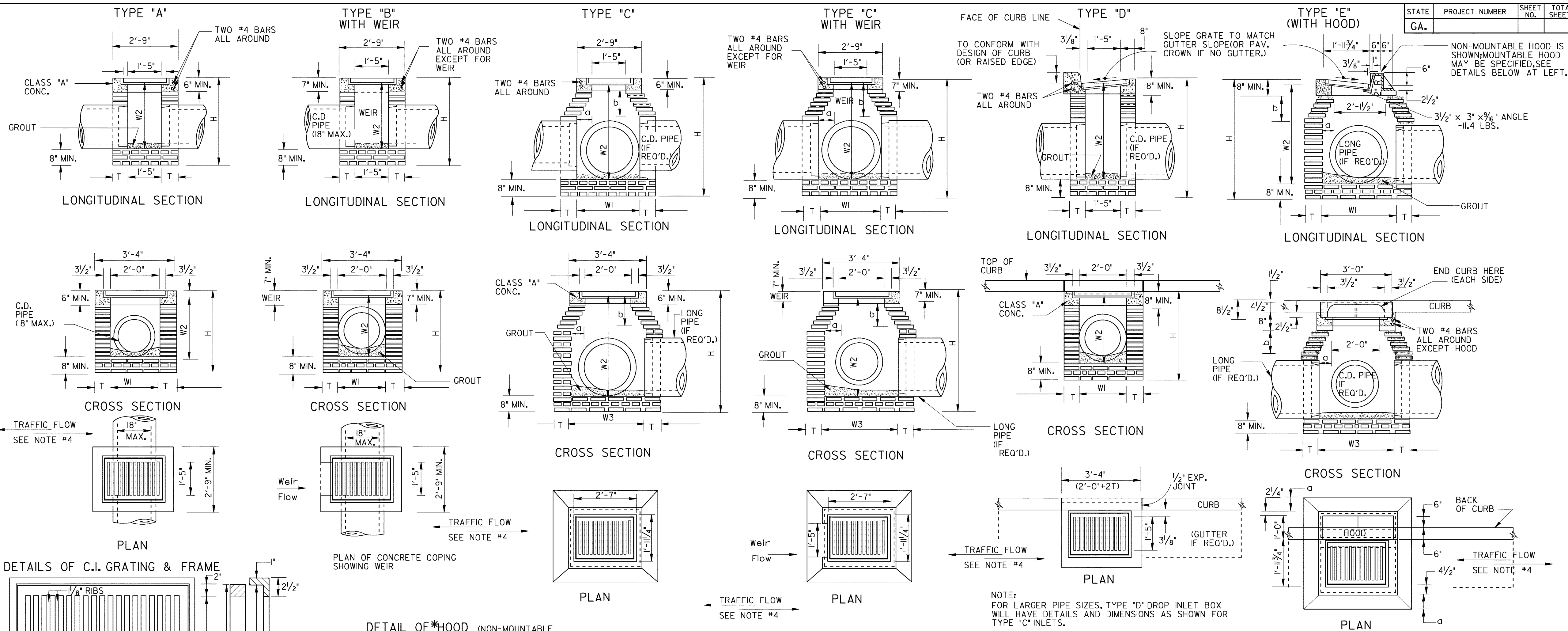
DATE: SEPTEMBER 2020

SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CIVIL
STANDARD DETAILS

SHEET NO.
DC-14



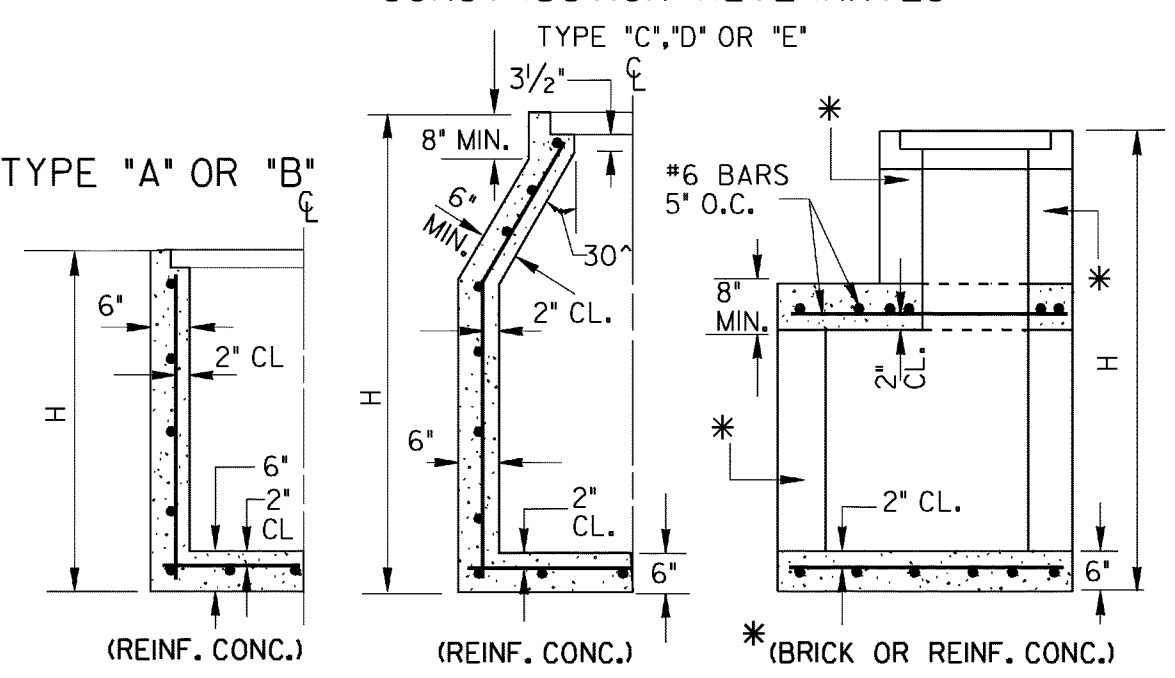
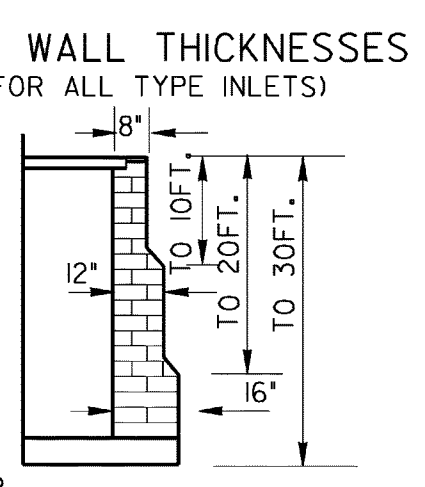
SPECIAL NOTE:
STANDARD 1019A INLETS ARE FOR USE AT LOW POINTS & WHERE HYDRAULIC LOW CAPACITY GRATES ARE SUFFICIENT. WHERE HIGHER CAPACITY GRATES ARE NEEDED ON A CONTINUOUS GRADE, STANDARD 1019B IS RECOMMENDED.

CONSTRUCTION ALTERNATES
NOTE: DETAILS NOT SHOWN FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO THAT SHOWN FOR BRICK MASONRY.

- GENERAL NOTES:**
- SPECIFICATIONS: GEORGIA STANDARD AND CURRENT EDITION, AND SUPPLEMENTS THERETO.
 - 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE RIGID PAVEMENT, CONCRETE SIDEWALK OR CONCRETE GUTTER MEETS DROP INLETS.
 - ALIGNMENT, NUMBER AND SIZES OF PIPES SHOWN ARE ONLY TYPICAL, SEE PLANS FOR ACTUAL PIPE CULVERT REQUIREMENTS.
 - ALL TYPE DROP INLETS WILL BE CONSTRUCTED (AS SHOWN), SO THAT THE GRATE BARS ARE PERPENDICULAR TO THE FLOW OF TRAFFIC EXCEPT ON LIMITED ACCESS PROJECTS OR WHERE BICYCLES ARE PROHIBITED.
 - BRICK MASONRY WITH CLASS "A" CONC. TOP PORTION IS SHOWN AS STANDARD CONSTRUCTION WITH ALTERNATES PERMITTED AS SHOWN, BOTTOM SLAB MAY BE 8" MIN. NON-REINFORCED CONCRETE, 8" BRICK OR 6" MIN. REINFORCED CONCRETE, SEE APPLICABLE STANDARDS FOR ALTERNATE PRECAST CONSTRUCTION.

NOTE:
MINIMUM DIMENSIONS GIVEN IN TABLE BELOW ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPES WITH NORMAL COVER AND CLEARANCES. THESE DIMENSIONS MAY BE MODIFIED IF SO DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER, DIMENSIONS GIVEN ARE MINIMUM EXCEPT FOR "a" WHICH IS MAXIMUM.

D	TYPE "A" OR "B" BRICK OR REIN. CONC.			TYPE "C" OR "D" (BRICK)					TYPE "E" (BRICK)					TYPE "C", "D" OR "E" (REINFORCED CONCRETE)								
	W1	W2	H (ft.)	W1	W2	W3	a (MAX.)	b	H (ft.)	W1	W2	W3	a (MAX.)	b	H (ft.)	W1	W2	W3	a (MAX.)	b	H (ft.)	
15"	2'-0"	2'-7"	3'-3 1/2"	2'-2 1/8"	2'-8"	2'-9 1/8"	0'-4 3/8"	0'-7 7/8"	3'-9 1/2"	3'-2 1/8"	3'-1"	3'-0 5/8"	0'-7 7/8"	1'-1 1/8"	3'-11 1/2"	2'-0"	2'-1"	2'-7"	2'-0"	3 1/2"	6"	3'-6"
18"	2'-0"	2'-10"	3'-7"	2'-2 1/8"	3'-2 1/2"	2'-9 1/8"	0'-4 3/8"	0'-7 7/8"	4'-1"	3'-2 1/2"	3'-4 1/2"	3'-0 5/8"	0'-7 7/8"	1'-1 1/8"	4'-1"	2'-0"	2'-1"	3'-0"	2'-0"	3 1/2"	6"	3'-11"
24"	~	~	~	2'-8 1/8"	3'-3 1/8"	3'-3 3/8"	0'-7 7/8"	1'-1 1/8"	4'-9"	3'-2 1/8"	3'-11 1/2"	3'-0 5/8"	0'-7 7/8"	1'-1 1/8"	4'-8 1/4"	2'-8"	2'-9"	3'-8"	2'-6"	6 1/2"	11 1/4"	4'-7"
30"	~	~	~	3'-1 1/4"	4'-0 1/4"	3'-10 1/8"	1'-0 1/8"	1'-9"	5'-10"	3'-5 1/2"	4'-8 3/8"	3'-4"	0'-8"	1'-1 1/8"	5'-6 1/2"	3'-4"	3'-6"	4'-9"	3'-0"	9 1/2"	16 1/2"	5'-10"
36"	~	~	~	4'-1 1/8"	5'-0 5/8"	4'-8 3/8"	1'-4 1/8"	2'-2 1/4"	6'-11 1/8"	3'-11 1/2"	5'-8 3/8"	3'-10"	0'-11"	1'-7 1/8"	6'-7 1/8"	3'-10"	4'-0"	5'-10"	3'-9"	1'-2"	2'-0"	6'-10"
42"	~	~	~	4'-5"	7'-1 3/4"	5'-0"	1'-6"	2'-7 3/8"	8'-0 1/4"	4'-6 1/2"	7'-5 1/8"	4'-5"	1'-2 1/2"	2'-1 3/8"	8'-4 3/8"	4'-5"	4'-6"	7'-0"	4'-3"	1'-5"	2'-5 1/2"	7'-11"
48"	~	~	~	5'-0"	8'-2 3/4"	5'-7"	1'-9 1/2"	3'-1 1/4"	9'-1 1/4"	5'-1 1/2"	8'-6 1/8"	5'-0"	1'-6"	2'-7 3/8"	9'-5 3/8"	5'-0"	5'-0"	8'-2"	5'-0"	1'-9 1/2"	3'-1 1/2"	9'-2"
54"	~	~	~	5'-7"	9'-4"	6'-2"	2'-1"	3'-7 1/2"	10'-2 1/2"	5'-8 3/8"	9'-7 3/8"	5'-7"	1'-9 1/2"	3'-1 1/4"	10'-6 1/4"	5'-6"	5'-6"	9'-2"	5'-6"	2'-0 1/2"	3'-6 1/2"	10'-0"
60"	~	~	~	6'-2"	1'-4 1/2"	6'-9"	2'-4 1/2"	4'-1 3/8"	11'-3 1/4"	6'-3 1/2"	10'-8 3/8"	6'-2"	2'-1"	3'-7 3/8"	11'-7 3/8"	6'-0"	6'-0"	10'-3"	6'-0"	2'-3 1/2"	4'-0"	11'-1"



NOTE: CONCRETE WALLS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS, BUT WHERE H IS OVER 9 FT., AND PIPE IS OVER 30" I.D., THE HORIZONTAL STEEL, WHICH IS MORE THAN 9 FT. DEEP WILL BE INCREASED TO 6" SPACINGS. 6" CONC. BOTTOM SLABS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS.

NOTE: FOR PRECAST ALTERNATES, SEE STD. 1019-A PRECAST AND/OR STD. 1040 PRECAST AND BUILT-IN-PLACE COMPONENTS MAY BE USED IN COMBINATIONS WHICH PROVIDE PROPER FITS AND STRUCTURAL ADEQUACY.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD DROP INLETS
(BUILT-IN-PLACE)

SCALE AS SHOWN REV. & REDR. AUG., 1999

DES. (SUBMITTED) *James K. ...*
REV. (APPROVED) *Paul L. ...*
TRA. CHK. *Paul L. ...*
CHIEF ENGINEER

NUMBER 1019A

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HARTWELL ENGINEERING, INC.
ENGINEERS & ARCHITECTS
1000 Peachtree Street, N.E.
Atlanta, GA 30309
P: 404-525-1111

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

DATE	REVISION

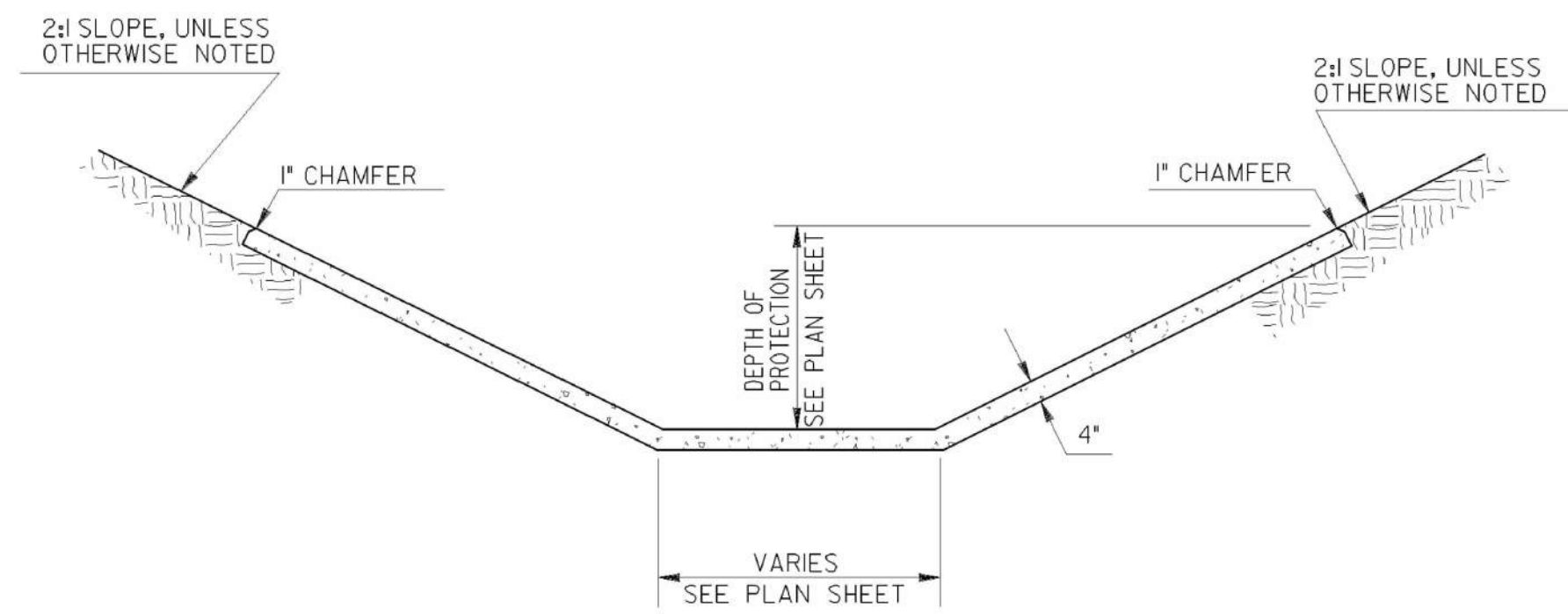
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: MJS
CHECKED BY: RM
APPROVED BY: GSK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CIVIL
STANDARD DETAILS

SHEET NO.
DC-15

File Name: C:\P_WORK\ATKINA01\SIM0864\DC-15.DWG Tab: DC-15 Plot: September 24, 2020 2:34pm

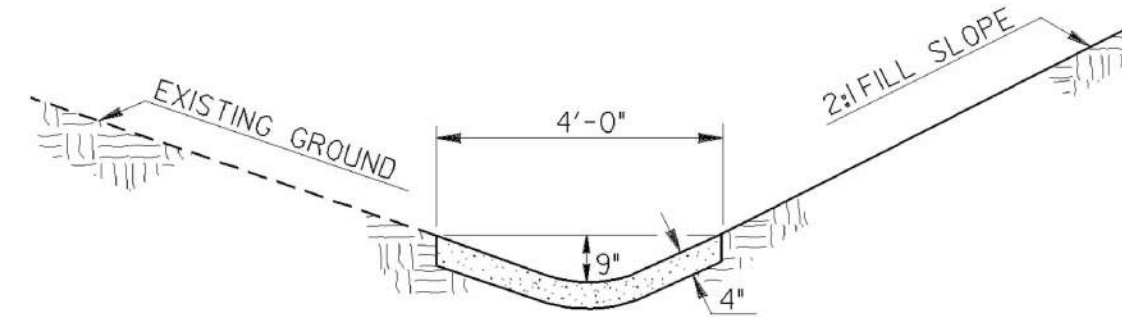
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



TYPICAL FLAT BOTTOM PAVED DITCH

GENERAL NOTES:

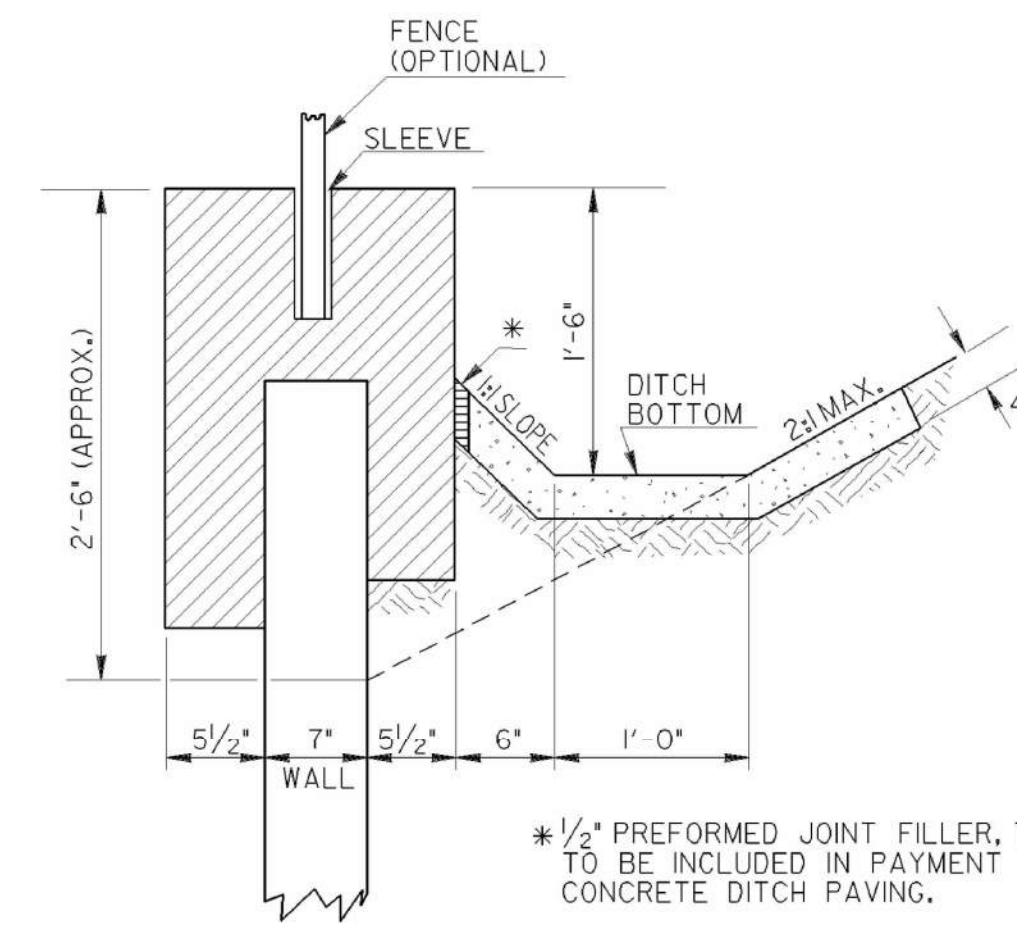
1. SEE CONSTRUCTION DETAIL D-10 (4\"/>



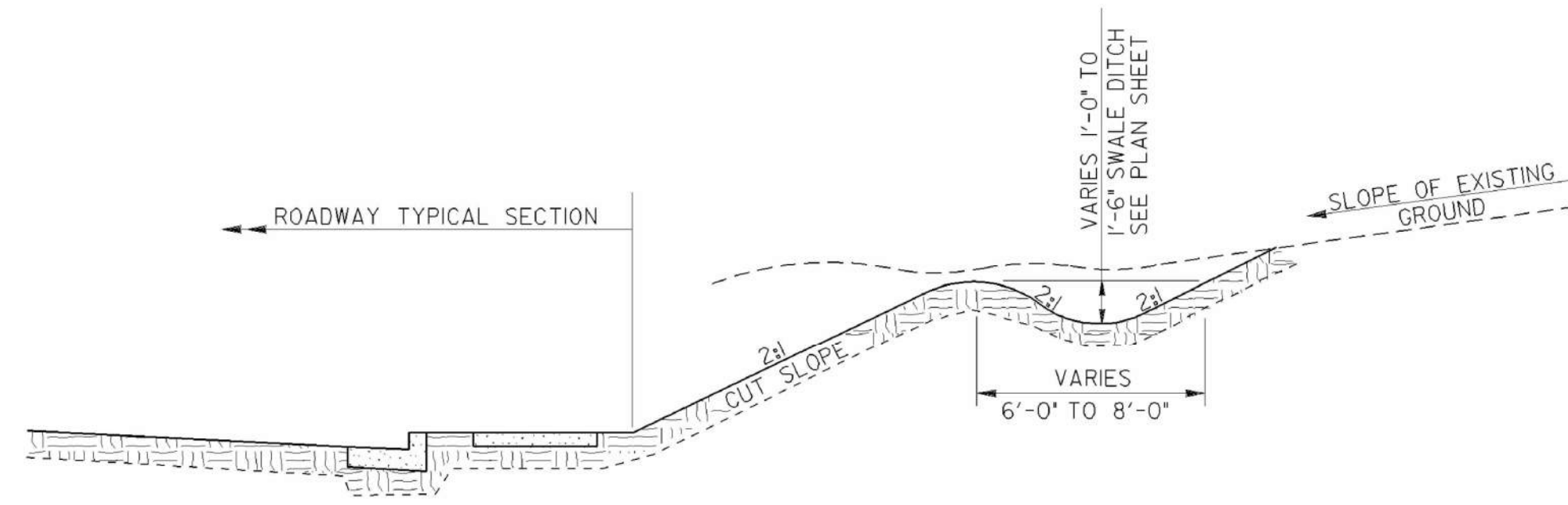
PAVED SWALE DITCH

GENERAL NOTES:

1. CONCRETE SHALL BE PER SECTION 441.
2. EARTH SHALL BE THOROUGHLY TAMPED OVER ENTIRE AREA UNDER DITCH PAVEMENT.



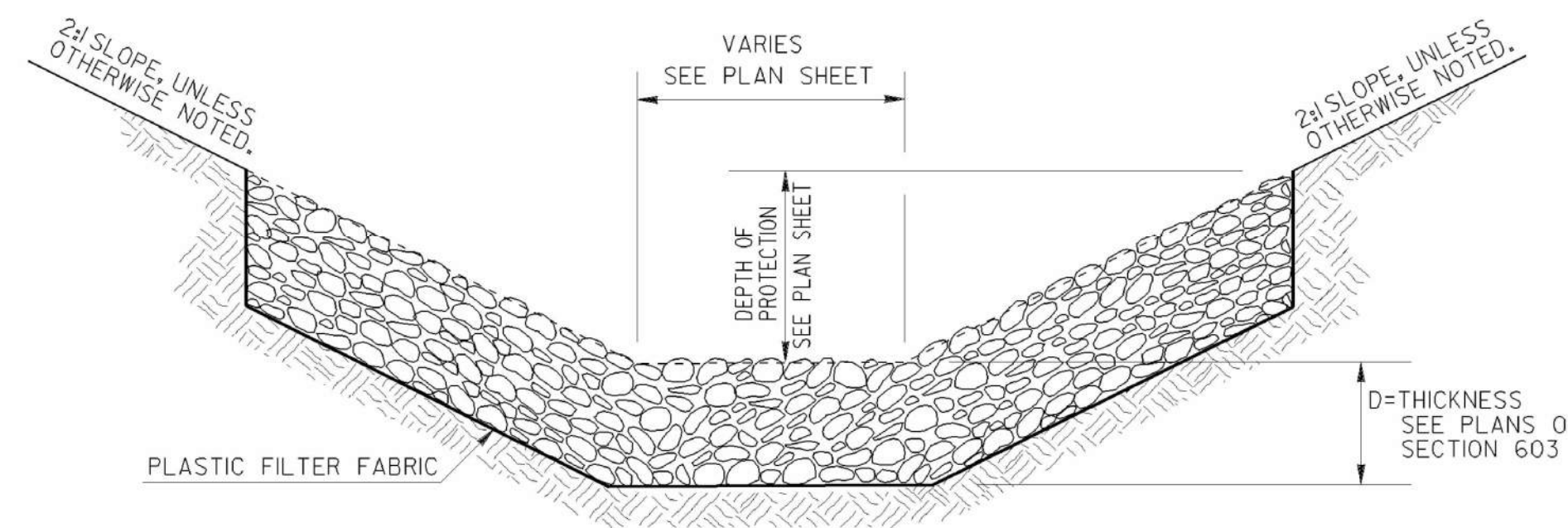
PAVED DITCH
(IN BACK OF RETAINING WALL)



DETAIL OF SWALE DITCH

GENERAL NOTES:

1. APPLICABLE AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER ON CONSTRUCTION.
2. TO BE PAID FOR AS UNCLASSIFIED EXCAVATION OR GRADING COMPLETE.



TYPICAL FLAT BOTTOM RIP RAP DITCH

GENERAL NOTES:

1. BASIS OF PAYMENT: STONE RIP RAP, PER SQ. YD.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
CONSTRUCTION DETAIL DITCH BACK OF RETAINING WALL SWALE DITCHES; RIP RAP DITCH	
NO SCALE	FEBRUARY, 2011
BY	NUMBER D-49

ATKINS
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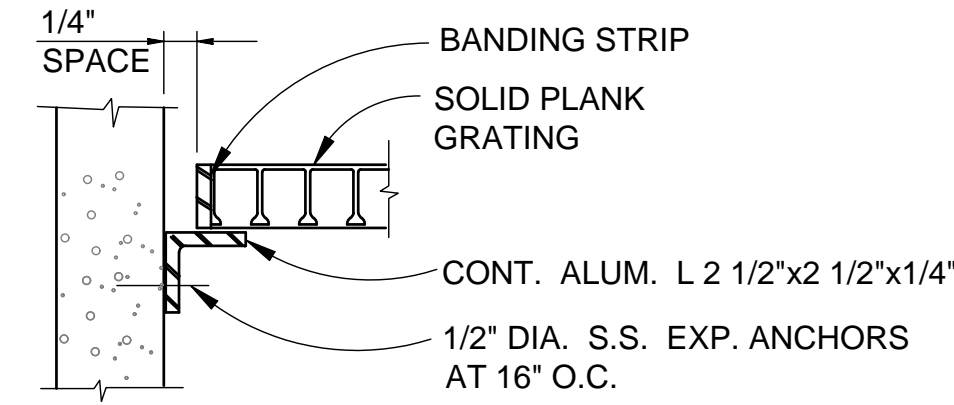
HARTWELL ENGINEERING, INC.
ENGINEERS & INTEGRATORS
1000 STEVENSON BLVD., SUITE 200
ROSELAND, GA 30080
(770) 248-5111

DATE	REVISION

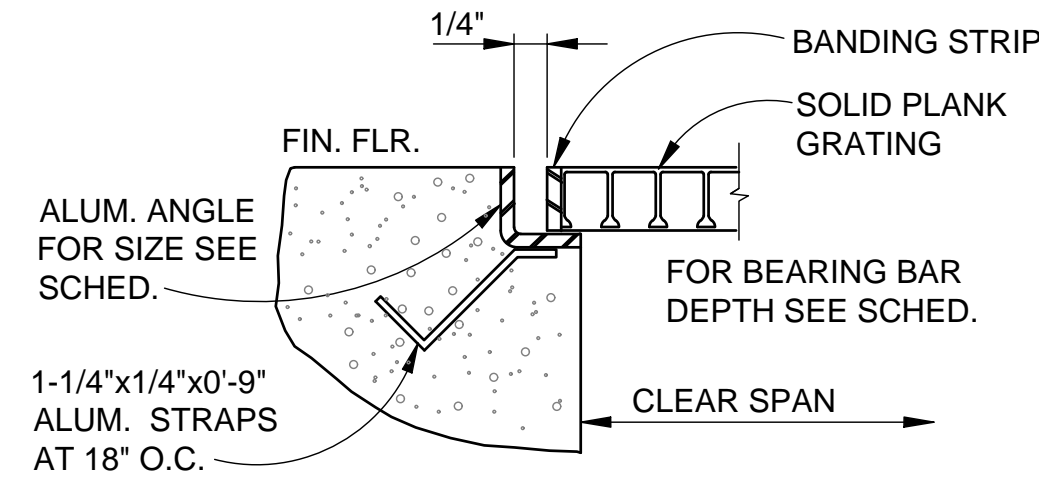
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: JWS
CHECKED BY: RM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
CIVIL
STANDARD DETAILS

SHEET NO.
DC-18



GRATING SUPPORT TYPE 1: BESIDE WALL



GRATING SUPPORT TYPE 2: ON TOP OF WALL

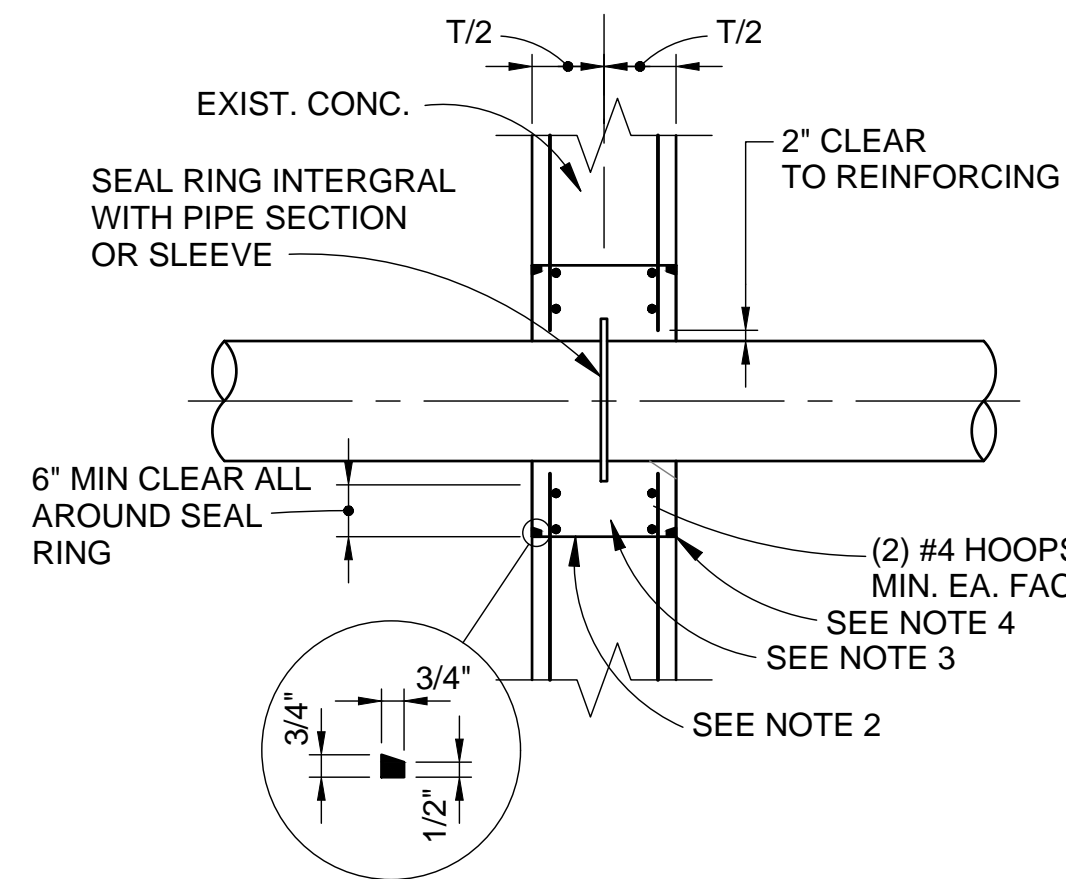
ALUMINUM SURFACES EMBEDDED IN OR IN CONTACT WITH CONC SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645.

CLEAR SPAN	BEARING BAR DEPTH	ANGLE SIZE
LESS THAN 3'-0"	1-1/4"	L 1-1/2x1-1/2x1/4
3'-0" TO 4'-0"	1-1/2"	L 1-3/4x1-3/4x1/4
4'-1" TO 5'-0"	1-3/4"	L 2x2x1/4
5'-1" TO 6'-0"	2"	L 2-1/2x2-1/2x1/2
6'-1" TO 7'-0"	2-1/2"	L 3x3x1/2

MINIMUM LIVE LOAD - 150 PSF

ALUMINUM SOLID PLANK SCHEDULE
NTS

310

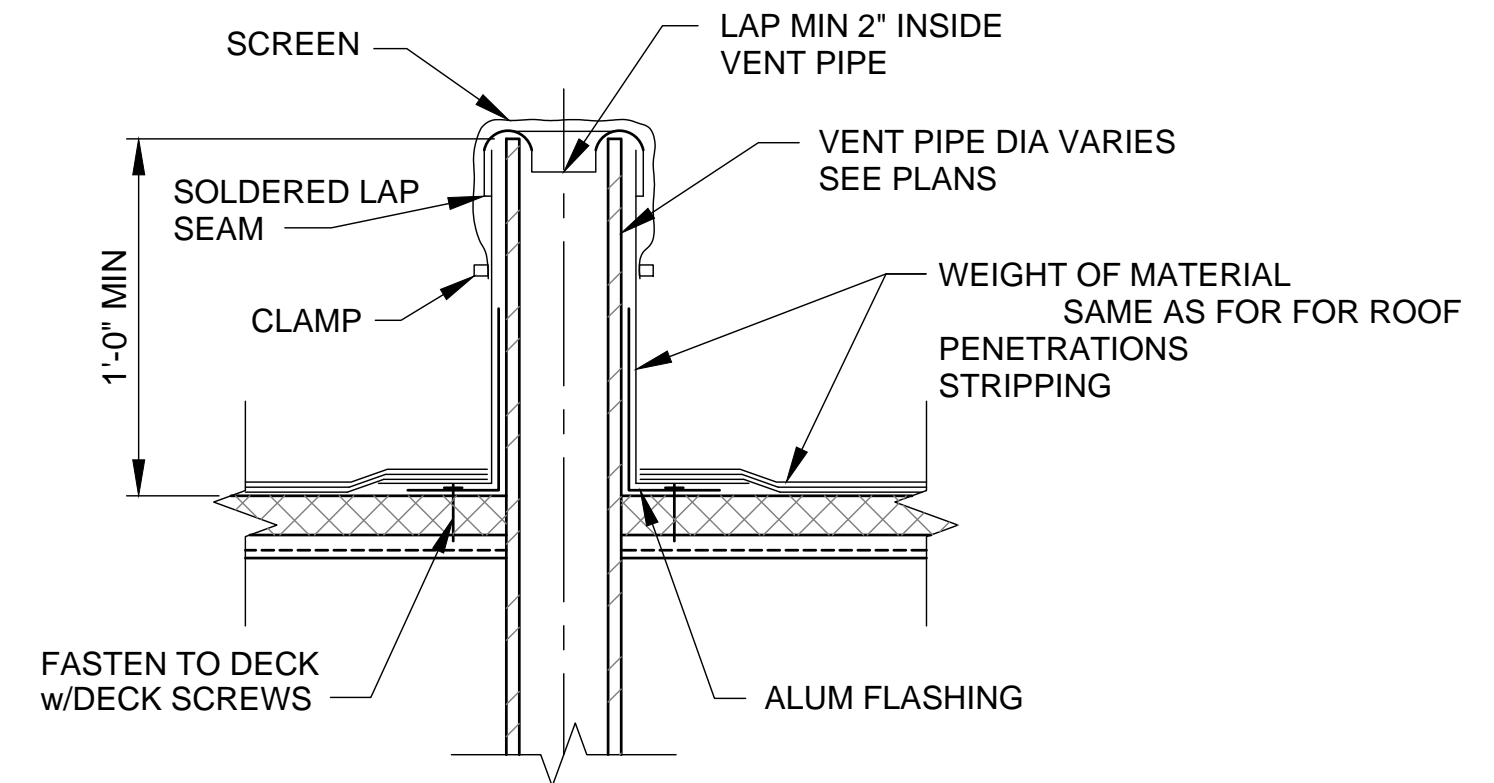


NOTES:

1. THE USE OF HEAVY-DUTY PNEUMATIC HAMMERS ARE NOT PERMITTED TO REMOVE EXISTING CONCRETE FOR NEW PIPE OPENING.
2. APPLY BONDING AGENT TO ROUGHENED PREPARED CONC. SURFACE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. BONDING AGENT TO BE SIKADUR 32 HIMOD OR ACCEPTABLE EQUIVALENT PRODUCT.
3. AFTER PIPE IS SET, FILL PENETRATION WITH CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 4000 LBS PER SQUARE INCH AT THE END OF 28 DAYS.
4. SIKADUR COMBIFLEX (OR ACCEPTABLE EQUIVALENT PRODUCT SYSTEM) ON BOTH SIDES OF WALL. MAKE CONNECTION WATER TIGHT.
5. EXIST. REINF. TO BE LEFT IN PLACE. REMOVE AT PIPE OR SLEEVE ONLY. CLEAN EXIST. REINF. BEFORE PLACING NEW CONCRETE.

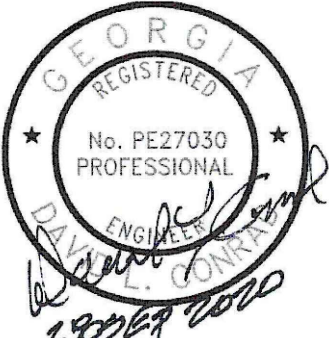
PIPE PENETRATION THRU WALL/SLAB
NTS

310



VENT PIPE PENETRATION THRU ROOF
NTS

311



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Atlanta, GA 30328
P: 770-993-0280

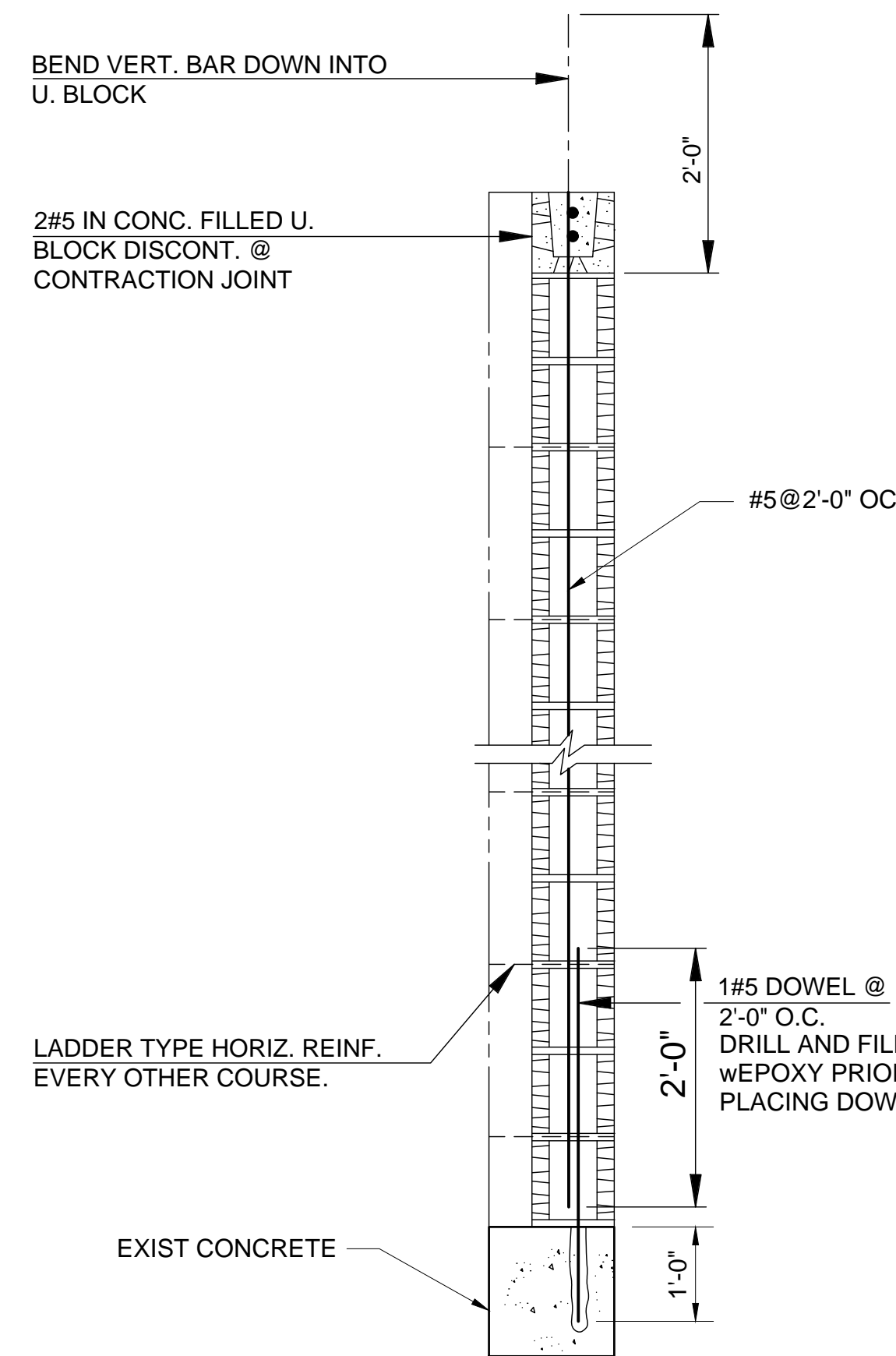
HARTWELL ENGINEERING, INC.
ENGINEERS & ARCHITECTS
STEVENSON, MARYLAND
(410) 284-5111

PROJ. NO.:	DESIGNED BY:	CHECKED BY:	DATE:	SCALE:
100061831	DLC	DMW/JLS	SEPTEMBER 2020	AS SHOWN

REVISION	DATE

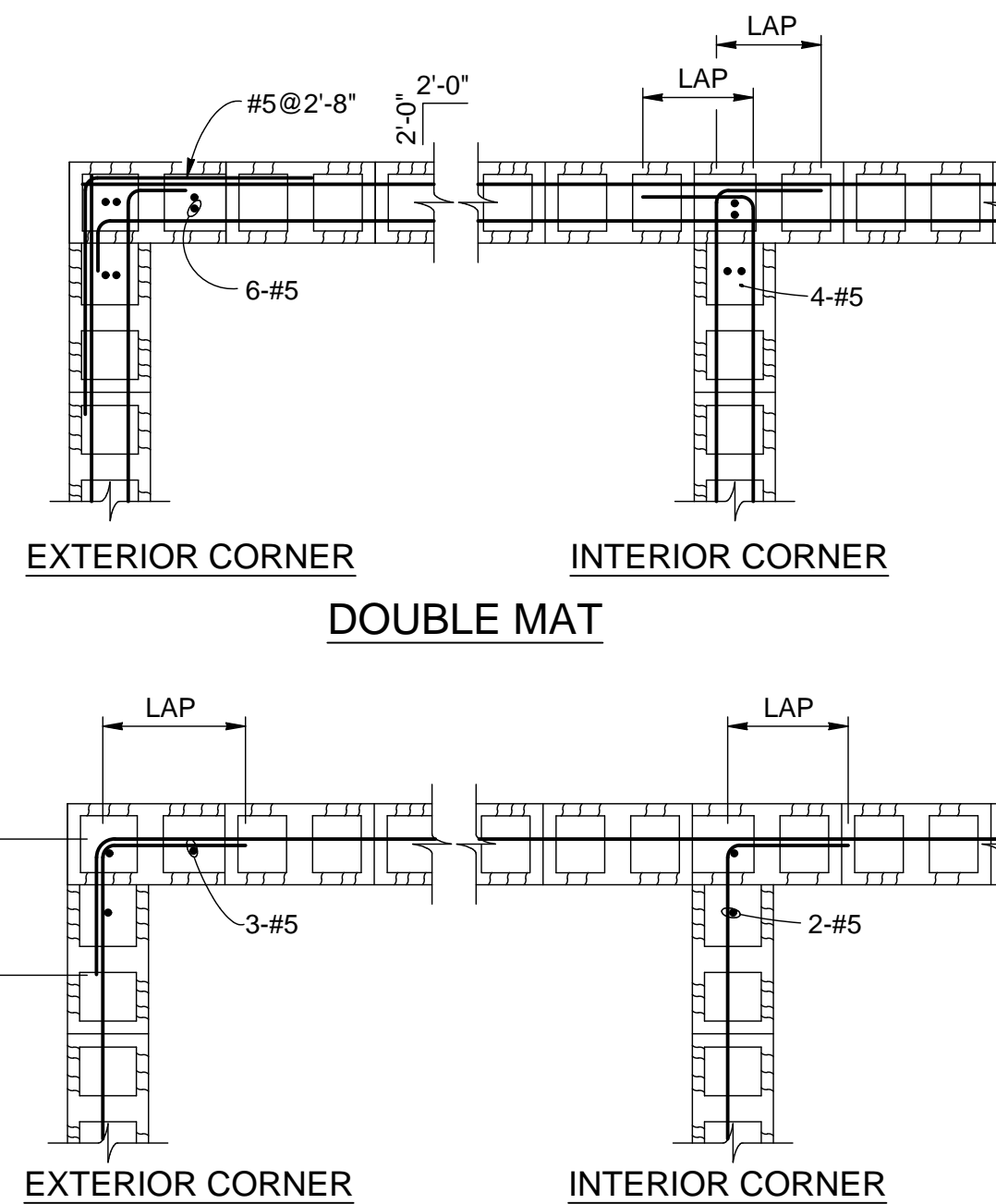
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-2



**HORIZONTAL REINFORCING
TYPICAL MASONRY WALL DETAIL**
NTS

313

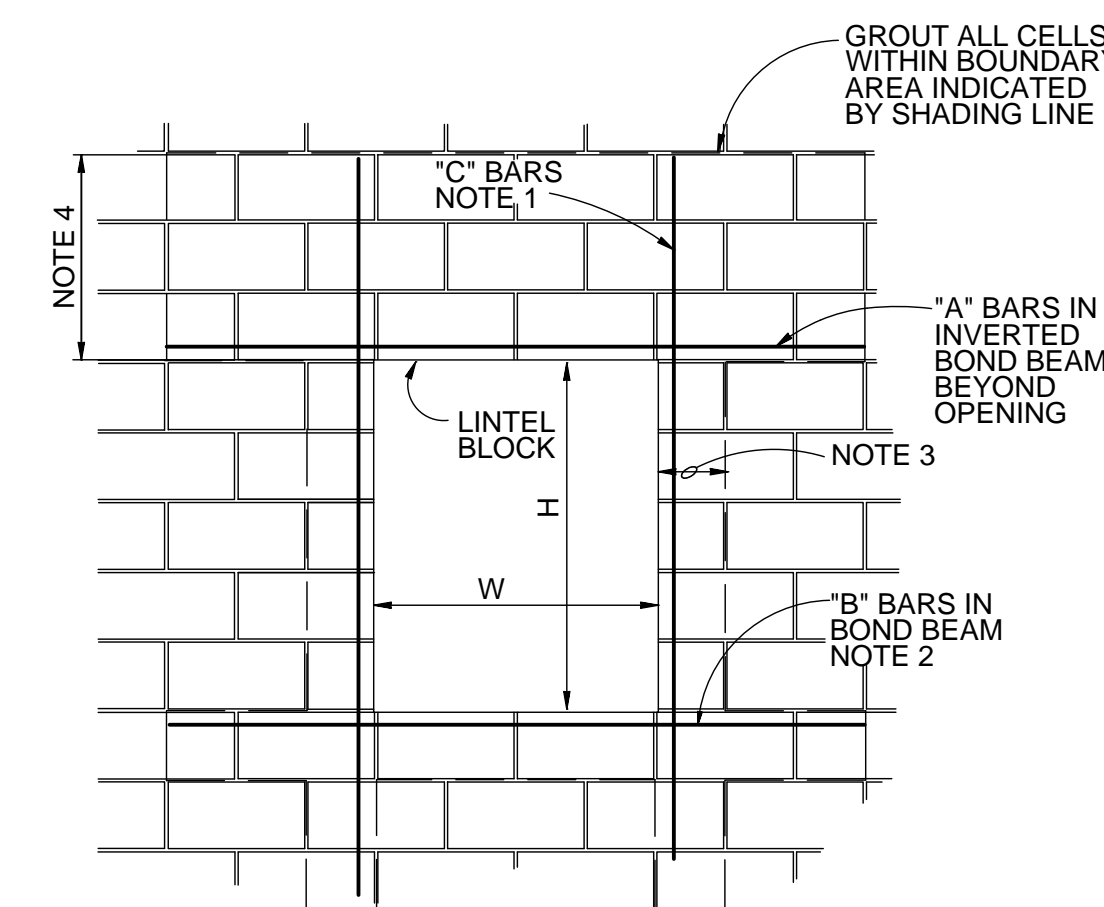


CMU WALL CORNERS
NTS

315

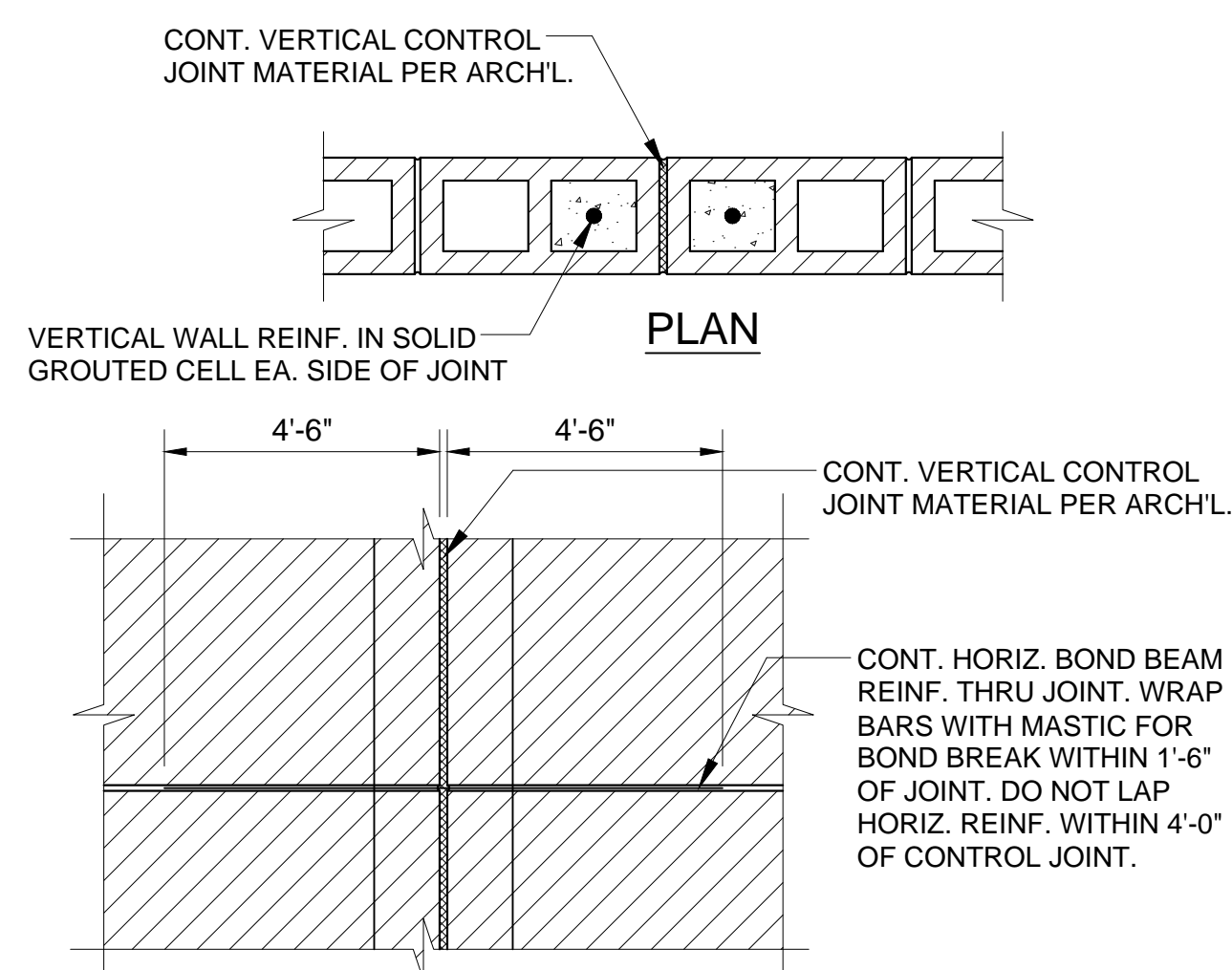
CMU OPENING REINF SCHEDULE								
W	"A" BARS		"B" BARS		"C" BARS		# CELLS TO GROUT NOTE 3	
	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU
≤2'-0"	1-#5	2-#5	1-#5	2-#5	1-#5	2-#5	ONE	ONE
>2'-0" ≤6'-0"	2-#5	2-#5	1-#5	2-#5	1-#5	2-#5	ONE	ONE
>6'-0" ≤8'-0"	2-#6	2-#6	2-#5	2-#6	2-#5	2-#5	TWO	TWO
>8'-0" ≤10'-0"	2-#7	2-#8	2-#6	2-#6	2-#5	2-#6	THREE	THREE
>10'-0"	SEE DRAWINGS							

- NOTES:**
- EXTEND "C" BARS 2'-0" MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", "C" BARS SHALL EXTEND FULL HEIGHT.
 - "A" AND "B" BARS SHALL EXTEND 2'-0" EACH SIDE OF THE OPENING. GROUT TO END OF BARS.
 - SEE SCHEDULE FOR NUMBER OF CELLS TO GROUT ON EACH SIDE OF THE OPENING.
 - GROUT ALL CELLS OVER OPENING TO W/2 OR 2'-0" WHICHEVER IS GREATER UNLESS TOP OF WALL IS REACHED FIRST.



CMU OPENING REINFORCING
NTS

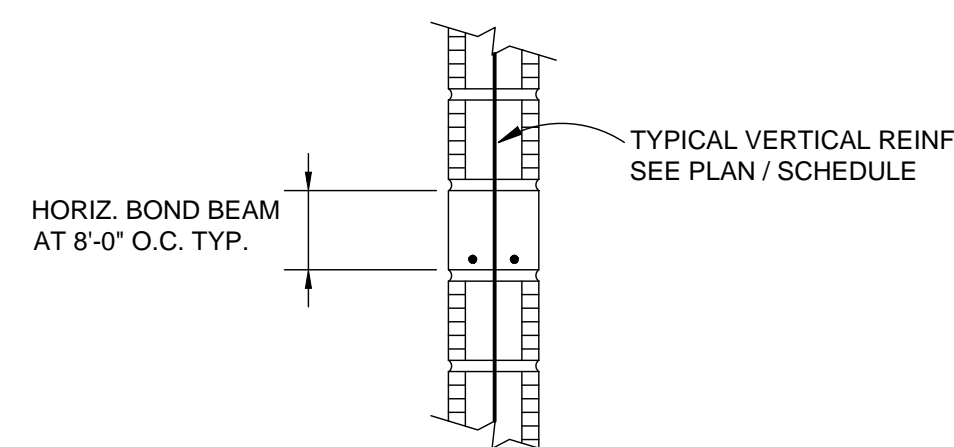
317



CONTROL JOINTS
NTS

314

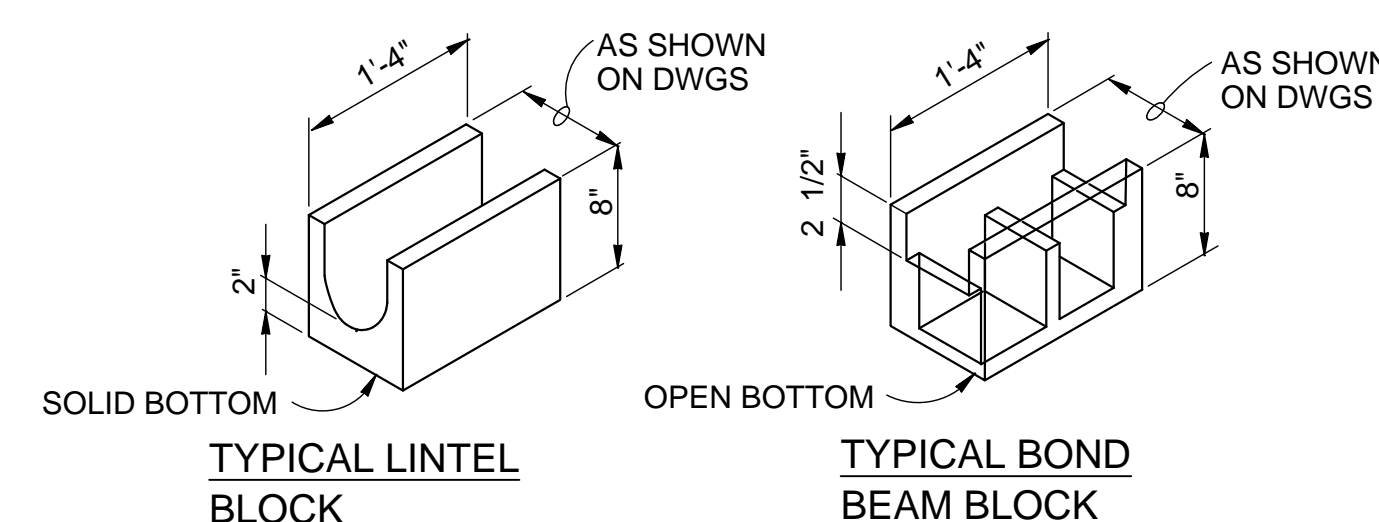
- NOTES:**
- MASONRY CONTROL JOINTS TO BE COORDINATED WITH ARCH'L. ELEVATIONS, PLANS AND SPECIFICATIONS.
 - WALL CONTROL JOINTS SHOULD MATCH LOCATION OF SLAB CONSTRUCTION JOINTS, BUT NOT NECESSARILY THE SAW CUT JOINT LOCATIONS.
 - CONTROL JOINTS @ MASONRY WALLS SHOULD BE PLACED @ SPACINGS NOT EXCEEDING 24'-0" OR 3 TIMES THE WALL HEIGHT WHICHEVER IS LESS. MORE SPECIFICALLY WHEN SELECTING A LOCATION IT SHOULD INCLUDE:
 - A- CHANGES IN WALL HT. OR THICKNESS.
 - B- OVER OPENINGS @ ONE SIDE PAST THE LINTEL.
 - C- AT INTERSECTING WALL.
 - D- AT CONSTRUCTION JOINTS IN SLAB.
 - E- NOT LESS THAN 2'-0" FROM A BEARING PLATE.
 - G.C. TO PROVIDE SHP DWG. W/ LOCATIONS OF CONTROL JOINTS & ALL VERTICAL REINF. FOR REVIEW BY A/E.



TYP. HORIZ. BOND BEAM DETAIL

NTS

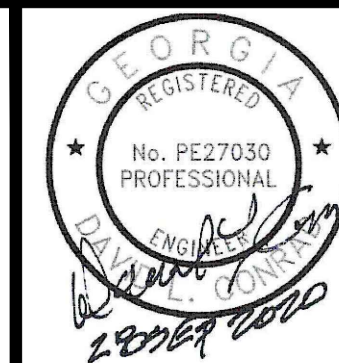
316



SPECIAL BLOCK SHAPES
NTS

318

- NOTES:**
- IF BOND BEAM BLOCK IS NOT LOCALLY AVAILABLE, STANDARD BLOCK SHALL BE SAW CUT TO THE CONFIGURATION SHOWN.
 - NOMINAL DIMENSIONS SHOWN.



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STEVENSVILLE, MARYLAND
(410) 246-2111

DATE	REVISION

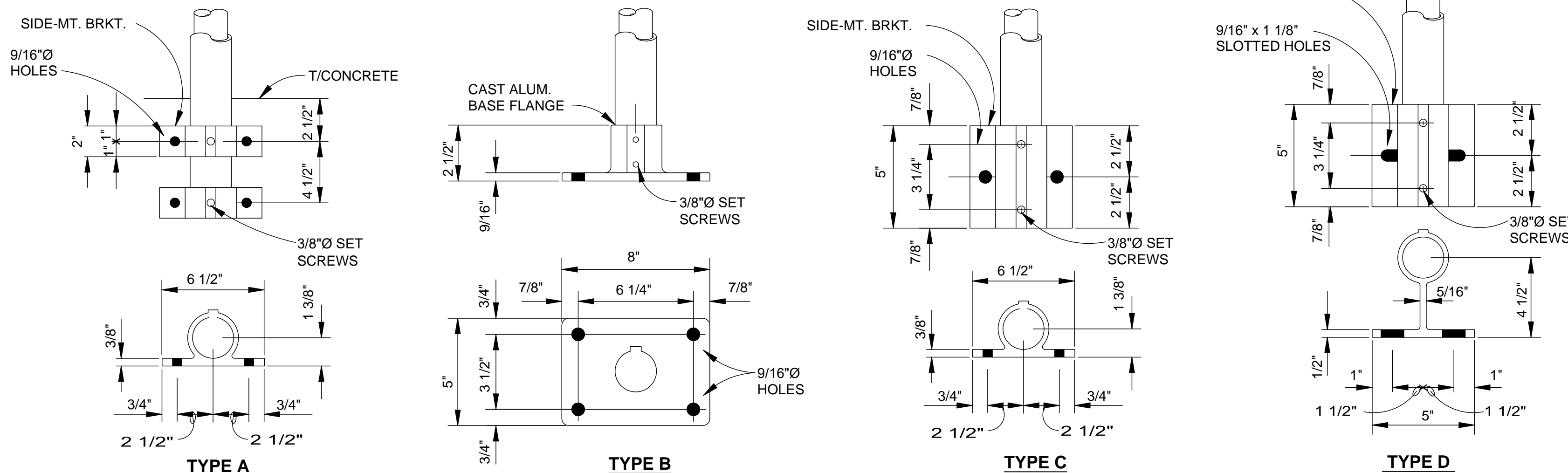
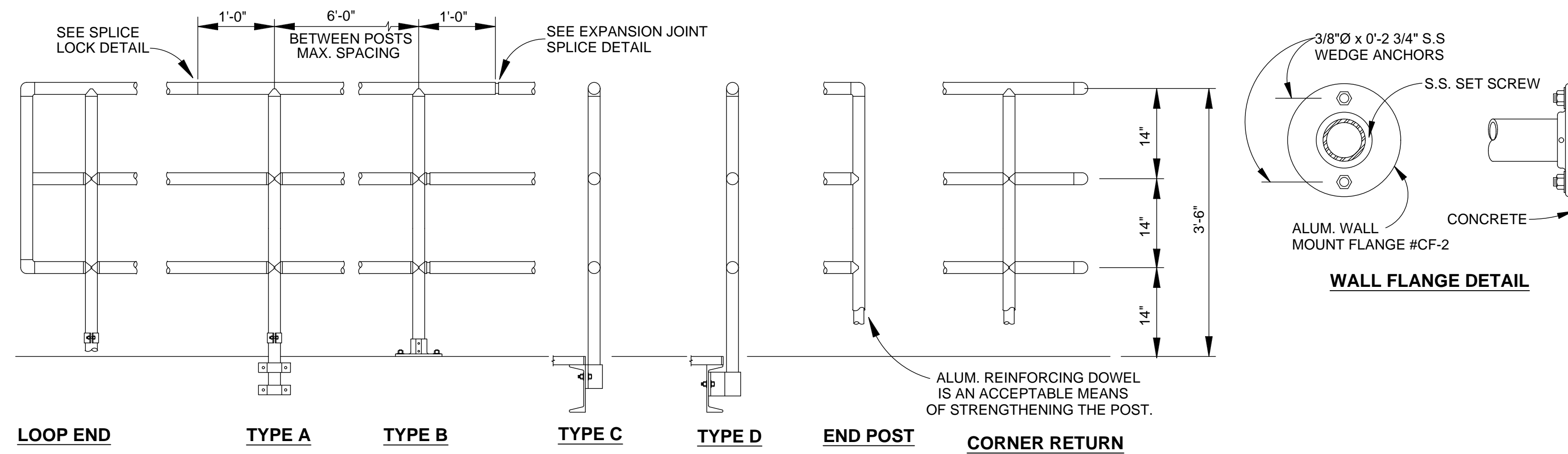
CERTIFICATE OF AUTHORIZATION #PEE00002 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.
 PROJ. NO.: 100061831
 DESIGNED BY: DLC
 DRAWN BY: -
 CHECKED BY: DIMM/JLS
 DATE: SEPTEMBER 2020
 SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

STRUCTURAL STANDARD DETAILS

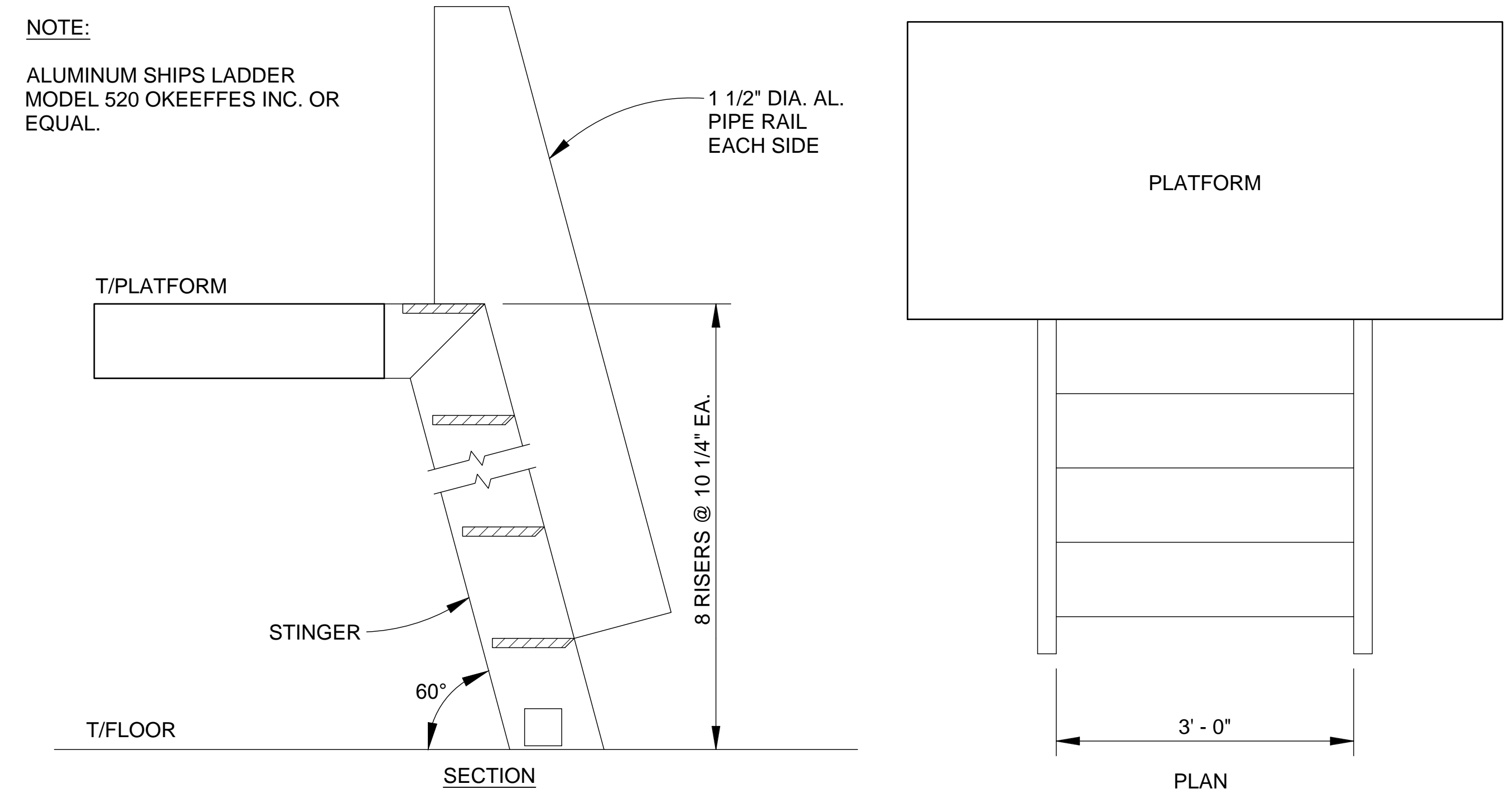
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DS-3



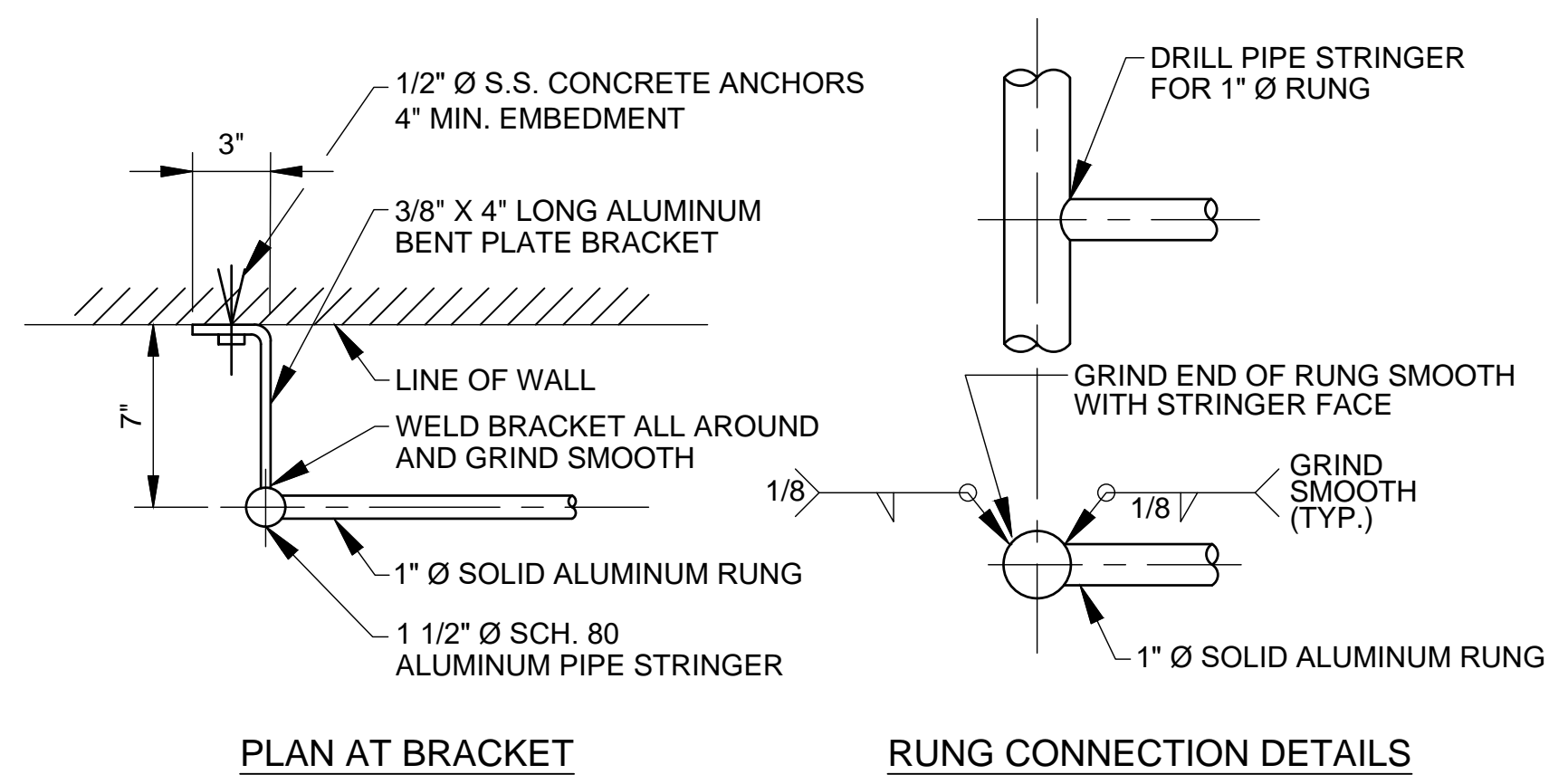
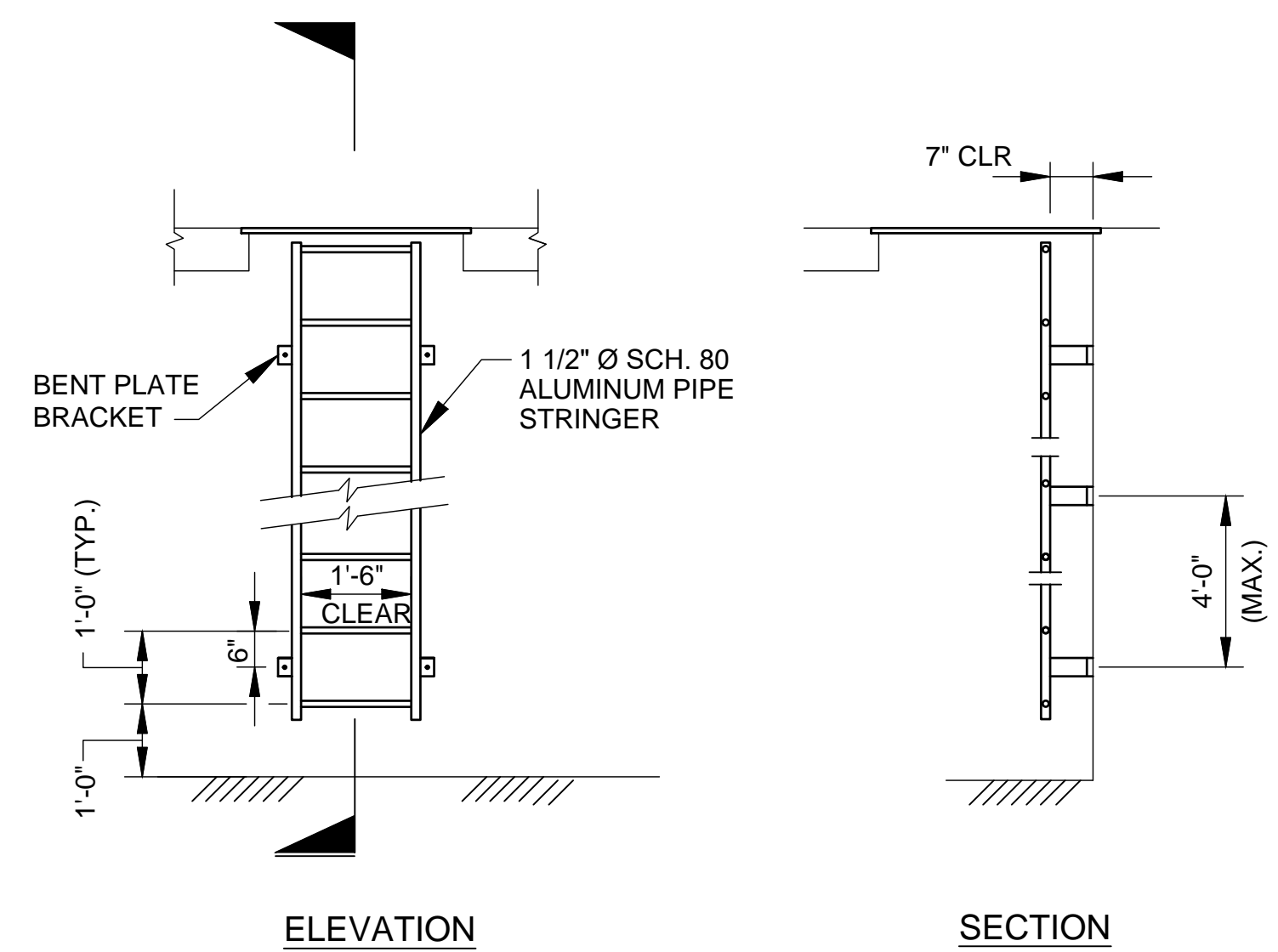
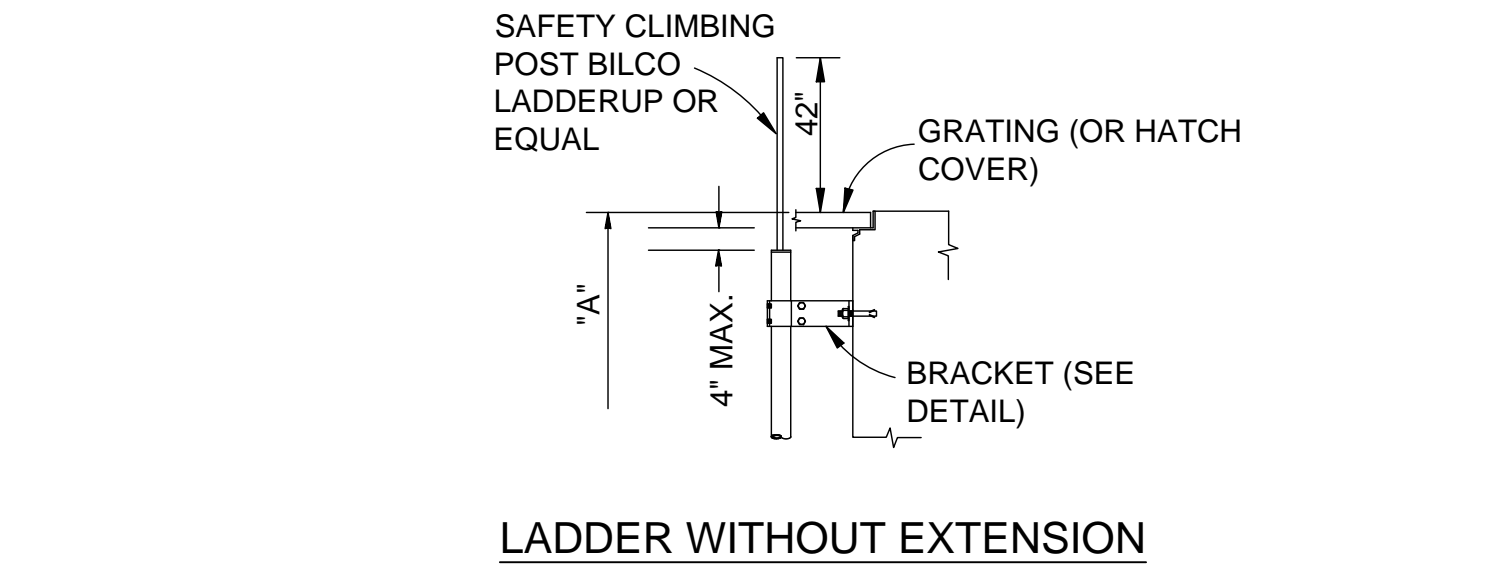
THREE RAIL HANDRAIL
NTS

319



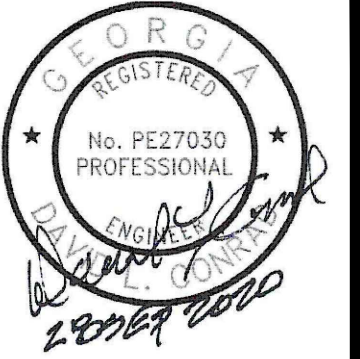
ALUMINUM SHIPS LADDER DETAIL
NTS

320



VERTICAL ALUMINUM LADDER AT HATCH
NTS

321



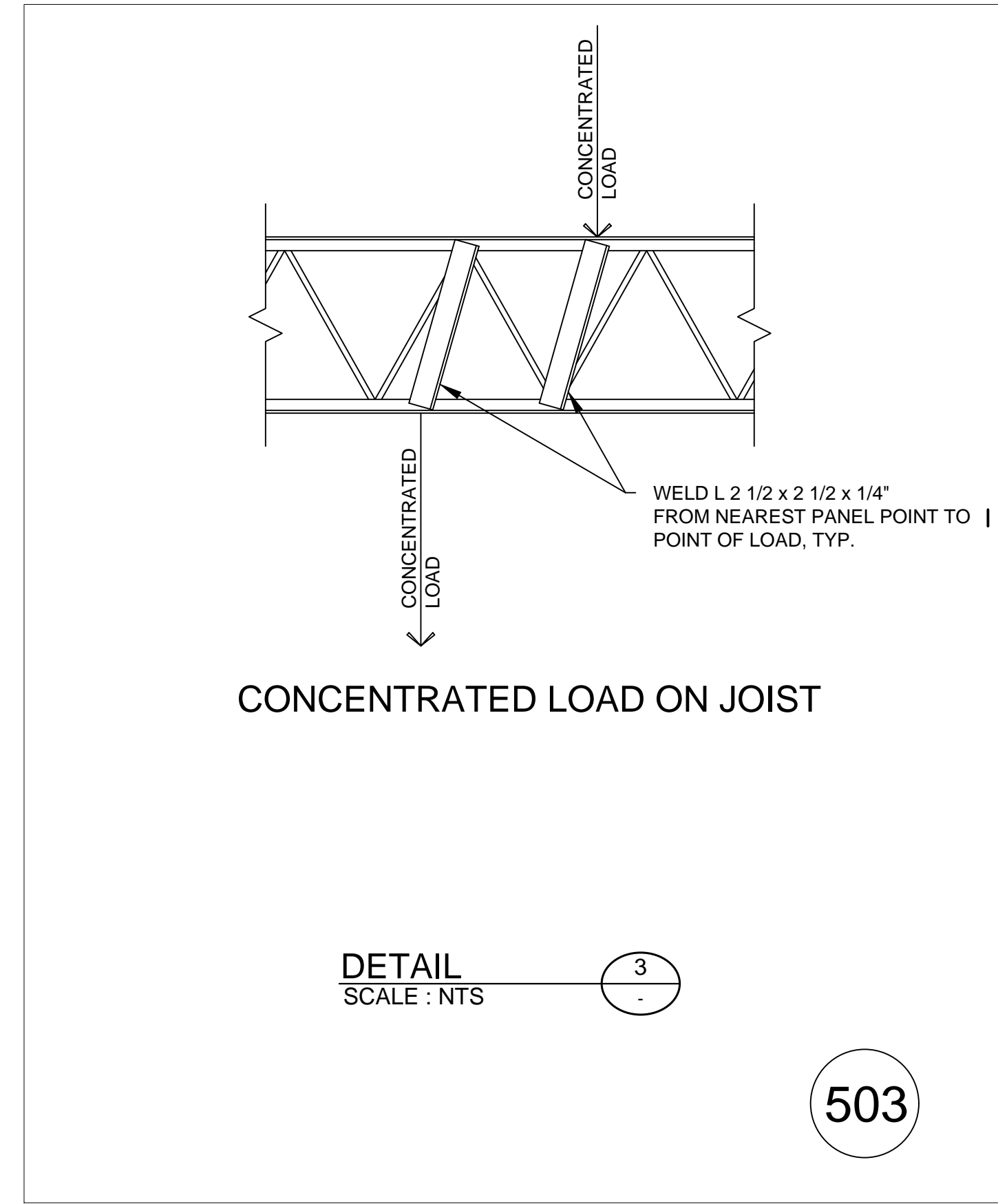
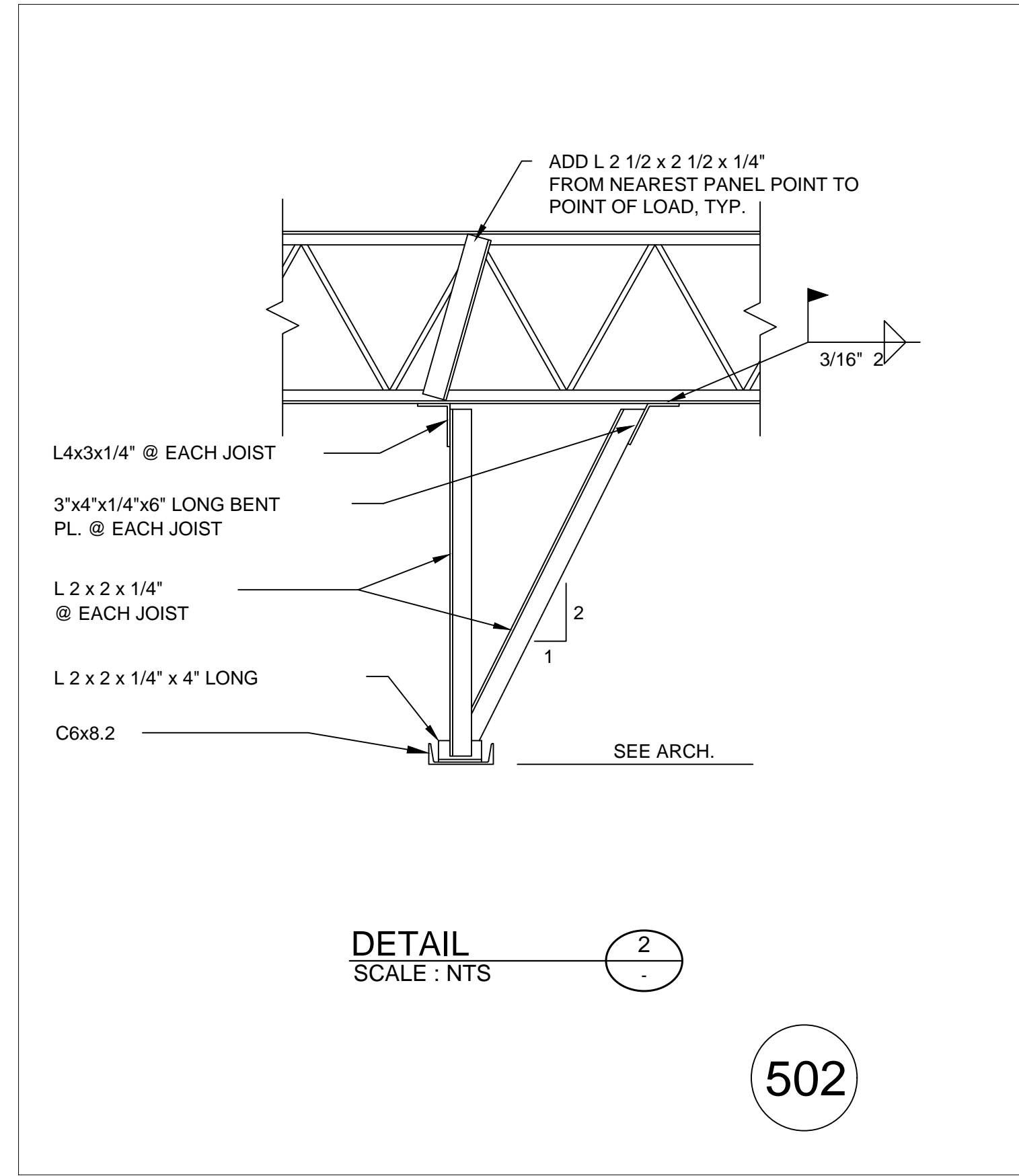
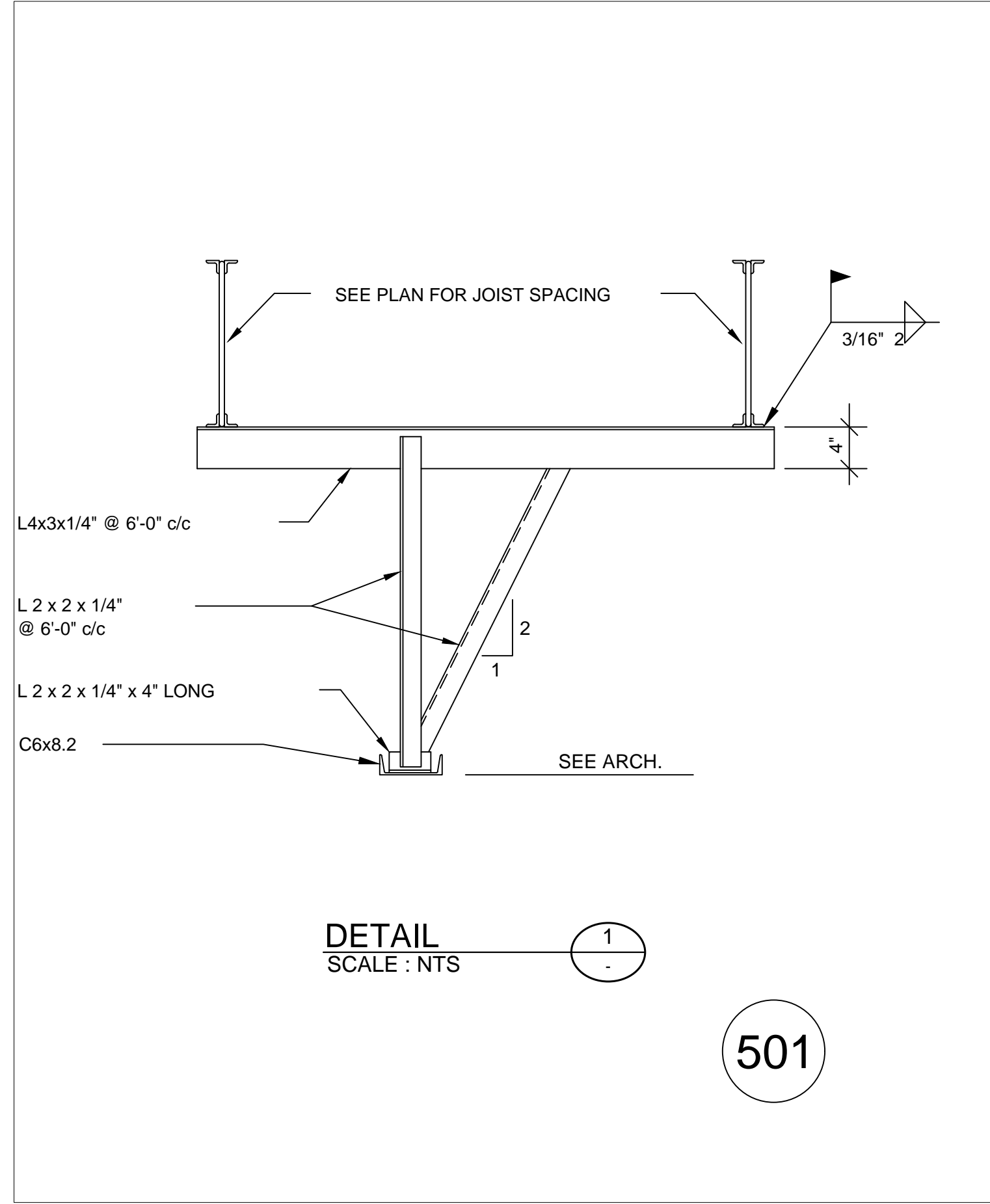
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1600 RiverEdge Parkway, N.W., Suite 700
Atlanta, GA 30328
P: 770-993-0260

HARTWELL ENGINEERING, INC.
ENGINEERS & ARCHITECTS
STEVENSVILLE, MARYLAND
(410) 284-2111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:	SCALE:
100061831	DLC	DM/JLS	HC	SEPTEMBER 2020	AS SHOWN
CERTIFICATE OF AUTHORIZATION #	PERFORMING EXPIRATION DATE	DATE	REVISION	DATE	
0630022	ATKINS NORTH AMERICA INC.				

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-4



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ATLANTA, GA 30309
(404) 242-1111

PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	DLC	DMW/JLS	HC	SEPTEMBER 2020	AS SHOWN

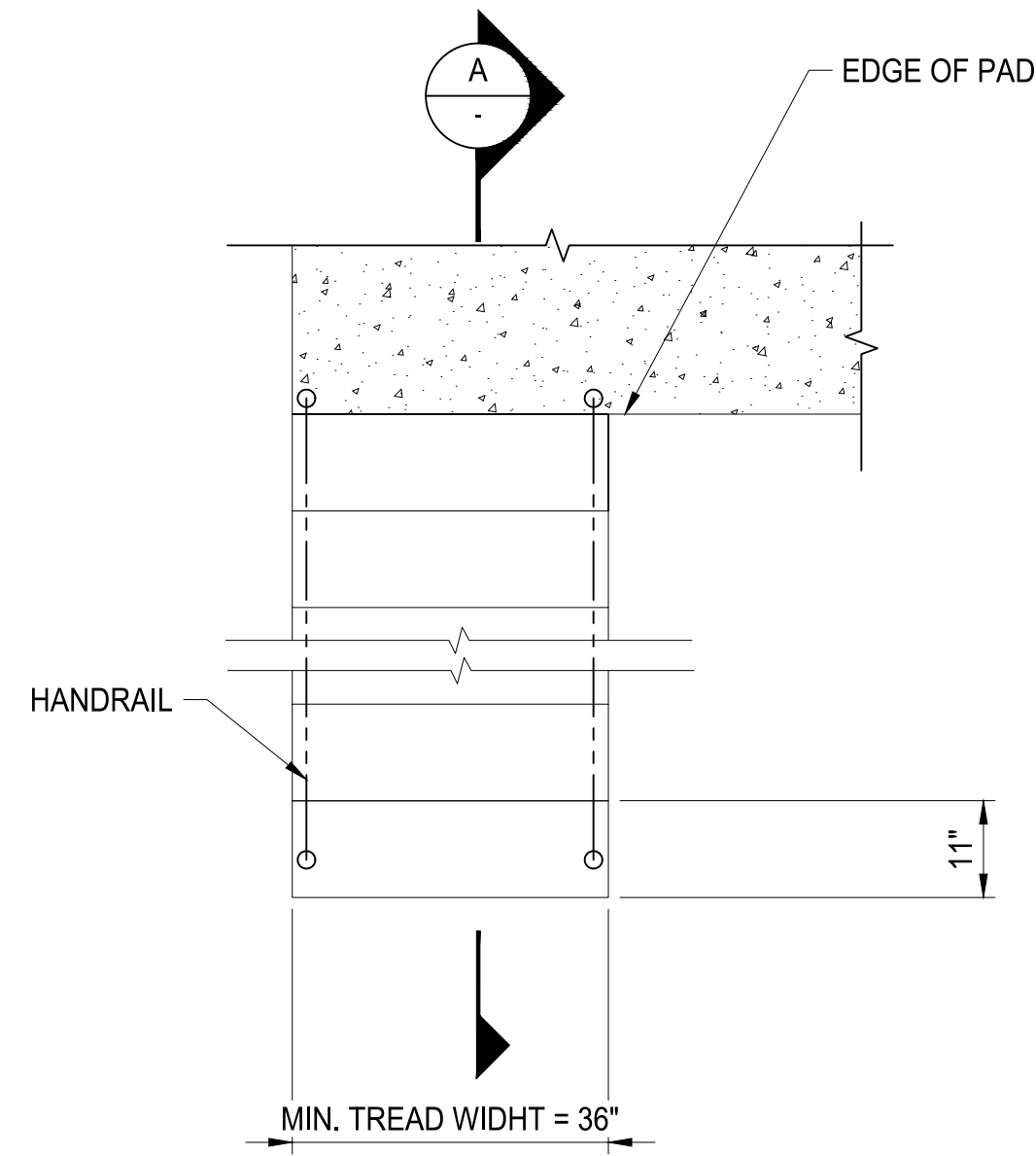
REVISION	DATE

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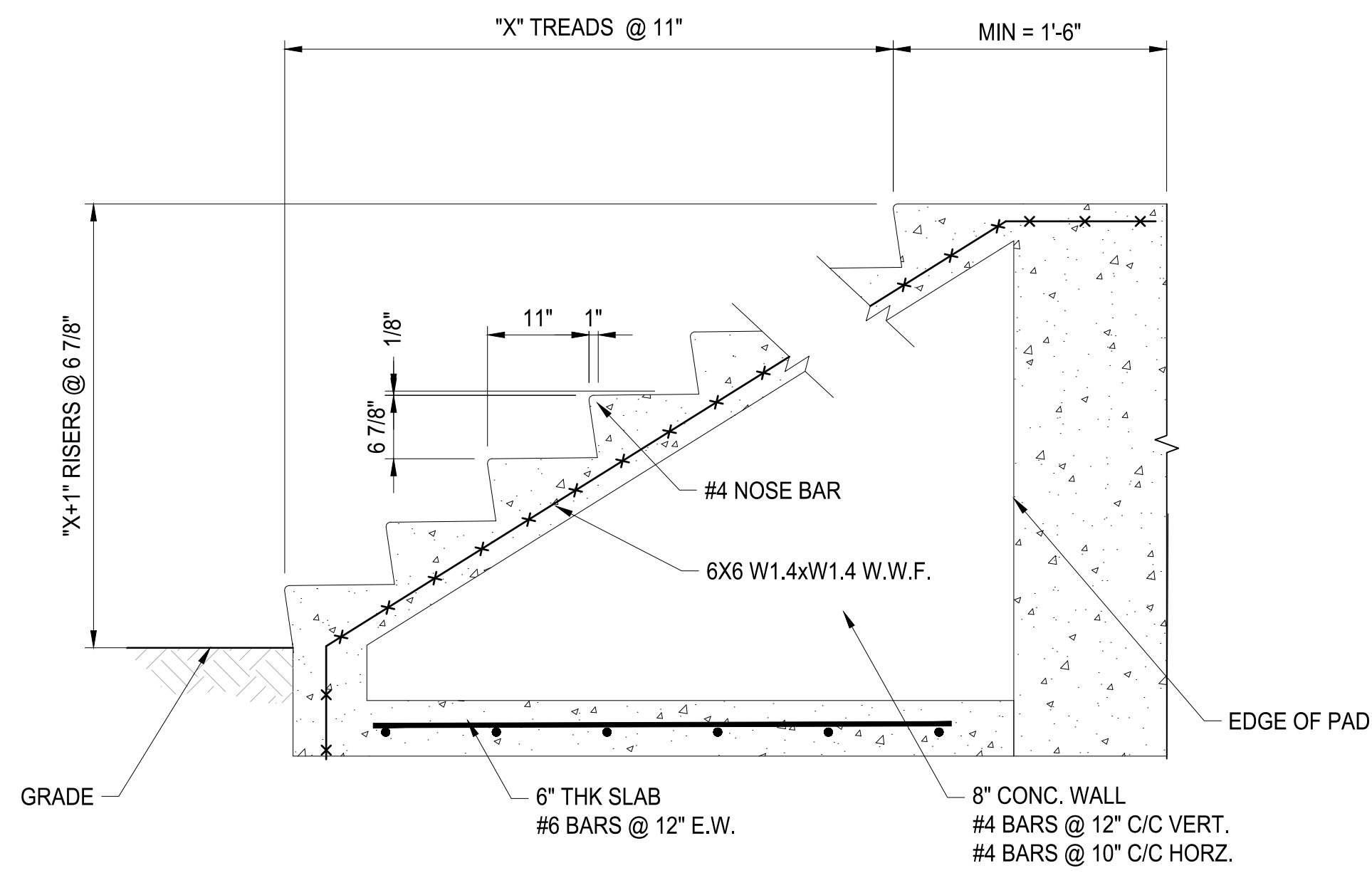
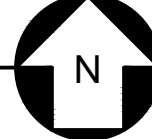
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

STRUCTURAL STANDARD DETAILS

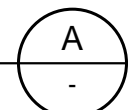
SHEET NO.
DS-5



TYPICAL STAIR DETAIL
SCALE:



SECTION
SCALE:



NOTES:

1. THESE DETAILS SHOULD USED BE ONLY FOR STAIRS WITH LESS THAN 8 FEET OF TOTAL FLIGHT

601



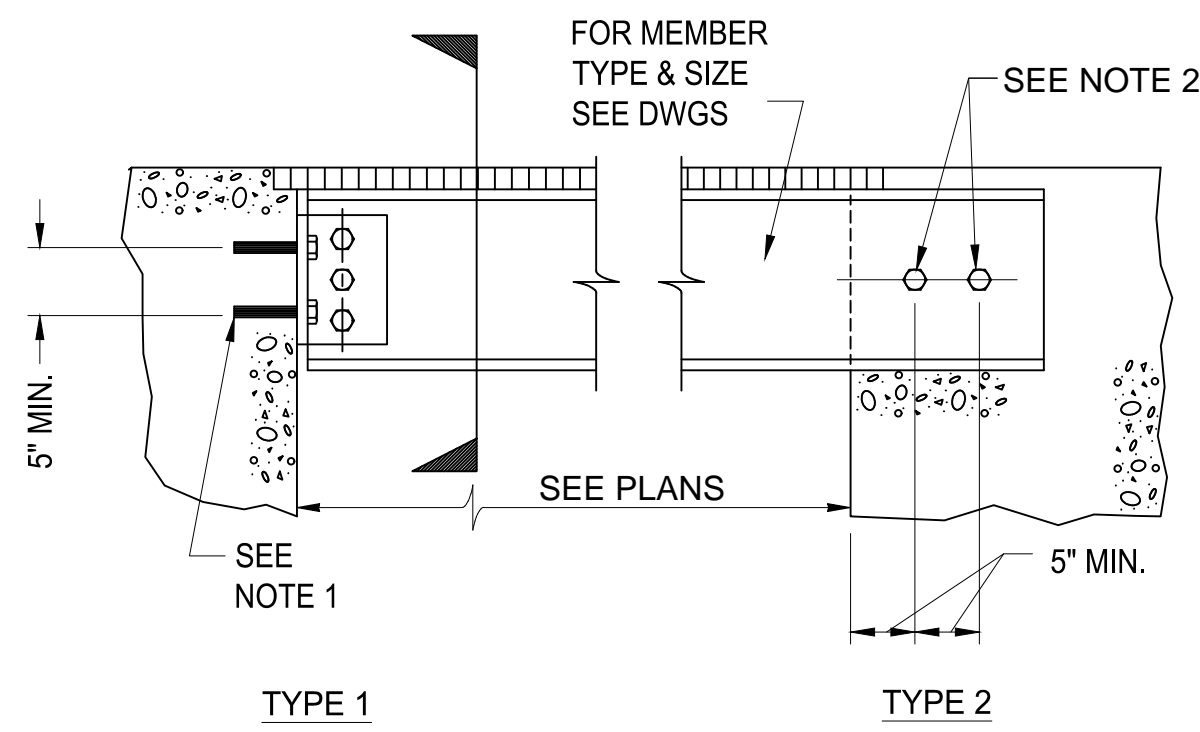
ATKINS
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ENGINEERS & ARCHITECTS
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PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	DLC	DMW/JLS	HC	SEPTEMBER 2020	AS SHOWN
CERTIFICATE OF AUTHORIZATION #PEE00002 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.					
		REVISION		DATE	

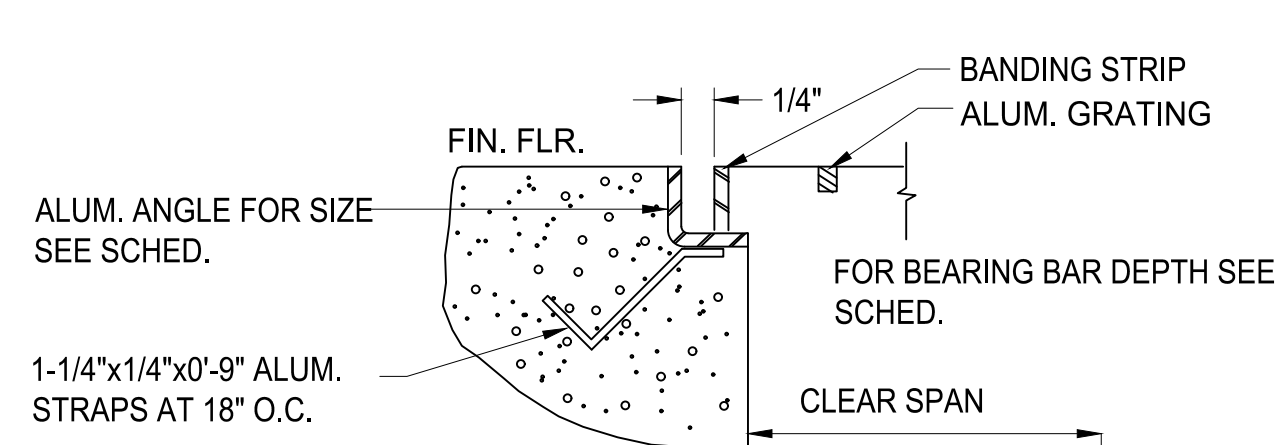
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-6

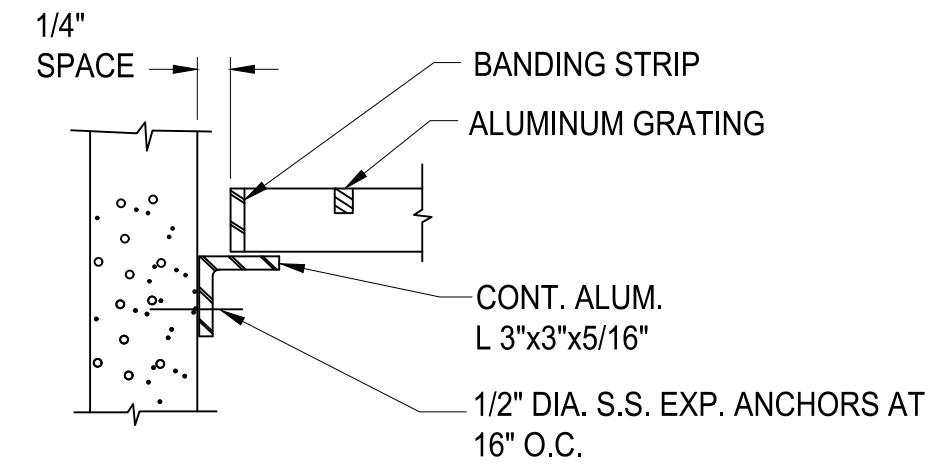


GRATING SUPPORT CONNECTION
SCALE: NTS

309



GRATING SUPPORT DETAIL AT WALL - TYPE 1
SCALE: NTS



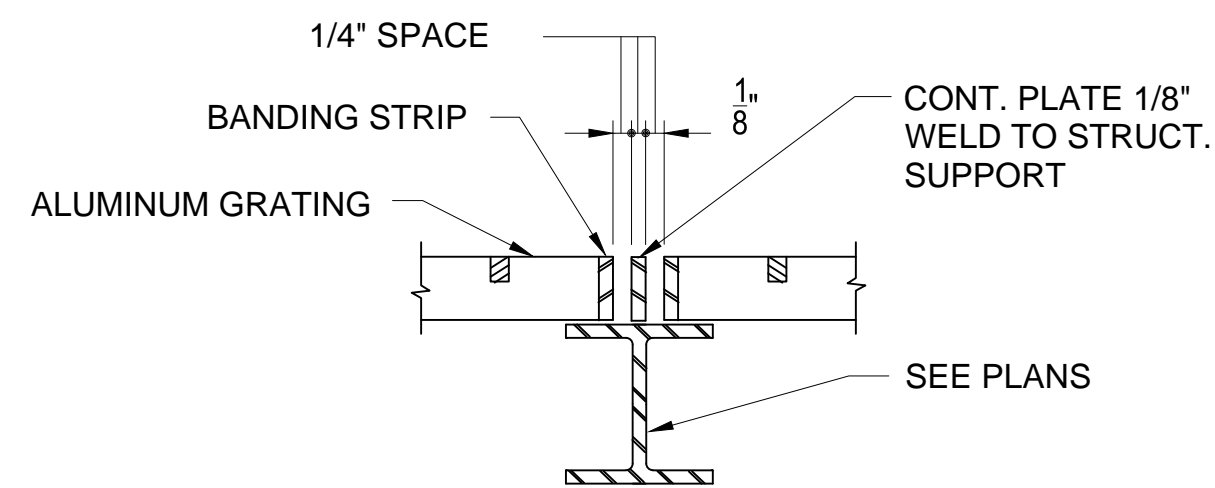
GRATING SUPPORT DETAIL AT WALL - TYPE 2
SCALE: NTS

ALUMINUM SURFACES EMBEDDED IN OR IN CONTACT WITH CONC SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645.

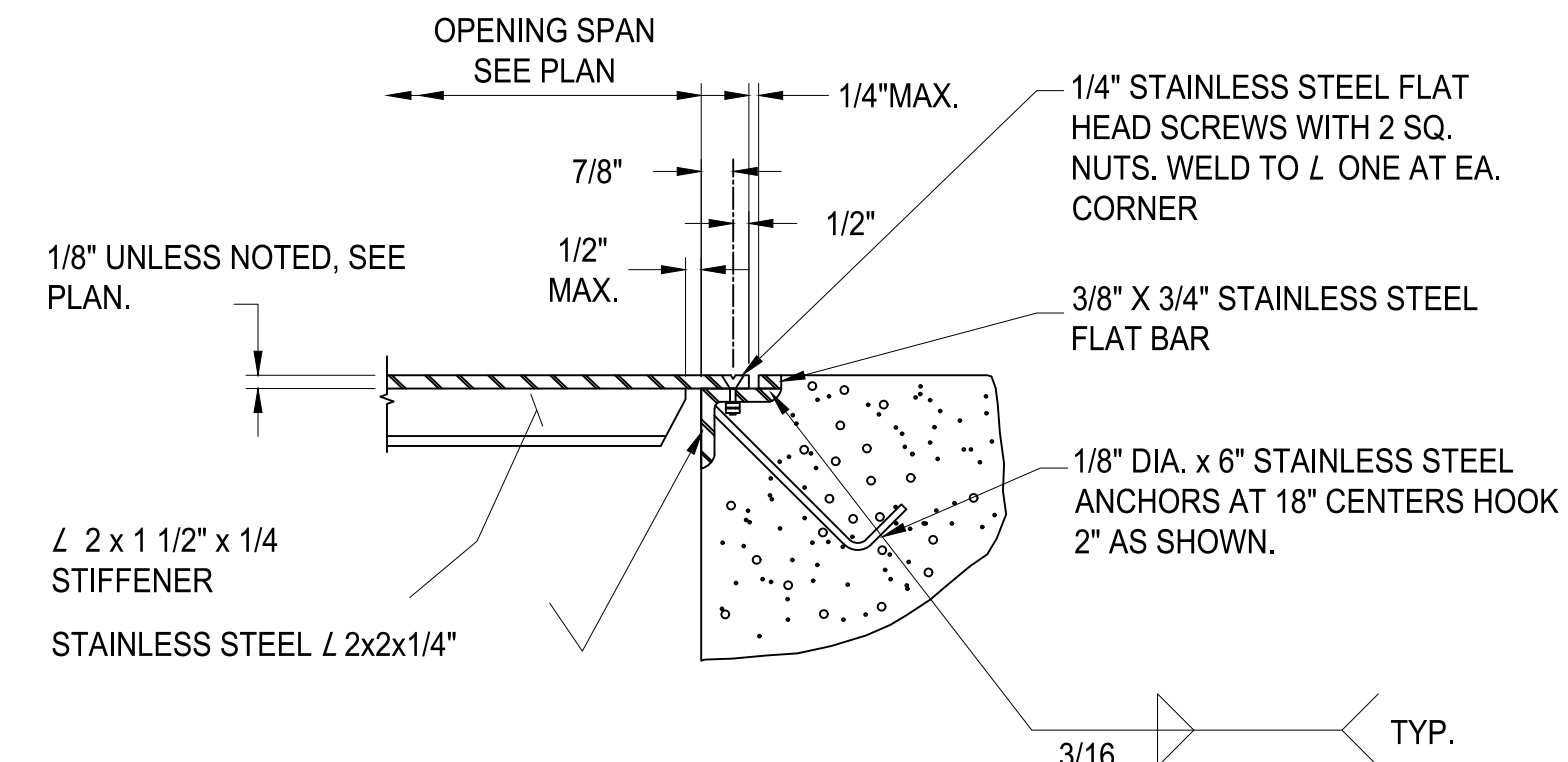
CLEAR SPAN	BEARING BAR DEPTH	ANGLE SIZE
LESS THAN 3'-0"	1-1/4"	L 1-1/2x1-1/2x1/4
3'-0" TO 4'-0"	1-1/2"	L 1-3/4x1-3/4x1/4
4'-1" TO 5'-0"	1-3/4"	L 2x2x1/4
5'-1" TO 6'-0"	2"	L 2-1/2x2-1/2x1/2
6'-1" TO 7'-0"	2-1/2"	L 3x3x1/2

MINIMUM LIVE LOAD - 100 PSF

ALUMINUM GRATING SCHEDULE
SCALE: NTS



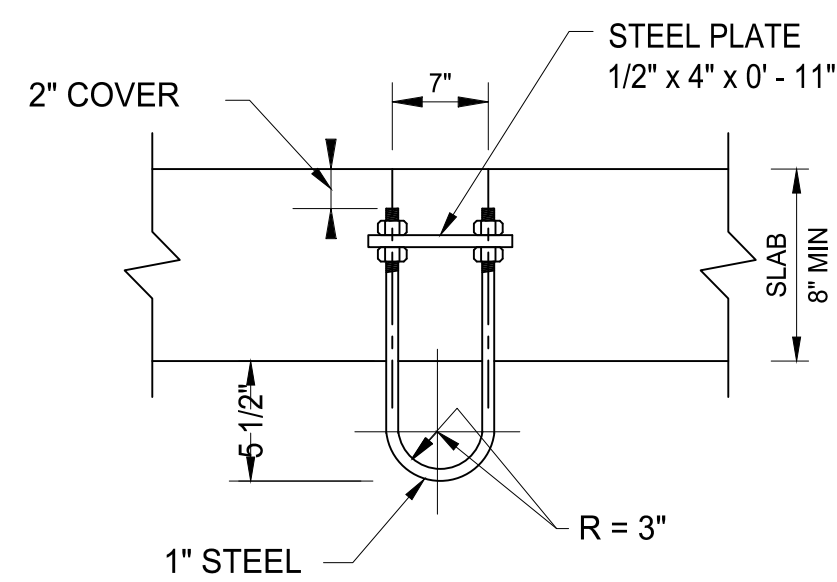
GRATING SUPPORT
SCALE: NTS



NOTE:
THIS DETAIL APPLIES AT OPENINGS WHOSE LARGER SIDE IS LARGER THAN 2'-6" AND AIR TIGHTNESS IS NOT REQUIRED.

GRATING SUPPORT DETAIL
SCALE: NTS

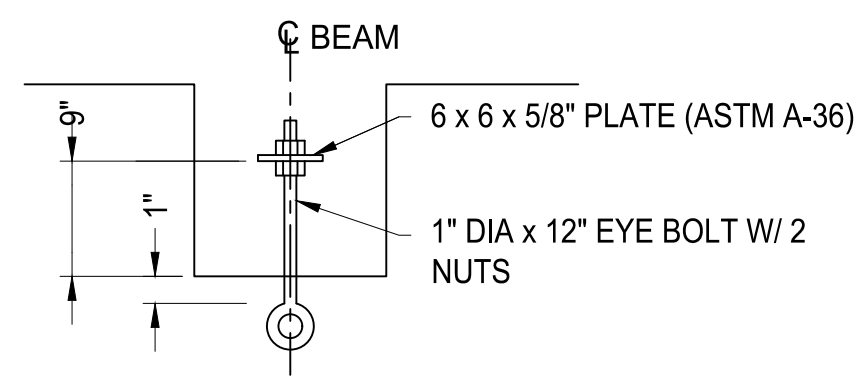
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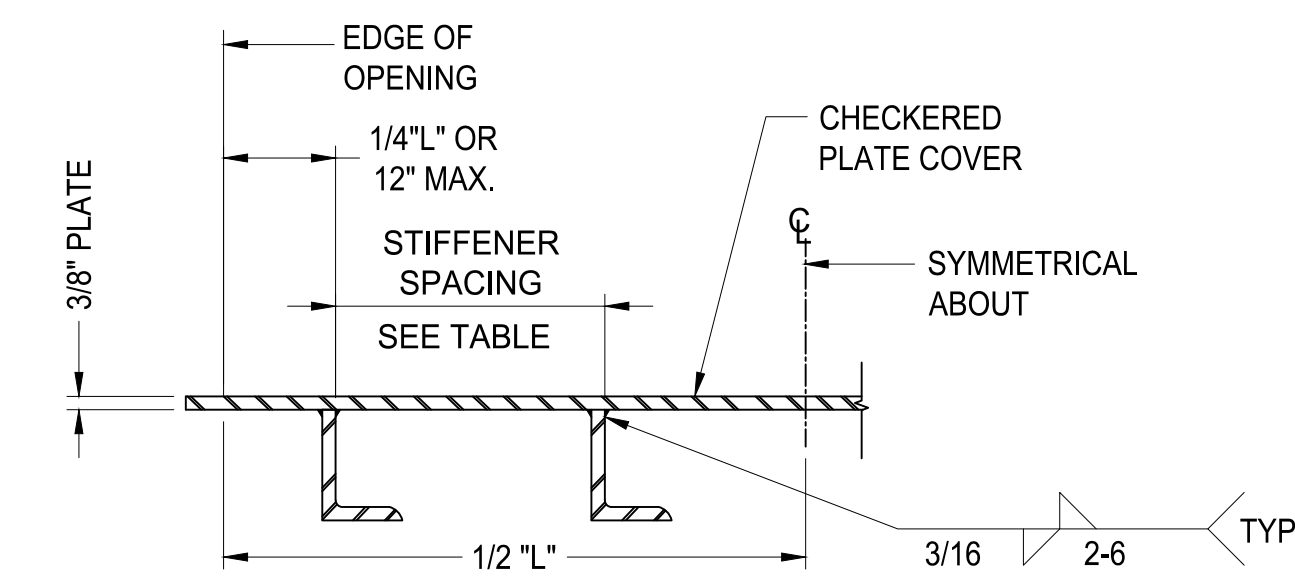
- NOTES:
1. MAXIMUM LOAD = 1 TON
 2. TO BE LOCATED WHERE SHOWN ON THE DRAWINGS.
 3. STEEL SHALL BE A-36
 4. ALL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM-A123 FOR PLATES AND ASTM-A153 FOR THREADED ITEMS.

LIFTING LUGS DETAIL
SCALE: NTS

310



- NOTES:
1. MAXIMUM LOAD = 5 TON
 2. TO BE LOCATED WHERE SHOWN ON THE DRAWINGS.
 3. STEEL SHALL BE A-36
 4. EYE BOLT SHALL BE PROVIDED WITH A BOLT TYPE ANCHOR SHACKLE. BOTH ITEMS SHALL HAVE A SAFETY FACTOR OF 4.
 5. ALL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM-A123 FOR PLATES AND ASTM-A153 FOR THREADED ITEMS.



- NOTES:
1. STIFFENERS TO BE PLACED LONG LEG VERTICAL.
 2. STIFFENERS TO BE PARALLEL TO THE SHORT EDGE OF OPNG.
 3. MAXIMUM ALLOWABLE UNIFORM DESIGN LOAD = 30 PSF.

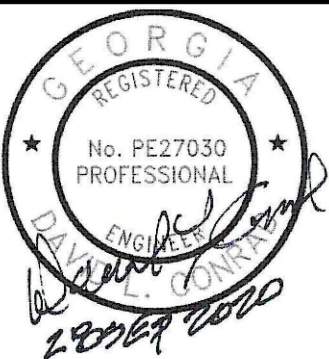
TABLE		
SHORT SPANS	STIFFENER SIZES	MAXIMUM SPACING
3'-0"	L2 x 1 1/2" x 1/4"	1'-6"
3'-6"	L2 x 1 1/2" x 1/4"	1'-6"
4'-0"	L2 x 1 1/2" x 1/4"	1'-3"
4'-6"	L2 x 1 1/2" x 1/4"	1'-6"
5'-0"	L2 x 1 1/2" x 1/4"	1'-3"

MINIMUM LIVE LOAD - 100 PSF

- NOTES:
1. COVER PL TYPES "A", "B", & "C" AND STIFFENERS ARE AL PL AND ANGLES.
 2. ALL COVER PLATES TO HAVE APPLICABLE LIFTING EYES AS SHOWN IN LIFTING EYE DETAILS.

COVER STIFFENERS
SCALE: NTS

312



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STEVENSVILLE, MARYLAND
(410) 248-5111

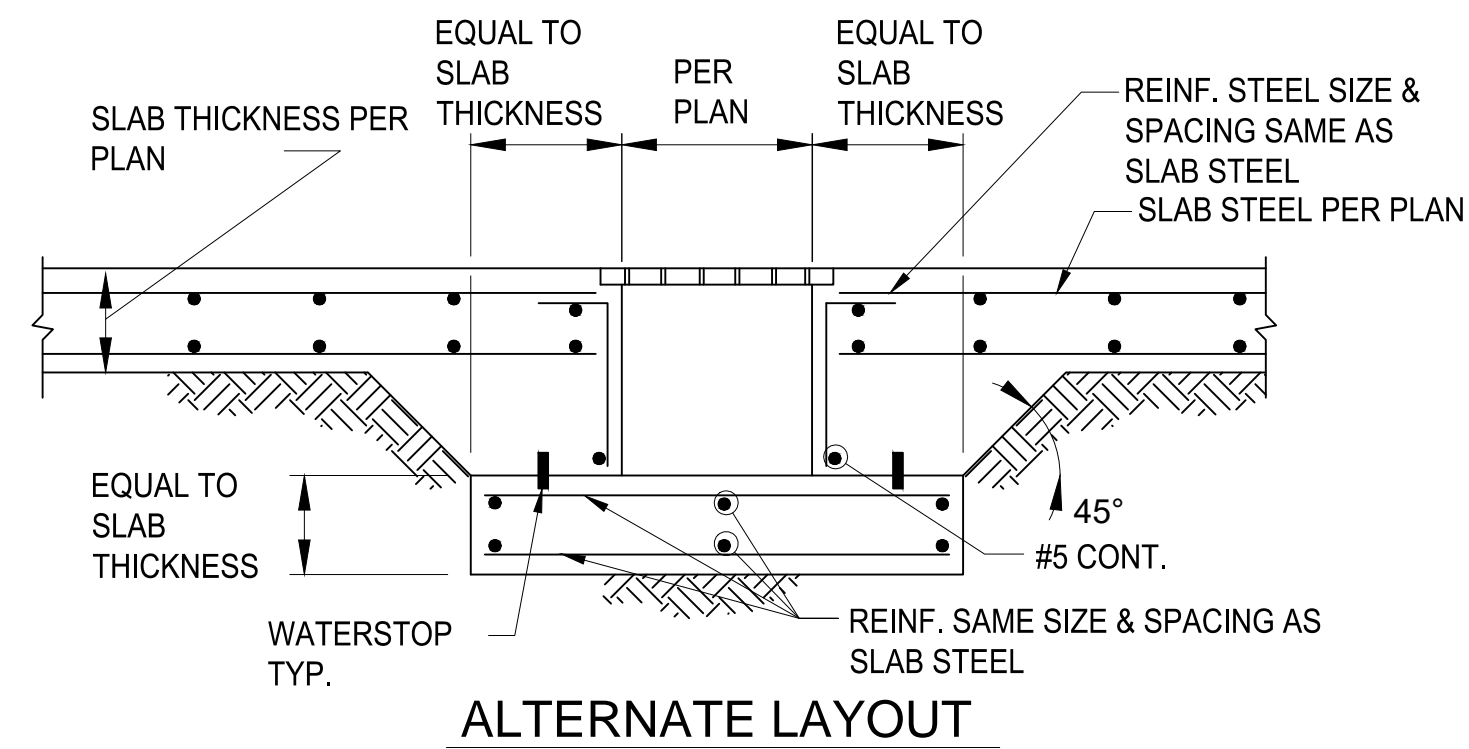
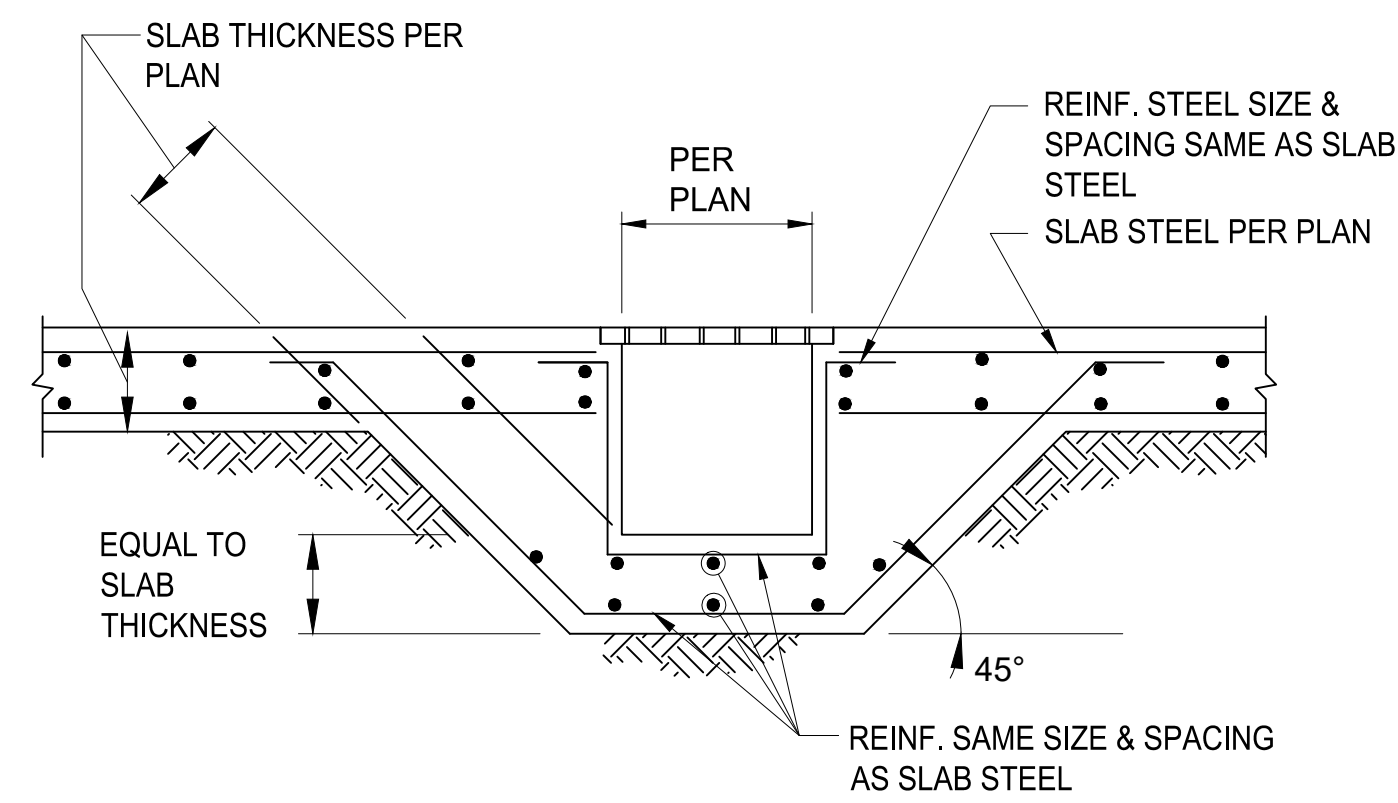
DATE	REVISION

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DIMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

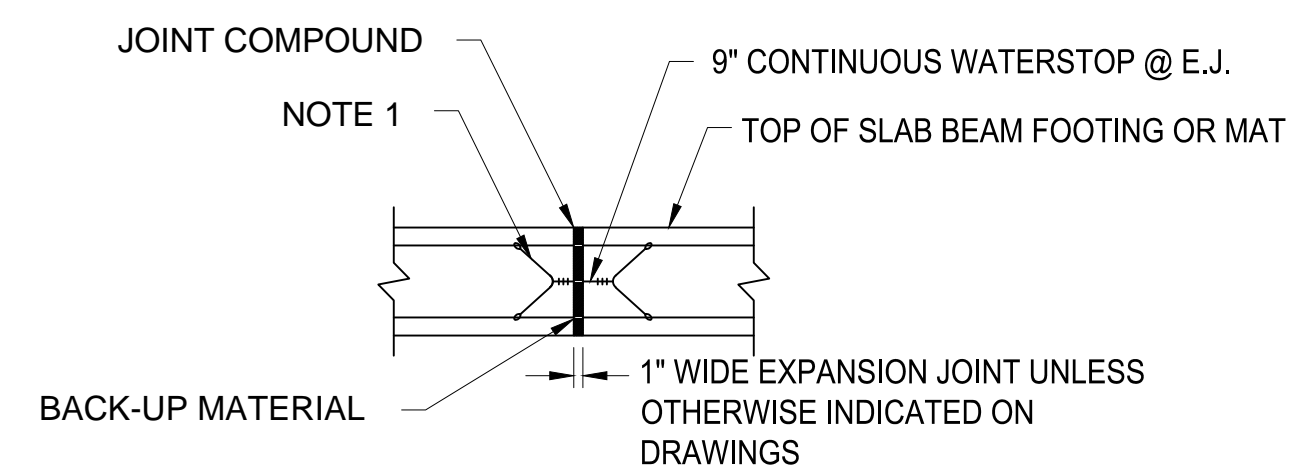
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-8



SECTION THRU SLAB TRENCH
SCALE : NTS

500

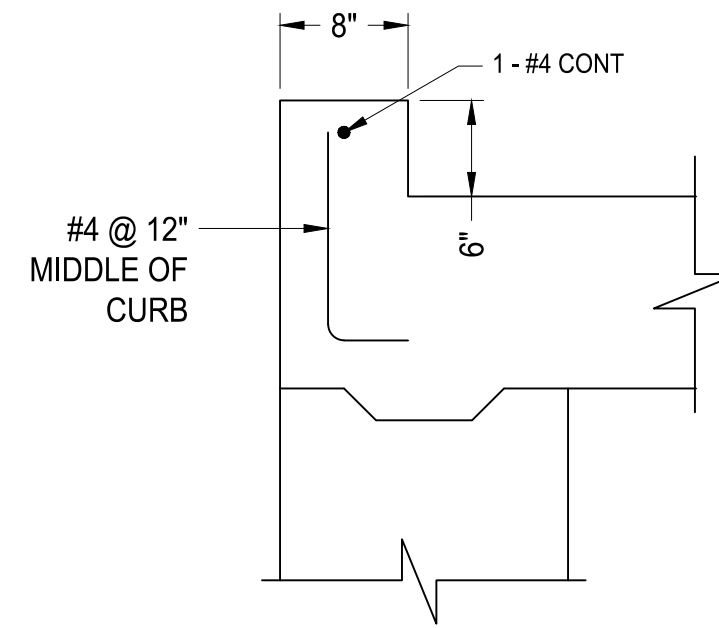


NOTES:

1. SECURE ALL WATERSTOP EDGES BY TIE WIRE FROM LOOPS TO ADJACENT REINFORCEMENT EVERY 12" ALONG EACH EDGE BOTH SIDES.
2. JOINT COMPOUND W X 1/2-INCH DEEP WITH BOND BREAKER BETWEEN BACK-UP MATERIAL AND JOINT COMPOUND.
3. JOINT COMPOUND TO BE CARRIED ONE-FOOT MINIMUM BELOW FINISH GRADE ON EARTH SIDE OF SLABS, BEAMS, FOOTINGS, AND MATS.
4. JOINT COMPOUND TO BE CARRIED VERTICALLY DOWN SIDES TO BOTTOM OF ELEVATED SLABS AND BEAMS WHICH ARE EXPOSED TO VIEW.

SECTION - EXPANSION JOINT WITH WATERSTOP FOR SLABS, FOOTINGS, AND FOUNDATIONS
SCALE : NTS

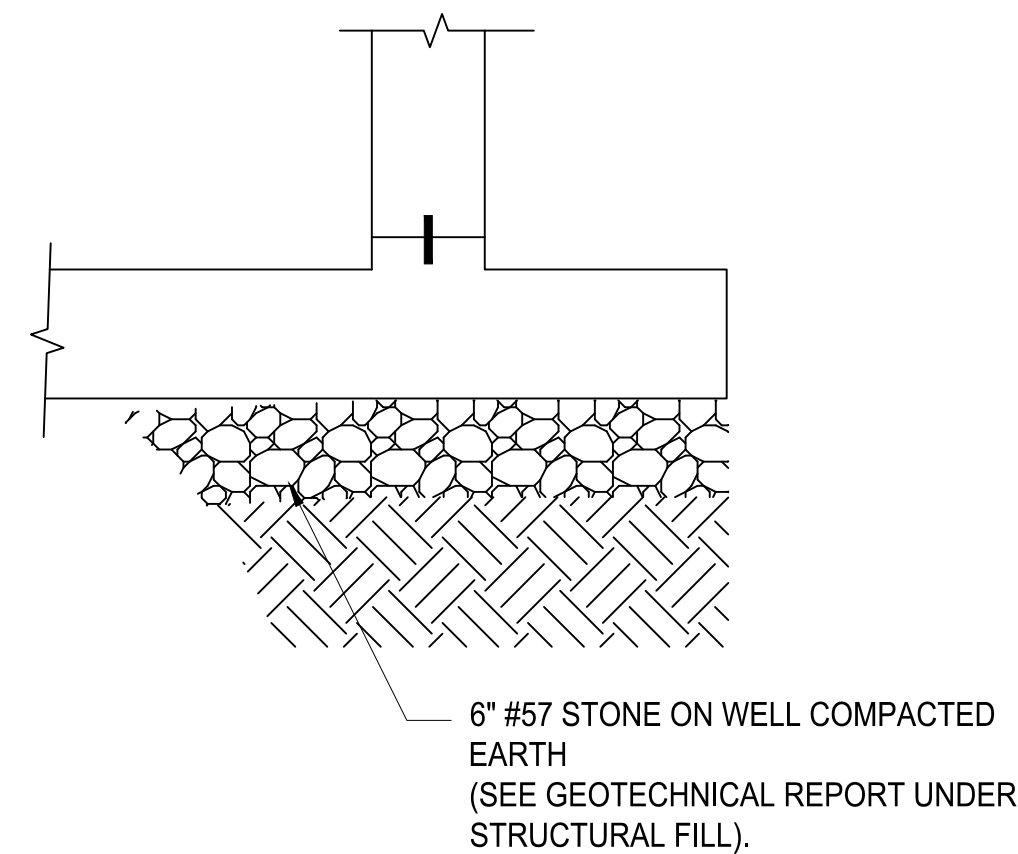
502



- NOTES:**
1. SEE PLANS, SECTIONS AND SCHEDULES FOR SLAB AND WALL REINFORCING.

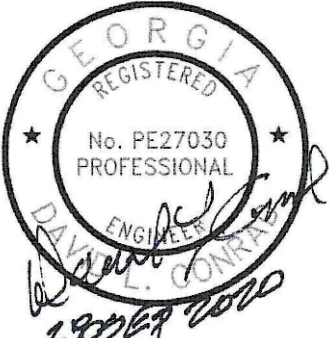
TYPICAL 6" HIGH x 8" WIDE CURB
SCALE : NTS

501



STONE FILL
SCALE : NTS

503



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(410) 284-5111

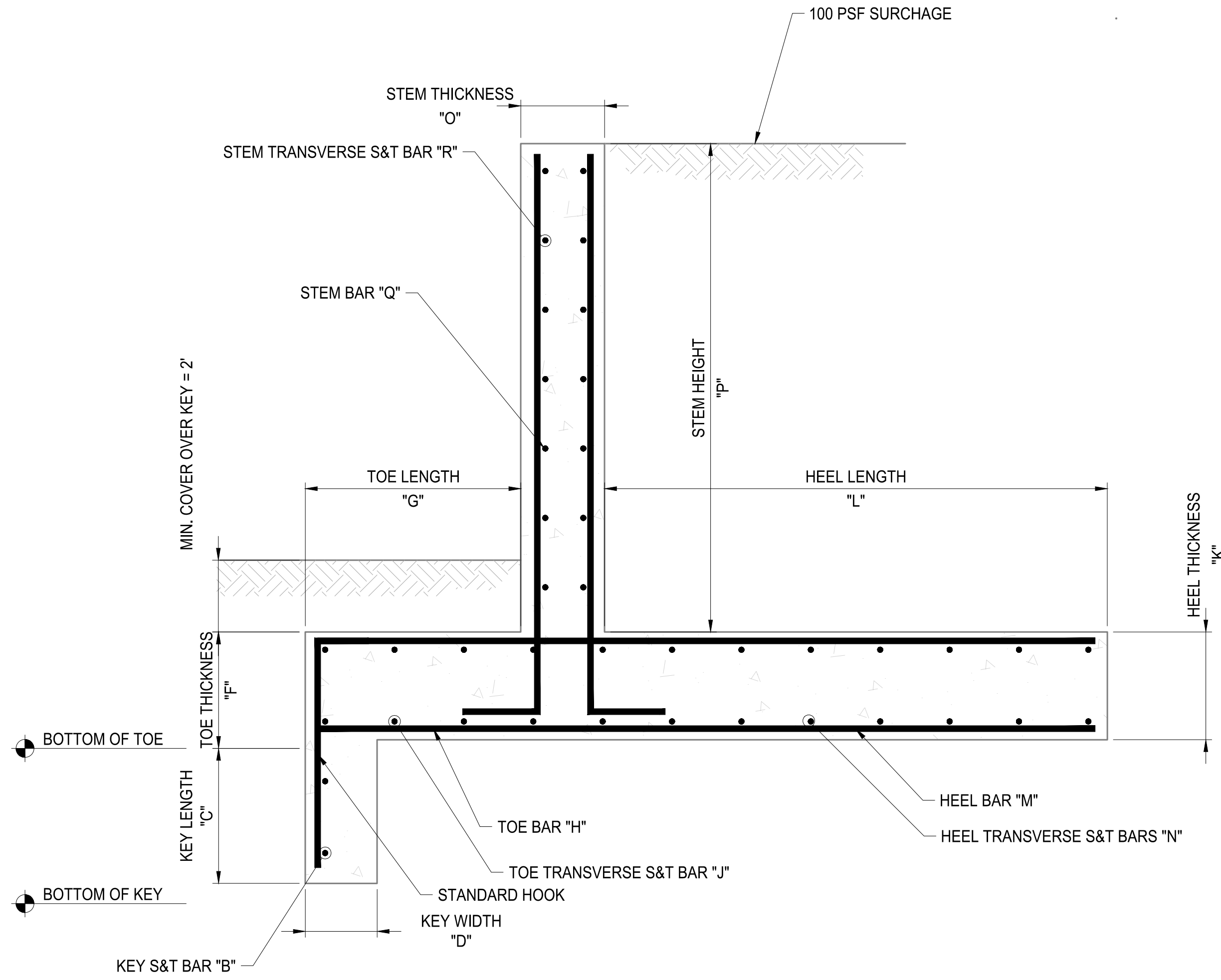
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100061831	DLC	DMW/JLS	HC	SEPTEMBER 2020	AS SHOWN

REVISION	DATE

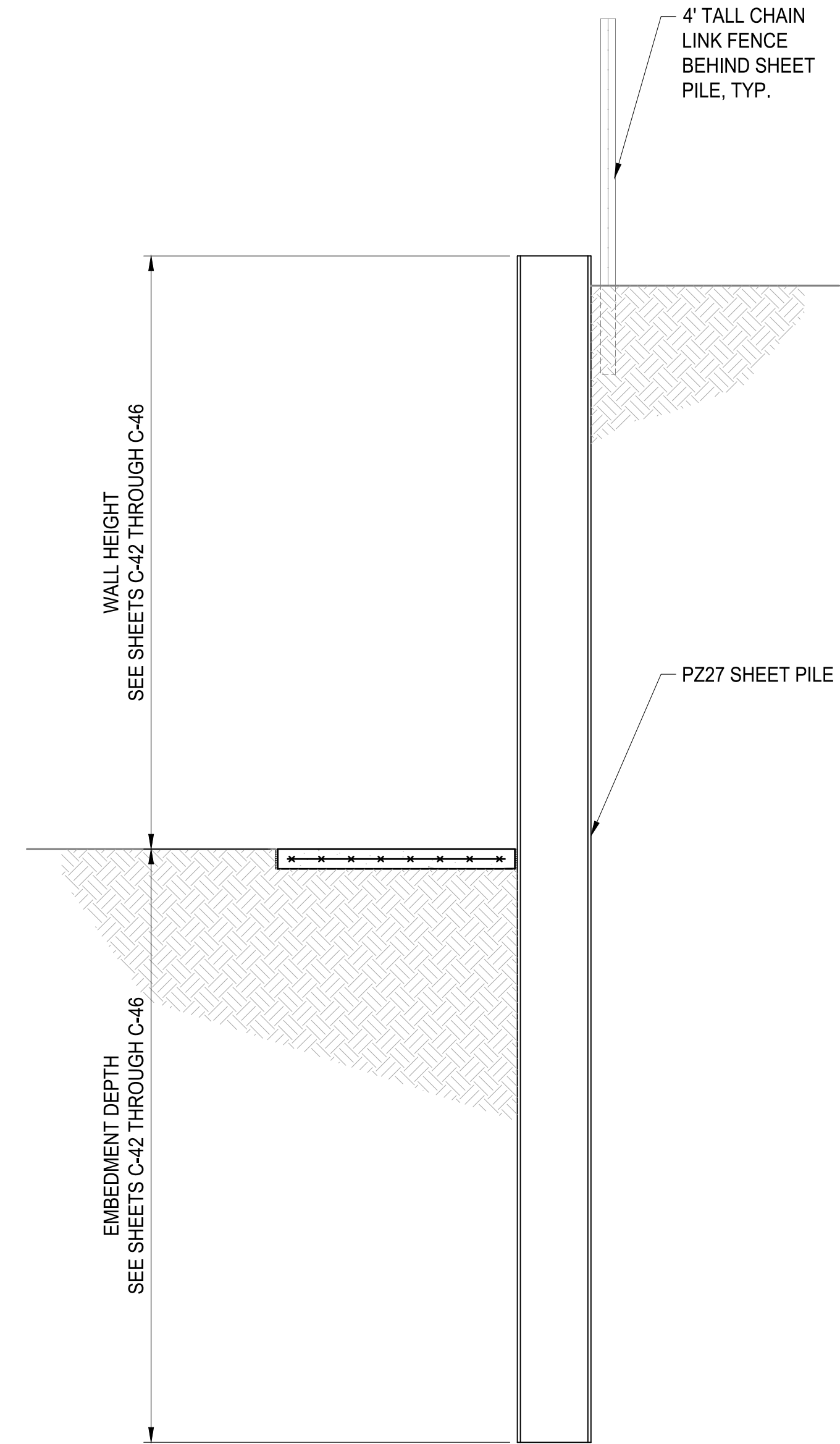
CERTIFICATE OF AUTHORIZATION #PE000002 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-9



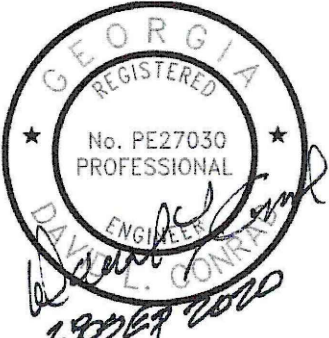
CAST IN PLACE RETAINING WALL SECTION
SCALE: NTS



SHEET PILE RETAINING WALL SECTION
SCALE: NTS

WALL HEIGHT	CAST IN PLACE RETAINING WALL SCHEDULE															
	KEY			TOE				HEEL				STEM				
	BARS	LENGTH	WIDTH	THICKNESS	LENGTH	BARS	TRANSVERSE BARS S&T	THICKNESS	LENGTH	BARS	TRANSVERSE BARS S&T	THICKNESS	HEIGHT	BARS	TRANSVERSE BARS S&T	
B	C (IN)	D (IN)	F (IN)	G (FT-IN)	H	J	K (IN)	L (FT-IN)	M	N	O (IN)	P (FT-IN)	Q	R		
P < 8 FT	#5@12 HORZ.	24	12	12	2'-0"	#5@12 T&B	#5@12 T&B	12	5'-0"	#5@12 T&B	#5@12 T&B	12	<=8'-0"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE	
P < 6 FT	#5@12 HORZ.	18	12	12	2'-0"	#5@12 T&B	#5@12 T&B	12	3'-0"	#5@12 T&B	#5@12 T&B	10	<=6'-0"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE	
P < 4 FT	#5@9 HORZ.	12	12	12	2'-0"	#5@12 T&B	#5@12 T&B	12	2'-0"	#5@12 T&B	#5@12 T&B	8	<=4'-0"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE	

Structural Standard Details - Site Civil



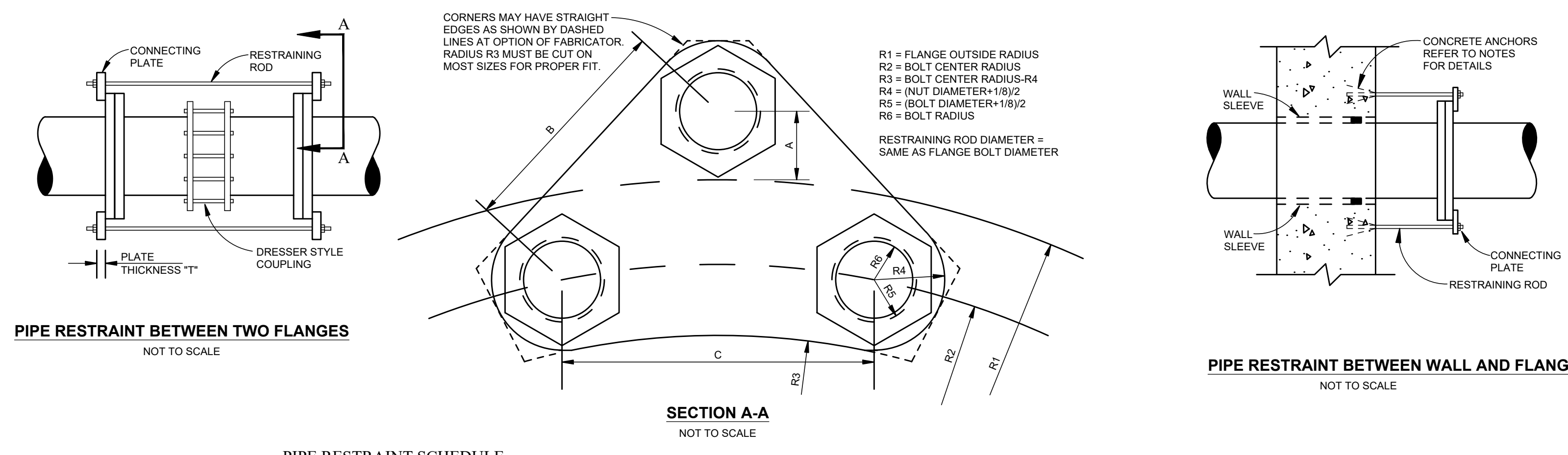
ATKINS
1600 RiverEdge Parkway, N.W., Suite 700
Atlanta, GA 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
REGISTERED PROFESSIONAL ENGINEER
STATE OF GEORGIA
NO. 248211

PROJ. NO.:	DESIGNED BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:	CERTIFICATE OF AUTHORIZATION #	PERIOD OF EXPIRATION DATE	REVISION	DATE
100061831	DLC	DMM/JLS	HC	SEPTEMBER 2020	AS SHOWN	0630022	ATKINS NORTH AMERICA INC.		

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
STRUCTURAL STANDARD DETAILS
SITE CIVIL

SHEET NO.
DS-10



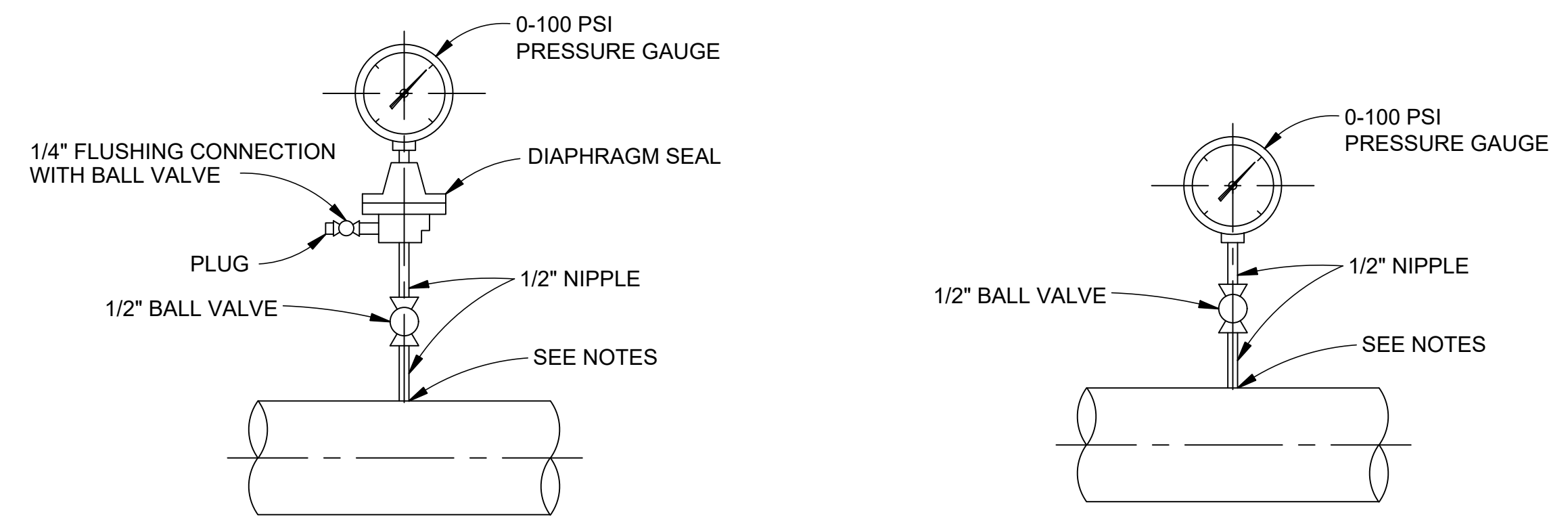
PIPE RESTRAINT SCHEDULE

NOMINAL PIPE DIAMETER (INCHES)	CONNECTING PLATE DIMENSIONS									RESTRAINING RODS			
	RADIUS (INCHES)						DISTANCE (INCHES)			THICKNESS (INCHES)	NUMBER REQUIRED		
	R1	R2	R3	R4	R5	R6	A	B	C		150 PSI FITTINGS	250 PSI FITTINGS	
4	4 1/2	3 3/4	3 5/32	19/32	3/8	5/16	9/16	2 1/5	2 8/7	3/4	5/8	2	2
6	5 1/2	4 3/4	4 1/32	23/32	7/16	3/8	5/8	2 5/1	3 6/4	7/8	3/4	2	2
8	6 3/4	5 7/8	5 5/32	23/32	7/16	3/8	5/8	2 9/7	4 5/0	7/8	3/4	2	2
10	8	7 1/8	6 5/16	13/16	1/2	7/16	11/16	2 5/8	3 6/9	1	7/8	2	3
12	9 1/2	8 1/2	7 11/16	13/16	1/2	7/16	11/16	2 9/6	4 4/0	1	7/8	2	4
14	10 1/2	9 3/8	8 7/16	15/16	9/16	1/2	3/4	3 2/7	4 8/5	1 1/8	1	2	4
16	11 3/4	10 5/8	9 11/16	15/16	9/16	1/2	3/4	2 9/4	4 1/5	1 1/8	1	3	5
18	12 1/2	11 3/8	10 11/32	1 1/32	5/8	9/16	13/16	3 0/9	4 4/4	1 1/4	1 1/8	3	5
20	13 3/4	12 1/2	11 15/32	1 1/32	5/8	9/16	13/16	2 9/6	3 9/1	1 3/8	1 1/8	4	6
24	16	14 3/4	13 19/32	1 5/32	11/16	5/8	7/8	3 2/6	4 6/2	1 3/8	1 1/4	4	6
30	19 3/8	18	16 27/32	1 5/32	11/16	5/8	7/8	3 1/1	4 0/3	1 1/2	1 1/4	6	10
36	23	21 3/8	20	1 3/8	13/16	3/4	1	3 4/4	4 1/9	1 3/4	1 1/2	6	10
42	26 1/2	24 3/4	23 3/8	1 3/8	13/16	3/4	1	3 5/7	4 3/1	1 3/4	1 1/2	8	13
48	29 3/4	28	26 5/8	1 3/8	13/16	3/4	1	3 4/6	4 0/0	1 3/4	1 1/2	10	17
54	33 1/8	31 3/8	29 23/32	1 21/32	15/16	7/8	1 1/8	3 7/1	4 4/8	2	1 3/4	10	16

NOTES:
 1. ALL EXPOSED COMPRESSION TYPE COUPLINGS SUBJECT TO MOVEMENT SHALL BE RESTRAINED WITH THREADED RODS OF THE SIZE AND NUMBER SHOWN IN THE SCHEDULE FOR THE WORKING PRESSURE SPECIFIED.
 2. FLANGE DIMENSIONS FOR CONNECTING PLATES ARE PER ANSI/AWWA C110/A21.10.
 3. RESTRAINING RODS AND CONNECTING PLATES SHALL BE FABRICATED FROM STEEL HAVING A MINIMUM ULTIMATE TENSILE STRENGTH OF 58,000 PSI.
 4. PROVIDE LONGER FLANGE BOLTS AS REQUIRED AT CONNECTING PLATES TO PROVIDE A MINIMUM OF TWO THREADS EXPOSED PAST THE NUT WHEN FULLY TIGHTENED. BOLTS SHALL BE ASTM A307 GRADE B.
 5. RESTRAINING RODS SHALL BE EQUALLY SPACED AROUND THE PIPE. SLIGHT VARIATIONS DUE TO ODD NUMBER OF RODS IS ACCEPTABLE.
 6. CONCRETE ANCHORS, WHERE REQUIRED, SHALL BE EMBEDDED PER THE MANUFACTURER'S RECOMMENDATIONS TO DEVELOP THE ULTIMATE TENSILE STRENGTH OF THE RODS FOR THE SPECIFIED CONCRETE STRENGTH. MANUFACTURER'S LITERATURE SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

TYPICAL PIPE RESTRAINT
NTS

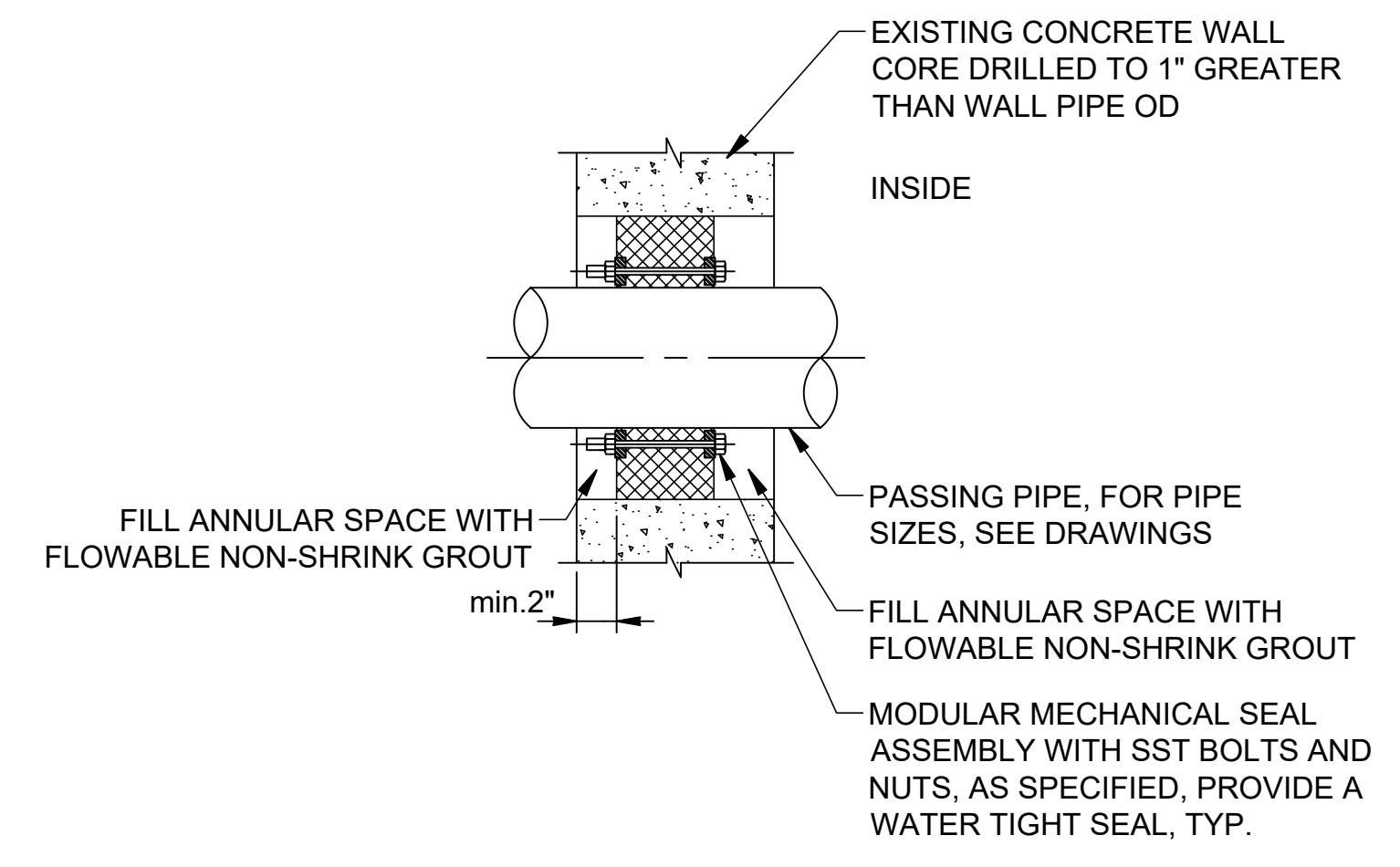
473



- NOTES:
- FOR STEEL GALV. AND PVC 2 1/2" AND SMALLER USE A BUSHING IN A TEE.
 - FOR DUCTILE IRON PIPE, 8" AND LESS, WELD A 1" THR'D HALF CPLG. TO PIPE AND REDUCE TO 1/2" WITH A 1"x1/2" THR'D RED. BSHG. INSIDE CPLG.
 - FOR FRP, ALL SIZES, USE PIPE SADDLE w/BUSHING.
 - FOR STEEL AND STAINLESS STEEL PIPES 3" AND LARGER, AND PRESSURE VESSELS, USE THRED-O-LET.
 - PROVIDE PRESSURE SENSOR w/GAUGE OR SWITCH FOR POSITIVE DISPLACEMENT PUMP INSTALLATIONS.
 - FOR DUCTILE IRON PIPE 10" AND OVER, USE A DIRECT TAP IN PIPE WALL (1/2" FPT).

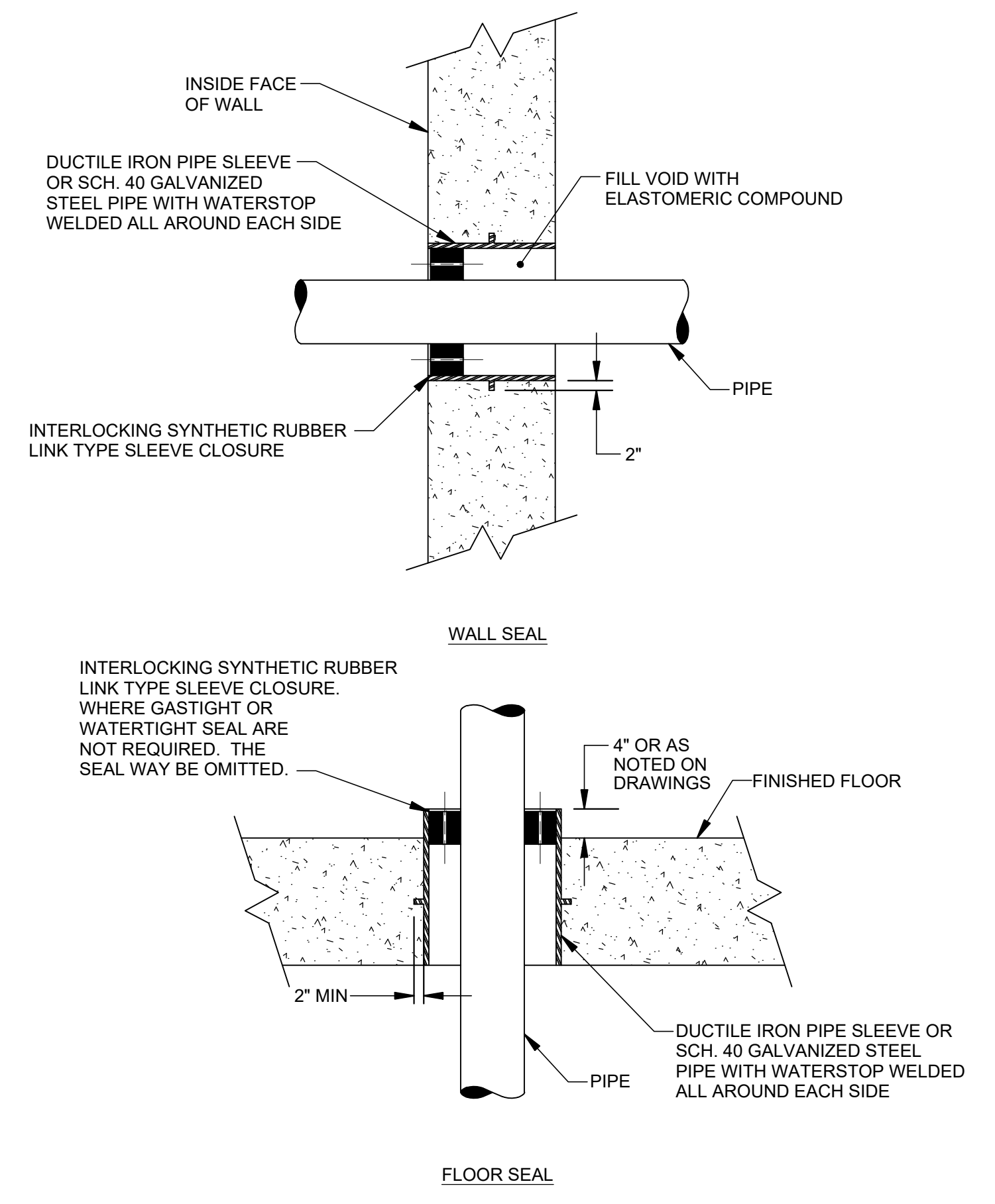
PRESSURE GAUGE MOUNTING DETAILS
NTS

474



WALL PENETRATION SEAL DETAIL
NTS

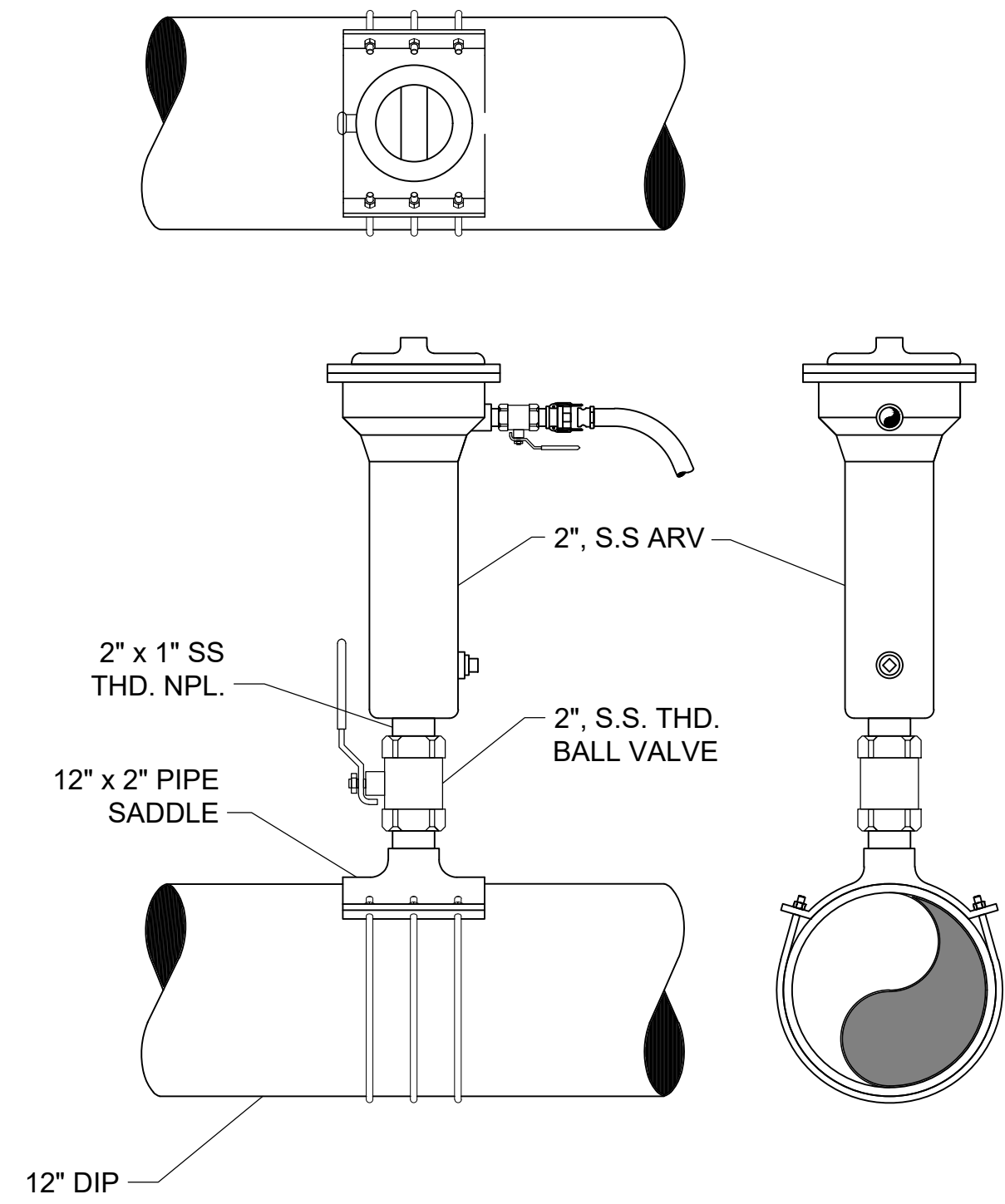
475



LINK TYPE WALL AND FLOOR SLEEVE CLOSURE
NTS

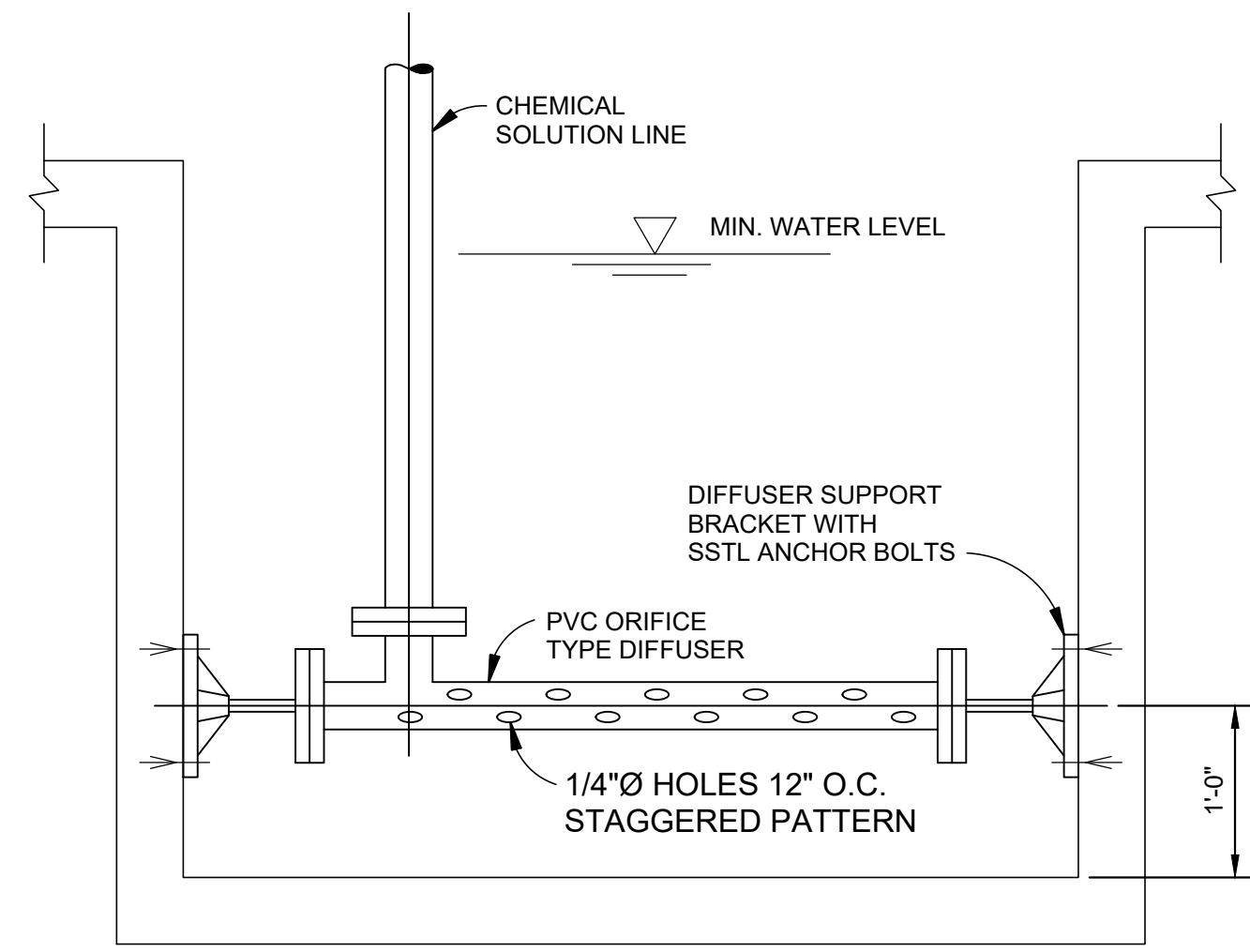
476

ATKINS 1600 RiverEdge Parkway, NW, Suite 700 Atlanta, GA 30328 P: 770-933-0260		HARTWELL ENGINEERING, INC. ENGINEERS & INTEGRATORS STEVENSVILLE, MARYLAND (410) 291-1111	
PROJ. NO.: 100061831	DESIGNED BY: SB	CHECKED BY: NC	APPROVED BY: HIR
	DRAWN BY: SB		DATE: SEPTEMBER 2020
			SCALE: NTS
CITY OF CANTON, GEORGIA WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD			
MECHANICAL STANDARD DETAILS			
SHEET NO. DM-7			



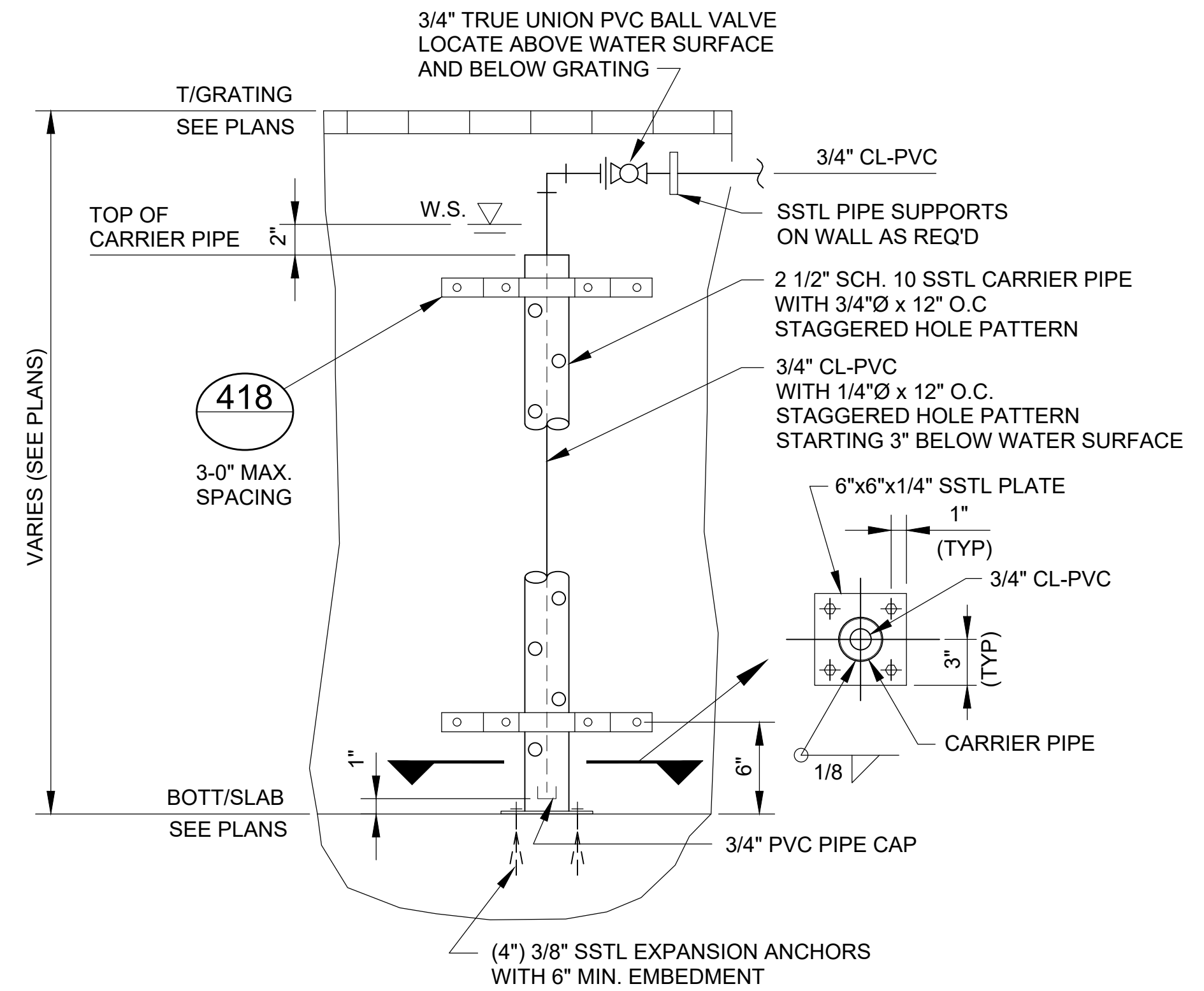
ARV INSTALLATION
NTS

477



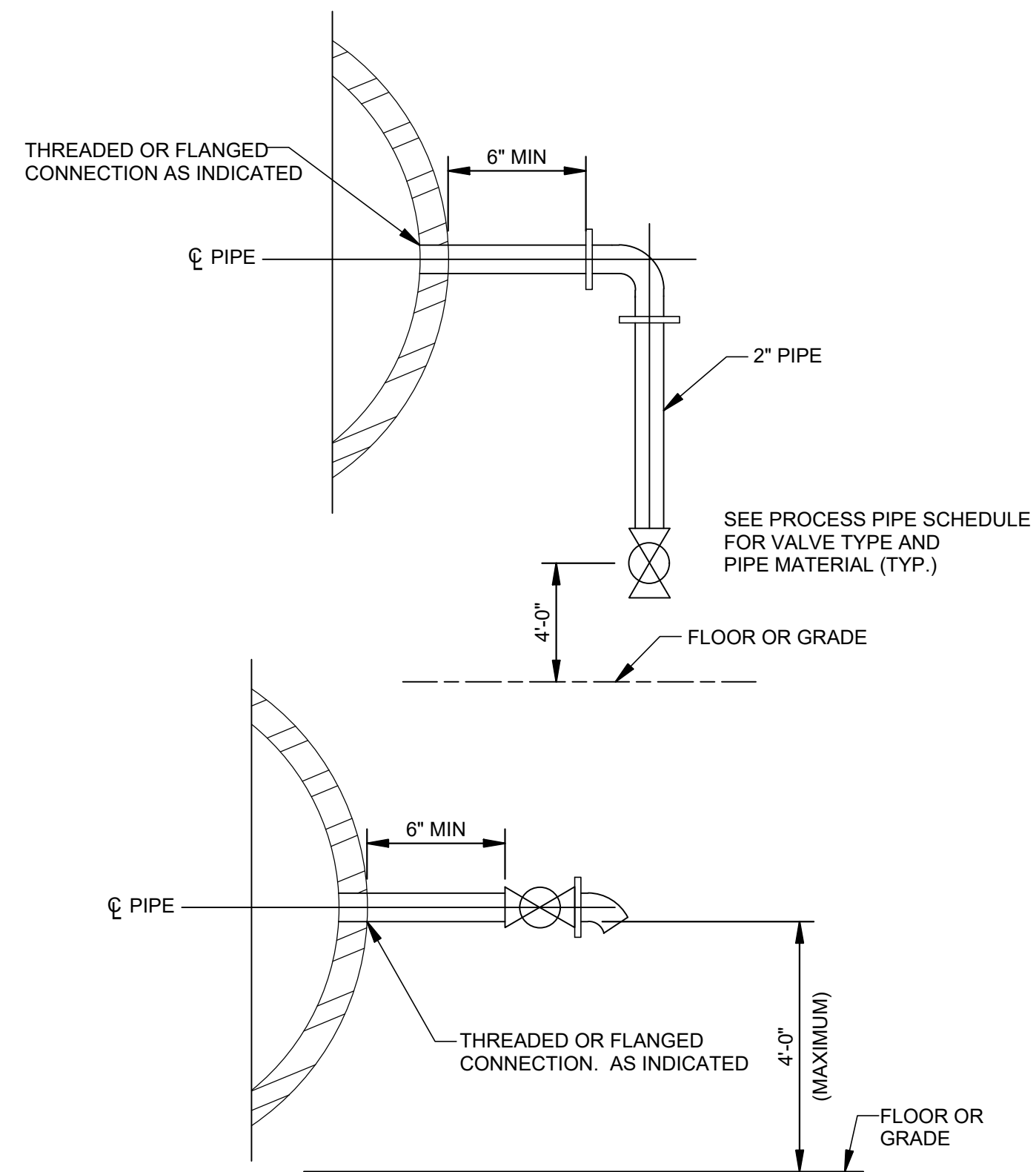
DIFFUSER DETAIL
NTS

479



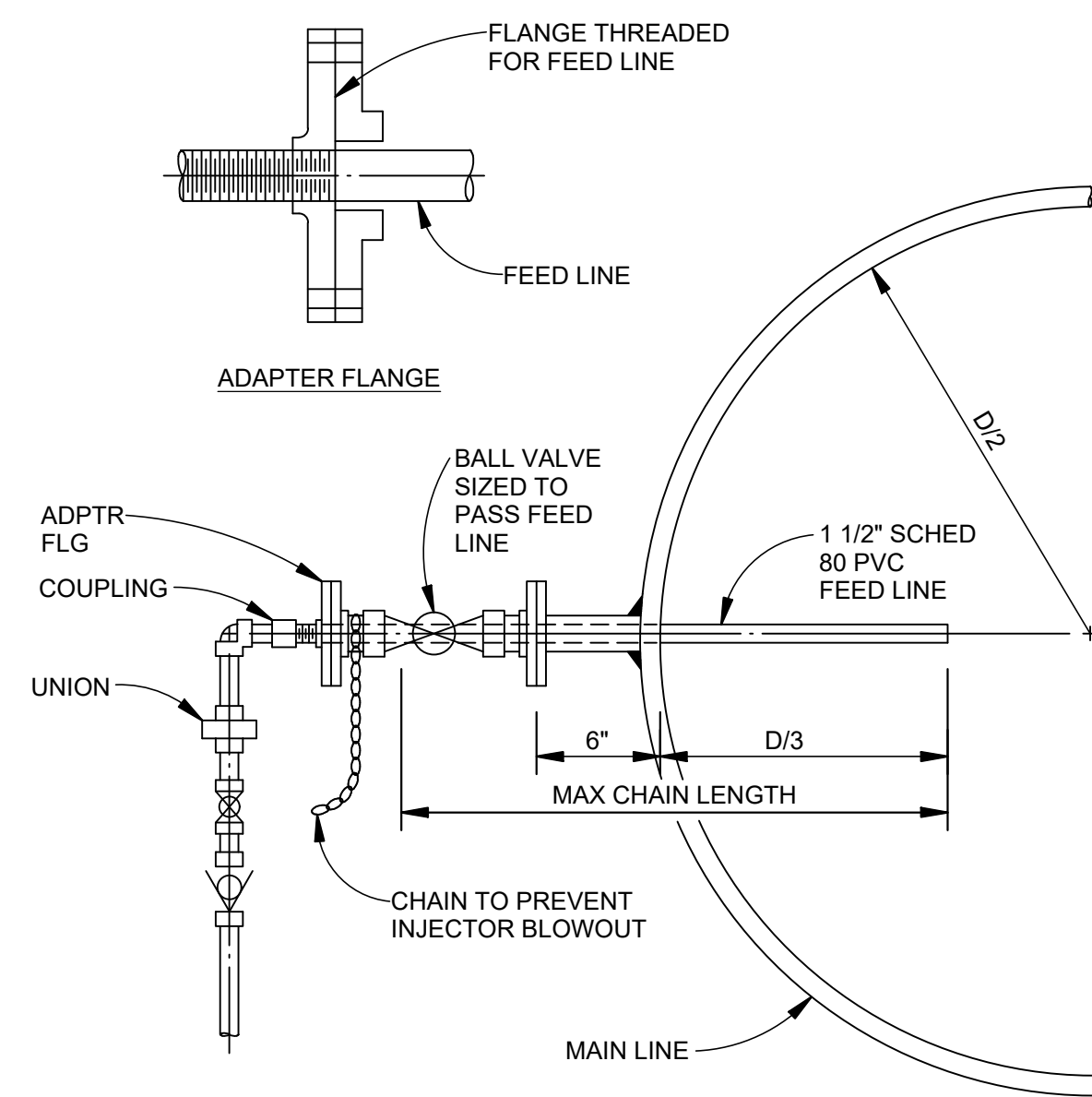
CHEMICAL DIFFUSER
NTS

481



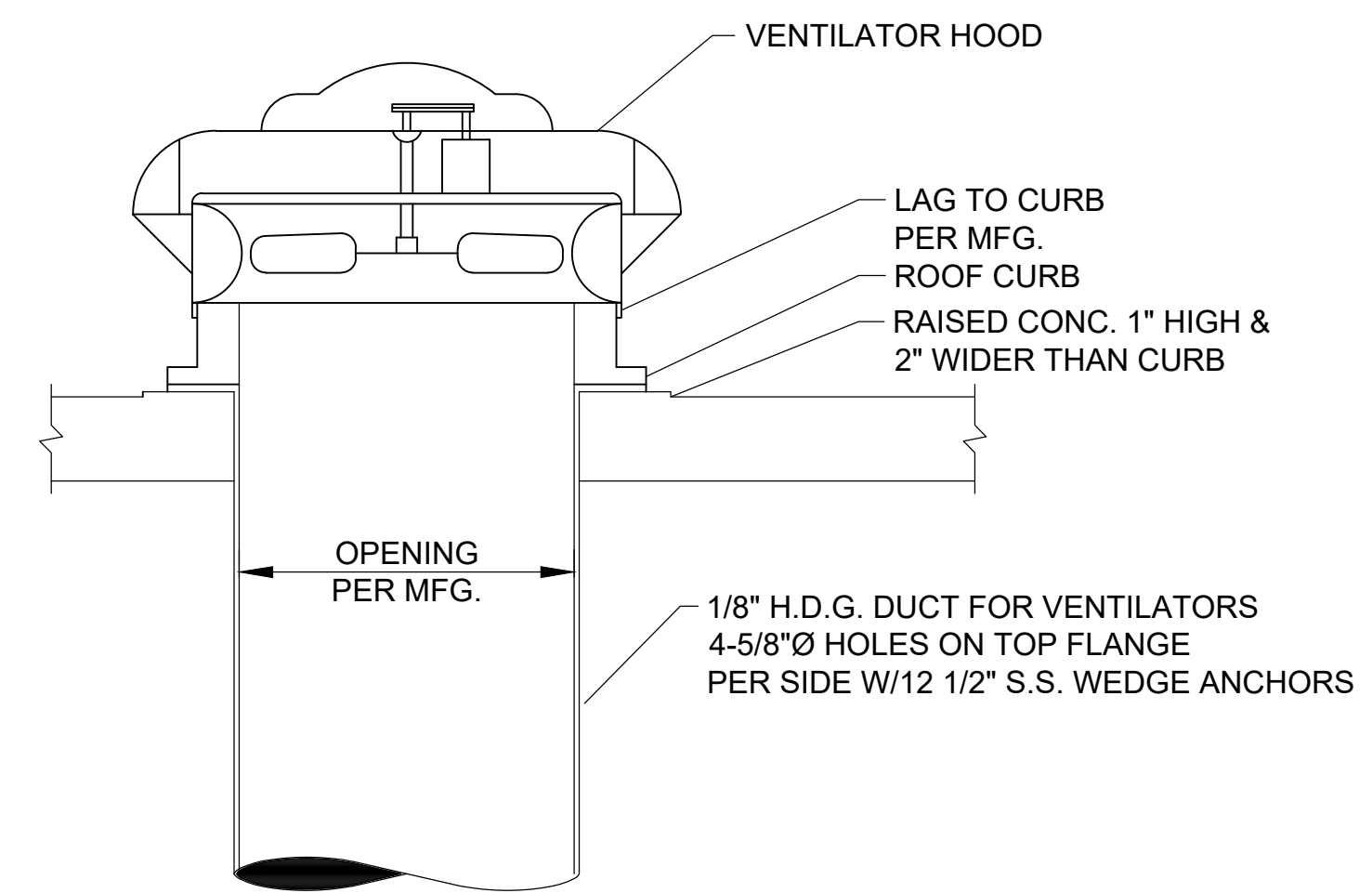
LOCAL SAMPLE CONNECTION
NTS

478



PIPE CHEMICAL DIFFUSER FOR 10" AND LARGER PIPE
NTS

480



NOTES:

- SUPPLY VENTILATOR SHALL BE PENN. ACME, TWIN CITY OR APPROVED EQUAL DESIGNED FOR 0.25" W.C.
- PROVIDE MOUNTING CURB, BIRD SCREEN, AND EXPLOSION-PROOF MOTOR.
- ALL ASSOCIATED DUCTING SHALL BE FRP, W/ SS HARDWARE.

TYPICAL VENTILATOR
NTS

482



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HARTWELL ENGINEERING, INC.
ENGINEERS & ARCHITECTS
STEVENSVILLE, MARYLAND
(410) 242-5111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	SB	SB	NC	HIR	SEPTEMBER 2020	NTS
REVISION	DATE					

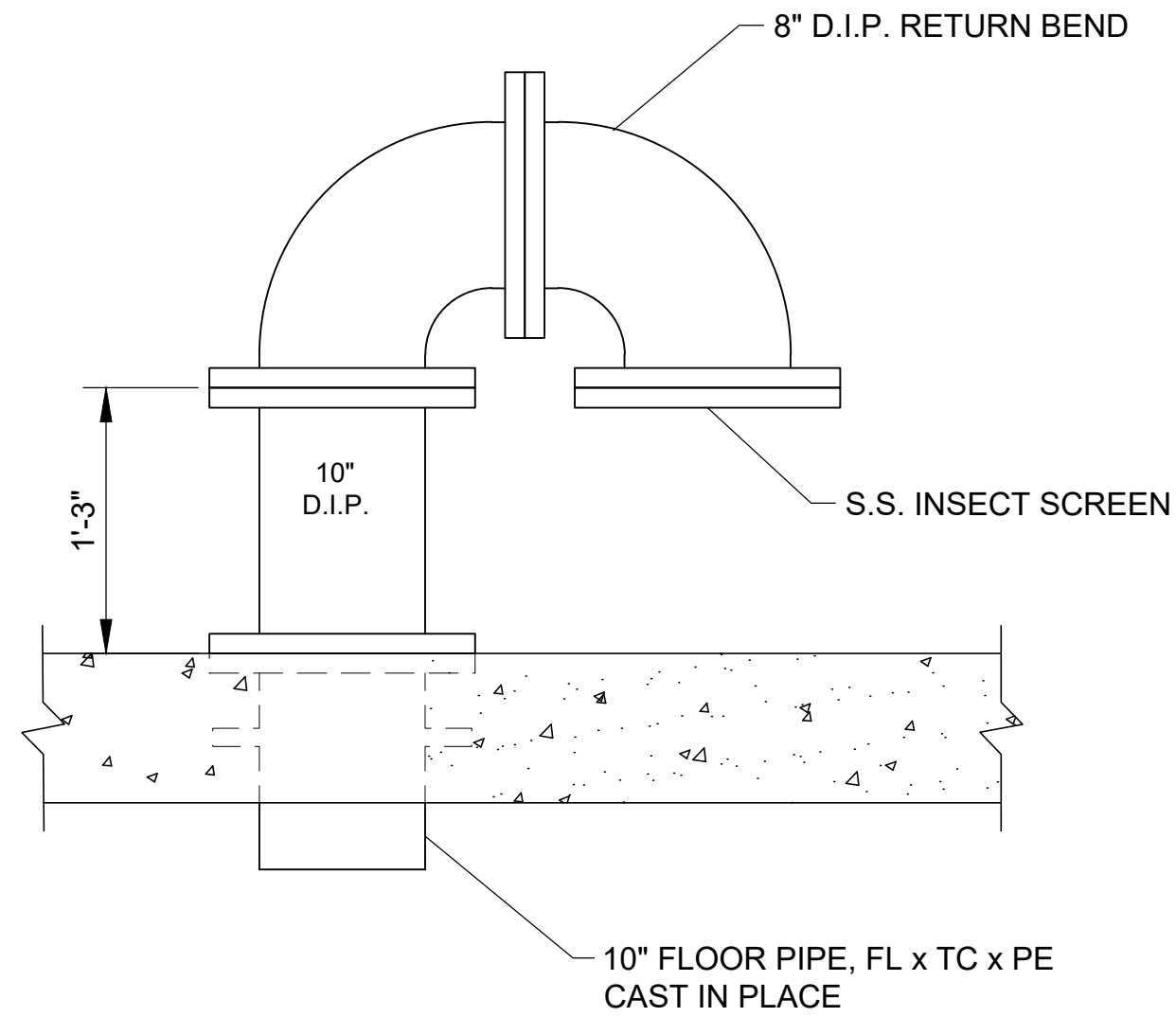
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MECHANICAL STANDARD DETAILS

SHEET NO.
DM-8

NOTES:

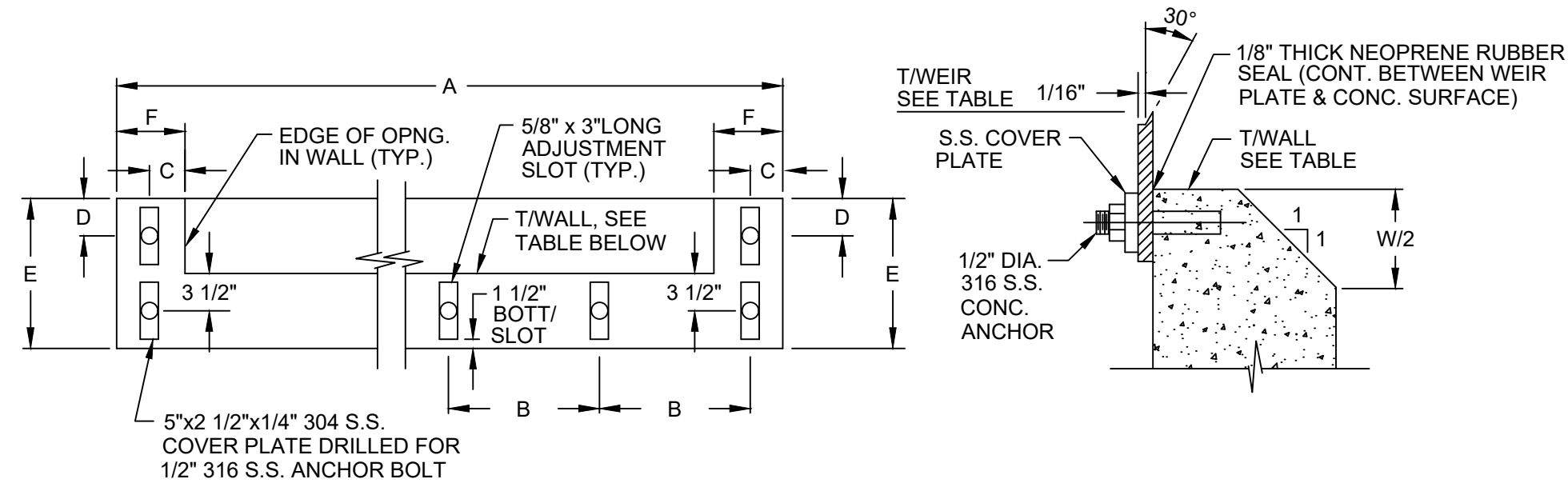
- SUPPLY FOR CHEMICAL SERVICE TANK VENTS, USE POLYESTER INSECT SCREEN.
- AIRVENT MATERIAL OF CONSTRUCTION TO BE THE SAME AS ASSOCIATED SERVICE.



TYPICAL EXHAUST VENT

NTS

483



WEIR LOCATION	QTY.	DIMENSIONS						TOP OF WALL EL.	TOP OF WEIR EL.
		A	B	C	D	E	F		
BNR BASIN 1-3 EFFLUENT	18	4'-9"	12"	2"	2"	12"	4.5"	880.30	880.65
BNR BASIN 4 EFFLUENT	1	26'-9"	12"	2"	2"	12"	4.5"	880.30	880.65
RAS SPLITTER BOX	4	6'-9"	12"	2"	2"	12"	4.5"	896.65	897.00
POST AERATION UVPA DROP BOX	2	14'-9"	12"	2"	2"	12"	4.5"	873.40	873.65

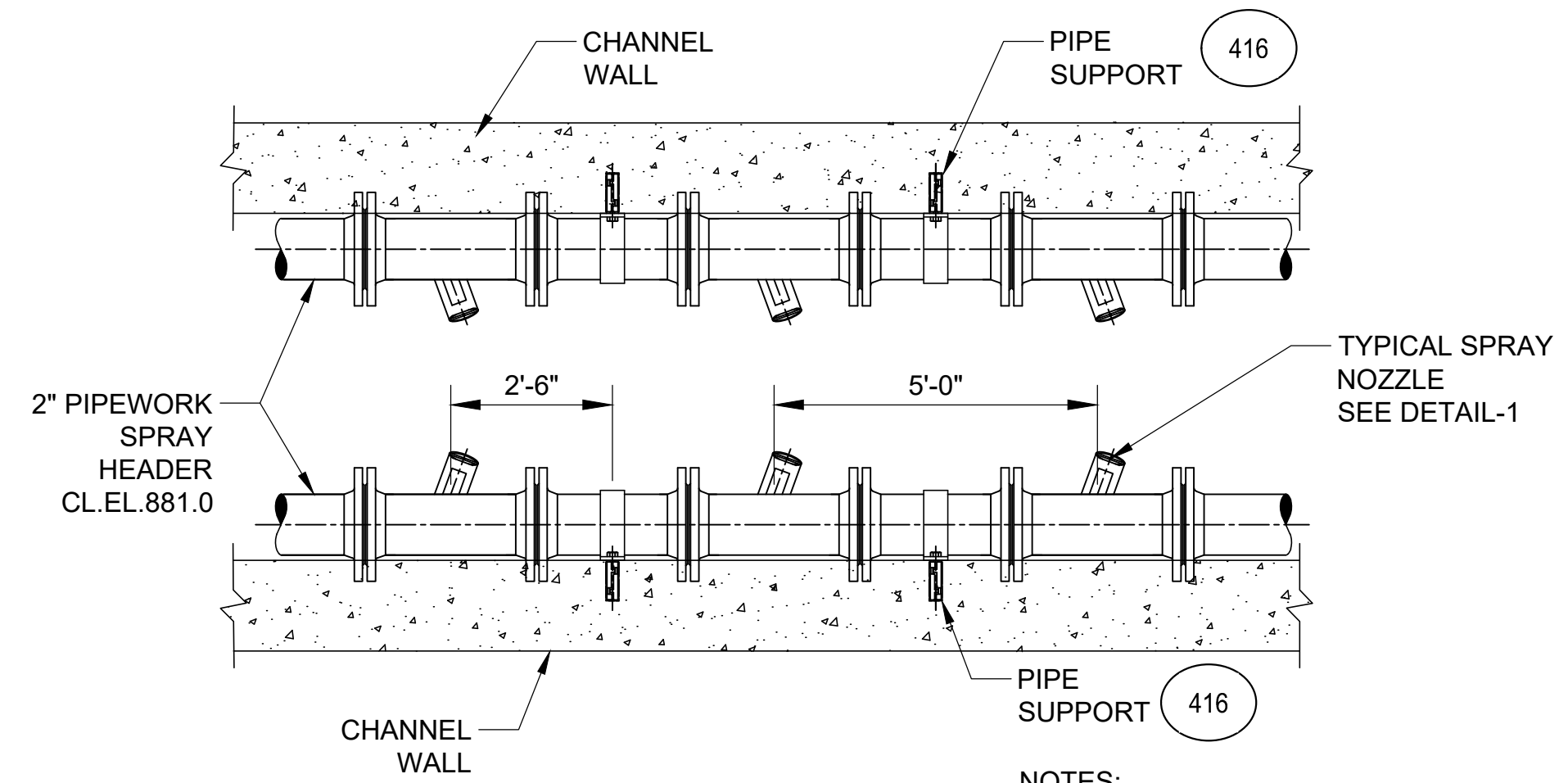
NOTES:

- WEIR PLATES TO BE 1/4" THICK 304 S.S.

FIXED WEIR PLATE

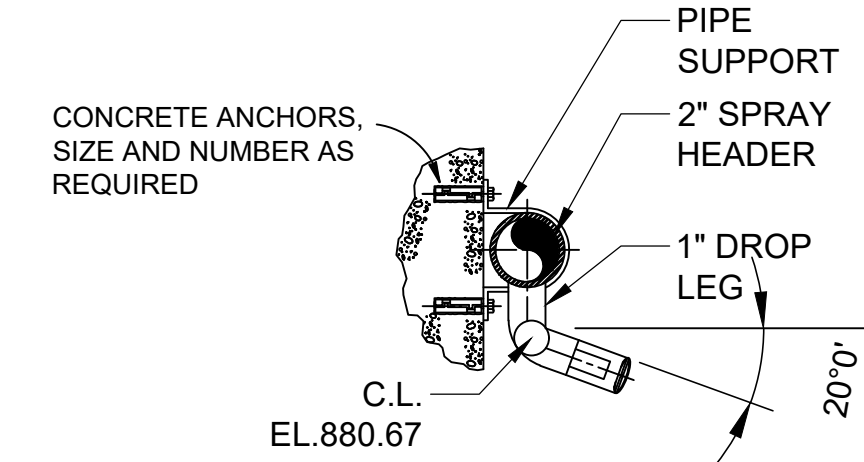
NTS

484



NOTES:

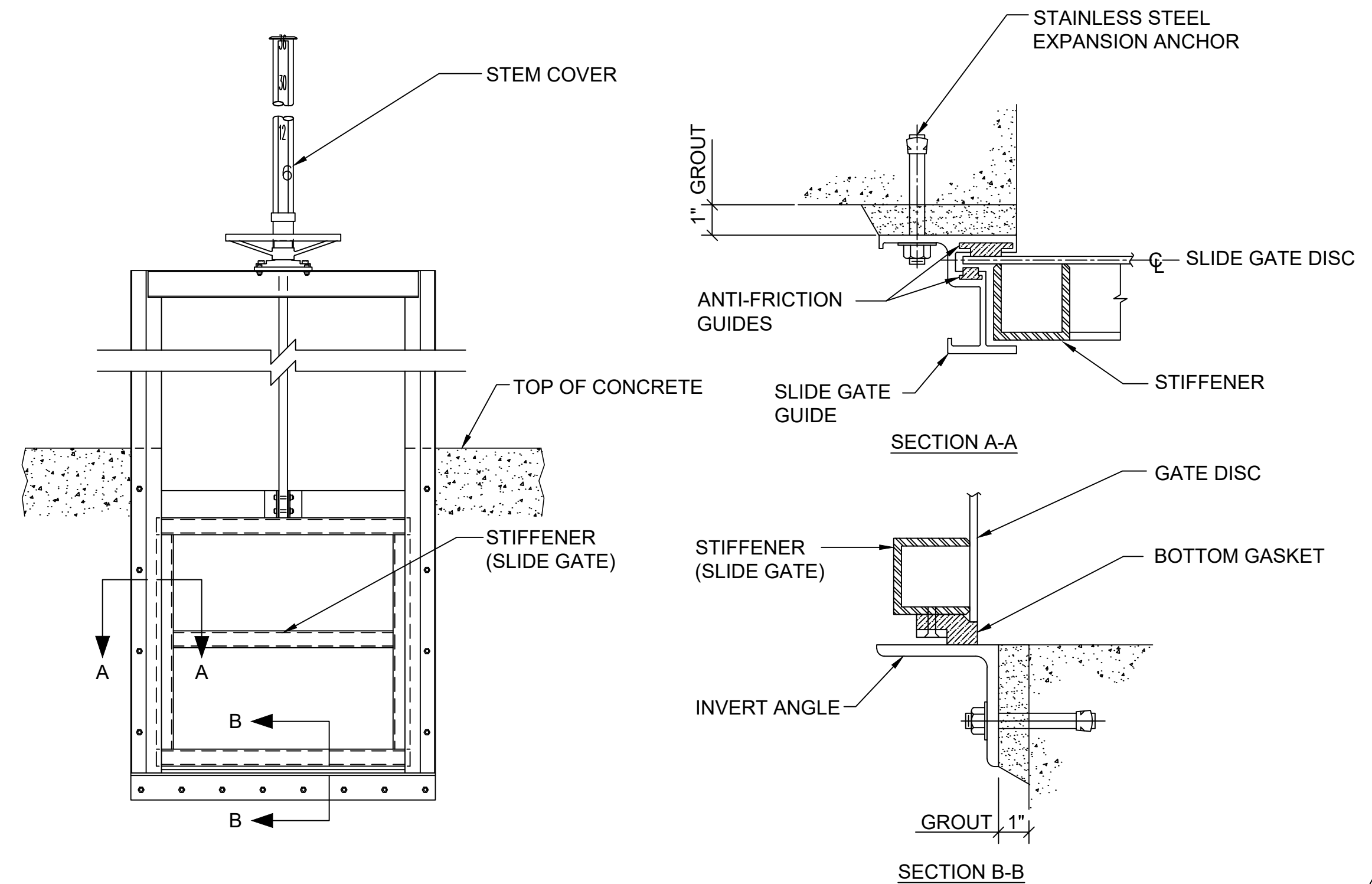
- HEAT TRACE AND INSULATE 2" SPRAY HEADER.



DETAIL 1

NTS

486



SELF CONTAINED / FACE MOUNTED SLUICE/SLIDE GATE DETAIL

NTS

490



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Atlanta, GA 30328
P: 770-933-0260

HARTWELL ENGINEERING, INC.
REGISTERED PROFESSIONAL ENGINEERS & SURVEYORS
STEVENSVILLE, MARYLAND
(410) 284-2111

DATE	REVISION

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

DESIGNED BY: SB
DRAWN BY: SB
CHECKED BY: NC
APPROVED BY: HIR
DATE: SEPTEMBER 2020
SCALE: NTS

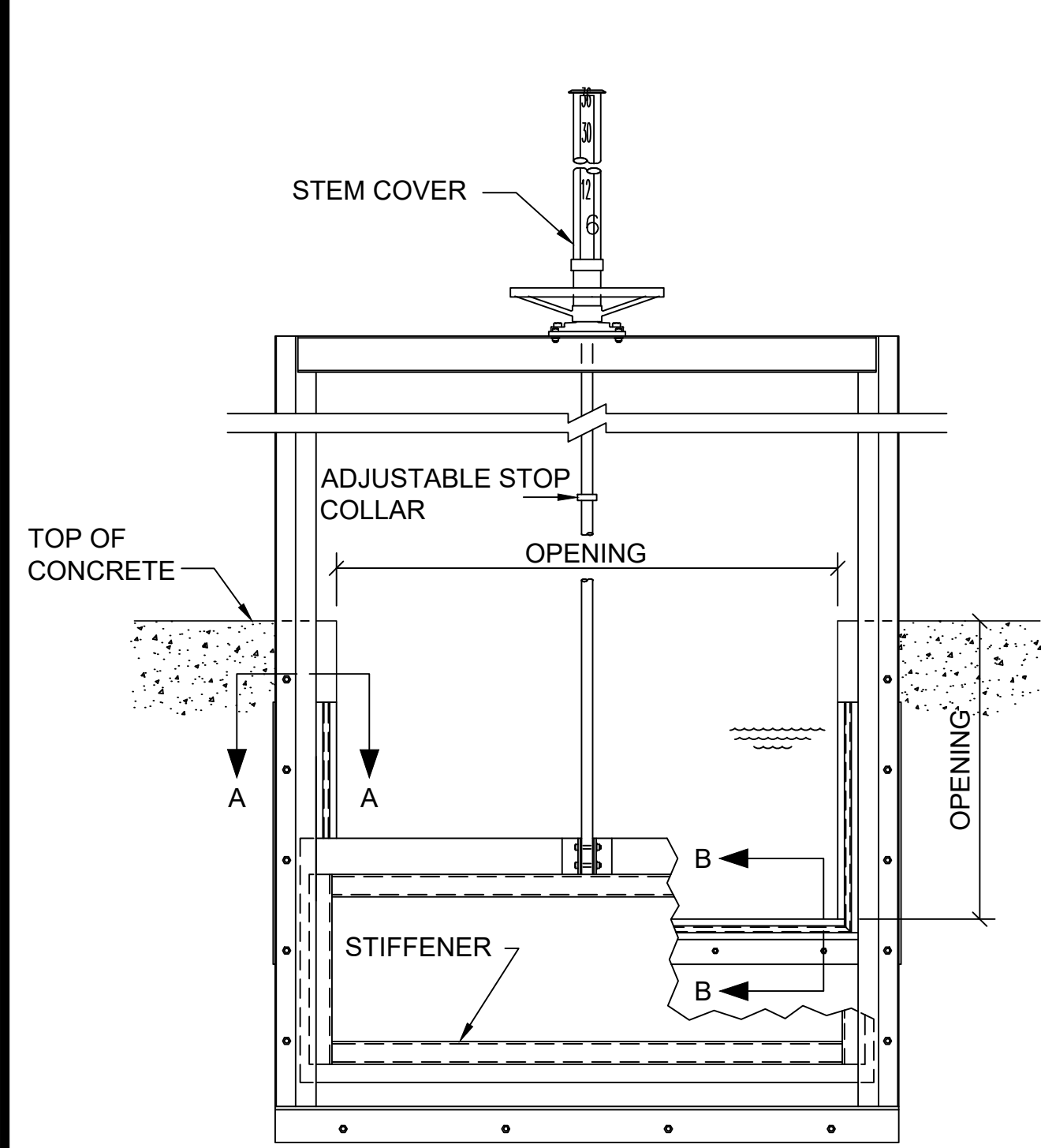
PROJ. NO.: 100061831
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
MECHANICAL STANDARD DETAILS

DM-09.DWG/Tab: DM-9/Plotted: September 25, 2020 2:56pm
File Name: C:\PW_WORK\ATKNA001\NEW\7492\DM555917\4006.09

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

DESIGNED BY: SB
DRAWN BY: SB
CHECKED BY: NC
APPROVED BY: HIR
DATE: SEPTEMBER 2020
SCALE: NTS

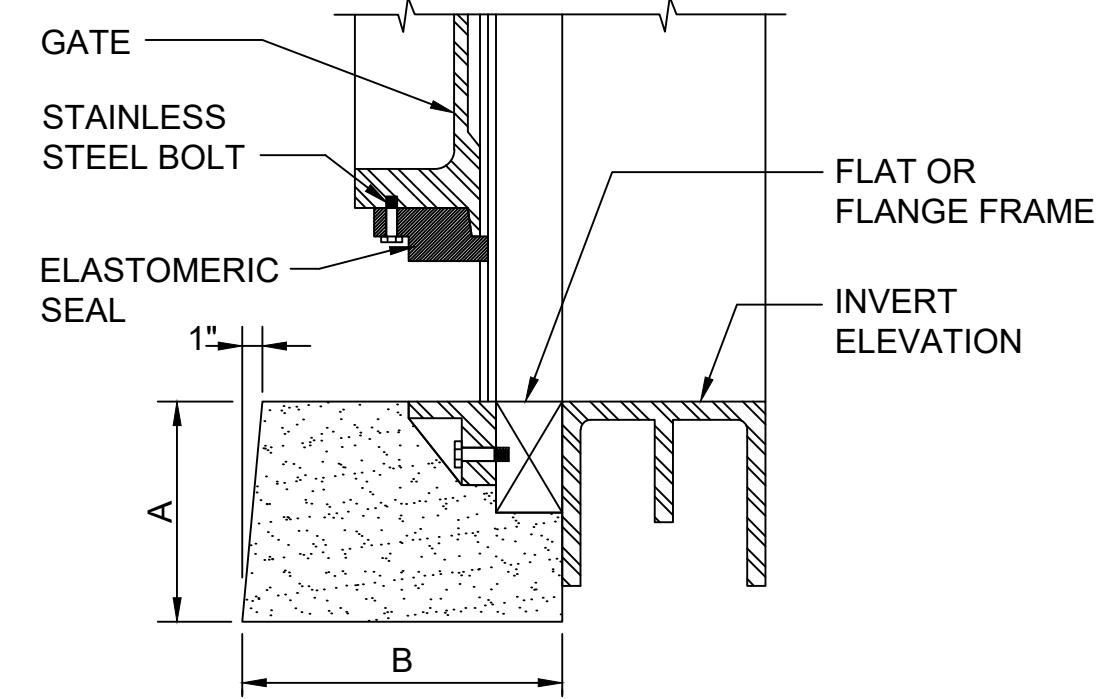
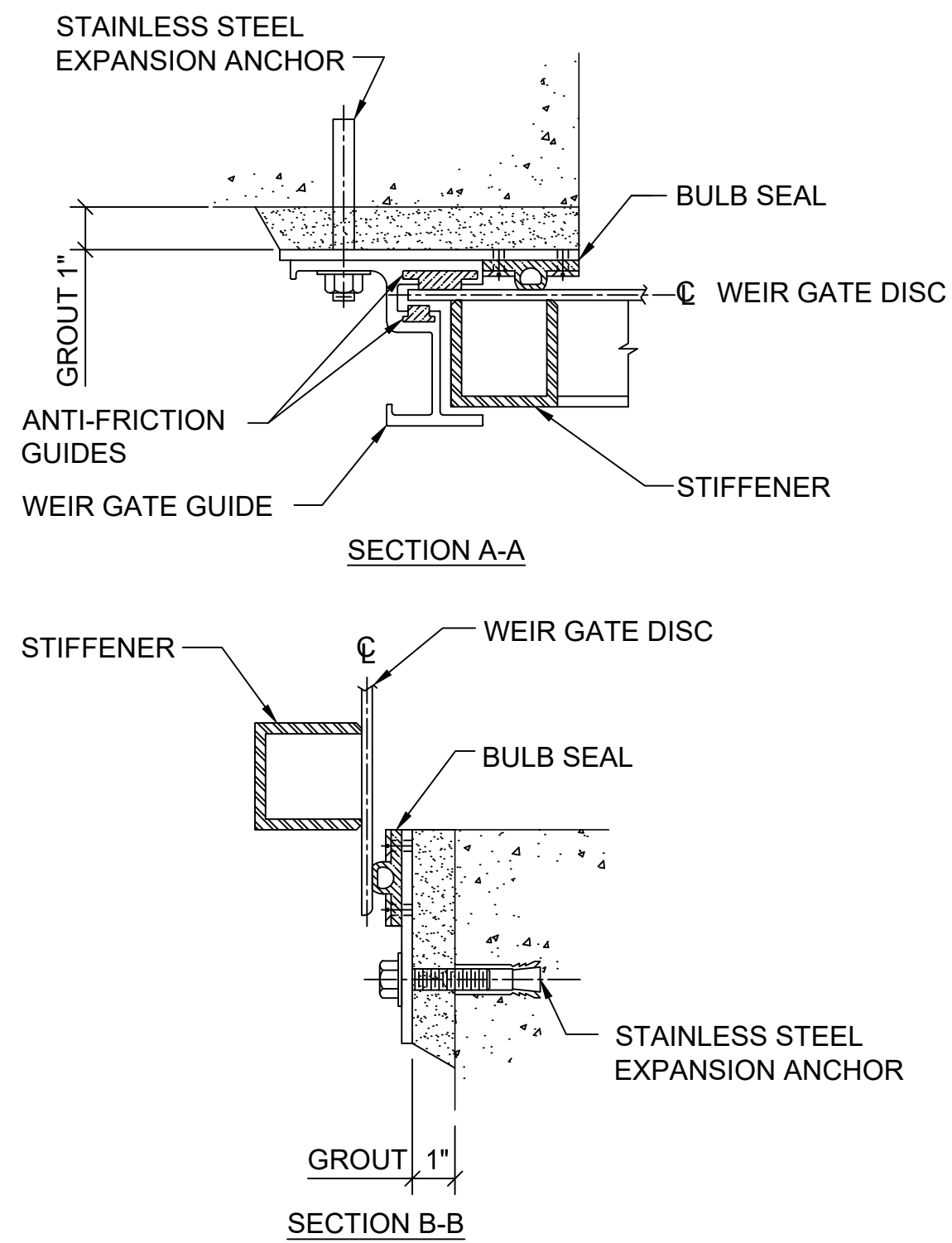
SHEET NO.
DM-9



SELF CONTAINED / FACE MOUNTED WEIR GATE DETAIL

NTS

491



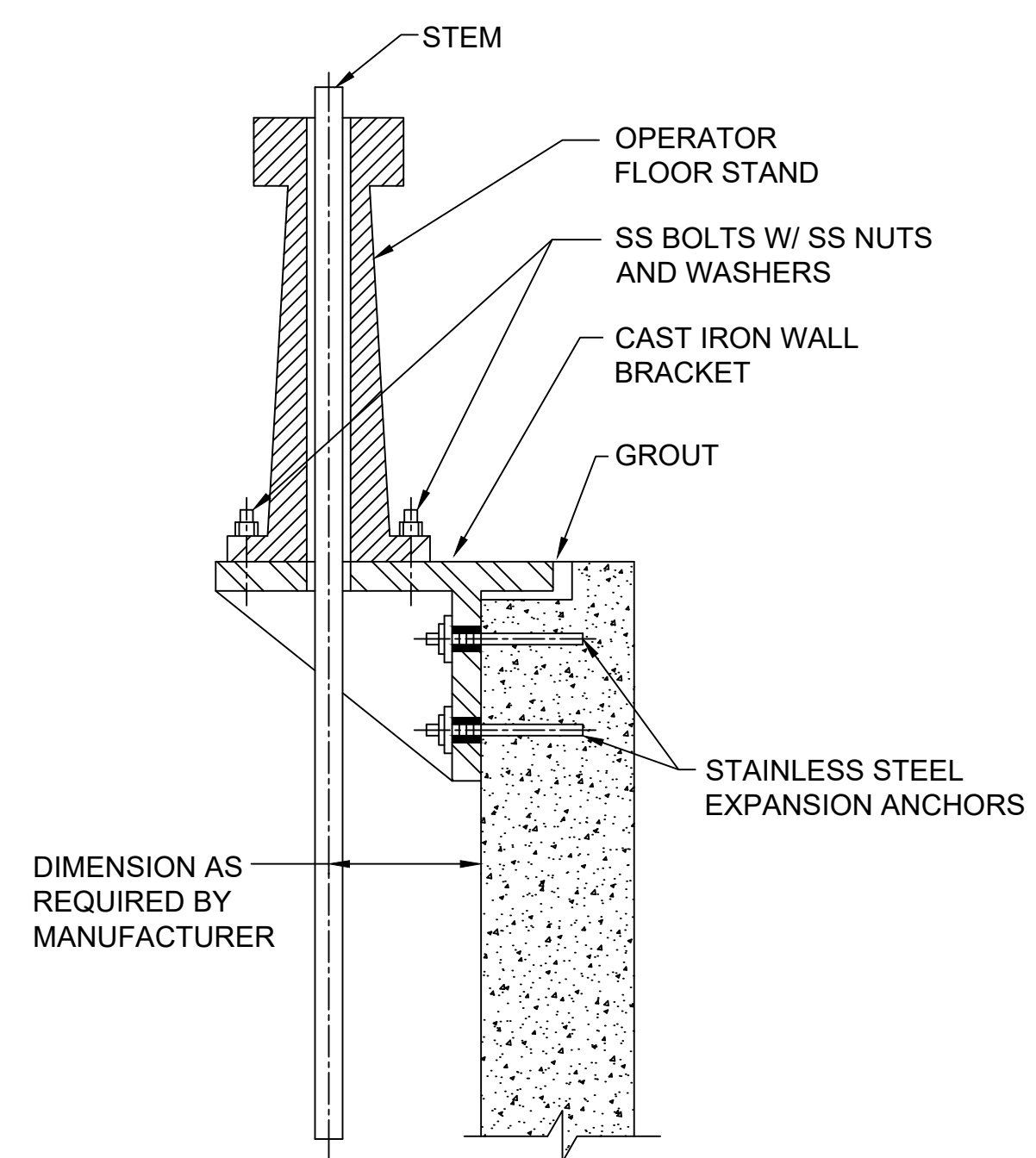
LARGEST DIMENSION EITHER WIDTH OR HEIGHT	MINIMUM BLOCKOUT	
	A	B
6" THRU 24"	11"	16"
30" THRU 42"	15"	20"
48" THRU 72"	17"	23"

NOTES:
GATE SHOWN IS IN THE RAISED POSITION.
FILL WITH GROUT AFTER GATE INSTALLATION.

FLUSH BOTTOM SLIDE GATE BLOCKOUT

NTS

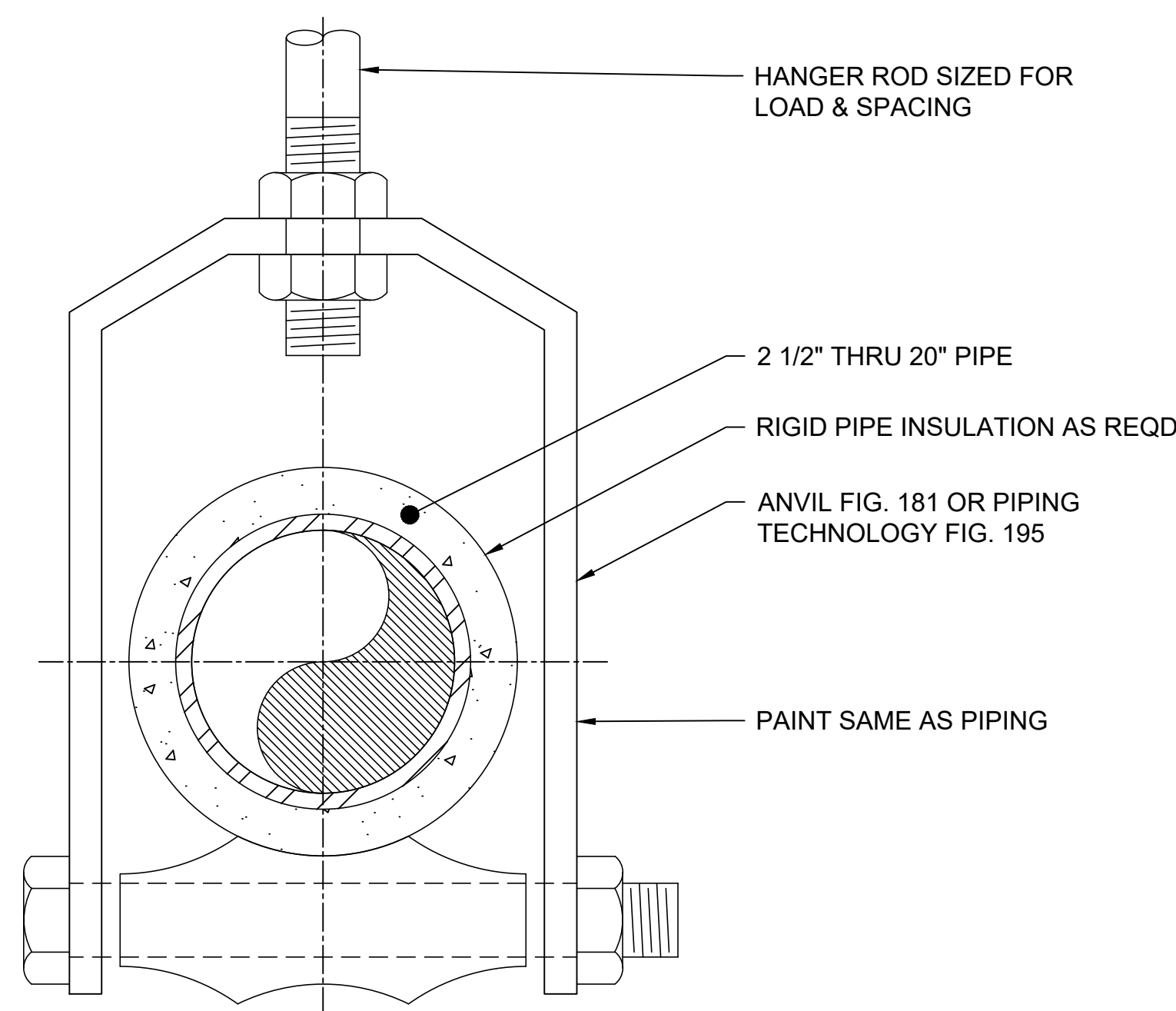
492



OPERATOR STAND SUPPORT DETAIL

NTS

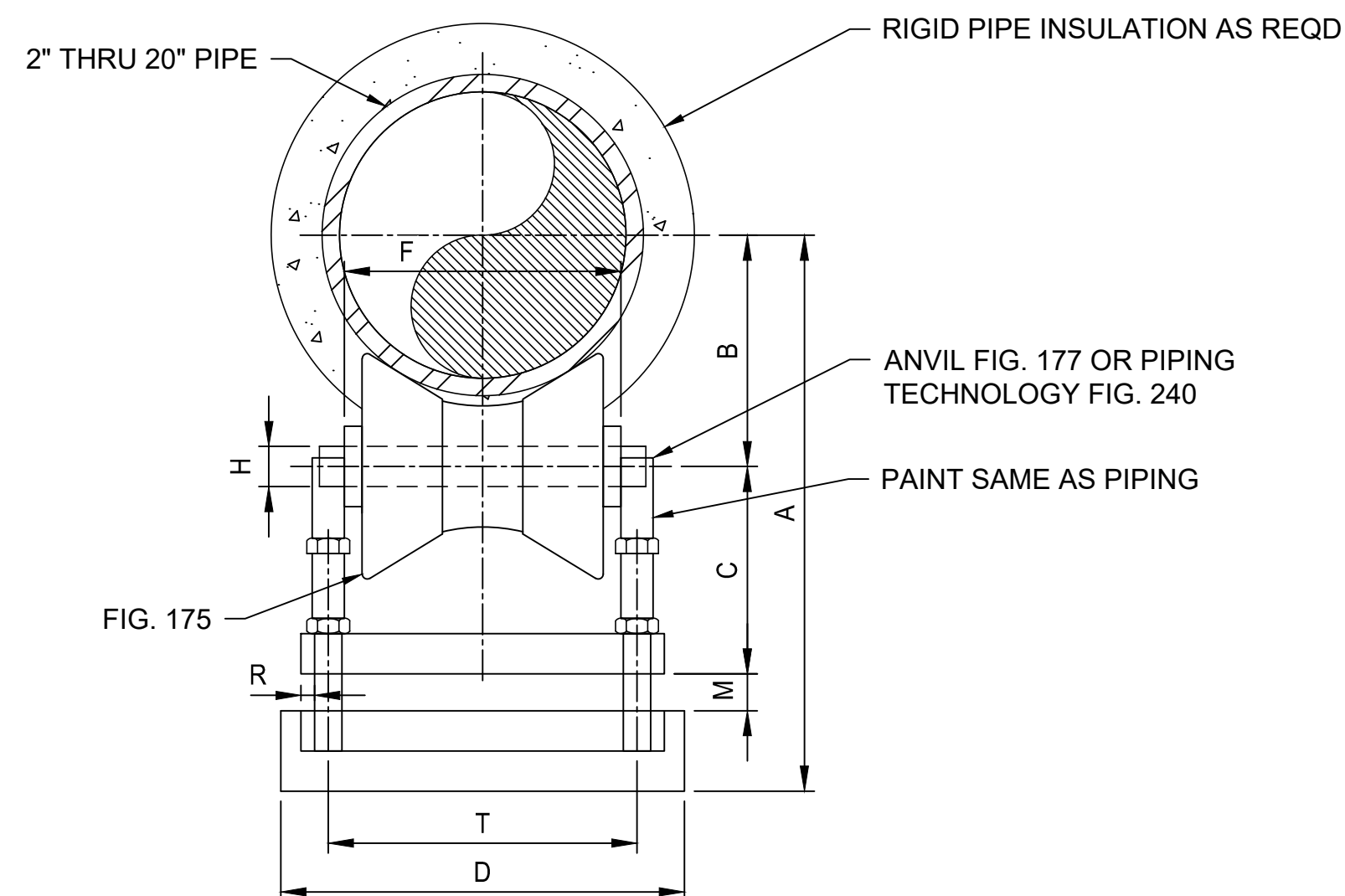
493



PIPE HANGER - HANGER WITH ROLLER CHAIR

NTS

494



PIPE SIZE	A		B	C	D	D1	E	F	G	H	J	J1	K	L	M	N	P	R	S	T	U
	MIN.	MAX.																			
2"	5 1/8"	5 3/8"	1 3/4"	1 3/4"	6 7/8"	8 3/8"	5 1/2"	2 3/4"	1 7/8"	1/2"	3 7/8"	6 3/8"	1"	11/16"	7/8"	1"	1/4"	1"	5/8"	3 7/16"	4"
2 1/2"	5 3/8"	5 5/8"	2 1/8"																		
3"	5 3/4"	6"	2 3/8"																		
3 1/2"	6"	6 1/4"	2 5/8"																		
4"	6 1/2"	7"	2 3/4"	2 1/16"	8 1/8"	9 7/8"	5 3/4"	3 3/4"	2 1/16"	1/2"	5 1/8"	2 1/16"	1"	7/8"	1 1/8"	1"	1/4"	1"	5/8"	4 11/16"	4 1/4"
5"	7"	7 1/2"	3 3/8"																		
6"	7 5/8"	8 1/8"	4"																		
8"	10 3/8"	11 5/8"	5 1/4"	3 7/16"	10 5/8"	-	6 3/4"	6"	3 1/4"	3/4"	7 3/8"	-	1"	7/8"	1 3/4"	1 1/8"	3/8"	1"	3/4"	7"	5"
10"	11 1/2"	12 3/4"	6 3/8"																		
12"	13"	14 1/4"	7 1/2"	3 7/8"	13"	-	8"	8"	4"	7/8"	9 1/2"	-	1"	7/8"	1 3/4"	1 1/8"	3/8"	1"	7/8"	9 1/16"	6"
14"	13 5/8"	14 7/8"	8 1/8"																		
16"	15 1/4"	16 5/8"	9 3/8"	4 1/4"	14 5/8"	-	8 5/8"	9"	4 1/2"	1 1/4"	11 1/8"	-	1"	1"	1 7/8"	1 1/4"	5/8"	1 3/16"	1"	10 1/4"	6 1/2"
18"	16 3/8"	17 3/4"	10 3/8"																		
20"	17 3/8"	18 3/4"	11 3/8"	4 1/4"	14 5/8"	-	8 5/8"	9"	4 1/2"	1 3/8"	11 1/8"	-	1"	1"	1 7/8"	1 1/4"	5/8"	1 3/16"	1"	10 1/4"	6 1/2"
24"	19 5/8"	21"	13 3/8"	4 3/8"	15 3/4"	-	8 5/8"	10"	4 7/16"	1 3/8"	12 1/4"	-	1"	1 7/8"	1 7/8"	1 3/8"	5/8"	1 3/16"	1"	11 3/8"	6 1/2"
30"	24"	26 3/4"	16 3/4"	5 1/8"	19 1/4"	-	10 1/2"	12 1/2"	5 1/2"	1 3/4"	15 3/4"	-	1"	1 1/2"	3 1/4"	1 5/8"	3/4"	1 3/8"	1 1/4"	14 1/4"	8"

PIPE SUPPORT - ADJUSTABLE ROLLER STAND

NTS

495

SIZE (in.)	MAX. RECOM. LOAD (lb.)	APPROX. WEIGHT (lb. PER 100)
2 - 3 1/2	390	1525
4 - 6	950	1930
8 - 10	2100	3205
12 - 14	3075	5115
16 - 20	4980	7130
24	6100	8700
30	7500	16615

MATERIAL:

CAST IRON BASE PLATE, STAND AND ROLL, STEEL ADJUSTING SCREWS.

ATKINS

 1600 RiverEdge Parkway, N.W., Suite 700

 Atlanta, GA 30328

 P: 770-933-0260

HARTWELL ENGINEERING, INC.

 ENGINEERS • INTEGRATORS

 STEVENSON, MARYLAND

 (410) 246-1111

PROJ. NO.:	DESIGNED BY:	DATE:
100061831	SB	
	SB	
	NC	
	HIR	
	SEPTEMBER 2020	
	SCALE: NTS	

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 MECHANICAL STANDARD DETAILS

SHEET NO.
DM-10



ATKINS
 1600 RiverEdge Parkway, N.W., Suite 700
 Atlanta, GA 30328
 P: 770-933-0280

HARTWELL ENGINEERING, INC.
 ENGINEERS & INTEGRATORS
 STEVENSON, MARYLAND
 (410) 284-5111

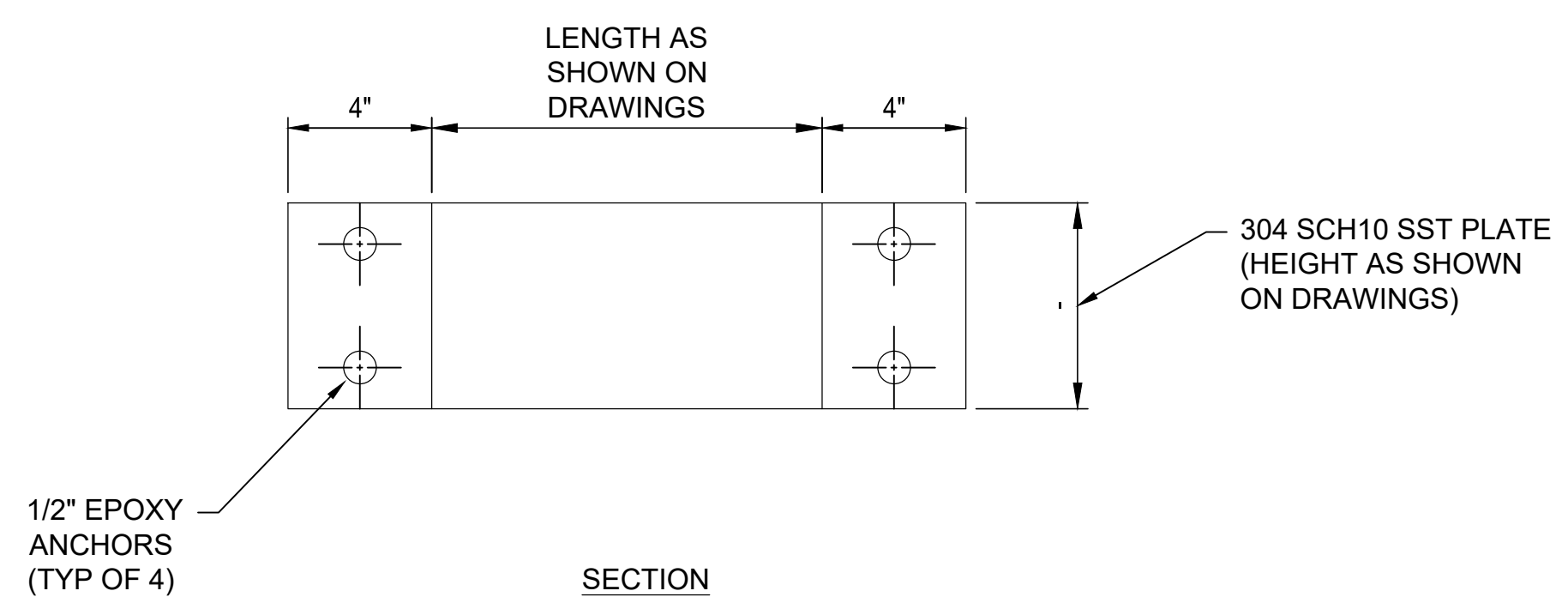
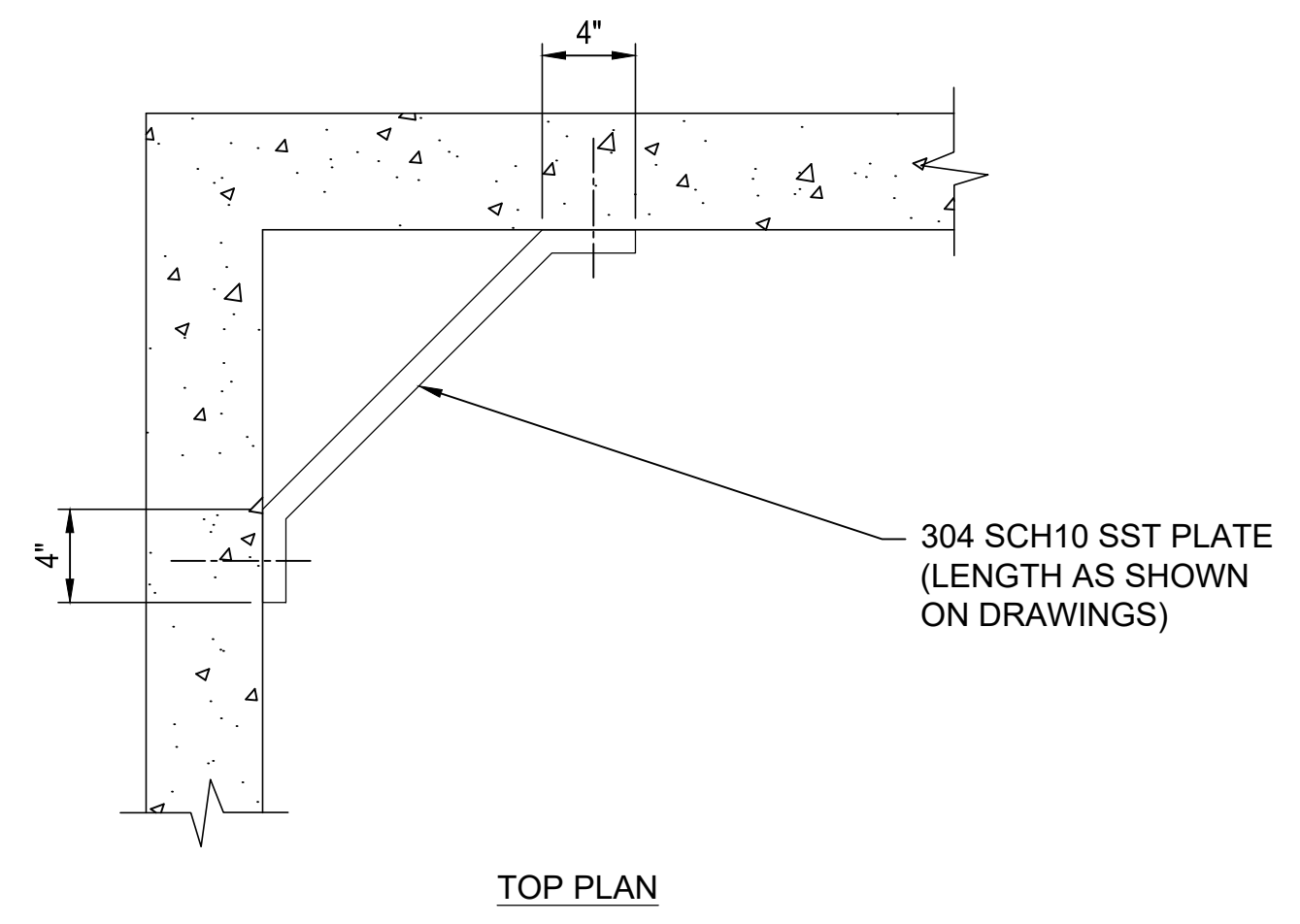
PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	SB	SB	NC	HIR	SEPTEMBER 2020	NTS

REVISION	DATE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
MECHANICAL STANDARD DETAILS

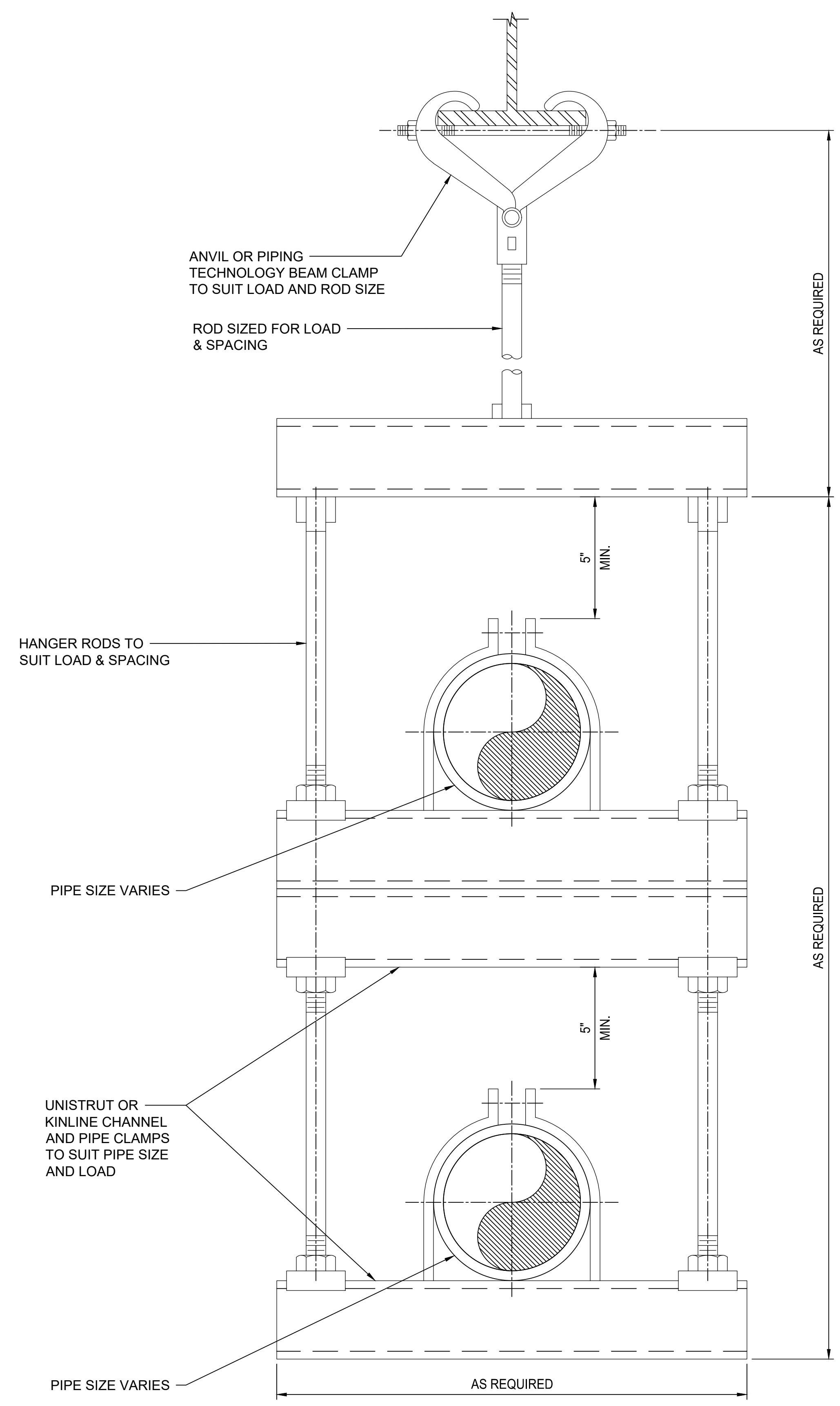
SHEET NO.
DM-11

File Name: C:\PW_WORK\ATKINACA01\NEW\7492\DM555917\4006.11 - DM-11.DWG|Tab:DM-11|Plotted: September 25, 2020 2:56pm



BAFFLE PLATES
 NTS

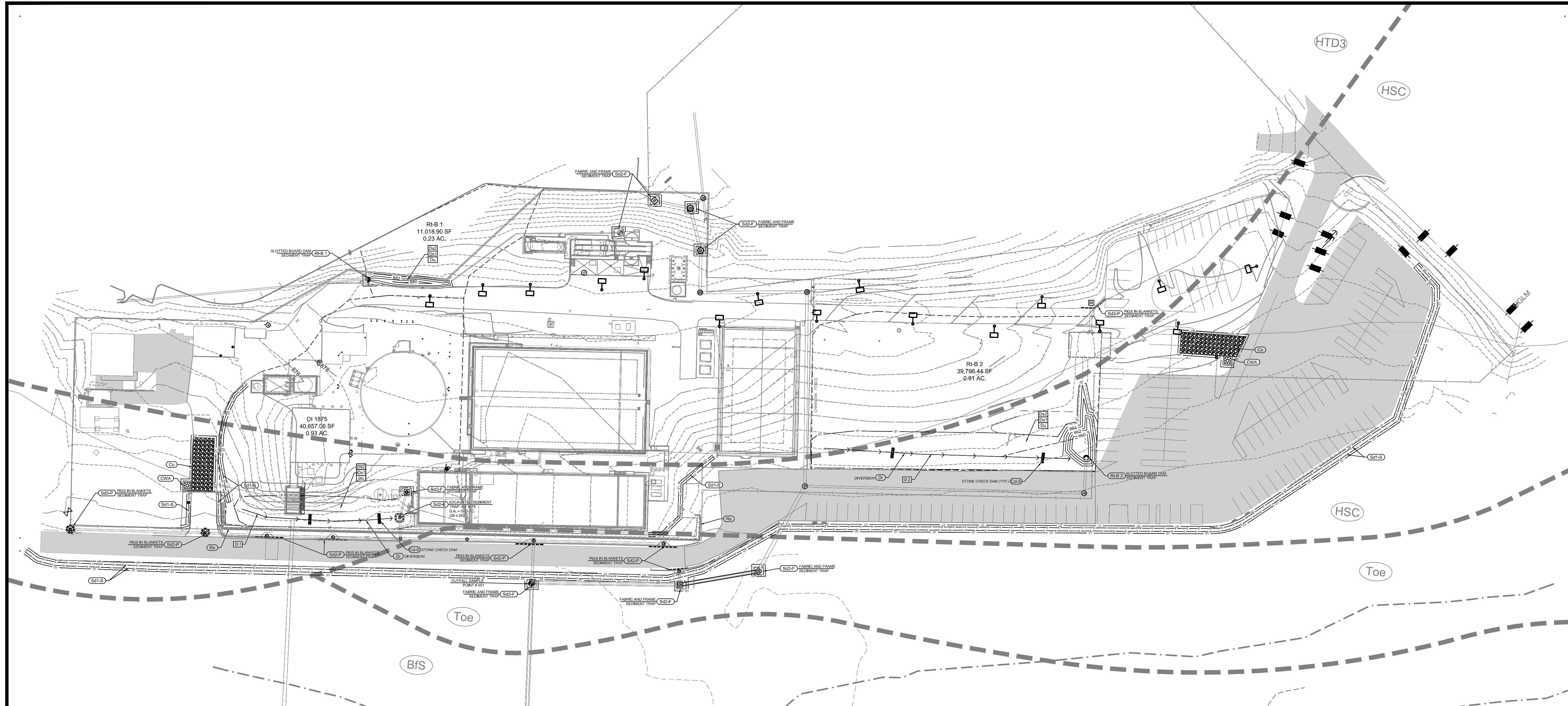
496



NOTES:
 TOTAL LOADING OF EACH BEAM CLAMP SHALL NOT EXCEED MFR'S RECOMMENDED LOADINGS.

STACKED TRAPEZE PIPE HANGER WITH BEAM CLAMP
 NTS

497



ATKINS
 1600 RiverEdge Parkway, NW, Suite 700
 Atlanta, GA 30328
 P: 770-933-0260

HARTWELL ENGINEERING, INC.
 ENGINEERS & SURVEYORS
 STEVENSONVILLE, MARYLAND
 (410) 296-5111

PROJ. NO. :	100061831
DESIGNED BY :	KRJ
DRAWN BY :	KRJ
CHECKED BY :	MFM
APPROVED BY :	GK
DATE :	SEPTEMBER 2020
SCALE :	NO SCALE

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 EROSION AND SEDIMENT CONTROL
 PLAN - INITIAL PHASE

SHEET NO.
EC-01

EROSION & SEDIMENT CONTROL PLAN LEGEND	
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING / VEGETATION)
Ss	SLOPE STABILIZATION
Du	DUST CONTROL ON DISTURBED AREAS
Re	RETAINING WALL
Di	DIVERSION
Cd-S	STONE CHECK DAM
Co	CONSTRUCTION EXIT
St	OUTLET PROTECTION
CWA	CONCRETE WASHDOWN AREA
Sd1-S	SEDIMENT BARRIER - SILT FENCE ("TYPE-C")
Sd2-E	INLET SEDIMENT TRAP - EXCAVATED
Sd2-F	INLET SEDIMENT TRAP - FILTER AND FRAME
Sd2-P	INLET SEDIMENT TRAP - CURB INLET FILTER ("PIGS-IN-A-BLANKET")
Rt-B	INLET SEDIMENT TRAP - SLOTTED BOARD DAM
LD	LIMITS OF DISTURBANCE
---	SOIL SERIES DELINEATION BOUNDARY
- - -	DRAINAGE AREA DIVIDE
●	SAMPLE POINT

ES&PC PLAN - INITIAL PHASE
 SCALE: 1"=50'

ESTIMATED EARTHWORK QUANTITIES:
 EXCAVATION (CUT) = 9,678 CU. YD.
 EMBANKMENT (FILL) = 5,575 CU. YD.

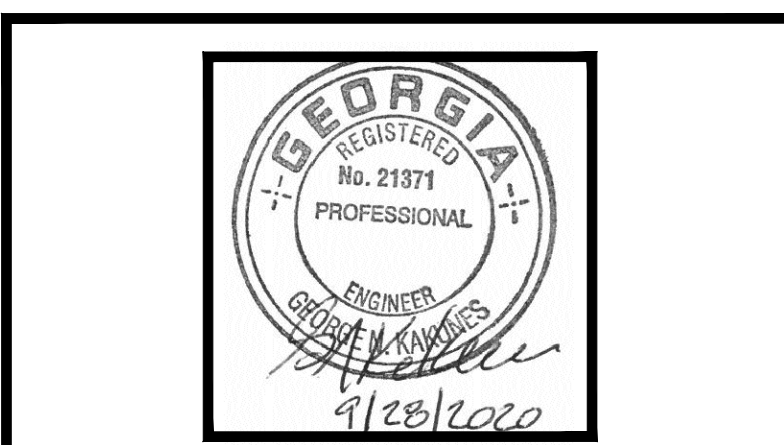
NOTE:
 CONTRACTOR MUST COORDINATE AND OBTAIN APPROVAL FROM CHEROKEE COUNTY EROSION CONTROL INSPECTOR FOR ANY SOIL STOCKPILE.

- GENERAL EROSION CONTROL NOTES:**
- FOR EROSION AND SEDIMENT CONTROL NOTES, REFER TO SHEET NO'S. EC-04 THRU EC-07.
 - FOR EROSION AND SEDIMENT CONTROL DETAILS, REFER TO SHEET NO'S. EC-08 THRU EC-11.
 - FOR SOIL SERIES INFORMATION AND CHART, REFER TO SHEET EC-07.

24-HR. EMERGENCY CONTACT:
 TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD
 CONTACT PHONE NO.: TBD

24-HOUR LOCAL EROSION, SEDIMENTATION, AND POLLUTION CONTROL CONTACT:
 TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD

LEVEL 1A CERTIFICATION NO.: (TBD AT A LATER DATE)
 LEVEL 1A CERTIFICATION EXP. DATE: (TBD AT A LATER DATE)



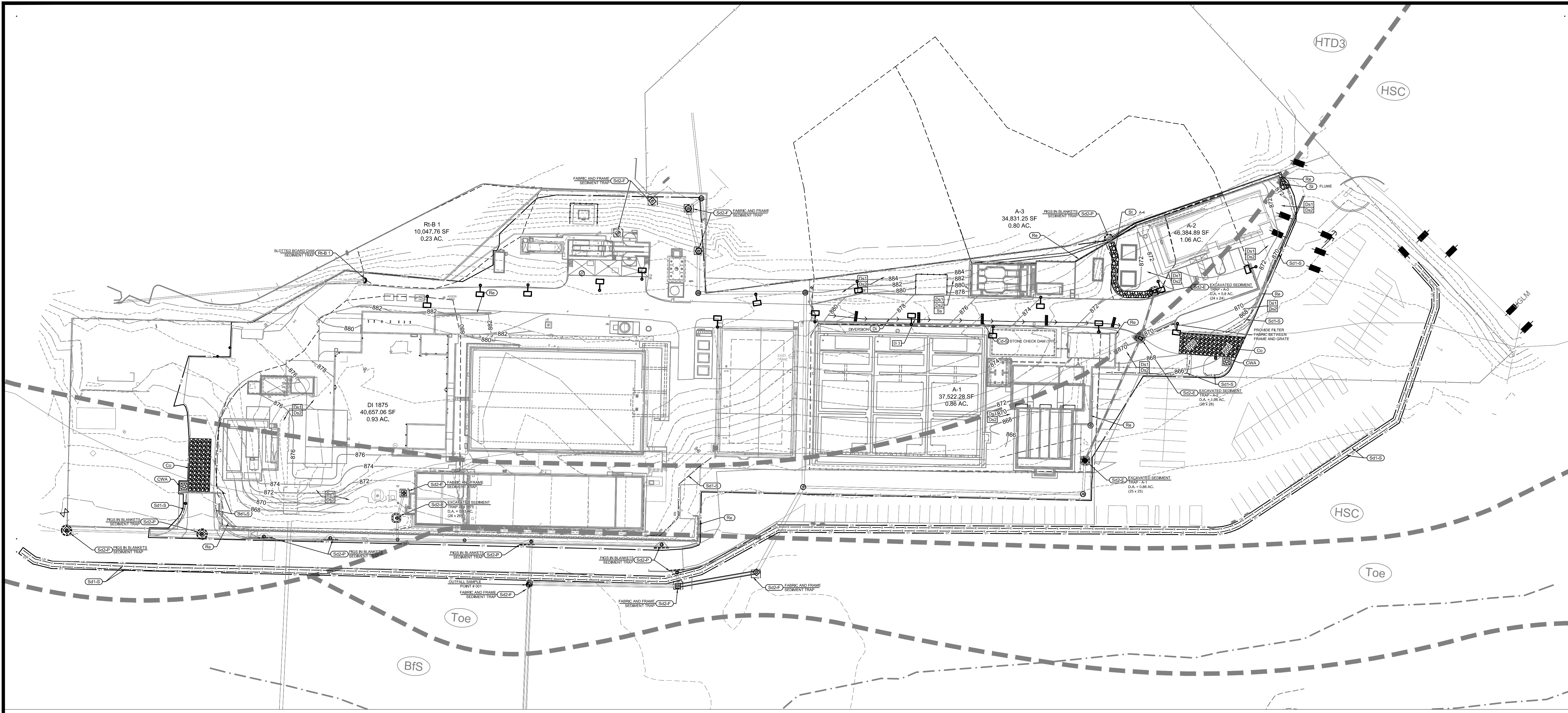
GEORGE N. KAKUNES
 GSWCC LEVEL II DESIGN PROFESSIONAL
 GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE
 0000016834
 GSWCC LEVEL II CERTIFICATION NUMBER GSWCC
 11/09/2021
 GSWCC LEVEL II CERTIFICATION EXPIRATION DATE





ATKINS
 1600 RiverEdge Parkway, N.W., Suite 700
 Atlanta, GA 30328
 P: 770-933-0260

HARTWELL ENGINEERING, INC.
 ENGINEERS & SURVEYORS
 2000 W. WASHINGTON ST., SUITE 100
 STEVENSVILLE, MARYLAND
 (410) 286-1111



PROJ. NO.:	DESIGNED BY:	DATE
100061831	KRJ	
DRAWN BY:	CHECKED BY:	REVISION
KRJ	MRM	
APPROVED BY:	DATE:	CERTIFICATE OF AUTHORIZATION - EXPIRATION DATE:
GK	SEPTEMBER 2020	06/30/2022 ATKINS NORTH AMERICA INC.
SCALE:	NO. SCALE	

EROSION & SEDIMENT CONTROL PLAN LEGEND

Ds1 DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	St OUTLET PROTECTION	CWA CONCRETE WASHDOWN AREA
Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Sd1-S SEDIMENT BARRIER - SILT FENCE ("TYPE-C")	Sd2-E INLET SEDIMENT TRAP - EXCAVATED
Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING / VEGETATION)	Sd2-F INLET SEDIMENT TRAP - FILTER AND FRAME	Sd2-P INLET SEDIMENT TRAP - CURB INLET FILTER ("PIGS-IN-A-BLANKET")
Ss SLOPE STABILIZATION	Rt-B INLET SEDIMENT TRAP - SLOTTED BOARD DAM	LD LIMITS OF DISTURBANCE
Du DUST CONTROL ON DISTURBED AREAS	SOIL SERIES DELINEATION BOUNDARY	DRAINAGE AREA DIVIDE
Re RETAINING WALL	SAMPLE POINT	
Di DIVERSION		
Cd-S STONE CHECK DAM		
Co CONSTRUCTION EXIT		

ES&PC - PLAN INTERMEDIATE PHASE
 SCALE: 1"=50'

ESTIMATED EARTHWORK QUANTITIES:

EXCAVATION (CUT) = 9,678 CU. YD.
 EMBANKMENT (FILL) = 5,575 CU. YD.

NOTE:
 CONTRACTOR MUST COORDINATE AND OBTAIN APPROVAL FROM CHEROKEE COUNTY EROSION CONTROL INSPECTOR FOR ANY SOIL STOCKPILE.

GENERAL EROSION CONTROL NOTES:

- FOR EROSION AND SEDIMENT CONTROL NOTES, REFER TO SHEET NO'S. EC-04 THRU EC-07.
- FOR EROSION AND SEDIMENT CONTROL DETAILS, REFER TO SHEET NO'S. EC-08 THRU EC-11.
- FOR SOIL SERIES INFORMATION AND CHART, REFER TO SHEET EC-07.

24-HR. EMERGENCY CONTACT:
 TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD
 CONTACT PHONE NO.: TBD

24-HOUR LOCAL EROSION, SEDIMENTATION, AND POLLUTION CONTROL CONTACT:
 TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD

LEVEL 1A CERTIFICATION NO.: (TBD AT A LATER DATE)
 LEVEL 1A CERTIFICATION EXP. DATE: (TBD AT A LATER DATE)

GEORGE N. KAKUNES
 GSWCC LEVEL II DESIGN PROFESSIONAL

George N. Kakunes
 GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE

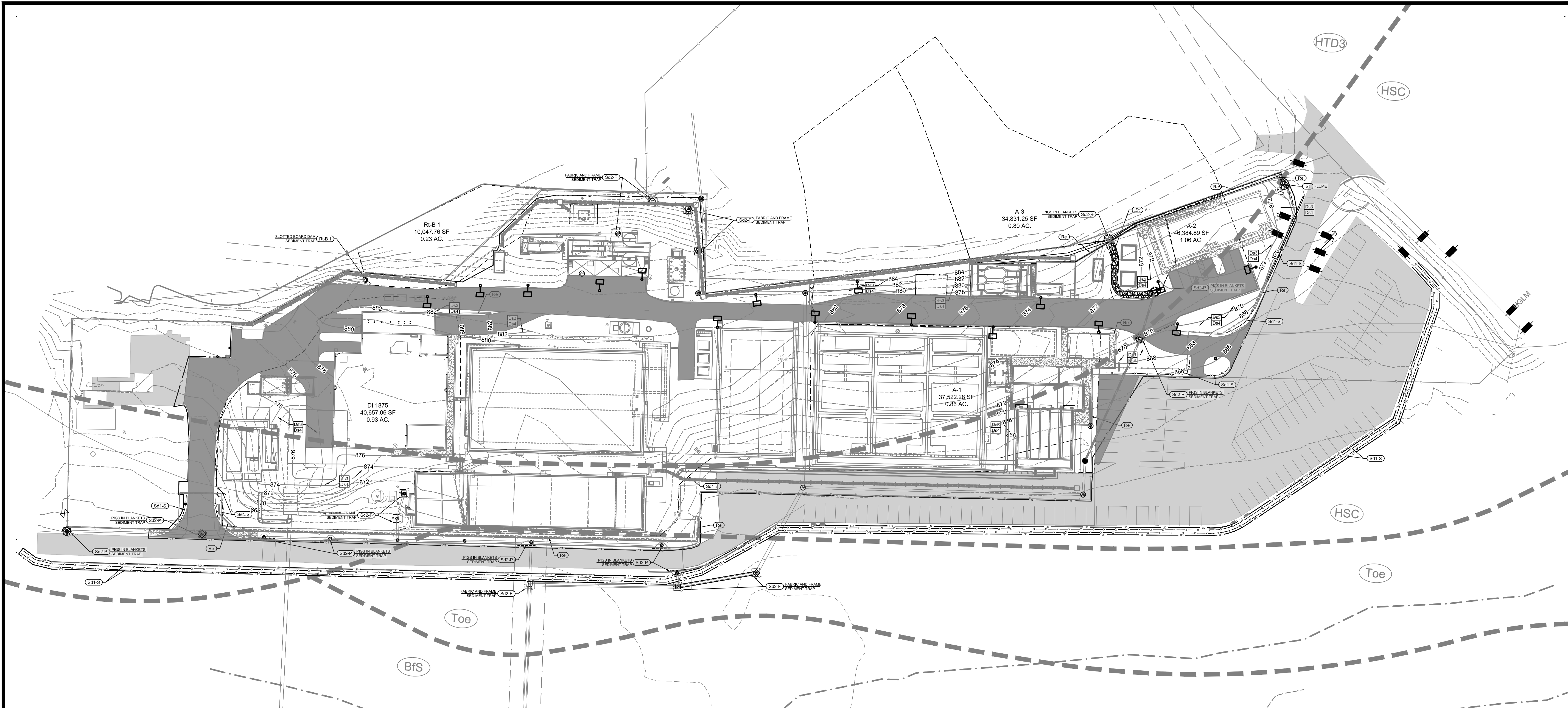
0000016834
 GSWCC LEVEL II CERTIFICATION NUMBER GSWCC

11/09/2021
 GSWCC LEVEL II CERTIFICATION EXPIRATION DATE

811 IF YOU DIG GEORGIA... CALL US FIRST!
 Know what's below. Call before you dig.
 UTILITIES PROTECTION CENTER

CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 EROSION AND SEDIMENT CONTROL
 PLAN - INTERMEDIATE PHASE

SHEET NO.
EC-02



ATKINS
 1600 RiverEdge Parkway, NW, Suite 700
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 P: 770-933-0260

HARTWELL ENGINEERING, INC.
 ENGINEERS & SURVEYORS
 200 W. HUNTER STREET
 STEPHENSBURG, GA 30281
 (770) 933-0260

PROJ. NO.:	DATE
100061831	
DESIGNED BY:	REVISION
KRJ	
DRAWN BY:	
KRJ	
CHECKED BY:	
MFM	
APPROVED BY:	
GNK	
DATE:	
SEPTEMBER 2020	
SCALE:	
NO SCALE	

PROJ. NO.: 100061831
 EXPIRATION DATE: 06/30/2022
 CITY OF CANTON, GEORGIA
 WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
 EROSION AND SEDIMENT CONTROL
 PLAN - FINAL PHASE

EROSION & SEDIMENT CONTROL PLAN LEGEND	
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING / VEGETATION)
Ss	SLOPE STABILIZATION
Du	DUST CONTROL ON DISTURBED AREAS
Re	RETAINING WALL
Di	DIVERSION
Cd-S	STONE CHECK DAM
Co	CONSTRUCTION EXIT
St	OUTLET PROTECTION
CWA	CONCRETE WASHDOWN AREA
Sd1-S	SEDIMENT BARRIER - SILT FENCE ("TYPE-C")
Sd2-E	INLET SEDIMENT TRAP - EXCAVATED
Sd2-F	INLET SEDIMENT TRAP - FILTER AND FRAME
Sd2-P	INLET SEDIMENT TRAP - CURB INLET FILTER ("PIGS-IN-A-BLANKET")
Rt-B	INLET SEDIMENT TRAP - SLOTTED BOARD DAM
LD	LIMITS OF DISTURBANCE
	SOIL SERIES DELINEATION BOUNDARY
	DRAINAGE AREA DIVIDE
	SAMPLE POINT

ES&PC - PLAN FINAL PHASE
 SCALE: 1"=50'

ESTIMATED EARTHWORK QUANTITIES:
 EXCAVATION (CUT) = 9,678 CU. YD.
 EMBANKMENT (FILL) = 5,575 CU. YD.

NOTE:
 CONTRACTOR MUST COORDINATE AND OBTAIN APPROVAL FROM CHEROKEE COUNTY EROSION CONTROL INSPECTOR FOR ANY SOIL STOCKPILE.

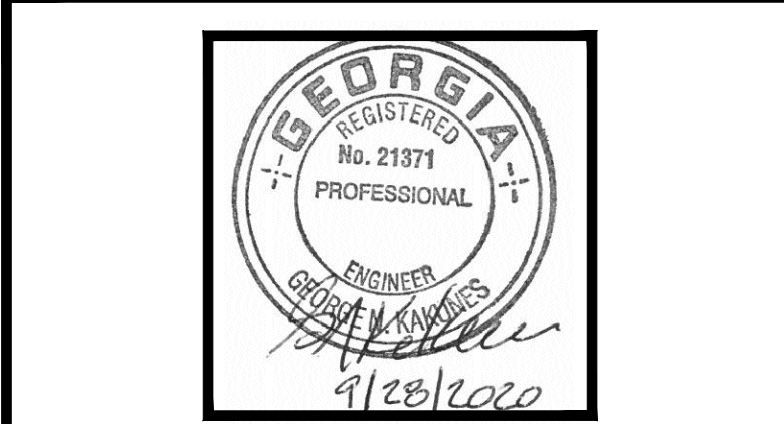
GENERAL EROSION CONTROL NOTES:

- FOR EROSION AND SEDIMENT CONTROL NOTES, REFER TO SHEET NO'S. EC-04 THRU EC-07.
- FOR EROSION AND SEDIMENT CONTROL DETAILS, REFER TO SHEET NO'S. EC-08 THRU EC-11.
- FOR SOIL SERIES INFORMATION AND CHART, REFER TO SHEET EC-07.

24-HR. EMERGENCY CONTACT:
 TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD
 CONTACT PHONE NO.: TBD

24-HOUR LOCAL EROSION, SEDIMENTATION, AND POLLUTION CONTROL CONTACT:
 TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD

LEVEL 1A CERTIFICATION NO.: (TBD AT A LATER DATE)
 LEVEL 1A CERTIFICATION EXP. DATE: (TBD AT A LATER DATE)



GEORGE N. KAKUNES
 GSWCC LEVEL II DESIGN PROFESSIONAL
 GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE
 0000016834
 GSWCC LEVEL II CERTIFICATION NUMBER GSWCC
 11/09/2021
 GSWCC LEVEL II CERTIFICATION EXPIRATION DATE



SHEET NO.
EC-03

GENERAL EROSION & SEDIMENTATION CONTROL NOTES:

- 1. ALL DISTURBED AREAS SHALL HAVE EROSION CONTROL PROVIDED IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION, AND CHEROKEE COUNTY STANDARDS AND SPECIFICATIONS, CURRENT EDITION.
2. ALL EROSION CONTROL MEASURES SHALL COMPLY WITH THE STATE OF GEORGIA SOIL AND WATER CONSERVATION COMMISSION MANUAL FOR EROSION AND SEDIMENT CONTROL IN THE STATE OF GEORGIA, CURRENT EDITION, AND CHEROKEE COUNTY, STANDARDS AND SPECIFICATIONS, CURRENT EDITION.
3. ALL CONSTRUCTION SHALL CONFORM TO CHEROKEE COUNTY, O.S.H.A., AND/OR GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT) STANDARDS AND SPECIFICATIONS, CURRENT EDITION.
4. THE NOTATION (XXX) AS SHOWN ON THE EROSION CONTROL PLAN SHEET(S) AND ON THE EROSION CONTROL DETAIL SHEET FOR THE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES, REFERS TO THE GEORGIA UNIFORM CODING SYSTEM AS DETAILED IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
5. GENERAL STATEMENT OF DESIGNED EROSION CONTROL SYSTEM:
A. NO SURFACE WATER FLOWS FROM ONSITE AREA SHALL BE ALLOWED INTO THE STORM SEWER SYSTEM WITHOUT FIRST BEING FILTERED BY AN EFFECTIVE SEDIMENT ENTRAPMENT DEVICE.
B. SEDIMENT ENTRAPMENT DEVICES ARE TO BE MAINTAINED AT ALL POINTS WHERE SURFACE FLOWS FROM DISTURBED AREAS CAN LEAVE THE SITE. FLOWS ARE TO BE DIRECTED TO ENTRAPMENT DEVICES THROUGHOUT CONSTRUCTION ACTIVITIES. MAINTAIN ALL BMP'S IN ACCORDANCE WITH REQUIREMENTS OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
6. EROSION CONTROL MEASURES MUST BE CONSTRUCTED PRIOR TO ANY LAND DISTURBING ACTIVITIES ON-SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. EROSION CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR AT THE END OF EACH WORKING DAY AND AFTER EACH STORM EVENT TO ENSURE THAT ALL MEASURES ARE FUNCTIONING PROPERLY. ANY NECESSARY REPAIRS SHALL BE MADE BY THE CONTRACTOR.
7. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY LAND DISTURBANCE ON SITE. SILT BARRIER TO BE PLACED AS SHOWN AND/OR AS DIRECTED BY THE PROJECT ENGINEER AND/OR CHEROKEE COUNTY INSPECTOR.
8. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
9. EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE AS DIRECTED BY THE ONSITE INSPECTOR OR THE DESIGN PROFESSIONAL.
10. ANY DISTURBED AREA LEFT IDLE/EXPOSED FOR A PERIOD GREATER THAN 14-DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
11. EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES TO BE INSPECTED DAILY, AFTER EACH RAIN EVENT, AND REPAIRED AS NECESSARY.
12. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DETERMINED NECESSARY BY ON-SITE INSPECTION.
13. THE CONTRACTOR SHALL COMPLETELY REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AND TREE PROTECTION FENCING ONCE FINAL STABILIZATION IS ACHIEVED.
14. THE CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND FOR REMOVING ANY DEBRIS AND SEDIMENT THAT IS CAUSED BY CONSTRUCTION ACTIVITIES.
15. ALL DISTURBED AREAS SHALL BE GRASSED BY THE SITEWORK CONTRACTOR AS SOON AS CONSTRUCTION PHASES PERMIT.
16. WHEN HAND PLANTING, MULCH (HAY OR STRAW) SHOULD BE UNIFORMLY SPREAD OVER SEEDED AREA WITHIN 24-HOURS OF SEEDING.
17. DURING UNSUITABLE GROWING SEASONS, MULCH WILL BE USED AS A TEMPORARY COVER (Ds1). ON SLOPES 4:1 OR STEEPER, MULCH MUST BE ANCHORED.
18. SILT FENCE SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
19. SEDIMENT DEPTH INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE MAINTENANCE REQUIREMENTS.
20. MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR.
21. CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2.5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL MATTING AND BLANKETS.
22. PROPOSED DETENTION PONDS, DETENTION OUTLET CONTROL STRUCTURES, AND TEMPORARY SEDIMENT POND FEATURES ARE TO BE CONSTRUCTED COMPLETELY AND BE FULLY OPERATIONAL PRIOR TO ANY OTHER LAND DISTURBANCE ACTIVITIES.
23. ALL PERMANENT GRADED EARTH SLOPES, EXCAVATION OR EMBANKMENT (CUT AND FILL) SHALL BE GRADED TO A MAXIMUM FINISHED SLOPE OF TWO (2) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL (MAXIMUM SLOPE 2H:1V).
24. NO SENSITIVE AREAS (I.E. CULTURAL RESOURCES: ENDANGERED SPECIES, ARCHEOLOGICAL SITES, HISTORICAL SITES, ETC...) EXIST ON, OR WITHIN, 200-FEET OF THE PROJECT SITE.
25. NO WETLANDS ARE LOCATED WITHIN 200 FEET OF THE PROJECT, WATERS OF THE STATE EXIST ON-SITE, OR THEY ARE LOCATED WITHIN 200-FEET OF THE PROJECT.
26. FLOOD NOTE:

THIS PROPERTY IS PARTIALLY LOCATED WITHIN THE 100-YEAR FLOOD HAZARD ZONE PER: F.E.M.A. NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM), FOR THE FOLLOWING AREA:

"CHEROKEE COUNTY, GEORGIA AND INCORPORATED AREAS"; PANEL 232 OF 380; MAP NUMBER 13057C0232E; MAP REVISED DATE: JUNE 7, 2019.

THIS PROPERTY LIES WITHIN THE FOLLOWING AREAS:

"REGULATORY FLOODWAY": FLOOD ELEVATIONS DETERMINED "ZONE AE": SPECIAL FLOOD HAZARD AREA WITH BASE FLOOD ELEVATION (BFE) OF 872 FEET. "ZONE X" (OTHER AREAS): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

INITIAL (CLEARING & GRUBBING) NOTES:

- 1. PRIOR TO LAND DISTURBING ACTIVITY, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE PROJECT SITE DEVELOPMENT INSPECTOR.
2. FULL COORDINATION SHALL BE MAINTAINED BETWEEN THE CONTRACTOR, DESIGN PROFESSIONAL, AND THE REGULATORY INSPECTOR REGARDING PROJECT SEQUENCE.
3. ALL STAGING AREAS, MATERIAL STORAGE AREAS, CONCRETE WASH-OUT AREAS, AND/OR DEBRIS BURN AND BURIAL HOLES SHALL BE LOCATED AT SETBACK DISTANCES FROM DESIGNATED TREE PROTECTION AREAS AND/OR STREAM BUFFERS AS REQUIRED BY LOCAL AND STATE REGULATIONS.
4. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE AT ALL TIMES. POST ON DAY ONE.
5. PRIOR TO COMMENCING LAND DISTURBING ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.
6. PRIOR TO ANY OTHER CONSTRUCTION, A STABILIZED CONSTRUCTION EXIT SHALL BE CONSTRUCTED AT EACH POINT OF ENTRY TO OR EXIT FROM THE SITE OR ONTO ANY PUBLIC ROADWAY AS SHOWN ON THE PLANS.
7. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCE/EXITS, ALL PERIMETER EROSION CONTROL AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE INITIAL PHASE OF THE EROSION CONTROL PLAN.
8. TYPE "C" SILT FENCE SHOULD BE INSTALLED AT THE PERIMETER OF THE DISTURBED AREA AS SHOWN ON THE PLAN. MAINTAIN IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION. THE PERIMETER SILT FENCE SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.
9. INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED ON ALL EXISTING STORM STRUCTURES AS SHOWN ON THE PLAN.
10. LOCATE STATE WATERS/WETLANDS.
11. CONSTRUCT THE INLET SEDIMENT TRAPS.
12. STONE CHECK DAMS SHALL BE INSTALLED IN AREAS OF CONCENTRATED FLOWS, AS SHOWN ON THE APPROVED PLANS.
13. TREE PROTECTION FENCING AND STREAM BUFFER LIMITS MARKINGS SHOULD BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY AND MAINTAINED UNTIL FINAL LANDSCAPE IS INSTALLED. THE TREE PROTECTION FENCING SHOULD BE INSPECTED DAILY. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.
14. AFTER INSTALLATION OF INITIAL EROSION CONTROL MEASURES, THE SITE CONTRACTOR SHALL SCHEDULE AN INSPECTION BY THE PROJECT DESIGN PROFESSIONAL. NO OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE PROJECT PROFESSIONAL APPROVES THE INSTALLATION OF SAID EROSION MEASURES. IF UNFORESEEN CONDITIONS EXIST IN THE FIELD THAT WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR MUST CONSTRUCT ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY BY THE SITE INSPECTION WITH CONSULTATION WITH THE DESIGN PROFESSIONAL.
15. AFTER APPROVAL OF THE INITIAL EROSION CONTROL INSTALLATION, THE CONTRACTOR MAY PROCEED WITH CLEARING AND GRUBBING ACTIVITIES. AS CLEARING PERMITS, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SEDIMENT PONDS AND DIVERSION DIKES AS SHOWN ON THE CLEARING PHASE PLAN TO CONTROL EROSION AND STORMWATER RUNOFF.
16. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS.

INTERMEDIATE (GRADING & TEMPORARY VEGETATION) NOTES:

- 1. FULL COORDINATION SHALL BE MAINTAINED BETWEEN THE CONTRACTOR, DESIGN PROFESSIONAL, AND THE REGULATORY INSPECTOR REGARDING PROJECT SEQUENCE.
2. EARTHWORK OPERATIONS IN THE VICINITY OF STREAM BUFFERS SHALL BE CAREFULLY CONTROLLED TO AVOID LOSS OF SEDIMENT INTO THE BUFFER AREAS.
3. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF ITS NATURAL GROUND COVER IS EXPOSED ONLY IN SMALL QUANTITIES, AND LIMITED TIME DURATIONS, BEFORE PERMANENT EROSION PROTECTION IS ESTABLISHED.
4. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION AND SEDIMENTATION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE DESIGN PROFESSIONAL IMMEDIATELY.
5. SEDIMENT SHALL NOT BE WASHED INTO STORM INLETS. SEDIMENT TRAPS MUST BE MAINTAINED IN WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
6. TYPE "C" SILT FENCE SHOULD BE INSTALLED AT THE TOE OF ALL FILL SLOPES. THE SILT FENCE SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED ON THE SLOPE. ADDITIONALLY, DIVERSION DIKES SHALL BE CONSTRUCTED ALONG THE TOP OF ALL SAID FILL SLOPES WITH THE USE OF TEMPORARY DOWN DRAINS TO CONTROL STORMWATER RUNOFF AS SHOWN ON THE PLANS. MAINTAIN ALL IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING BARRIERS AT THE TOE OF SLOPES UNDER CONSTRUCTION. THESE BARRIERS SHALL BE AS SHOWN IN THE PLANS. THESE BARRIERS MAY BE RELOCATED AND REUSED AFTER PERMANENT SLOPE STABILIZATION BECOMES FULLY ESTABLISHED. AS THEY ARE RELOCATED, ANY DEFECTIVE MATERIALS IN THE BARRIER SHALL BE REPLACED. IN ADDITION, ALL DEBRIS AND SILT AT THE PREVIOUS LOCATION SHALL BE REMOVED.
8. ALL SLOPES STEEPER THAN 2.5:1 AND WITH A HEIGHT OF 10-FEET OR GREATER, AND CUTS AND FILLS WITH STREAM BUFFERS, SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKETS.
9. TYPE "C" SILT FENCE SHALL BE PLACED SURROUNDING ALL SOIL STOCK PILE AREAS.
10. INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED ON ALL STORM STRUCTURES AS THEY ARE CONSTRUCTED.
11. STORM DRAIN OUTLET PROTECTION SHALL BE PLACED AT ALL OUTLET HEADWALL LOCATIONS AS SOON AS THE HEADWALL IS CONSTRUCTED.

INTERMEDIATE (GRADING & TEMPORARY VEGETATION) NOTES (CONT'D.):

- 12. STONE CHECK DAMS SHALL BE INSTALLED IN AREAS OF CONCENTRATED FLOWS, AS SHOWN ON THE APPROVED PLANS.
13. AFTER PRELIMINARY CLEARING AND GRADING ACTIVITIES, THE CONTRACTOR SHALL CONSTRUCT ALL RETROFITS, EXCAVATED SEDIMENT TRAPS AND DIVERSION DIKES AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN THE RETROFITS UNTIL PERMANENT GROUND COVER IS ESTABLISHED. MAINTAIN ALL IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
14. SEDIMENT AND EROSION CONTROL MEASURES MUST BE CHECKED DAILY AND AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.
15. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. MAINTAIN IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION.
16. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS.

GSWCC AND NPDES NOTES:

- 1. APPLICABLE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN CHECKLIST ESTABLISHED BY THE COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED:

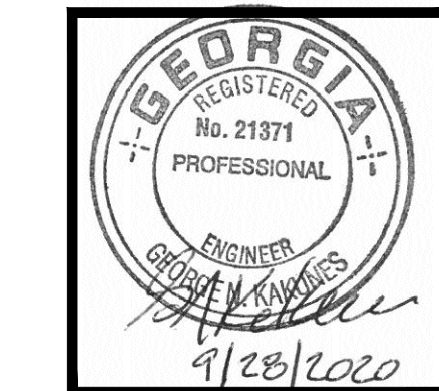
EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST STAND ALONE CONSTRUCTION PROJECTS

Project Name: Canton WPCP Expansion to 6 MGD Address: Boling Park Road Canton, Georgia 30114
City/County: Canton, Cherokee County Date on Plans: September 2020
Name & email of person filling out checklist: George Kakunes george.kakunes@atkinsglobal.com

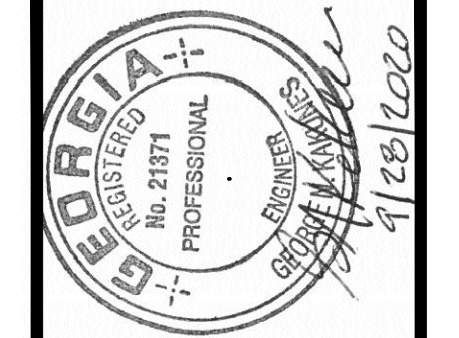
Table with columns: Plan, Included, Y/N, and checklist items 1-21. Includes items like 'The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.' and 'Level II certification number issued by the Commission, signature and seal of the certified design professional.'

GSWCC AND NPDES NOTES (CONT'D.):

- 22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III, C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.
23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in Item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.
24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.
25 Provide BMPs for the remediation of all petroleum spills and leaks.
26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.
27 Description of practices to provide cover for building materials and building products on site.
28 Description of the practices that will be used to reduce the pollutants in storm water discharges.
29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
30 Provide complete requirements of inspections and record keeping by the primary permittee.
31 Provide complete requirements of sampling frequency and reporting of sampling results.
32 Provide complete details for retention of records as per Part IV.F. of the permit.
33 Description of analytical methods to be used to collect and analyze the samples from each location.
34 Appendix B rationale for NTU values at all outfall sampling points where applicable.
35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged.
36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase.
37 Graphic scale and North arrow.
38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:
Map Scale Ground Slope Contour Intervals, ft
1 inch = 100ft or larger scale Flat 0 - 2% 0.5 or 1
Rolling 2 - 8% 1 or 2
Steep 8% + 2.5 or 10
39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPA or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gswcc.org.
40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition.
41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
43 Delineation and acreage of contributing drainage basins on the project site.
44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions.
45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
47 Soil series for the project site and their delineation.
48 The limits of disturbance for each phase of construction.
49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.
* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.



MR. GEORGE N. KAKUNES, P.E.
GSWCC LEVEL II DESIGN PROFESSIONAL
GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE
0000016834
GSWCC LEVEL II CERTIFICATION NUMBER GSWCC
11/09/2021
GSWCC LEVEL II CERTIFICATION EXPIRATION DATE



ATKINS
1600 RiverEdge Parkway, N.W., Suite 700
Atlanta, GA 30328
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HARTWELL ENGINEERING, INC.
ENGINEERS & SURVEYORS
STEARNSVILLE, MARYLAND
(410) 486-1100

Table with columns: PROJECT, AUTHORIZATION, EXPIRATION DATE, REVISION, DATE. Includes project name 'CITY OF CANTON, GEORGIA WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD' and revision details.

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
EROSION AND SEDIMENT CONTROL NOTES
SHEET NO.
EC-04

GSWCC AND NPDES NOTES (CONT'D.):

3. THE LIMIT OF DISTURBANCE FOR THIS PROJECT IS LESS THAN 50 ACRES AT ANY ONE TIME FOR THE DURATION OF THE PROJECT; THEREFORE, NO WRITTEN AUTHORIZATION FROM THE EPD DISTRICT OFFICE, NOR THE INCLUSION OF AT LEAST 4 OF THE BMPs LISTED IN APPENDIX 1 OF THIS CHECKLIST, IS REQUIRED.

4. 24-HOUR LOCAL EROSION, SEDIMENTATION, AND POLLUTION CONTROL CONTACT:

NAME: TBD, INFORMATION WILL BE PROVIDED UPON PROJECT AWARD
LOCAL ADDRESS:

CONTACT PHONE NO.:

5. PRIMARY PERMITTEE:

OPERATOR: TBD, INFORMATION WILL BE PROVIDED UPON PROJECT AWARD

OPERATOR CONTACT:
OPERATOR CONTACT PHONE NO.:

OWNER: NAME: CITY OF CANTON, GA
ADDRESS: 110 ACADEMY STREET
CANTON, GA 30114

OWNER CONTACT: DAVID HABATIAN, CITY ENGINEER
OWNER CONTACT PHONE NO.: (770) 704-1500

6. TOTAL PROPERTY SITE AREA: 6.74 ACRES.
TOTAL PROJECT DISTURBED AREA (PHASE 1): 0.73 ACRES.
TOTAL PROJECT DISTURBED AREA (PHASE 2 & 3): 5.81 ACRES.

7. THE GPS LOCATION FOR THE CONSTRUCTION EXITS ARE LISTED BELOW:

N 34°13'55" W 84°30'13"
N 34°13'49" W 84°30'27"

8. FOR THE INITIAL DATE OF THE PLAN AND THE DATES OF ANY REVISIONS MADE TO THE PLAN INCLUDING THE ENTITY WHO REQUESTED THE REVISIONS, REFER TO THE TITLE BLOCK ON ALL SHEETS.

9. DESCRIPTION OF THE NATURE OF CONSTRUCTION ACTIVITY:

PROPOSED CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT CONSIST OF THE GRADING OF THE SITE AND THE INSTALLATION OF SITE AND UTILITY INFRASTRUCTURE REQUIRED TO SUPPORT AN EXPANSION OF AN EXISTING WASTEWATER TREATMENT PLANT.

10. VICINITY MAP:



SCALE: 1" = ±2,000'
CANTON WASTEWATER TREATMENT PLANT
CANTON, CHEROKEE COUNTY, GEORGIA 30114

11. PROJECT RECEIVING WATERS:

THE PROJECT RECEIVING WATERS FOR THIS SITE IS THE ETOWAH RIVER, WHICH IS LOCATED SOUTH OF THE PROPERTY.

STORM WATER RUNOFF LEAVES THE SITE VIA AN EXISTING SUB-SURFACE PIPED STORM SEWER SYSTEM LOCATED ALONG THE EASTERN PROPERTY BOUNDARY AND AN EXISTING STORM SEWER SYSTEM ALONG THE SOUTHERN BOUNDARY. STORM WATER RUNOFF IS CONVEYED THROUGH THIS PIPED SYSTEM UNTIL IT DISCHARGES INTO AN EXISTING PIPE (APPROXIMATELY 335 FEET LONG) THAT OUTFALLS INTO THE ETOWAH RIVER.

STORM WATER RUNOFF IS CONVEYED THROUGH ETOWAH RIVER, WHICH THEN FEEDS INTO LAKE ALATOONA.

NEITHER THE ETOWAH RIVER, NOR LAKE ALATOONA SHALL BE ADVERSELY IMPACTED BY THE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT.

12. DESIGN PROFESSIONAL'S CERTIFICATION STATEMENT AND SIGNATURE THAT THE SITE WAS VISITED PRIOR TO DEVELOPMENT OF THE ES&PC PLAN AS STATED ON PAGE 15 OF THE PERMIT:

"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION."

MR. GEORGE N. KAKUNES, P.E.
GSWCC LEVEL II DESIGN PROFESSIONAL (NAME AND SIGNATURE)

0000016834 11/09/2021
GSWCC LEVEL II CERTIFICATION NO. GSWCC LEVEL II CERTIFICATION EXP. DATE

GSWCC AND NPDES NOTES (CONT'D.):

13. DESIGN PROFESSIONAL'S CERTIFICATION STATEMENT AND SIGNATURE THAT THE PERMITTEE'S ES&PC PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BMPs AND SAMPLING TO MEET PERMIT REQUIREMENTS AS STATED ON PAGE 15 OF THE PERMIT:

"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT 'MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA' (MANUAL) PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."

MR. GEORGE N. KAKUNES, P.E.
GSWCC LEVEL II DESIGN PROFESSIONAL (NAME AND SIGNATURE)

0000016834 11/09/2021
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14. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION:

THE DESIGN PROFESSIONAL, OR AN AUTHORIZED AGENT DESIGNATED BY THE DESIGN PROFESSIONAL, WILL PERFORM AN INSPECTION OF THE EROSION AND SEDIMENTATION CONTROL BMPs THAT HAVE BEEN INSTALLED AND WILL SUBMIT A SIGNED COPY OF A REPORT OF THEIR FINDINGS TO THE PRIMARY OPERATOR WITHIN 7-DAYS OF THE DATE OF THE INSPECTION, WHICH SHALL BE KEPT ON FILE WITH THE NOTICE OF INTENT (NOI) AND ALL OTHER REQUIRED PAPER WORK.

DATE OF INSPECTION:
"I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLANS ON THE DATE OF INSPECTION."

MR. GEORGE N. KAKUNES, P.E.
GSWCC LEVEL II DESIGN PROFESSIONAL

GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE

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GSWCC LEVEL II CERTIFICATION NUMBER GSWCC

11/09/2021
GSWCC LEVEL II CERTIFICATION EXPIRATION DATE

INSPECTION REVEALED THE FOLLOWING DEFICIENCIES FROM THE ES&PC PLAN:

THE DEFICIENT ITEMS IDENTIFIED IN THE REPORT MUST BE ADDRESSED AND CORRECTED BY THE CONTRACTOR WITHIN 2 BUSINESS DAYS UPON RECEIPT OF THE INSPECTION REPORT AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

15. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

REQUIREMENTS FOR STREAM BUFFER VARIANCE (SBV):

- (i.) 25-FOOT UNDISTURBED NATURAL VEGETATIVE BUFFER OF STATE WATERS;
(ii.) 50-FOOT UNDISTURBED NATURAL VEGETATIVE BUFFER ALONG ALL STREAMS
(iii.) 75-FOOT BUFFER PROHIBITING IMPERVIOUS COVER, GRADING, FILLING AND EARTHMOVING TO BE MINIMIZED; AND,
(iv.) 150-FOOT UNDISTURBED BUFFER ESTABLISHED ALONG BOTH SIDES OF THE ETOWAH RIVER

16. NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A 25-FOOT BUFFER ALONG THE BANKS OF ALL STATE WATERS, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW, OR WAVE ACTION, EXCEPT WHERE A SBV IS APPROVED BY GA EPD. THIS PROJECT PROPOSES NO ENCROACHMENT WITHIN THE STATE BUFFER.

NOTE: ALONG STREAM BANK BUFFERS AND OTHER SENSITIVE AREAS, TWO ROWS OF TYPE-"C" SILT FENCE, OR ONE ROW TYPE-"C" SILT FENCE BACKED BY HAYBALES SHALL BE USED. THIS REQUIREMENT MUST BE IMPLEMENTED REGARDLESS OF WORK THAT IS APPROVED UNDER AN SBV, OR FOR A PROJECT THAT IS EXEMPT FROM AN SBV.

17. ANY AMENDMENTS/REVISIONS TO THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLANS (ES&PC PLANS), WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT, MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

18. WASTE MATERIALS (I.E. SOLID MATERIALS, INCLUDING BUILDING MATERIALS) SHALL NOT BE DISPOSED OF OR DISCHARGED INTO STORM WATER INLETS OR TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DISPOSED OF IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY, AND TRASH WILL BE HAILED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ON-SITE. ALL PERSONNEL WILL BE INSTRUCTED ON PROPER PROCEDURES FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES WILL BE POSTED AT THE JOBSITE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

19. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

20. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

21. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14-DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

GSWCC AND NPDES NOTES (CONT'D.):

22. NO PORTION OF THE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR IS WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF AN BIOTA IMPAIRED STREAM SEGMENT. THEREFORE, COMPLIANCE WITH PART III.C OF THE PERMIT, INCLUDING THE COMPLETED APPENDIX 1 LISTING ALL THE BMPs THAT WILL BE USED FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT, IS NON-APPLICABLE TO THIS PROJECT.

ETOWAH RIVER REACH INFORMATION:

THE ETOWAH RIVER IS IDENTIFIED AS AN IMPAIRED STREAM SEGMENT. REACH INFORMATION IS AVAILABLE PER THE FOLLOWING:

https://hub.arcgis.com/datasets/9572968209da4c719b27844f42c5bf_1/data?geometry=-84.580%2C34.227%2C-84.415%2C34.252&where=Name%20%3D%20'Etowah%20River'

B. STREAM IS IMPAIRED BY FECAL COLIFORM (FC)

23. A TMDL IMPLEMENTATION PLAN FOR SEDIMENT IMPAIRMENT IS NOT APPLICABLE AS THERE IS NO SEDIMENT IMPAIRED STREAM SEGMENT (IDENTIFIED IN ITEM 22 ABOVE), THERE IS A TMDL PLAN PREPARED FOR FC IMPAIRMENT IN 2009. THEREFORE, NO TMDL IMPLEMENTATION PLAN OR SITE-SPECIFIC REQUIREMENTS FOR SEDIMENT IMPAIRMENT ARE APPLICABLE TO THIS PROJECT.

24. BMPs FOR CONCRETE WASHDOWN OF THE FOLLOWING:

TOOLS: ALL CONCRETE WASH WATER THAT RESULTS FROM THE WASHDOWN OF TOOLS USED FOR CONCRETE WORK SHALL BE CONTAINED IN A DESIGNATED CONCRETE WASHOUT AREA.

CONCRETE MIXER CHUTES: ALL CONCRETE WASH WATER THAT RESULTS FROM THE RINSING OUT OF CONCRETE MIXER CHUTES SHALL BE CONTAINED IN A DESIGNATED CONCRETE WASHOUT AREA.

HOPPERS: ALL CONCRETE WASH WATER THAT RESULTS FROM THE RINSING OUT OF CONCRETE HOPPERS SHALL BE CONTAINED IN A DESIGNATED CONCRETE WASHOUT AREA.

REAR OF VEHICLES: ALL CONCRETE AND WASH WATER THAT RESULTS FROM THE RINSING OFF OF THE REAR OF CONCRETE TRUCKS SHALL BE CONTAINED IN A DESIGNATED CONCRETE WASHOUT AREA.

CONCRETE TRUCK PROHIBITIONS AND CONCRETE WASHOUT AREAS (CWA): WASHOUT OR DISCHARGE OF ANY SURPLUS CONCRETE OR DRUM WASH WATER FROM CONCRETE TRUCKS AT THE CONSTRUCTION SITE IS PROHIBITED. DO NOT DISCHARGE ANY CONCRETE WASTEWATER (WASH OUT) INTO SANITARY OR STORM WATER SEWER SYSTEM OR DRAINS.

25. BMPs FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS:

POTENTIAL ENVIRONMENTAL IMPACTS FROM POLLUTANT SOURCES (EXISTING AND PROPOSED):

- (1.) VEHICLE AND/OR EQUIPMENT LEAKS, AS WELL AS FROM ANY UNEXPECTED ACCIDENTS;
(2.) STORAGE, HANDLING AND/OR TRANSPORTATION OF HAZARDOUS MATERIALS/CHEMICALS;
(3.) LOADING/UNLOADING AND/OR REFUELING/TRANSFERRING OPERATIONS OF HEAVY EQUIPMENT AND ANY OTHER FUEL OPERATED EQUIPMENT (I.E. GENERATORS, PUMPS, CHAINSAWS, ETC...) TO INCLUDE THE USE OF FUEL TANKS AND ANY OTHER TYPE OF DISPENSERS (AS APPLICABLE); AND,
(4.) ASPHALT, CONCRETE, ROCK CRUSHER OPERATIONS.

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) REQUIREMENTS:

DURING THE IMPLEMENTATION (CONSTRUCTION/OPERATION) PHASE(S) OF THE PROJECT, THE CONTRACTOR AND/OR PROPONENT MUST HAVE A SPCC PLAN, AND FOLLOW ALL CHEROKEE COUNTY AND GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT) REGULATIONS, WHICH ARE ASSOCIATED WITH TRANSPORTATION OF ANY HAZARDOUS MATERIALS. STORAGE OF HAZARDOUS MATERIALS/CHEMICALS AND WASTE MUST COMPLY WITH CHEROKEE COUNTY REGULATIONS, INCLUDING SECONDARY CONTAINMENT AS REQUIRED. DRIP PANS SHOULD BE AVAILABLE FOR VEHICLES AND EQUIPMENT TO PREVENT OIL AND OTHER PETROLEUM PRODUCTS FROM SPILLING ONTO THE SOIL OR WATER. SECONDARY CONTAINMENT IS REQUIRED FOR ANY REFUELING/TRANSFERRING ACTIVITIES.

STORAGE AREAS FOR HAZARDOUS MATERIALS / CHEMICALS / WASTE SHOULD BE DESIGNED TO ALLOW FOR SECURE PRODUCT STORAGE, TO PROVIDE SECONDARY CONTAINMENT, AND COVERED.

A HAZARDOUS MATERIAL INVENTORY AND MSDS SHOULD BE KEPT ON RECORD AT ALL TIMES FOR SPCC/ISCP AND EPCRA REQUIREMENTS. THE INVENTORY MUST INCLUDE ALL PETROLEUM PRODUCTS, CHEMICALS, HERBICIDES, PESTICIDES, FERTILIZERS, DETERGENTS, PAINTS AND ANY OTHER HAZARDOUS SUBSTANCES USED AND/OR STORED BY THE CONTRACTOR/PROPONENT ON THE PROJECT SITE.

FOR WATER QUALITY:

NO DEMOLITION/CONSTRUCTION WASTE OR EXCESS CONSTRUCTION MATERIALS OF ANY KIND CAN BE DUMPED TO THE SANITARY SEWER SYSTEM, THE STORM SEWER SYSTEM, OR BE DISPOSED TO THE GROUND INCLUDING PAINT, PAINT PRIMER, PAINT THINNER, PAINT STRIPPER, SOLVENTS, ACIDS, BASES, OILS, GREASES, ADHESIVES, GLUES, PASTES, SEALANTS, SOLDER, CAULKING, GROUT, PUTTY, WAXES, SHEET ROCK, INSULATION, CARPET, CARPET PADDING, ACETATE, TILE, COOLANT, CORROSION INHIBITOR, CLEANING COMPOUNDS, HERBICIDES, TERMITICIDES, FUNGICIDE, WEED KILLERS, PESTICIDES.

BMPs FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS:

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF ON-SITE ABOVE GROUND STORAGE OF PETROLEUM, OIL, AND LUBRICANT (POL) PRODUCTS EXCEEDS 1,320 GALLONS, COUNTING CONTAINERS OF 55-GALLONS OR LARGER (THIS INCLUDES CAPACITIES OF EQUIPMENT), OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. IN SUCH A CASE, THE CONTRACTOR WILL BE REQUIRED TO HAVE A SITE SPECIFIC SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURES (SPCC) PLAN AT THE STATE LEVEL PREPARED AND SEALED BY A CERTIFIED DESIGN PROFESSIONAL (P.E.) IN ACCORDANCE WITH 40 CFR 112 AND APPROVED BY THE LOCAL ISSUING AUTHORITY AND/OR STATE OF GEORGIA EPD.

THE CONTRACTOR IS REQUIRED TO PROVIDE SPECIFIC MEASUREMENTS TO MEET THE SPCC REQUIREMENTS IN THE ENVIRONMENTAL PROTECTION PLAN (EPP). THIS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR WHO IS ACTUALLY CONDUCTING THE CONSTRUCTION PHASE.

GSWCC AND NPDES NOTES (CONT'D.):

TO ENSURE THAT BEST MANAGEMENT PRACTICES (BMPs) FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS ARE SUITABLE, THE PRIMARY PERMITTEE (OPERATOR/CONTRACTOR) SHALL PROVIDE AND IMPLEMENT THE FOLLOWING SPILL CONTINGENCY PLAN REQUIREMENTS, WHICH ALSO MEET GAR 100001 - PART III.B.1.& 2.; PART IV. (iii) (SECOND PARAGRAPH); D.2.c.(1), (3) & (4); PART IV.D.3.(1); GAR 000000 NPDES INDUSTRIAL REQUIREMENTS. THIS SECTION ALSO COVERS REQUIREMENTS FOR HAZARDOUS WASTE AND PEST MANAGEMENT.

BMPs FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS (CONT'D.):

(a.) DESCRIPTION OF MEASURES TO REDUCE / PREVENT / MINIMIZE SPILL / RELEASES OF HAZARDOUS MATERIALS STORED AND USED AT THE SITE DURING CONSTRUCTION ACTIVITIES AND TO SHOW THEIR LOCATION IN A MAP;

(b.) LOCATION OF HAZARDOUS MATERIALS STORAGE AREAS; INCLUDING TANKS AND REFUELING OPERATIONS;

(c.) SPECIFIC INFORMATION OF THE CONTRACTOR'S EMERGENCY RESPONSE TEAM AND CLEAN-UP PROCEDURES TO BE PROVIDED IN THE ENVIRONMENTAL PROTECTION PLAN (EPP). CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL EMERGENCY RESPONSE ACTIONS AT THE SITE, TO INCLUDE REMOVAL AND DISPOSAL OF CONTAMINATED MATERIALS. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY AND REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.

SPILL CLEANUP AND CONTROL PRACTICES:

- LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO ALL ON-SITE PERSONNEL.

- MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS.

- TYPICAL MATERIALS AND EQUIPMENT INCLUDE, BUT IS NOT LIMITED TO: BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.

- SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS. THE CONTRACTOR SHOULD ALSO NOTIFY THE FOLLOWING OF ALL SPILL / RELEASES AND ALL CORRECTIVE ACTIONS TAKEN AFTER A SPILL / RELEASE AS REQUIRED:

- FOR EMERGENCY ASSISTANCE FROM THE FIRE DEPARTMENT CONTACT 911;

- FOR SPILLS THAT IMPACT SURFACE WATER (I.E. LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED AT (800) 424-8802 / (202) 267-2675;

- FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED AT (800) 424-8802 / (202) 267-2675;

- FOR SPILLS GREATER THAN 25-GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA ENVIRONMENTAL PROTECTION DIVISION (EPD) SHALL BE CONTACTED WITHIN 24-HOURS;

- FOR SPILLS LESS THAN 25-GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED

26. DESCRIPTION OF MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED:

MEASURES INCLUDE A COMBINATION OF VEGETATED SWALES AND NATURAL DEPRESSIONS FOR FLOW ATTENUATION, LANDSCAPED AND TURF AREAS THAT WILL REDUCE SOIL AND SEDIMENT RUNOFF.

STORM WATER MANAGEMENT FOR DEVELOPMENT OF THE PROJECT SITE WILL BE ACCOMPLISHED AFTER FINAL SITE CONDITIONS ARE ESTABLISHED BY MEANS OF A PROPOSED STORM SYSTEM DISCHARGING INTO AN EXISTING DETENTION POND.

BY PROVIDING POST-CONSTRUCTION STORM WATER MANAGEMENT PRACTICES, WHICH SHALL PROVIDE PERPETUAL MANAGEMENT OF RUNOFF QUALITY AND QUANTITY, THESE MEASURES WILL ENSURE THAT THE RECEIVING STREAM'S BIOLOGICAL, CHEMICAL, AND PHYSICAL CHARACTERISTICS AND FUNCTIONS ARE PROTECTED AND THAT NATURAL STREAM FUNCTIONS ARE MAINTAINED AND PROTECTED.

27. DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE:

THE CONTRACTOR MUST PROVIDE MEASURES, SUCH AS PLASTIC SHEETING OR TEMPORARY ROOFS, TO COVER BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTE, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND TO STORMWATER.

28. DESCRIPTION OF THE PRODUCT SPECIFIC PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES:

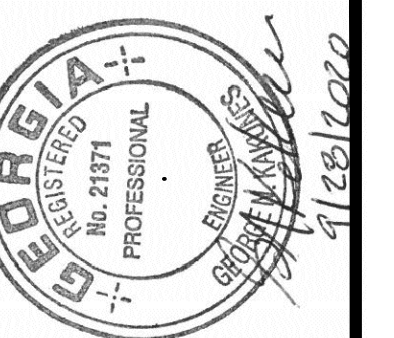
PETROLEUM BASED PRODUCTS: CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS, AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/ MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF ON-SITE ABOVE GROUND STORAGE OF PETROLEUM, OIL, AND LUBRICANT (POL) PRODUCTS EXCEEDS 1,320 GALLONS, COUNTING CONTAINERS OF 55-GALLONS OR LARGER (THIS INCLUDES CAPACITIES OF EQUIPMENT), OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. IN SUCH A CASE, THE CONTRACTOR WILL BE REQUIRED TO HAVE A SITE SPECIFIC SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURES (SPCC) PLAN AT THE STATE LEVEL PREPARED AND SEALED BY A CERTIFIED DESIGN PROFESSIONAL (P.E.) IN ACCORDANCE WITH 40 CFR 112 AND APPROVED BY THE LOCAL ISSUING AUTHORITY AND/OR STATE OF GEORGIA EPD.

PAINTS / FINISHES / SOLVENTS: ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

FERTILIZER / HERBICIDES: THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE FOLLOWING: MANUFACTURER'S SPECIFICATIONS; THE GUIDELINES SET FORTH FOR THE ESTABLISHMENT OF CROPS; THE GUIDELINES SET FORTH IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION; AND/OR, CHEROKEE COUNTY STANDARDS AND SPECIFICATIONS, CURRENT EDITION. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.

BUILDING MATERIALS: NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ON-SITE. ALL SUCH MATERIALS WILL BE DISPOSED OF IN ACCORDANCE WITH PROPER WASTE DISPOSAL PROCEDURES.



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Table with columns: DATE, REVISION, AUTHORIZATION, EXPIRATION DATE.

PROJ. NO.: 100061831
DESIGNED BY: KRJ
DRAWN BY: KRJ
CHECKED BY: MRM
APPROVED BY: GSK
DATE: SEPTEMBER 2020
SCALE: NO SCALE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
EROSION AND SEDIMENT CONTROL NOTES

SHEET NO. EC-05

GSWCC AND NPDES NOTES (CONT'D.):

29. CONSTRUCTION SCHEDULE:

THE ANTICIPATED START DATE FOR THE PROJECT IS JANUARY 30th, 2021 AND IS EXPECTED TO HAVE AN APPROXIMATE TIME DURATION OF 42 MONTHS FOR A CONSTRUCTION COMPLETION DATE OF JULY 30th, 2024. REFER TO SHEET NUMBER EC-07 FOR THE PROPOSED SITE WORK CONSTRUCTION ACTIVITY SCHEDULE FOR A DESCRIPTION AND CHART / TIMELINE OF THE INTENDED SEQUENCE OF MAJOR ACTIVITIES, WHICH DISTURB SOILS FOR THE MAJOR PORTIONS OF THE SITE (I.E. INITIAL PERIMETER AND SEDIMENT STORAGE BMPs, CLEARING AND GRUBBING ACTIVITIES, EXCAVATION ACTIVITIES, UTILITY INSTALLATION ACTIVITIES, TEMPORARY AND FINAL STABILIZATION, ETC...).

30. DETAILS ON COMPLETE REQUIREMENTS OF INSPECTIONS AND RECORD KEEPING BY THE PRIMARY PERMITTEE:

INSPECTIONS (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.D.4.):

a. PERMITTEE REQUIREMENTS.

(1). EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL, PROVIDED BY THE PRIMARY PERMITTEE, SHALL INSPECT:

- (a.) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT;
(b.) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING; AND,
(c.) MEASURE RAINFALL ONCE EACH 24-HOUR PERIOD AT THE SITE.

THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(2). MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

(3). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24-HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST):

- (a.) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE;
(b.) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
(c.) STRUCTURAL CONTROL MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(4). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E. UNTIL A NOTICE OF TERMINATION HAS BEEN SUBMITTED) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURE ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).

(5). BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN. THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

(6). A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E. INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

31. DETAILS ON COMPLETE REQUIREMENTS OF SAMPLING FREQUENCY AND REPORTING OF SAMPLING RESULTS:

SAMPLING FREQUENCY (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.D.6.d.):

(1). THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORMWATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.

- (a). THE ACCUMULATION OF THE MINIMUM AMOUNT OF RAINFALL FOR THE QUALIFYING EVENT, IF THE STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER OR FROM A MONITORED OUTFALL HAS BEGUN AT OR PRIOR TO THE ACCUMULATION; OR,
(b). THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER OR FROM A MONITORED OUTFALL, IF THE DISCHARGE BEGINS AFTER THE ACCUMULATION OF THE MINIMUM AMOUNT OF RAINFALL FOR THE QUALIFYING EVENT.

(2). HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.

GSWCC AND NPDES NOTES (CONT'D.):

SAMPLING FREQUENCY (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.D.6.d.) (CONT'D.):

(3). SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING EVENTS:

(a.) FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;

(b.) IN ADDITION TO (a) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION, WHICHEVER COMES FIRST;

(c.) AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (a) AND (b) ABOVE, IF BMPs IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES 0.5 INCH DURING NORMAL BUSINESS HOURS * UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPs ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED.

(d.) WHERE SAMPLING PURSUANT TO (a), (b) OR (c) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE) THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.a(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (a), (b) OR (c) ABOVE; AND

(e.) EXISTING CONSTRUCTION ACTIVITIES, I.E. THOSE THAT ARE OCCURRING ON OR BEFORE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (a) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (b). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (b) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (c) ABOVE.

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (a) AND (b) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES, OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

REPORTING (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.E.):

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO THE EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING RESULTS SHALL INCLUDE THE FOLLOWING INFORMATION:

- a. THE RAINFALL AMOUNT, DATE, EXACT PLACE, AND TIME OF SAMPLING OR MEASUREMENTS;
b. THE NAME(S) OF THE INDIVIDUAL(S) WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
c. THE DATE(S) ANALYSES WERE PERFORMED;
d. THE TIME(S) ANALYSES WERE INITIATED;
e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
f. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED; AND,
g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS.
h. RESULTS WHICH EXCEED 1,000 NTU SHALL BE REPORTED AS "EXCEEDS 1,000 NTU." AND
i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

32. COMPLETE DETAILS FOR RETENTION OF RECORDS AS PER PART IV.F. OF THE PERMIT:

1. THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI:

- a. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
d. A COPY OF ALL MONITORING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.a. OF THIS PERMIT;
f. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND,
g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.a.(1)(c) OF THIS PERMIT.

GSWCC AND NPDES NOTES (CONT'D.):

32. COMPLETE DETAILS FOR RETENTION OF RECORDS AS PER PART IV.F. OF THE PERMIT: (CONT'D.):

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, REPORTS, PLANS, MONITORING REPORTS, MONITORING INFORMATION, INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THE NPDES PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

33. DESCRIPTION OF ANALYTICAL METHODS TO BE USED TO COLLECT AND ANALYZE THE SAMPLES FROM EACH LOCATION:

SAMPLE TYPE (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.D.6.b.): ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001"; AND, GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD. ANALYTICAL METHODS USED FOR THE COLLECTION AND ANALYSIS OF SAMPLES FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL USE, AT A MINIMUM, THE GUIDELINES SET FORTH IN PART IV.D.6.a. AND PART IV.D.6.b OF THIS PERMIT.

SAMPLING POINTS (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.D.6.c.): FOR CONSTRUCTION ACTIVITIES, THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S), OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALLS USING THE MINIMUM GUIDELINES SET FORTH IN PART IV.D.6.c.(1). OF THIS PERMIT. RECEIVING WATER(S) MUST HAVE AN UPSTREAM AND A DOWNSTREAM SAMPLE LOCATION.

WHEN USING UPSTREAM AND DOWNSTREAM SAMPLING POINTS, A MAXIMUM ALLOWABLE INCREASE/DIFFERENCE OF 25 NTU IS ALLOWED. THE FOLLOWING RECEIVING WATERS WILL BE SAMPLED:

THERE ARE NO UPSTREAM AND DOWNSTREAM SAMPLING POINTS FOR THE PROJECT. THE OUTFALL SAMPLING POINT DESCRIBED BELOW FLOWS INTO THE ETOWAH RIVER WHICH IS THE RECEIVING WATER FOR THE SITE.

34. "APPENDIX B" RATIONALE FOR OUTFALL SAMPLING POINTS:

SAMPLING REQUIREMENTS (NPDES GENERAL PERMIT NO. GAR100001, SEC. IV.D.6.a.(3).):

WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OF THE OUTFALLS WILL BE MONITORED, A RATIONALE MUST BE INCLUDED FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES).

STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATION(S). A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES (BMPs) HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING THE VALUE THAT WAS SELECTED FROM "APPENDIX B" IN THE NPDES GENERAL PERMIT NO. GAR100001.

OUTFALL SAMPLE POINT #001: OUTFALL SAMPLE POINT 001 IS THE OUTFALL SAMPLE POINT LOCATED WITHIN AN EXISTING STORM SEWER DRAIN INLET. THE SAMPLE POINT IS ON THE SOUTHWEST SIDE OF THE SITE WHICH OUTFALLS INTO THE ETOWAH RIVER. REFER TO SHEET NOS. EC-01 THRU EC-03 FOR IDENTIFICATION OF SAMPLING POINT LOCATION.

APPENDIX B Nephelometric Turbidity Unit (NTU) TABLES

Table with 2 main sections: Cold Water (Trout Stream) and Warm Water (Supporting Warm Water Fisheries). Each section has a grid of Site Size (acres) vs Surface Water Drainage Area (square miles) with NTU values. The table is crossed out with a large X.

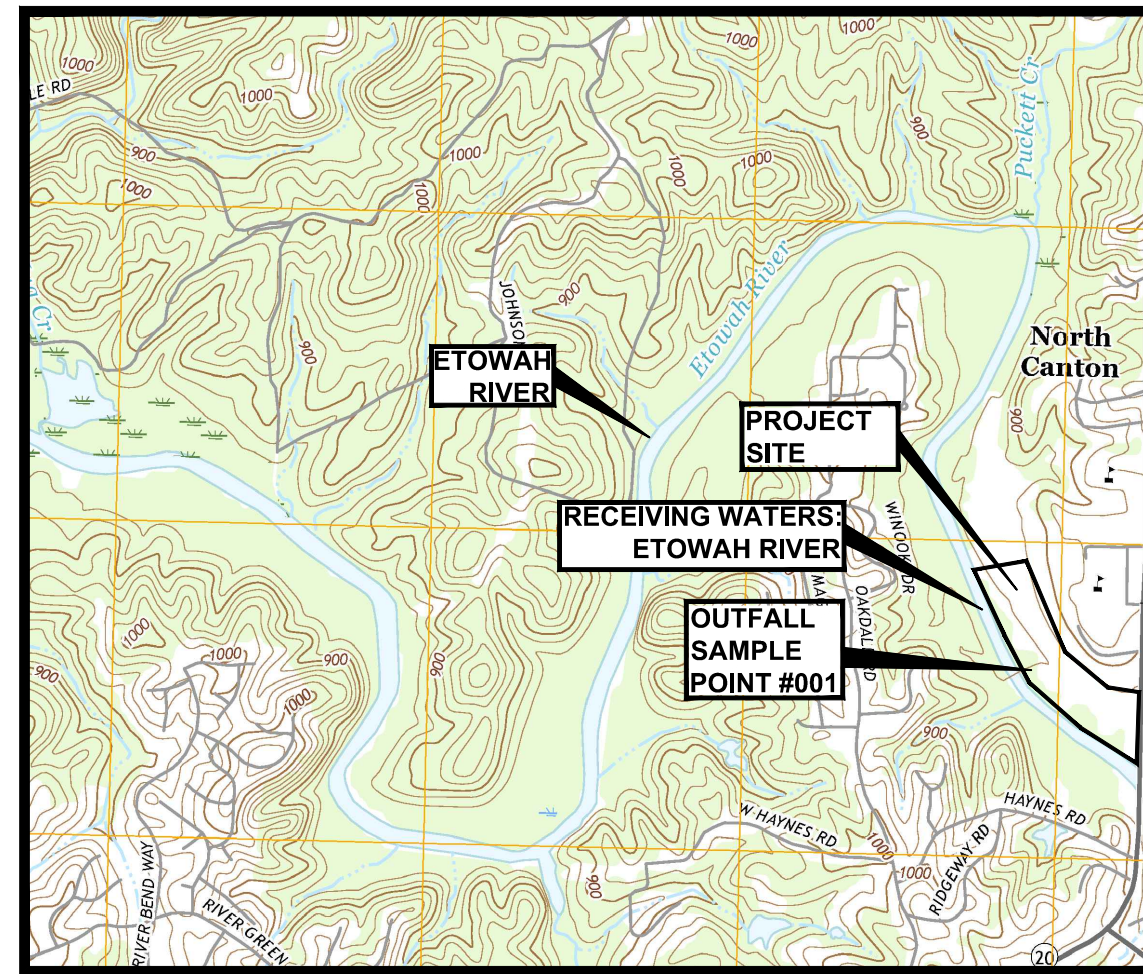
To use these tables, select the size (acres) of the construction site. Then, select the surface water drainage area (square miles). The NTU matrix value arrived at from the above tables is the one to use in Part III.D.4.

Example 1: For a site size of 12.5 acres and a cold water drainage area of 37.5 square miles, the NTU value to use in Part III.D.4 is 75 NTU.

Example 2: For a site size of 51.7 acres and a warm water drainage area of 72 square miles, the NTU value to use in Part III.D.4 is 100 NTU.

GSWCC AND NPDES NOTES:(CONT'D.)

35. FOR THE DELINEATION OF ALL SAMPLING LOCATIONS, PERENNIAL AND INTERMITTENT STREAMS, AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED, REFER TO SHEET NOS. C-4.1 THRU C-4.3 AND THE USGS TOPOGRAPHIC MAP BELOW.



USGS SOUTH CANTON QUADRANGLE GEORGIA-CHEROKEE CO. 7.5-MINUTE SERIES

36. DESCRIPTION OF THE APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE FOR EACH PHASE OF EROSION AND SEDIMENT CONTROL:

EROSION CONTROLS AND MEASURES - INITIAL PHASE (INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs):

CONSTRUCTION EXIT (Co) TO PREVENT THE TRACKING OR FLOW OF MUD ONTO ADJACENT ROADS AND DRIVES; SILT FENCE "TYPE-C" (Sd1-S) FOR PERIMETER CONTROL; EXCAVATED INLET SEDIMENT TRAPS (Sd2-E) AND SLOTTED BOARD DAMS (R-B) FOR SEDIMENT STORAGE; INLET SEDIMENT TRAPS - FABRIC AND FRAME (Sd2-F) AND PIGS IN BLANKETS (Sd2-P) TO PROTECT EXISTING STORM DRAINAGE STRUCTURES; DUST CONTROL ON DISTURBED AREAS (Du); DISTURBED AREA STABILIZATION WITH MULCHING ONLY (Ds1); AND, DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING (Ds2), AND DIVERSIONS (D1) WITH STONE CHECK DAMS (Cd-S).

EROSION CONTROLS AND MEASURES - INTERMEDIATE PHASE (GRADING AND DRAINAGE BMPs):

CONSTRUCTION EXIT (Co) TO PREVENT THE TRACKING OR FLOW OF MUD ONTO ADJACENT ROADS AND DRIVES; SILT FENCE "TYPE-C" (Sd1-S) FOR PERIMETER CONTROL; EXCAVATED SEDIMENT TRAPS (Sd2-E) AND SLOTTED BOARD DAMS (R-B) AT DRAINAGE STRUCTURES FOR SEDIMENT STORAGE; INLET SEDIMENT TRAPS - FABRIC AND FRAME (Sd2-F) AND PIGS IN BLANKETS (Sd2-P) TO PROTECT EXISTING AND PROPOSED STORM DRAINAGE STRUCTURES; DUST CONTROL ON DISTURBED AREAS (Du); DISTURBED AREA STABILIZATION WITH MULCHING ONLY (Ds1); DISTURBED AREA STABILIZATION WITH TEMPORARY SEEDING (Ds2); AND, EROSION CONTROL MATTING AND BLANKETS (Ss) ON ALL SLOPES STEEPER THAN 2.5:1 AND GREATER THAN 10 FEET IN HEIGHT AND IN AREAS OF CONCENTRATED FLOW, AND DIVERSIONS (D1) WITH STONE CHECK DAMS (Cd-S).

INTERMEDIATE PHASE BMPs MUST BE INSPECTED AND MAINTAINED REGULARLY AND SHALL BE RELOCATED AND/OR RE-INSTALLED BY THE CONTRACTOR AS REQUIRED

EROSION CONTROLS AND MEASURES - FINAL PHASE:

SILT FENCE "TYPE-C" (Sd1-S) FOR PERIMETER CONTROL; INLET SEDIMENT TRAPS (Sd2-F AND Sd2-P) TO PROTECT STORM DRAINAGE STRUCTURES; DUST CONTROL ON DISTURBED AREAS (Du); DISTURBED AREA STABILIZATION WITH PERMANENT SEEDING (Ds3) AND/OR DISTURBED AREA STABILIZATION WITH SODDING (Ds4).

FINAL PHASE BMPs SHALL BE MAINTAINED UNTIL ALL DISTURBED AREAS HAVE ACHIEVED FINAL STABILIZATION, AND SHALL BE REMOVED AFTER STABILIZATION HAS BEEN ACHIEVED.

37. FOR GRAPHIC SCALE AND NORTH ARROW, REFER TO SHEET NO. EC-01 THRU EC-03.

38. FOR EXISTING AND PROPOSED CONTOUR LINES, REFER TO SHEET NO. EC-01 THRU EC-03.

39. USE OF ALTERNATIVE BMPs WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO, OR SUPERIOR TO, CONVENTIONAL BMPs AS CERTIFIED BY A DESIGN PROFESSIONAL (UNLESS DISAPPROVED BY EPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION) SHALL NOT BE UTILIZED FOR THIS PROJECT.

IF THE USE OF ALTERNATIVE EROSION AND SEDIMENT CONTROL BMPs IS DETERMINED NECESSARY BY ON-SITE INSPECTION AND/OR AS FIELD CONDITIONS DICTATE TO CONTROL OR TREAT THE SEDIMENT SOURCE, REFERENCE SHALL BE MADE TO THE "ALTERNATIVE BMP GUIDANCE DOCUMENT" FOUND AT <www.gaswcc.org>.

40. USE OF ALTERNATIVE BMP FOR APPLICATION TO EQUIVALENT BMP LIST. PLEASE REFER TO APPENDIX A-2 OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, 2016 EDITION. NO ALTERNATIVE BMPs ARE PROPOSED FOR THIS DEVELOPMENT.

41. APPLICABLE 25-FOOT OR 50-FOOT UNDISTURBED BUFFERS ADJACENT TO STATE WATERS OR ANY ADDITIONAL BUFFERS REQUIRED BY THE LOCAL ISSUING AUTHORITY ARE DELINEATED ON SHEETS EC-01 THRU EC-03.

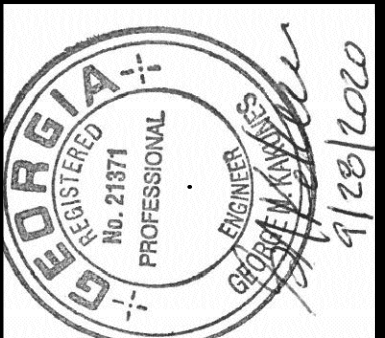
REQUIREMENTS FOR STREAM BUFFER VARIANCE (SBV):

- (i.) 25-FOOT UNDISTURBED NATURAL VEGETATIVE BUFFER OF STATE WATERS;
(ii.) 50-FOOT UNDISTURBED NATURAL VEGETATIVE BUFFER ALONG ALL STREAMS
(iii.) 75-FOOT BUFFER PROHIBITING IMPERVIOUS COVER, GRADING, FILLING AND EARTHMOVING TO BE MINIMIZED; AND,
(iv.) 150-FOOT UNDISTURBED BUFFER ESTABLISHED ALONG BOTH SIDES OF THE ETOWAH RIVER

THIS PROJECT PROPOSES NO BUFFER ENCROACHMENT WITHIN THE STATE STREAM BUFFER; THEREFORE, THERE ARE NO REQUIREMENTS FOR STREAM BUFFER VARIANCE (SBV) OR ANY ADDITIONAL BUFFERS REQUIRED BY THE LOCAL ISSUING AUTHORITY.

NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A 25-FOOT BUFFER ALONG THE BANKS OF ALL STATE WATERS, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW, OR WAVE ACTION, EXCEPT WHERE A SBV IS APPROVED BY GA EPD.

NOTE: ALONG STREAM BANK BUFFERS AND OTHER SENSITIVE AREAS, TWO ROWS OF TYPE-"C" SILT FENCE, OR ONE ROW TYPE-"C" SILT FENCE BACKED BY HAYBALES SHALL BE USED. THIS REQUIREMENT MUST BE IMPLEMENTED REGARDLESS OF WORK THAT IS APPROVED UNDER AN SBV, OR FOR A PROJECT THAT IS EXEMPT FROM AN SBV.



ATKINS 1600 RiverEdge Parkway, N.W., Suite 700 Atlanta, GA 30328 P: 770-953-0260
HARTWELL ENGINEERS & INTEGRATORS STEPHEN W. HARTWELL, P.E. (GA) 24851-1

Table with columns: PROJ. NO., DESIGNED BY, DRAWN BY, CHECKED BY, APPROVED BY, DATE, SCALE, and a revision table with columns: DATE, REVISION.

CITY OF CANTON, GEORGIA WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD EROSION AND SEDIMENT CONTROL NOTES

GSWCC AND NPDES NOTES (CONT'D.):

42. NO WETLANDS ARE LOCATED ON THE SITE OR WITHIN 200 FEET, STATE WATERS ARE LOCATED ON-SITE, OR WITHIN 200-FEET OF THE PROJECT LIMITS. THE DELINEATION OF THESE ITEMS ARE SHOWN ON SHEET NO'S. EC-01 THRU EC-03.

NO SENSITIVE AREAS (I.E. CULTURAL RESOURCES: ENDANGERED SPECIES, ARCHEOLOGICAL SITES, HISTORICAL SITES, ETC...) EXIST ON, OR WITHIN, 200-FEET OF THE PROJECT SITE.

NOTE: ALONG STREAM BANK BUFFERS AND OTHER SENSITIVE AREAS, TWO ROWS OF TYPE-"C" SILT FENCE, OR ONE ROW TYPE-"C" SILT FENCE BACKED BY HAYBALES, SHALL BE USED.

43. FOR THE DELINEATION AND ACREAGE OF CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE, REFER TO SHEETS EC-01 THRU EC-03 AND TO THE HYDROLOGY REPORT IDENTIFIED IN THE GSWCC AND NPDES NOTES, ITEM #44.

44. NO HYDROLOGY STUDY IS AVAILABLE FOR THE SITE. EXISTING DRAINAGE AREAS ARE SHOWN ON DRAWING NO. EC-01. PROPOSED DRAINAGE AREAS ARE SHOWN ON DRAWING NO. EC-03.

45. ESTIMATE OF THE RUNOFF COEFFICIENT, OR PEAK DISCHARGE FLOW OF THE SITE, PRIOR TO AND AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED.

SITE RUNOFF COEFFICIENTS	
DESCRIPTION	C
WEIGHTED PRE-CONSTRUCTION RUNOFF COEFFICIENT	0.76
WEIGHTED POST-CONSTRUCTION RUNOFF COEFFICIENT	0.81

SITE RUNOFF COEFFICIENT / CURVE NUMBER NOTE FOR ADDITIONAL INFORMATION, REFER TO THE HYDROLOGY REPORT REFERENCED FOR THIS PROJECT AS IDENTIFIED IN THE GSWCC AND NPDES NOTES, ITEM #44.

46. FOR STORM-DRAIN PIPE AND WEIR VELOCITIES WITH APPROPRIATE OUTLET PROTECTION TO ACCOMMODATE DISCHARGES WITHOUT EROSION, REFER TO THE THE STORM DRAIN OUTLET PROTECTION DETAIL ON EC-09.

FOR THE IDENTIFICATION / DELINEATION OF ALL STORM WATER DISCHARGE POINTS, REFER TO SHEET NO. EC-01 THRU EC-03.

47. SOIL SERIES FOR THE PROJECT SITE AND THEIR DELINEATION:

A. REFER TO THE SOIL SERIES INFORMATION CHART BELOW.

B. REFER TO SHEET NO.s. EC-01 THRU EC-03 FOR PROJECT SITE SOIL SERIES BOUNDARY DELINEATIONS.

C. REFERENCES:

1. UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY, 6 JUNE 2017. <<http://websoilsurvey.nrcs.usda.gov/>>

SOIL SERIES INFORMATION		
MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC GROUP
BIS	BUNCOMBE LOAMY SAND	A
HSC	HIWASSEE LOAM, 6 TO 10 PERCENT SLOPES	B
HTD3	HIWASSEE CLAY LOAM, 6 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
TcE	TALLAPOOSA FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES	D
TJF	TALLAPOOSA CHANNERY SANDY LOAM, 25 TO 60 PERCENT SLOPES	D
Toe	TOCCOA COMPLEX	A
W	WATER	
WgB	WICKHAM FINE SANDY LOAM, 2 TO 6 PERCENT SLOPES	B

48. FOR THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION, REFER TO SHEET NO.s EC-01 THROUGH EC-03.

49. MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED FOR EACH COMMON DRAINAGE LOCATION PER PHASE OF EROSION AND SEDIMENT CONTROL:

NOTES:

1. PERENNIAL AND INTERMITTENT WATERS OF THE STATE SHALL NOT BE USED FOR TEMPORARY OR PERMANENT SEDIMENT DETENTION.
2. MAINTENANCE AND FINAL DISPOSAL OF EXCAVATED INLET SEDIMENT TRAPS (Sd2-E) IMPLEMENTED AT THE PROJECT SITE WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE STATE OF GEORGIA SOIL AND WATER CONSERVATION COMMISSION (GSWCC) MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, 5th EDITION - REQUIREMENTS AS IDENTIFIED ON PAGES 6-139 AND 6-140 OF THE MANUAL; AND/OR, THE LATEST REVISION.
3. SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBANCE ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED.
4. FOR SEDIMENT STORAGE CALCULATIONS FOR EACH PHASE OF EROSION AND SEDIMENT CONTROL, REFER TO SHEET NO.s EC-09 THRU EC-11.

GSWCC AND NPDES NOTES (CONT'D.):

49. MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED FOR EACH COMMON DRAINAGE LOCATION PER PHASE OF EROSION AND SEDIMENT CONTROL (CONT'D.):

REQUIRED SEDIMENT STORAGE SHALL BE ACCOUNTED FOR BY USE OF THE FOLLOWING BMP'S DURING THE CORRESPONDING PHASE OF EROSION AND SEDIMENT CONTROL:

SEDIMENT STORAGE BMPs - INITIAL PHASE:

SEDIMENT STORAGE FOR THE INITIAL PHASE CONSISTS OF SLOTTED BOARD DAMS, EXCAVATED SEDIMENT TRAPS, ROCK FILTER DAMS AND DIVERSIONS IN VARIOUS LOCATIONS ON THE SITE. REFER TO SHEET NO. EC-01 FOR LOCATION OF SEDIMENT STORAGE BMPs FOR THE INITIAL PHASE. REFER TO SHEET NO. EC-10 FOR SLOTTED BOARD DAM CALCULATIONS AND SHEET NO. EC-11 FOR EXCAVATED SEDIMENT TRAP CALCULATIONS.

SEDIMENT STORAGE BMPs - INTERMEDIATE PHASE:

MAINTAIN TEMPORARY SEDIMENT BASINS AS LONG AS CONSTRUCTION PERMITS. MAINTAIN SLOTTED BOARD DAM R4-B 2 AS LONG AS CONSTRUCTION PERMITS AND CONSTRUCT EXCAVATED SEDIMENT TRAP IN ITS PLACE WHEN ABLE. CONSTRUCT EXCAVATED SEDIMENT TRAPS (Sd2-E) AT ALL PROPOSED STORM DRAINAGE STRUCTURES. REFER TO SHEET NO. EC-02 FOR BMP LOCATIONS. REFER TO SHEET NO. EC-10 FOR SLOTTED BOARD DAM CALCULATIONS AND SHEET NO. EC-11 FOR EXCAVATED SEDIMENT TRAP CALCULATIONS.

SEDIMENT STORAGE BMPs - FINAL PHASE:

EXCAVATED SEDIMENT TRAPS (Sd2-E) AND SLOTTED BOARD DAMS WILL BE MAINTAINED AT ALL STORM DRAINAGE STRUCTURES UNTIL FINAL STABILIZATION IS ACHIEVED. THE UNDERGROUND DETENTION SYSTEM WILL PROVIDE PERMANENT DETENTION AND WATER QUALITY TREATMENT FOR THE FULLY DEVELOPED SITE. REFER TO SHEET NO. EC-03 FOR BMP LOCATIONS.

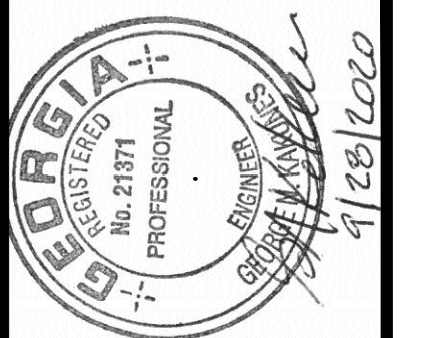
50. FOR PHASED EROSION AND SEDIMENT CONTROL PLANS (I.E. INITIAL PHASE INTERMEDIATE PHASE, AND FINAL PHASE) SHOWING THE LOCATION OF BEST MANAGEMENT PRACTICES (BMPs) THAT ARE CONSISTENT WITH AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION, USING UNIFORM CODING SYMBOLS FROM THE MANUAL, CHAPTER 6, REFER TO SHEET NO'S. EC-01 THRU EC-03. FOR UNIFORM CODING SYMBOLS LEGEND, REFER TO SHEET NO'S. EC-01 THRU EC-03.

51. FOR DETAILED DRAWINGS OF EROSION AND SEDIMENTATION CONTROL STRUCTURAL PRACTICES, REFER TO SHEET NO'S. EC-08 THRU EC-11.

52. FOR A SITE SPECIFIC VEGETATIVE PLAN NOTING ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES, INCLUDING SPECIES, PLANTING DATES, AND SEEDING, FERTILIZER, AND MULCHING RATES, REFER TO THE "SOUTHERN PIEDMONT VEGETATION PLAN" Ds1 AND Ds2 DETAIL ON SHEET NO. EC-08.

CONSTRUCTION ACTIVITY SCHEDULE

ACTIVITY	MONTHS																																																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42							
APPROX. START DATE: JAN 30th 2021 APPROX. END DATE: JUL 30th 2024																																																	
EROSION CONTROL IMPLEMENTATION	█																																																
CLEARING AND GRUBBING	█																																																
EARTHWORK	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
TEMPORARY GRASSING																																																	
STORM PIPE CONSTRUCTION																																																	
FINE GRADING																																																	
PAVING AND CURBS																																																	
UTILITY (WATER & SANITARY)																																																	
BUILDING CONSTRUCTION																																																	
FINAL STABILIZATION																																																	
PERMANENT GRASSING																																																	
CLEAN STORM DRAINS																																																	
REMOVE TEMP EROSION CONTROLS																																																	
MAINTENANCE OF EROSION CONTROL ITEMS																																																	



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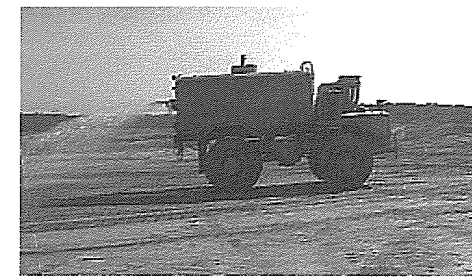
HARTWELL ENGINEERING, INC.
ENGINEERS & SURVEYORS
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(404) 249-5111

PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:
100061831	KRJ	KRJ	MFM	GNK	SEPTEMBER 2020	NO SCALE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
EROSION AND SEDIMENT CONTROL NOTES

SHEET NO.
EC-07

Dust Control on Disturbed Areas



DEFINITION
Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE
- To prevent surface and air movement of dust from exposed soil surfaces.
- To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

CONDITIONS
This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

METHOD AND MATERIALS
A. TEMPORARY METHODS
Mulches. See standard **Ds1 - Disturbed Area Stabilization (With Mulching Only)**. Synthetic resins may be used instead of asphalt to bind mulch material. Refer to standard **Tb-Tackifiers and Binders**. Resins such as Curasol or Terrastack should be used according to manufacturer's recommendations.
Vegetative Cover. See standard **Ds2 - Disturbed Area Stabilization (With Temporary Seeding)**.
Spray-on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to standard **Tb-Tackifiers and Binders**.
Tillage. This practice is designed to roughen and bring clods to the surface. It is an emergency measure

which should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.
Barriers. Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.
Calcium Chloride. Apply at rate that will keep surface moist. May need retreatment.

B. PERMANENT METHODS
Permanent Vegetation. See standard **Ds3 - Disturbed Area Stabilization (With Permanent Vegetation)**. Existing trees and large shrubs may afford valuable protection if left in place.
Topsoiling. This entails covering the surface with less erodible soil material. See standard **Tp - Topsoiling**.
Stone. Cover surface with crushed stone or coarse gravel. See standard **Cr-Construction Road Stabilization**.

DESIGN CRITERIA
General
The design of a retaining wall is a complicated process. Many factors must be taken into account such as: stresses and forces outside and within the wall, allowable height and minimum thickness. Other considerations are: foundation design with respect to loadings, bearing values of soils and footing dimensions. Additional design factors are safety hazards, subsurface and surface drainage and appearance.
Each situation requires a specific design that is within the capabilities of the design professional.
Consideration should be given to all of the alternative methods with regard to construction of the

Retaining Wall



DEFINITION
A wall constructed of one or more of the following: concrete masonry, reinforced concrete cribbing, treated timbers, steel piling, gabions, stone drywall, rock riprap, etc.

PURPOSE
To assist in the stabilization of cut or fill slopes where stable slopes are not attainable without the use of the wall.

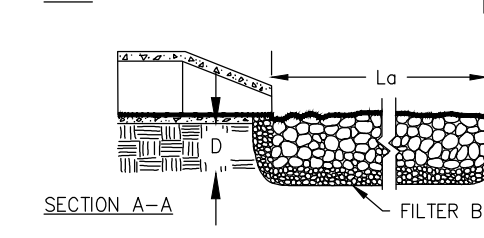
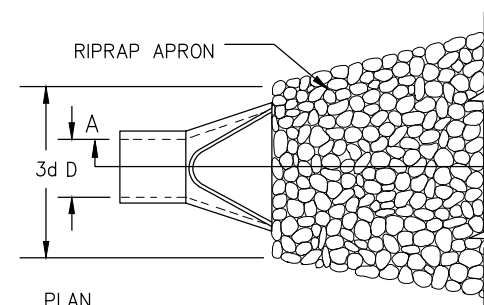
CONDITIONS
Use in conjunction with cut or fill slopes that, because of space limitations or unstable material, do not allow the stable slope criteria listed above, e.g. cuts into steep hillsides on small lots or cuts into hillsides behind shopping centers to provide loading space.

DESIGN CRITERIA
General
The design of a retaining wall is a complicated process. Many factors must be taken into account such as: stresses and forces outside and within the wall, allowable height and minimum thickness. Other considerations are: foundation design with respect to loadings, bearing values of soils and footing dimensions. Additional design factors are safety hazards, subsurface and surface drainage and appearance.
Each situation requires a specific design that is within the capabilities of the design professional.
Consideration should be given to all of the alternative methods with regard to construction of the

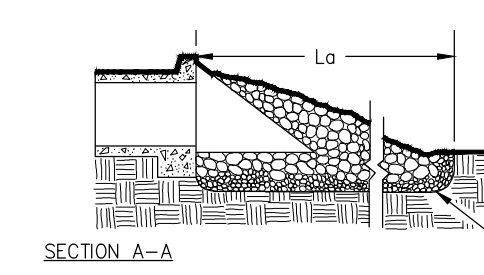
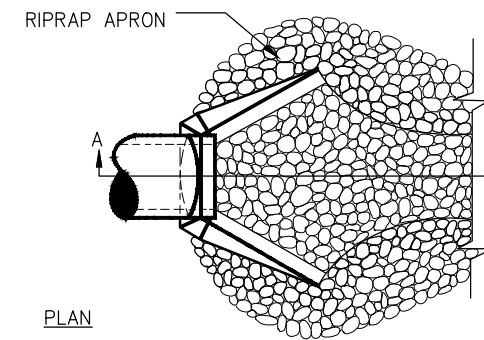
- wall. Some methods are:
1. Concrete masonry
 2. Concrete cribbing
 3. Gabions
 4. Steel piling
 5. Stone drywall
 6. Rock riprap, etc.
 7. Treated timbers
 8. Geotextile wrapped-face wall
 9. Geotextile reinforced steep slopes

RIPRAP OUTLET PROTECTION

PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL

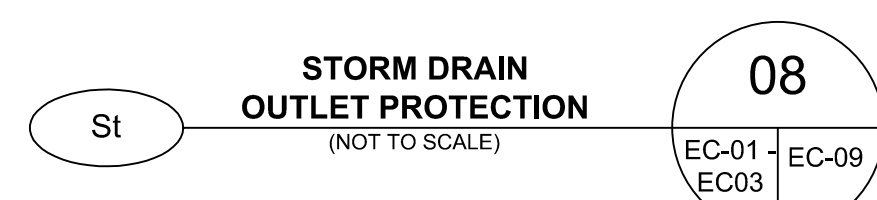
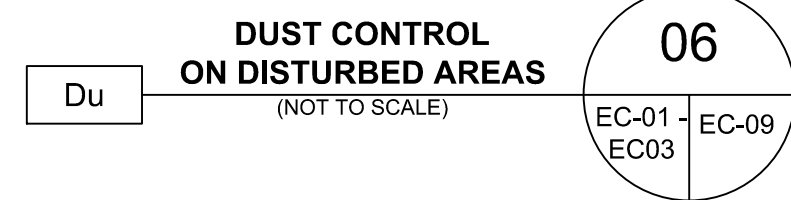


PIPE OUTLET TO WELL DEFINED CHANNEL

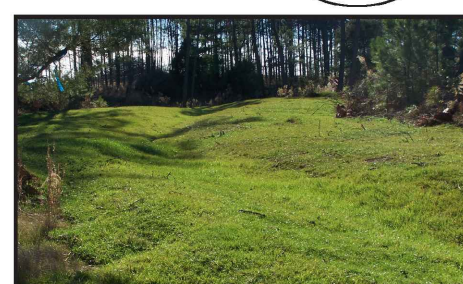


- NOTES:**
1. L₀ IS THE LENGTH OF THE RIPRAP APRON.
 2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
 3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
 4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

FLOW CHARACTERISTICS				RIP-RAP APRON SIZING						
OUTFALL ID	PIPE DIA. (in)	FLOW RATE (cfs)	VELOCITY (ft/s)	TAILWATER CONDITION	APRON LENGTH La (ft)	WIDTH AT HEADWALL W1 (ft)	WIDTH DOWNSTREAM W2 (ft)	AVERAGE STONE DIA. D50 (in)	MAX. STONE DIA. Dmax (in)	STONE DEPTH D (in)
A-4	18	8.67	3.84	MINIMUM	10.00	4.50	11.50	4	6	9
FLUME	12	0.45	1.97	MINIMUM	10.00	3.00	11.00	4	6	9



Diversion



DEFINITION
A ridge of compacted soil, constructed above, across or below a slope.

PURPOSE
To reduce the erosion of steep, or otherwise highly erodible areas by reducing slope lengths, intercepting storm runoff and diverting it to a stable outlet at a non-erosive velocity.

CONDITIONS
Diversion are applicable when:

1. Runoff from higher areas is or has potential for damaging property, causing erosion, contributing to pollution, flooding, interfering with or preventing the establishment of vegetation on lower areas.
2. Surface and/or shallow subsurface flow is damaging sloping upland.
3. The length of slope needs to be reduced so that soil loss will be reduced to a minimum.

This standard applies to temporary and permanent diversions in developments involving land-disturbing activities.
DESIGN CRITERIA
Location
Diversion location shall be determined by considering outlet conditions, topography, land use, soil type, length of slope, seep planes (when seepage is a problem), and the development layout. Diversions should be tailored to fit the conditions for a particular field and local soil type(s).
A detailed design is not required for this type of diversion. Diversions installed to divert water

A diversion consists of two components that must be designed - the ridge and the channel.

Ridge Design
The ridge shall be compacted and designed to have stable side slopes, which shall not be steeper than 2:1. The ridge shall be a minimum width of four feet at the design water elevation after settlement. Its design shall allow ten percent for settlement.

Channel Design
Land slope must be taken into consideration when choosing channel dimensions. On the steeper slopes, narrow and deep channels may be required. On the more gentle slopes, broad, shallow channels usually are applicable. The wide, shallow section will be easier to maintain. Since sediment deposition is often a problem in diversions, the designed flow velocity should be kept as high as the channel lining will permit.

Table 6-17.1 indicates the storm frequency required for the design of the diversion. The required storm frequency is based on the purpose of the diversion. The storm frequency is used to determine the required channel capacity, Q (peak rate of runoff).

The channel portion of the diversion may have a parabolic or trapezoidal cross-section. Detailed information for the design of these channels is provided in the specification **Wt - Stormwater Conveyance Channel**.

Outlets
Each diversion must have an adequate outlet. The outlet may be a constructed or natural waterway, a stabilized vegetated area or a stabilized open channel. In all cases, the outlet must discharge in such a manner as to not cause an erosion problem. Protected outlets shall be constructed and stabilized prior to construction of the diversion.

Stabilization
Channels shall be stabilized in accordance with item 5 of the construction specifications.

Diversions For Roads and Utility Rights - of Way
A detailed design is not required for this type of diversion. Diversions installed to divert water

off a road or right-of-way shall consist of a series of compacted ridges of soil running diagonally across the road at a 30° angle. Ridges are constructed by excavating a channel up-stream for this type of diversion.

The compacted ridge height shall be 8-12" above the original road surface; the channel depth shall be 8-12" below the original road surface. Channel bottoms and ridge tops shall be smooth enough to be crossed by vehicular traffic. The maximum spacing between diversions shall be as follows:

Road Grade (Percent)	Distance Between Diversions (Feet)
1	400
2	250
5	125
10	80
15	60
20	50

Stable outlets shall be provided for each diversion.

CONSTRUCTION SPECIFICATIONS

1. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the diversion.
2. The diversion shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein and free of irregularities that will impede normal flow.
3. All fills shall be machine compacted as needed to prevent unequal settlement that would cause damage in the completed diversion.
4. All earth removed and not needed in construction shall be spread or disposed of so that it will not interfere with the functioning of the diversion.
5. Diversion channel shall be stabilized in accordance with specification **Ch - Channel Stabilization**.

TYPICAL DIVERSION ACROSS ROAD

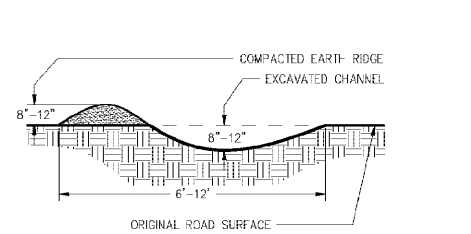


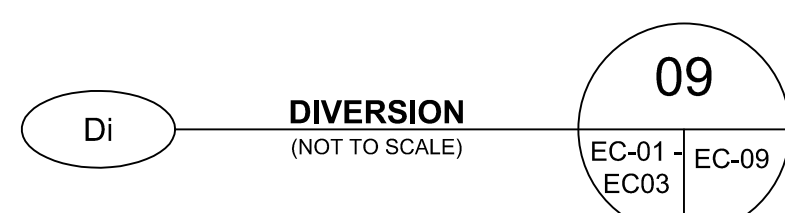
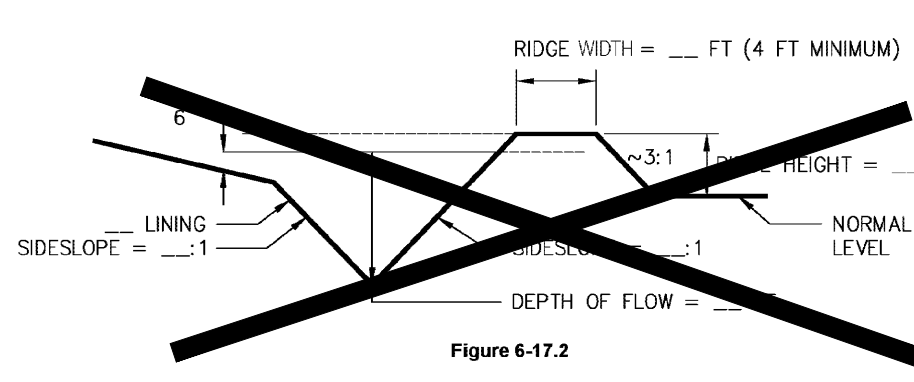
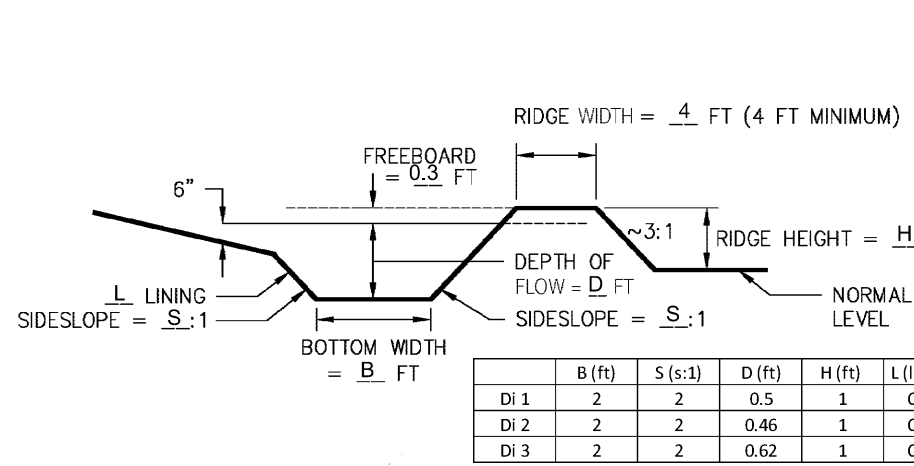
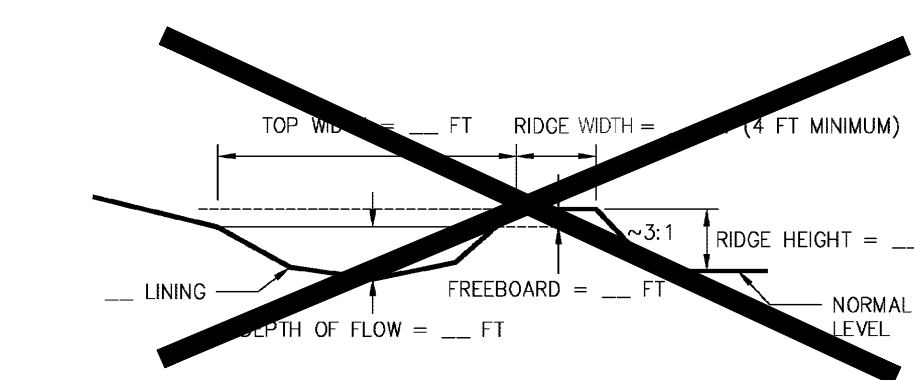
Table 6-17.1. Diversion Design Criteria

Diversion Type	Land or Improvement Protected	Storm Frequency ¹	Freeboard	Minimum Top Width
Temporary	Construction areas Building sites	10 yrs ²	0.3'	4'
Permanent	Landscaped, recreation and similar areas.	25 yrs	0.3'	4'
	Dwellings, schools, commercial bldgs., and similar installations	50 yrs	0.5'	4'

¹ Use 24-hr storm duration
² Use 10 yrs or the storm for the storm frequency specified in Title 12 of the Official Code of Georgia Annotated

SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

COMPLETE THE APPROPRIATE DETAIL DRAWING FOR THE CHANNEL CROSS-SECTION OF CHOICE.



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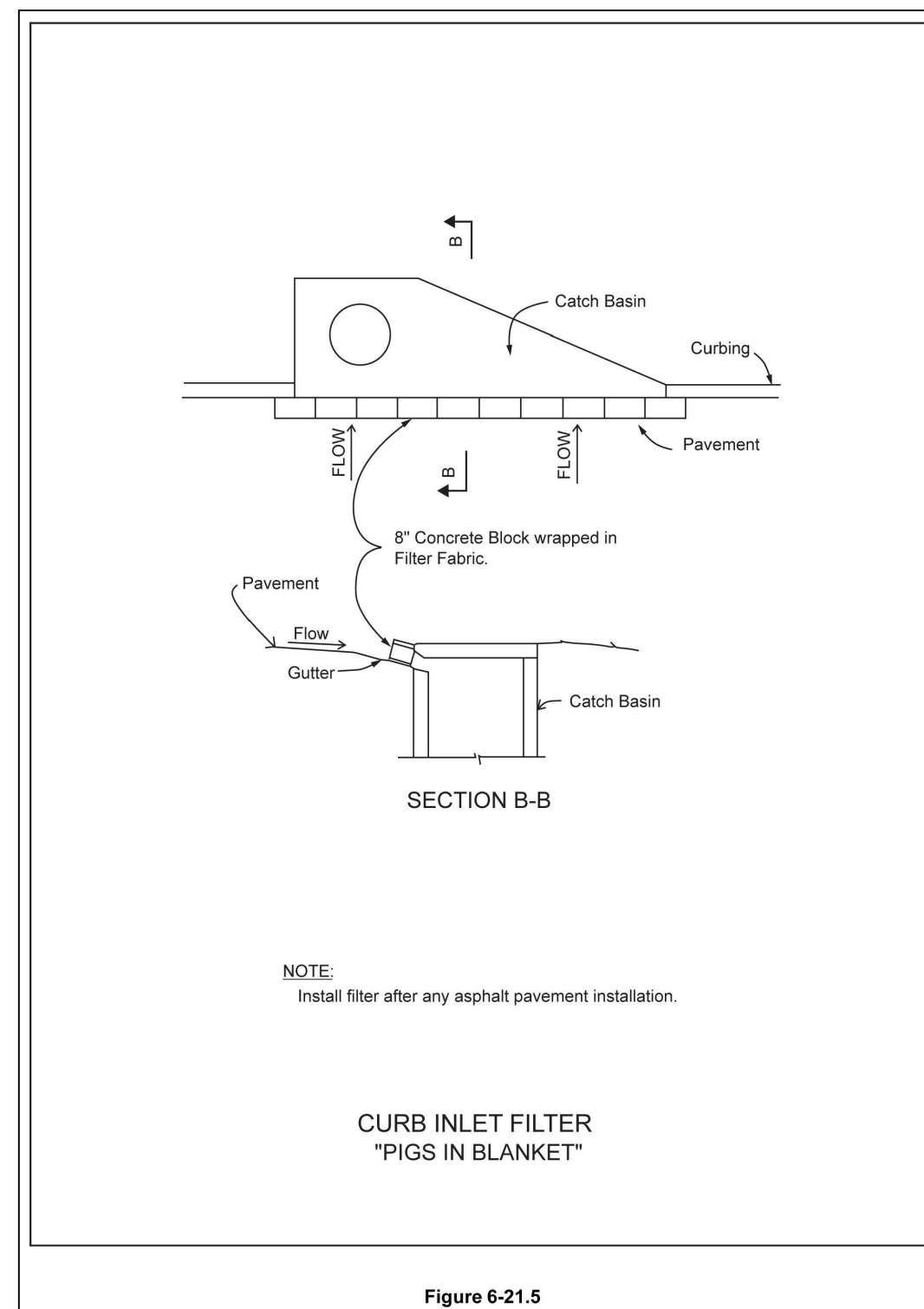
HARTWELL ENGINEERING, INC.
REGISTERED PROFESSIONAL ENGINEER
STATE OF GEORGIA
No. 25251

DATE	REVISION

PROJ. NO.: 100061831
DESIGNED BY: KRJ
DRAWN BY: KRJ
CHECKED BY: MRM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: NO SCALE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
EROSION AND SEDIMENT CONTROL DETAILS

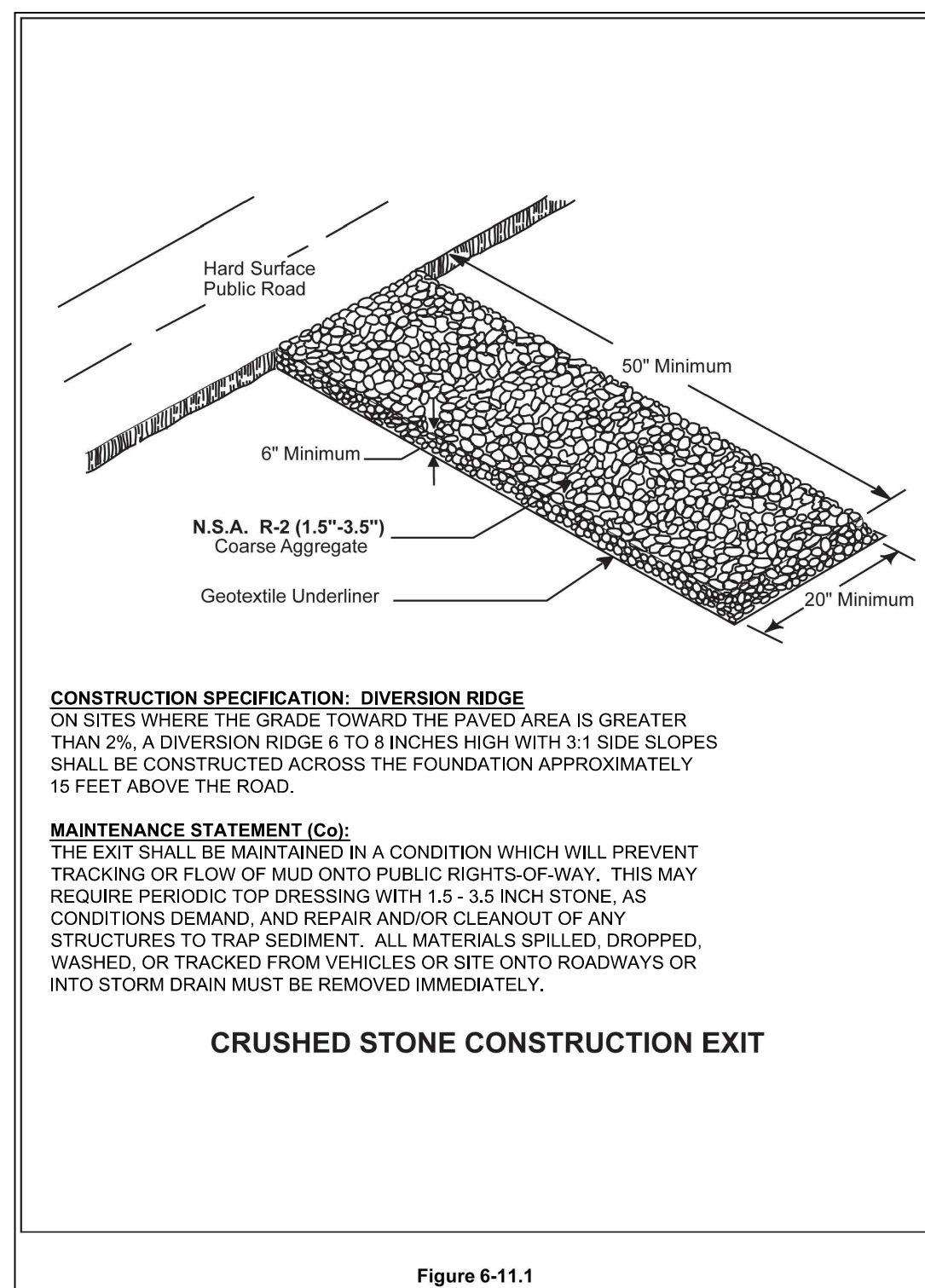
SHEET NO.
EC-09



Sd2-P **INLET SEDIMENT TRAP (CURB INLET FILTER - "PIGS-IN-A-BLANKET")** (NOT TO SCALE)

10

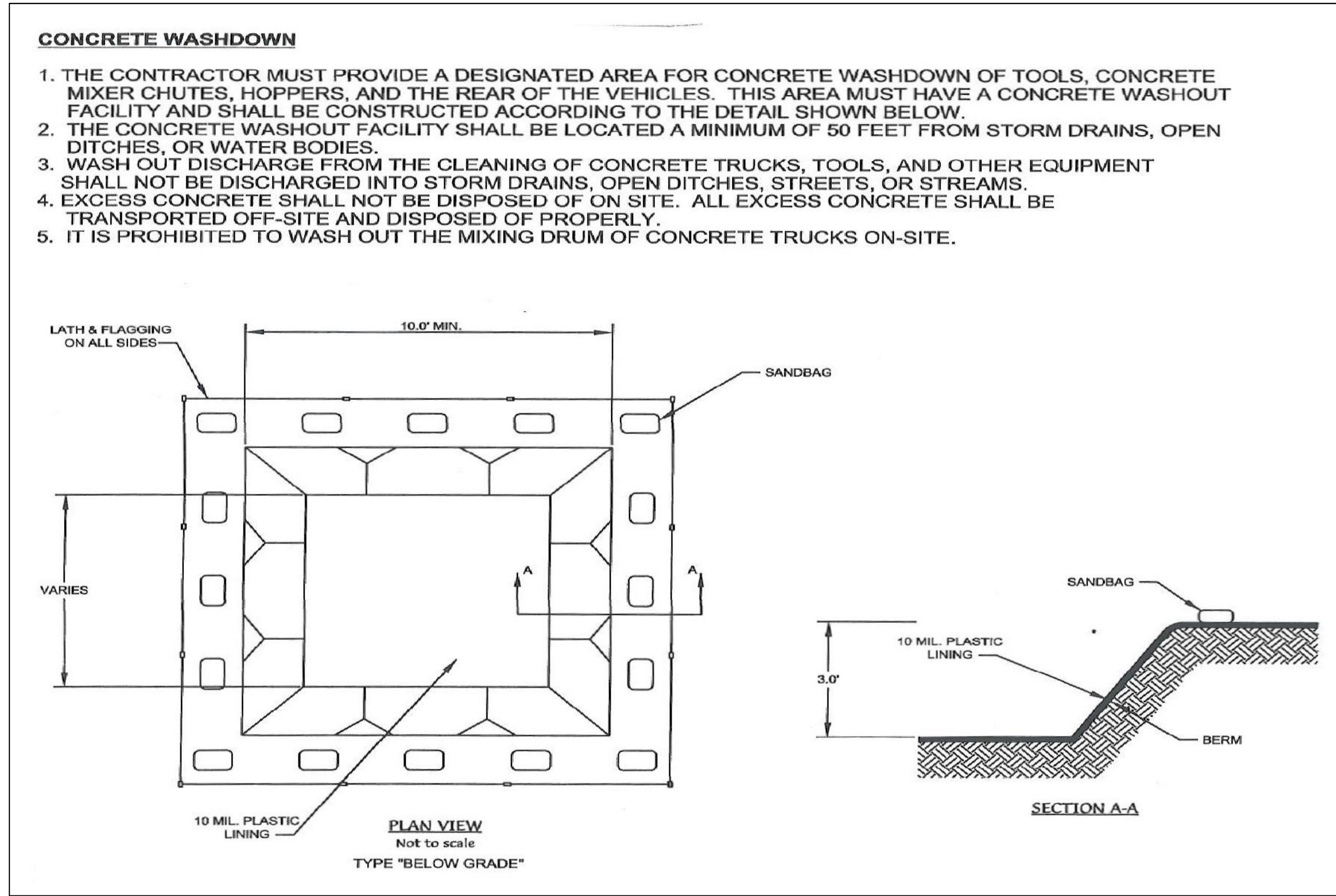
EC-01 EC-10
EC-03



Co **CONSTRUCTION EXIT (NOT TO SCALE)**

11

EC-01 EC-10
EC-03



CWA **CONCRETE WASHDOWN AREA (NOT TO SCALE)**

12

EC-01 EC-10
EC-03

Sd2-P **INLET SEDIMENT TRAP (CURB INLET FILTER - "PIGS-IN-A-BLANKET")** (NOT TO SCALE)

10

EC-01 EC-10
EC-03

Rt-B **SLOTTED BOARD DAM SEDIMENT TRAP (NOT TO SCALE)**

13

EC-01 EC-10
EC-03

Sd2-F **FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION (NOT TO SCALE)**

14

EC-01 EC-10
EC-03

TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

Storage Calculations Rt-B 1

- Required stormwater storage = $\frac{0}{0.0001}$ cy (as determined by local ordinance)
- Required sediment storage = $\frac{15.41}{0.07}$ cy/ac = 0.23 ac (disturbed area)
- Total required storage = $0 + 15.41 = 15.41$ cy
- Available storage = 5.34 cy
- Is the available storage (4) greater than the total required storage (3)? yes no
- If "no", the sediment storage capacity of the pond must be increased. Choose the method to be used: Raise the invert of the outlet structure Undercut the pond Other REGRADE AND LOWER DITCH AS SHOWN ON SHEET EC-01
- Clean-out elevation = 880.9 ft (Elevation corresponding to 22 cy/ac * 0.23 ac (disturbed area))
- Is the length-width ratio 2:1 or greater? yes no
- If "no", the length of flow must be increased. Choose the method to be used: Baffle (Type of baffle: _____) Other _____

Note the CMP diameter and height if a half-round CMP retrofit is to be used.
Diameter = _____ inches Height = _____ feet

TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

Storage Calculations Rt-B 2

- Required stormwater storage = $\frac{0}{0.0001}$ cy (as determined by local ordinance)
- Required sediment storage = $\frac{60.97}{0.07}$ cy/ac = 0.91 ac (disturbed area)
- Total required storage = $0 + 60.97 = 60.97$ cy
- Available storage = 10.41 cy
- Is the available storage (4) greater than the total required storage (3)? yes no
- If "no", the sediment storage capacity of the pond must be increased. Choose the method to be used: Raise the invert of the outlet structure Undercut the pond Other REGRADE AND LOWER DITCH AS SHOWN ON SHEET EC-01
- Clean-out elevation = 880.24 ft (Elevation corresponding to 22 cy/ac * 0.91 ac (disturbed area))
- Is the length-width ratio 2:1 or greater? yes no
- If "no", the length of flow must be increased. Choose the method to be used: Baffle (Type of baffle: _____) Other _____

Note the CMP diameter and height if a half-round CMP retrofit is to be used.
Diameter = _____ inches Height = _____ feet

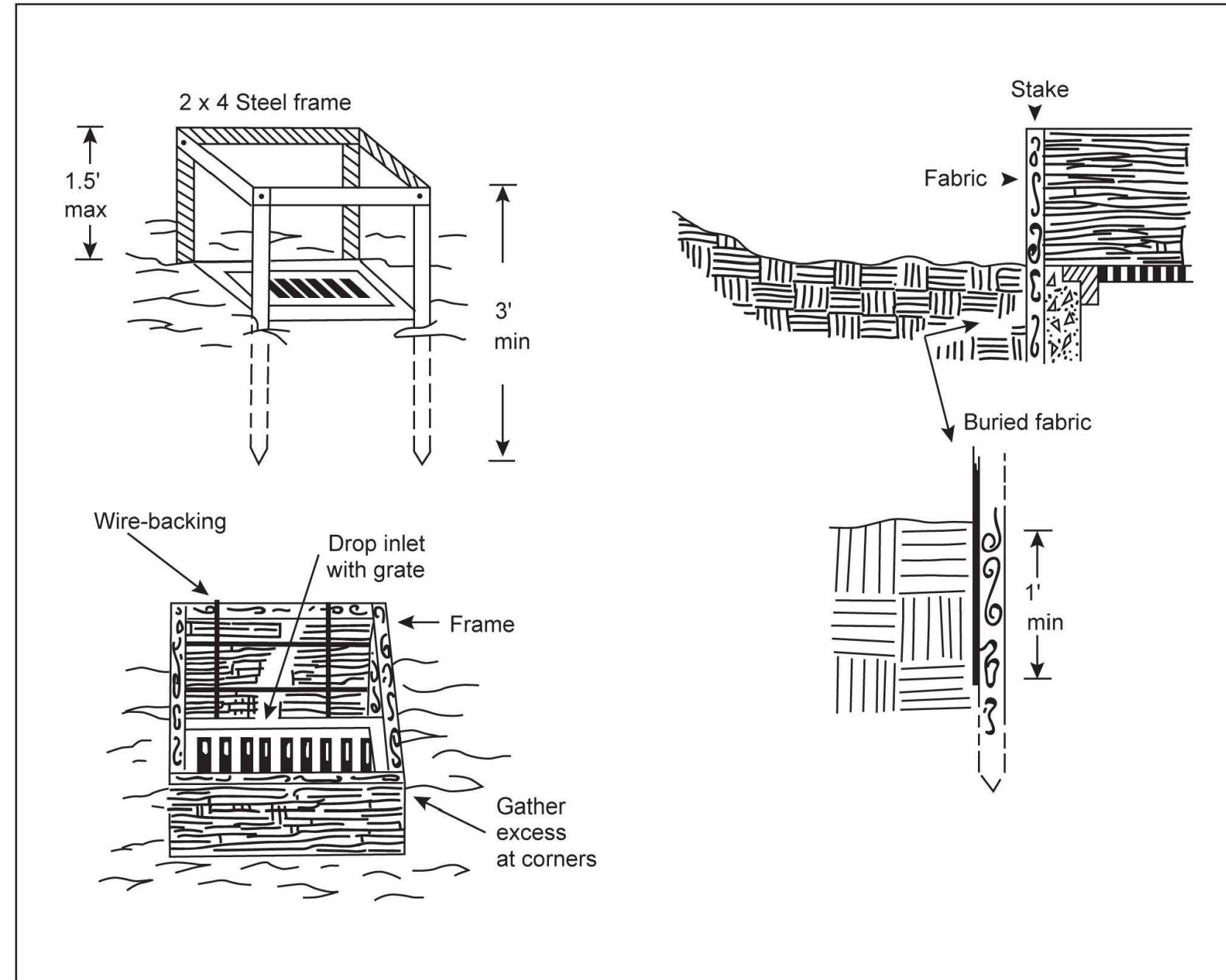
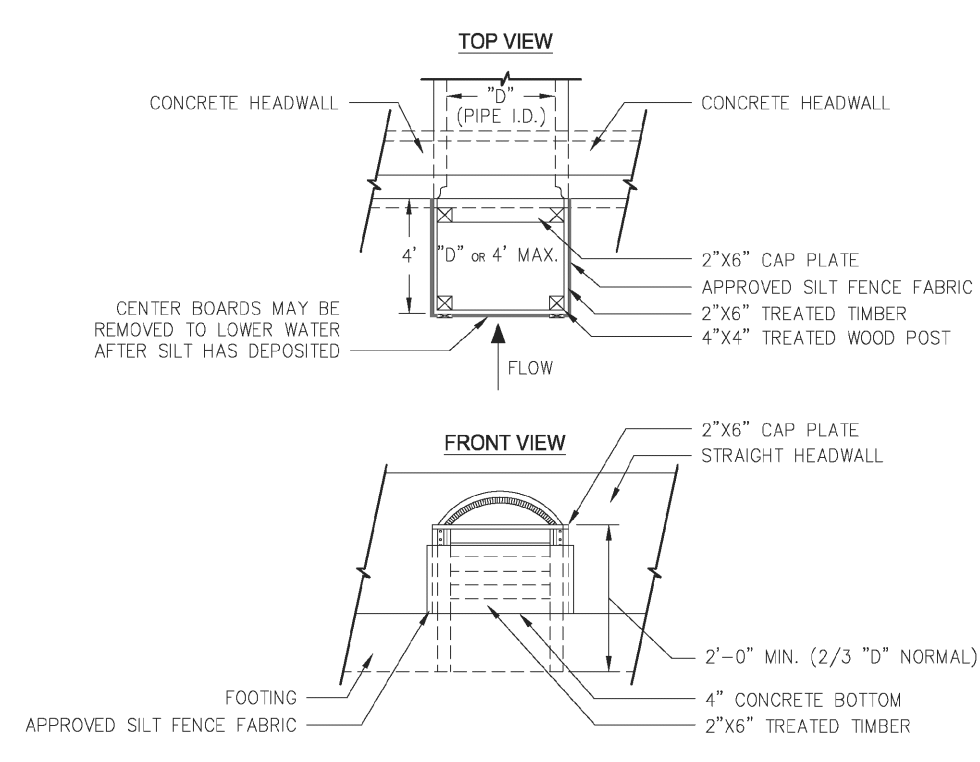


Figure 6-21.1 - Fabric and Supporting Frame For Inlet Projection

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ENGINEERS & SURVEYORS
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PROJ. NO.: 100061831
DESIGNED BY: KRJ
DRAWN BY: KRJ
CHECKED BY: MRM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: NO SCALE

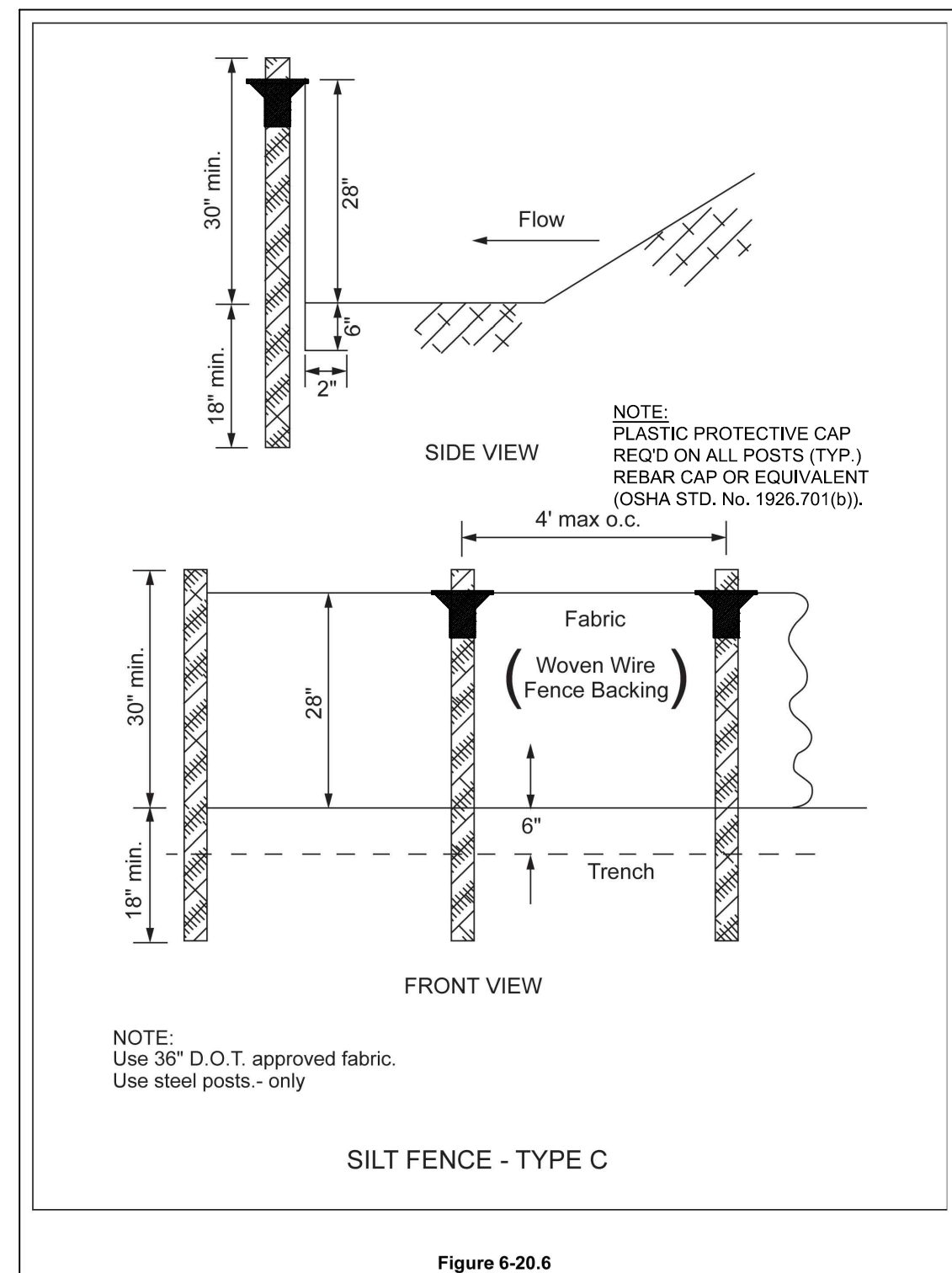
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
EROSION AND SEDIMENT CONTROL DETAILS

SHEET NO.
EC-10

CERTIFICATE OF AUTHORIZATION # PFD00002 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.
DATE: _____
REVISION: _____
DATE: _____

REG. NO. 12171
PROFESSIONAL ENGINEER
STATE OF GEORGIA
4/25/2020

FILE NAME: C:\PW_WORK\ATKIN\CA01\ENK6917\MS35911\EC-08, 09, 10, 11, 12.DWG\Tab:EC-10\Plotted: September 24, 2020 6:06pm

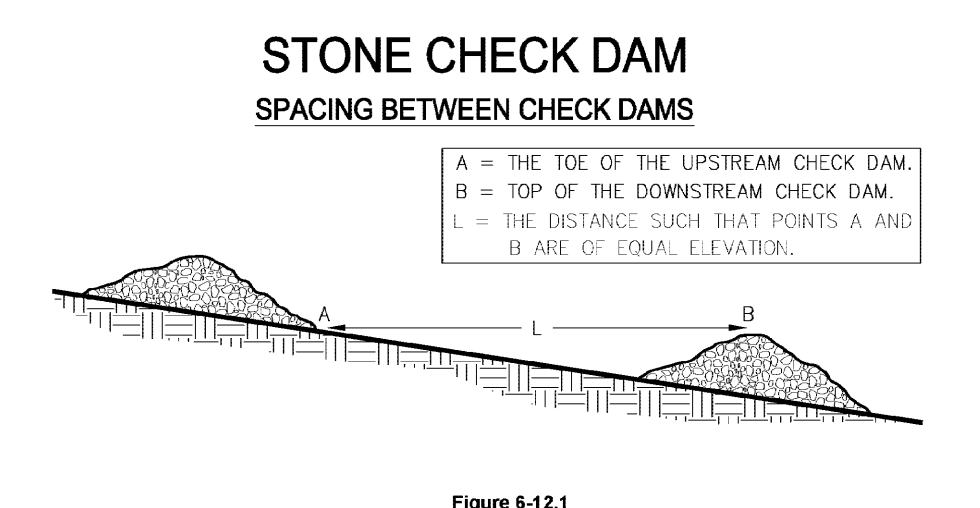


TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

1. cfs in the channel/ditch that the check dam is being used in. See chart in detail 09 / EC-09 for DI Diversion

2. Above 2.0 cfs: Yes No

3. If Yes, list BMP being used in conjunction with check dams: Ch (Channel Stabilization)



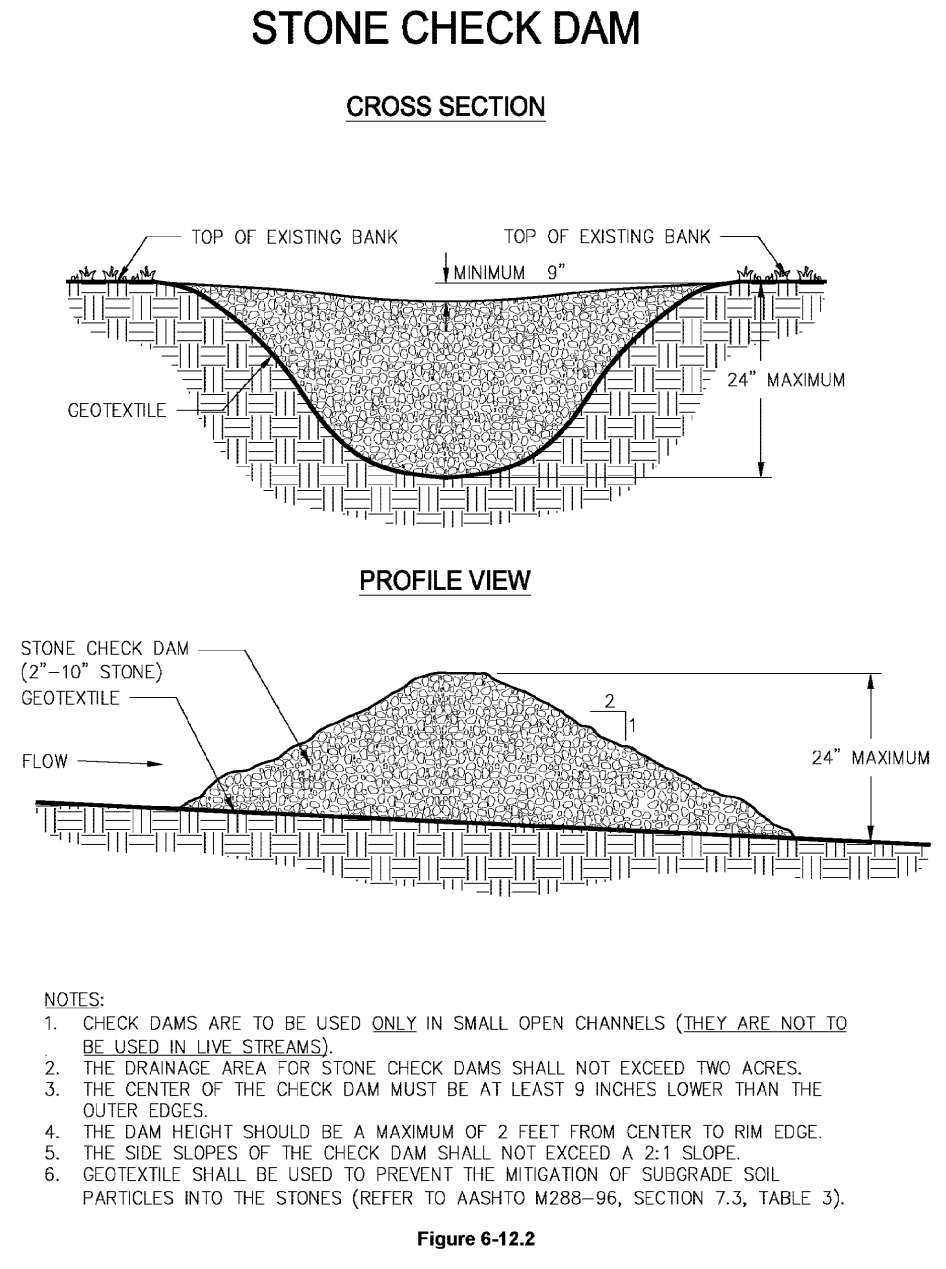
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MAINTENANCE STATEMENT (Sd1-C):

SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

Inlet Sediment Trap DI 1875

- Drainage area = 0.93 ac
- Required sediment storage = 67 cy/ac * drainage area
Required sediment storage = 67 cy/ac * 0.93 ac
- Assume excavation depth (minimum of 1.5 ft) = 2 ft
- Assume slope of sides (shall not be steeper than 2:1) = 2:1
- Determine required surface area
SAmin = Required sediment storage / excavation depth
SAmin = 1682.37 cf / 2 ft
Samin = 841.185 sf
- Assume shape of excavation and determine dimensions.
(A rectangular shape with 2:1 length to width ratio is recommended.)
Shape: square
Dimensions: l = 26 ft SAact = 1156
w = 26 ft Area Acceptable
Volume Required = 1682.37
Volume Provided = 1768 Volume Acceptable



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Inlet Sediment Trap A-1

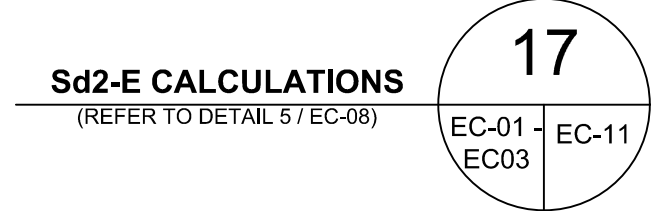
- Drainage area = 0.86 ac
- Required sediment storage = 67 cy/ac * drainage area
Required sediment storage = 67 cy/ac * 0.86 ac
- Assume excavation depth (minimum of 1.5 ft) = 2 ft
- Assume slope of sides (shall not be steeper than 2:1) = 2:1
- Determine required surface area
SAmin = Required sediment storage / excavation depth
SAmin = 1555.74 cf / 2 ft
Samin = 777.87 sf
- Assume shape of excavation and determine dimensions.
(A rectangular shape with 2:1 length to width ratio is recommended.)
Shape: square
Dimensions: l = 25 ft SAact = 1089
w = 25 ft Area Acceptable
Volume Required = 1555.74
Volume Provided = 1650 Volume Acceptable

Inlet Sediment Trap A-2

- Drainage area = 1.06 ac
- Required sediment storage = 67 cy/ac * drainage area
Required sediment storage = 67 cy/ac * 1.06 ac
- Assume excavation depth (minimum of 1.5 ft) = 2 ft
- Assume slope of sides (shall not be steeper than 2:1) = 2:1
- Determine required surface area
SAmin = Required sediment storage / excavation depth
SAmin = 1917.54 cf / 2 ft
Samin = 958.77 sf
- Assume shape of excavation and determine dimensions.
(A rectangular shape with 2:1 length to width ratio is recommended.)
Shape: square
Dimensions: l = 28 ft SAact = 1296
w = 28 ft Area Acceptable
Volume Required = 1917.54
Volume Provided = 2016 Volume Acceptable

Inlet Sediment Trap A-3

- Drainage area = 0.8 ac
- Required sediment storage = 67 cy/ac * drainage area
Required sediment storage = 67 cy/ac * 0.8 ac
- Assume excavation depth (minimum of 1.5 ft) = 2 ft
- Assume slope of sides (shall not be steeper than 2:1) = 2:1
- Determine required surface area
SAmin = Required sediment storage / excavation depth
SAmin = 1447.2 cf / 2 ft
Samin = 723.6 sf
- Assume shape of excavation and determine dimensions.
(A rectangular shape with 2:1 length to width ratio is recommended.)
Shape: square
Dimensions: l = 24 ft SAact = 1024
w = 24 ft Area Acceptable
Volume Required = 1447.2
Volume Provided = 1536 Volume Acceptable



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DATE	REVISION

PROJ. NO.: 100061831
DESIGNED BY: KRJ
DRAWN BY: KRJ
CHECKED BY: MRM
APPROVED BY: GSK
DATE: SEPTEMBER 2020
SCALE: NO SCALE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD
EROSION AND SEDIMENT CONTROL DETAILS

SHEET NO.
EC-11

DISTURBED AREA STABILIZATION (WITH SODDING) Ds4



DEFINITION
A permanent vegetative cover using sods on highly erodible or critically eroded lands.

PURPOSE

- Establish immediate ground cover.
- Reduce runoff and erosion.
- Improve aesthetics and land value.
- Reduce dust and sediments.
- Stabilize waterways, critical areas.
- Filter sediments, nutrients and bugs.
- Reduce downstream complaints.
- Reduce likelihood of legal action.
- Reduce likelihood of work stoppage due to legal action.
- Increase "good neighbor" benefits.

CONDITIONS

This application is appropriate for areas that require immediate vegetative covers, drop inlets, grass swales, and waterways with intermittent flow.

PLANNING CONSIDERATIONS

Sodding can initially be more costly than seeding, but the advantages justify the increased initial costs.

1. Immediate erosion control, green surface, and quick use.
2. Reduced failure as compared to seed as well as the lack of weeds.
3. Can be established nearly year-round.

Sodding is preferable to seed in waterways and swales because of the immediate protection of the channel after application. Sodding must be staked in concentrated flow areas (See Figure 6-6.1).

Consider using sod framed around drop inlets to reduce sediments and maintaining the grade.

CONSTRUCTION SPECIFICATIONS

Soil Preparation
Bring soil surface to final grade. Clear surface of trash, woody debris, stones and clods larger than 1". Apply sod to soil surfaces only and not frozen surfaces, or gravel type soils.

Topsoil properly applied will help guarantee a stand. Don't use topsoil recently treated with herbicides or soil sterilants.

Mix fertilizer into soil surface. Fertilize based on soil tests or Table 6-6.1.

Fertilizer Type	Fertilizer Rate (lbs/acre)	Fertilizer Rate (lbs/sq ft)	Season
10-10-10	1000	.025	Fall

Agricultural lime should be applied based on soil tests or at a rate of 1 to 2 tons per acre.

Installation

Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod (See Figure 6-6.2)

On slopes steeper than 3:1, sod should be anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil.

Irrigate sod and soil to a depth of 4" immediately after installation.

Sod should not be cut or spread in extremely wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

MATERIALS

Sod selected should be certified. Sod grown in the general area of the project is desirable.

1. Sod should be machine cut and contain 3/4" (+ or -1/4") of soil, not including shoots or thatch.
2. Sod should be cut to the desired size within + or -5%. Torn or uneven pads should be rejected.
3. Sod should be cut and installed within 36 hours of digging.
4. Avoid planting when subject to frost heave or hot weather, if irrigation is not available.
5. The sod type should be shown on the plans or installed according to Table 6-6.2. See Figure 6-4.1 for your Resource Area.

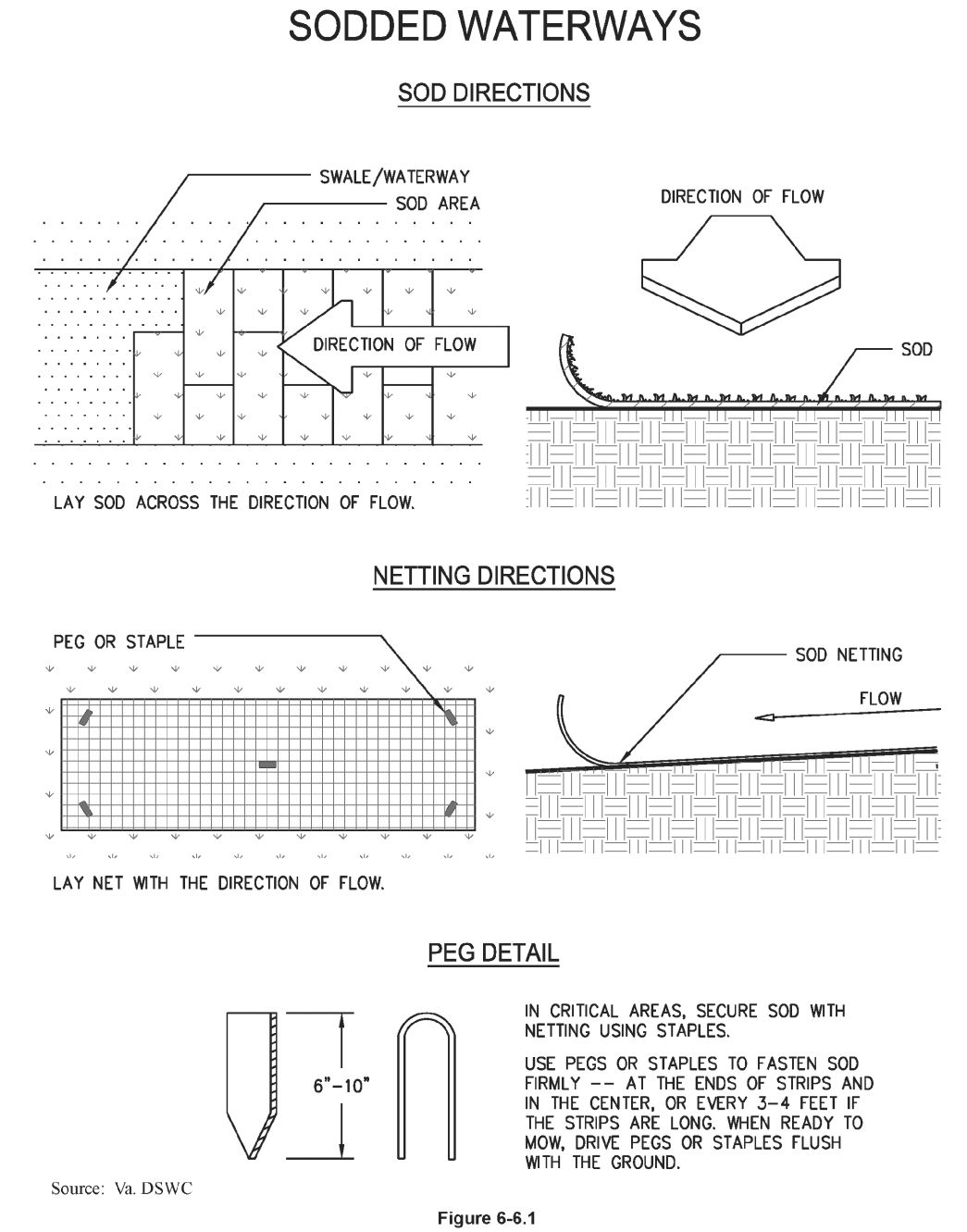
MAINTENANCE

Re-sod areas where an adequate stand of sod is not obtained. New sod should be mowed sparingly. Grass height should not be cut less than 2"-3" or as specified (See Figure 6-6.2).

Apply one ton of agricultural lime as indicated by soil test or every 4-6 years. Fertilize grasses in accordance with soil tests or Table 6-6.3.

Grass	Varieties	Resource Area	Growing Season
Bermudagrass	Common Tifway Tifgreen Tifdawn	M-L,P P,C P,C	warm weather
Bahiagrass	Pensacola	P,C	warm weather
Centipede	-	P,C	warm weather
St. Augustine	Common Bitterblue Raleigh	C	warm weather
Zoysia	Emerald Myer	P,C	warm weather
Tall Fescue	Kentucky	M-L,P	cool weather

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs/acre)	Nitrogen Top Dressing Rate (lbs/acre)
cool season grasses	first	6-12-12	1500	50-100
	second maintenance	6-12-12 10-10-10	1000 400	- 30
warm season grasses	first	6-12-12	1500	50-100
	second maintenance	6-12-12 10-10-10	800 400	50-100 30

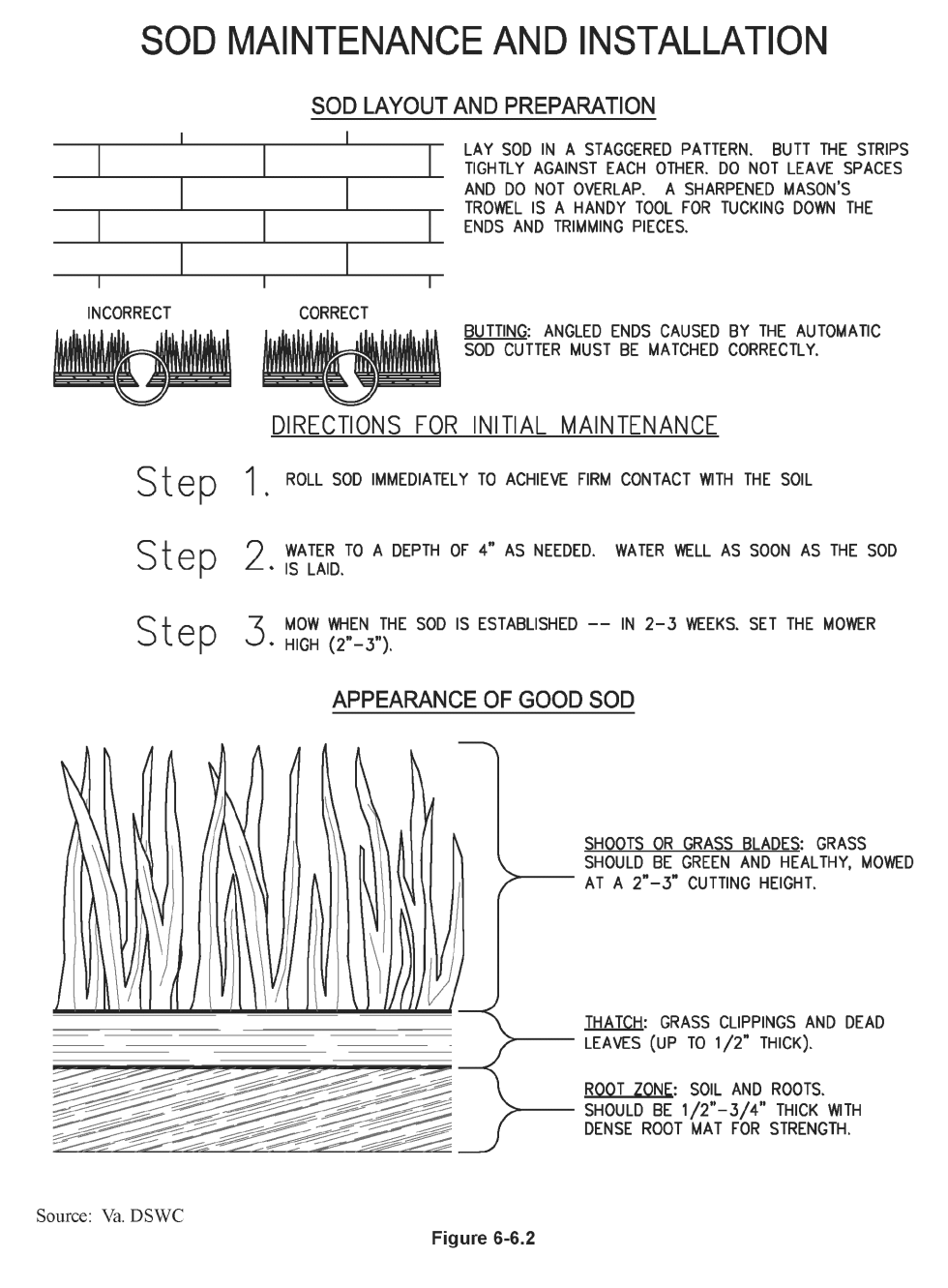


Source: Va. DSWC

Figure 6-6.1

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6-53



Source: Va. DSWC

Figure 6-6.2

6-54

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DISTURBED AREA STABILIZATION (WITH PERMANENT SODDING)

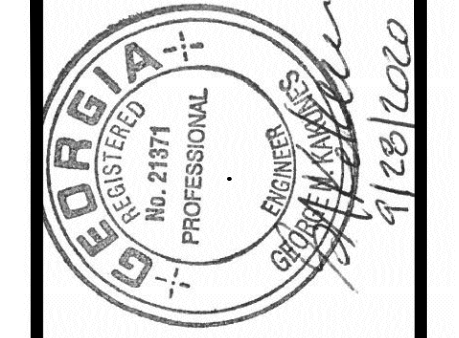
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Ds4

18

EC03

EC-12



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PROJ. NO.:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:	CERTIFICATE OF AUTHORIZATION #	EXPIRATION DATE	REVISION	DATE
100061831	KRJ	KRJ	MFM	GK	SEPTEMBER 2020	NO SCALE	06300002	ATKINS NORTH AMERICA INC.		

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SHEET NO.
EC-12