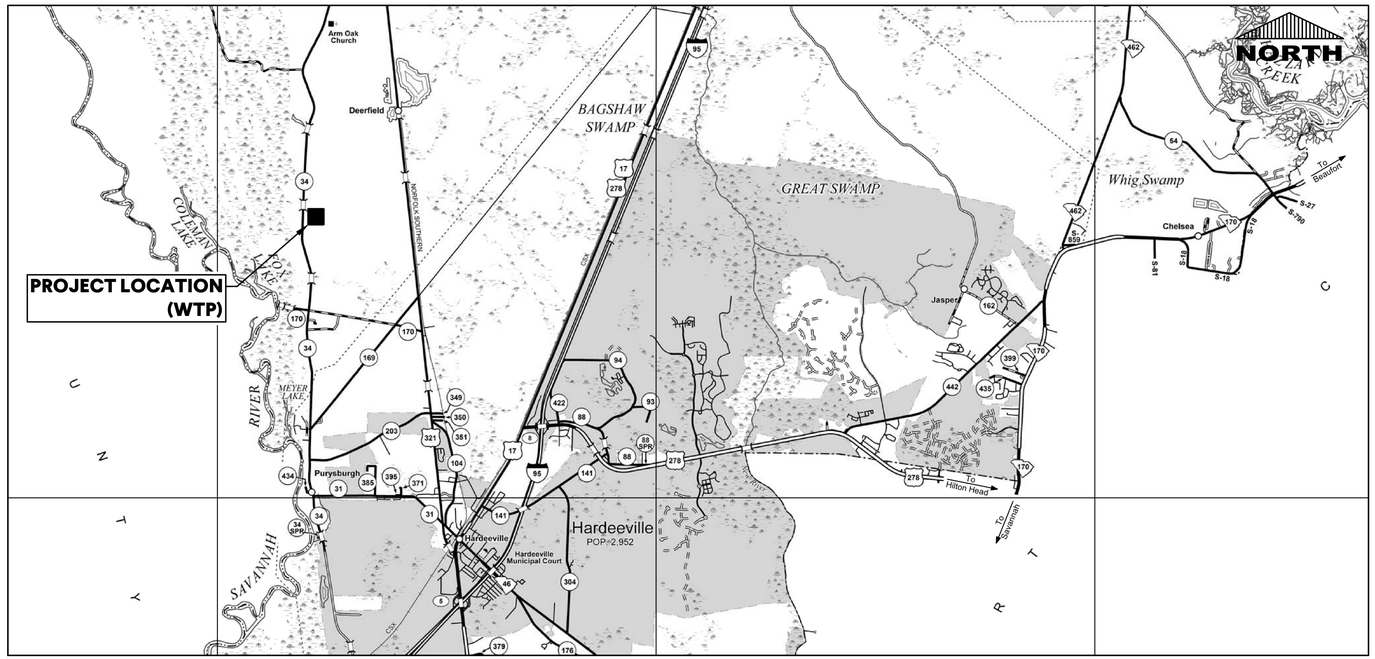

VICINITY MAP
NOT TO SCALE

PURRYSBURG WTP
JASPER COUNTY,
SOUTH CAROLINA

LOCATION MAP
STATE OF SOUTH CAROLINA

I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000.

PURRYSBURG WTP EXPANSION TO 30 MGD - PHASE 1

BEAUFORT-JASPER WATER & SEWER AUTHORITY
JASPER COUNTY, SOUTH CAROLINA

CGRE180057

GOODWYN MILLS & CAWOOD, INC | PROCESS, ARCHITECTURE, CIVIL, ELECTRICAL

WEATHERFORD & DAY ENGINEERS | STRUCTURAL ENGINEERING

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 04/18/19

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GMC

101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

ISSUE	DATE
30% SUBMITTAL	
75% SUBMITTAL	05.20.19
90% SUBMITTAL	
FINAL	06.19.19
PROJECT MANAGER:	JCV
ENGINEER:	MEF
DESIGNER:	GSS
DRAWN BY:	

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

TITLE SHEET
VICINITY MAP

G-001

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\01 GENERAL\G-001 COVER PURRYSBURG-PHASE 1.dwg
PLOTTED: Jun 21, 2019 - 4:15pm

EXISTING LEGEND

EXISTING AIR LINE: BURIED	A
EXISTING BORE: SOIL TESTING	
EXISTING CENTERLINE	
EXISTING CONCRETE MONUMENT	
EXISTING CONTOUR- GRADE	123
EXISTING DITCH AND/OR CREEK	
EXISTING ELECTRICAL: BURIED	UGE
EXISTING ELECTRICAL LINE: OVERHEAD	OHP
EXISTING FENCE LINE	X X
EXISTING FIBER OPTIC: BURIED	UFO
EXISTING FITTINGS	
EXISTING FIRE HYDRANT	
EXISTING FLUSH HYDRANT	
EXISTING GAS MAIN	G
EXISTING GAS METER	
EXISTING GAS REGULATOR	
EXISTING GAS VALVE	
EXISTING GRATE INLET	
EXISTING GUY WIRE	
EXISTING IRON PIN	
EXISTING LIGHT POLE	
EXISTING MANHOLE	S
EXISTING NAIL SET	
EXISTING PIPING	
EXISTING POWER BOX	P
EXISTING POWER POLE	
EXISTING PROPERTY LINE	
EXISTING RAIL ROAD TRACKS	
EXISTING REDUCER	
EXISTING RIGHT OF WAY	
EXISTING SANITARY SEWER FORCE MAIN	FM
EXISTING SANITARY SEWER MAIN	SAN
EXISTING SIGN	
EXISTING STORM SEWER DRAIN LINE	
EXISTING TELEPHONE: BURIED	UGT
EXISTING TELEPHONE PEDESTAL	T
EXISTING TREE LINE	
EXISTING TREE LINE TO BE REMOVED	
EXISTING WATER MAIN	W
EXISTING WATER METER	
EXISTING WATER VALVE	
EXISTING WELL	W

REQUIRED LEGEND

REQUIRED AIR RELEASE VALVE	
REQUIRED BORE CROSSING	
REQUIRED CONSTRUCTION LIMITS	
REQUIRED CONTOUR- GRADE	123
REQUIRED FENCE LINE	X X
REQUIRED FIRE HYDRANT ASSEMBLY	
REQUIRED FITTINGS	
REQUIRED FLUSH HYDRANT	
REQUIRED GRAVITY SEWER W/ MANHOLE	
REQUIRED OPEN/CUT PAVEMENT PATCH	
REQUIRED VALVE	
REQUIRED PROPERTY LINE	
REQUIRED REDUCER	
REQUIRED SILT FENCE	
REQUIRED TAPPING SLEEVE & VALVE	
REQUIRED TREE LINE	
REQUIRED WATER METER	
REQUIRED WATER VALVE	

HATCHING LEGEND

DESCRIPTION	EXISTING	PROPOSED
ASPHALT PAVING (PLAN)		
CONCRETE (ELEVATION)		
CONCRETE (PLAN)		
CONCRETE (SECTION)		
CRUSHED STONE (SECTION)		
EARTH OR BACKFILL (SECTION)		
GRAVEL DRIVE (PLAN)		
GROUT FILL (PLAN & SECTION)		
LAKE OR POND (PLAN)		
REMOVAL OR DEMOLITION (PLAN & SECTION)		
UNPAVED DRIVE (PLAN)		

GRAPHICS LEGEND

ELEVATION INDICATOR

SHT – ELEVATION NUMBER; SHEET WHERE DRAWN

SECTION INDICATOR

X / SHT – SECTION NUMBER; SHEET NUMBER

ENLARGED PLAN/DETAIL INDICATOR

/ SHT – ENLARGED PLAN/DETAIL NUMBER; SHEET WHERE DRAWN; SHEET WHERE INDICATED; AREA ENLARGED

DRAWING TITLE

PLAN/DETAIL TITLE
PLAN/DETAIL NUMBER
1 / 101 VIEW TITLE
SCALE: 1/8" = 1'-0"
SHEET WHERE DRAWN
GRAPHIC SCALE

PIPE SUPPORT INDICATOR

H / 1 – STRUCTURAL ATTACHMENT (D-904); PIPE SUPPORT (D-902 & D-903)

SHEET NUMBERING

DISCIPLINE DESIGNATOR
PROCESS AREA DESIGNATOR
SHEET SEQUENCE NUMBER
P - 3 1 1 SHEET NUMBER

GENERAL NOTES

1. THE CONTRACTOR IS EXPECTED TO CAREFULLY EXAMINE THE PLANS, PROPOSAL AND SITE OF THE WORK. THEREFORE, IT WILL BE ASSUMED THAT THE BIDDER HAS SATISFIED HIMSELF AS TO THE CONDITIONS TO BE ENCOUNTERED IN REGARDS TO THE CHARACTER, QUALITY, AND QUANTITIES OF WORK TO BE PERFORMED AND MATERIALS TO BE FURNISHED, AND AS TO THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS AND CONTRACT. THE SUBMISSION OF A PROPOSAL BY A BIDDER WILL BE CONSIDERED PRIMA FACIE EVIDENCE THAT THE BIDDER HAS MADE SUCH AN EXAMINATION.
2. THE CONTRACTOR IS REQUIRED TO MAINTAIN AN AS-BUILT SET OF DRAWINGS DURING PROJECT CONSTRUCTION. THE COMPLETE AS-BUILT MAP WILL CONTAIN ALL INSTALLED ELECTRICAL, STRUCTURAL ENTITIES, LINES, VALVES, METERS, AND CONNECTIONS WITH REFERENCE DISTANCES TO PERMANENT ABOVE GROUND STRUCTURES.
3. ALL EXISTING UTILITIES SHOWN ABOVE AND BELOW GROUND ARE APPROXIMATE AND ARE NOT NECESSARILY ALL THAT EXIST. THE DETERMINATION OF THE EXISTENCE, LOCATION, AND DEPTH OF ALL UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED BY CONTRACTOR FOR ONE YEAR AFTER ACCEPTANCE BY THE OWNER PER SPECIFICATIONS.
5.
6. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE CIVIL DRAWINGS AND THE ARCHITECTURAL/STRUCTURAL DRAWINGS, THE ARCHITECTURAL/STRUCTURAL DRAWINGS SHALL HAVE PRECEDENCE. THE CONTRACTOR SHALL ADVISE THE ENGINEER OF ANY CONFLICT IN THE PLANS/SPECS FOR CLARIFICATION PRIOR TO BID. SHOULD CONFLICTING DOCUMENTS NOT BE CLARIFIED AT THE REQUEST OF THE BIDDING CONTRACTOR, THE MORE COSTLY ALTERNATIVE AS IDENTIFIED IN THE PLAN & SPECS SHALL BE INCLUDED IN THE PRICE BID.
7. ALL HAZARDOUS SUBSTANCES USED FOR THIS PROJECT, INCLUDING, BUT NOT LIMITED TO, PAINT, OIL, GREASE, AND OTHER PETROLEUM PRODUCTS SHALL BE STORED IN ACCORDANCE WITH "SPILL PREVENTION, CONTROL & COUNTERMEASURE" REGULATIONS. THESE SUBSTANCES SHALL BE STORED AWAY FROM STORM DRAINS, DITCHES, AND GUTTERS IN WATERTIGHT CONTAINERS. DISPOSAL OF THESE SUBSTANCES SHALL BE IN ACCORDANCE WITH STATE & FEDERAL AGENCY REGULATIONS. CONTRACTOR SHALL PROVIDE ADEQUATE TRASH CONTAINERS ON SITE FOR THE DISPOSAL OF CONSTRUCTION MATERIALS WASTE. CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING ANY TRASH OR OTHER POLLUTANTS FROM ENTERING STORM DRAINS & WATERS OF THE STATE.

OWNER

DESCRIPTION	NAME	PHONE NUMBER	EMAIL ADDRESS
		xxxx	
		xxx	

ENGINEER

DESCRIPTION	NAME	PHONE NUMBER	EMAIL ADDRESS
PROJECT MANAGER	JIM VAUGHN	912.226.1667	jim.vaughn@gmcnetwork.com
PROJECT ENGINEER	MITCH FREEMAN	706.251.9099	mitch.freeman@gmcnetwork.com
INSPECTOR			

PIPE SYMBOLS

	DOUBLE LINE	SINGLE LINE
EXISTING BURIED PIPE		
EXISTING ABOVE GRADE PIPE		
NEW BURIED PIPE		
NEW ABOVE GRADE PIPE		
WELDED JOINT		
FLANGED JOINT		
FLANGED COUPLING ADAPTER		
MECHANICAL JOINT		
PUSH-ON		
EXPANSION JOINT		

DISCIPLINE DESIGNATORS

DISCIPLINE	DESIGNATOR
GENERAL	G
CIVIL	C
CIVIL UTILITIES	CU
DEMOLITION	DD
STRUCTURAL	S
ARCHITECTURAL	A
PLUMBING	P
MECHANICAL	M
PROCESS	D
ELECTRICAL	E
ELECTRICAL SITE	ES
ELECTRICAL DEMOLITION	ED
ELECTRICAL LIGHTING	EL
ELECTRICAL POWER	EP
ELECTRICAL CONTROLS	EC

PROCESS AREA DESIGNATORS

PROCESS	AREA DESIGNATOR
INTAKE & RIVER WATER PUMPING	1000
PAC CONTACTOR & RESERVOIR PUMPING	2000
RAPID MIX & FLOW SPLIT	3000
FLOCCULATION & SEDIMENTATION	4000
FILTRATION	5000
POST MIX / TRANSFER PUMP STATION / CLEARWELL & HIGH SERVICE PUMP STATION	6000
SOLIDS HANDLING	7000
CHEMICAL FEED SYSTEMS	8000
ADMINISTRATION, LABORATORY & MISCELLANEOUS	9000

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 04/18/19

GMC

101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

ISSUE	DATE	
30% SUBMITTAL	05.20.19	JCV
75% SUBMITTAL		MEF
90% SUBMITTAL	06.19.19	GSS
FINAL		

PROJECT MANAGER:
ENGINEER:
DESIGNER:
DRAWN BY:

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

GOODWYN, MILLS & CAWOOD INC. No. 0339
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

GENERAL PROJECT NOTES & SYMBOLS

G-007

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\01 GENERAL\G-007 GEN PROJ NOTES & SYMBOLS-PH1.dwg
PLOTTED: Jun 19, 2019 - 9:07am

GENERAL ABBREVIATIONS

AB	ANCHOR BOLT
AC	AIR CONDITIONING
ACP	ASPHALTIC CONCRETE PAVING
ADDL	ADDITIONAL
ADDM	ADDENDUM
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFS	AIR FLOW SWITCH
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
ASME	AMERICAN SOCIETY MECHANICAL ENGINEERS
ASPH	ASPHALT
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATM	ATMOSPHERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AVS	AUTOMATIC VALVE STATION
AWG	AMERICAN WIRE GAGE
BE	BELL END
BF	BOTTOM FACE
BFD	BUTTERFLY DAMPER
BFV	BUTTERFLY VALVE
BIO	BIOSOLIDS
BLDG	BUILDING
BLK	BLOCK
BLM	BUREAU OF LAND MANAGEMENT
BM	BENCH MARK
BOD	BIOCHEMICAL OXYGEN DEMAND
BOT	BOTTOM
BU	BELL UP
BV	BALL VALVE
C/C	CENTER TO CENTER
CCP	CONCRETE CYLINDER PIPE
CCW	COUNTER CLOCKWISE
CFM	CUBIC FEET PER MINUTE
CHKV	CHECK VALVE
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CL	CENTER LINE OR CHAIN LINK
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS(ATION)
COR	CORNER
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CTR	CENTER
CV	CHECK VALVE
CW	COLD WATER
CY	CUBIC YARDS
DBIO	DEWATERED BIOSOLIDS
DEMO	DEMOLITION
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISTR	DISTRIBUTION
DL	DEAD LOAD
DMJ	DUCTILE MECHANICAL JOINT
DN	DOWN
DWG	DRAWING
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE OR ELECTRICAL FAN
EFF	EFFLUENT
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
EOA	EDGE OF ASPHALT
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESMT	EASEMENT
EST	ESTIMATE
EUH	ELECTRIC UNIT HEATER
EW	EACH WAY
EWS	EQUIPMENT WATER STATION
EXP JT	EXPANSION JOINT
EXST	EXISTING
EXST GR	EXISTING GRADE
EXT	EXTERIOR

F/F	FACE TO FACE
FA	FOUL AIR
FAD	FOUL AIR DUCT
FCA	FLANGE COUPLING ADAPTER
FCS	FLUSH CONTROL STATION
FD	FLOOR DRAIN
FDN	FOUNDATION
FES	FLARED END SECTION
FF EL	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIN	FINISH
FIN FL	FINISH FLOOR
FIN GR	FINISH GRADE
FL	FLANGE
FLR	FLOOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET
FTG	FOOTING OR FITTING
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GR	GRIT
GRC	GALVANIZED RIGID CONDUIT
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GW	GROUNDWATER
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HB	HOSE BIB
HDWL	HEADWALL
HNDRL	HAND RAIL
HNDWL	HAND WHEEL
HOCl	HYPOCHLORITE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HS	HIGH STRENGTH
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HW	HOT WATER
HWL	HIGH WATER LINE
HWY	HIGHWAY
HYD	HYDRANT
ID	INSIDE DIAMETER
IF	INSIDE FACE
INCL	INCLUDED
INCR	INCREASER
INF	INFLUENT
INSTL	INSTALLATION
INSTR	INSTRUMENT
INSUL	INSULATION
INV	INVERT
INT	INTERIOR
INV EL	INVERT ELEVATION
ISA	INSTRUMENT SOCIETY OF AMERICA
JST	JOIST
JTS	JOINTS
KO	KNOCKOUT
KWY	KEYWAY
L	LEFT OR LITER
LAB	LABORATORY
LAV	LAVATORY
LB(S)	POUND(S)
LEL	LOW EXPLOSIVE LIMIT
LF	LINEAR FOOT
LL	LIVE LOAD, LOOSE LINTEL
LOC	LOCATION
LP	LOW PRESSURE OR LIGHT POLE
LR	LONG RADIUS
LS	LICENSED SURVEYOR
LT	LIGHT
LT WT	LIGHTWEIGHT
LWL	LOW WATER LEVEL
MAINT	MAINTENANCE
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MED	MEDIUM
MFM	MAGNETIC FLOW METER
MFR	MANUFACTURER
MG	MILLION GALLONS OR MILLIGRAMS
MGD	MILLION GALLONS PER DAY
MGMT	MANAGEMENT

MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
MNPT	MALE NATIONAL PIPE THREAD
MO	MASONRY OPENING
MRGB	MOISTURE RESISTANT GYPSUM WALL BOARD
MTG	MOUNTING
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NPL	NAMEPLATE
NPT	NATIONAL PIPE THREAD
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE / OVERFLOW
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTIONAL
PC	POINT OF CURVE, OR PORTLAND CEMENT
P & C	PIN AND CAP
PCO	PRESSURE CLEAN OUT
PCP	PROGRESSING CAVITY PUMP
PCR	POINT OF CURVE RETURN
PE	PLAIN END
PERM	PERMANENT
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PL	PLATE OR PROPERTY LINE
PLBG	PLUMBING
PLYWD	PLYWOOD
PNT	PAINT
POC	POINT ON VERTICAL CURVE
POL	POLYMER
POLY	POLYETHYLENE
PPM	PARTS PER MILLION
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PRELIM	PRELIMINARY
PREP	PREPARATION
PROJ	PROJECT
PROP	PROPERTY
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE
PS	PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAGE
PSV	PRESSURE SUSTAINING VALVE
PT	POINT OF TANGENCY OR POINT
PV	PLUG VALVE
PVC	POINT OF VERTICAL CURVE OR POLYVINYL CHLORIDE
PVG	PAVING
PVI	POINT OF VERTICAL CURVE INTERSECTION
PVMT	PAVEMENT
Q_{AVG}	AVERAGE DAILY FLOW
Q_{MAX}	MAXIMUM DAILY FLOW
Q_{PEAK}	PEAK HOUR FLOW
QTR	QUARTER
QTY	QUANTITY
RAD	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RECT	RECTANGULAR
RED	REDUCER
RE:	REFER TO
REF	REFERENCE
REHAB	REHABILITATION
REINF	REINFORCE (D) (ING) (MENT)
REQD	REQUIRED
RESIL	RESILIENT
RFCA	RESTRAINED FLANGED COUPLING ADAPTER
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RRAS	RAPID RETURN ACTIVATED SLUDGE
RTN	RETURN

SA	SUPPLY AIR
SALV	SALVAGE
SAN	SANITARY
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCM	SCUM
SCN	SCREENINGS
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SHLDR	SHOULDER
SHT	SHEET
SIM	SIMILAR
SNT	SUPERNATANT
SOTE	STANDARD OXYGEN TRANSFER EFFICIENCY
SP	SPACE (ING)
SPEC	SPECIFICATION
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SRT	SOLIDS RETENTION TIME
SS	SANITARY SEWER
SST	STAINLESS STEEL
SST BT	STAINLESS STEEL BOLT
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STL JST	STEEL JOIST
STL PL	STEEL PLATE
STRUCT	STRUCTURAL
SV	SOLENOID VALVE
SVC	SERVICE
SWD	SIDE WATER DEPTH
SYMM	SYMMETRICAL
SYS	SYSTEM
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T&P	TEMPERATURE AND PRESSURE
T	TEE
TB	TOP OF BEAM
TBIO	THICKENED BIOSOLIDS
TBM	TEMPORARY BENCH MARK
TE	TOP ELEVATION
TEMP	TEMPORARY
TF	TOP OF FOOTING
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TFF	TOP OF FINISH FLOOR
TH	TEST HOLE
THD	THREAD (ED)
THK	THICK
TJ	TOP OF JOIST
TOA	TOP OF ASPHALT
TOC	TOP OF CONCRETE OR TOP OF CURB
TOE	THREADED ONE END
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TOP OF PAVEMENT
TSL	TOP OF SLAB
TSS	TOTAL SUSPENDED SOLIDS
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UGE	UNDERGROUND ELECTRIC
ULT	ULTIMATE
UN	UNION
UNGD	UNDERGROUND
VAC	VACUUM
VB	VALVE BOX
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VP	VENT PIPE
VTR	VENT THROUGH ROOF

W	WIDE OR WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WCO	WALL CLEANOUT
WD	WIDTH OR WOOD
WDW	WINDOW
WF	WIDE FLANGE
WH	WALL HYDRANT
WL	WATER LINE OR WIND LOAD
WP	WEIR PLATE
WS	WETTED SURFACE
WT	WEIGHT
WTR	WATER
WW	WASTEWATER
WWF	WELDED WIRE FABRIC
WWTP	WASTEWATER TREATMENT PLANT
X SECT	CROSS SECTION
XMR	TRANSFORMER
YCO	YARD CLEANOUT
YD	YARD DRAIN
YH	YARD HYDRANT

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 06/18/19 JAMES C. VAUGHN, JR.

GMC

101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

ISSUE	DATE	
30% SUBMITTAL		
75% SUBMITTAL	05.20.19	GSS
90% SUBMITTAL		
FINAL	06.19.19	JCV
PROJECT MANAGER:		MEF
ENGINEER:		
DESIGNER:		GSS
DRAWN BY:		

IF THIS BAR DOES NOT MEASURE ONE INCH DRAWING IS NOT LABELED TO SCALE

PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

ABBREVIATIONS

G-008

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\01 GENERAL\G-008 ABBREVIATIONS-PH1.dwg
PLOTTED: Jun 19, 2019 - 8:17am

SERVICE ABBREVIATION	DESCRIPTION (NOTE 1)	PIPE MATERIAL (SCHEDULED AT RIGHT) EXPOSED PIPING (NOTE 2) 3" DIA & SMALLER	EXPOSED PIPING (NOTE 2) 4" DIA & LARGER	BURIED PIPING (NOTE 3) 3" DIA & SMALLER	BURIED PIPING (NOTE 3) 4" DIA & LARGER	FIELD TESTING REQUIREMENTS (SEE NOTE 4) SEE DEVIATION TABLE MIN TEST PRESSURE (PSI)	TESTING MEDIUM	LEAKAGE ALLOWANCE
A	AIR	1,8	3,5,8,11	1,8	3,5,11	25	AIR	NOTE 7,8
AL	ALUM	9	9	9	9	125	WATER	NOTE 7
AMM	AMMONIA SOLUTION	9	9	9	9	150	WATER	NOTE 7
BW	BACKWASH	-	4,5	-	4,5	NOTE 9	WATER	NOTE 7
BWW	BACKWASH WASTE	-	4,5	-	4,5	75	WATER	NOTE 7
C	CARBON	NOTE 12	NOTE 12	NOTE 12	NOTE 12	125	-	NOTE 7
CD	CHEMICAL DRAIN	10	10	10	10	NOTE 10	-	-
CEN	CENTRATE	-	4,5	-	4,5	75	WATER	NOTE 7
CLCW	CLOSED LOOP COOLING WATER	1	1	1	1, 5	125	WATER	NOTE 7
CLO2	CHLORINE DIOXIDE	9	9	9	9	125	WATER	NOTE 7
CLS	CHLORINE SOLUTION	9	9	9	9	125	WATER	NOTE 7
CPA	COMPRESSED AIR	7,13	2	13	2	200	AIR	NOTE 7,8
CWR	COOLING WATER RETURN	8,13	4,8	2,9,13	4,5	125	WATER	NOTE 7,11
CWS	COOLING WATER SUPPLY	8,13	4,8	2,9,13	4,5	125	WATER	NOTE 7,11
D	DRAIN	6	6	6	6	NOTE 10	-	-
DS	DIGESTED SLUDGE	-	5	-	5	50	WATER	NOTE 7, 11
FAS	FILTER AIR SCOUR	8	8	-	5	25	AIR	NOTE 7
FE	FILTER EFFLUENT	2,7,13	4,5	2,13	4,5	25	WATER	NOTE 7,11
FG	FEED GAS	7	7	7	7	125	AIR	NOTE 7
FI	FILTER INFLUENT	2,7,13	4,5	2,13	4,5	25	WATER	NOTE 7,11
FM	FORCE MAIN	-	5	-	5,12	50	WATER	NOTE 7, 11
FTW	FILTER TO WASTE (FILTER RINSE)	-	4,5, 7	-	4,5	125	WATER	NOTE 7
FW	FINISHED WATER	2,7,13	4,5	2,13	4,5	125	WATER	NOTE 7,11
GOX	GASEOUS OXYGEN	7	7	7	7	125	AIR	NOTE 7
HF	HYDROFLUOROSILICIC ACID	9	9	9	9	125	WATER	NOTE 7
HP	HYDROGEN PEROXIDE (30%)	7	7	7	7	125	AIR	NOTE 7
HPS	HYDROGEN PEROXIDE SIDESTREAM	7	7	7	7	125	AIR	NOTE 7
HPQ	HYDROGEN PEROXIDE QUENCH	7	7	7	7	125	AIR	NOTE 7
HPW	HYDROGEN PEROXIDE WATER	7	7	7	7	125	AIR	NOTE 7
LOX	LIQUID OXYGEN	7	7	7	7	125	AIR	NOTE 7
LS	LIME SYSTEM	NOTE 12	NOTE 12	NOTE 12	NOTE 12	125	-	NOTE 7
N2	NITROGEN GAS							
NaOCL	SODIUM HYPOCHLORITE	9	9	9	9	125	WATER	NOTE 7
NAOH	SODIUM HYDROXIDE (CAUSTIC)	1	1	1	1	125	WATER	NOTE 7
NPW	NON-POTABLE WATER	2,7,13	4,5	2,9,13	4,5	125	WATER	NOTE 7,11
O3	OZONE	7	7	7	7	125	AIR	NOTE 7
OF	OVERFLOW	4,5	4,5	4,5	4,5	NOTE 9	WATER	NOTE 7
OFG	OFF GAS	7	7	7	7	125	AIR	NOTE 7
OLCW	OPEN LOOP COOLING WATER	2,13	4,5	2,9,13	4,5	125	WATER	NOTE 7,11
OZW	OZONATED WATER	2,13	4,5	2,9,13	4,5	125	WATER	NOTE 7,11
OZWS	OZONATED WATER SIDESTREAM	2,13	4,5	2,9,13	4,5	125	WATER	NOTE 7,11
PA	PLANT AIR	1, 7, 13	-	1	-	300	AIR	NOTE 7,8
PAC	POLY ALUMINUM CHLORIDE	9	9	9	9	125	WATER	NOTE 7
PD	PUMPED DRAIN	2,9	2,5	2,9	5,9	125	WATER	NOTE 7,11
PG	PROCESS GAS	7	7	7	7	125	AIR	NOTE 7
PPH	POLYPHOSPHATE	9	-	9	-	125	WATER	NOTE 7
POL	POLYMER SYSTEM	9	-	9	-	125	WATER	NOTE 7
PSW	PLANT SERVICE WATER	2,7,13	4,5	2,9,13	4,5	125	WATER	NOTE 7,11
RW	RAW WATER	2,9	4,5	2,9	4,5	125	WATER	NOTE 7,11
SA	SAMPLE WATER	8, 9,11,13	-	9,11,13	-	125	WATER	NOTE 7
SAB	SCREEN AIR BURST	8	8	11,14	11,14	200	AIR	NOTE 7,8
SAN	SANITARY SEWER	6	6	6	6	NOTE 10	WATER	-
SL	SLUDGE	-	5	-	5	125	WATER	NOTE 7,11
SP	SODIUM PERMANGANATE	9	-	9	-	125	WATER	NOTE 7
SN	SUPERNATANT	-	4,5	-	4,5	75	WATER	NOTE 7
SW	SETTLED WATER	-	4,5	-	4,5	NOTE 9	WATER	NOTE 7
TD	TANK DRAIN	-	5	-	5	NOTE 9	WATER	NOTE 7
TSL	THICKENED SLUDGE	-	5	-	5	125	WATER	NOTE 7
TW	TREATED WATER	2,9	4,5	2,9	4,5	NOTE 9	WATER	NOTE 7
V	VENT	9	9	-	-	NOTE 9	WATER	NOTE 7
VAC	VACUUM	2, 8	3,8	-	-	NOTE 10	AIR	NOTE 7
W	WATER	2,13, 8	4,5,8	2,9,13	4,5	125	WATER	NOTE 7,11
WW	WASTE WASHWATER	-	4,5	-	4,5	NOTE 9	WATER	NOTE 7

PROCESS PIPING MATERIAL SCHEDULE (NOTE 5, NOTE 6)

GROUP NO.	PIPE MATERIAL	SPECIFICATION SECTION	FITTINGS	COMMENTS
1	STEEL, ASTM A53, SCH 40, BLACK, WELDED	400524	3" AND SMALLER, MALLEABLE IRON, ANSIB16.3, THREADED BLASK 150 PSI OR STEEL ANSIB16.9 BUTT-WELDED 4" AND LARGER, CAST IRON, ANSIB16.1, FLANGED OR MECH COUPLING	
2	STEEL, ASTM A53, SCH 40, WELDED, GALVANIZED	400524	3" AND SMALLER, MALLEABLE IRON, ANSIB16.3, THREADED GALVANIZED 150 PSI 4" AND LARGER, CAST IRON, ANSIB16.1, FLANGED OR MECH COUPLING	
3	WELDED STEEL,AWWA C200, UNLINED	400524	WELDED STEEL, AWWA C200 FABRICATED, UNLINED	
4	WELDED STEEL,AWWA C200,	400524	WELDED STEEL, AWWA C200 FABRICATED,	
5	DUCTILE IRON, AWWA C151, 150 PSI, PUSH-ON, MECHANICAL JOINT OR 125 PSI FLANGED, UNLINED FOR AIR LINES	400519	DUCTILE IRON AWWA 110, PUSH-ON, MECHANICAL JOINT 250 PSI (PR), 12" AND SMALLER, 150 SSI (PR). FLANGES JOINTS 125PSI ANSI B16.1	
6	CAST IRON SOIL PIPE ASTM A74, SERVICE WEIGHT, BELL & SPIGOT OR NO-HUB, SYSTEM 5 MAY BE SUBSTITUTED	400519	CAST IRON ASTM A74, SERVICE WEIGHT, BELL & SPIGOT OR NO-HUB, SYSTEM 5 MAY BE SUBSTITUTED	
7	STAINLESS STEEL, TYPE 316, ASTM A312, SCHEDULE 40	400523	STAINLESS STEEL TYPE 316, ANSI B16.3, THREADED, 150 PSI, ANSIB16.9, BUTT-WELDED SCH 40 OR 150 PSI FLANGED	PTFE GASKETS FOR GOX, LOX, O3,FG, PG, HP, HPQ, HPW & HPS SERVICE
8	STAINLESS STEEL, TYPE 304, ASTM A312, SCHEDULE 10S	400523	STAINLESS STEEL TYPE 304, ANSIB16.9, BUTT-WELDED SCH 10S OR 150 PSI FLANGED	
9	POLYVINYL CHLORIDE (PVC), SCHEDULE 80, ASTM D1785	400531	PVC SCHEDULE 80, ASTM D2467 SOCKET SOLVENT WELD JOINTS	
10	POLYPROPYLENE, ASTMD2146, SCHEDULE 40, HEAT FUSED JOINTS	400531	POLYPROPYLENE, SCHEDULE 40, DRAINAGE TYPE WITH HEAT FUSED SOCKET JOINTS	
11	FIBERGLASS REINFORCED PLASTIC (FRP), ASTMD2996, FILAMENT WOUND SOCKET AND SPIGOT JOINTS, ADHESIVE BONDED	400536	FRP, FILAMENT WOUND, SOCKET ENDS, ADHESIVE BONDED OR FIBERGLAS FLANGES	
12	POLYVINYL CHLORIDE (PVC) PRESSURE PIPE ASTM D2241, WTIH BELL & SPIGOT JOINTS	400531	DUCTILE IRON, AWWA C110, CEMENT LINED, AWWA C104	
13	COPPER, ASTM B88, TYPE K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED		WROUGHT COPPER ANSIB16.22 SOLDER JOINT, 150 PSI OR COMPRESSION FITTINGS (FOR COMPRESSED AIR USE TIN-ANTIMONY SOLDER)	
14	HDPE DR 9 FOR PRESSURE RATING 150 PSI OR MORE, OTHERWISE DR17	400533	HDPE FABRICATED OR MOLDED	

RESERVED FOR FUTURE

NOTES:

1. THE SCHEDULE INCLUDES SOME PROCESS DESIGNATIONS NOT USED IN THIS PROJECT.
2. EXPOSED PIPING SHALL BE COATED IN ACCORDANCE WITH THE SPECIFICATIONS. COLORS WILL BE SELECTED BY THE ENGINEER.
3. SEE SPECIFICATIONS FOR PIPE LINING AND COATING.
4. SEE SPECIFICATION SECTION 400513 FOR ADDITIONAL TESTING REQUIREMENTS.
5. DEVIATIONS FROM THIS SCHEDULE OF MATERIALS OR TESTING REQUIREMENTS ARE NOTED IN THE SPECIFICATIONS OR ADDITIONAL NOTATIONS ON THE DRAWINGS.
6. SEE VALVE SCHEDULE FOR VALVE TYPE FOR EACH SERVICE.
7. PIPE SHALL SHOW NO LEAKAGE
8. LOSS OF PRESSURE SHALL BE LESS THAN 5 PERCENT
9. STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGHEST POINT ON PIPE.
10. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE.
11. PIPE LIKE SHALL NOT BE MORE THAN 0.02 GALLONS PER HOUR PER INCH DIAMETER PER 100 FEET OF BURIED PIPE.
12. PIPING MATERIAL SHALL BE ABRASION RESISTANT FLEXIBLE RUBBER HOSE & QUICK CONNECT COUPLINGS WITH SYSTEM 1 PIPING AT EQUIPMENT CONNECTIONS. PIPE SHALL SHOW ZERO LEAKAGE AT NORMAL OPERATING CONDITIONS.

DEVIATIONS FROM SCHEDULED TEST PRESSURES

LOCATION	OPERATING PRESSURE (PSI)	TEST PRESSURE (PSI)

GMC
101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
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ISSUE	DATE	
30% SUBMITTAL	05.20.19	
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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

PROCESS PIPING SCHEDULE

G-009

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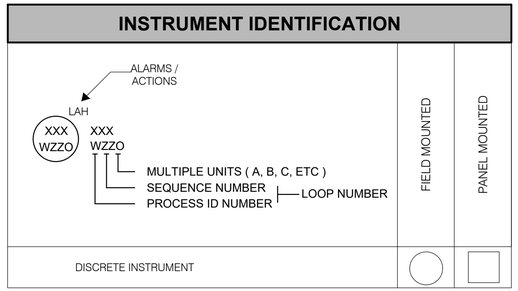
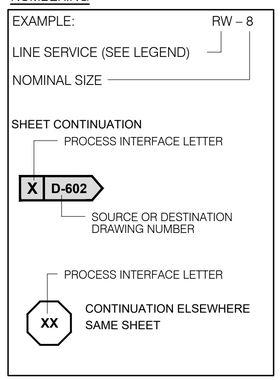
PLOTTED: Jun 19, 2019 - 9:17am

INSTRUMENT IDENTIFICATION



PROCESS LINE SYMBOLS



LINE LEGEND

- PRIMARY PROCESS LINE
- SECONDARY PROCESS LINE
- EXISTING
- ELECTRICAL SIGNAL
- ES 120/1 — ELECTRIC SUPPLY VOLTAGE/PHASE
- INSULATED
- HEAT TRACED
- E — ETHERNET
- PA — PLANT AIR SUPPLY
- IA — INSTRUMENT AIR SUPPLY
- NPW — NON-POTABLE WATER SUPPLY
- PRW — REUSE WATER SUPPLY
- BY VENDOR

UNDEFINED INTERLOCK LOGIC

EXAMPLE ALARMS OR ACTIONS

HA- HIGH ALARM
LAH- LEVEL ALARM HIGH
LAHH- LEVEL ALARM HIGH HIGH
HOA- HAND / OFF / AUTO
LAL - LOW
LAU - LOW LOW
OO- ON / OFF

VALVE SYMBOLS

- GATE
- GLOBE
- CHECK
- DIAPHRAGM
- BALL
- FLOAT
- NEEDLE VALVE
- BUTTERFLY
- SAFETY RELIEF
- PRESSURE REGULATING
- PLUG
- 3-WAY
- AIR RELEASE VALVE
- MUD OR FOOT VALVE

ACTUATORS

- M — MOTOR OPERATOR
- S — SOLENOID
- PNEUMATIC ACTUATOR
- SLIDE GATE

PROCESS INSTRUMENTS

- FLOWMETER - MAG
- FLOWMETER - PROPELLER
- FLOWMETER - VENTURI
- FLOWMETER THERMAL MASS
- ROTAMETER
- PARSHAL FLUME
- LEVEL ELEMENT (ULTRASONIC) (OR RADAR)
- FLOAT SWITCH
- VIBRATING FORK LEVEL SWITCH

GENERAL FITTINGS

- REDUCER
- FLANGE / BOLTED
- END CAP
- RESTRICTING ORIFICE

GENERAL EQUIPMENT

- CENTRIFUGAL PUMP
- POSITIVE DISPLACEMENT PUMP
- VERTICAL TURBINE PUMP
- HORIZONTAL SPLIT-CASE PUMP
- ROTARY SCREW COMPRESSOR
- PROGRESSIVE CAVITY PUMP
- GRINDER
- DIAPHRAGM PUMP
- EDUCTOR
- CENTRIFUGAL FAN / BLOWER
- BLOWER (POSITIVE DISPLACEMENT)
- SPRAY NOZZLE
- FILTER OR STRAINER
- HEATER
- HEAT EXCHANGER
- PERISTALTIC PUMP
- STATIC MIXER
- MIXER
- SILENCER
- DRAIN
- VENT
- FLEXIBLE HOSE OR JOINT
- DIAPHRAGM OR LOAD CELL
- UNION
- ANNULAR SEAL RING
- SINGLE ARCH EXPANSION JOINT
- ROTMETER

ABBREVIATIONS

CONC	CONCENTRIC
CP	CONTROL PANEL
DO	DISSOLVED OXYGEN
ECC	ECCENTRIC
EL	ELEVATION
ES	EMERGENCY STOP
FC	FAIL CLOSE
FCP	FACTORY CONTROL PANEL (FURNISHED BY EQUIPMENT MANUFACTURER)
FI	FAIL INTERMEDIATE
FL	FAIL LOCKED
FLG	FLANGE
FO	FAIL OPEN
FOR	FORWARD/OFF/REVERSE (MAINTAINED)
FSR	FORWARD/STOP/REVERSE (MAINTAINED)
FWE	FURNISHED WITH EQUIPMENT
GPM	GALLONS PER MINUTE
HMI	HUMAN MACHINE INTERFACE
HOR	HAND/OFF/REMOTE
HP	HIGH PRESSURE
LC	LOCKED CLOSE
LCP	LOCAL CONTROL PANEL (FURNISHED BY SYSTEMS INTEGRATOR)
LO	LOCKED OPEN
LOR	LOCAL/OFF/REMOTE
LP	LOW PRESSURE
LR	LOCAL/REMOTE
LT	LOW TEMPERATURE
MA	MANUAL/AUTO
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MIN	MINIMUM
MW	MANWAY
NC	NORMALLY CLOSED
NLL	NORMALLY LIQUID LEVEL
NO	NORMALLY OPEN
OC	OPEN/CLOSE
OCA	OPEN/CLOSE/AUTO
OCR	OPEN/CLOSE/REMOTE
OO	ON/OFF
ORIF	ORIFICE
ORP	OXIDATION REDUCTION POTENTIAL
OS	OPERATION SWITCH
PC	PARTICLE COUNT
pH	HYDROGEN ION CONCENTRATION
R	RESET
RED	REDUCER
RS	RUN/STOP (AUTO RESET/RUN @ POWER INTERRUPTION)
RSJ	RUN/STOP/JOG
S	SILENCE
SCH	SCHEDULE
SCM	STREAMING CURRENT MONITOR
SCN	SAMPLE CONNECTION
SD	SHUTDOWN
SLBL	SLUDGE BLANKET LEVEL
SP	SAMPLE POINT
SR	SAFE/RUN
SST	STAINLESS STEEL
SS	START/STOP (MANUAL RESET @ POWER INTERRUPTION)
STD	STANDARD
T	TEST
TOR	TORQUE
TURB	TURBIDITY
TYP	TYPICAL
UD	UP/DOWN

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME				
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSE
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL	DELAY		
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTERMEDIATE
N	UNCLASSIFIED				
O	UNCLASSIFIED		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT OR TRANSMITTER	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	EVENT			UNCLASSIFIED	
Y	UNCLASSIFIED			RELAY, COMPUTE OR CONVERT	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTES:

1. THE PROCESS AND INSTRUMENTATION DIAGRAM IS BASED ON PROCESS EQUIPMENT SHOWN ON THE DRAWINGS, SELECTED BY ENGINEER AND INFORMATION AVAILABLE TO ENGINEER.
2. THE PROCESS AND INSTRUMENTATION DIAGRAM ARRANGEMENT IS BASED ON THE EQUIPMENT BASIS OF DESIGN AS SPECIFIED. CHANGES TO THE LISTED BASIS OF DESIGN RESULTING IN DIFFERENCES OF THE SHOWN ARRANGEMENT SHALL BE THE CONTRACTORS RESPONSIBILITY. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR FOR MODIFICATIONS.
3. THE MANUFACTURER MAY ELECT TO MAKE MODIFICATIONS TO THE PROCESS AND INSTRUMENTATION DIAGRAM TO IMPROVE SYSTEM FUNCTION BUT ONLY WHEN APPROVED BY THE ENGINEER.
4. SEE DRAWING G-009 FOR PROCESS PIPING SERVICE ABBREVIATIONS.

GMC
101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

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75% SUBMITTAL		MEP
90% SUBMITTAL	06.19.19	JCV
FINAL		
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ENGINEER:		
DESIGNER:		
DRAWN BY:		

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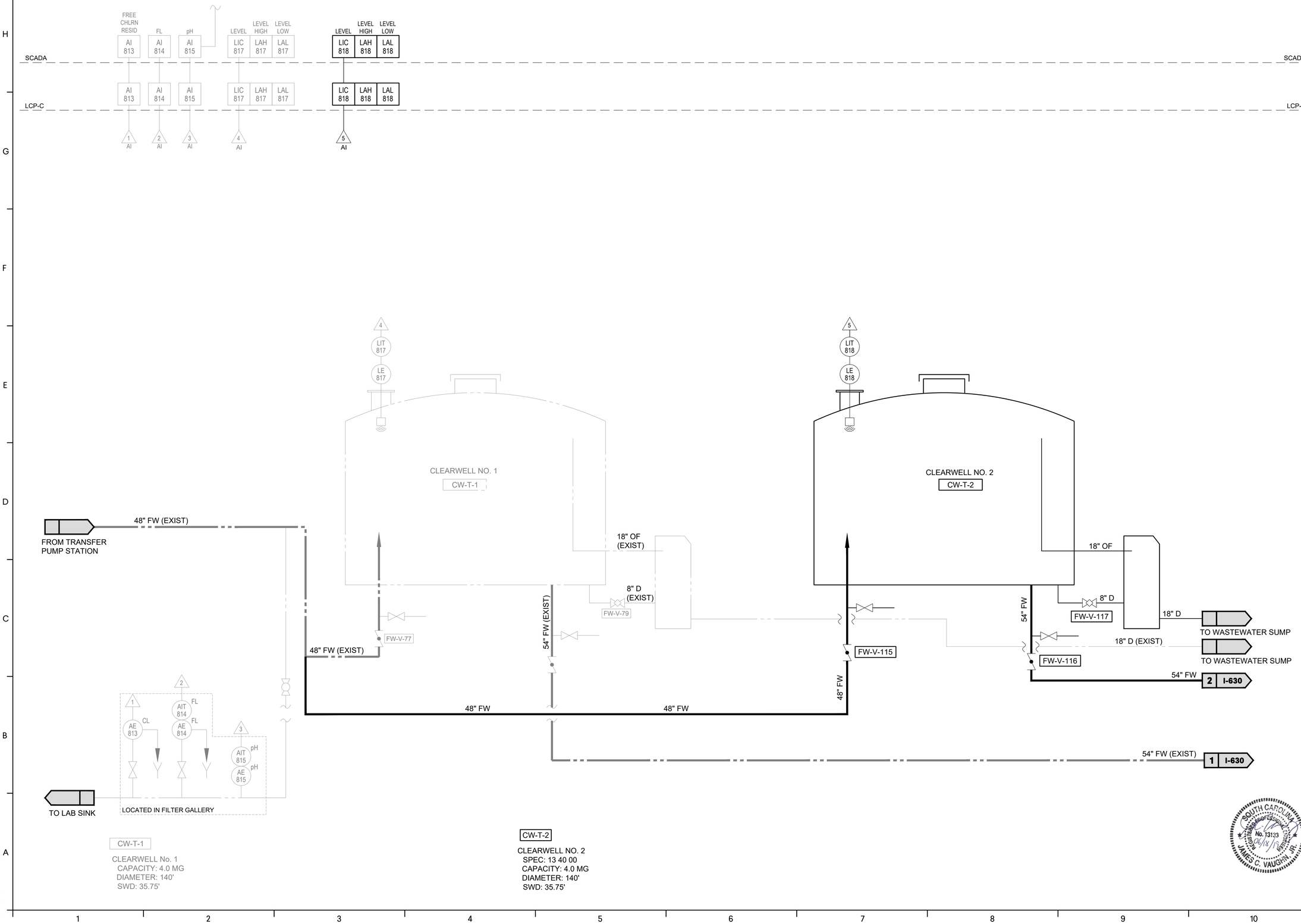
BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339
CERTIFICATE OF AUTHORIZATION

P&ID LEGEND & ABBREVIATIONS & NOTES

I-001



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BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
No. 13133
REGISTERED PROFESSIONAL ENGINEER
JAMES C. VAUGHN, JR.
06/19/19

PROCESS AND INSTRUMENTATION DIAGRAM - CLEARWELL

I-620

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\02 INSTRUMENTATION\I-620-630-PH1-100.dwg
PLOTTED: Jun 19, 2019 - 9:17am

SCADA

LCP-C

MCC

2 I-620 54" FW

FW-V-106

54" FW (EXIST)

54" FW (EXIST)

TO BACKWASH PUMP

PI 529

PI 529 PSHH 529 PSH 529

M

24" FW (EXIST)

FW-V-83

24x20

HS-P-4

18" FW

FW-V-92

FW-V-93

18x24

PI 529

M

24" FW (EXIST)

FW-V-82

24x20

HS-P-3

PI 529 PSHH 529 PSH 529

18" FW

FW-V-90

FW-V-91

18x24

24" FW (EXIST)

PI 529

M

24" FW (EXIST)

FW-V-81

HS-P-2

FW-V-88

FW-V-89

24" FW (EXIST)

24" FW (EXIST)

PI 529

M

FW-V-80

HS-P-1

FW-V-86

FW-V-87

1" NaOCL

FROM CHEMICAL FEED BUILDING

2" AMM

FROM CHEMICAL FEED BUILDING

1 I-620

HIGH SERVICE CHEMICAL FEED VAULT

1" NaOCL

5 I-631

2" AMM

6 I-631

FW-V-109

TO BACKWASH TANK

SURGE VALVE

FW-V-108

48" FW (EXIST)

4 I-631

TO HIGH SERVICE VENTURI VAULT

FW-V-107

7 I-631

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR.

GMC

101 East Washington Street
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Greenville, SC 29601
T 864.527.0460
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ISSUE	DATE	
30% SUBMITTAL		
75% SUBMITTAL	05.20.19	
90% SUBMITTAL		
FINAL	06.19.19	
PROJECT MANAGER:		JCV
ENGINEER:		MEF
DESIGNER:		GSS
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

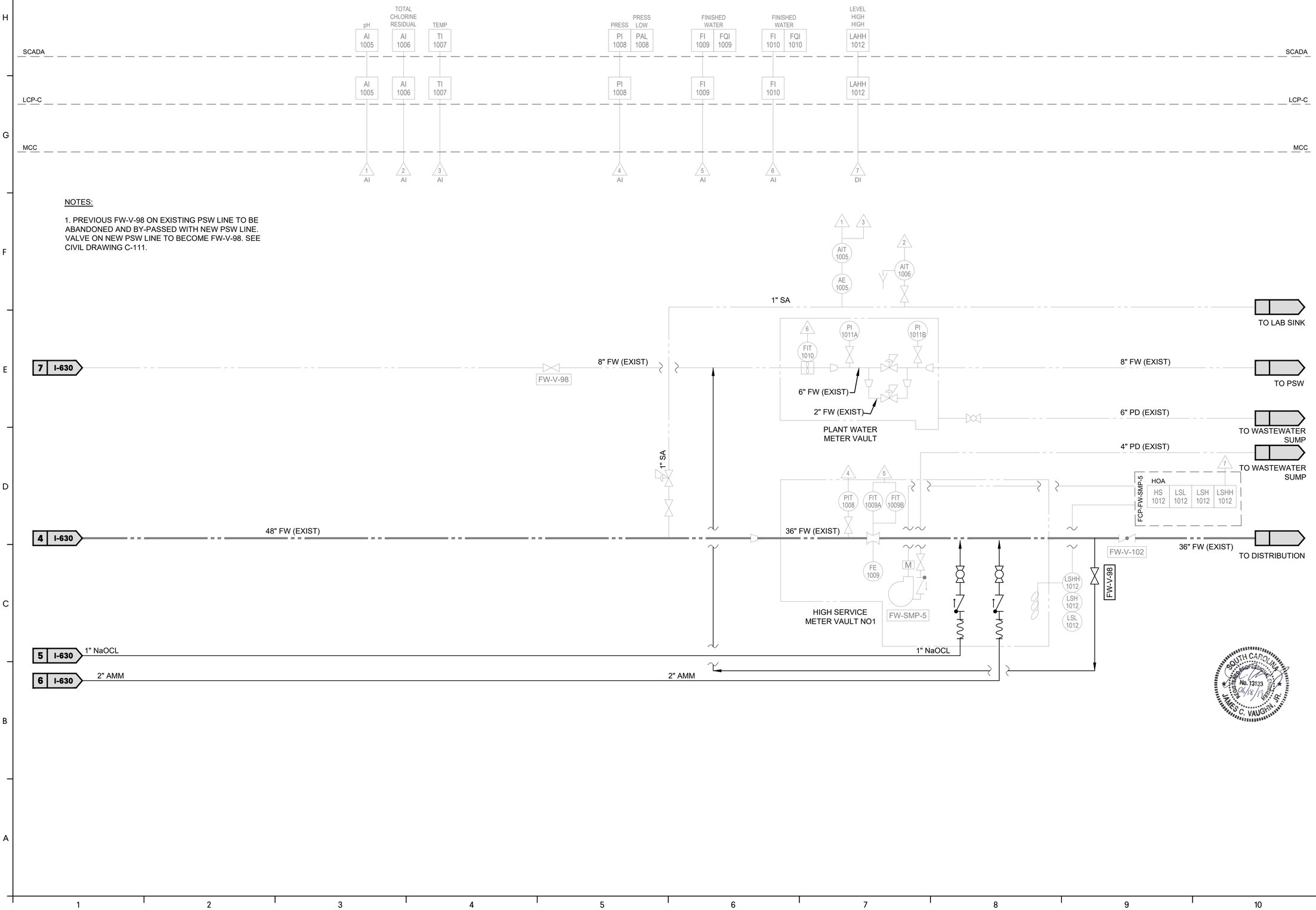
BJWSA Project CIP #1366
GMC Project #CGRE180057

GOODWYN, MILLS & CAWOOD INC. No. 0339
SOUTH CAROLINA
CERTIFICATE OF AUTHORIZATION

PROCESS & INSTRUMENTATION DIAGRAM-HSPS

I-630

DRAWING FILE: M:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\101 BID DRAWINGS\02 INSTRUMENTATION\I-620-630-PH1-100.dwg
PLOTTED: Jun 18, 2019 - 9:17am



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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

PROCESS & INSTRUMENTATION DIAGRAM-HSPS & BACKWASH VAULTS

I-631

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RAW WATER RESERVOIR

BEAUFORT JASPER WATER & SEWER AUTHORITY

OKEETEE CLUB

CANAL

PROPERTY LINES

SOUTH CAROLINA ELECTRIC & GAS CO.

OKEETEE CLUB

PROPERTY LINES

CANAL

PROPERTY LINES

BEAUFORT JASPER WATER & SEWER AUTHORITY

SOUTH CAROLINA ELECTRIC & GAS CO.

D-801

C-111

CITY OF HARDEEVILLE

WATER TREATMENT PLANT

PROPERTY LINES

SOUTH CAROLINA ELECTRIC & GAS CO.

PROPERTY LINES

PURRYSBURG ROAD

C-112

PROPERTY LINES

PURRYSBURG ROAD

EPSTEIN, ALBERT REVOCABLE TRUST

SOUTH CAROLINA ELECTRIC & GAS CO.

BEAUFORT JASPER WATER & SEWER AUTHORITY

C-113

BEAUFORT JASPER WATER & SEWER AUTHORITY

CANAL

CHELSEA RIVER PUMP INTAKE & PUMP STATION

PROCESS WATER LAGOONS

PROPERTY LINES

C-114

PURRYSBURG RIVER PUMP STATION

PROPERTY LINES

PROPERTY LINES

SOUTH CAROLINA ELECTRIC & GAS CO.

SOUTH CAROLINA ELECTRIC & GAS CO.

SOUTH CAROLINA ELECTRIC & GAS CO.

1 C-101 **PROJECT SITE PLAN - KEY**

SCALE: 1" = 200'

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ENGINEER:	MEF
DESIGNER:	GSS
DRAWN BY:	

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

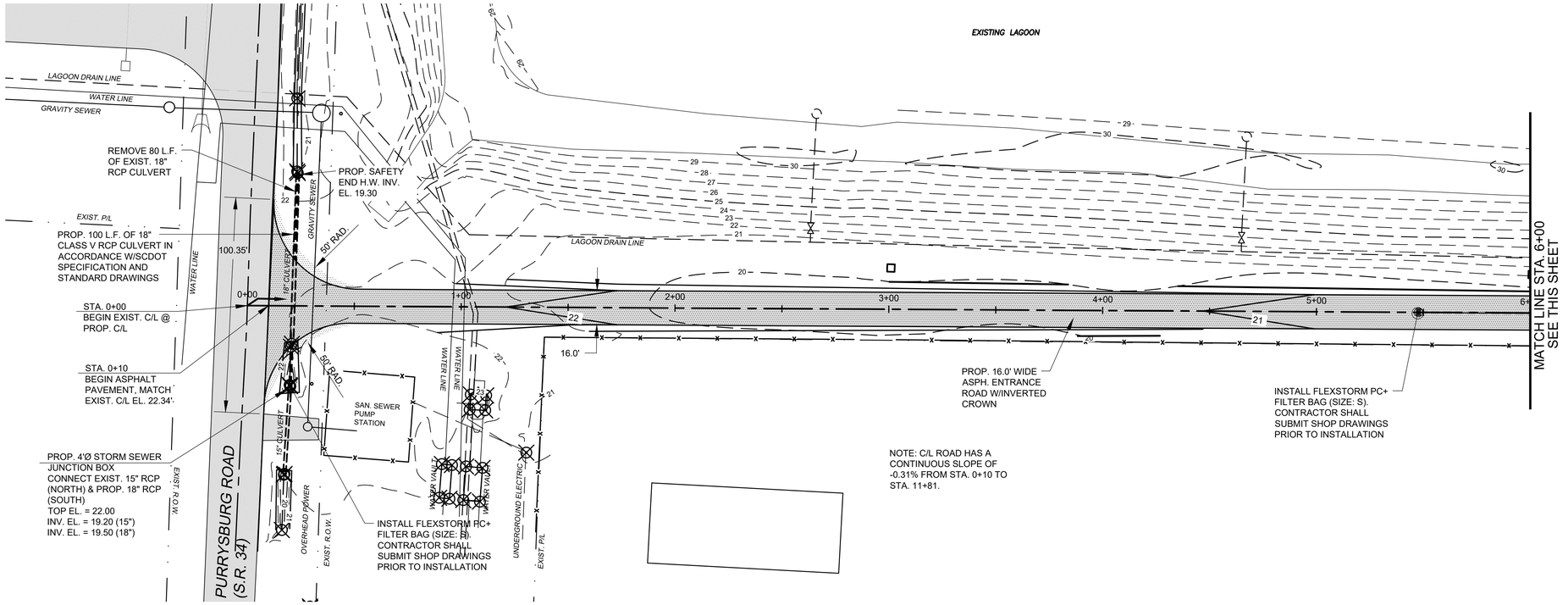
BJWSA Project CIP #1366
GMC Project #CGRE180057

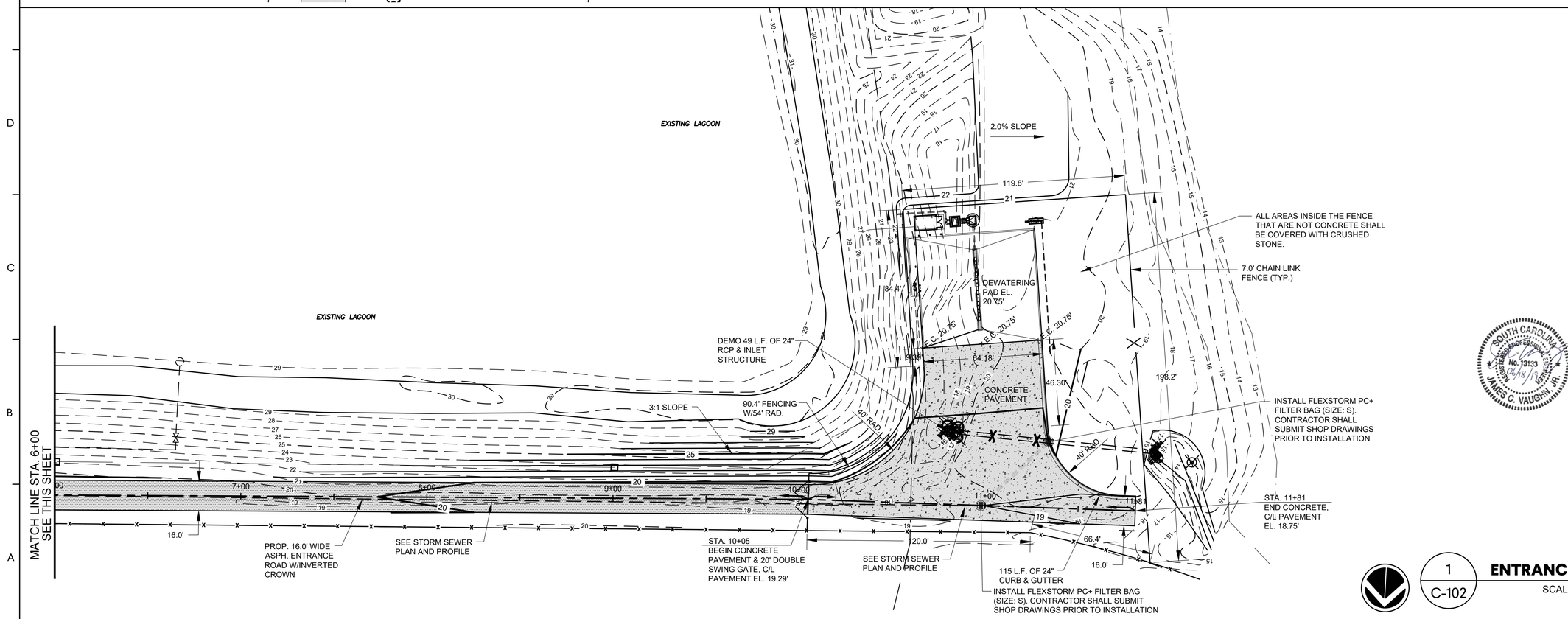
SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 06/18/19 JAMES C. VAUGHN, JR.

SOUTH CAROLINA GOODWYN, MILLS & CAWOOD INC. No. 0339 CERTIFICATE OF AUTHORIZATION

SITE PLAN
KEY PLAN

C-101





1 C-102 **ENTRANCE PLAN**
SCALE: 1" = 30'

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90% SUBMITTAL	06.19.19	GSS
FINAL		

PROJECT MANAGER:
ENGINEER:
DESIGNER:
DRAWN BY:

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0 1"

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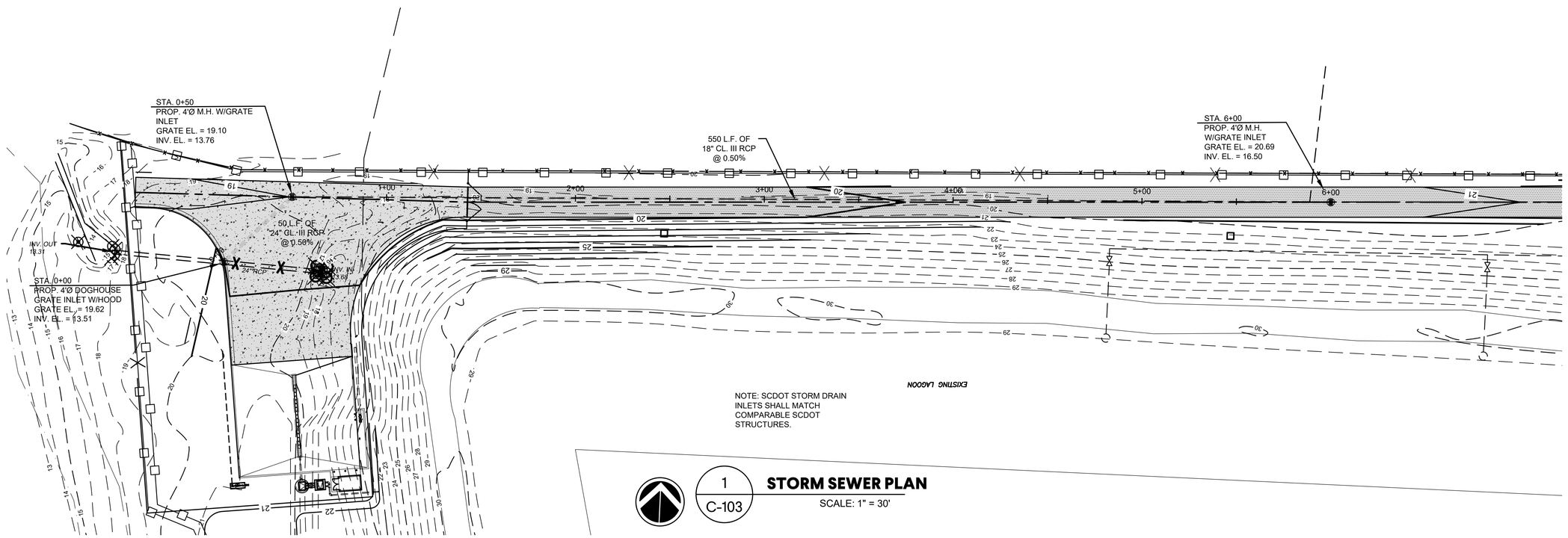
BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND SURVEYORS
No. 13133
JAMES C. VAUGHN, JR.
05/15/19

SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339
CERTIFICATE OF AUTHORIZATION

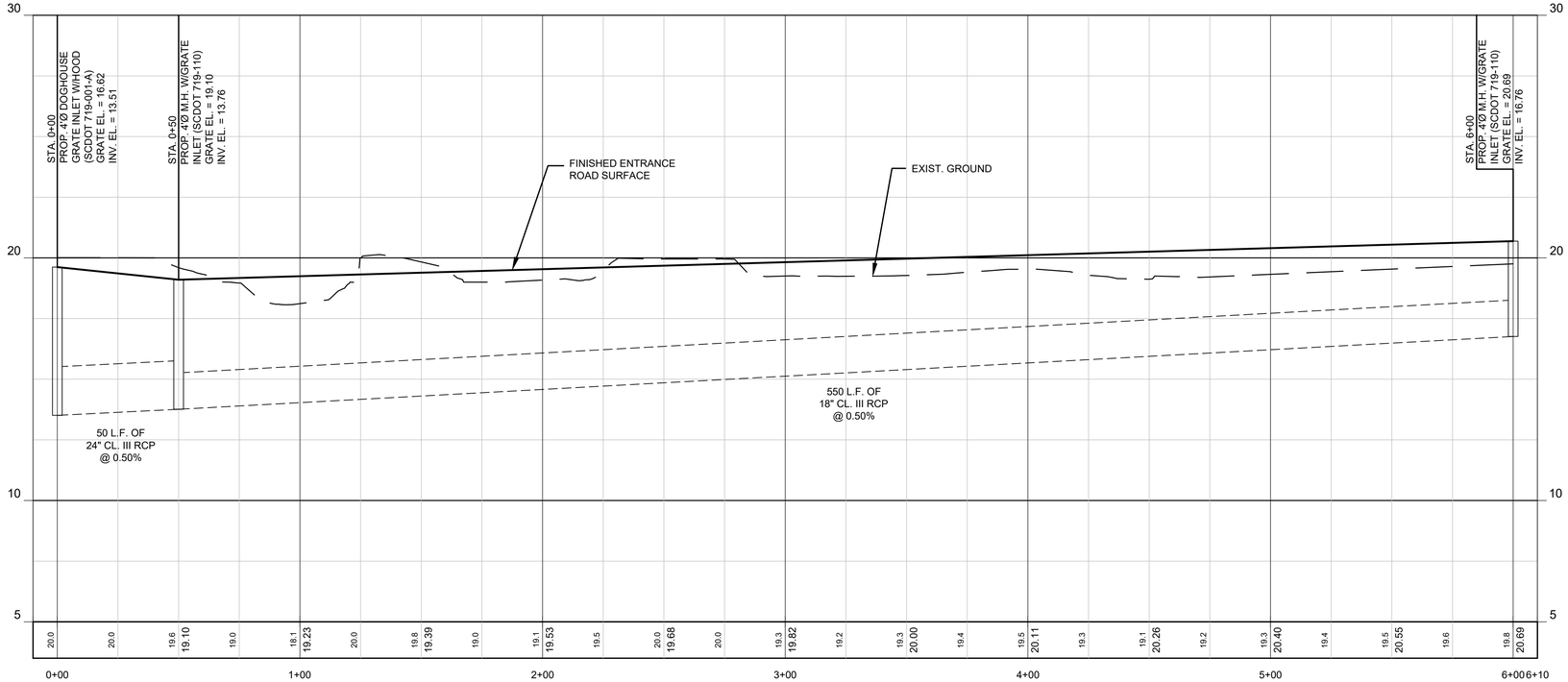
STAGING AREA FOR CONTRACT DREGING ENTRANCE ROAD GRADING & DRAINAGE

C-102



1 / C-103 **STORM SEWER PLAN**

SCALE: 1" = 30'



STORM PIPE PROFILE

SCALE:
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 3'

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DESIGNER:		GSS
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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 06/18/19

SOUTH CAROLINA GOODWYN, MILLS & CAWOOD INC. No. 0339 CERTIFICATE OF AUTHORIZATION

STORM SEWER PLAN & PROFILE

C-103

CLEARWELL 1
(EXISTING)

CLEARWELL NO. 2
CW-T-2

HIGH SERVICE
PUMP STATION

HIGH SERVICE
VENTURI VAULT

SURGE
VALVE
VAULT

8" PSW

48" FW

FW-V-77

FW-V-118

1-1/4" SA
1-1/4" SA

1" NaOCL
2" AMM

FW-V-78

54" FW

18" D SLOPE= 0.12%

FW-V-117

FW-V-115

REMOVE
TREE

1-1/2" SA

4" PSW

2" NaOCL
2" AMM

FW-V-116

REMOVE & REPLACE
PAVEMENT

8" MJ PLUG
(RESTRAINED)

8" FW

4" FW

36" FW

36" x 8" TAPPING
SLEEVE & VALVE

B-7
B-8
B-9

1
C-111

YARD PIPING PLAN

SCALE: 1" = 20'

1
C-904

EQUIPMENT LEGEND

1. REMOVE EXISTING PLUG, CONNECT & EXTEND 18" D
2. CONNECT TO EXISTING CHEMICAL FEED LINES IN VAULT,CORE DRILL EXISTING VAULT & EXTEND 2" NaOCL & 2" AMM TO HIGH SERVICE VENTURI VAULT
3. 6' Ø MANHOLE
4. 18" STUB-OUT WITH PLUG
5. REMOVE EXISTING PLUG, CONNECT & EXTEND 54" FW
6. 54" 90° MJ BEND
7. REMOVE EXISTING PLUG, CONNECT & EXTEND 48" FW
8. 48" 45° MJ BEND
9. 48" 45° MJ BEND (VERTICAL)
10. 8" 90° MJ BEND (RESTRAINED)
11. CUT-IN 8" x 8" MJ TEE

KEY PLAN

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90% SUBMITTAL	06.19.19	JCV
FINAL		MEF
PROJECT MANAGER:		
ENGINEER:		
DESIGNER:		
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 13133
JAMES C. VAUGHN, JR.

SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339
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YARD PIPING PLAN
NEW CLEAREWELL

C-111

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PLOTTED: Jun 19, 2019 - 9:18am

EXISTING WASTEWATER PUMPING STATION;
ELECTRIC SERVICE FOR CONTRACT DEWATERING
SYSTEM ORIGINATES FROM THIS STRUCTURE
SEE "E" DWGS

12" W
SD
12" W
SD
SD
R40'
R40'
8"x6" RED
8"x6" RED
24" RW
12" W
3" RO
12" WW
24" RW
12" WW
TAPPING SLEEVE & VALVE
4
C-901
12" W
24" RW
PROCESS WATER LAGOON "B"
4" PSW
ELECTRICAL SERVICE CONDUIT
12" WW
4" PSW
PROCESS WATER LAGOON "B"
TOP OF BERM EL. 30.0
WATER SURFACE EL. 29.0
BOT EL. 15.0
MATCH LINE - SEE DRAWING NO C-113

1
C-113

YARD PIPING PLAN

SCALE: 1" = 20'

KEY PLAN

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90% SUBMITTAL		GSS
FINAL	06.19.19	
PROJECT MANAGER:		
ENGINEER:		
DESIGNER:		
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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR.

SOUTH CAROLINA GOODWYN, MILLS & CAWOOD INC. No. 0339 CERTIFICATE OF AUTHORIZATION 1993

STAGING AREA FOR CONTRACT DREDGING AND DEWATERING - YARD PIPING

C-112

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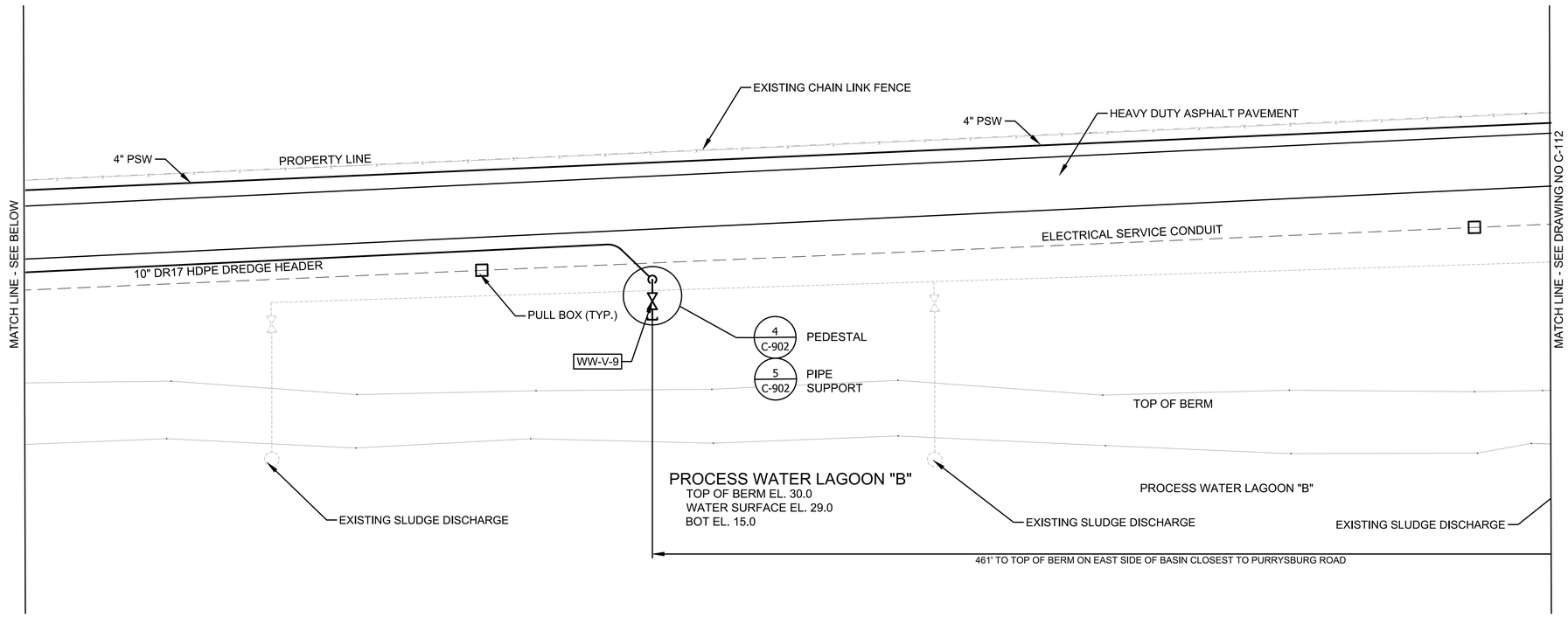
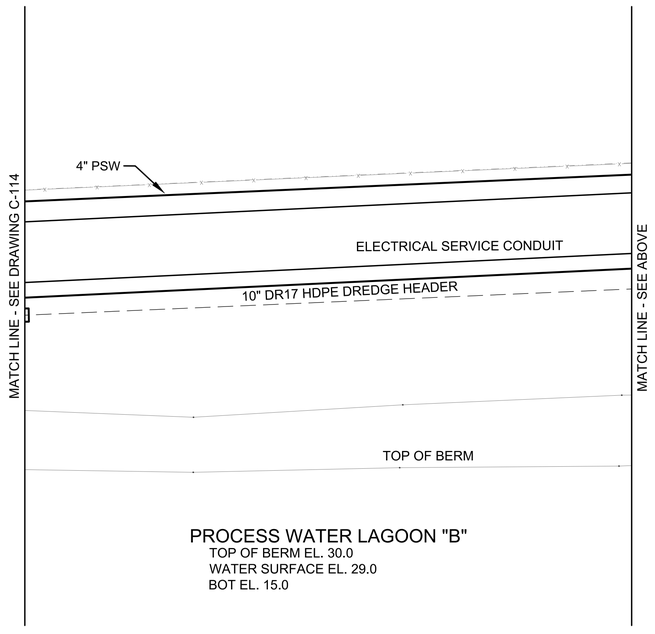
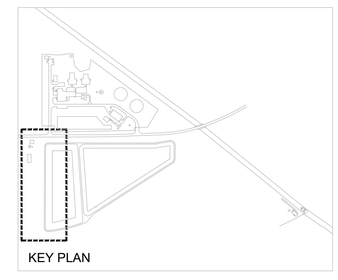


1 / C-121 **PARTIAL SITE PLAN**
SCALE: 1" = 20'



2 / C-121 **PARTIAL SITE PLAN**
SCALE: 1" = 20'



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FINAL		
PROJECT MANAGER:		
ENGINEER:		
DESIGNER:		
DRAWN BY:		

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SOUTH CAROLINA PROFESSIONAL ENGINEER JAMES C. VAUGHN, JR. No. 13133 06/18/19

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STAGING AREA FOR CONTRACT DREDGING AND DEWATERING - YARD PIPING

C-113

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MATCH LINE - SEE DRAWING NO C-113

PROCESS WATER LAGOON "B"
TOP OF BERM EL. 30.0
WATER SURFACE EL. 29.0
BOT EL. 15.0

ELECTRICAL SERVICE CONDUIT
TOP OF BERM
9'
16'
1'
20' DUAL LEAF SWING GATE
4" PSW
10" DR17 HDPE DREDGE HEADER
R60'
WW-V-10
D
C-713
RISER
6" D
3
C-903
TOP OF BERM
TOP OF BERM
35'
6'
64'
175'
4" PSW
4" W
60'
15'
50'
90.00°
R40'
2
C-901
FENCE
25' WETLAND BUFFER
WETLAND LIMITS

SOUTH CAROLINA PROFESSIONAL ENGINEER
No. 13133
06/18/19
JAMES C. VAUGHN, JR.

KEY PLAN

1
C-122
YARD PIPING PLAN
SCALE: 1" = 20'

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STAGING AREA FOR CONTRACT DREDGING AND DEWATERING - YARD PIPING

C-114

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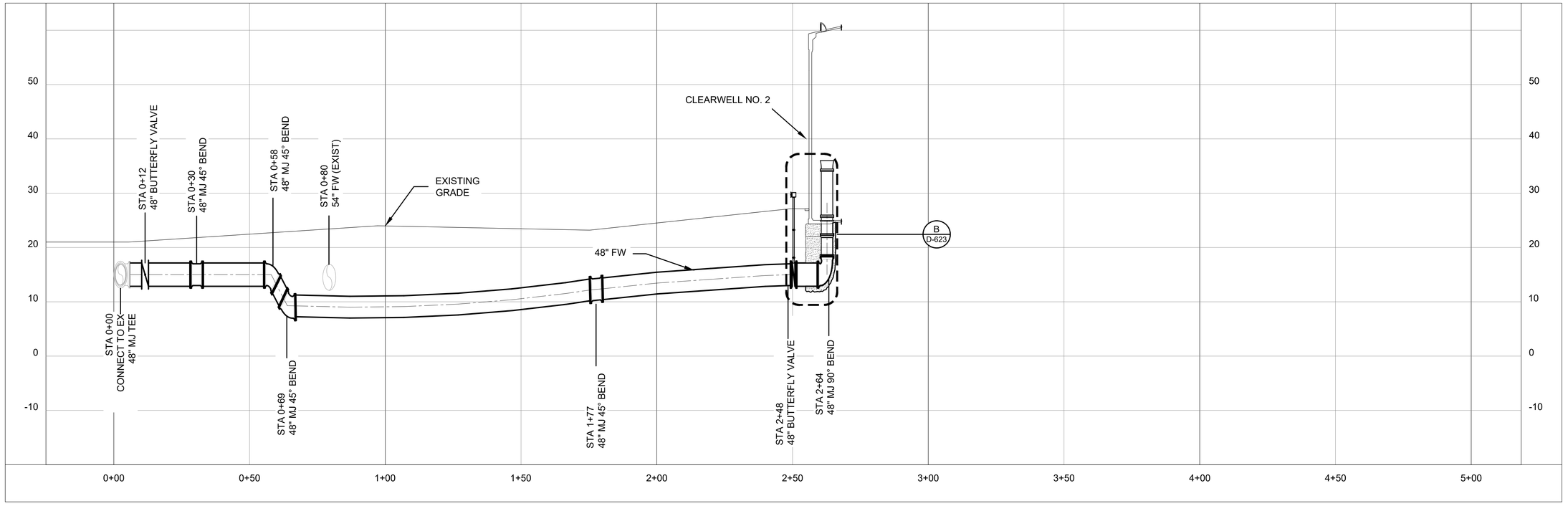

FINISHED WATER MAIN PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 10' VERTICAL

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FINAL		MEF

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ENGINEER:
DESIGNER:
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EXPANSION TO 30 MGD - PHASE 1
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YARD PIPING PROFILES

C-121

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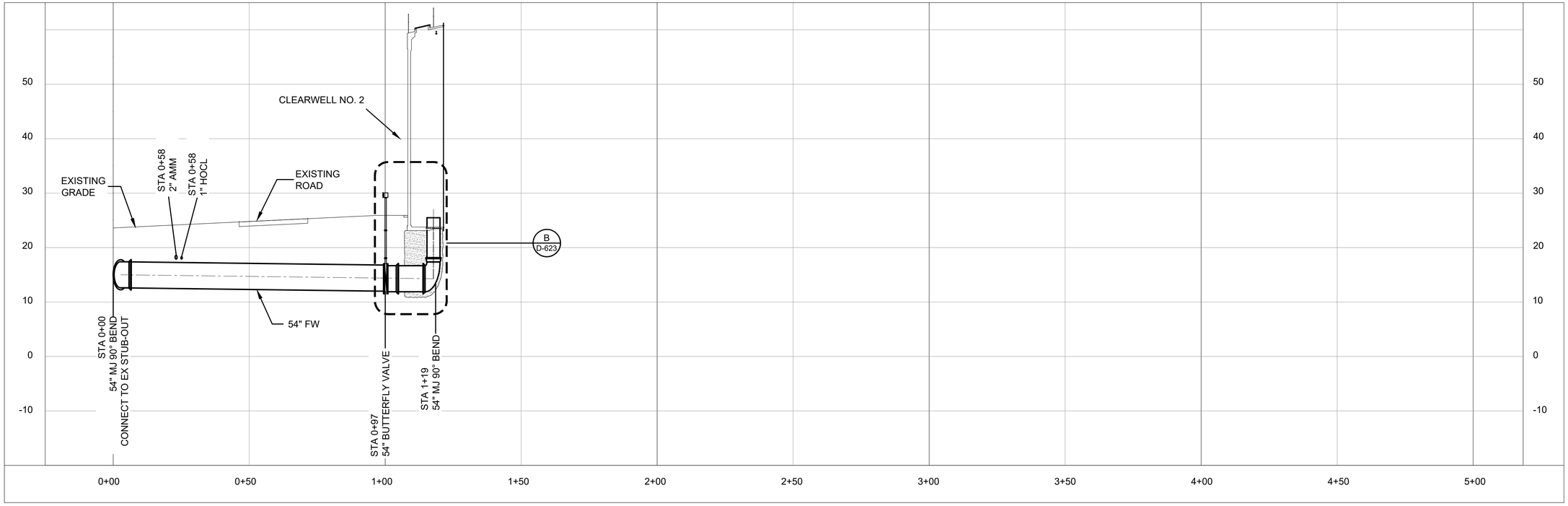

FINISHED WATER MAIN PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 10' VERTICAL

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 06/18/19

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

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YAR PIPING PROFILES

C-122

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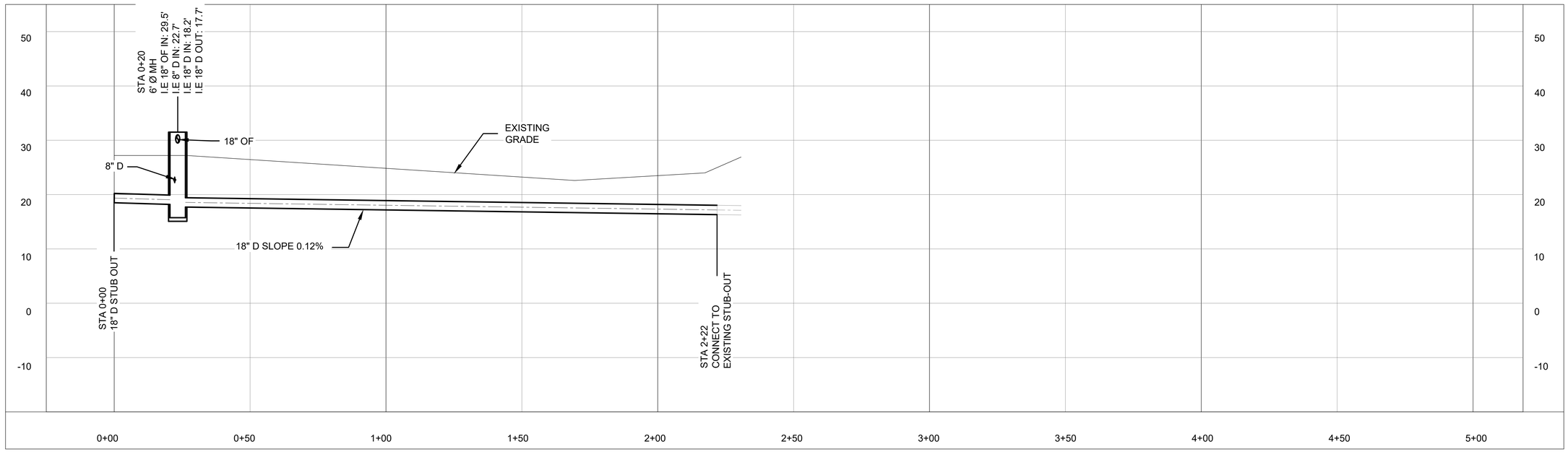

FINISHED WATER MAIN PROFILE
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1" = 10' VERTICAL

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No. 0339
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YARD PIPING PROFILES

C-123

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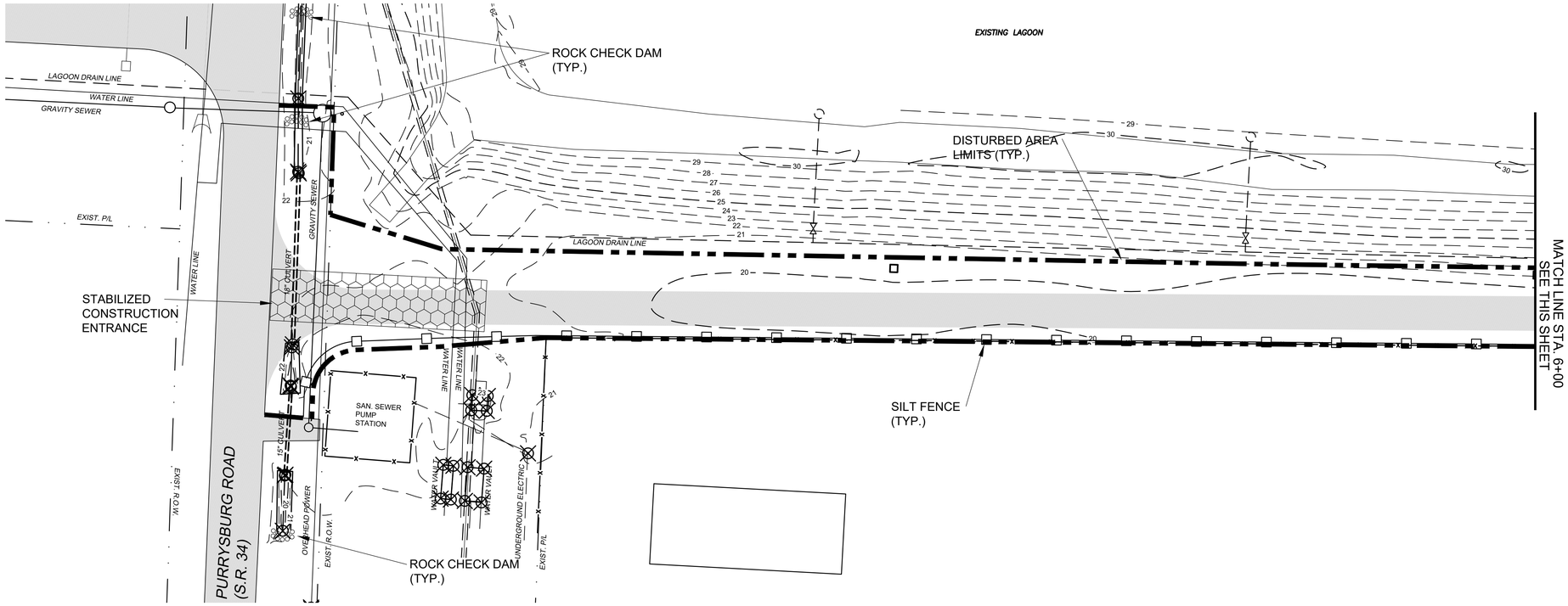

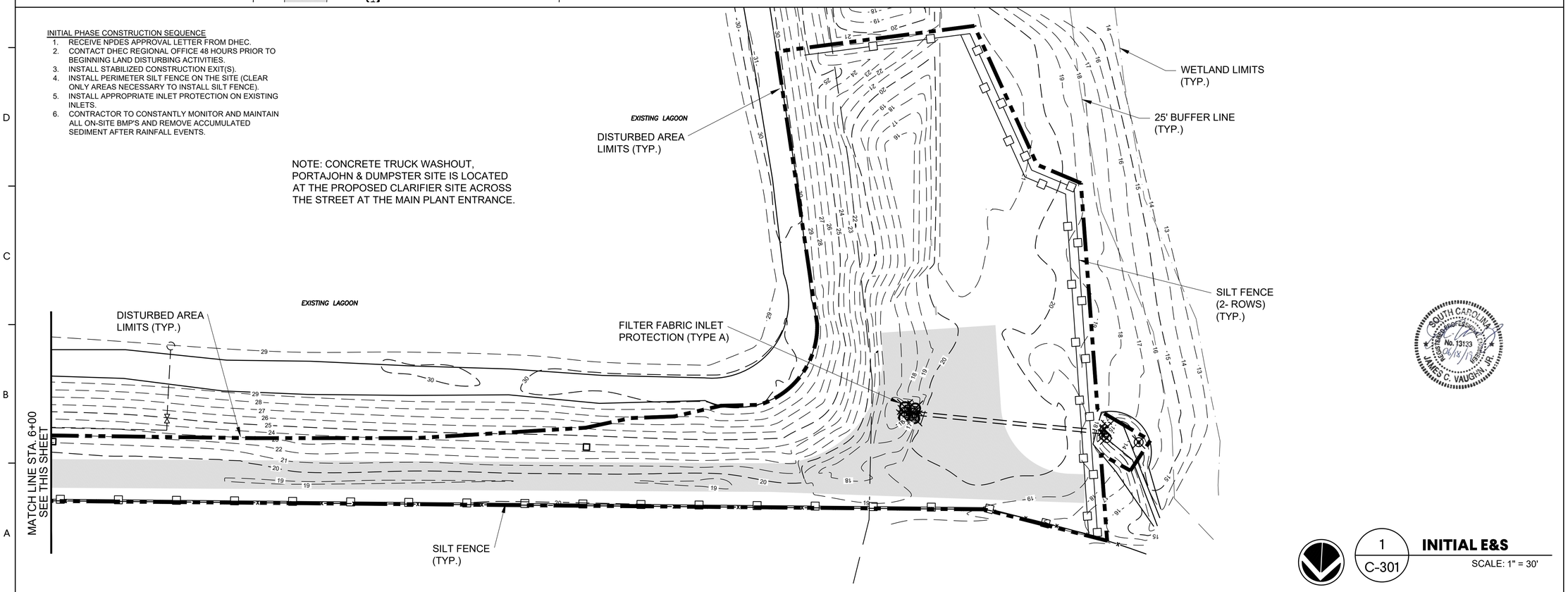

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EXPANSION TO 30 MGD - PHASE 1
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GMC Project #CGRE180057

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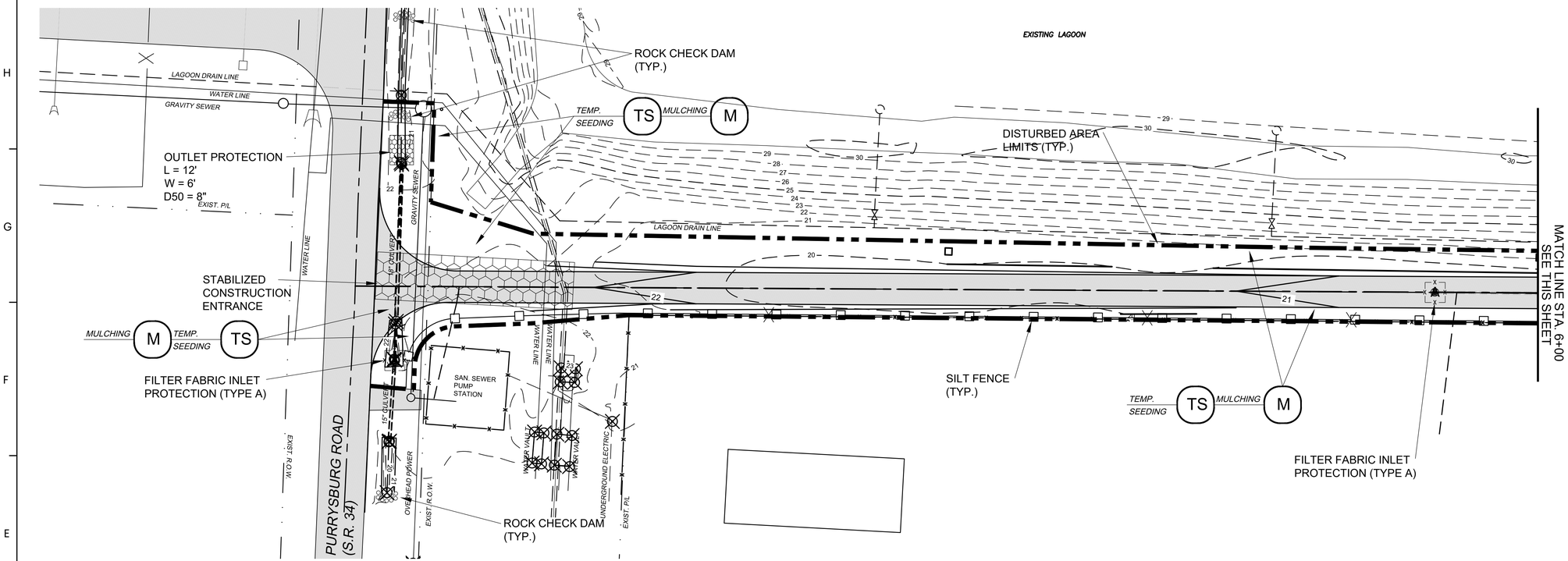
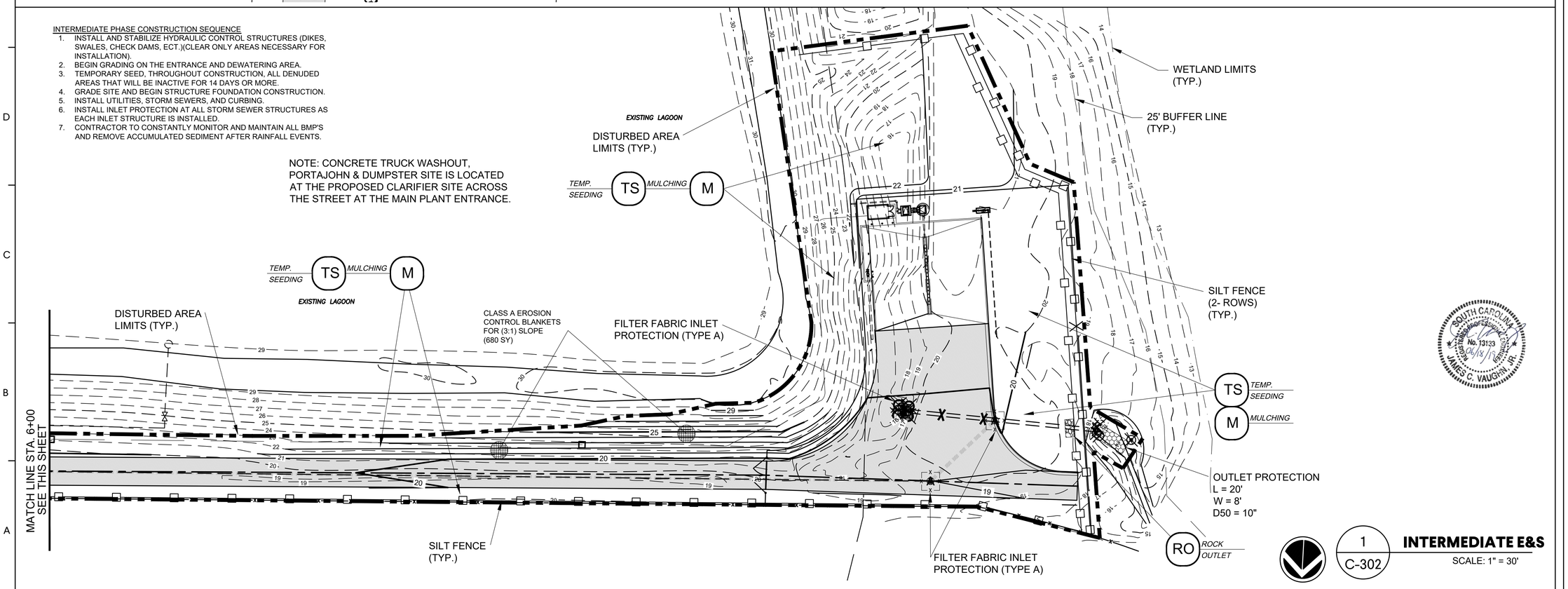
LAGOON ENTRANCE ROAD
INITIAL PHASE
EROSION AND SEDIMENT
CONTROL PLAN

C-301

1 / C-301 **INITIAL E&S**
SCALE: 1" = 30'





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ISSUE	DATE	
30% SUBMITTAL	05.20.19	JCV
60% SUBMITTAL	06.19.19	MEF
90% SUBMITTAL		GSS
FINAL		
PROJECT MANAGER:		
ENGINEER:		
DESIGNER:		
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 06/18/19

SOUTH CAROLINA GOODWYN, MILLS & CAWOOD INC. No. 0339 CERTIFICATE OF AUTHORIZATION

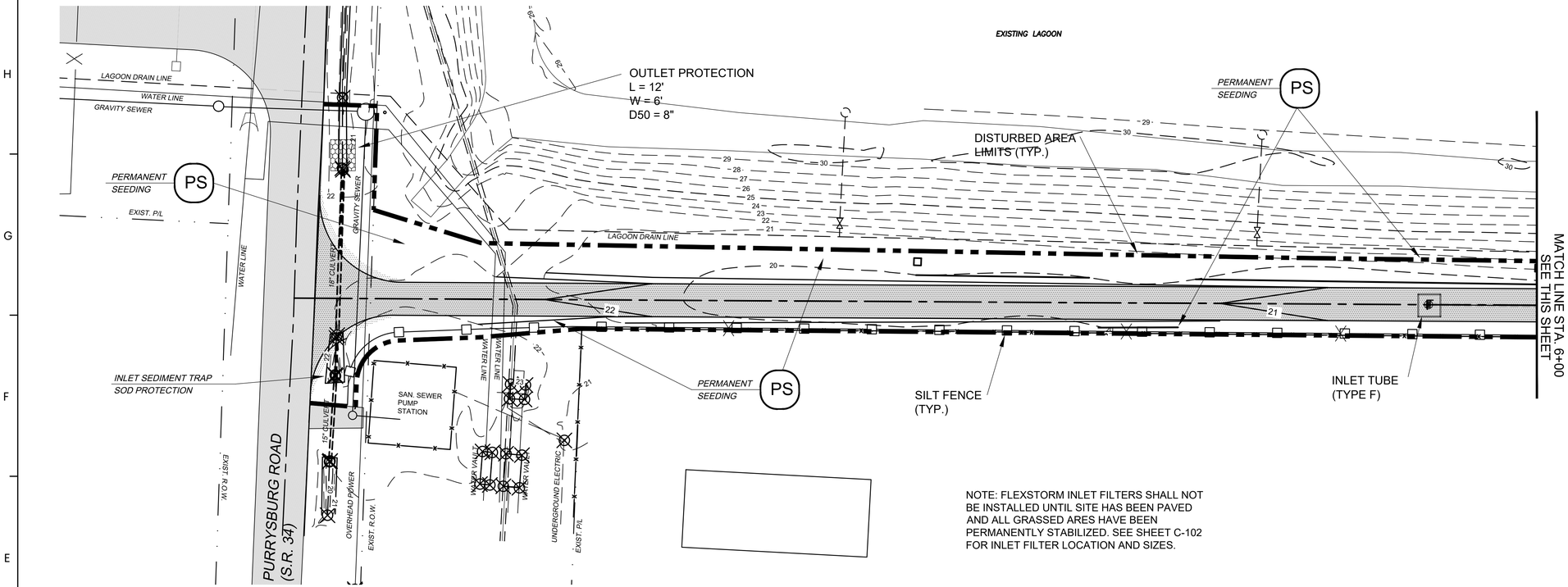
LAGOON ENTRANCE ROAD
INTERMEDIATE PHASE
EROSION AND SEDIMENT
CONTROL PLAN

C-302

1 / C-302

INTERMEDIATE E&S

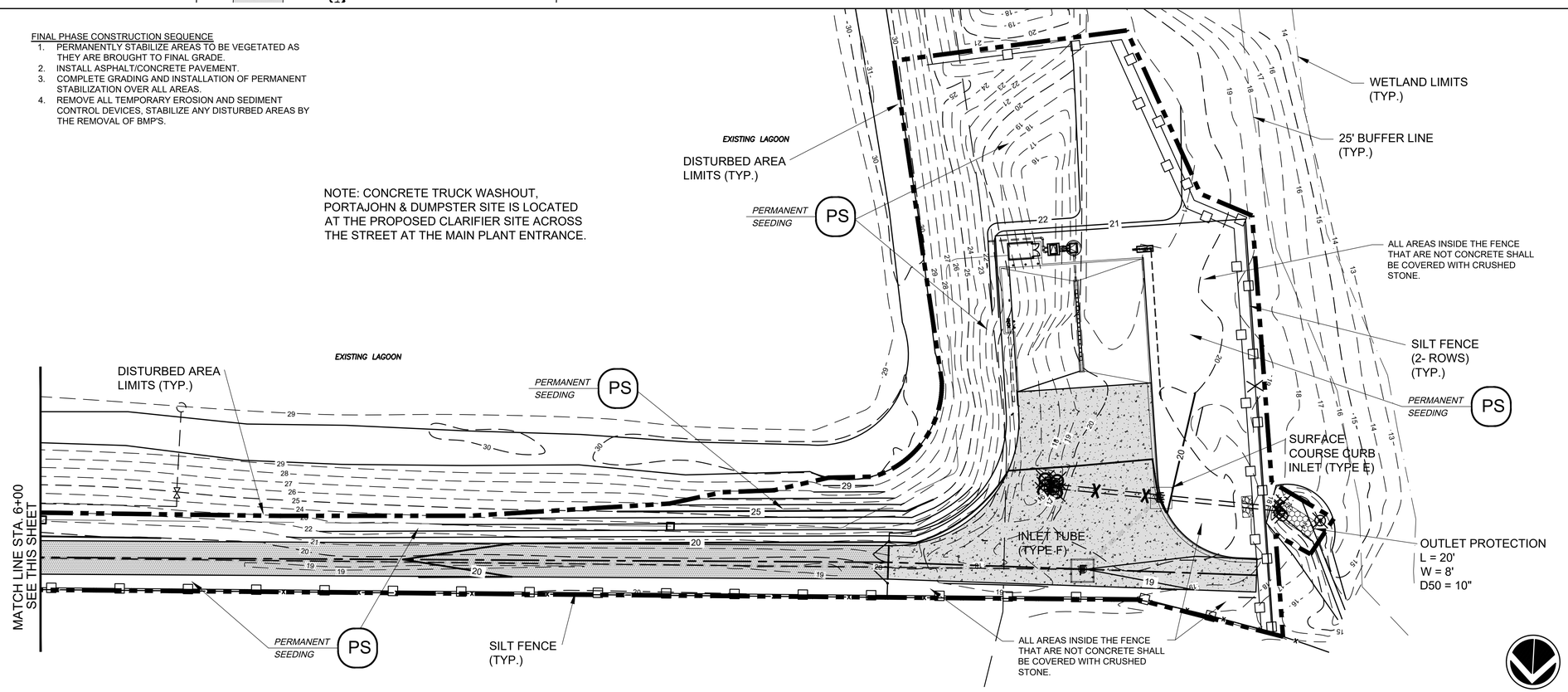
SCALE: 1" = 30'



FINAL PHASE CONSTRUCTION SEQUENCE

1. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
2. INSTALL ASPHALT/CONCRETE PAVEMENT.
3. COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS.
4. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES, STABILIZE ANY DISTURBED AREAS BY THE REMOVAL OF BMP'S.

NOTE: CONCRETE TRUCK WASHOUT, PORTAJOHN & DUMPSTER SITE IS LOCATED AT THE PROPOSED CLARIFIER SITE ACROSS THE STREET AT THE MAIN PLANT ENTRANCE.



1 C-303 **FINAL E&S**

SCALE: 1" = 30'

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FINAL	

PROJECT MANAGER: JCV
ENGINEER: MEF
DESIGNER:
DRAWN BY: GSS

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 04/18/19

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

LAGOON ENTRANCE ROAD
FINAL PHASE
EROSION AND SEDIMENT CONTROL PLAN

C-303

INITIAL PHASE CONSTRUCTION SEQUENCE

1. RECEIVE NPDES APPROVAL LETTER FROM DHEC.
2. CONTACT DHEC REGIONAL OFFICE 48 HOURS PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
3. INSTALL STABILIZED CONSTRUCTION EXIT(S).
4. INSTALL PERIMETER SILT FENCE ON THE SITE (CLEAR ONLY AREAS NECESSARY TO INSTALL SILT FENCE).
5. INSTALL APPROPRIATE INLET PROTECTION ON EXISTING INLETS.
6. CONTRACTOR TO CONSTANTLY MONITOR AND MAINTAIN ALL ON-SITE BMP'S AND REMOVE ACCUMULATED SEDIMENT AFTER RAINFALL EVENTS.

SILT FENCE TYP.)
ELEVATED WATER TANK
CLEARWELL #1
CANAL
SILT FENCE (2-ROWS) (TYP.)
DISTURBED AREA LIMITS (TYP.)
CHAIN LINK FENCE
SE 24.0'
SE 24.0'
SE 21.6'
SE 21.8'
SE 21.6'
SE 21.7'
SE 21.9'
SE 21.9'
SE 21.6'
SE 21.6'
SE 21.6'
TEMPORARY SOIL STOCKPILE AREA
DISTURBED AREA LIMITS (TYP.)
PLANT ENTRANCE
4" FSW
8" FSW
WATER LINE
ASPH.
HIGH SERVICE P.S.
54" FW
SE 21.5'
STABILIZED CONSTRUCTION ENTRANCE
SE 21.1'
MATERIAL LAY DOWN AREA
SE 21.9'
SWALE
LANDSCAPING
SE 21.6'
CONCRETE TRUCK WASHOUT
SILT FENCE (2-ROWS) (TYP.)
ASPH.
48" FW
SILT FENCE TYP.)
CHAIN LINK FENCE
PORT-A-JOHN
DUMPSTER
LAGOON
36" FW
ASPH.
STORM PIPE
STORM PIPE
EXIST. R.O.W.
EXIST. R.O.W.
36" WATER LINE
12" WATER LINE
PURRYSBURG ROAD
(S.R. 34)
EXIST. R.O.W.

1 C-304 **INITIAL E&S**
SCALE: 1" = 30'

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ENGINEER:		MEF
DESIGNER:		GSS
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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 04/15/19

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

CLEARWELL SITE INITIAL PHASE EROSION AND SEDIMENT CONTROL PLAN

C-304

INTERMEDIATE PHASE CONSTRUCTION SEQUENCE

1. INSTALL AND STABILIZE HYDRAULIC CONTROL STRUCTURES (DIKES, SWALES, CHECK DAMS, ECT.)(CLEAR ONLY AREAS NECESSARY FOR INSTALLATION).
2. BEGIN SITE GRADING.
3. TEMPORARY SEED, THROUGHOUT CONSTRUCTION, ALL DENUDED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE.
5. INSTALL UNDERGROUND PIPING AND CHEMICAL FEED LINES.
6. GRADE SITE AND BEGIN CLEARWELL STRUCTURE FOUNDATION CONSTRUCTION.
7. CONTRACTOR TO CONSTANTLY MONITOR AND MAINTAIN ALL BMP'S AND REMOVE ACCUMULATED SEDIMENT AFTER RAINFALL EVENTS.

SILT FENCE TYP.)
ELEVATED WATER TANK
CLEARWELL #1
TS
M
CANAL
SILT FENCE (2-ROWS) (TYP.)
DISTURBED AREA LIMITS (TYP.)
48" FW
CHAIN LINK FENCE
DC
SE 24.0'
SE 24.0'
SE 21.6'
SE 21.8'
SE 21.6'
CLEARWELL #2
SE 21.7'
SE 21.9'
SE 21.9'
48" FW
SE 21.6'
SE 21.6'
TEMPORARY SOIL STOCKPILE AREA
DISTURBED AREA LIMITS (TYP.)
PLANT ENTRANCE
4" PSW
8" PSW
WATER LINE
ASPH.
HIGH SERVICE P.S.
54" FW
SE 21.5'
STABILIZED CONSTRUCTION ENTRANCE
MATERIAL LAY DOWN AREA
TEMP. SEEDING
TS
MULCHING
M
SE 21.9'
CHEM. FEED LINES
SWALE
LANDSCAPING
SE 21.6'
CONCRETE TRUCK WASHOUT
ASPH.
48" FW
SILT FENCE (2-ROWS) (TYP.)
CHAIN LINK FENCE
PORT-A-JOHN
DUMPSTER
SILT FENCE TYP.)
ROCK OUTLET
RO
LAGOON
36" FW
ASPH.
TEMP. SEEDING
TS
MULCHING
M
STORM PIPE
STORM PIPE
EXIST. R.O.W.
EXIST. R.O.W.
36" WATER LINE
12" WATER LINE
PURRYSBURG ROAD
(S.R. 34)
EXIST. R.O.W.

1
C-305
INTERMEDIATE E&S
SCALE: 1" = 30'

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90% SUBMITTAL		
FINAL	06.19.19	
PROJECT MANAGER:		JCV
ENGINEER:		MEF
DESIGNER:		GSS
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA PROFESSIONAL ENGINEER JAMES C. VAUGHN, JR. No. 13133 6/13/19

SOUTH CAROLINA GOODWYN, MILLS & CAWOOD INC. No. 0339 CERTIFICATE OF AUTHORIZATION

CLEARWELL SITE
INTERMEDIATE PHASE
EROSION AND SEDIMENT
CONTROL PLAN

C-305

FINAL PHASE CONSTRUCTION SEQUENCE

1. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
2. COMPLETE CLEARWELL STRUCTURE.
3. COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS.
4. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES, STABILIZE ANY DISTURBED AREAS BY THE REMOVAL OF BMP'S.

SILT FENCE TYP.)
ELEVATED WATER TANK
CLEARWELL #1
CANAL
SILT FENCE (2-ROWS) (TYP.)
DISTURBED AREA LIMITS (TYP.)
48" FW
CHAIN LINK FENCE
PERMANENT SEEDING
PS
SE 24.0'
SE 21.6'
SE 21.8'
CLEARWELL #2
SE 21.7'
SE 21.9'
PLANT ENTRANCE
4" PSW
8" PSW
WATER LINE
ASPH.
HIGH SERVICE P.S.
54" FW
SE 21.5'
TEMPORARY SOIL STOCKPILE AREA
MATERIAL LAY DOWN AREA
SE 21.1'
SWALE
LANDSCAPING
CHEM. FEED LINES
SE 21.9'
SE 21.6'
CONCRETE TRUCK WASHOUT
DISTURBED AREA LIMITS (TYP.)
SILT FENCE (2-ROWS) (TYP.)
CHAIN LINK FENCE
PORT-A-JOHN
DUMPSTER
LAGOON
SILT FENCE TYP.)
36" FW
STORM PIPE
EXIST. R.O.W.
36" WATER LINE
12" WATER LINE
PURRYSBURG ROAD
(S.R. 34)

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13123 JAMES C. VAUGHN, JR. 04/18/19

1 C-306 **FINAL E&S**
SCALE: 1" = 30'

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90% SUBMITTAL		
FINAL	06.19.19	
PROJECT MANAGER:		JCV
ENGINEER:		MEF
DESIGNER:		GSS
DRAWN BY:		

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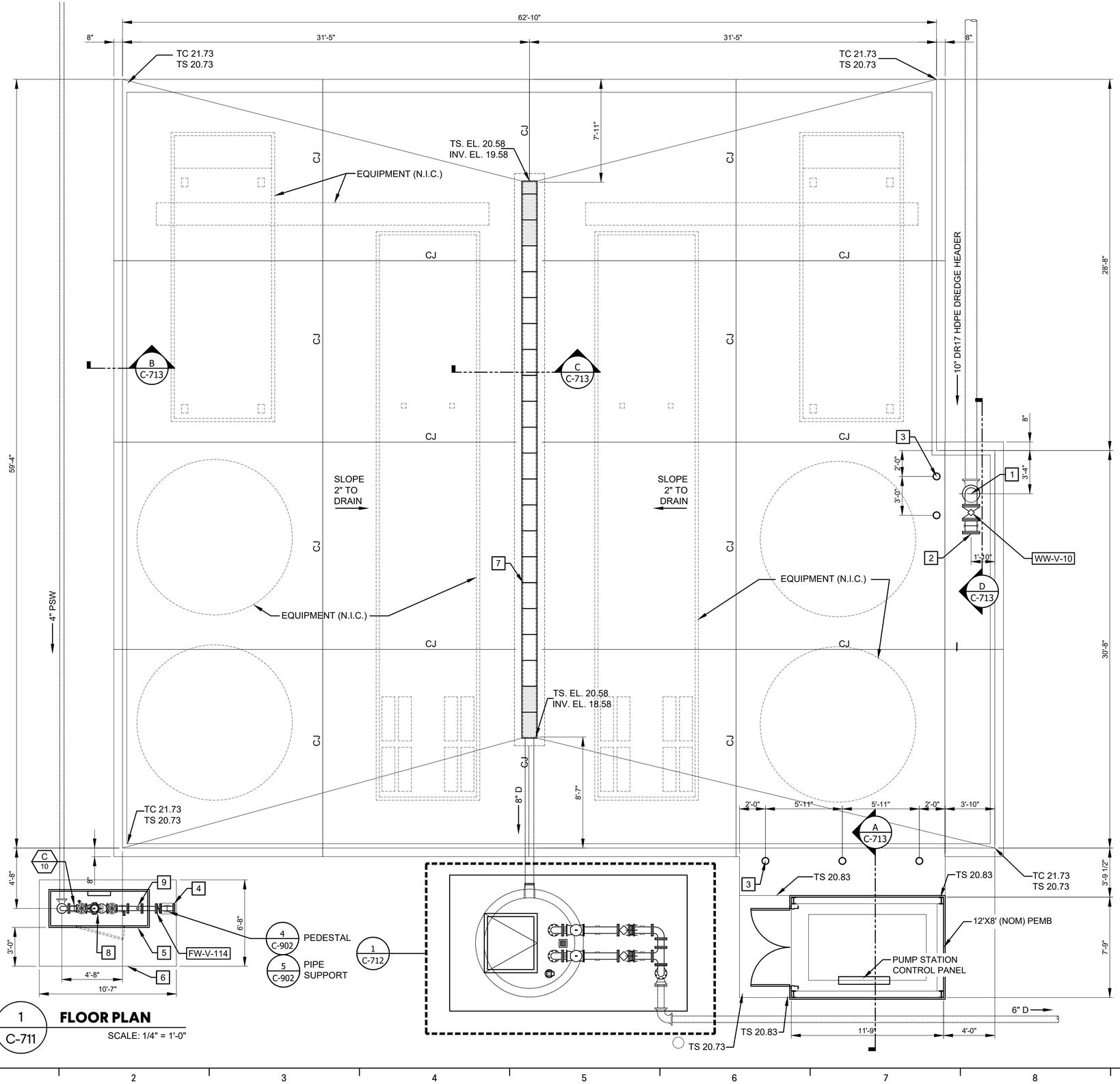
PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

CLEARWELL SITE
FINAL PHASE
EROSION AND SEDIMENT
CONTROL PLAN

C-306



1 / C-711 **FLOOR PLAN**

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

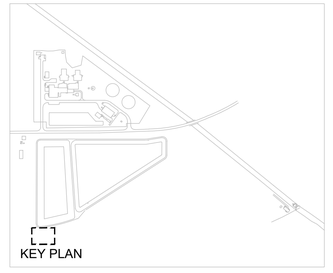
EQUIPMENT LEGEND

1. 10" FL X FL 90° BEND
2. 10" BLIND FLANGE
3. 6" Ø SCH40 STEEL GUARDPOST, PAINTED.
4. 4" BLIND FLANGE
5. 35 X 93 FABRICATED ALUMINUM HOT BOX W/ 1900 WATT HEATER. 1-1/2" INSULATION, HUBBELL MODEL H32X90, OR EQUAL.
6. 6" CONC PAD
7. 12" HEAVY DUTY CAST IRON FRAME AND GRATE, NEENAH R-4990 OR EQUAL.
8. 4" RPZ BACKFLOW PREVENTER
9. HERSEY MVR650 TURBINE METER W/ VISUAL REGISTER

GENERAL NOTES:

1. AREA INSIDE FENCE SHALL BE COVERED WITH STONE PAVEMENT. SEE DETAIL 8 ON SHEET C-902.
2. CONCRETE SHALL CONFORM TO THE BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE (ACI 318).
3. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH AT 28 DAYS OF f'c = 4000 PSI (MIN).
4. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
5. DEWATERING PAD SLAB SHALL BE REINFORCED WITH #6 REBAR @ 10" O.C. 3" CLEAR BOTTOM. PRE-FABRICATED BUILD SLAB SHALL BE REINFORCED WITH 6x6-8/8 WELDED WIRE FABRIC LOCATED AT $\frac{1}{3}$ SLAB DEPTH FROM TOP.
6. ANCHOR RODS SHALL BE ASTM A307.
7. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE:
   - 7.1. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH : 3 IN.
   - 7.2. EXPOSED TO EARTH OR WEATHER: 2 IN
8. PREPARE STRUCTURE SUBGRADE PER THE REQUIREMENTS OF THE PROJECT GEOTECHNICAL REPORT.

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR.



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90% SUBMITTAL	06.19.19	
FINAL		
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ENGINEER:		MEF
DESIGNER:		GSS
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT–JASPER WATER & SEWER AUTHORITY

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GMC Project #CGRE180057

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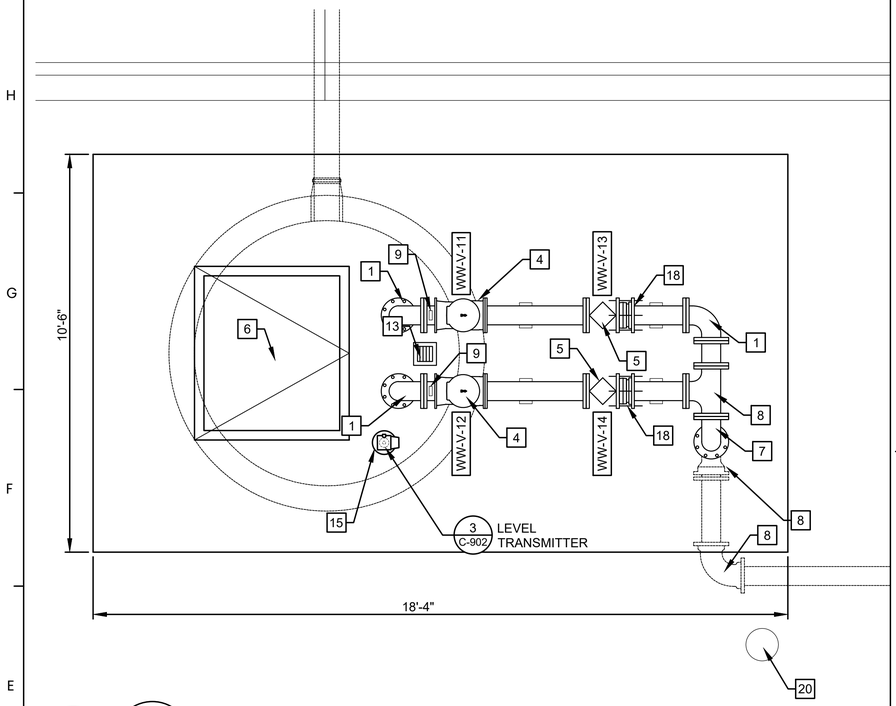
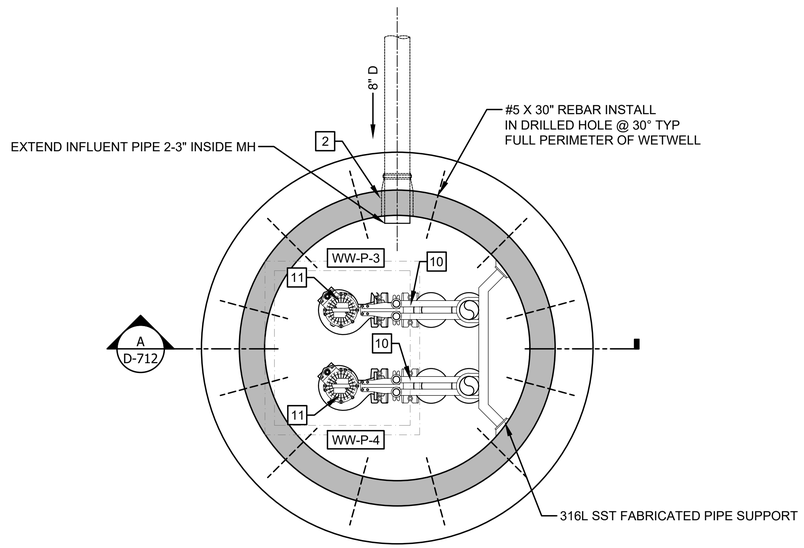
CONTRACT DREDGING & DEWATERING AREA FLOOR PLAN

C-711

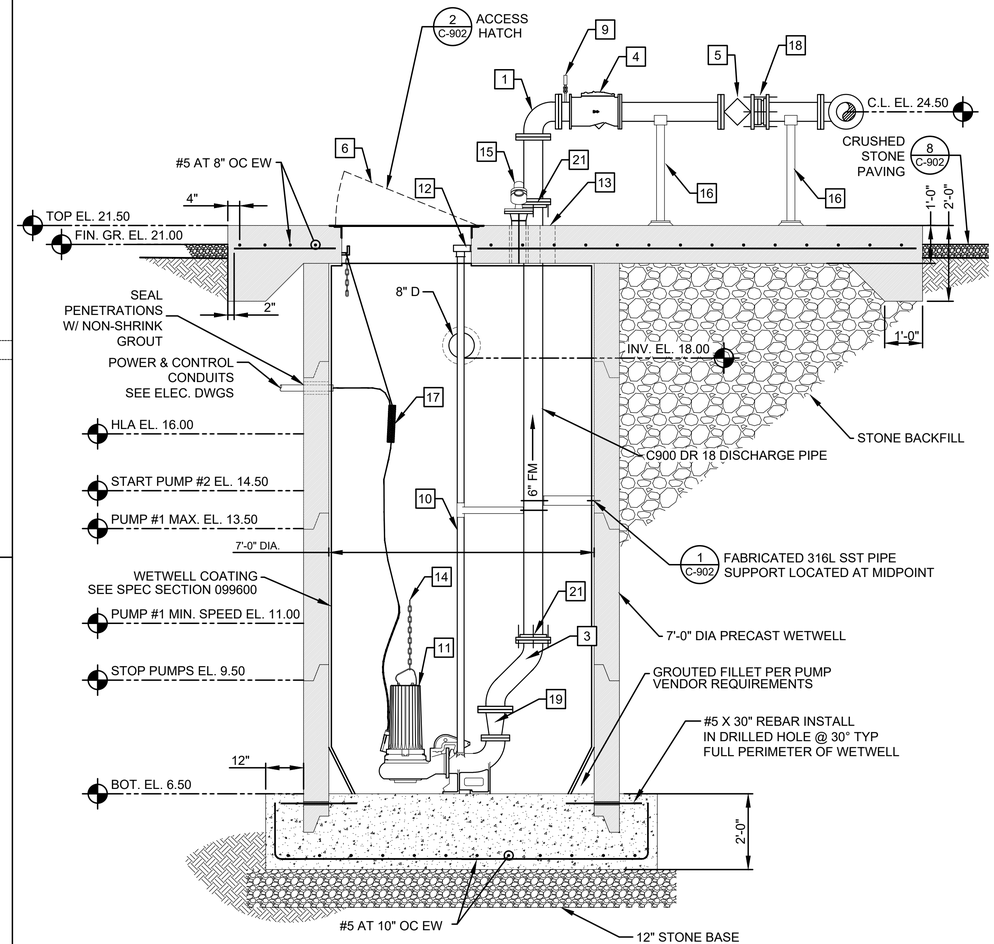
DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\03 CIVIL\C-711 Dewatering Floor Plan.dwg
PLOTTED: Jun 20, 2019 - 11:08am



1 C-712 **UPPER LEVEL PLAN**
SCALE: 1/2" = 1'-0"



2 C-712 **LOWER LEVEL PLAN**
SCALE: 1/2" = 1'-0"



A C-712 **SECTION**
SCALE: 1/2" = 1'-0"

EQUIPMENT LEGEND

1. 6" FL X FL 90° BEND
2. FLEXIBLE PIPE BOOT
3. 6" FL 1' OFFSET
4. 6" SPRING & LEVER CHECK VALVE
5. 6" FL PLUG VALVE WITH HANDWHEEL ACTUATOR
6. 40" X 49" HEAVY DUTY ALUMINUM ACCESS COVER W/ 304 SST HARDWARE, SAFETY GRATE, & NON-RECESSED PADLOCK BAR
7. 6" X 6" FL TEE
8. 6" MJ 90° BEND (RESTRAINED)
9. ISO-RING, 1/2" BALL VALVE, & 0-60 PSI PRESSURE GAUGE
10. 2" SCHEDULE 40 316L SST GUIDE BAR W/ INTERMEDIATE GUIDE BRACKET
11. SUBMERSIBLE WASTEWATER PUMP SEE SPECIFICATION SECTION 43 25 13
12. UPPER GUIDE BAR SUPPORT
13. 4.75" x 4.75" SQUARE FLUSH VENT FRAMED W/ 1/4" x 1" x 1" ANGLE & COVERED BY 1" x 1" x 1" ALUMINUM GRATING 6" SQUARE
14. 316L SST LIFT CHAIN
15. ULTRASONIC LEVEL TRANSMITTER (HYDRORANGER 200 HMI)
16. 316L FABRICATED PIPE SUPPORT; SECURE TO BOTTOM W/ 4-3/8" Ø 316L SST CHEMICAL ANCHORS
17. PUMP CABLE STRAIN RELIEF
18. 6" FLANGED COUPLING ADAPTER (RESTRAINED)
19. 4" X 6" FL X FL REDUCER
20. NIGHT AND ALARM LIGHTS ON MARINE POLE MOUNTED A MINIMUM OF 12' ABOVE FINAL GRADE AND VISIBLE FROM NEAREST PAVED ROAD
21. 6" MEGA FLANGE

NOTE:

1. COAT ALL ABOVE GROUND PIPING WITH A MINIMUM OF THREE (3) COATS OF TNEMEC EPOXY PAINT. TOPCOAT COLOR SHALL BE "HUNTER GREEN"

2. PIPING WITHIN WETWELL TO BE COATED AS DESCRIBED IN SPEC SECTION 099600

KEY PLAN

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DRAWN BY:

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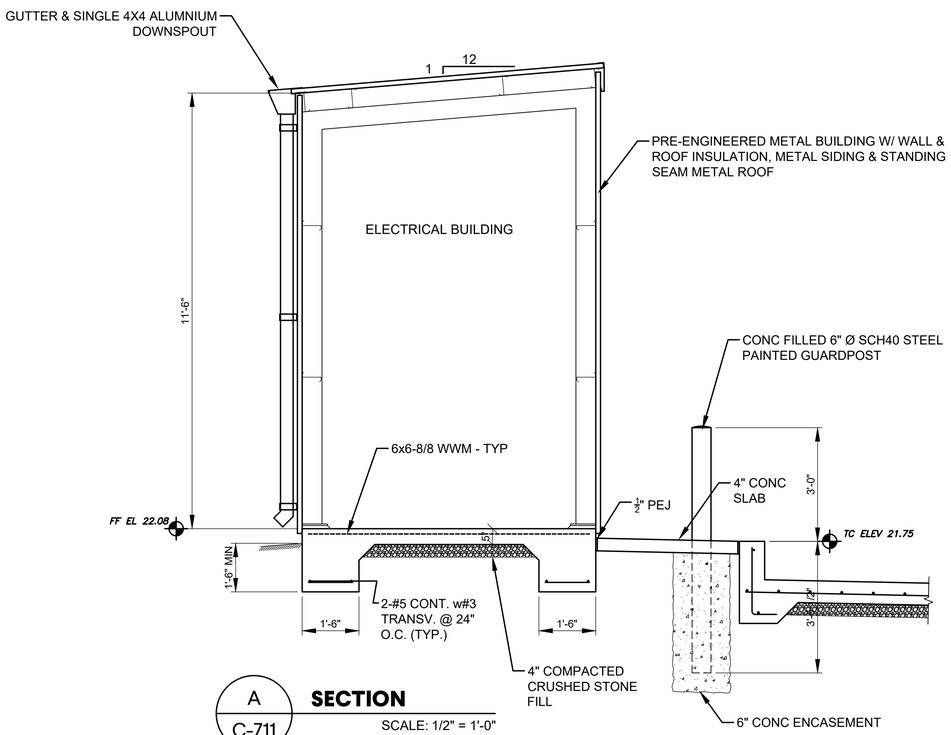
PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

DRAINAGE SUMP PUMP STATION PLANS & SECTION

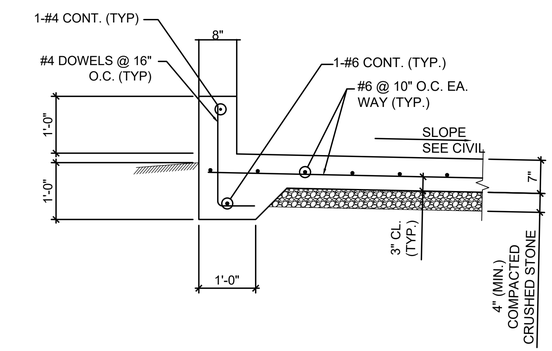
C-712

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\03 CIVIL\C-712 Dewatering PS.dwg
PLOTTED: Jun 20, 2019 - 11:08am



A C-711 **SECTION**

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

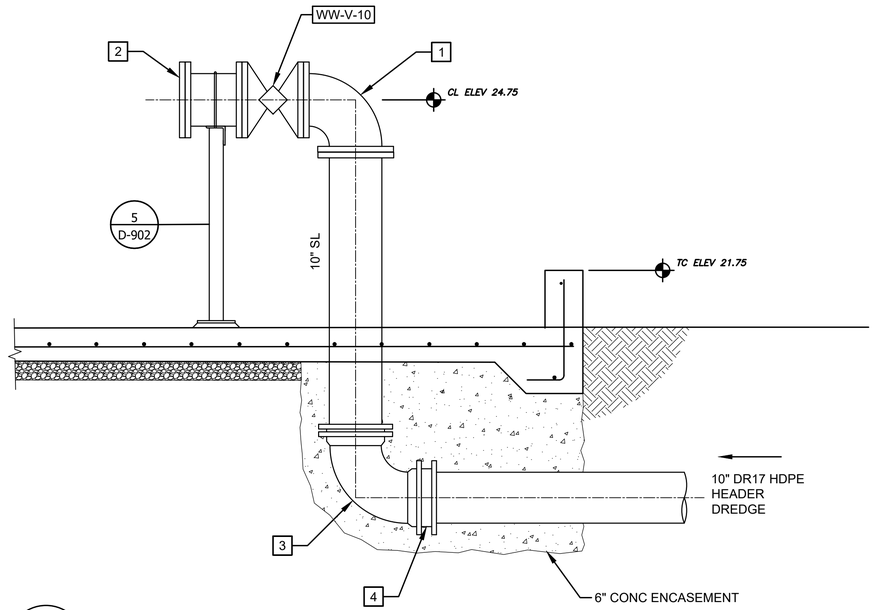


B C-711 **SECTION**

SCALE: 3/4" = 1'-0"

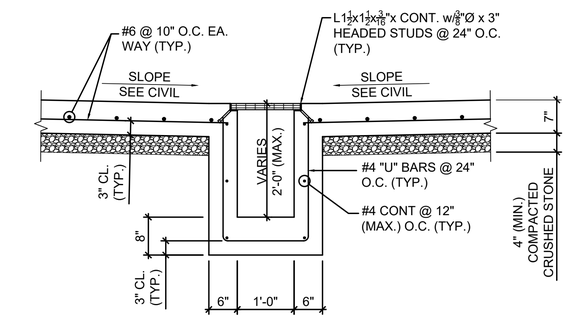
EQUIPMENT LEGEND

1. 10" FL X FL 90° BEND
2. 10" BLIND FLANGE
3. 10" MJ 90° BEND (RESTRAINED)
4. 10" HDPE X MJ ADAPTER



D C-711 **SECTION**

SCALE: 3/4" = 1'-0"



C C-711 **SECTION**

SCALE: 3/4" = 1'-0"

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER JAMES C. VAUGHN, JR. No. 13133 04/18/19

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Suite 200
Greenville, SC 29601
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75% SUBMITTAL	05.20.19	MEF
90% SUBMITTAL		GSS
FINAL	06.19.19	

PROJECT MANAGER:
ENGINEER:
DESIGNER:
DRAWN BY:

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

DRAINAGE SUMP & DEWATERING AREA SECTIONS & DETAILS

C-713

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\03 CIVIL\C-713 Dewatering DETAILS.dwg
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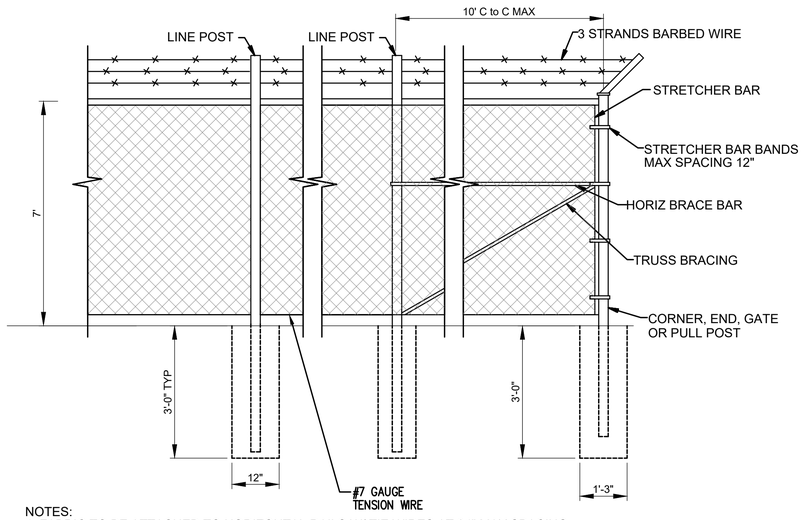
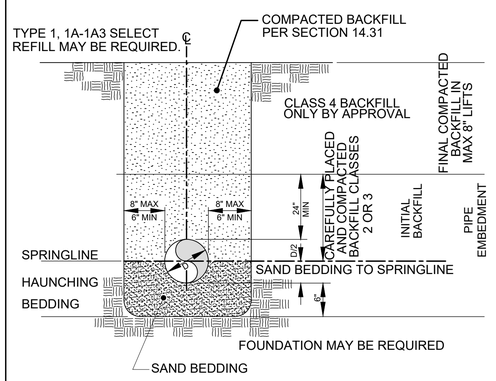


NOTES:
1. FABRIC TO BE ATTACHED TO HORIZONTAL RAILS W/ TIE WIRES AT 24" MAX SPACING
2. FABRIC TO BE ATTACHED TO TENSION WIRES W/ HOG RINGS AT 24" MAX SPACING
3. FABRIC TO BE ATTACHED TO LINE POSTS W/ SELF-LOCKING BANDS AT 12" MAX SPACING
4. TOP RAIL TO TOP OF FABRIC SHALL BE 2" MAX

1 C-901 **DETAIL - CHAIN LINK FENCE**

SCALE: NOT TO SCALE

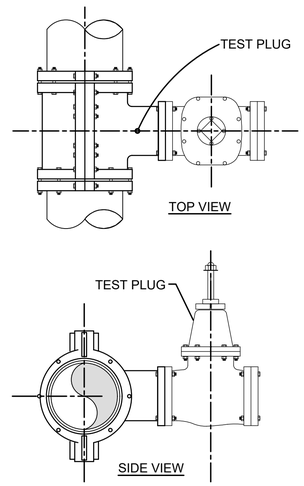


NOTES:
1. TRENCH EXCAVATION, BACKFILL AND COMPACTION SHALL BE IN STRICT CONFORMANCE WITH SECTION 14.31 OF AUGUSTA UTILITY DEPARTMENT SPECIFICATIONS.

3 C-901 **DETAIL -PIPE TRENCH**

SCALE: NOT TO SCALE

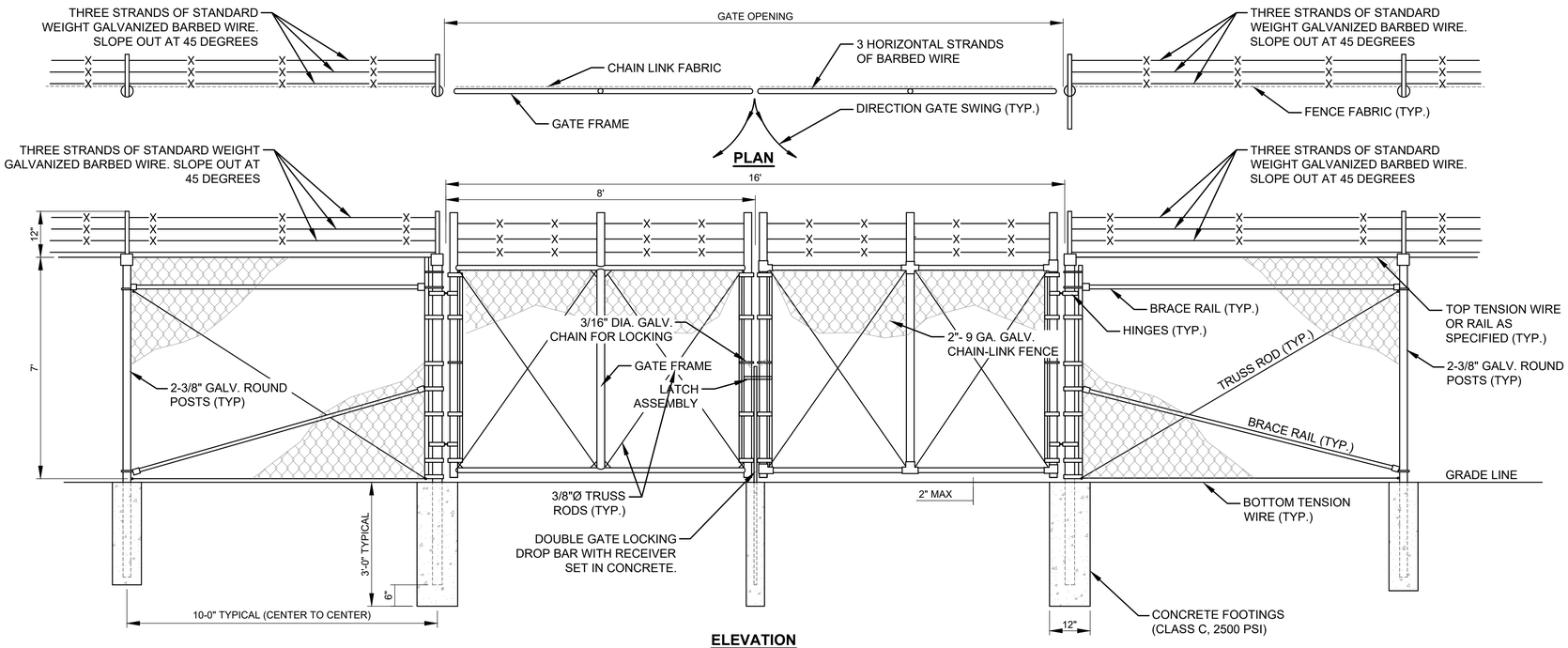
TAPPING VALVE - MUELLER A-2360-23 OR CLOW 6100, RESILIENT WEDGE-FL X MJ ENDS.
TAPPING SLEEVE - MUELLER H-304 SS OR SMITH BLAIR 665 .



TAPPING SLEEVE AND VALVE SHALL BE PRESSURE TESTED FOR 1 HOUR PRIOR TO TAPPING THE EXISTING MAIN. TESTING PRESSURE SHALL BE 200 PSIG.

4 C-901 **DETAIL -TAPPING SLEEVE & VALVE**

SCALE: NOT TO SCALE



2 C-901 **DETAIL - DOUBLE SWING GATE**

SCALE: NOT TO SCALE

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90% SUBMITTAL		
FINAL	06.19.19	
PROJECT MANAGER:		JCV
ENGINEER:		MEF
DESIGNER:		GSS
DRAWN BY:		

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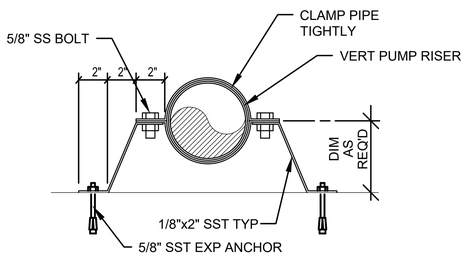
PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

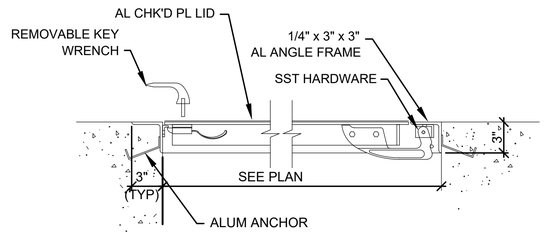
CIVIL / SITE DETAILS

C-901



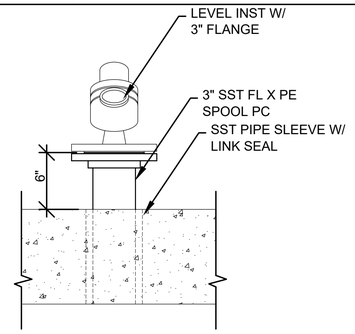
1 C-902 **DETAIL - PIPE SUPPORT**

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



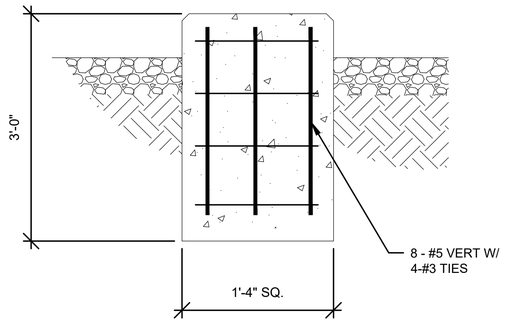
2 C-902 **DETAIL - ACCESS HATCH**

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



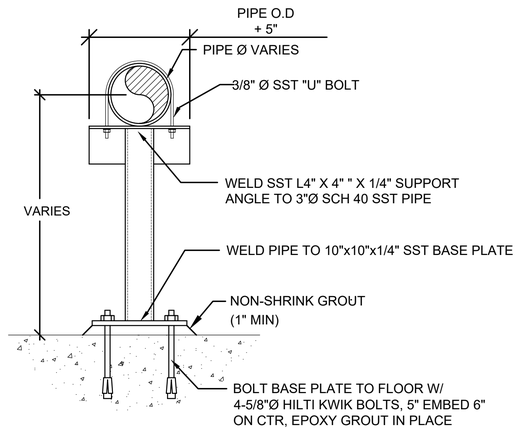
3 C-902 **DETAIL - LEVEL TRANSMITTER MOUNT**

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



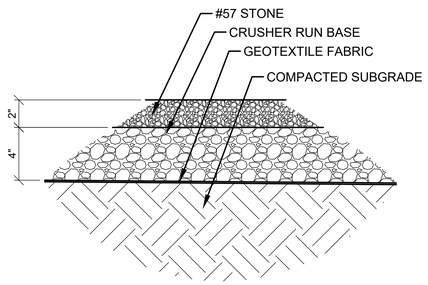
4 C-902 **DETAIL - PEDESTAL**

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



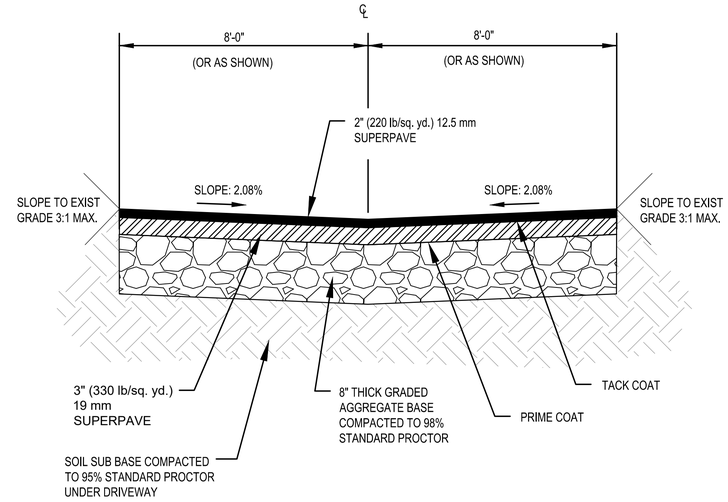
5 C-902 **DETAIL - PIPE SUPPORT**

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



8 C-902 **DETAIL - STONE PAVEMENT**

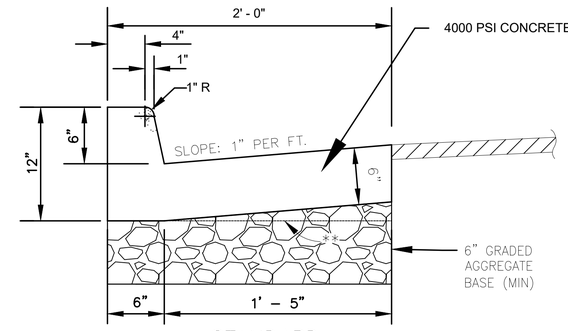
SCALE: NTS



STA. 0+10 TO STA. 10+05

6 C-901 **DETAIL - ASPHALT PAVING**

SCALE: N.T.S.

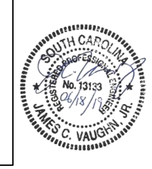


STANDARD TYPE 2-0"

** AT CONTRACTOR'S OPTION THE GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING OF BASE COURSE, BUT THE GUTTER THICKNESS MUST NOT BE LESS THAN THE SPECIFIED 6" OR 8" AT ANY POINT.

7 C-901 **DETAIL - CURB & GUTTER**

SCALE: N.T.S.



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ENGINEER:		
DESIGNER:		
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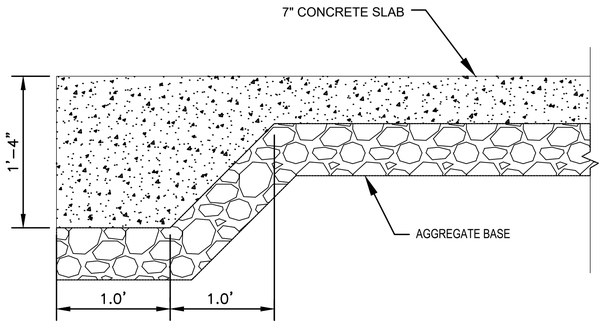
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339
CERTIFICATE OF AUTHORIZATION

CIVIL / SITE DETAILS

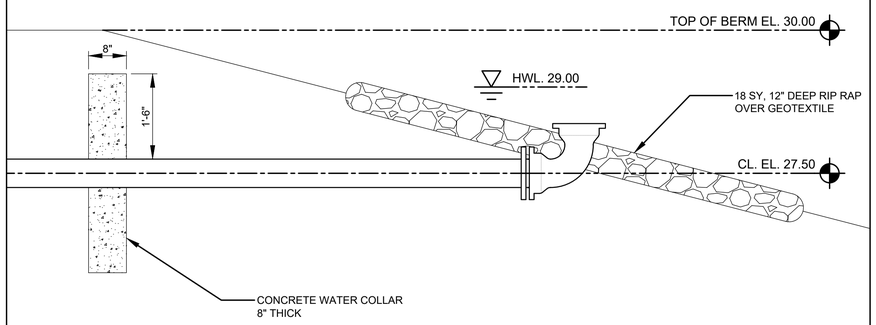
C-902



1 C-903

DETAIL - CONCRETE TURN DOWN

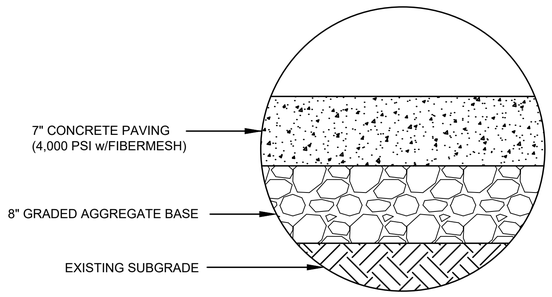
SCALE: N.T.S.



3 C-903

DETAIL - PIPE DISCHARGE

SCALE: 3/4" = 1'-0"



STA. 10+05 TO STA. 11+81

2 C-903

DETAIL - CONCRETE PAVING

SCALE: N.T.S.

SOUTH CAROLINA PROFESSIONAL ENGINEER JAMES C. VAUGHN, JR. No. 13133

SOUTH CAROLINA GOODWYN, MILLS & CAWOOD INC. No. 0339 CERTIFICATE OF AUTHORIZATION

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PURRYSBURG WTP
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CIVIL / SITE DETAILS

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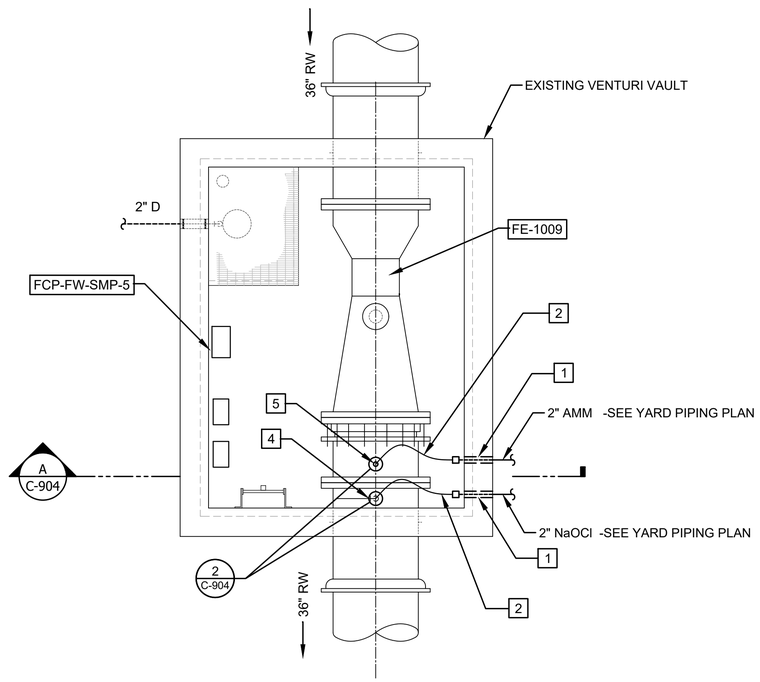
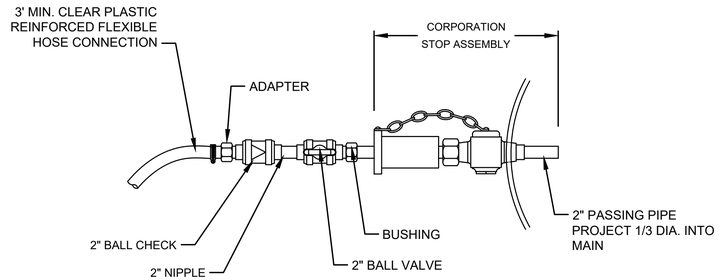


1 C-904 **HIGH SERVICE VENTURI VAULT - PLAN**

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

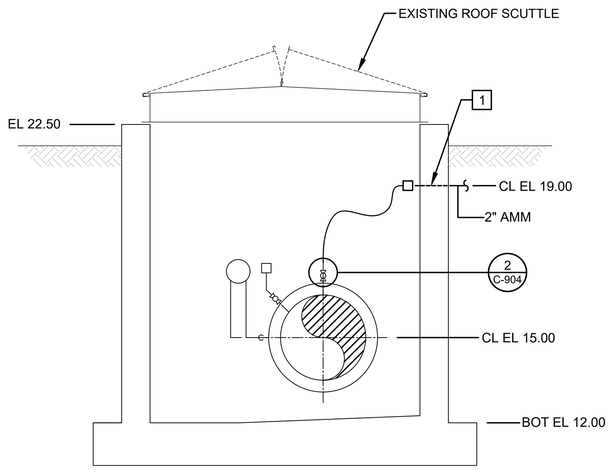


2 C-904 **DETAIL - CHEMICAL INJECTION QUILL**

SCALE: NTS

EQUIPMENT LIST

1. CORE DRILL OPENING & INSTALL TYPE "B" WALL PENETRATION
2. 2" CHEMICAL HOSE
3. 1" CHEMICAL HOSE
4. REMOVE EXISTING 1" SAMPLE PIPING, RE-TAP WITH 2" TAP & INSTALL CHEMICAL FEED WITH 2" CORP STOP ASSEMBLY
5. TAP EXISTING 36" FW WITH 2" TAP & CORP STOP ASSEMBLY.



A C-904 **SECTION**

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

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90% SUBMITTAL	06.19.19	JCV
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ENGINEER:		IF THIS BAR DOES NOT MEASURE ONE INCH DRAWING IS NOT LABELED TO SCALE
DESIGNER:		
DRAWN BY:		

PURRYSBURG WTP
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BJWSA Project CIP #1366
GMC Project #CGRE180057

YARD PIPING DETAILS

C-904

DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\03 CIVIL\C-904 - YARD PIPING DETAILS.dwg
PLOTTED: Jun 19, 2019 - 9:21am

Standard Notes

1. If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.

2. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
   - Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
   - Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.

3. All sediment and erosion control devices shall be inspected once every calendar week. If periodic inspection or other information indicates that a BMP has been inappropriately, or incorrectly, the Permittee must address the necessary replacement or modification required to correct the BMP within 48 hours of identification.

4. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove sediment before being pumped back into any waters of the State.

5. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.

6. The contractor must take necessary action to minimize the tracking of mud onto paved roadway(s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.

7. Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C Reg. 72-300 et seq. and SCR100000.

8. Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.

9. All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.

10. Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.

11. A copy of the SWPPP, inspections records, and rainfall data must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.

12. Initiate stabilization measures on any exposed steep slope (3H:1V or greater) where land-disturbing activities have permanently or temporarily ceased, and will not resume for a period of 7 calendar days.

13. Minimize soil compaction and, unless infeasible, preserve topsoil.

14. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

15. Minimize the discharge of pollutants from dewatering of trenches and excavated areas. These discharges are to be routed through appropriate BMPs (sediment basin, filter bag, etc.).

16. The following discharges from sites are prohibited:

    - Wastewater from washout of concrete, unless managed by an appropriate control;
    - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
    - Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
    - Soaps or solvents used in vehicle and equipment washing.

17. After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site.

18. If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or SC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as reasonably possible.

19. A Pre-Construction Conference must be held for each construction site with an approved On-Site SWPPP prior to the implementation of construction activities. For non-linear projects that disturb 10 acres or more this conference must be held on-site unless the Department has approved otherwise.

Best Management Practices (BMPs)
Heavy Equipment & Earth–Moving Activities

Heavy Equipment Operation Problems

Soil excavation and grading operations often contribute to urban runoff pollution. By loosening large amounts of soil and sediment, earth–moving activities can cause sediment to flow into gutters, storm drains and streams. Sediment is the most common pollutant washed from worksites, creating multiple problems once it enters the stream. Sediment clogs the gills of fish, blocks light transmission and increases stream water temperature, all of which harm life, disturbing the food chain upon which both fish and people depend upon.

Sediment also carries with it other worksite pollutants such as pesticides, cleaning solvents, cement wash, asphalt and car fluids like motor oil, grease and fuel. Thus, poorly maintained vehicles and heavy equipment leaking fuel and oil at the construction site, also contribute to ocean pollution.

Solutions

Best Management Practices (BMPs) such as handling, storing, and disposing of materials properly can prevent pollutants from entering the storm drains.

General Business Practices

Schedule excavation and grading work for dry weather. Use as little water as possible for dust control.

Clean Up Spills

Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (sawdust, kitty litter, and/or rags) and dispose of properly. Sweep up dry spilled materials immediately. Never attempt to bury them or "wash them away" with water. Clean up spills on dirt areas by digging up and properly disposing of contaminated soil. Report significant spills to the appropriate spill response agencies immediately.

Vehicle & Equipment Maintenance

Maintain all vehicle and heavy equipment in good working order and inspect frequently for leaks. Conduct all vehicle/equipment maintenance and refueling at one location––away from storm drains. Perform major maintenance, repair jobs and vehicle/equipment washing off–site. Use gravel approaches where truck traffic is frequent, to reduce soil compaction and limit the tracking of sediment into streets. Use drip pans or drop cloths to catch drips and spills if you drain and replace motor oil, radiator coolant or other fluids on site. Collect all used fluids, store in separate containers and recycle whenever possible; otherwise make certain they are disposed of properly.
Do not use diesel oil to lubricate equipment or parts. Washout of the drum at the construction site is prohibited.

Erosion Prevention

After clearing, grading or excavating, exposed soil poses a clear and immediate danger for stormwater pollution. Revegetation (permanent or temporary) is an excellent form of erosion control for any site. Avoid excavation and grading activities during wet weather. Construct diversion dikes to channel runoff around the site. Line channels with grass or roughened pavement to reduce runoff velocity. Cover stockpiles and excavated soil with secured tarps or plastic sheeting. Remove existing vegetation only when absolutely necessary. Large projects should be conducted in phases. Consider planting temporary vegetation for erosion control on slopes or where construction is not immediately planned. Plant permanent vegetation as soon as possible, once excavation and grading activities are complete.

EROSION CONTROL GENERAL NOTES

1. EROSION CONTROL MEASURES ARE TO BE ACCOMPLISHED PRIOR TO ANY CONSTRUCTION ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
2. ADDITIONAL EROSION CONTROL MEASURES WILL BE EMPLOYED WHERE DETERMINED NECESSARY BY ACTUAL SITE CONDITIONS.
3. ALL DEVICES ARE TO BE MAINTAINED AND REPAIRED ON A REGULAR BASIS.
4. EXCESS SEDIMENT TO BE REMOVED WHEN SILT REACHES ONE-HALF (1/2) THE HEIGHT OF THE FENCE.
5. TEMPORARY GRASSING SHALL BE IMPLEMENTED NOT MORE THAN TWO (2) WEEKS AFTER COMPLETION OF ANY GRADING ACTIVITIES.
6. ALL DRAINAGE STRUCTURES TO BE EROSION PROOFED (EXTEND RIPRAP SIX TIMES PIPE DIAMETER FROM DOWNSTREAM END) ALL RIPRAP SHALL BE TYPE 1 STONE PLAIN WITH A MINIMUM THICKNESS OF 18" IN ACCORDANCE WITH THE LATEST EDITION OF S.C.D.O.T. STANDARD SPECIFICATIONS.
7. ALL HEAD WALLS ARE TO HAVE ST. STORM DRAIN OUTLET PROTECTION AND SILT TRAP DITCHES.
8. ALL CATCH BASINS AND DROP INLETS ARE TO HAVE SD2 TEMPORARY TOPS UNTIL THE FINAL GRADE IS ESTABLISHED.
9. PERMANENT VEGETATION SHALL BE INSTALLED AS SOON AS PRACTICAL FOLLOWING FINAL GRADING.
10. NOTIFY OWNER'S REPRESENTATIVE 48 HOURS PRIOR TO CONSTRUCTION.
11. EROSION CONTROL MEASURES WILL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RAIN, AND REPAIRED BY THE GENERAL CONTRACTOR AS NEEDED.
12. CONTRACTOR TO COMPLETELY SECURE FROM EROSION ANY STOCK PILE OF EARTHEN MATERIALS.
13. EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES SHALL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
14. ALL DESIGN WILL CONFORM TO AND ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF S.C.D.H.E.C.'S PUBLICATION ENTITLED "BMP HANDBOOK."
15. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE PROJECT ENGINEER, COUNTY REPRESENTATIVE OR, AS CONDITIONS MAY DICTATE.
16. MAXIMUM CUT OR FILL SLOPES IS 2H:1V.
17. SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE 1/3 FULL VOLUME.
18. 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.
19. DETENTION POND, DETENTION OUTLET STRUCTURES AND TEMPORARY SEDIMENT POND FEATURES ARE TO BE CONSTRUCTED AND FULLY OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING.
20. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH IF LAND-DISTURBING ACTIVITIES CEASE FOR MORE THAN 14 CALENDAR DAYS.
21. ALL FILL SLOPES SHALL HAVE SILT FENCE PLACED AT THE SLOPE'S TOE.
22. CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2.5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
23. THE PROFESSIONAL WHO SEALS THIS PLAN CERTIFIES UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY THE PROFESSIONAL OR THE PROFESSIONAL'S AUTHORIZED AGENT, UNDER THE PROFESSIONAL'S DIRECT SUPERVISION.
24. NO WASTE WILL BE DISPOSED INTO STORM WATER INLET OR WATER OF THE STATE.
25. 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.

*****NOTE:**

1. **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.**
2. **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.**
3. **ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.**

Concrete Waste Management

Description and Purpose
Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off–site, performing on–site washout in a designated area, and training employees and subcontractors.

Suitable Applications
These procedures are suitable on all construction sites where concrete work takes place.

Implementation
< Store dry and wet materials under cover, away from drainage areas.
< Avoid mixing excess amounts of fresh concrete or cement on–site.
< Perform washout of concrete trucks off–site or in designated areas only.
< Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
< Do not allow excess concrete to be dumped on–site, except in designated areas.
< When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area.
< Train employees and subcontractors in proper concrete waste management.
< Washout of the drum at the construction site is prohibited.

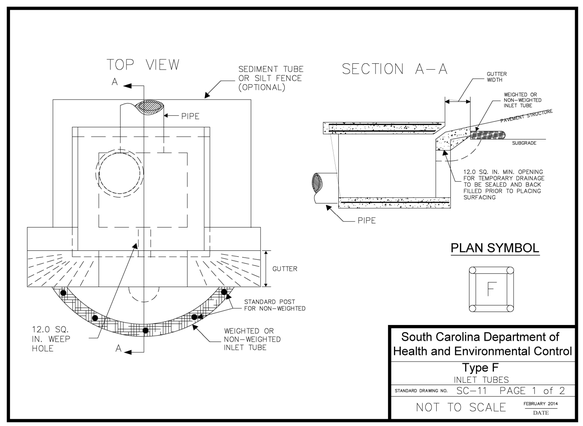
Vehicle fueling

Description and Purpose
Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can beaccomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Suitable Applications
These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.

Limitations
Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with Co, Stabilized Construction Entrance/ Exit.

Implementation
.. Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site. .. Discourage "topping–off" of fuel tanks.



South Carolina Department of Health and Environmental Control
Type F
INLET TUBES
STANDARD DRAWING NO. SC–11 PAGE 1 of 2
NOT TO SCALE FEBRUARY 2014 DATE

TYPE F – INLET TUBES INLET PROTECTION

GENERAL NOTES

1. Inlets tubes should be composed of compacted geotextiles, curled excelsior wood, natural coconut fibers, a hardwood mulch, or a mix of these materials enclosed by a flexible netting material.
2. Inlets tubes should utilize an outer netting that consists of seamless, high–density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high–density polyethylene non–degradable material. Curled wood excelsior fiber, or natural coconut fiber rolled erosion control products rolled up to create an inlet tube device are not allowed.
3. Do not use straw, straw fiber, straw bales, pine needles, or leaf mulch as fill material within inlet tubes.
4. Weighted inlet tubes must be capable of staying in place without external stabilization measures and may have a weighted inner core or other weighted mechanism to keep them in place.
5. Install weighted tubes lying flat on the ground, with no gaps between the underlying surface and the inlet tube. Do not stack inlet tubes. Do not completely block inlet with tube.
6. Non–weighted inlet tubes require staking or other stabilization methods to keep them safely in place.
7. Overflow or overtopping of inlet tubes must be allowed to flow into inlet unobstructed.
8. To avoid possible flooding, two or three concrete cinder blocks may be placed between the tube and the inlet.

INSPECTION AND MAINTENANCE

1. The key to functional inlet protection is weekly inspection, routine maintenance, and regular sediment removal.
2. Regular inspections of all inlet protection shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall event that produces 1/2–inch or more of precipitation.
3. Attention to sediment accumulations in front of the inlet protection is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the blocks. If a sump is used, sediment should be removed when it fills approximately 1/3 the depth of the hole.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Large debris, trash, and leaves should be removed from in front of tubes when found.
7. Replace inlet tube when damaged or as recommended by manufacturer's specifications.
8. Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control
Type F
INLET TUBES
STANDARD DRAWING NO. SC–11 PAGE 2 of 2
GENERAL NOTES FEBRUARY 2014 DATE

GMC

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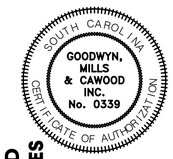
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

ISSUE	DATE	
30% SUBMITTAL		
60% SUBMITTAL	05.20.19	
90% SUBMITTAL		
FINAL	06.19.19	
PROJECT MANAGER:		JCV
ENGINEER:		MEF
DESIGNER:		GSS
DRAWN BY:		

IF THIS BAR DOES NOT MEASURE ONE INCH DRAWING IS NOT LABELED TO SCALE

PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

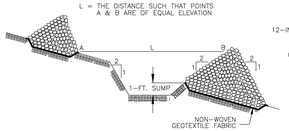


STANDARDS EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

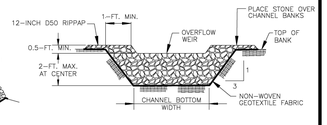
C-905

SPACING BETWEEN DITCH CHECK

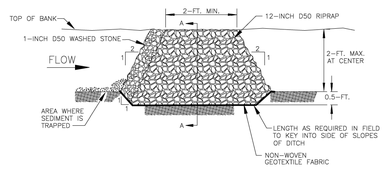
L = THE DISTANCE SUCH THAT POINTS A & B ARE OF EQUAL ELEVATION



CROSS SECTION A-A THRU STONE DITCH CHECK



TYPICAL DITCH CHECK SECTION



PLAN SYMBOL

OR

South Carolina Department of Health and Environmental Control

ROCK DITCH CHECK

STANDARD DRAWING NO. SC-04 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

ROCK DITCH CHECK – GENERAL NOTES

1. Rock Ditch Checks should not be placed in Waters of the State or USGS blue-line streams (unless approved by Federal Authorities).
2. Rock Ditch Checks should be installed in steeply sloped channels where adequate vegetation cannot be established. This BMP measure should only be used in small open channels.
3. A non-woven geotextile fabric shall be installed over the soil surface where the rock ditch check is to be placed.
4. The body of the rock ditch check shall be composed of 12-inch D50 Riprap. The upstream face may be composed of 1-inch D50 washed stone.
5. Rock Ditch Checks should not exceed a height of 2-feet at the centerline of the channel.
6. Rock Ditch Checks should have a minimum top flow length of 2 feet.
7. Riprap should be placed over channel banks to prevent water from cutting around the ditch check.
8. The riprap should be placed by hand or mechanical placement (no dumping of rock to form dam) to achieve complete coverage of the channel. Doing so will also ensure that the center of the check is lower than the edges.
9. The maximum spacing between the dams should be such that the toe of the upstream check is at the same elevation as the top of the downstream check.

ROCK DITCH CHECK – INSPECTION & MAINTENANCE

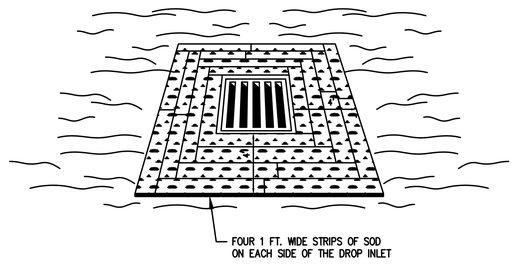
1. The key to functional rock ditch check is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of rock ditch checks shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the rock ditch check is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the rock ditch check.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Inspect Rock Ditch Checks' edges for erosion and evidence of runoff bypassing the installed check. If evident repair promptly as necessary to prevent erosion and bypassing.
7. In the case of grass-lined ditches, channels, and swales, rock ditch checks should be removed when the grass has matured sufficiently to protect the ditch or swale unless the slope of the swale is greater than 4%.
8. After construction is completed and final stabilization is reached, the entirety of the rock ditch check should be removed if vegetation will be used for permanent erosion control measures. The area beneath the removed rock ditch check must be addressed with permanent stabilization measures.

South Carolina Department of Health and Environmental Control

ROCK DITCH CHECK

STANDARD DRAWING NO. SC-04 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE



CONSTRUCTION SPECIFICATIONS

This method of inlet protection is applicable only at the time of permanent seeding, to protect the inlet from sediment and mulch material until permanent vegetation has become established. The sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Sod strips shall be staggered so that adjacent strip ends are not aligned.

MAINTENANCE

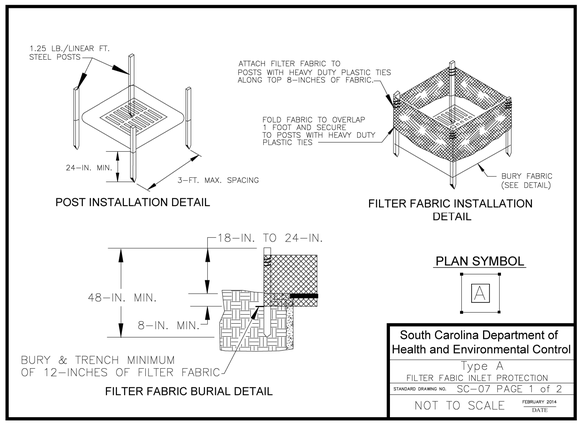
The trap shall be inspected daily and after each rain and repairs made as needed.

Sediment shall be removed when the sediment has accumulated to one-half the height of the trap. Sediment shall be removed from curb inlet protection immediately. For excavated inlet sediment traps, sediment shall be removed when one-half of the sediment storage capacity has been lost to sediment accumulation. Sod inlet protection shall be maintained as specified in Ds4-Disturbed Area Stabilization (with sodding).

Sediment shall not be washed into the inlet. It shall be removed from the sediment trap and disposed of and stabilized so that it will not enter the inlet, again.

When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed, and either salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

INLET SEDIMENT TRAP
SOD INLET PROTECTION



POST INSTALLATION DETAIL

FILTER FABRIC INSTALLATION DETAIL

FILTER FABRIC BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

TYPE A – FILTER FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

TYPE A – POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24-inches. A minimum height of 1-to 2- inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3-feet on center.

TYPE A – INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

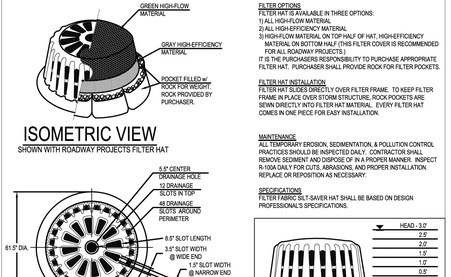
South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 2 of 2

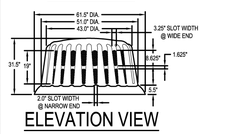
GENERAL NOTES FEBRUARY 2014 DATE



ISOMETRIC VIEW

SHOWN WITH ROADWAY PROJECTS FILTER HAT

PLAN VIEW



ELEVATION VIEW

REPLACEMENT FILTERS: MODEL # R-140

FILTER OPTIONS

FILTER HAT IS AVAILABLE IN THREE OPTIONS:
1) ALL HIGH-FLOW MATERIAL
2) ALL HIGH-EFFICIENCY MATERIAL
3) HIGH-FLOW MATERIAL ON TOP HALF OF HAT, HIGH-EFFICIENCY MATERIAL ON BOTTOM HALF (THIS FILTER COVER IS RECOMMENDED FOR ALL ROADWAY PROJECTS.)
IT IS THE PURCHASERS RESPONSIBILITY TO PURCHASE APPROPRIATE FILTER HAT. PURCHASER SHALL PROVIDE ROCK FOR FILTER POCKETS.

FILTER HAT INSTALLATION

FILTER HAT SLIDES DIRECTLY OVER FILTER FRAME. TO KEEP FILTER FRAME IN PLACE OVER STORM STRUCTURE, ROCK POCKETS ARE SEWN DIRECTLY INTO FILTER HAT MATERIAL. EVERY FILTER HAT COMES IN ONE PIECE FOR EASY INSTALLATION.

MAINTENANCE

ALL TEMPORARY EROSION, SEDIMENTATION, & POLLUTION CONTROL PRACTICES SHOULD BE INSPECTED DAILY. CONTRACTOR SHALL REMOVE SEDIMENT AND DISPOSE OF IN A PROPER MANNER. INSPECT R-100A DAILY FOR CUTS, ABRASIONS, AND PROPER INSTALLATION. REPLACE OR REPOSITION AS NECESSARY.

SPECIFICATIONS

FILTER FABRIC SILT-SAVER HAT SHALL BE BASED ON DESIGN PROFESSIONAL'S SPECIFICATIONS.

FRAME & FILTER DISCHARGE ANALYSIS

HEAD (FT)	EQUATION USED	OPENING AREA (SF)	FRAME FLOW (CFS)	FILTER AREA (SF)	FILTERED FLOW (CFS)
0.5	Q	2.1	7	6	2
1.0	Q	3.9	19	12	3
1.5	Q	7.0	41	18	5
2.0	Q	8.0	54	24	7
2.5	Q	9.2	70	30	9
3.0	Q	9.2	77	----	77

DUE TO NARROW SLOT, A TRANSITION WILL OCCUR BETWEEN WEIR AND ORIFICE CONDITIONS. ORIFICE FLOW WILL PROVIDE A MORE CONSERVATIVE ESTIMATE OF FLOW, THEREFORE THE LESSER OF THE ORIFICE AND WEIR FLOWS WILL BE USED FOR EACH STAGE CALCULATION.

FILTER MATERIAL ALLOWS 129 gpm/SF OR 0.29cfs/SF
ORIFICE EQUATION (Q) = Q=0.6A(2gh)^0.5
P = FEET PERIMETER
h = HEAD IN FEET
Q = CAPACITY IN cfs
A = FREE OPEN AREA OF FRAME
g = 32.2 FEET-PER-SECOND/SECOND

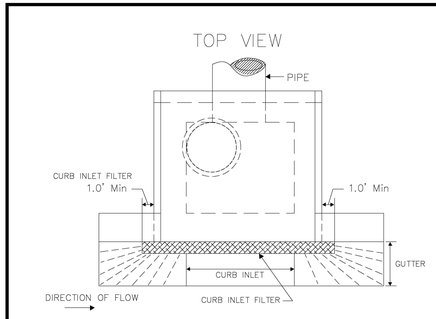
SILT-SAVER

SYSTEMS OF CONTROL

ROUND FRAME & FILTER ASSEMBLY
Model # R-100A

FRAME MATERIAL: BLACK 0.25" HMWPE
FILTER FABRIC MATERIAL: REFER TO SPEC
SCALE: NOT TO SCALE
LAST UPDATED: APRIL 2010

SILT-SAVER, INC. 105M CULPEPPER DRIVE, CONYERS, GA 30094 PHONE: (770) 388-7818 FAX: (770) 388-7640 TOLL FREE: 1-888-383-SILT (7458) www.siltsaver.com



PLAN SYMBOL

E

South Carolina Department of Health and Environmental Control

Type E

SURFACE COURSE CURB INLET FILTERS

STANDARD DRAWING NO. SC-10 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

SURFACE COURSE CURB INLET PROTECTION

GENEARL NOTES

1. Only use surface curb inlet filters that have a minimum height or diameter of 9-inches and have a minimum length that is 2-feet longer than the length of the curb opening.
2. Surface course inlets filters that are designed to completely block the inlet opening are prohibited. Acceptable inlet filters should allow for overflows to enter the catch basin.
3. Surface course inlet filters should be constructed with a synthetic material that will allow stormwater to freely flow through while trapping sediment and debris.
4. Straw, straw fiber, straw bales, pine needles and leaf mulch are not permissible filter materials.
5. Each filter should have aggregate compartments for stone, sand, and other weighted materials or mechanisms to hold the unit in place. Fill aggregate compartments to a level (at least 1/2 full) to hold the filter in place and create a seal between the filter and the road surface.
6. Use only Type E inlet filters appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #58, or filters meeting the most current edition of the SC DOT Standard Specifications for Highway Construction.

INSPECTION AND MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of all inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the inlet protection is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when silt and/or debris has built up around the filter preventing stormwater to flow through the filter.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control

Type E

SURFACE COURSE CURB INLET FILTERS

STANDARD DRAWING NO. SC-10 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

GMC

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Greenville, SC 29601
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ISSUE	DATE	
30% SUBMITTAL	05.20.19	JCV
60% SUBMITTAL		MEF
90% SUBMITTAL		GSS
FINAL		

IF THIS BAR DOES NOT MEASURE ONE INCH DRAWING IS NOT LABELED TO SCALE

PROJECT MANAGER:
ENGINEER:
DESIGNER:
DRAWN BY:

PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 13133 JAMES C. VAUGHN, JR. 04/18/2019

CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339

STANDARD EROSION AND SEDIMENT CONTROL DETAILS

C-906

PURPOSE: 1. TO PREVENT THE MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES

2. PREVENT THE MOVEMENT OF AIRBORNE SUBSTANCES THAT MAY BE HARMFUL TO HEALTH.

INSTALLATION: 1. APPLY ACCORDINGLY TO APPROVED PLAN, IF SHOWN.

2. MULCH DISTURBED AREAS AND TACKIFY WITH RESINS SUCH AS ASPHALT, CURASOL OR TERRATACK ACCORDING TO MANUFACTURERS RECOMMENDATIONS

3. STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION.

4. IRRIGATE DISTURBED AREAS UNTIL SURFACE IS WET.

5. COVER SURFACES WITH CRUSHED STONE OR GRAVEL.

6. APPLY CALCIUM CHLORIDE AT A RATE TO KEEP SURFACE MOIST.

7. APPLY SPRAY–ON ADHESIVES TO MINERAL SOILS (NOT MUCK SOILS) AS DESCRIBED IN TABLE 1

TABLE 1

ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN–IN–WATER EMULSION	4:1	FINE SPRAY	300

MAINTENANCE: 1. PROHIBIT TRAFFIC ON SURFACE AFTER SPRAYING.

2. SUPPLEMENTAL SURFACE COVERING AS NEEDED.

REFERENCES: 1. Ds1

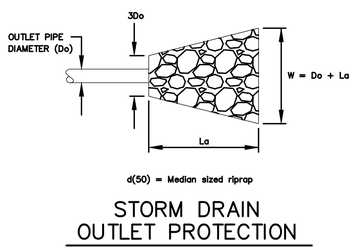
2. Ds2

2. Ds3

2. Ds4

Du DUST CONTROL ON DISTURBED AREAS

1. La 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 bank, whichever is less.
4. A filter blanket or filter fabric should be installed between the riprap and soil foundation.
5. The average sized stone for riprap, d(50), shall be determined from table provided in the latest edition of the "SC DHEC BMP Handbook".



d(50) = Median sized riprap

STORM DRAIN OUTLET PROTECTION

Temporary Seeding - Upstate

Species	lbs./ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Browntop Millet (Alone)	40												
Browntop Millet (Mix)	10												
Rye Grain (Alone)	56												
Rye Grain (Mix)	10												
Rye Grass (Alone)	50												
Rye Grass (Mix)	8												
For Steep Slopes/Cut Slopes													
Weeping Lovegrass (Alone)	4												
Weeping Lovegrass (Mix)	2												

Permanent Seeding - Upstate

Species	Lbs/Ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bahia Grass (Alone)	40												
Bahia Grass (Mix)	30												
Bermuda Grass (hulled) (Alone)	8-12												
Bermuda Grass (hulled) (Mix)	4-6												
Fescue, Tall (KY31) Alone	40												
Fescue, Tall (KY31) mix	20												
Sericea Lespedeza (Scarified) Alone or Mix (inoculate with EL Innoculant	40												
Ladino Clover (mix only) Innoculate with AB Innoculant	2												
For Steep Slopes/Cut Slopes													
Weeping Lovegrass (Alone)	4												
Weeping Lovegrass (Mix)	2												
Crownvetch (Mix) (Inoculate with Type M Innoculant	8-10												

Temporary Seeding – Coastal

Species	Lbs/Ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sandy, Droughty Sites													
Browntop Millet	40 lbs./ac.												
Rye, Grain	56 lbs./ac.												
Ryegrass	50 lbs./ac.												
Well drained, clayey/loamey Sites													
Browntop Millet or Japanese Millet	40 lbs./ac.												
Rye, Grain or Oats	56 lbs./ac. 75 lbs./ac.												
Ryegrass	50 lbs./ac.												

Permanent Seeding - Coastal

Species	Lbs/Ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sandy, Droughty Sites													
Browntop Millet Bahiagrass	10 lbs./ac. 40 lbs./ac.												
Browntop Millet Bahiagrass Sericea Lespedeza	10 lbs./ac. 30 lbs./ac. 40 lbs./ac.												
Browntop Millet Atlantic Coastal Panicgrass	10 lbs./ac. 15 lbs./ac. PLS												
Browntop Millet Switchgrass (Alamo) Little Bluestem Sericea Lespedeza Browntop Millet Weeping Lovegrass	10 lbs./ac. 8 lbs./ac. PLS 4 lbs./ac. 20 lbs./ac. 10 lbs./ac. 8 lbs./ac.												
Well drained, clayey/loamey Sites													
Browntop Millet Bahiagrass	10 lbs./ac. 40 lbs./ac.												
Rye, Grain Bahiagrass Clover, Crimson (Annual)	10 lbs./ac. 40 lbs./ac. 5 lbs./ac.												
Browntop Millet Bahiagrass Sericea lespedeza	10 lbs./ac. 30 lbs./ac. 40 lbs./ac.												
Browntop Millet Bermuda, Common Sericea lespedeza	10 lbs./ac. 10 lbs./ac. 40 lbs./ac.												
Browntop Millet Bermuda, Common Kobe Lespedeza (Annual)	10 lbs./ac. 12 lbs./ac. 10 lbs./ac.												
Browntop Millet Bahiagrass Bermuda, Common Sericea lespedeza	10 lbs./ac. 20 lbs./ac. 6 lbs./ac. 40 lbs./ac.												
Browntop Millet Switchgrass Little Bluestem Indiangrass	10 lbs./ac. 8 lbs./ac. PLS 3 lbs./ac. PLS 3 lbs./ac. PLS												

Erosion Control Blankets (ECBs)

Plan Symbol

Description

Temporary erosion control blankets (ECBs) are products composed primarily of biologically, photochemically or otherwise degradable constituents such as wheat straw, coconut fiber, or aged curled excelsior wood product with longevity of approximately 1- to 3-years.

When and Where to Use It

ECBs are used for the temporary stabilization of soil immediately following seeding until the vegetative cover has grown and becomes established. ECBs provide temporary protection by degrading over time as the vegetation becomes established. Some products are effective for a few months while others degrade slowly and are effective for up to 3-years.

ECB Categories

- Class A (Slope Applications Only)
- Class B (Channel Applications Only).

Class A ECBs are for **slope applications only**.

- Applicable for slopes **2H:1V or flatter** only. Slopes greater than 2H:1V require Turf Reinforcement Matting (TRM).

Class B ECBs are for **channel applications**.

- Applicable for channels and concentrated flow areas with a maximum calculated shear stress **less than 1.75 lb/ft²**. Channels and concentrated flow areas with design shear stresses greater than 1.75 lb/ft² require TRM

All acceptable Class A and Class B temporary erosion control blankets consisting of straw, coconut, or straw-coconut blends meet the following requirements:

- Utilize non-organic, photodegradable or biodegradable polypropylene netting.
- Consist of **double netted matting**, defined as matting with netting on both sides of the blanket. The top netting is degradable polypropylene with a maximum mesh opening of 0.75 inches by 0.75 inches. The bottom is degradable polypropylene with a maximum mesh opening of 0.5 inches by 0.5 inches.
- Be sewn on center a maximum of 2.0 inches

All acceptable Class A and Class B temporary erosion control blankets consisting of curled excelsior fibers meet the following requirements:

- Utilize non-organic, photodegradable or biodegradable polypropylene netting
- Consist of double netted matting. Double netted matting is matting with netting on both sides of the blanket. The degradable polypropylene top netting requires a maximum mesh opening of 1.0-inches by 1.0-inches, while the degradable polypropylene bottom netting requires a maximum mesh opening of 1.0-inches by 1.0-inches
- Consist of curled excelsior interlocking fibers with 80% of the fibers a minimum of 6-inches long
- Sewn on center a maximum of 4.0-inches.

Use Class A and Class B temporary erosion control blankets having the following Minimum Average Roll Values (MARV) for physical properties, as derived from quality control testing performed by a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory:

- Minimum mass per unit area (ASTM D6475) of 6 oz/yd² (203 g/m²)
- Minimum thickness (ASTM D6525) of 0.25-inches (6 mm)
- Minimum initial grab tensile strength (ASTM D6818) of 75 x 75 lb/ft. (1 x 1 kN/m)
- Minimum roll width of 48-inches (1.22 m)
- For Class B channel applications, a minimum unvegetated shear stress of 1.0 lb/ft² (48 N/m²) based on short-term peak flow duration of 0.5 hour is required.

Installation

Grade and compact areas to be protected with ECBs as indicated on the plans.

Remove large rocks, soil clods, vegetation, and other sharp objects that could keep the ECB from intimate contact with subgrade.

Prepare seedbed by loosening 2 to 3 inches of soil above final grade.

The proper installation of ECBs is different for each product, therefore the recommended installation procedure from the specific manufacturer should be followed.

When requested, a Manufacturer's Representative may be required to be on-site to oversee and approve the initial installation of the ECB. When requested, a letter from the Manufacturer approving the contractor installation may be required.

Inspection and Maintenance

- Inspect areas protected by ECBs for dislocation or failure every 7 calendar days and within 24-hours after each storm that produces ½-inch or more of rain.
- Conduct regular inspections until grasses are firmly established.
- Adhere to the pinning or stapling pattern as shown on the Manufacturer's installation sheet. If there is evidence that the ECB is not securely fastened to the soil, require extra pins or staples to inhibit the ECB from becoming dislodged.
- If washout or breakage occurs, repair all damaged areas immediately by restoring the soil on slopes or channels to its finished grade, re-apply fertilizer and seed, and replacing the appropriate ECB material as needed.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER JAMES C. VAUGHN, JR. 04/18/19

GMC

101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
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DESIGNER:		GSS
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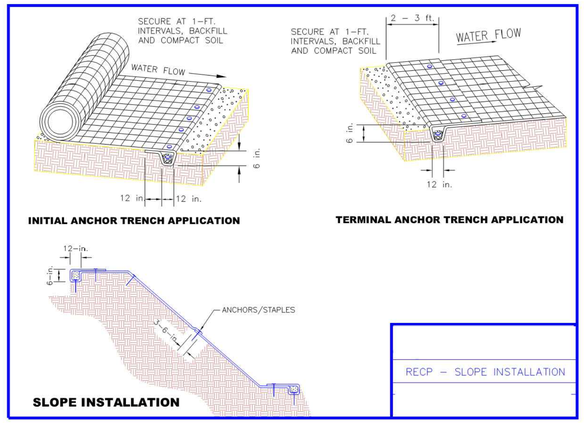
PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT–JASPER WATER & SEWER AUTHORITY

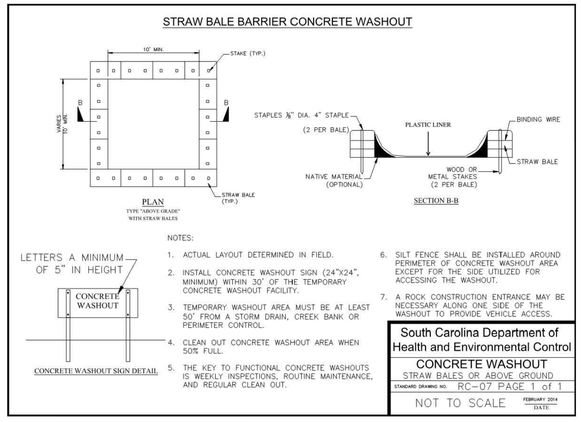
BJWSA Project CIP #1366
GMC Project #CGRE180057

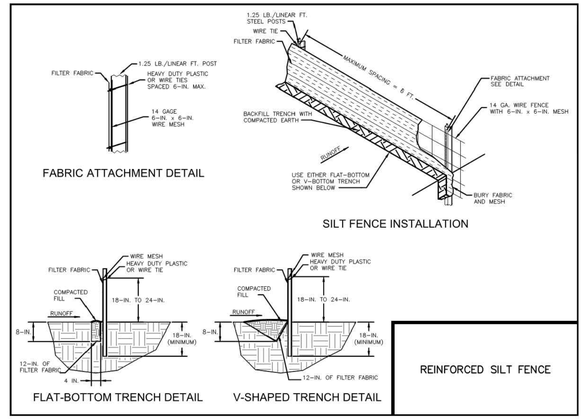
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

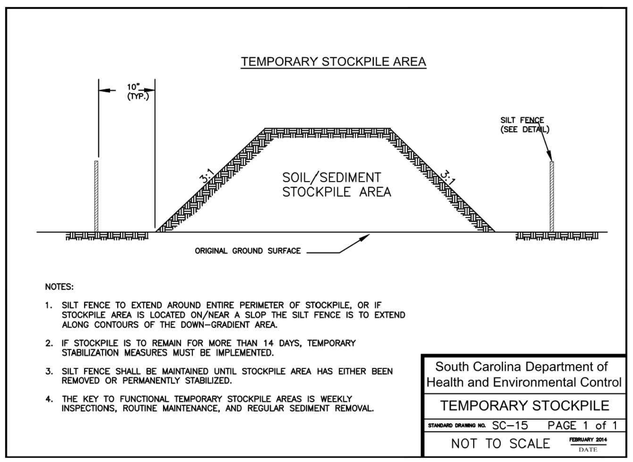
STANDARD EROSION AND SEDIMENT CONTROL DETAILS

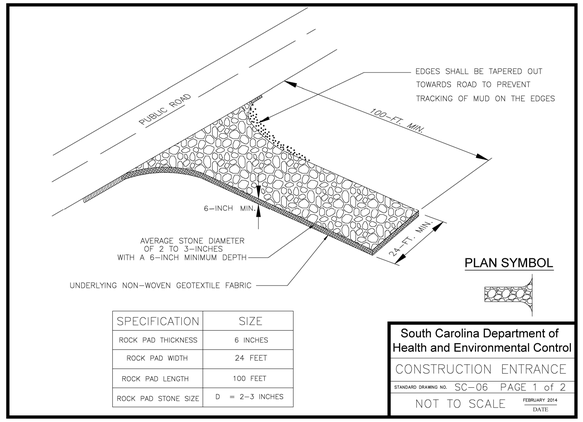
C-907











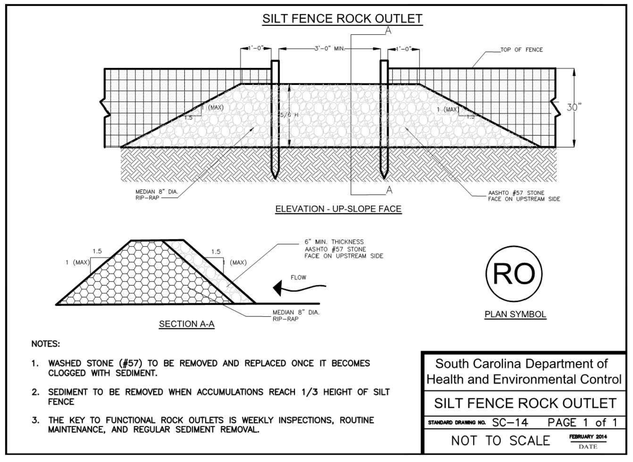
CONSTRUCTION ENTRANCE – GENERAL NOTES

1. Stabilized construction entrances should be used at all points where traffic will egress/ingress a construction site onto a public road or any impervious surfaces, such as parking lots.
2. Install a non-woven geotextile fabric prior to placing any stone.
3. Install a culvert pipe across the entrance when needed to provide positive drainage.
4. The entrance shall consist of 2-inch to 3-inch D50 stone placed at a minimum depth of 6-inches.
5. Minimum dimensions of the entrance shall be 24-feet wide by 100-feet long, and may be modified as necessary to accommodate site constraints.
6. The edges of the entrance shall be tapered out towards the road to prevent tracking at the edge of the entrance.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin or other sediment trapping structure.
8. Limestone may not be used for the stone pad.

CONSTR. ENTRANCE – INSPECTION & MAINTENANCE

1. The key to functional construction entrances is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of construction entrances shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. During regular inspections, check for mud and sediment buildup and pad integrity. Inspection frequencies may need to be more frequent during long periods of wet weather.
4. Reshape the stone pad as necessary for drainage and runoff control.
5. Wash or replace stones as needed and as directed by site inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce the amount of mud being carried off-site by vehicles. Frequent washing will extend the useful life of stone pad.
6. Immediately remove mud and sediment tracked or washed onto adjacent impervious surfaces by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.
7. During maintenance activities, any broken pavement should be repaired immediately.
8. Construction entrances should be removed after the site has reached final stabilization. Permanent vegetation should replace areas from which construction entrances have been removed, unless area will be converted to an impervious surface to serve post-construction.

South Carolina Department of Health and Environmental Control
CONSTRUCTION ENTRANCE
STANDARD DRAWING NO. SC-06 PAGE 2 of 2
GENERAL NOTES
FEBRUARY 2014 DATE



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Suite 200
Greenville, SC 29601
T 864.527.0460
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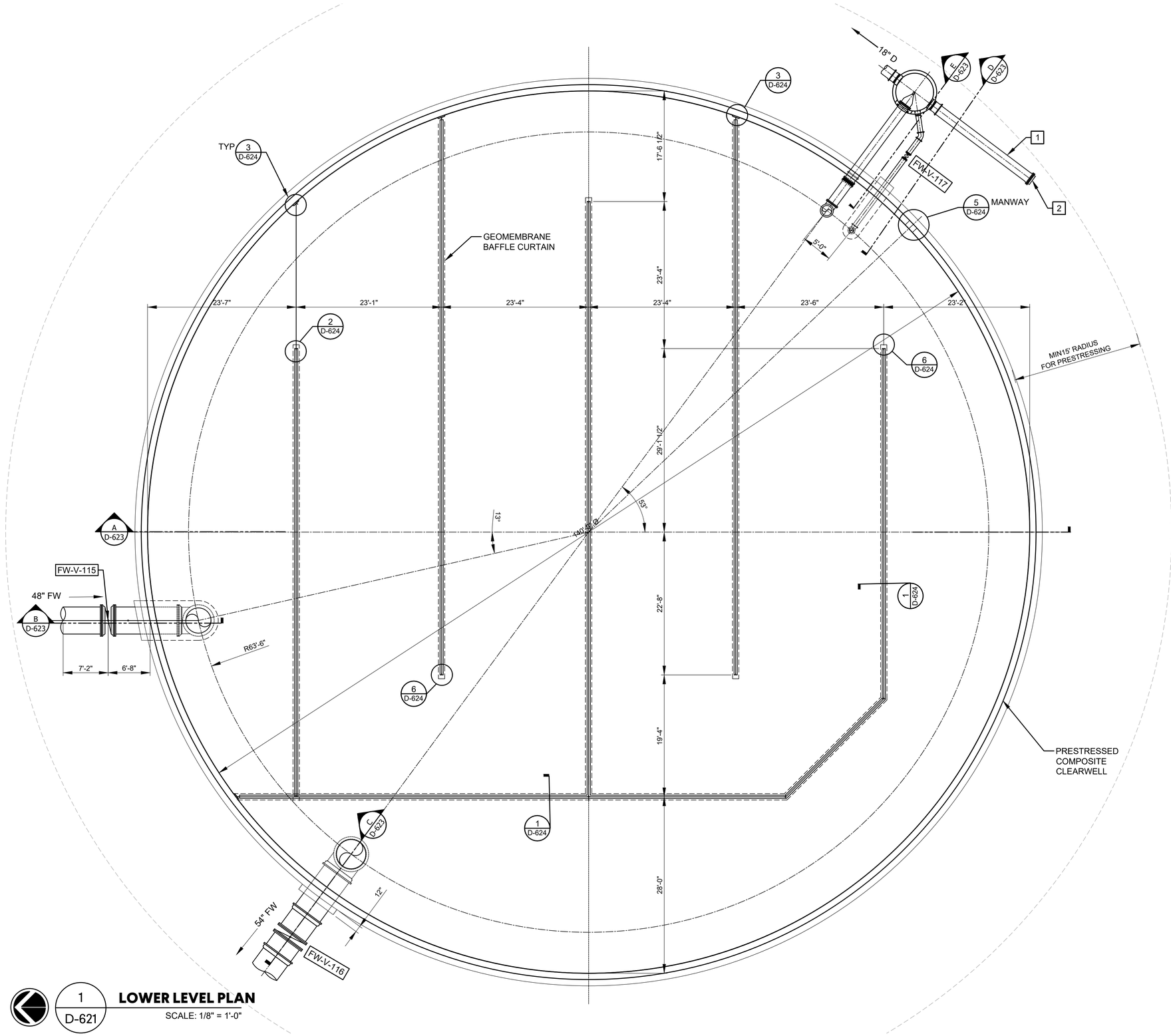
STANDARD EROSION AND SEDIMENT CONTROL DETAILS

C-908

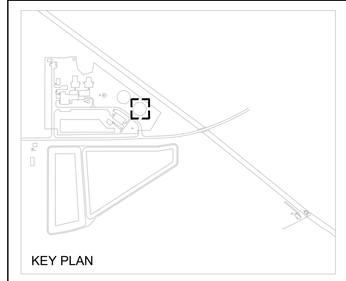


1 D-621 **LOWER LEVEL PLAN**

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

EQUIPMENT LEGEND

1	1 JOINT 18" D
2	18" MJ PLUG



KEY PLAN

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CLEARWELL LOWER LEVEL PLAN

D-621

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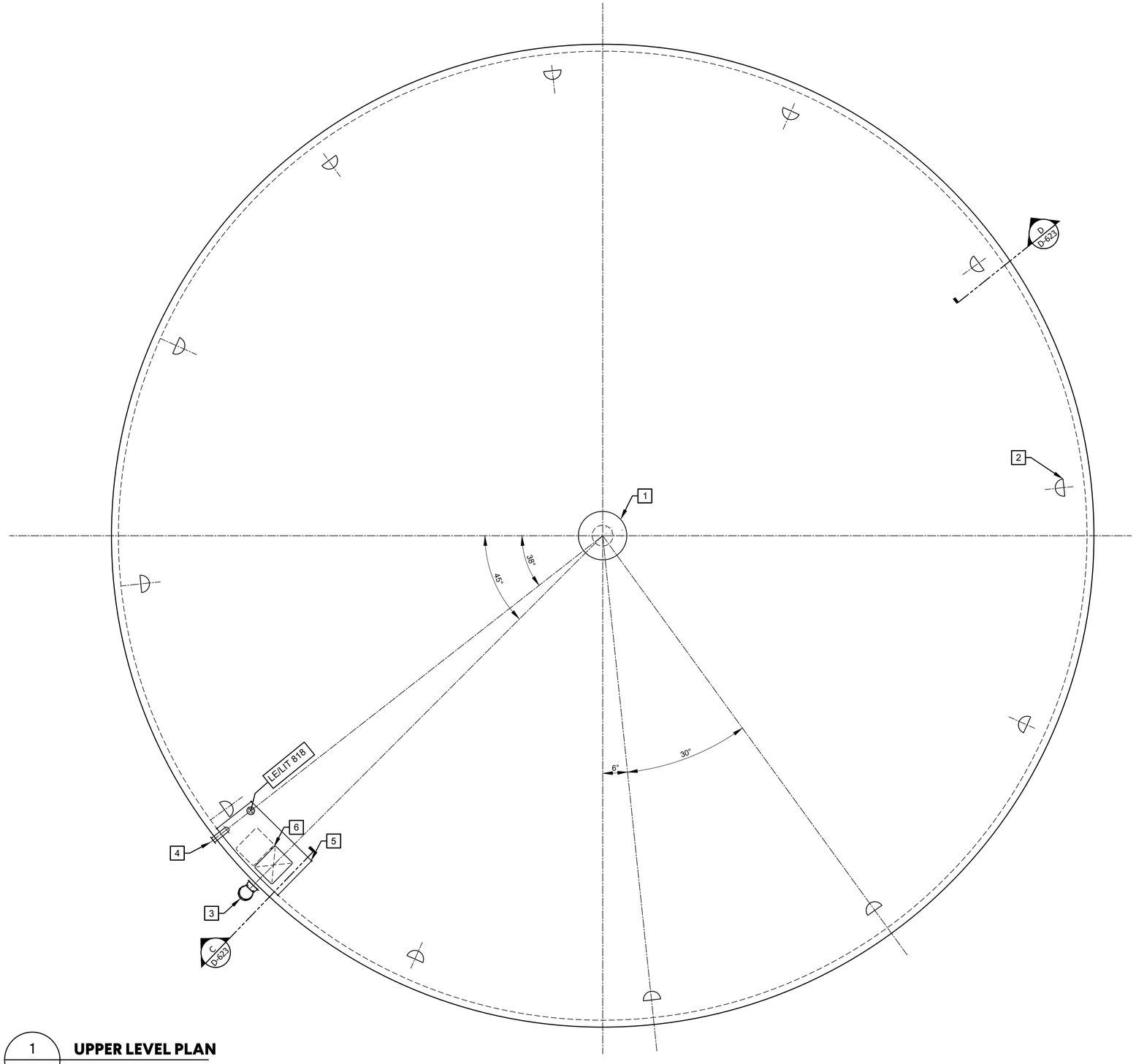
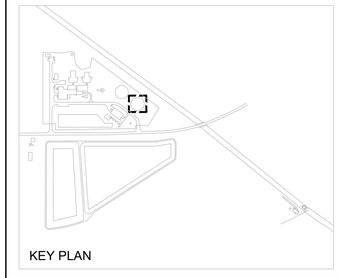


1 / D-622 **UPPER LEVEL PLAN**

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

EQUIPMENT LEGEND

1. FIBERGLASS VENTILATOR
2. CAST-IN-PLACE TANK OVERFLOWS
3. ACCESS LADDER WITH SAFETY CAGE
4. TANK LEVEL INDICATOR
5. ALUMINUM HANDRAIL
6. HINGED WATER TIGHT ACCESS PANEL ON RAISED CURB



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CLEARWELL
UPPER LEVEL PLAN

D-622

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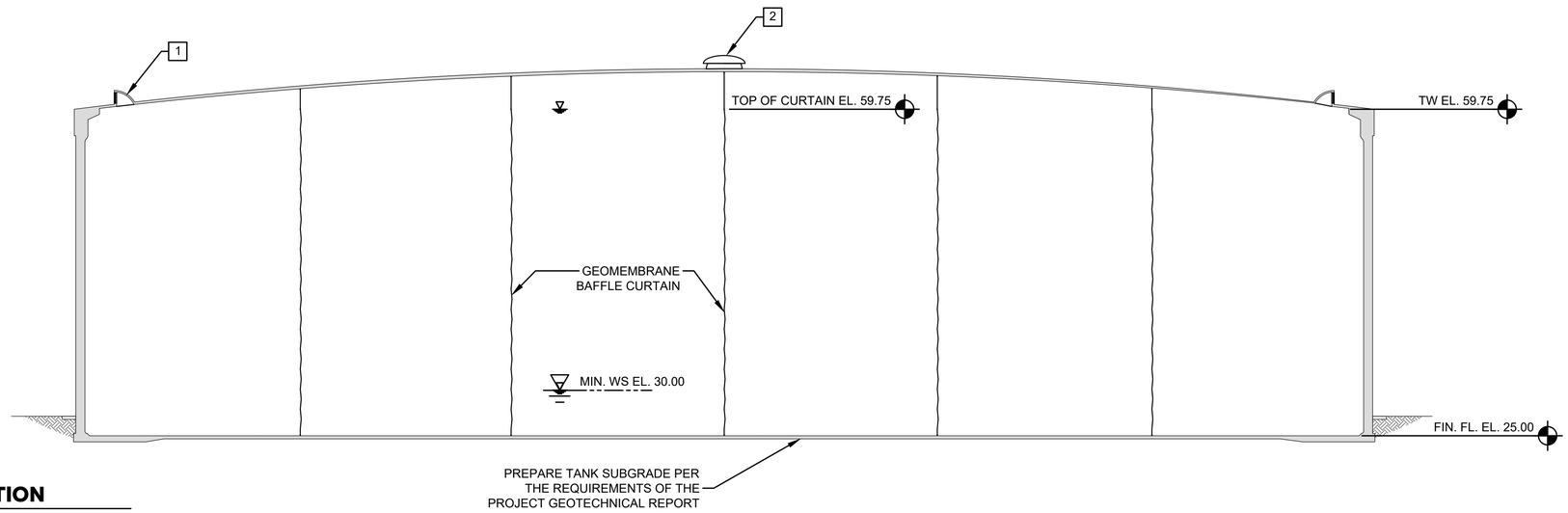
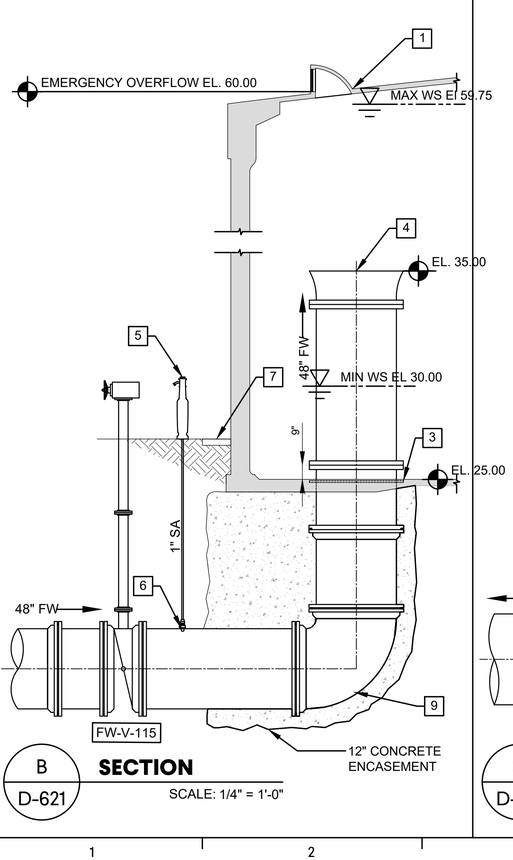


A D-621 **SECTION**

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

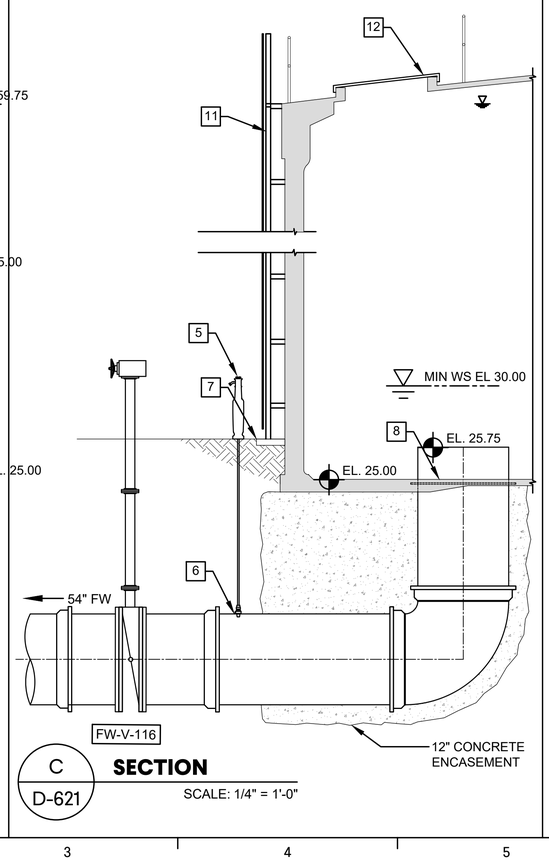
EQUIPMENT LIST

1. CAST-IN-PLACE TANK OVERFLOW
2. FIBERGLASS VENTILATOR
3. 48" TYPE 'H' PIPE PENETRATION
4. 48" FLEX FLARE
5. NON-FREEZE YARD HYDRANT FOR SAMPLING
6. 1" CURB COCK
7. 18" WIDE MOWER STRIP CONTINUOUS 4" STONE OVER GEOTEXTILE
8. 54" TYPE 'H' PIPE PENETRATION
9. 48" 90° BEND
10. 54" 90° BEND
11. ACCESS LADDER WITH SAF-T-CLIMB
12. HINGED WATER TIGHT ACCESS COVER ON RAISED CURB
13. 8" TYPE 'H' PIPE PENETRATION
14. 8" MJ 90° BEND
15. 8" MJ 45° BEND
16. 18" FLEX FLARE
17. 18" BASE ELL
18. 18" FLANGE COUPLING ADAPTER
19. 18" TYPE 'C' PIPE PENETRATION
20. FABRICATED 304 STAINLESS STEEL PIPE SUPPORT BY TANK SUPPLIER
21. 18" FL x DUCKBILL CHECK VALVE
22. 18" TYPE 'D' PIPE PENETRATION



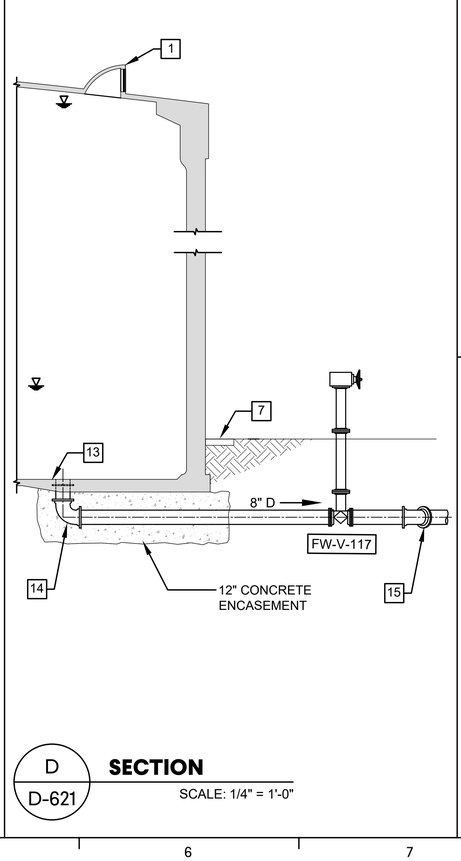
B D-621 **SECTION**

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



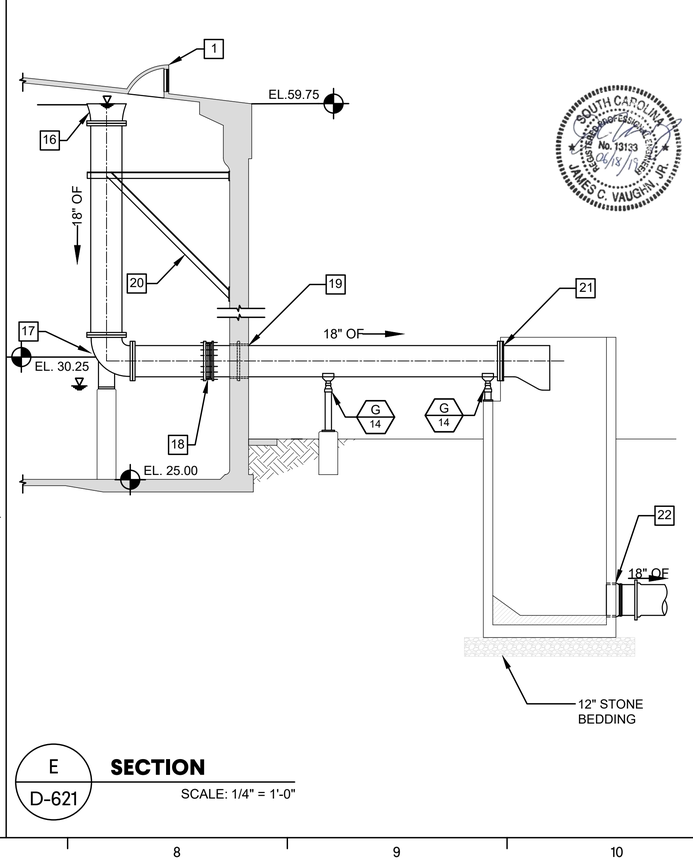
C D-621 **SECTION**

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



D D-621 **SECTION**

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



E D-621 **SECTION**

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

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GMC

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Suite 200
Greenville, SC 29601
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CLEARWELL SECTIONS

D-623

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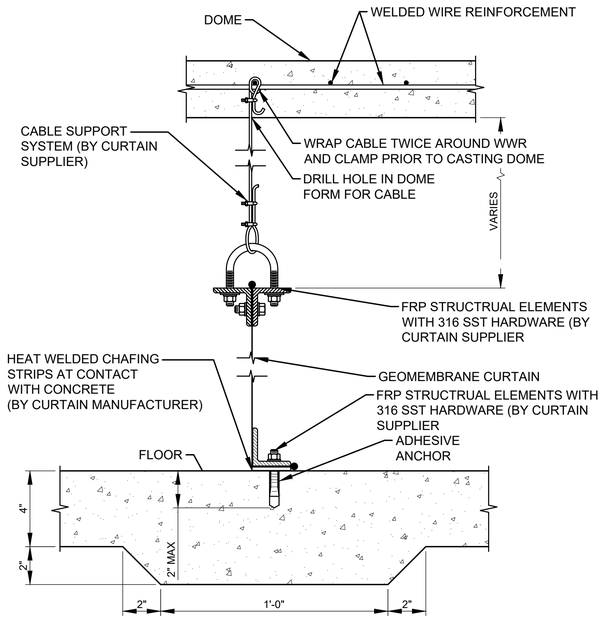
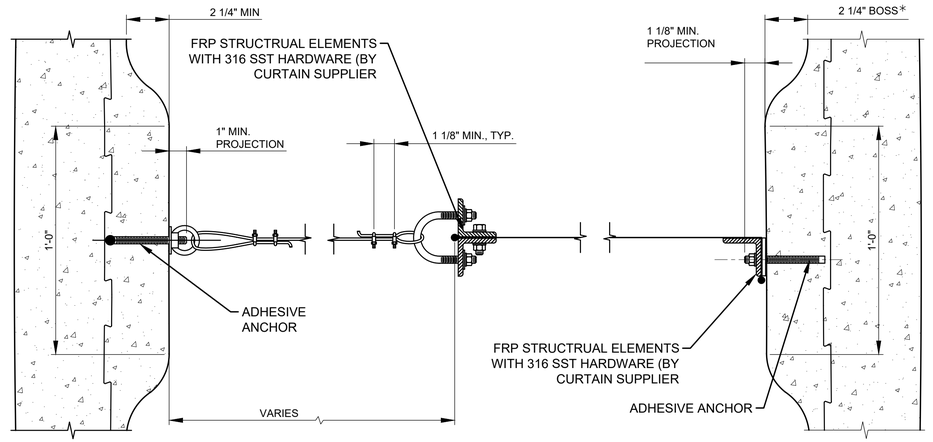


1 D-621 **CURTAIN DOME / FLOOR SECTION**

SCALE: 3" = 1'-0"

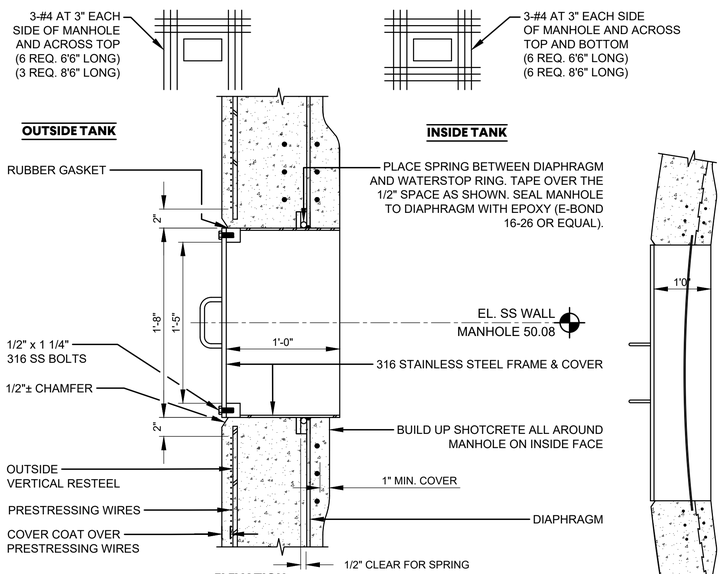


2 D-621 **CURTAIN OPEN END DETAIL**

SCALE: 3" = 1'-0"

3 D-621 **WALL CONNECTION**

SCALE: 3" = 1'-0"



5 D-621 **STAINLESS STEEL WALL MANHOLE DETAIL**

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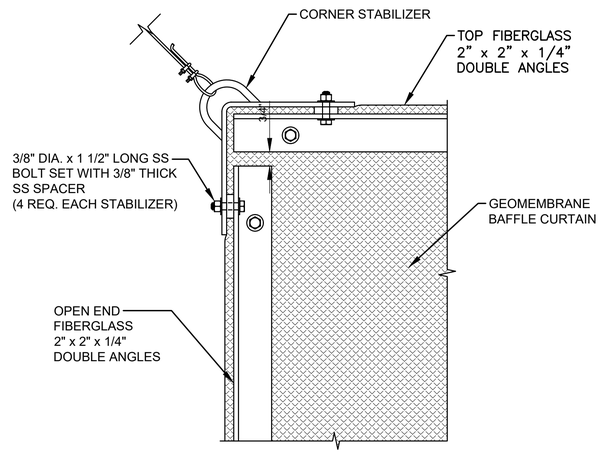

6 D-621 **CURTAIN CORNER DETAIL**

SCALE: 3" = 1'-0"

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CLEARWELL DETAILS

D-624

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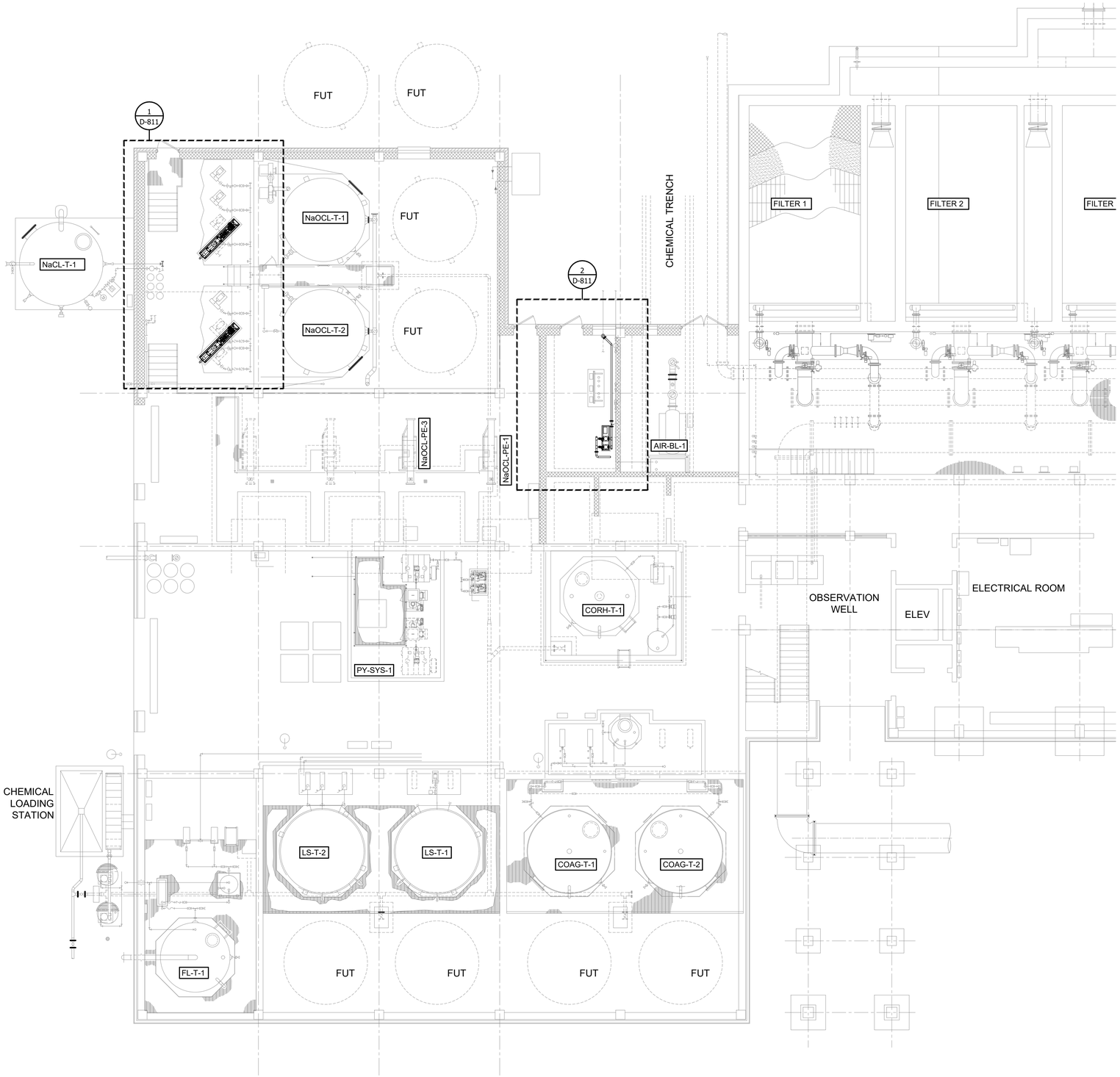

1 D-801 **LOWER LEVEL PLAN**

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

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CHEMICAL BUILDING KEY PLAN

D-801

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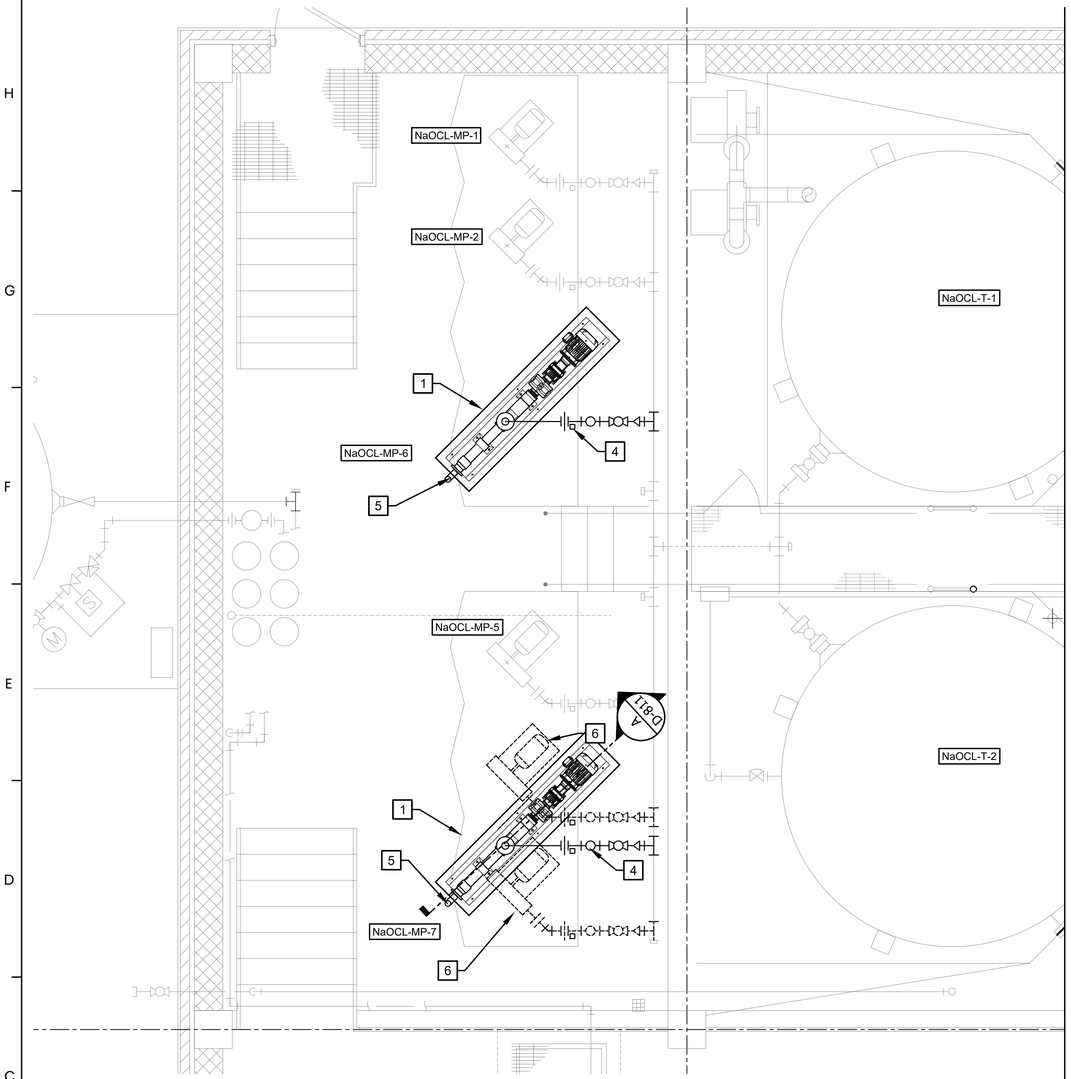
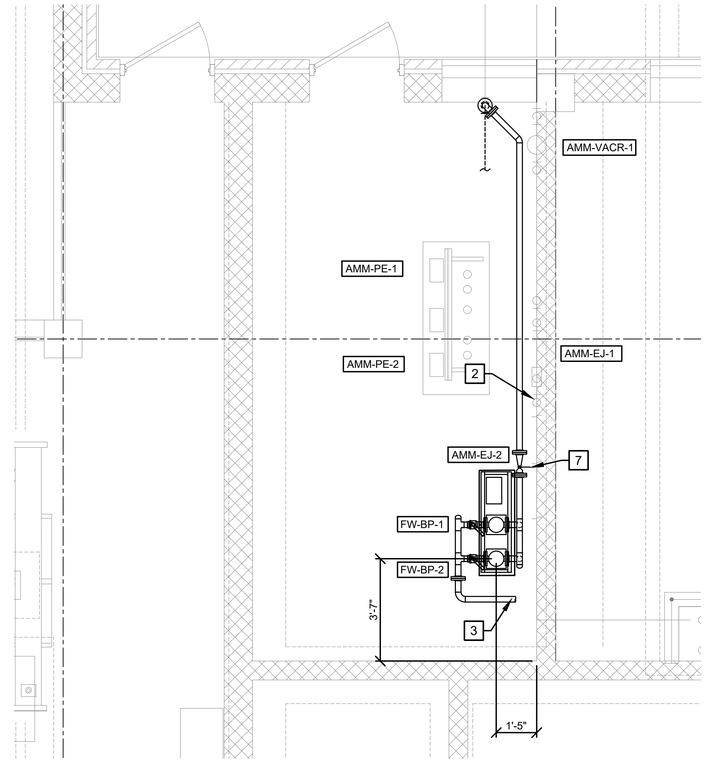


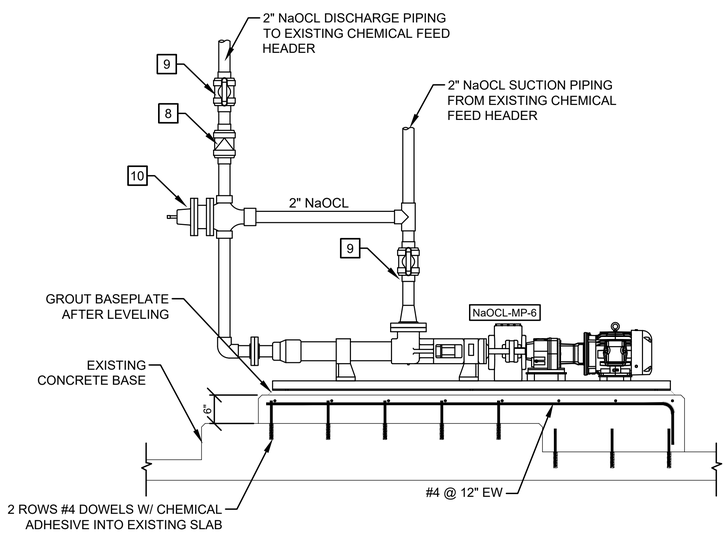
1 D-801 **ENLARGED PLAN - HYPOCHLORITE FEED**

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



2 D-801 **ENLARGED PLAN - AMMONIA FEED**

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



A D-811 **SECTION**

SCALE: 3/4" = 1'-0"

EQUIPMENT LIST

1. NEW 6" HIGH CONCRETE HOUSEKEEPING PAD
2. SALVAGE EXISTING AMMONIA EDUCTOR AND REPLACE WITH NEW EDUCTOR
3. EXTEND EXISTING 3" PSW TO NEW FW BOOSTER PUMP SUCTION. EXTEND 2" PSW DISCHARGE HEADER TO NEW EDUCTOR & CONNECT TO EXISTING AMMONIA SOLUTION FEED PIPING
4. INSTALL NEW 2" SUCTION PIPE TO NEW PUMP. MATCH EXISTING VALVES & ACCESSORIES
5. EXTEND NEW 2" PUMP DISCHARGE LINES NaOCL TO EXISTING NaOCL FINISHED WATER FEED. MATCH EXISTING VALVES & ACCESSORIES
6. SALVAGE EXISTING PUMP AND SUPPORT FRAME TO OWNER .
7. EXTEND AND CONNECT AMMONIA GAS TUBING FROM CONTROLLER TO EDUCTOR
8. 2" TRUE UNION BALL CHECK VALVE
9. 2" TRUE UNION BALL VALVE
10. 2" PRESSURE RELIEF BYPASS VALVE

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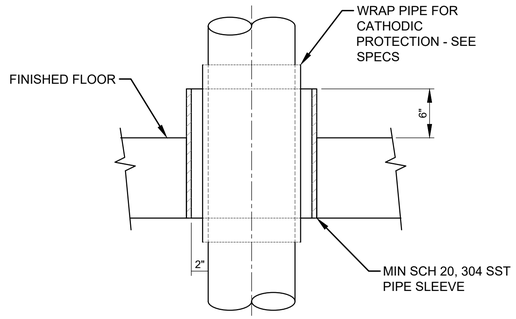
GOODWYN, MILLS & CAWOOD INC.
No. 0339

HYPOCHLORITE AND AMMONIA FEED ENLARGED PLAN

D-811

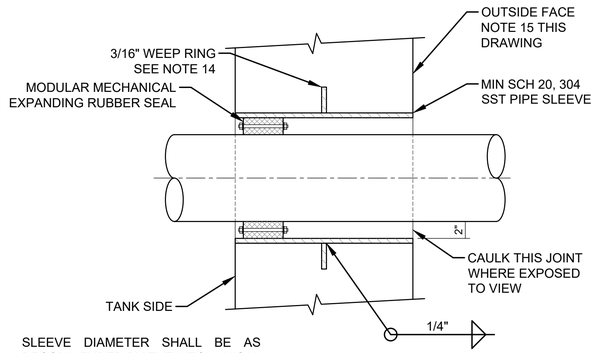
DRAWING FILE: W:\Civil\CGRE180057 Purrysburg WTP Expansion\CAD\01 BID DRAWINGS\10 PROCESS\D-811 Hypo and AMM Plan -PH1.dwg
PLOTTED: Jun 19, 2019 - 9:22am



FOR FLOORS

A D-901 **DETAIL - TYPE 'A' PIPE PENETRATION**

SCALE: NOT TO SCALE

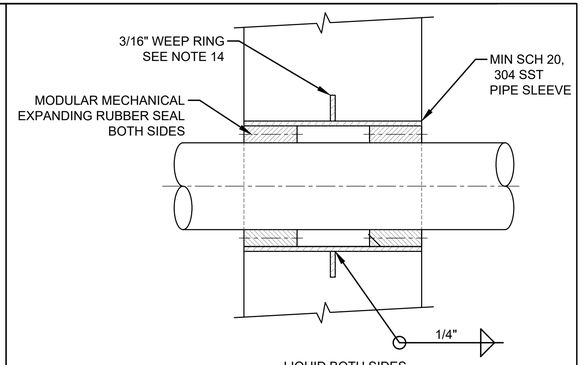


SLEEVE DIAMETER SHALL BE AS RECOMMENDED BY THE MECHANICAL SEAL MANUFACTURER.

FOR WALLS OR FLOORS

B D-901 **DETAIL - TYPE 'B' PIPE PENETRATION**

SCALE: NOT TO SCALE



LIQUID BOTH SIDES FOR WALLS

C D-901 **DETAIL - TYPE 'C' PIPE PENETRATION**

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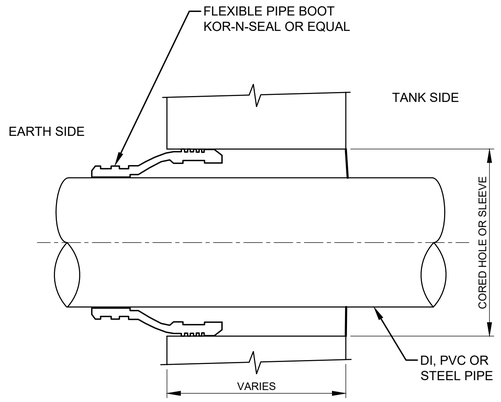

D D-901 **DETAIL - TYPE 'D' PIPE PENETRATION**

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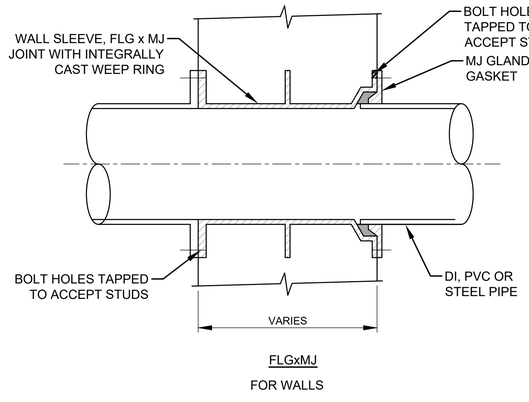

FLGxMJ

FOR WALLS

E D-901 **DETAIL - TYPE 'E' PIPE PENETRATION**

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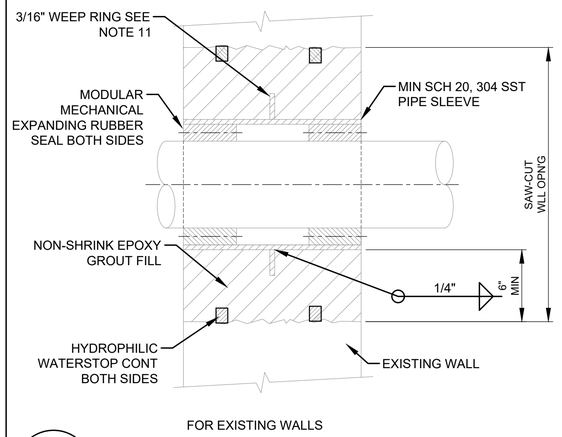

FOR EXISTING WALLS

F D-901 **DETAIL - TYPE 'F' PIPE PENETRATION**

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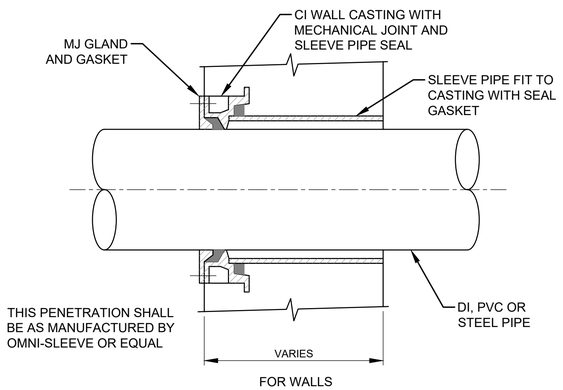

FOR WALLS

G D-901 **DETAIL - TYPE 'G' PIPE PENETRATION**

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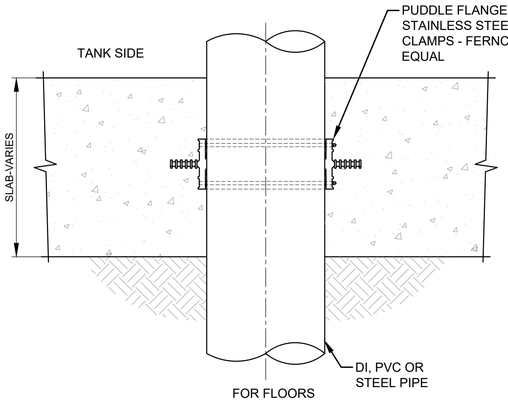

FOR FLOORS

H D-901 **DETAIL - TYPE 'H' PIPE PENETRATION**

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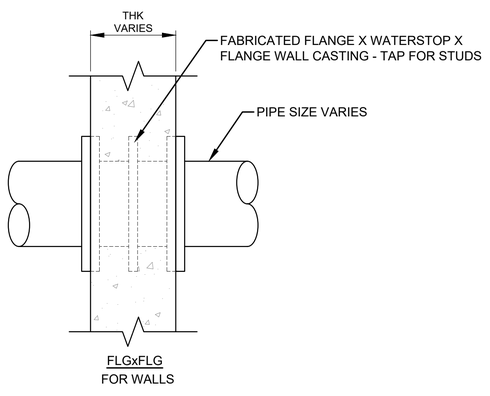

FLGxFLG

FOR WALLS

I D-901 **DETAIL - TYPE 'I' PIPE PENETRATION**

SCALE: NOT TO SCALE

PIPE PENETRATION NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ROOM, GALLERY, TUNNEL OR SIMILAR ENCLOSURE.
4. IN CONDITION 5, TYPE B OR C SHALL BE USED WHERE ONE SIDE CONTAINS EXPLOSION PROOF EQUIPMENT, WHERE FLOODING IS POSSIBLE OR WHERE SPECIFIED.
5. SEAL FLANGES SHALL BE DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE GASKETED.
6. PROVIDE CURB WHERE PENETRATING FLOOR EXCEPT FOR PENETRATION TYPE A. CURB SHALL BE 4" HIGH AND 3" WIDE.
7. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
8. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
9. RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL M11. FIGURES 19.15 AND 19.16 AND TABLE 19.17 SHALL BE UTILIZED.
10. INSULATION SHALL NOT EXTEND THROUGH SLEEVES UNLESS OTHERWISE SPECIFIED.
11. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER EQUAL TO THE PIPE DIAMETER PLUS 3 INCHES.
12. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH OR OUTSIDE ATMOSPHERE.

PIPE PENETRATION TYPES

	DESCRIPTION		TYPE		
	FROM	TO	STEEL OR SST PIPE	DUCTILE IRON PIPE	PLASTIC PIPE
1	TANK	TANK BELOW W.S.	C or I	C, E or I	C
2	TANK	TANK ABOVE W.S.	B	B-I	B-I
3	PASSAGE	TANK BELOW W.S.	C or I	C or I	C
4	PASSAGE	TANK ABOVE W.S.	A, B or C	A, B or C	A, B or C
5	PASSAGE	PASSAGE	A, Note 4	A, Note 4	A, Note 4
6	PASSAGE	OUTSIDE WALL	B or C	B or C	B or C
7	PASSAGE	ROOF	AS SHOWN		
	Use this Table unless noted otherwise in Drawings				

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER JAMES C. VAUGHN, JR. 04/18/19

GMC
101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

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90% SUBMITTAL	06.19.19	JCV
FINAL		MEF

PROJECT MANAGER:
ENGINEER:
DESIGNER:
DRAWN BY:

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

PIPE PENETRATIONS DETAIL

D-901

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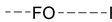
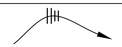
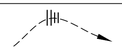
ELECTRICAL LEGEND

FLOAT SWITCH	
DISCONNECT SWITCH, SEE DISCONNECT SCHEDULE.	
MOTOR - HORSEPOWER AS INDICATED.	
LEVEL TRANSDUCER.	
CONDUIT OR RACEWAY CONCEALED IN CEILING CAVITY OR WALL.	
CONDUIT OR RACEWAY UNDERGROUND OR CONCEALED IN FLOOR SLAB.	
UNDERGROUND FIBER OPTIC CABLE.	
HOMERUN. ARROW INDICATES NUMBER OF CIRCUITS. TICKS INDICATES NUMBER OF CONDUCTORS NO TICKS INDICATES 1 PHASE, 1 NEUTRAL, 1 GROUND CONDUCTOR.	
UNDERGROUND HOMERUN. ARROW INDICATES NUMBER OF CIRCUITS. TICKS INDICATES NUMBER OF CONDUCTORS NO TICKS INDICATES 1 PHASE, 1 NEUTRAL, 1 GROUND CONDUCTOR.	

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERES	LAHJ	LOCAL AUTHORITY HAVING JURISDICTION
AC	AIR CONDITIONING	LGT	LIGHT
ACT	ABOVE COUNTER TOP	M	METER
AFF	ABOVE FINISHED FLOOR	MAT	MASTER ANTENNA TELEVISION
AIC	AMPERES INTERRUPTING CAPACITY (MIN)	MAX	MAXIMUM
APPROX.	APPROXIMATELY	MCM	THOUSAND CIRCULAR MILS
AWG	AMERICAN WIRE GAUGE	MDP	MAIN DISTRIBUTION PANEL
ANN	ANNUCIATOR	MIN	MINIMUM
BLDG	BUILDING	MLO	MAIN LUGS ONLY
BPS	BOLTED PRESSURE SWITCH	MPC	MAIN POWER CENTER
C	CONDUIT	MTD, MTG	MOUNT (ED), (ING)
CAT	CATALOG	N	NORTH
CATV	CABLE TELEVISION	NEC	NATIONAL ELECTRIC CODE
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CONT	CONTINUATION	NO	NUMBER
CR	CARD READER	NTS	NOT TO SCALE
DD	DUCT DETECTOR	OC	ON CENTER
DIA	DIAMETER	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
DIM	DIMENSION	P	POLE
DP	DISTRIBUTION PANEL	PC	PHOTO CELL
DWG	DRAWINGS	PMS	PROPERTY MANAGEMENT SYSTEM
EA	EACH	PNL	PANEL
EC	EMPTY CONDUIT	PVC	POLYVINYL CHLORIDE
ELEC	ELECTRICAL	RS	RAPID START
EMER	EMERGENCY	RSC	RIGID STEEL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	SD	SMOKE DETECTOR
EOL	END OF LINE RESISTOR	SIM	SIMILAR
EQUIP	EQUIPMENT	S/S	STAINLESS STEEL
F	FUSED	SPST	SINGLE POLE SINGLE THROW
FA	FIRE ALARM	T	TRANSFORMER
FIN	FINISH	TC	TRAY CABLE
FIX	FIXTURE	TBB	TELEPHONE BACKBOARD
FLUOR.	FLUORESCENT	TEL	TELEPHONE
GFI	GROUND FAULT INTERRUPTER	TM	TV MONITOR
GRC	GALVANIZED RIGID STEEL CONDUIT	TYP	TYPICAL
GRND, G		UNO	UNLESS OTHERWISE NOTED
HP	HORSEPOWER	V	VOLT
IAW	IN ACCORDANCE WITH	W	WIRE
IF	INSIDE FROST	WP	WEATHERPROOF
IG	ISOLATED GROUND	WW	WARM WHITE
INCAN	INCANDESCENT	XFMR	TRANSFORMER
J	JUNCTION	PDC	POWER DISTRIBUTION PANEL
KVA	KILO-VOLT-AMPERE	E.W.	EACH WAY
KW	KILOWATT	OCEW	ON CENTER EACH WAY

GENERAL NOTES

1. ALL ELECTRICAL WORK AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE N.E.C. AND THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. WIRING SYSTEMS SHALL CONSIST OF COPPER WIRING INSTALLED IN CONDUIT, MINIMUM WIRE SIZE SHALL BE #12AWG, MINIMUM CONDUIT SIZE SHALL BE 3/4".
3. CONDUIT ABOVE CEILINGS, IN WALLS, ETC., WHERE NOT SUBJECT TO MOISTURE OR DAMAGE SHALL BE EMT. WHERE SUBJECT TO DAMAGE, OUTSIDE BUILDING SHALL BE GALVANIZED RIGID CONDUIT. CONDUITS (ALL SIZES) ROUTED EXPOSED SHALL BE GALVANIZED RIGID CONDUIT. CONDUITS SHALL BE SIZED IN ACCORDANCE WITH TABLE 1, CHAPTER NINE OF N.E.C.
4. CONDUCTORS SHALL BE 99% COPPER (NO ALUMINUM CONDUCTORS WILL BE ACCEPTED).
5. EQUIPMENT GROUNDING SHALL BE IN ACCORDANCE WITH N.E.C.
6. ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.
7. ALL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCES AND CONFLICTS. REFER TO THE DRAWINGS OF THE RESPECTIVE SYSTEMS PRIOR TO SUBMISSION OF BIDS FOR ADDITIONAL WORK WHICH MAY BE REQUIRED AS PART OF THIS WORK. NO ALLOWANCES WILL BE MADE FOR THE LACK OF COORDINATION BETWEEN DISCIPLINES OR SYSTEMS AND EQUIPMENT.
8. THE WORK SHALL BE COORDINATED WITH THE ENGINEERING DOCUMENTS FOR THE EXACT LOCATION OF LIGHT FIXTURES, EQUIPMENT, DEVICES, ETC. TO ASSURE PROPER PLACEMENT OF SAID DEVICES AND EQUIPMENT. WHERE A CONFLICT EXISTS BETWEEN ANY TWO DOCUMENTS, NOTIFY THE ENGINEER PRIOR TO ANY INSTALLATION FOR RESOLUTION.
9. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT BEING INSTALLED PRIOR TO INSTALLATION TO ASSURE THAT THE FEEDER, DISCONNECT, STARTER, OVER CURRENT PROTECTION, ETC. MATCHES THE ACTUAL NAMEPLATE DATA AS SUPPLIED BY THE MANUFACTURER.
10. SPECIFIC REQUIREMENTS REGARDING MATERIALS, WORKMANSHIP, AND THE WORK TO BE DONE ARE COVERED BY THE SPECIFICATIONS WHICH COMPLEMENT THE PLANS. WORK CALLED FOR BY THE SPECIFICATIONS OR THE PLANS IS REQUIRED THE SAME AS IF REQUIRED BY BOTH. WHERE A CONFLICT EXISTS BETWEEN THE PLANS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS OF THE TWO SHALL APPLY.
11. REFER TO EQUIPMENT CUT SHEETS AND MANUFACTURER'S DATA FOR ROUGH IN LOCATIONS OF ELECTRICAL CONNECTIONS AND INTERCONNECTIONS OF ALL EQUIPMENT.
12. INSTALL OVER CURRENT PROTECTION AND BRANCH CIRCUIT WIRING PER U.L. LISTING REQUIREMENTS FOR EQUIPMENT SERVED - REFER TO NAMEPLATE DATA.
13. PROVIDE START-UP ASSISTANCE TO OWNER PERSONNEL AND EQUIPMENT TECHNICIANS TO CONFIRM CORRECT PHASE ROTATION, PROPER OPERATION & SEQUENCE, AND CONTROLS.
14. CONTRACTOR SHALL COORDINATE ELEVATIONS AND PIPING SYSTEM SLOPES SUCH THAT DUCTWORK, PIPING, RACEWAY, CABLE TRAY, AND ASSOCIATED EQUIPMENT IS INSTALLED AT UNIFORM ELEVATIONS WITH MINIMAL OFFSET. PROVIDE COORDINATION DRAWING TO ENGINEER FOR REVIEW PRIOR TO EQUIPMENT ORDERS AND ROUGH-IN.
15. VERIFY ALL DOOR SWINGS WITH ARCHITECTURAL PLANS BEFORE ROUGHING IN LIGHT SWITCHES.
16. ELECTRICAL CONTRACTOR TO FIELD MARK ELECTRICAL SERVICE EQUIPMENT WITH A CONSPICUOUS AND PERMANENT LABEL THAT INDICATES THE AVAILABLE FAULT CURRENT PER NEC 110.16 & 110.24.
17. ELECTRICAL CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY EXCAVATION.
18. PROVIDE UNSWITCHED PHASE CONDUCTOR TO EMERGENCY LIGHTS AND/OR EXIT SIGNS FOR 24 HOUR OPERATION.
19. ELECTRICAL EQUIPMENT SHALL BE FULLY RATED FOR THE FAULT CURRENT INDICATED ON THE PLANS. NO SERIES RATING WILL BE ACCEPTED.
20. DO NOT INSTALL DEVICES WITHIN 24" OF EACH OTHER IN ANY FIRE RATED WALLS.
21. SEAL ALL PENETRATIONS IN ACCORDANCE WITH A UL APPROVED METHOD TO MAINTAIN THE UL RATING OF THE WALL AS INDICATED IN ARCHITECTURAL PLANS.
22. NO COMBUSTIBLE MATERIAL IS ALLOWED IN AIR PLENUMS.
23. FINAL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT AS INDICATED ON PLANS SHALL BE WITH FLEXIBLE STEEL CONDUIT IN DRY LOCATIONS AND LIQUID TIGHT FLEX IN WET, DAMP, OR SPRAY DOWN LOCATIONS. VERIFY EXACT LOCATION OF ALL MOTORS AND EQUIPMENT BEFORE ROUGH IN.
24. ELECTRICAL CONTRACTOR SHALL NOTE THAT ONLY BASIC AIR CONDITIONING AND HEATING CONTROLS ARE SHOWN ON DRAWINGS. EXACT LAYOUT AND DIAGRAMS MUST BE OBTAINED FROM RESPECTIVE SUBCONTRACTORS FOR A COMPLETE COORDINATED WORKING LAYOUT.
25. SUBSURFACE CONDUIT SHALL BE SCHEDULE 40PVC UNO. VERTICAL TURN UPS SHALL BE GRC SWEEP 90S WITH A BITUMASTIC COATING OR PVC COATED RGC UNO.
26. ALL EMPTY CONDUITS SHALL HAVE A 200 LBS NYLON PULL STRING. SUBSURFACE CONDUITS TURNING UP AND TERMINATING SHALL BE CAPPED ON BOTH ENDS TO PREVENT ENTRY OF RODENTS, WATER, AND OTHER FOREIGN MATTER. DUCT TAPE IS NOT CONSIDERED AN ACCEPTABLE MEANS OF CAPPING.
27. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VISIT THE SITE AND TO BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO BID DATE AS HE SHALL BE RESPONSIBLE FOR THE SAME.
28. ELECTRICAL CONTRACTOR WILL PROVIDE ALL MATERIAL TO FINALIZE A NEAT, COMPLETE, AND PROPERLY WORKING ELECTRICAL SYSTEM WHICH CONFORMS TO ALL LOCAL CODES AND THE NATIONAL ELECTRICAL CODE (N.E.C.), PLANS, AND SPECIFICATIONS.
29. CONTRACTOR SHALL REPAIR ANY DISTURBED AREA TO SAME COMPACTION, GRADE, SLOPE, ETC. AS ORIGINAL AREA INCLUDING REPLACEMENT OF SOD, GRASS, ROCK, GRAVEL, RIP-RAP, ETC. TO THE SATISFACTION OF THE OWNER AND ENGINEER.
30. SLOPE ALL AREAS AROUND CONCRETE PADS TO PREVENT WATER PONDING.
31. CLEAN UP ALL DEBRIS AROUND CONSTRUCTION SITE DAILY.
32. REMOVE ANY SPILLED DIRT, CONCRETE, ETC. FROM ANY DRIVEWAYS, ROADWAYS OR CONSTRUCTION SITE AS DIRECTED BY OWNER OR ENGINEER.

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101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
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ENGINEER:		MGD
DESIGNER:		JJM
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

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GMC Project #CGRE180057

ELECTRICAL NOTES, ABBREVIATIONS, & LEGEND

E-001

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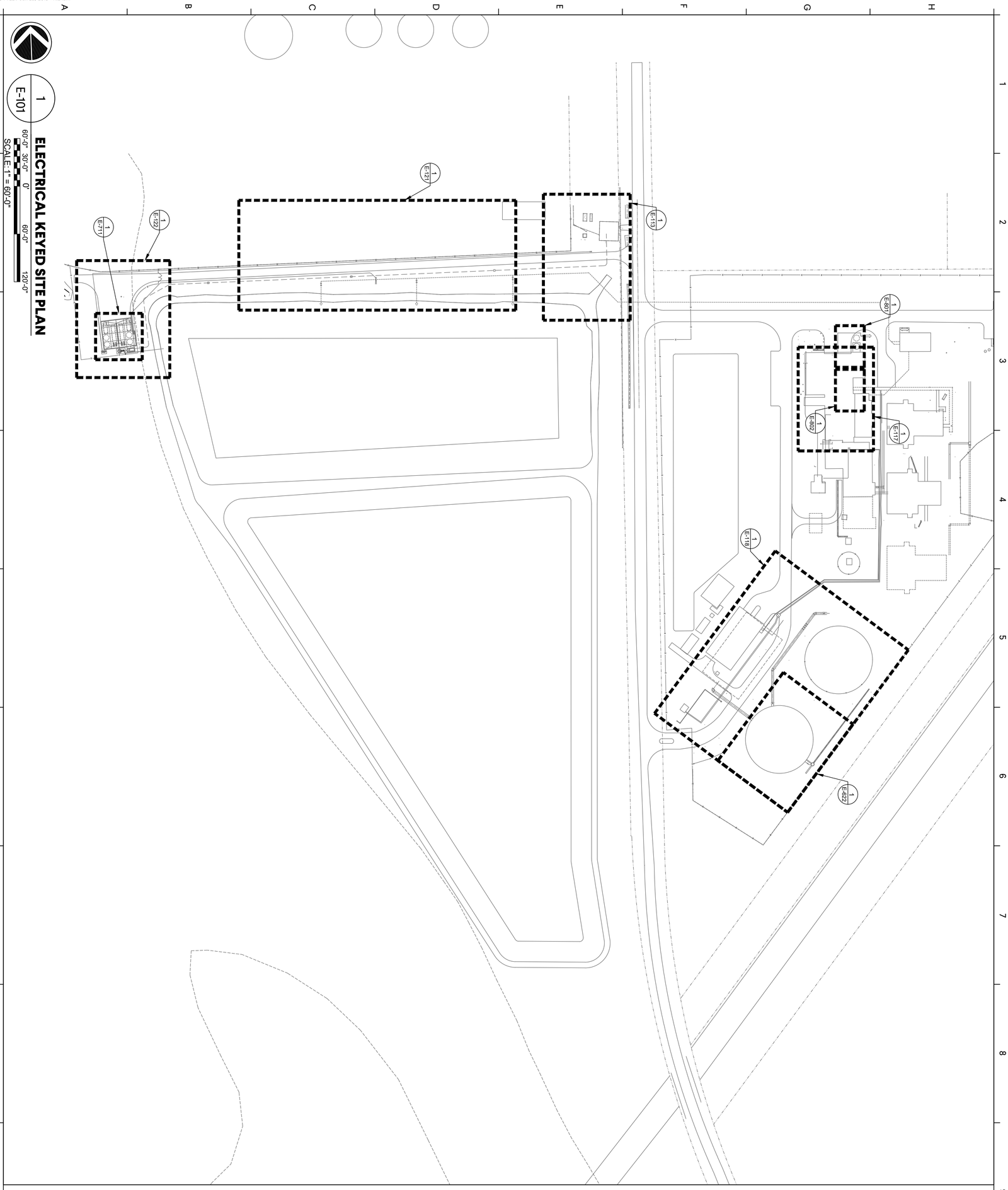

JOHN J. HERBERT
SOUTH CAROLINA PROFESSIONAL ENGINEER
LICENSED
No. 28294
6.21.19

ELECTRICAL KEYED SITE PLAN

E-101

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PURRYSBURG WTP
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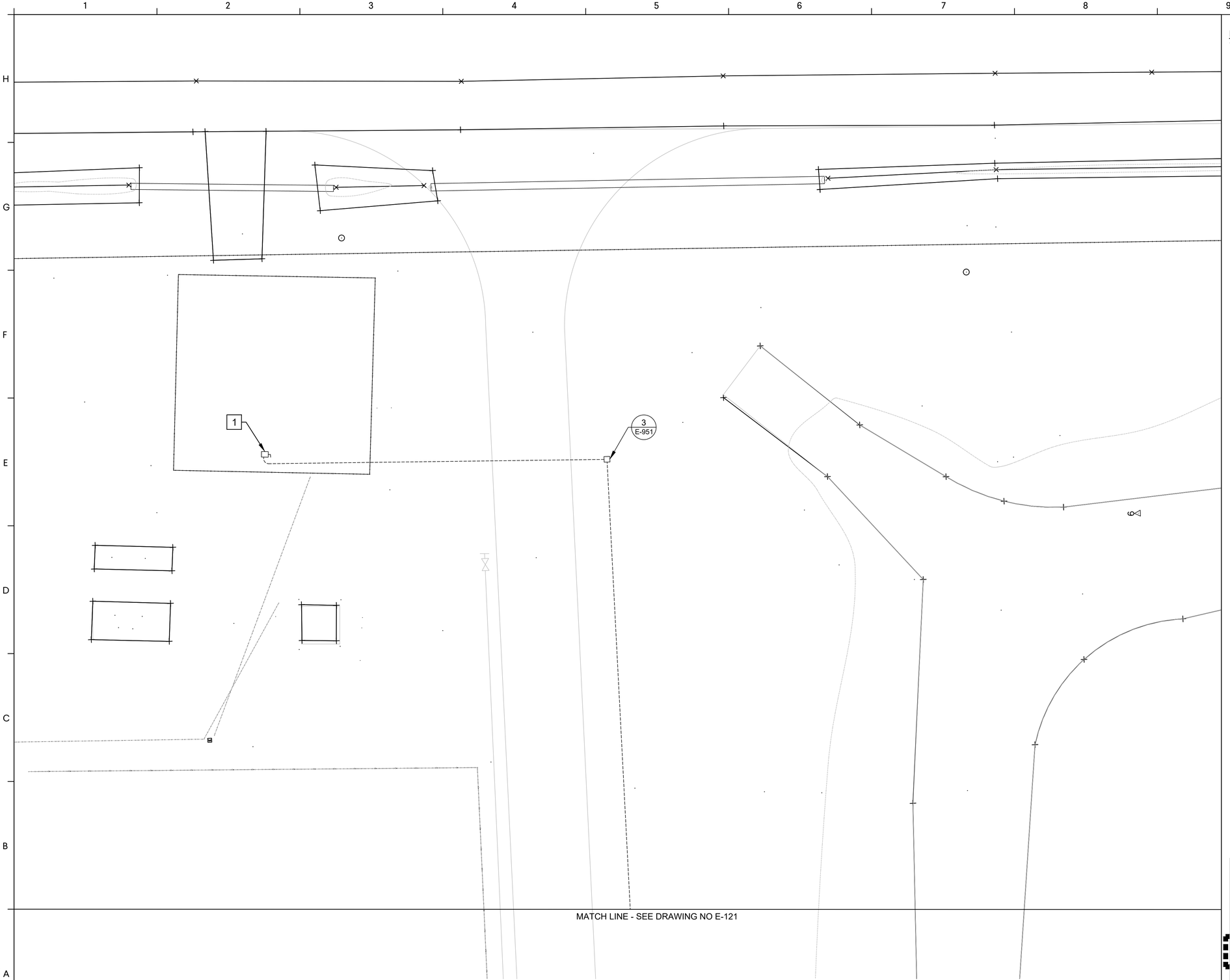
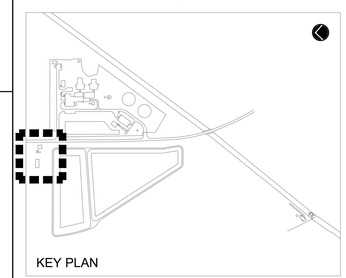


KEYED NOTES [#] :

1. EXISTING LIFT STATION SERVICE. CONTRACTOR SHALL UPGRADE EXISTING SERVICE TO 400A 277/480V, 3ϕ SERVICE W/ 400A CT STYLE METER (INCLUDING CT's AND CT-CABLE INSTALLED IN 3/4"C FROM METER LOCATION TO CT'S). NEW 400A, 480V, N3R, ENCLOSED CIRCUIT BREAKER, WITH A DOUBLE LUG KIT ON THE LOAD SIDE, CIRCUIT BREAKER TO BE INSTALLED AS A REPLACEMENT FOR THE EXISTING SERVICE DISCONNECT. FEEDER TO EXISTING LS CONTROL PANEL TO REMAIN, RECONNECT AS REQUIRED. FEED NEW CONTRACT DREDGING AND DEWATERING AREA WITH NEW CONDUCTORS AND CONDUIT.



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ENGINEER:		JEA
DESIGNER:		MGD
DRAWN BY:		JJM

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BEAUFORT-JASPER WATER & SEWER AUTHORITY

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No. 0339
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EXISTING LIFT STATION AND LAGOON

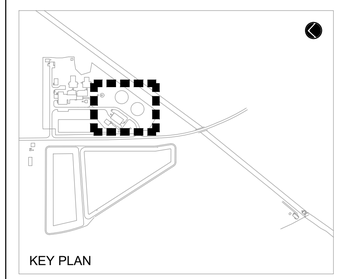
E-113

1 / E-113 **EXISTING LIFT STATION AND LAGOON**

10'-0" 5'-0" 0' 10'-0" 20'-0"
SCALE: 1" = 10'-0"

KEYED NOTES [#] :

1. EXISTING LOCAL CONTROL PANEL LCP-E LOCATED ON TOP FLOOR IN IT ROOM.
2. EXISTING POWER PANEL HE2 LOCATED ON BOTTOM FLOOR IN ELECTRICAL ROOM.



1 / E-117 **CONTROL BUILDING SITE VIEW**

10'-0" 5'-0" 0' 10'-0" 20'-0"

SCALE: 1" = 10'-0"

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No. 0339
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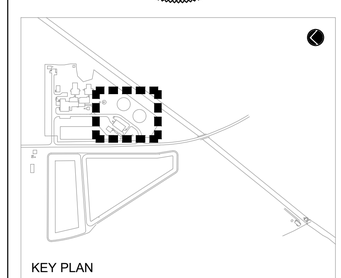
CONTROL BUILDING SITE VIEW

E-117

DRAWING FILE: V:\+Projects\2018 Projects\+GRE\VCGRE180003 - Purrysburg WTP\+Drawings\Electrical\E-117.dwg
PLOTTED: Jun 20, 2019 - 11:25am

KEYED NOTES [#] :

1. NEW LEVEL TRANSMITTER, LIT 818.
2. EXISTING PLC PANEL LCP-H. TERMINATE AND INTEGRATE NEW FLOW TRANSMITTER SIGNAL INTO EXISTING PLC BY UTILIZING ONE OF THE EXISTING SPARE ANALOG INPUTS.
3. USE EXISTING 20/1P SPARE BREAKER LH1-12 IN EXISTING PANEL LH1 TO FEED NEW LEVEL TRANSMITTER.
4. UTILIZE EXISTING 2" EMPTY CONDUITS 'D' AND 'F' VIA JUNCTION EMH-12 IN EXISTING DUCT BANK 29 FOR NEW WIRING FROM NEW LEVEL TRANSMITTER TO PANELS LH1 AND LCP-H .
5. NEW DUCT BANK FOR NEW LEVEL ELEMENT CABLING TO CONNECT WITH EMH-12. SEE DETAIL 5/E-951.


KEY PLAN

1 / E-118 **YARD PIPING NEW CLEARWELL ELECTRICAL PLAN**

20'-0" 10'-0" 0' 20'-0" 40'-0"

SCALE: 1" = 20'-0"

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ISSUE	DATE	
30% SUBMITTAL		
75% SUBMITTAL	05.20.19	
90% SUBMITTAL		
FINAL	06.21.19	
PROJECT MANAGER:		JEA
ENGINEER:		JEA
DESIGNER:		MGD
DRAWN BY:		JJM

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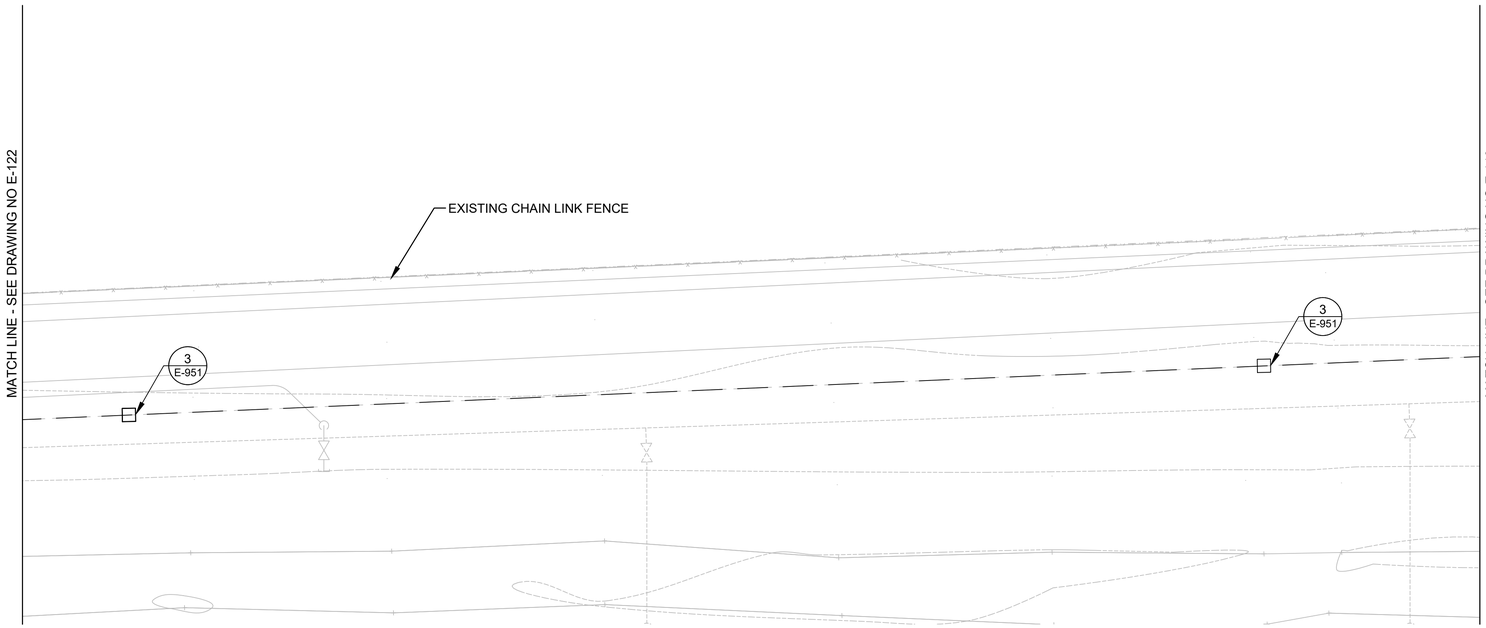
PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA
GOODWYN, MILLS & CAWOOD INC.
No. 0339
CERTIFICATE OF AUTHORIZATION

YARD PIPING NEW CLEARWELL ELECTRICAL PLAN

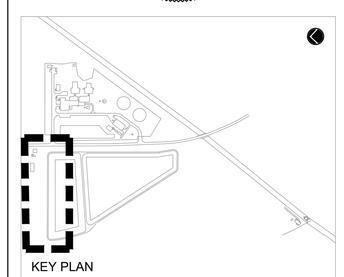
E-118



1 / E-121 **STAGING AREA FOR CONTRACT DREDGING ELECTRICAL PLAN**

20'-0" 10'-0" 0' 20'-0" 40'-0"

SCALE: 1" = 20'-0"



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90% SUBMITTAL		
FINAL	06.21.19	
PROJECT MANAGER:	JEA	GMCNETWORK.COM
ENGINEER:	JEA	
DESIGNER:	MGD	IF THIS BAR DOES NOT MEASURE ONE INCH
DRAWN BY:	JJM	DRAWING IS NOT LABELED TO SCALE

PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 26294
6.21.19
JOHN AVERRETT

SOUTH CAROLINA
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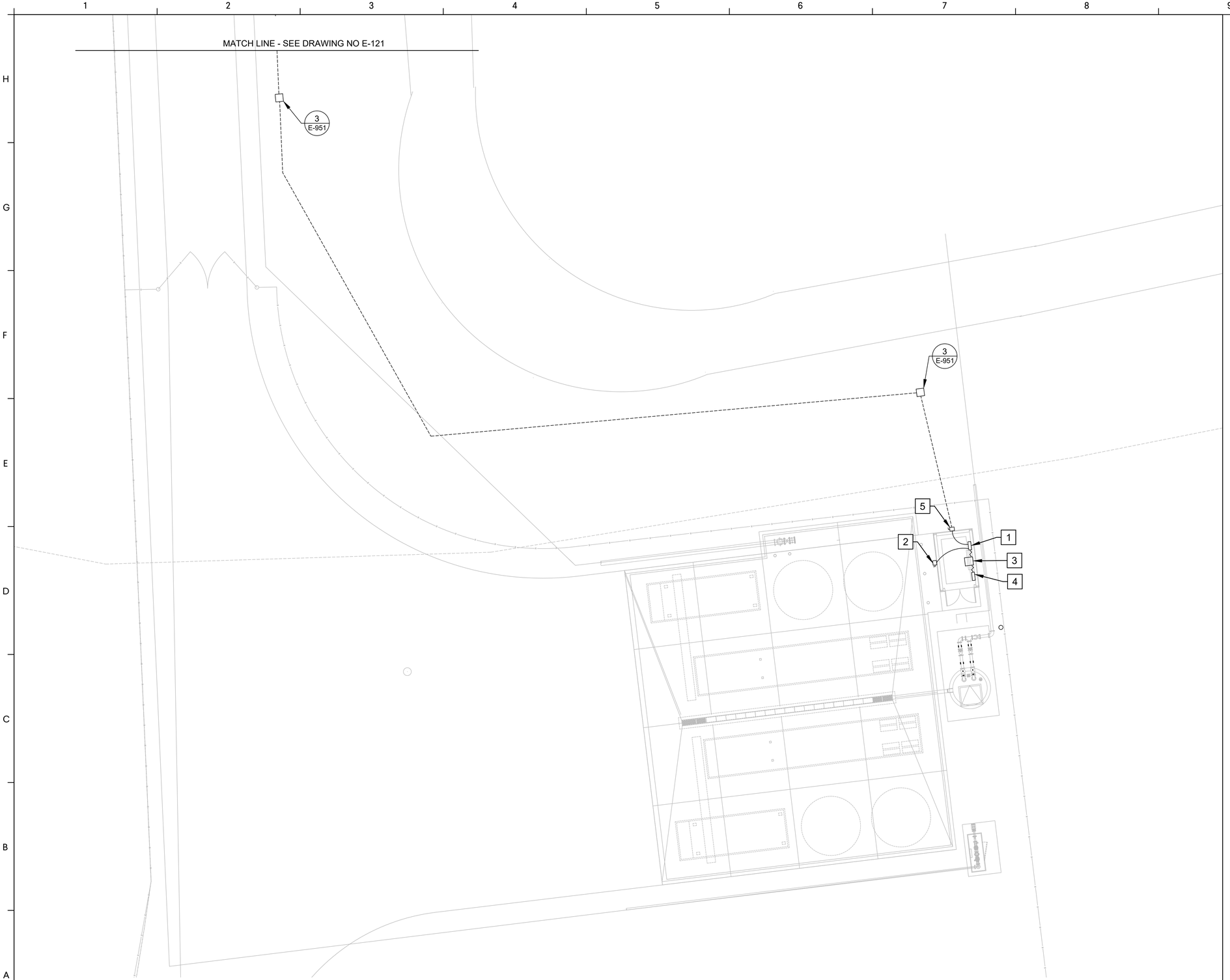
STAGING AREA FOR CONTRACT DREDGING AND DEWATERING ELECTRICAL PLAN

E-121

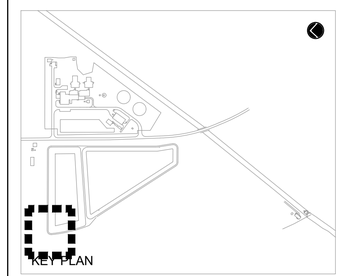
DRAWING FILE: V:\+Projects\2018 Projects\+GRE\VGRE180003 - Purrysburg WTP+\Drawings\Electrical\E-121.dwg
PLOTTED: Jun 20, 2019 - 11:25am

MATCH LINE - SEE DRAWING NO E-121



KEYED NOTES [#] :

1. 400A, 480V, 3ϕ PANEL 'A'.
2. 400A, 480V, 3ϕ, N3R, NF DISCONNECT.
3. 10 kVA, 480V TO 120/240V 1ϕ TRANSFORMER.
4. 60A, 120/240V, 1ϕ PANEL 'B'.
5. NEW 480V, 400A 3ϕ, N3R ENCLOSED CIRCUIT BREAKER.



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90% SUBMITTAL		
FINAL	06.21.19	
PROJECT MANAGER:		JEA
ENGINEER:		JEA
DESIGNER:		MGD
DRAWN BY:		JJM

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

CONTRACT DREDGING AND DEWATERING ELECTRICAL PLAN

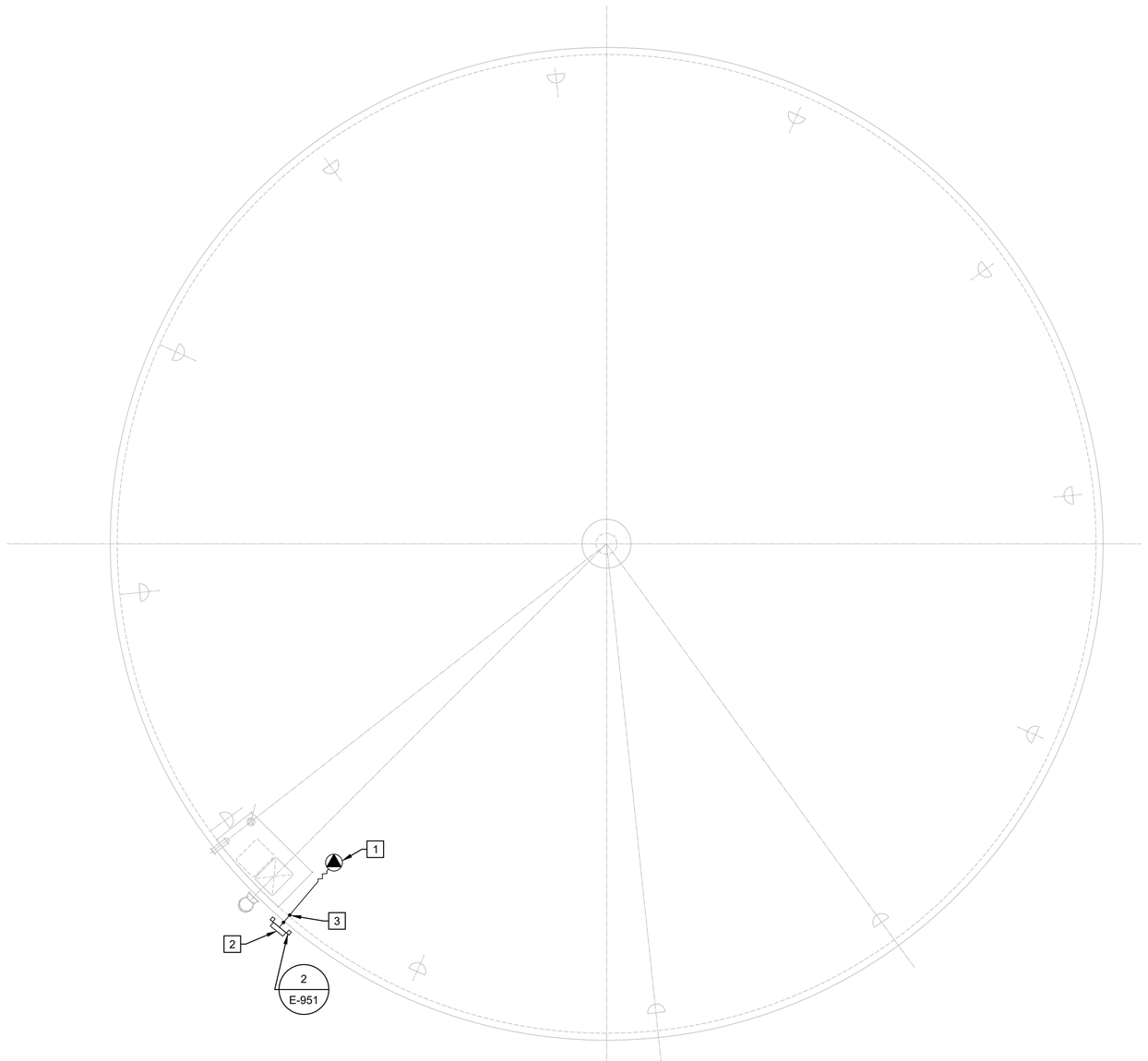
E-122

1
E-122

CONTRACT DREDGING AND DEWATERING ELECTRICAL PLAN

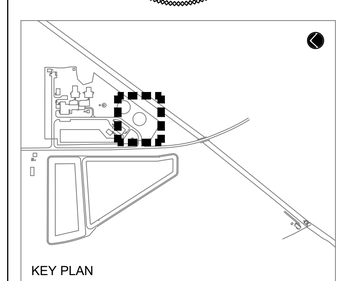
10'-0" 5'-0" 0' 10'-0" 20'-0"
SCALE: 1" = 10'-0"

DRAWING FILE: V:\+Projects\2018 Projects\+GREVGRE180003 - Purrysburg WTP\+Drawings\Electrical\E-122.dwg
PLOTTED: Jun 20, 2019 - 11:26am



KEYED NOTES [#] :

1. LEVEL TRANSDUCER, LE818.
2. LEVEL TRANSMITTER, LIT818.
3. LB CONDULET (TYPICAL).



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No. 26294
6.21.19
JOHN AVERRETT

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75% SUBMITTAL	05.20.19	
90% SUBMITTAL		
FINAL	06.21.19	
PROJECT MANAGER:		JEA
ENGINEER:		JEA
DESIGNER:		MGD
DRAWN BY:		JJM

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

CLEAWELL UPPER LEVEL ELECTRICAL PLAN

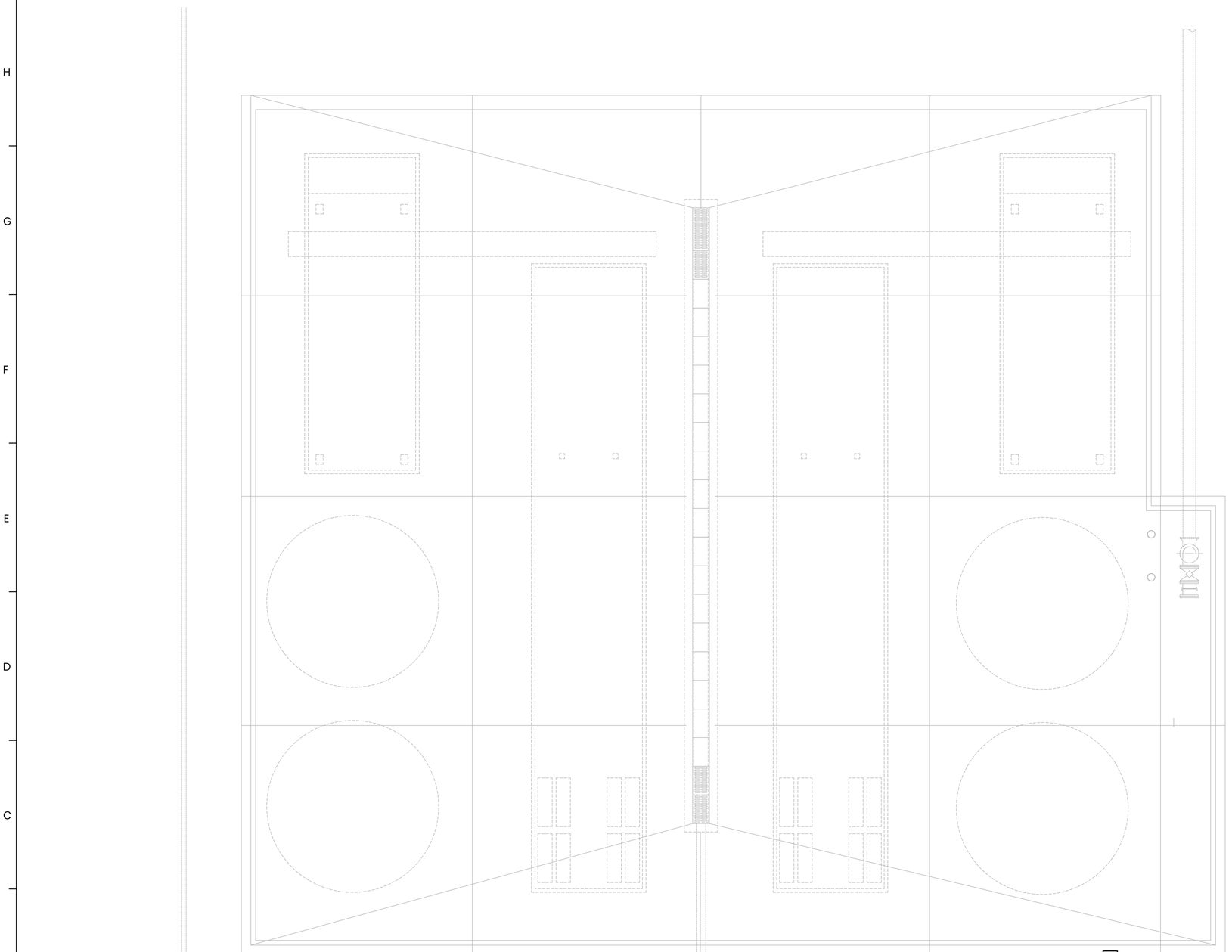
E-622

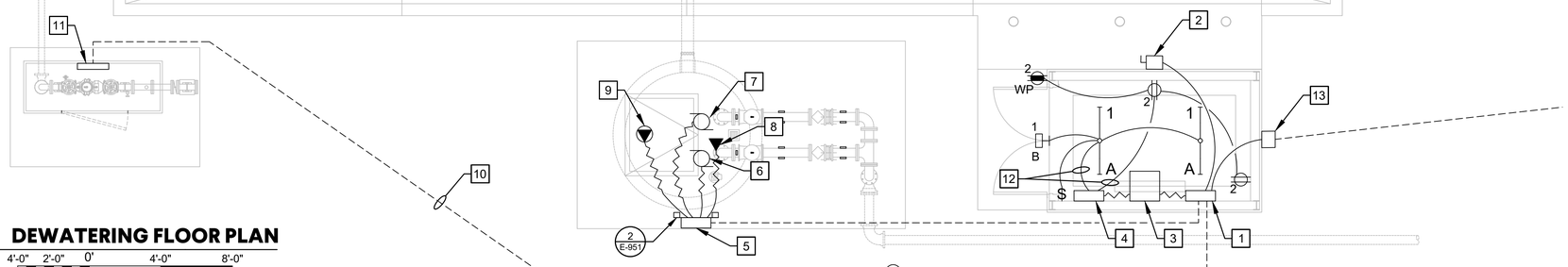
1 / E-622

CLEARWELL UPPER LEVEL ELECTRICAL PLAN

10'-0" 5'-0" 0' 10'-0" 20'-0"
SCALE: 1" = 10'-0"

DRAWING FILE: V:\Projects\2018 Projects\+GRE\CGRE180003 - Purrysburg WTP\+Drawings\Electrical\E-622.dwg
PLOTTED: Jun 20, 2019 - 11:26am





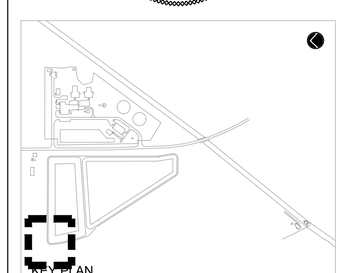
1 E-711 **DEWATERING FLOOR PLAN**

4'-0" 2'-0" 0' 4'-0" 8'-0"

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

KEYED NOTES [#]:

1. 400A, 480V, 3ϕ PANEL 'A'.
2. 400A, 480V, 3ϕ, N3R, NF DISCONNECT.
3. 10 kVA, 480V TO 120/240V 1ϕ TRANSFORMER.
4. 60A, 120/240V, 1ϕ PANEL 'B'.
5. PACKAGE PUMP STATION CONTROL PANEL.
6. MANUFACTURER SUPPLIED SUBMERSIBLE PUMP #1.
7. MANUFACTURER SUPPLIED SUBMERSIBLE PUMP #2.
8. MANUFACTURER SUPPLIED FLOAT SWITCHES INSTALLED.
9. MANUFACTURER SUPPLIED SUBMERSIBLE LEVEL TRANSDUCER.
10. 3#12, 1#12G - 3/4"C.
11. HEATER SUPPLIED BY EQUIPMENT VENDOR.
12. 2#12, 1#12G - 3/4"C.
13. 480V, 400A, 3Φ, N3R ENCLOSED CIRCUIT BREAKER.



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No. 26294
6.21.19
JOHN AVERRETT

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Greenville, SC 29601
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90% SUBMITTAL		
FINAL	06.21.19	
PROJECT MANAGER:		JEA
ENGINEER:		JEA
DESIGNER:		MGD
DRAWN BY:		JJM

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

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GOODWYN, MILLS & CAWOOD INC.
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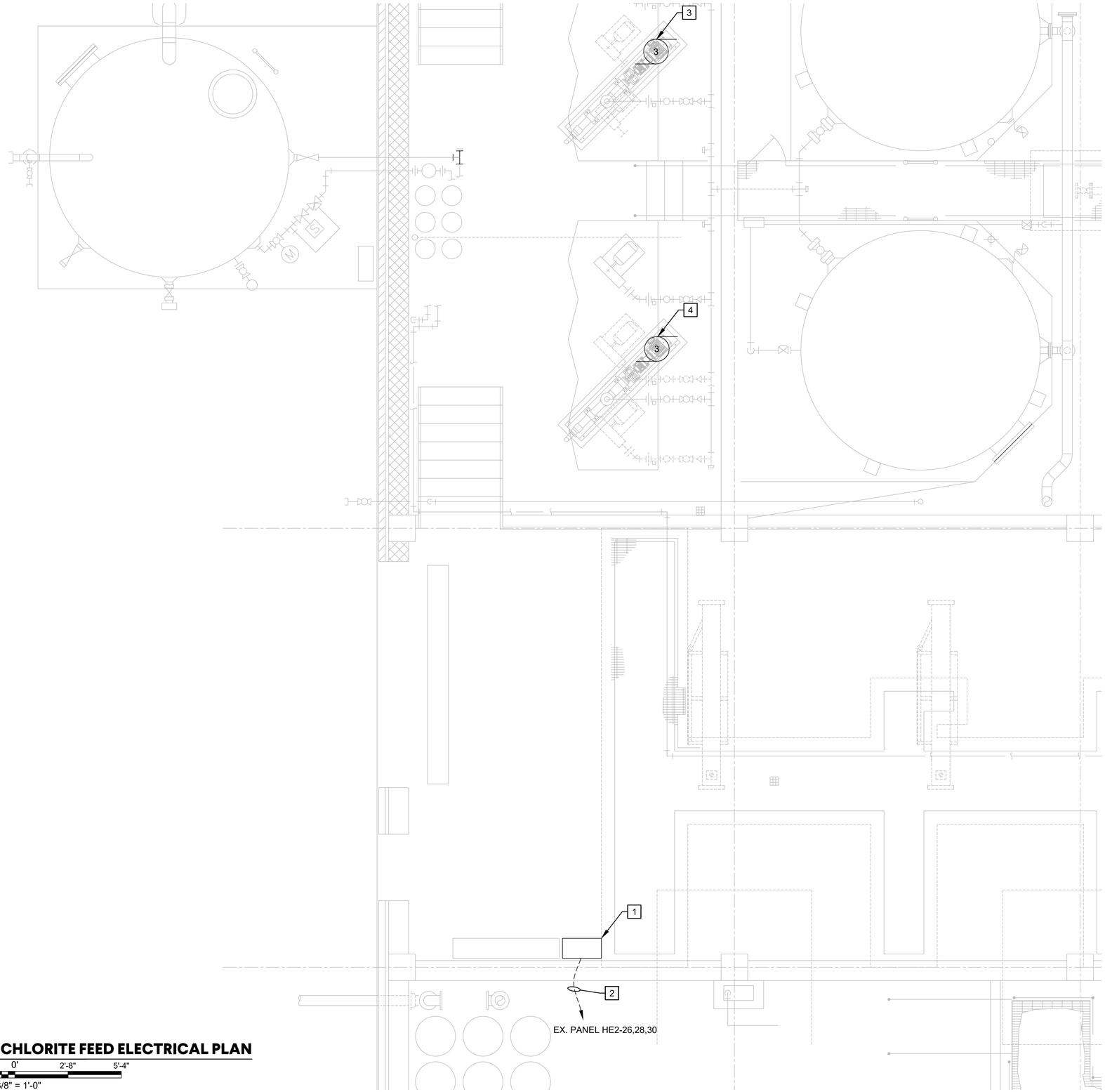
DEWATERING FLOOR PLAN

E-711



GENERAL NOTES:

1. ALL EXPOSED CONDUIT, FITTINGS, ETC. BELOW 48"AFF SHALL BE PVC COATED GALVANIZED RIGID STEEL. ALL EXPOSED CONDUIT, FITTINGS, ETC. ABOVE 48"AFF SHALL BE ALUMINUM. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL HAVE A MINIMUM RATING OF NEMA 4X. ALL SUPPORTING MATERIALS AND HARDWARE SHALL BE STAINLESS STEEL.

2. ALL EXPOSED CONDUIT, FITTINGS, ETC. WITHIN 10'-0" OF NaOCL TANKS SHALL BE PVC COATED GALVANIZED RIGID STEEL. ALL REMAINING CONDUIT, FITTINGS, ETC. EXPOSED TO THE WEATHER SHALL BE ALUMINUM. ALL ELECTRICAL EQUIPMENT AND DEVICES EXPOSED TO THE WEATHER SHALL HAVE A MINIMUM RATING OF NEMA 4X. ALL SUPPORTING MATERIALS AND HARDWARE EXPOSED TO THE WEATHER SHALL BE STAINLESS STEEL.

KEYED NOTES [#] :

1. NEW FCP-NaOCL-MP-2 FOR (2) NEW VFDS SUPPLIED BY SYSTEMS INTEGRATOR. EXTEND EXISTING CONTROL WIRING FROM FCP-NaOCL-MP-1 TO THIS NEW FIELD CONTROL PANEL. CONTROL WIRING CONSISTS OF THE FOLLOWING FOR EACH PUMP: 5#14 - 3/4"C FOR RUNNING AND FAILED STATUS OF EACH PUMP AND (1) TWISTED SHIELDED PAIR - 3/4"C FOR DOSAGE CONTROL ANALOG SIGNAL.

2. NEW 3#12, 1#12G - 1"C.

3. NEW 480V, 3HP NaOCL-MP-6 PUMP. PROVIDE NEW 600V, 30A, 3P, N4X DISCONNECT MOUNTED ON PEDESTAL. SEE DETAIL 6/E-951 FOR MOUNTING. SEE DETAIL 4/E-951 FOR NEW WIRING AND CONDUIT.

4. NEW 480V, 3HP NaOCL-MP-7 PUMP. REPLACE EXISTING DISCONNECT WITH NEW 600V, 30A, 3P, N4X DISCONNECT SWITCH. SEE DETAIL 4/E-951 FOR NEW WIRING AND CONDUIT.

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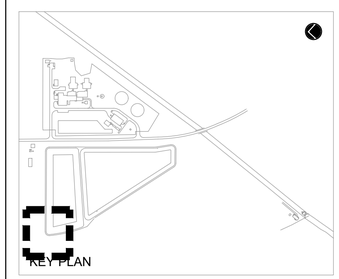
No. 26294
6.21.19
JOHN AVERRETT



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90% SUBMITTAL		
FINAL	06.21.19	
PROJECT MANAGER:		JEA
ENGINEER:		JEA
DESIGNER:		MGD
DRAWN BY:		JJM

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

HYPOCHLORITE FEED ELECTRICAL PLAN

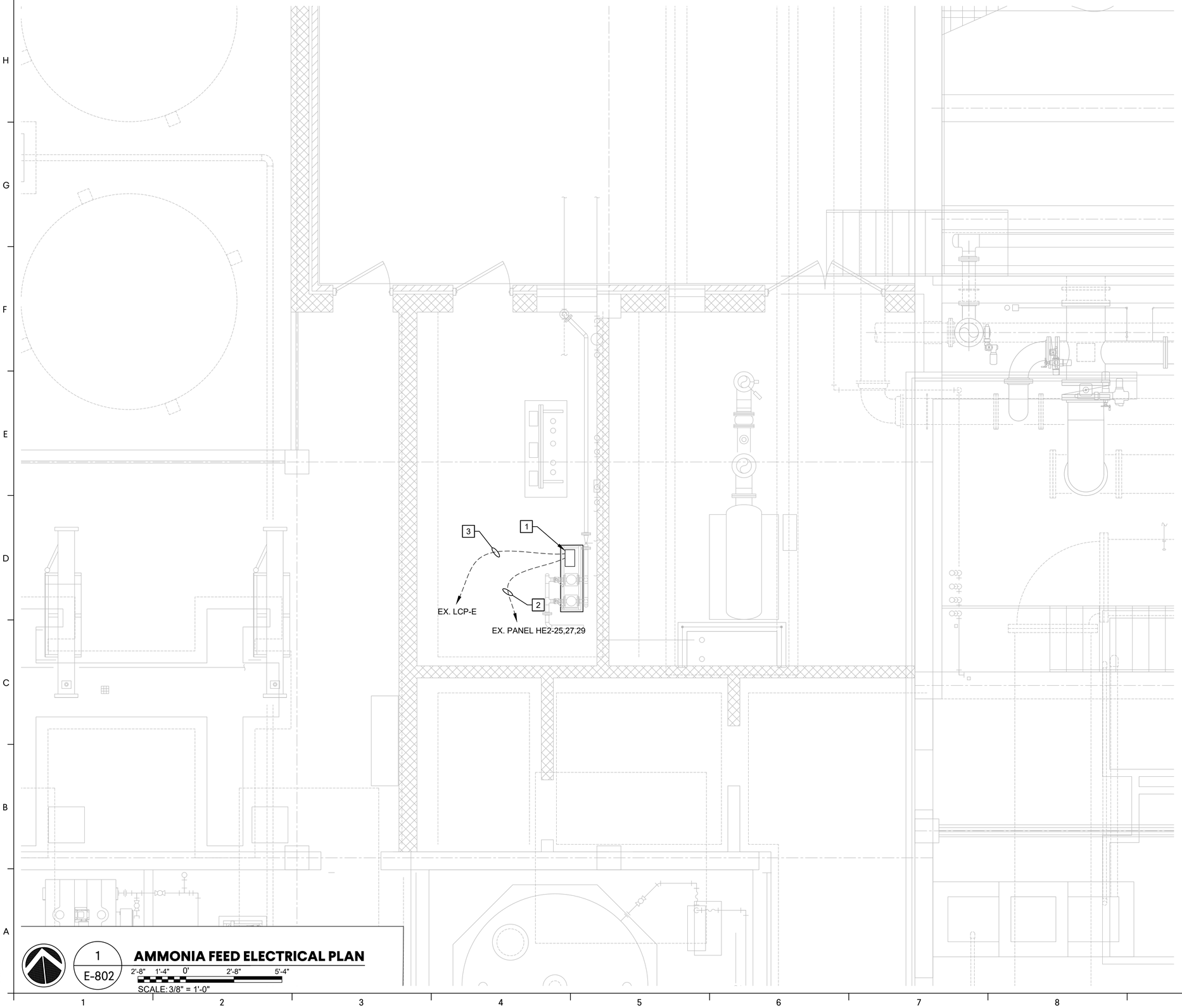
E-801

1 / E-801

HYPOCHLORITE FEED ELECTRICAL PLAN

2'-8" 1'-4" 0' 2'-8" 5'-4"
SCALE: 3/8" = 1'-0"

DRAWING FILE: V:\+Projects\2018 Projects\+CGRE\CGRE180003 - Purrysburg WTP\+Drawings\Electrical\E-801, E-802 HYPOCHLORITE AND AMMONIA FEED.dwg
PLOTTED: Jun 20, 2019 - 11:26am



1 E-802 **AMMONIA FEED ELECTRICAL PLAN**

2'-8" 1'-4" 0' 2'-8" 5'-4"

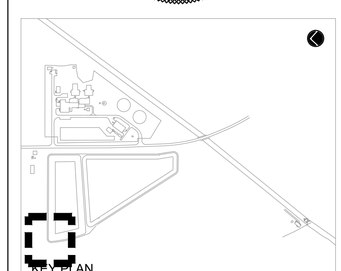
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. ALL EXPOSED CONDUIT, FITTINGS, ETC. BELOW 48"AFF SHALL BE PVC COATED GALVANIZED RIGID STEEL. ALL EXPOSED CONDUIT, FITTINGS, ETC. ABOVE 48"AFF SHALL BE ALUMINUM. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL HAVE A MINIMUM RATING OF NEMA 4X. ALL SUPPORTING MATERIALS AND HARDWARE SHALL BE STAINLESS STEEL.

KEYED NOTES [#]:

1. NEW FCP-FW-BP-1 FOR PACKAGE AMMONIA FEED SYSTEM.
2. NEW 3#10, 1#10G - 1"C.
3. NEW CAT 6 CABLE - 1"C.



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75% SUBMITTAL	05.20.19	MGD
90% SUBMITTAL		
FINAL	06.21.19	JJM
PROJECT MANAGER:		JEA
ENGINEER:		
DESIGNER:		MGD
DRAWN BY:		JJM

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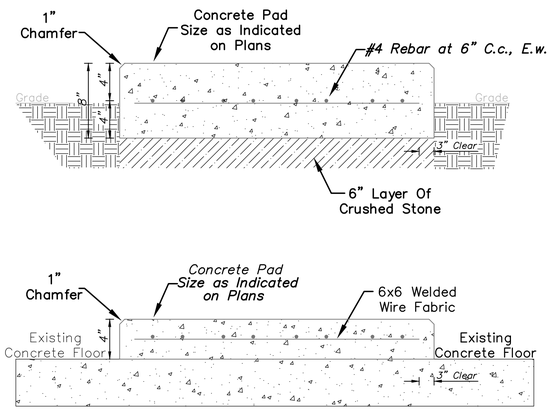
PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

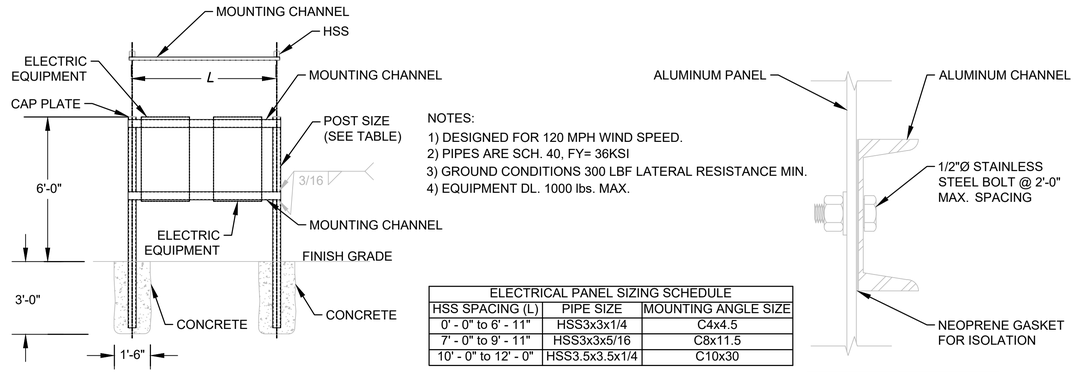
AMMONIA FEED ELECTRICAL PLAN

E-802



1 / E-951 **CONCRETE PAD DETAIL**

NOT TO SCALE



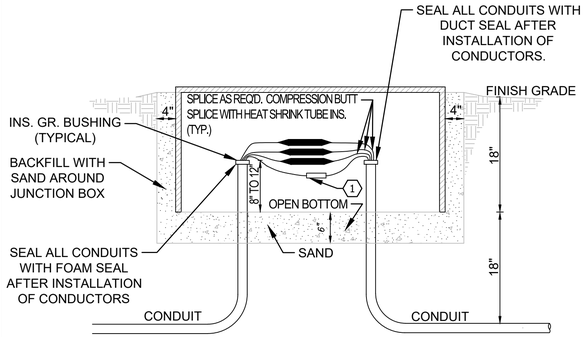
NOTES:
1) DESIGNED FOR 120 MPH WIND SPEED.
2) PIPES ARE SCH. 40, FY= 36KSI
3) GROUND CONDITIONS 300 LBF LATERAL RESISTANCE MIN.
4) EQUIPMENT DL. 1000 lbs. MAX.

ELECTRICAL PANEL SIZING SCHEDULE		
HSS SPACING (L)	PIPE SIZE	MOUNTING ANGLE SIZE
0' - 0" to 6' - 11"	HSS3x3x1/4	C4x4.5
7' - 0" to 9' - 11"	HSS3x3x5/16	C8x11.5
10' - 0" to 12' - 0"	HSS3.5x3.5x1/4	C10x30

FOR WHEN AN ALUMINUM BACKING PLATE IS REQUIRED

2 / E-951 **EQUIPMENT MOUNTING FRAME DETAIL**

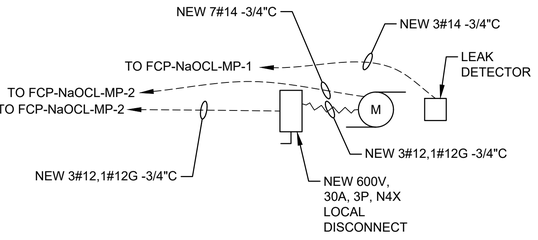
NOT TO SCALE



NOTES:
(1) INSULATION (HEAT SHRINK TUBING) ON GROUNDING. BUTT SPLICE IS NOT REQUIRED.

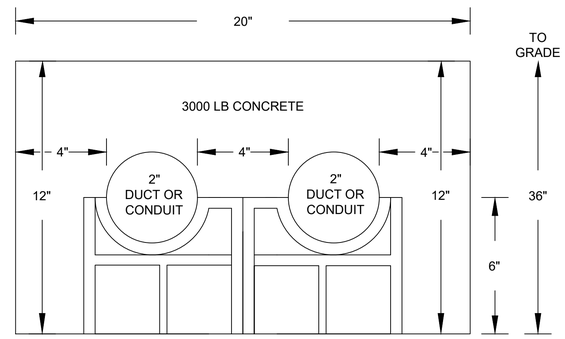
3 / E-951 **UNDERGROUND JUNCTION BOX**

NOT TO SCALE



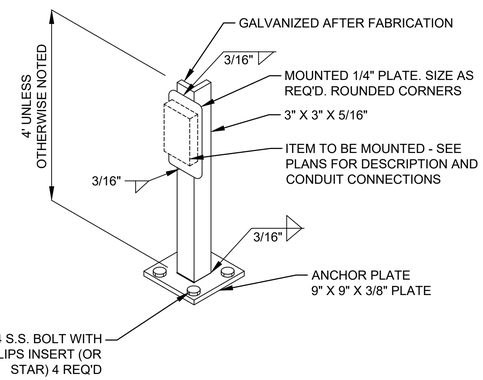
4 / E-951 **NaOCL METERING PUMP WIRING DETAIL**

NOT TO SCALE



5 / E-951 **DUCT BANK (2 DUCTS)**

NOT TO SCALE



6 / E-951 **SUPPORT DETAIL FOR FREE STANDING CONTROLS, SWITCHES, ETC.**

NOT TO SCALE

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75% SUBMITTAL		JEA
90% SUBMITTAL	06.21.19	MGD
FINAL		JJM
PROJECT MANAGER:		
ENGINEER:		
DESIGNER:		
DRAWN BY:		

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PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

BJWSA Project CIP #1366
GMC Project #CGRE180057

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No. 0339
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ELECTRICAL DETAILS

E-951

DRAWING FILE: V:\+Projects\2018 Projects\+GREVCGRE180003 - Purrysburg WTP\+Drawings\Electrical\E-001 - E-508 Electrical Details WWTP.dwg
PLOTTED: Jun 20, 2019 - 11:26am

EXISTING PANELBOARD SCHEDULE: HE2

LOCATION	CONTROL BUILDING		MAIN:	225A	MLO				EXISTING					
VOLTAGE	480V		SYSTEM: 3ø, 3 WIRE											
TRIM	SURFACE		INTERRUPTING RATING:		42K	AIC								
CKT	LOAD	BREAKER		PHASE (kVA)			PHASE (kVA)			BREAKER		LOAD	CKT	
#	DESCRIPTION	P	TRIP	A	B	C	A	B	C	TRIP	P	DESCRIPTION	#	
1													2	
3	EXISTING	3	60							125	3	EXISTING	4	
5													6	
7													8	
9	EXISTING	3	60							20	3	EXISTING	10	
11													12	
13													14	
15	EXISTING	3	30							20	3	EXISTING	16	
17													18	
19													20	
21	EXISTING	3	20							20	3	EXISTING	22	
23													24	
25													26	
27	***FCP-FW-BP-1***	***3***	***30***							***20***	***3***	***FCP-NaOCL-MP-2***	28	
29													30	
31													32	
33	SPACE	3	-							-	3	SPACE	34	
35													36	
37													38	
39	SPACE	3	-							-	3	SPACE	40	
41													42	

EXISTING PANELBOARD SCHEDULE: LH1

LOCATION	HIGH SERVICE PUMP STA.		MAIN:	150A	MCB				EXISTING					
VOLTAGE	120/208V		SYSTEM: 3ø, 4 WIRE											
TRIM	SURFACE		INTERRUPTING RATING:		10K	AIC								
CKT	LOAD	BREAKER		PHASE (kVA)			PHASE (kVA)			BREAKER		LOAD	CKT	
#	DESCRIPTION	P	TRIP	A	B	C	A	B	C	TRIP	P	DESCRIPTION	#	
1	EXISTING	1	20							20	1	EXISTING	2	
3	EXISTING	1	20							20	1	EXISTING	4	
5	EXISTING	1	20							20	1	SPARE	6	
7	SPARE	1	20							20	1	SPARE	8	
9	EXISTING	1	30							20	1	SPARE	10	
11	EXISTING	1	20							***20***	***1***	***LIT-818***	12	
13	EXISTING	1	20							20	1	EXISTING	14	
15	EXISTING	1	20							20	1	EXISTING	16	
17	EXISTING	1	20							20	1	EXISTING	18	
19	EXISTING	1	20							20	1	EXISTING	20	
21	EXISTING	1	30							30	1	EXISTING	22	
23	EXISTING	1	20							20	1	EXISTING	24	
25	EXISTING	1	20							20	1	EXISTING	26	
27	SPARE	1	20							20	1	EXISTING	28	
29	SPARE	1	20							20	1	EXISTING	30	
31	SPACE	1	-							-	1	SPACE	32	
33	SPACE	1	-							-	1	SPACE	34	
35	SPACE	1	-							-	1	SPACE	36	
37	SPACE	1	-										38	
39	SPACE	1	-							60	3	EXISTING	40	
41	SPACE	1	-										42	

PANELBOARD SCHEDULE: A

LOCATION	DEWATERING		MAIN:	400A	MCB									
VOLTAGE	277/480		SYSTEM: 3ø, 4 WIRE											
TRIM	SURFACE		INTERRUPTING RATING:		42K	AIC								
CKT	LOAD	BREAKER		PHASE (kVA)			PHASE (kVA)			BREAKER		LOAD	CKT	
#	DESCRIPTION	P	TRIP	A	B	C	A	B	C	TRIP	P	DESCRIPTION	#	
1	SLUDGE DEWATERING EQUIPMENT DISCONNECT	3	350A							30A	3	LV TRANSFORMER	2	
3													4	
5													6	
7	PACKAGE PUMP STATION CONTROL PANEL	3	30A							20A	3	HEATER	8	
9													10	
11													12	
13													14	
15													16	
17													18	
19													20	
21													22	
23													24	
25													26	
27													28	
29													30	

PANELBOARD B SCHEDULE

LOCATION	DEWATERING		MAIN: 60A MCB						
VOLTAGE	120/240		SYSTEM: 1ø, 3 WIRE						
TRIM	SURAFCE		INTERRUPTING RATING: 18K AIC						
CKT	LOAD	BREAKER		PHASE (KW)		PHASE (KW)		BREAKER		LOAD	CKT
#	DESCRIPTION	P	TRIP	A	B	A	B	TRIP	P	DESCRIPTION	#
1	LIGHTS	1	20	0.20		0.20		20	1	RECEPTACLES	2
3											4
5											6
7											8
9											10
11											12
13											14
15											16
17											18

LUMINAIRE SCHEDULE

FIXTURE MARK	LAMPS NO	LAMPS WATTS	LAMPS TYPE	VOLTAGE	MAKE	MOUNTING TYPE	MODEL	DESCRIPTION
A	1	21	LED/835	UNV	METALUX	SURFACE	4SNLED-LD5-30SL-LN-UNV-L835-CD1-U	4' STRIP FIXTURE WITH ROUND LENS
B	1	109.1	LED	UNV	XTRALIGHT	WALL PACK	VNTW-11000L-40K-DIM-3M-BZ	LED WALL PACK

LUMINAIRE SCHEDULE NOTES:

1. EQUIVALENT PRODUCTS WILL BE REVIEWED PROVIDED THE REQUIREMENTS FOR PRIOR APPROVAL OUTLINED IN THE SPECIFICATIONS ARE MET.

2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL FIXTURE MOUNTING PROVISIONS WITH THE ASSOCIATED CEILING TYPE(S) BEFORE ORDERING FIXTURES

3. IN ORDER TO ENSURE PROPER COORDINATION AND LONG TERM SUPPORT FOR THE OWNER, ALL LIGHTING FIXTURES WILL BE PURCHASED THROUGH A MANUFACTURER'S REPRESENTATIVE AND DISTRIBUTORS LOCATED WITHIN ONE HUNDRED AND FIFTY (150)MILES OF THE PROJECT SITE. SUBMITTALS RECEIVED THAT DO NOT COMPLY WITH THIS WITH THIS REQUIREMENT WILL BE REJECTED WITHOUT REVIEW. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DELAYS CAUSED BY NON-COMPLIANCE WITH THIS REQUIREMENT.

4. ALL EMERGENCY AND EXIT LIGHTS WILL BE CONNECTED TO UNSWITCHED HOT LEG SO THAT BATTERY OPERATES UPON POWER FAILURE.

SOUTH CAROLINA PROFESSIONAL ENGINEER LICENSE No. 26294 6.21.19 JOHN AVERRETT

GMC

101 East Washington Street
Suite 200
Greenville, SC 29601
T 864.527.0460
GMCNETWORK.COM

ISSUE	DATE	
30% SUBMITTAL	05.20.19	JEA
75% SUBMITTAL		MGD
90% SUBMITTAL		JJM
FINAL	06.21.19	JEA

PROJECT MANAGER:
ENGINEER:
DESIGNER:
DRAWN BY:

IF THIS BAR DOES NOT MEASURE ONE INCH DRAWING IS NOT LABELED TO SCALE

PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
BEAUFORT-JASPER WATER & SEWER AUTHORITY

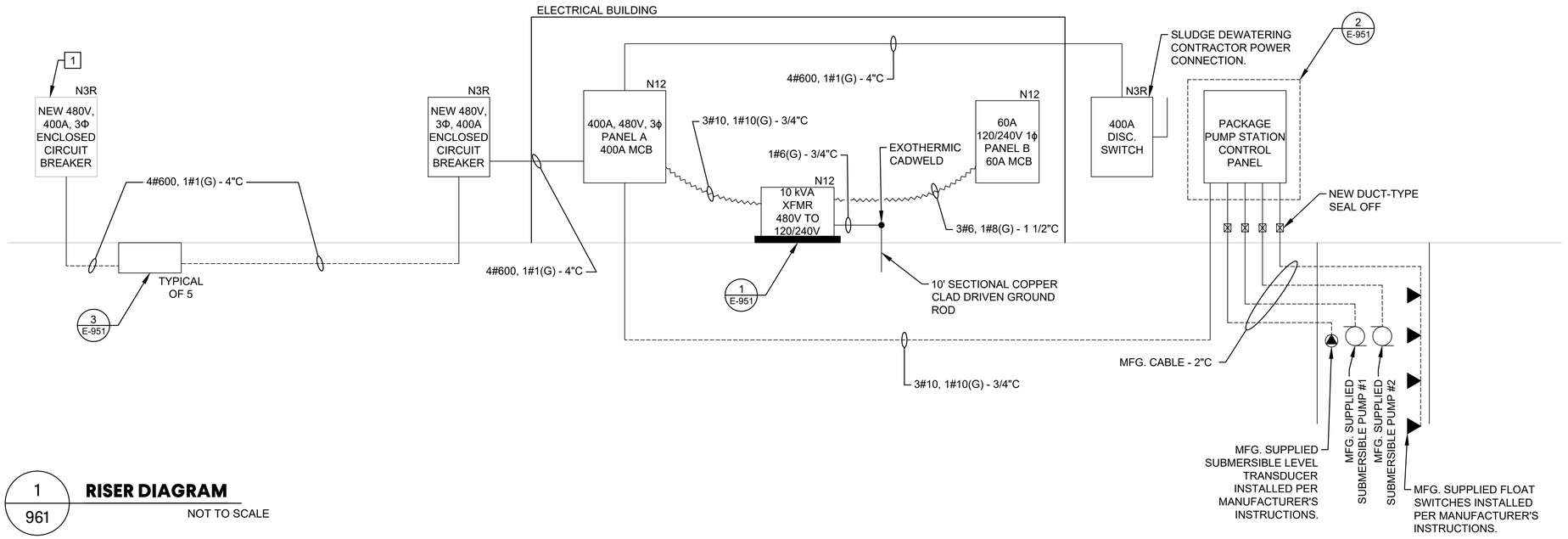
BJWSA Project CIP #1366
GMC Project #CGRE180057

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GOODWYN, MILLS & CAWOOD INC. No. 0339

PANELBOARD SCHEDULES

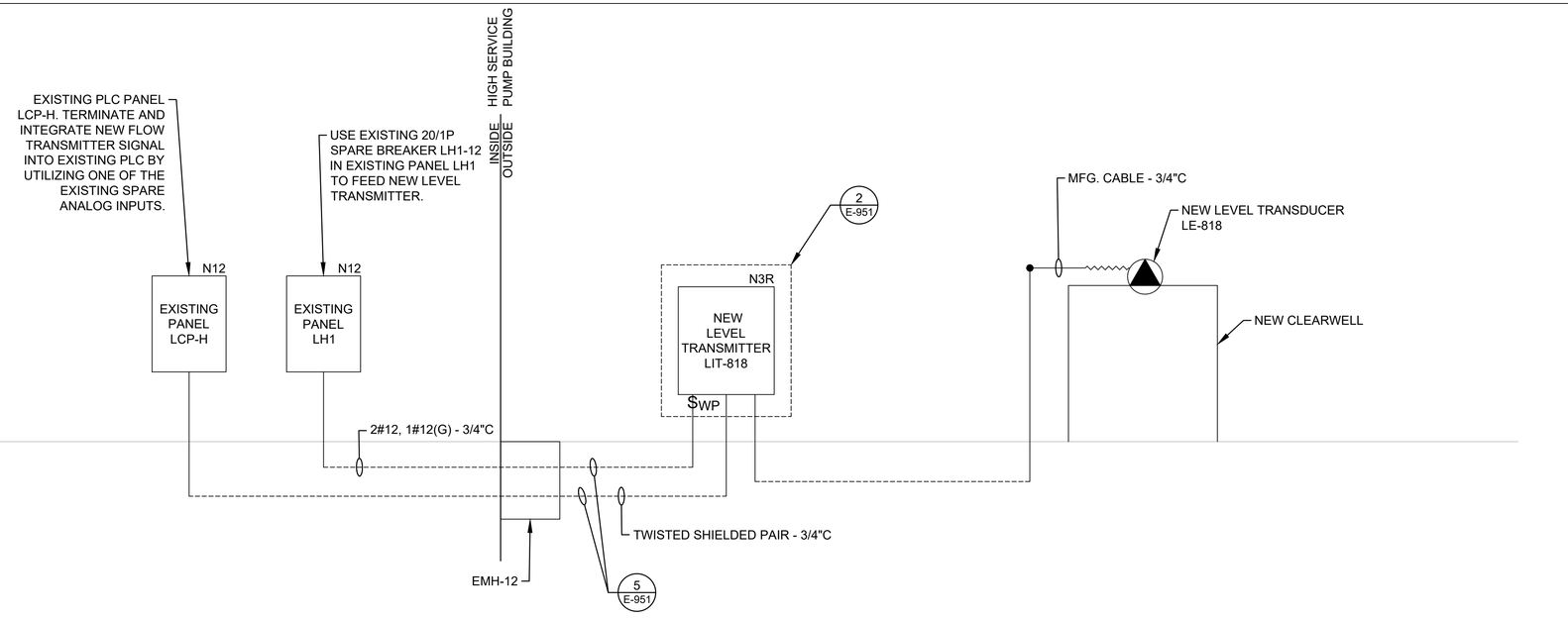
E-952

DRAWING FILE: V:\Projects\2018 Projects\+CGREVGRE180003 - Purrysburg WTP\+Drawings\Electrical\E-952 PANEL SCHEDULES.dwg
PLOTTED: Jun 20, 2019 - 11:27am



1 / 961 **RISER DIAGRAM**

NOT TO SCALE



2 / 961 **RISER DIAGRAM**

NOT TO SCALE

KEYED NOTES [#] :

1. EXISTING LIFT STATION SERVICE. CONTRACTOR SHALL UPGRADE EXISTING SERVICE TO 400A 277/480V, 3ϕ SERVICE W/ 400A CT STYLE METER (INCLUDING CT's AND CT-CABLE INSTALLED IN 3/4"C FROM METER LOCATION TO CT'S). NEW 400A, 480V, N3R ENCLOSED CIRCUIT BREAKER, WITH A DOUBLE LUG KIT ON THE LOAD SIDE TO BE INSTALLED AS A REPLACEMENT FOR THE EXISTING SERVICE DISCONNECT. FEEDER TO EXISTING LS CONTROL PANEL TO REMAIN, RECONNECT AS REQUIRED. FEED NEW CONTRACT DREDGING AND DEWATERING AREA WITH NEW CONDUCTORS AND CONDUIT.

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PROJECT MANAGER:		IF THIS BAR DOES NOT MEASURE ONE INCH DRAWING IS NOT LABELED TO SCALE
ENGINEER:		
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DRAWN BY:		

PURRYSBURG WTP
EXPANSION TO 30 MGD - PHASE 1
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SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 26294
6.21.19
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RISER DIAGRAMS

E-961