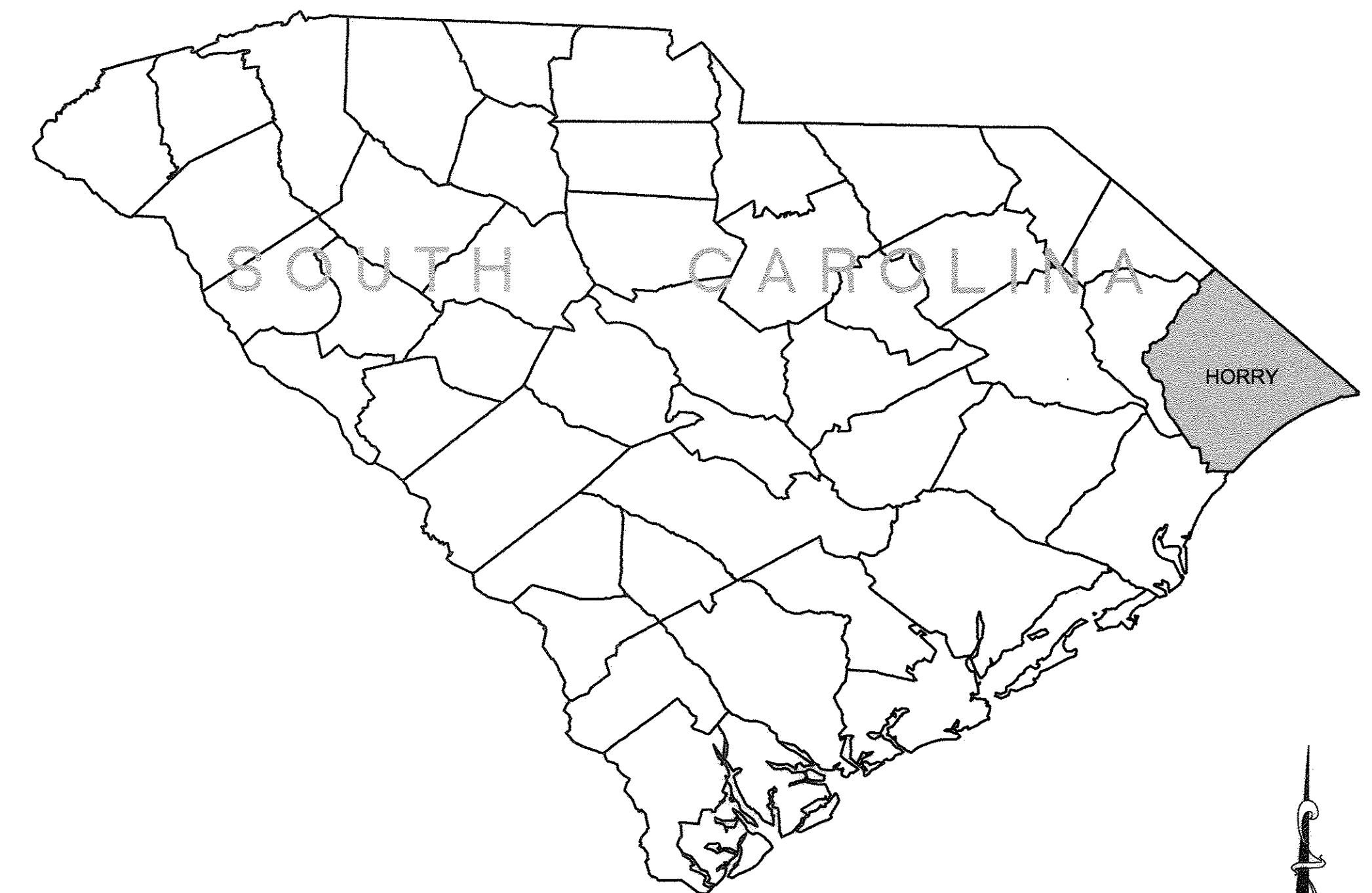
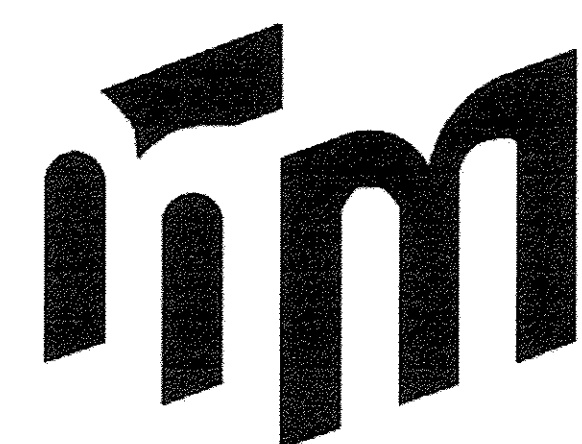


# VEREEN WWTP 30" EFFLUENT DISCHARGE

HORRY COUNTY, SOUTH CAROLINA  
PROJ #: 919-01



LOCATION MAP  
N.T.S.



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MAY 2011

JOB NO. 38014

11x17 DWGS. ARE  
TRUE HALF SCALE

AS-BUILT

Version: 8

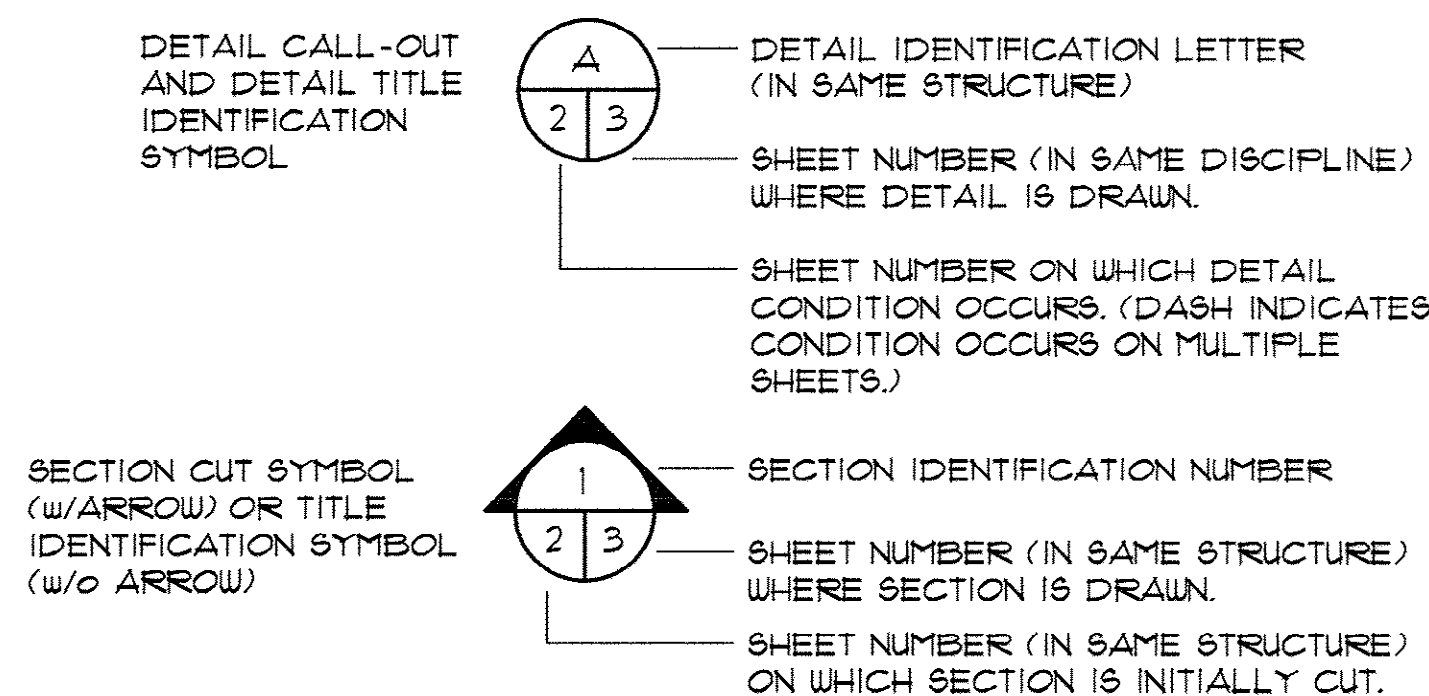
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GENERAL CONSTRUCTION ABBREVIATIONS

#	NUMBER OR POUND	INFL	INFLUENT
Ø	DIAMETER	INS.	INSIDE
&	AND	INV.	INVERT
<	LESS THAN	JT.	JOINT
<=	LESS THAN OR EQUAL TO	JTS	JOINTS
>	GREATER THAN	L.L.O.	LONG LEG OUT
@	AT	LB	POUND
A.B.	ANCHOR BOLT	LG	LONG
AFF.	ABOVE FINISHED FLOOR	L.P.	LOW POINT
ADDL	ADDITIONAL	M.J.	MECHANICAL JOINT
ALUM	ALUMINUM OR ALUM	MATL.	MATERIAL
APPROX	APPROXIMATE(LY)	MAS	MASONRY
ARCH	ARCHITECTURAL	MAX	MAXIMUM
BM	BENCH MARK OR BEAM	MECH	MECHANICAL
BOTT.	BOTTOM	MFR	MANUFACTURER
B.W.	BLOCK WALL	MH	MANHOLE
C.I.	CAST IRON	MIN	MINIMUM
C/C	CENTER TO CENTER	MNTG	MOUNTING
CAP	CAPACITY	N.P.W.	NONPOTABLE WATER
CIRCUM	CIRCUMFERENCE	N.T.S.	NOT TO SCALE
CL	CLAY	NO.	NUMBER
CLR.	CLEARANCE	O.C.	ON CENTER
CL	CENTERLINE	O/O	OUTSIDE TO OUTSIDE
CL2	CHLORINE	OPNG	OPENING
CLARIF	CLARIFIER	OX	OXIDATION
CHEM.	CHEMICAL	P.E.	PLAIN END
COL	COLUMN	PED	PEDESTAL
CONC.	CONCRETE	PL	PLATE
CONST	CONSTRUCTION	PLCS.	PLACES
CONT	CONTINUOUS	PROJ	PROJECTION
CONTR	CONTRACTOR	P.S.	PUMP STATION
CU	COPPER	P.V.C.	POLYVINYL CHLORIDE
C.W.	CONCRETE WALL	R.C.P.	REINFORCED CONCRETE PIPE
D	DIAMETER	RAD.	RADIUS
DIA	DIAMETER	RAS	RETURN ACTIVATED SLUDGE
D.I.P.	DUCTILE IRON PIPE	RED	REDUCER
DISCH.	DISCHARGE	REF	REFERENCE
DP	DEEP	REINF	REINFORCING OR REINFORCED
DWLS.	DOWELS	REQ'D	REQUIRED
EF.	EACH FACE	S.S.	STAINLESS STEEL
E.J.	EXPANSION JOINT	SCH.	SCHEDULE
EA	EACH	SHT	SHEET
EFF.	EFFLUENT	SIM	SIMILAR
EL	ELEVATION	SO2	SULFUR DIOXIDE
ELEV	ELEVATION	SFA	SPACES
EQ	EQUAL	SQ.	SQUARE
EQUIP	EQUIPMENT	STD.	STANDARD
EXIST.	EXISTING	STL	STEEL
EXP.	EXPANSION	STN	STAINLESS
F.E.S.	FLARED END SECTION	S.W.	SLAB WIDTH
F.R.P.	FIBERGLASS	S.W.D.	SIDE WALL DEPTH
	REINFORCED PLASTIC	T/	TOP OF
FIG	FIGURE	T.C.J./C.J.	TYP. CONTROL JOINT, CONSTRUCTION JOINT
FIN	FINISHED		
FL.	FLANGE	THRD	THREAD(S)X(ED)
FLR	FLOOR	TRICK	TRICKLING
FTG	FOOTING	TYP	TYPICAL
GALV	GALVANIZED	U.O.N.	UNLESS OTHERWISE NOTED
HDUE	HARDWARE	VERT	VERTICAL
HK	HOOK	W.W.F.	WELDED WIRE FABRIC
HORIZ.	HORIZONTAL	W/	WITH
H.P.	HIGH POINT	W/O	WITHOUT
HYD	HYDRANT	WAS	WASTE ACTIVATED SLUDGE
I.D.	INSIDE DIAMETER	W/L	WATER LEVEL
O.D.	OUTSIDE DIAMETER		

SECTION/DETAIL LEGEND



GENERAL NOTES

- PIPE SEPARATION: THE FOLLOWING MINIMUM PIPE SEPARATION WILL BE MAINTAINED:  
A. 24 INCHES VERTICAL SEPARATION BETWEEN CROSSING OF SANITARY SEWER AND STORM SEWERS.  
B. 18 INCHES VERTICAL SEPARATION BETWEEN CROSSING OF SEWER (INCLUDING FORCE MAINS) AND WATER MAINS (WATER OVER SEWER). ANYTIME A SEWER CROSSES OVER A WATER MAIN, BOTH MUST BE DUCTILE IRON PIPE, PRESSURE TESTED TO 150 PSI.  
C. 10 FEET MINIMUM HORIZONTAL SEPARATION BETWEEN SANITARY SEWER (INCLUDING FORCE MAINS) AND WATER MAINS. IF 10 FEET HORIZONTAL SEPARATION CANNOT BE MAINTAINED, THEN DUCTILE IRON PIPE WILL BE USED 10 FEET EITHER SIDE OF CROSSING AND ALONG ENTIRE LENGTH OF LINE LESS THAN 10 HORIZONTAL FEET FROM WATER MAINS. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE ENGINEER IN THE FIELD BEFORE PAYMENT WILL BE MAKE AT DUCTILE IRON PRICES.
- STAKEOUT: CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT LAYOUT BASED ON THE PLANS & PERMITS. LOCATION OF LINE WILL BE STAKED BY THE CONTRACTOR AND VERIFIED BY THE OWNER OR THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION.
- UTILITY LOCATION: THE CONTRACTOR SHALL CONTACT THE POWER CO., GAS CO. AND TELEPHONE CO. FOR THE EXACT LOCATION OF ALL UNDERGROUND MAINS, CABLES OR LINES BEFORE CONSTRUCTION BEGINS.
- DISTURBANCE DURING CONSTRUCTION: THE CONTRACTOR SHALL REVIEW THE PLANS AND SPECIFICATIONS FOR LOCATION OF ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL REPAIR ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AT NO COST TO GSW&SA.
- ALL ROAD SIGNS AND MAILBOXES REMOVED AS A RESULT OF THIS INSTALLATION WILL BE REPLACED WITHOUT DELAY.
- NO BORE PITS WILL BE ALLOWED WITHIN FIVE FEET OF EDGE OF PAVEMENT. NO BORE PITS WILL BE LEFT OPEN OVERNIGHT OR UNATTENDED.
- NO METERS OR VALVES WILL BE ALLOWED IN THE DITCH LINE. ALL METERS AND VALVES WILL BE FLUSH WITH THE EXIST. GRADE OF SHOULDER.
- NO UTILITY INSTALLATION WILL BE ALLOWED TO CONTINUE PAST 1000' WITHOUT COMPLETING SHOULDER AND DITCH LINE.

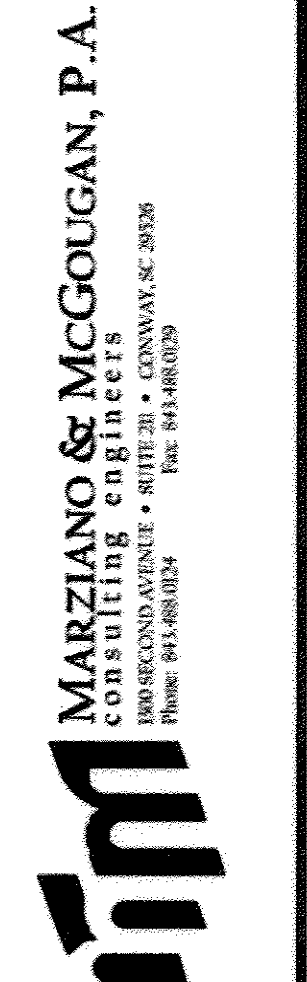
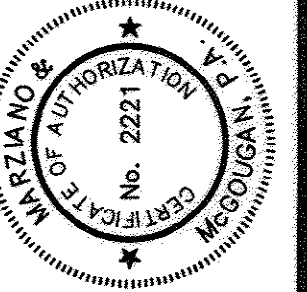
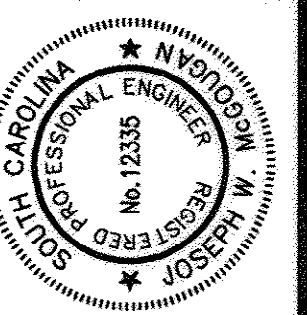
- FOR PUBLIC OR PRIVATE WELLS, PIPING MATERIAL, TESTING METHODS AND ACCEPTABILITY STANDARDS MEETING WATER MAIN STANDARDS SHALL BE USED WHERE THE MINIMUM SEPARATIONS IS LESS THAN 100 FEET. ALL APPURTENANCES (VALVE, ARV, FITTINGS, MANHOLES, TRANSITIONS, ETC.) SHALL BE OUTSIDE THE 100 FOOT RADIUS. THE MINIMUM SEPARATION SHALL HOWEVER NOT BE LESS THAN 25 FEET FROM A PRIVATE WELL OR 50 FOOT FROM A PUBLIC WELL.
- WELL RADIUS SYMBOL: EACH PRIVATE WELL HAS BEEN LOCATED ON THE PLAN SHEET. A SYMBOL REPRESENTING RADII OF 25', 50' AND 100' ARE SHOWN.
- ALL WORK PERFORMED WITHIN SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION RIGHTS-OF-WAY SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE SCDOT CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL OR UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THE WORK AND ADHERING TO THE RIGHT-OF-WAY ENCROACHMENT CONTRACT SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNER TO ACCURATELY DETERMINE THE LOCATION OF EXISTING WATER MAINS AND SEWER LINES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL TAKE ADDITIONAL CAUTION IN EXCAVATING AROUND THE SERVICE LINES AND MAINS WHILE WORKING WITHIN THIS PROJECT. ANY DAMAGE TO THE MAINS OR SERVICE LINES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING CULVERTS AND DRAINAGE STRUCTURES AS NECESSARY DURING THE CONSTRUCTION OF THE SEWER LINES. ANY DAMAGE TO THE CULVERTS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. SPECIAL CIRCUMSTANCES (IE. UNREINFORCED CONCRETE PIPE) SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY IN ORDER TO RECEIVE ANY NECESSARY CHANGES IN PAYMENT AMOUNTS.
- THE CONTRACTOR IS INSTRUCTED TO CONTROL SEDIMENTATION RUNOFF BY METHODS APPROVED BY THE ENGINEERS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS REMINDED THAT ALL WORK SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE RULES AND REGULATIONS OF EROSION AND SEDIMENT CONTROL AS PUBLISHED BY SC DHEC.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING THE ACTUAL AS-BUILT CONDITION OF THE PROJECT AT COMPLETION. AS-BUILTS WILL BE FURNISHED AT OR PRIOR TO FINAL INSPECTION BY THE ENGINEER. ACCEPTABLE AS-BUILT DRAWINGS INCLUDE MARK-UP COPIES OF PLAN DRAWINGS INDICATING ALL DIMENSIONS.
- NO APPURTENANCES SHALL BE LOCATED IN CLOSE PROXIMITY TO THE 100 YEAR FLOOD PLAIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE RELOCATION OF ANY POWER POLES OR OTHER EXISTING UTILITIES WITH THE ELECTRICAL AND/OR TELEPHONE COMPANY PRIOR TO BEGINNING CONSTRUCTION.
- PERMANENT VEGETATION SHALL BE ESTABLISHED QUICKLY UPON COMPLETION OF EACH PHASE OF CONSTRUCTION IN ORDER TO REDUCE THE AMOUNT OF SEDIMENT RUNOFF FROM THE SITE. THE CONTRACTOR SHALL GO NO MORE THAN 500' ALONG THE CLEARING LIMITS WITHOUT TEMPORARY STABILIZATION.
- A MINIMUM SEPARATION OF 50 FEET SHALL BE PROVIDED BETWEEN ALL COMPONENTS OF THE SEWER SYSTEM AND WETLANDS/STREAMS. WHERE THIS SEPARATION CANNOT BE MAINTAINED, ALL MATERIALS, TESTING METHODS, AND ACCEPTABILITY STANDARDS SHALL MEET WATER MAIN STANDARDS, AS SPECIFIED IN 15A NCAC 18C. UNDER NO CIRCUMSTANCES SHALL THE SEWER SYSTEM COMPONENTS BE INSTALLED LESS THAN 10 FEET FROM WETLANDS/STREAMS.
- THE LAND DISTURBING ACTIVITY WILL BE ACCOMPLISHED PURSUANT TO THE CONCEPT PLAN AND THE COUNTY HAS THE RIGHT TO CONDUCT ON-SITE INSPECTIONS.
- FINAL INSPECTIONS WILL NOT BE CONDUCTED UNTIL A FINAL AS-BUILT HAS BEEN SUBMITTED TO THE COUNTY.
- PROHIBIT ALL FENCES AND STRUCTURES WHICH WOULD INTERFERE WITH ACCESS TO THE EASEMENT AREAS AND/OR MAINTENANCE FUNCTION OF THE DRAINAGE SYSTEM.

INDEX OF SHEETS

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- PLAN & PROFILE STA 0+00 - 14+00
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- 30" OUTLET LINE PROFILE
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- MISCELLANEOUS DETAILS
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- EROSION CONTROL DETAILS
- 20 Discharge into ICWW Portion As-Built (Greenwall Construction)

AS-BUILT

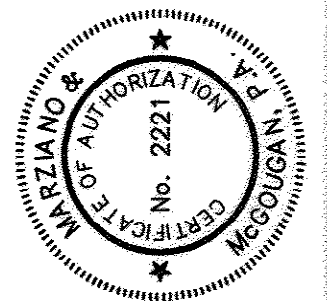
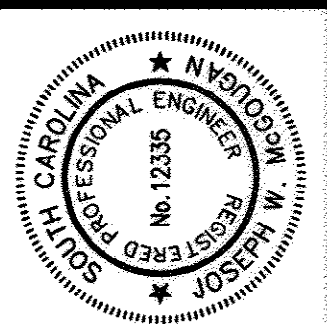
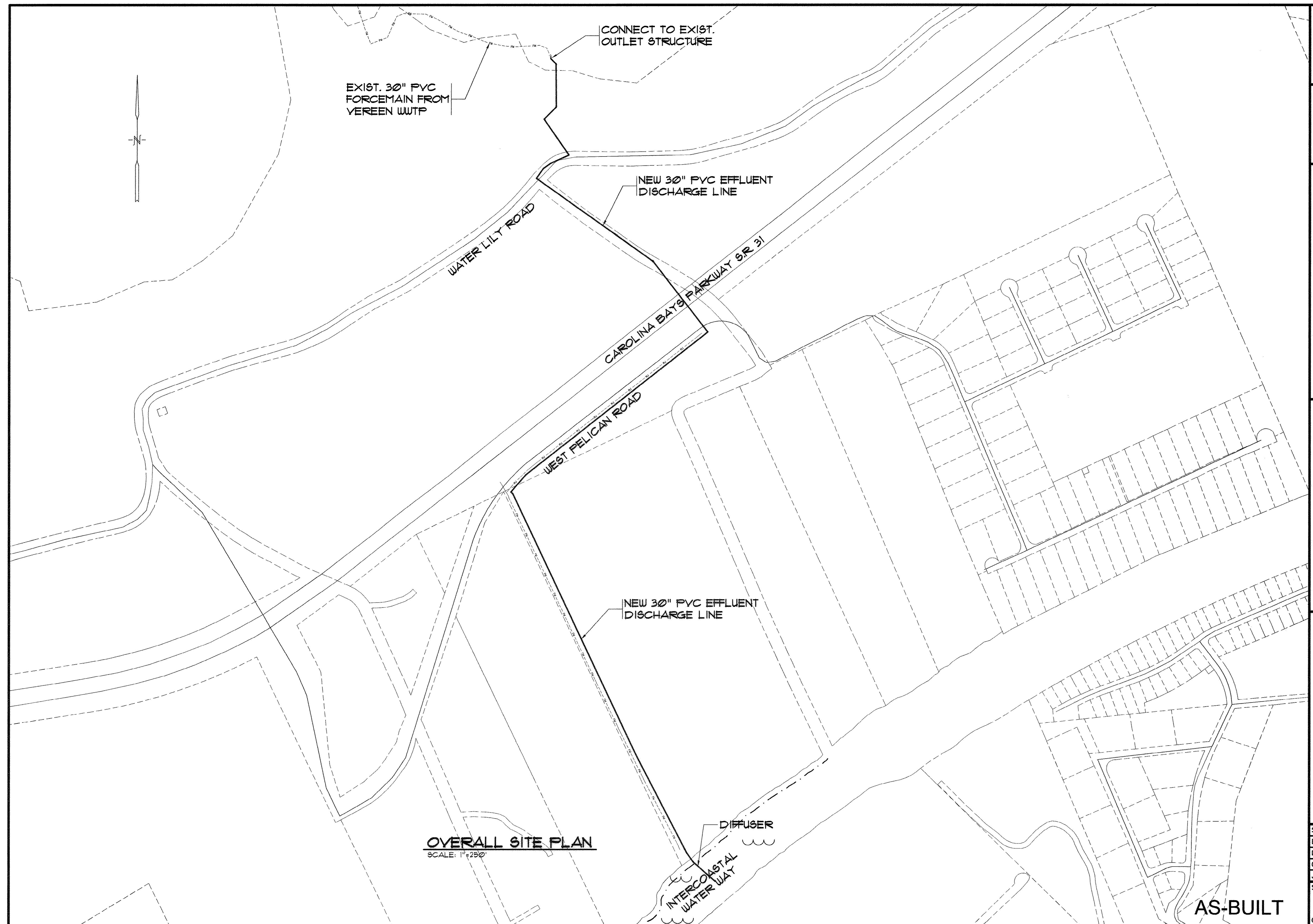
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GENERAL NOTES & INDEX

VEREEN WWTP  
30" EFFLUENT DISCHARGE  
HORRY COUNTY, SOUTH CAROLINA

Scale:	AS SHOWN
Date:	MAY 2011
Drawn:	ALR
Checked:	JWM
Job No.:	38014
Sheet No.:	2
Of: 19	Version: 8



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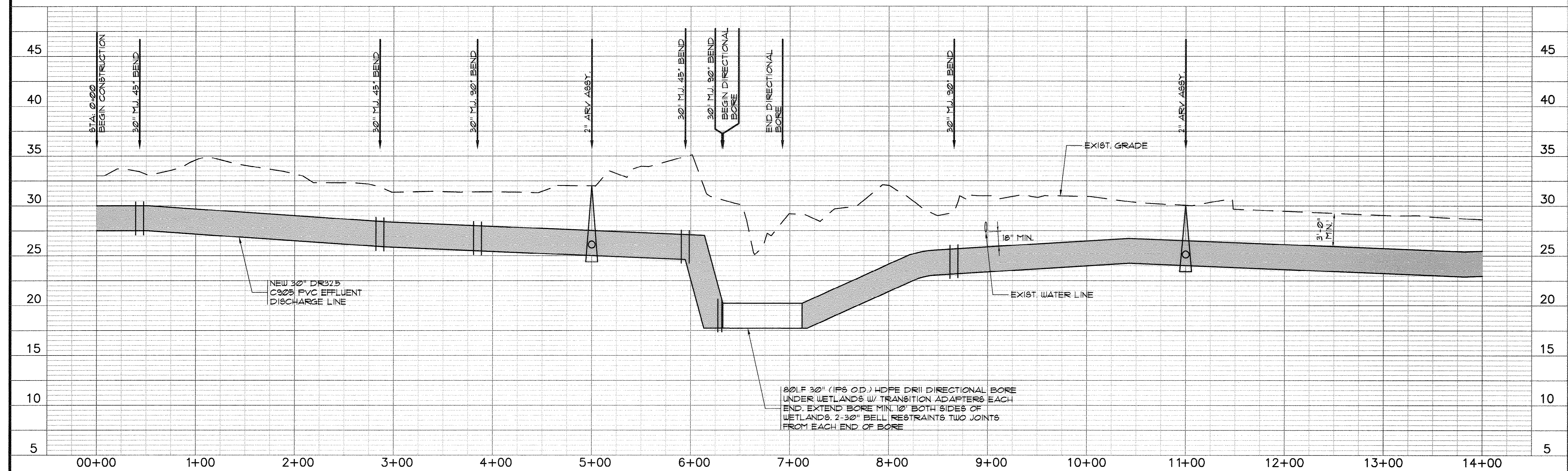
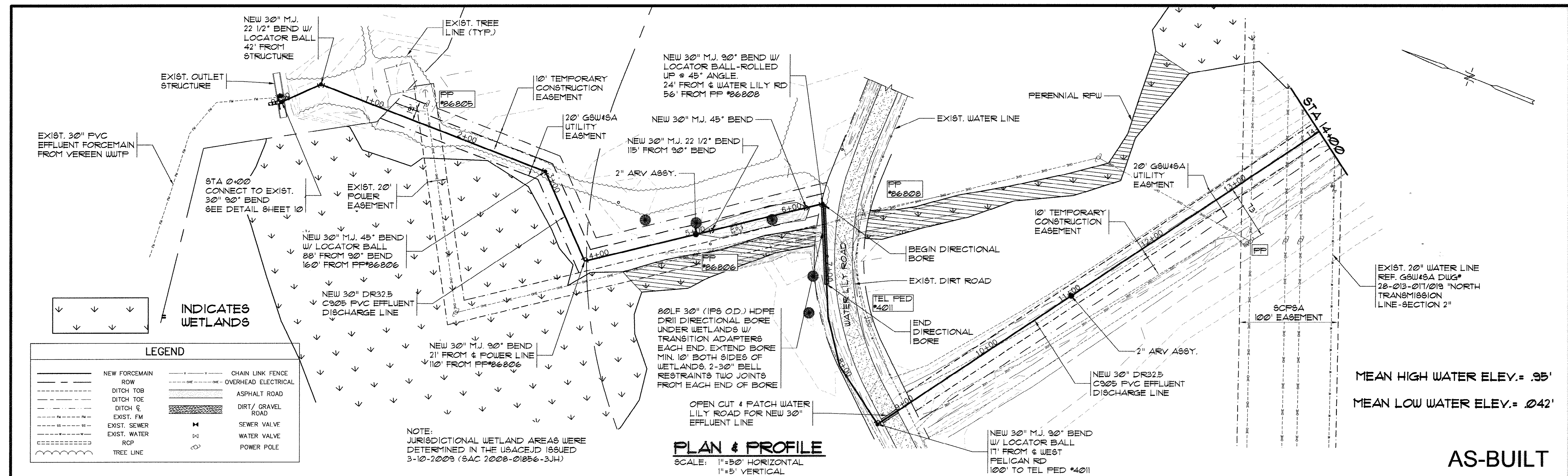


OVERALL SITE PLAN

VERREEN WWTP  
30" EFFLUENT DISCHARGE  
HORRY COUNTY, SOUTH CAROLINA

Scale:	AS SHOWN
Date:	MAY 2011
Drawn:	ALR
Checked:	JWM
Job No.:	38014
Sheet No.:	3
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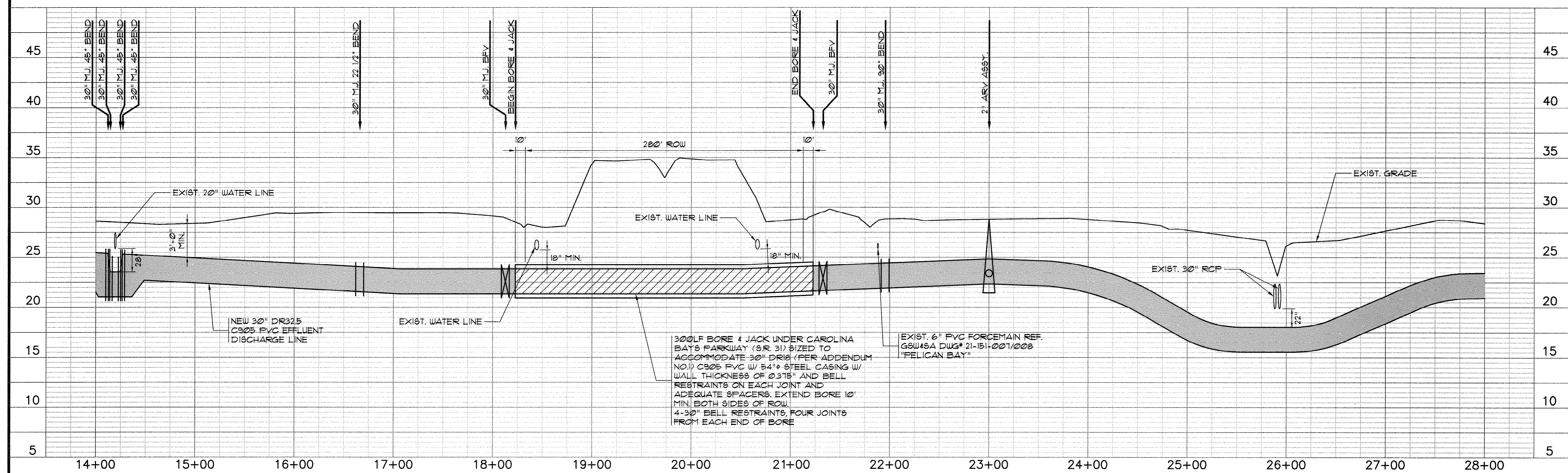
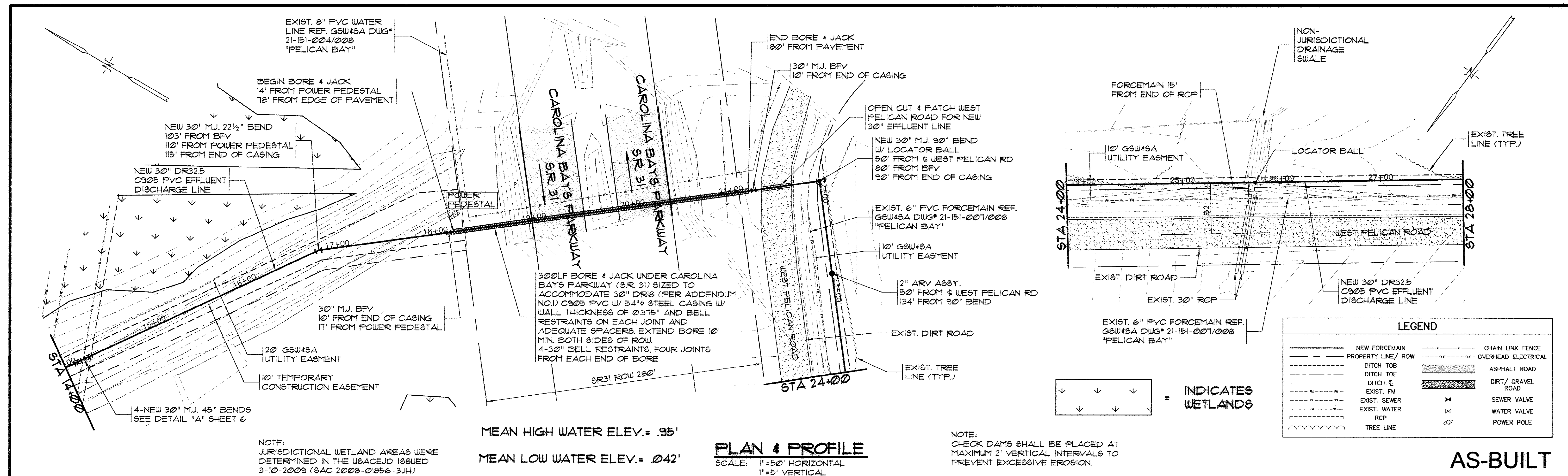




						<b>PLAN &amp; PROFILE</b> STA 0+00 - 14+00		<b>VEREEN WWTP</b> <b>30" EFFLUENT DISCHARGE</b> HORRY COUNTY, SOUTH CAROLINA		Scale: AS SHOWN Date: MAY 2011 Drawn: ALR Checked: JWM Job No.: 38014		Sheet No.: 4 Of: 19 Version: 8	
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47-004-004/20





REVISIONS			
BY	DATE	DESCRIPTION	SYM.

			<b>MARZIANO &amp; MCGOUGAN, P.A.</b> consulting engineers 1300 SECOND AVENUE • SUITE 211 • CONWAY, SC 29526 Phone: 843.488.0124 Fax: 843.488.0129	<b>PLAN &amp; PROFILE</b> STA 14+00 - 28+00	<b>VEREEN WWTP</b> <b>30" EFFLUENT DISCHARGE</b> HORRY COUNTY, SOUTH CAROLINA	Scale: AS SHOWN Date: MAY 2011 Drawn: ALR Checked: JWM Job No.: 38014	Sheet No.: <b>5</b> Of: 19 Version: 8
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