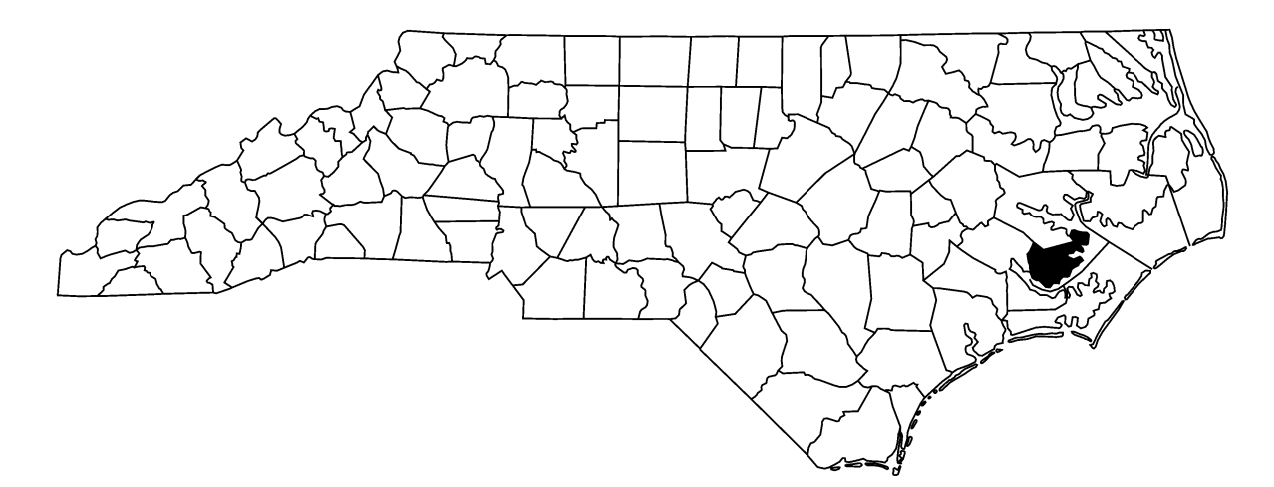


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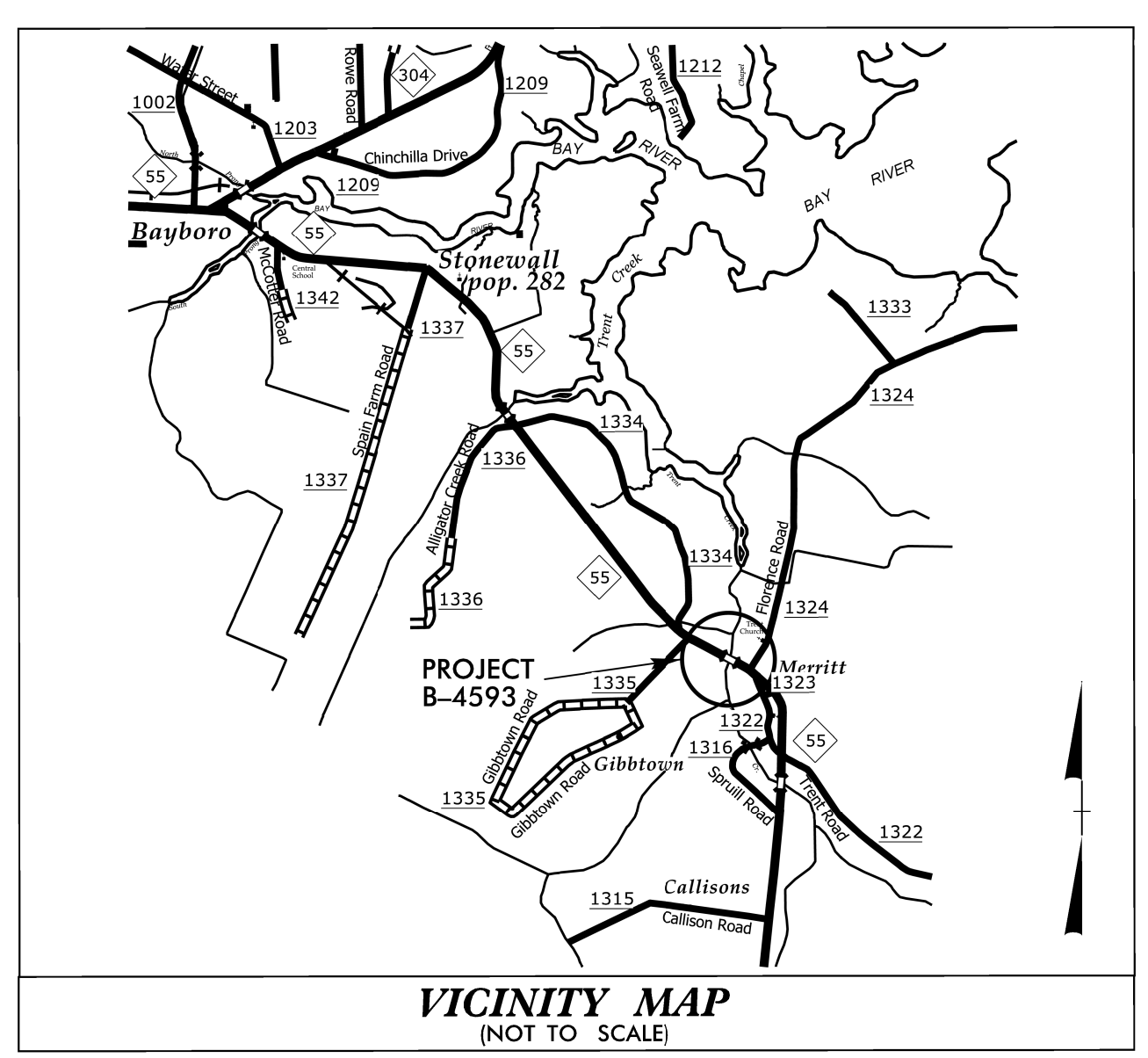
T.I.P. NO.	SHEET NO.
B-4593	UC-1



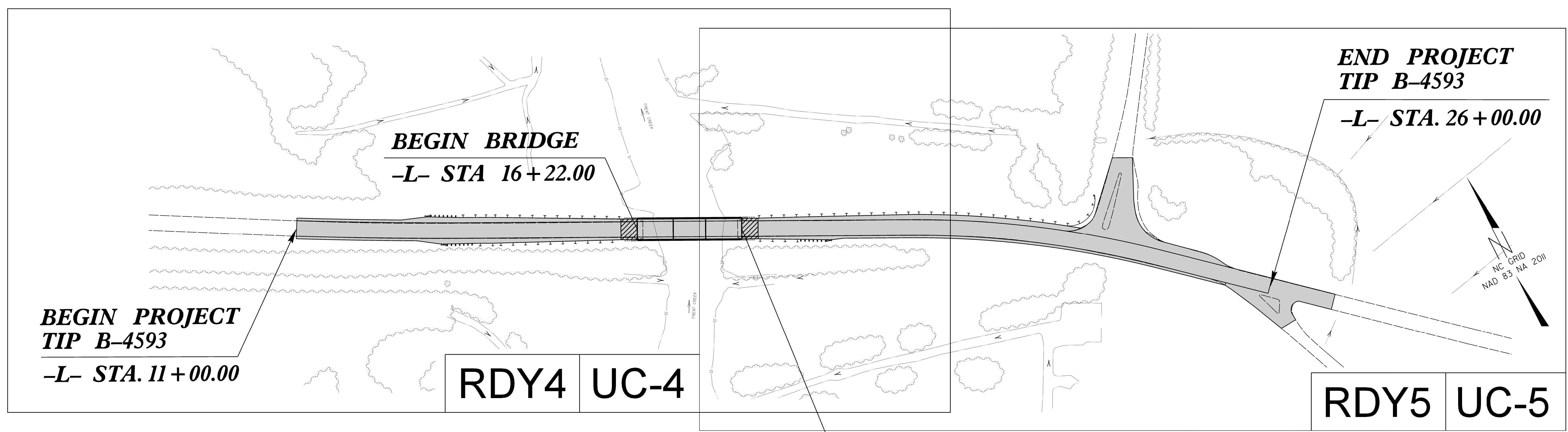
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
PAMLICO COUNTY**

LOCATION: BRIDGE No. 38 ON NC 55 OVER TRENT CREEK
TYPE OF WORK: RELOCATION OF SANITARY SEWER AND WATER LINE

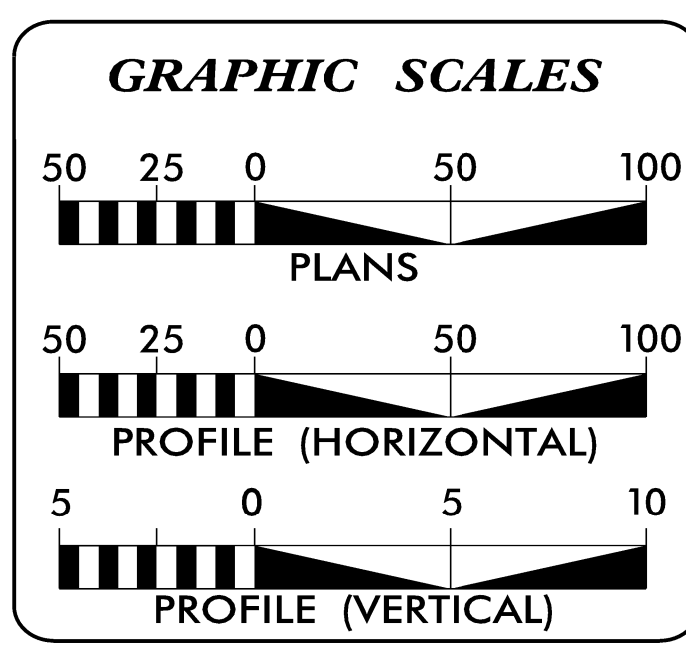


TIP PROJECT: B-4593



100% FINAL DESIGN

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INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	UTILITY NOTES
UC-3A	UTILITY DETAILS
UC-4	SITE UTILITY PLAN AND PROFILE
UC-5	SITE UTILITY PLAN AND PROFILE

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - PAMLICO CO. WATER DEPT.
(B) SANITARY - BAY RIVER METROPOLITAN SEWER DIST.

PREPARED IN THE OFFICE OF

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

CHRISTOPHER BROWN, PE UTILITY ENGINEER
JACOB VANDENBOSCH, PE UTILITY DESIGN ENGINEER

SEAL

7/1/2019

DIVISION OF HIGHWAYS UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

NABIL HAMDAN UTILITIES REGIONAL ENGINEER
KELVIN MARTIN, EI UTILITIES ENGINEER
KYLE PLEASANT UTILITIES AREA COORDINATOR
LARRY JAMES UTILITIES COORDINATOR

PLOT DRIVER: Tdotpffupitcfcg
 USER: LLIGHTFO
 DATE: 6/28/2019
 TIME: 9:51:19 AM
 FILE: NCDOT\NCDOT_2016-2018_Utilities_Design\Design\Engineering_Services\On-Coil\N\NCDOT-B4593-Utility_Design\6.0.CAD\BIM\6.2.WIP\Plan_Sheets\280.001_B4593_ut_tsh_UC01_psh.dgn
 6/28/2019
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PROJECT REFERENCE NO.	B-4593	SHEET NO.	UC-2
DESIGNED BY:	JV		
DRAWN BY:	CB		
CHECKED BY:	CB		
APPROVED BY:	JV		
REVISED:			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, NC 27601 (919) 232-6600			
Chris Brown			

7/1/2019

UTILITY SYMBOLOGY B-4593

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Power Pole		Thrust Block	
Telephone Pole		Air Release Valve	
Joint Use Pole		Utility Vault	
Telephone Pedestal		Concrete Pier	
Utility Line by Others (Type as Shown)		Steel Pier	
Trenchless Installation		Gate Valve	
Water Main			
Encasement by Open Cut			
Encasement			

EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records		Sanitary Sewer Cleanout	
End of Information		Well	

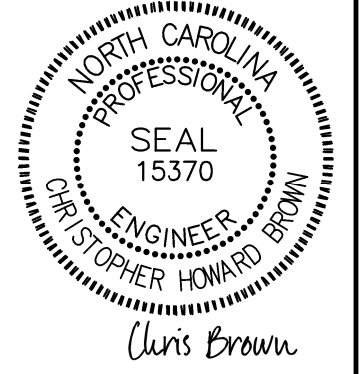

ABBREVIATIONS

BC	BACK OF CURB	FOD	FULL OF DEBRIS	RRS	RAILROAD SPIKE
B.H.	BUILDING HEIGHT	PB	PLAT BOOK	R/W	RIGHT-OF-WAY
BST	BITUMINOUS SURFACE TREATMENT	PG	PAGE	SE	SIGHT EASEMENT
CC	CURB CUT	PIN	TAX PARCEL ID NUMBER	S.F.	SQUARE FEET
CGF	COMBINED GRID FACTOR	POB	POINT OF BEGINNING	TW	TOP OF WALL
CH	CHORD	PVC	POLYVINYL CHLORIDE PIPE	(M)	MEASURED
CM	CONCRETE MONUMENT	RCP	REINFORCED CONCRETE PIPE	(R)	RECORDED INVERT ELEVATION
CMP	CORRUGATED METAL PIPE				
CONC.	CONCRETE				
DB	DEED BOOK				
DIP	DUCTILE IRON PIPE				

REVISIONS

6/28/2019
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UTILITY NOTES B-4593

PROJECT REFERENCE NO.	B-4593	SHEET NO.	UC-3
DESIGNED BY:	JV		
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CHECKED BY:	CB		
APPROVED BY:	JV		
REVISED:			
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, NC 27601 (919) 232-6600			
<i>Chris Brown</i>			

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
2. THE EXISTING UTILITIES BELONG TO PAMLICO COUNTY AND BAY RIVER MSD. CONTACTS ARE JEFF SANDERS (252-745-5453) AND ERIC HARPER (252-745-4812) RESPECTIVELY.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE "1500-7 - SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

9. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.
10. STABILIZATION STONE UNDER PIPING TO BE PLACED WHEN CONDITIONS WARRANT.
11. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS.

THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHER IS MORE STRINGENT.

PROJECT SPECIFIC NOTES:

1. BORE PITS, TRENCHES AND ALL OTHER EXCAVATIONS WHERE SLOPE IS 1:1 OR STEEPER FROM EDGE OF ROADWAY MUST INCLUDE POSITIVE SHORING MEETING NCDOT AND OSHA REQUIREMENTS. ALL SHORING SYSTEMS MUST BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA.
2. REMOVE AND RESET FENCES AS NOTED ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.
3. SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SAW CUT WIDTH SHALL BE 1 FOOT MINIMUM FROM THE EXISTING EDGE OF PAVEMENT. SAW CUT PAVEMENT SHALL BE REPLACED AS WELL AS ADDITIONAL PAVEMENT REQUIRED TO TIE-IN TO FACE OF CURB AND GUTTER.
4. CONTRACTOR SHALL USE ADEQUATE SHORING METHODS TO ENSURE:
A. COMPLIANCE WITH OSHA REGULATIONS.
B. PROTECTION OF EXISTING PAVEMENT AND ROAD SHOULDERS.
C. CONSTRUCTION ACTIVITIES ARE CONFINED TO RIGHTS-OF-WAY OR EASEMENTS AS INDICATED.

UTILITIES

1. PRIOR TO CONSTRUCTION, NOTIFY ALL UTILITY OWNERS WHOSE FACILITIES MAY BE AFFECTED TO DETERMINE UTILITY LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD PAMLICO COUNTY AND BAY RIVER MSD, HARMLESS FOR ANY THIRD PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS.
2. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS.

-FOR UTILITY LOCATE MEMBERS, CALL NORTH CAROLINA ONE-CALL @ 1-800-632-4949.
-FOR LOCATES OF UTILITIES NOT MEMBERS OF NORTH CAROLINA ONE-CALL CONTACT THE SPECIFIC UTILITY COMPANY.
3. CONTRACTOR SHALL ANTICIPATE HAND DIGGING AROUND EXISTING WATER SERVICES, SANITARY SEWER LATERALS, AND OTHER UTILITIES.
4. CONTRACTOR SHALL COORDINATE CONNECTIONS AND ANY WATER SERVICE SHUT DOWNS WITH PAMLICO COUNTY AND BAY RIVER MSD.
5. MAINTAIN SANITARY SEWER SERVICE AT ALL TIMES.

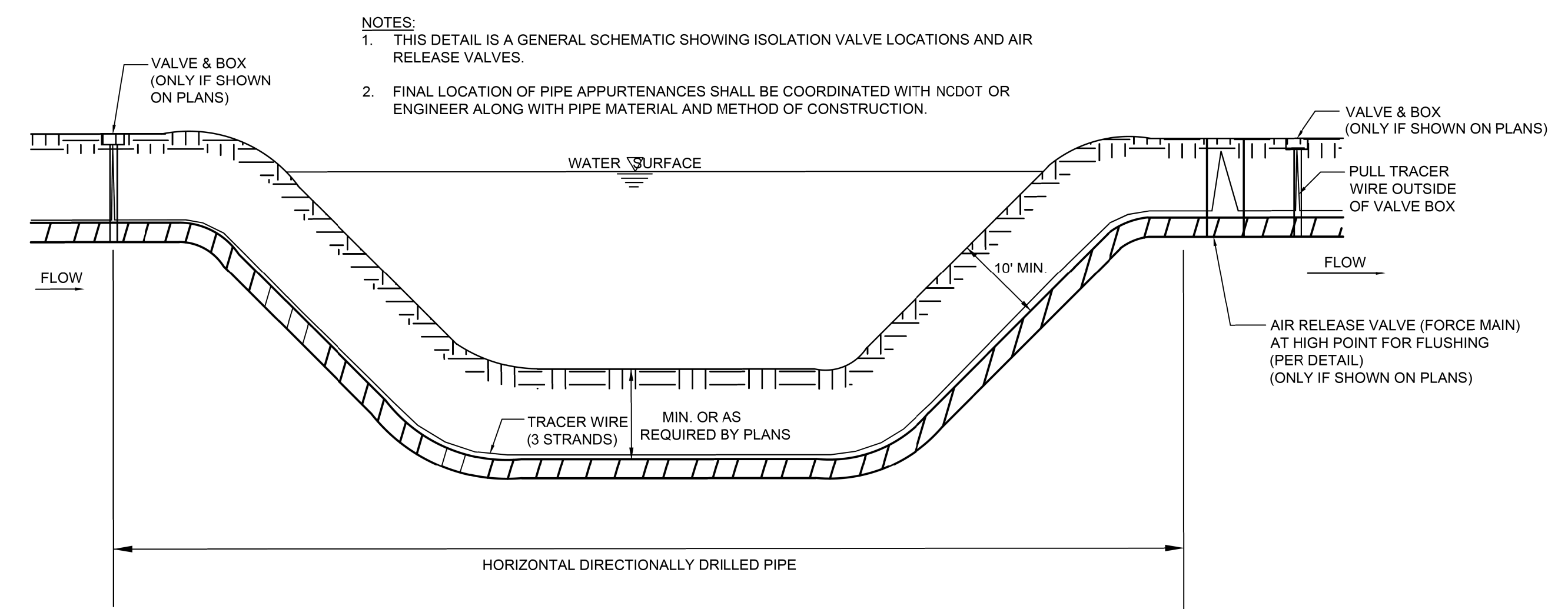
WATER AND SEWER

1. UTILITY SEPARATION REQUIREMENTS:
 - a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVIOR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPERATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPERATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
 - b) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPERATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
 - c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE USED & INSTALLED TO WATERLINE SPECIFICATIONS.
 - d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS USED FOR SANITARY SEWER.
 - e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, USE DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE.
 - f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
2. CONTRACTOR SHALL MAINTAIN CONTINOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE
3. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMANS.

REVISIONS

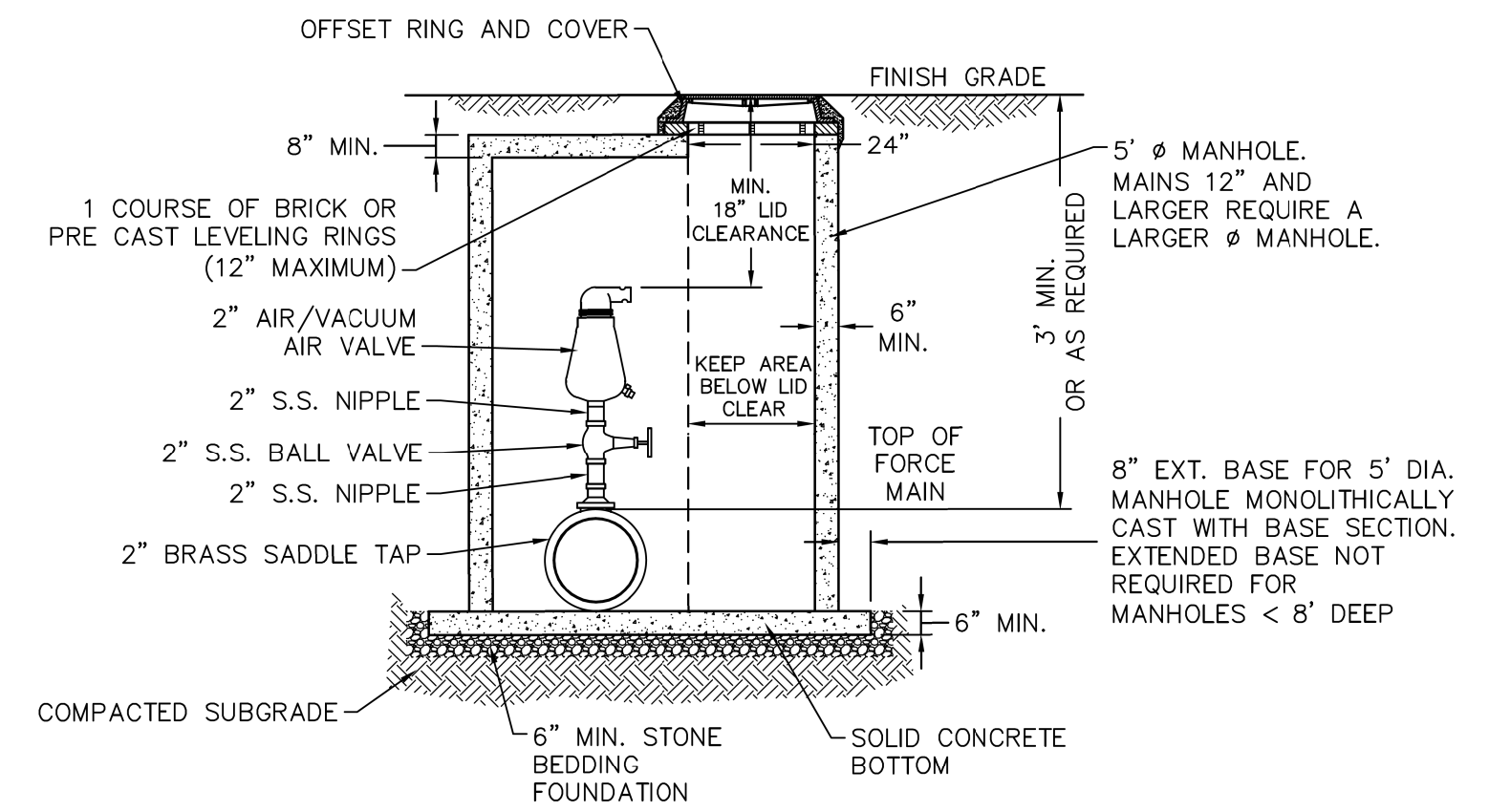
UTILITY DETAILS B-4593

PROJECT REFERENCE NO.	B-4593	SHEET NO.	UC-3A
DESIGNED BY:	JV		
DRAWN BY:			
CHECKED BY:	CB		
APPROVED BY:	JV		
REVISED:			
7/1/2019			



1 DIRECTIONAL DRILL UNDER WETLANDS/WATER BODY
NOT TO SCALE

- NOTES:**
- ALL BORE SECTIONS SHALL BE HYDROSTATICALLY TESTED PER NCDOT STANDARDS AFTER INSTALLATION, AND PRIOR TO CONNECTION TO THE OPEN CUT WATER/SEWER LINE. A FINAL TEST WILL BE A PART OF THE TOTAL MAIN LINE SYSTEM TEST.
 - LENGTH OF CROSSING, LOCATION OF INSPECTION/OBSERVATION EXCAVATION, NUMBER OF HDD PIPE JOINTS, LOCATION OF DRILL MACHINE, AUGER ENTRANCE LOCATION AND TIE-IN POINTS ARE TO BE APPROVED BY ENGINEER PRIOR TO ANY START OF WORK.
 - THE BORE DEVELOPED FOR THE DIRECTIONALLY DRILLED PIPE SHALL BE KEPT AT A MINIMUM DIAMETER FOR THE PIPE INSTALLATION. THE AUGER HEAD SIZE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY START OF WORK.
 - THE CONTRACTOR SHALL ALLOW SUFFICIENT LENGTHS OF PIPE TO EXTEND PAST THE TERMINATION POINT TO ALLOW FOR CONTRACTION. PULLED HDD PIPE SHALL BE ALLOWED TO RELAX 7 DAYS OR THE AMOUNT OF TIME RECOMMENDED BY THE MANUFACTURER PRIOR TO MAKING CONNECTIONS.
 - SEE PLAN FOR RESTRAINED PIPE REQUIRED UPSTREAM AND DOWNSTREAM OF DIP/HDPE/FUSIBLE PVC MJ ADAPTER ON EACH END OF THE HORIZONTAL DIRECTIONALLY DRILLED PIPE UNLESS OTHERWISE APPROVED BY ENGINEER.



- NOTES:**
- CONTRACTOR TO INSTALL VALVE & MANHOLE AT SUFFICIENT DEPTH TO ALLOW FOR ACCESS.
 - FORCE MAIN TO BE OFFSET IN MANHOLE TO KEEP AREA BELOW LID CLEAR.
 - USE CAST IN RUBBER BOOT WITH SST. CLAMPS FOR ALL MH CONNECTIONS, INCLUDING FORCE MAIN.

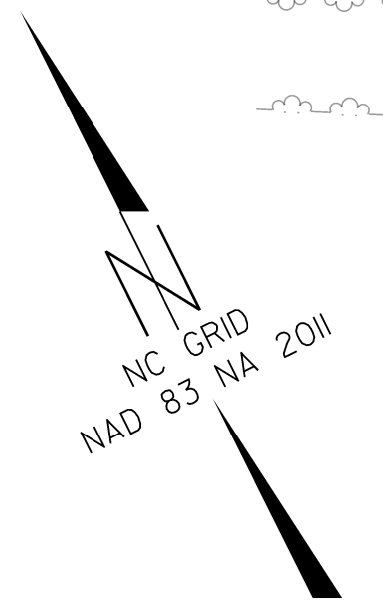
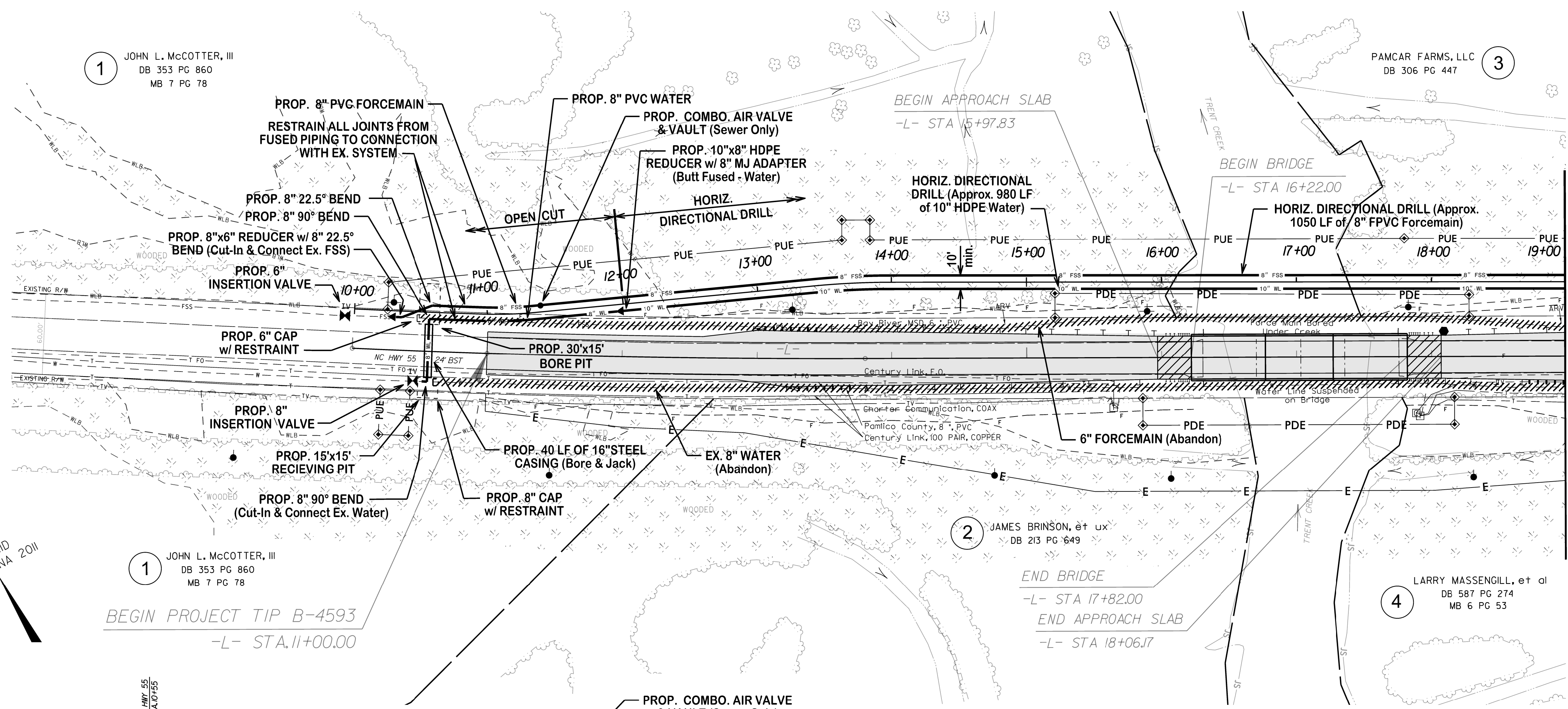
2 AIR RELEASE / VACUUM VALVE
NTS

REVISIONS

6/3/2019
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PROJECT REFERENCE NO.	B-4593	SHEET NO.	UC-4
DESIGNED BY:	JV		
DRAWN BY:			
CHECKED BY:	CB		
APPROVED BY:	JV		
REVISED:			
		HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, NC 27601 (919) 232-6600	

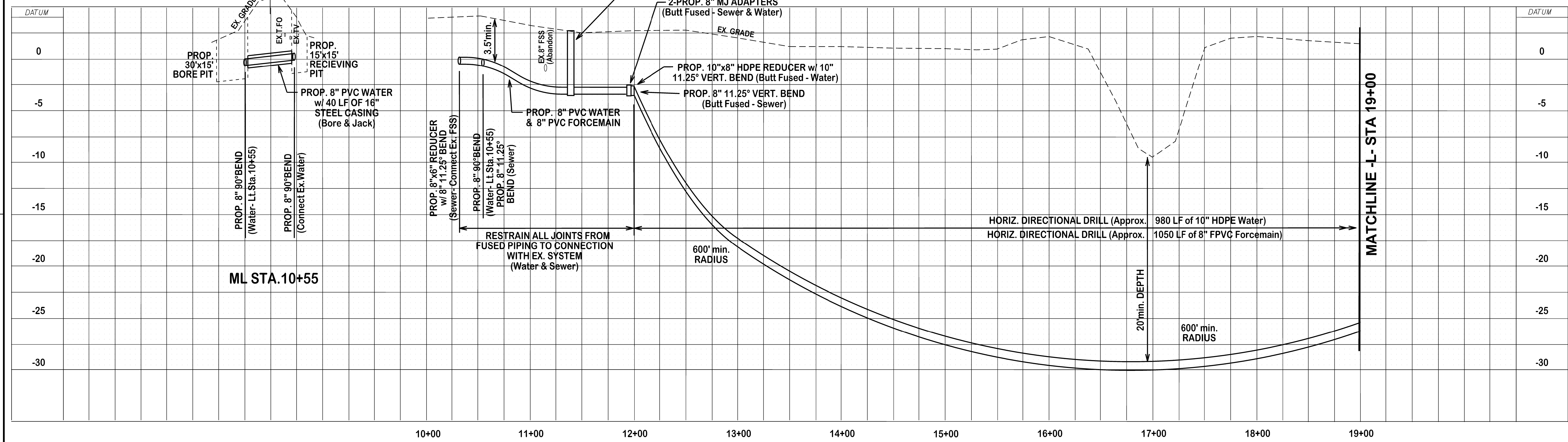
SITE UTILITY SHEET B-4593



MATCHLINE -L- STA 19+00 (See Sht. UC-5)

.....
 BM1 ELEVATION = 5.85
 N 500252 E 2682958
 BL STATION 31+46.00 248' RIGHT
 RR SPIKE SET IN 20" HARDWOOD

SCALE: 1"=5' Vert.
 1"=50' Horiz.



REVISIONS

7/24/2019
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