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TIP PROJECT: B-5995

CONTRACT: C204742

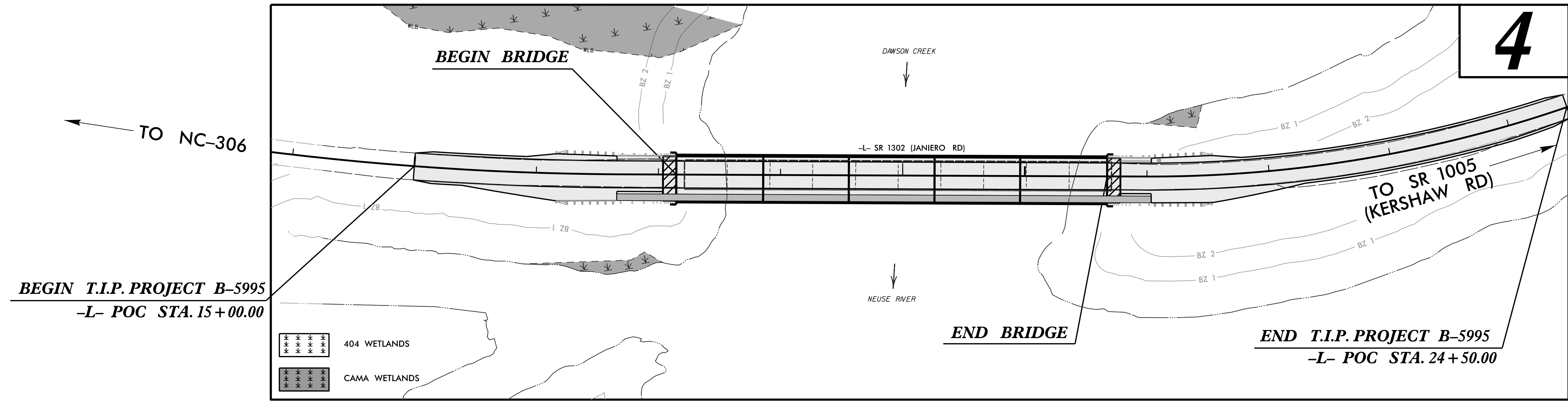
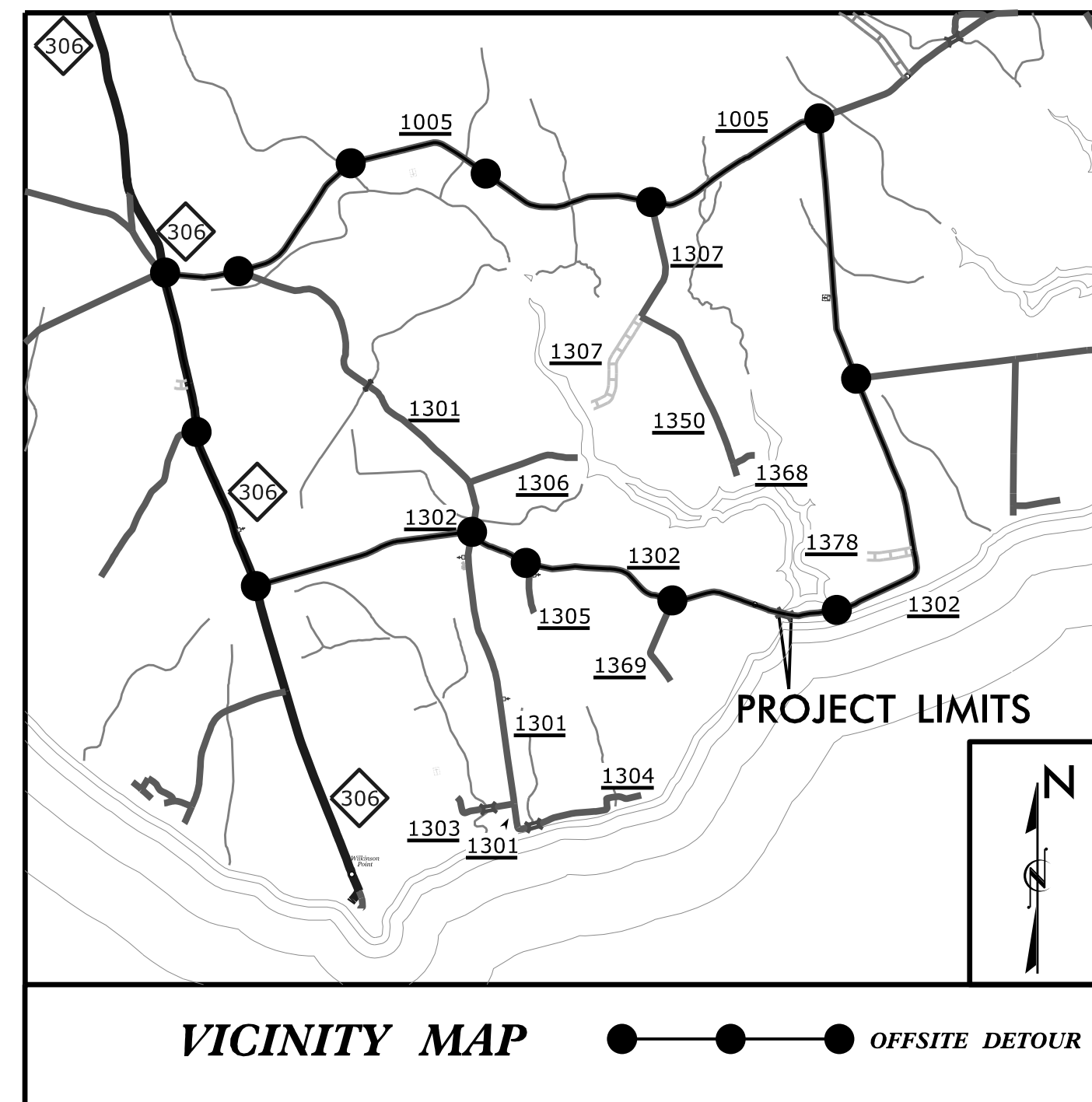
T.I.P. NO.	SHEET NO.
B-5995	UC-01

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

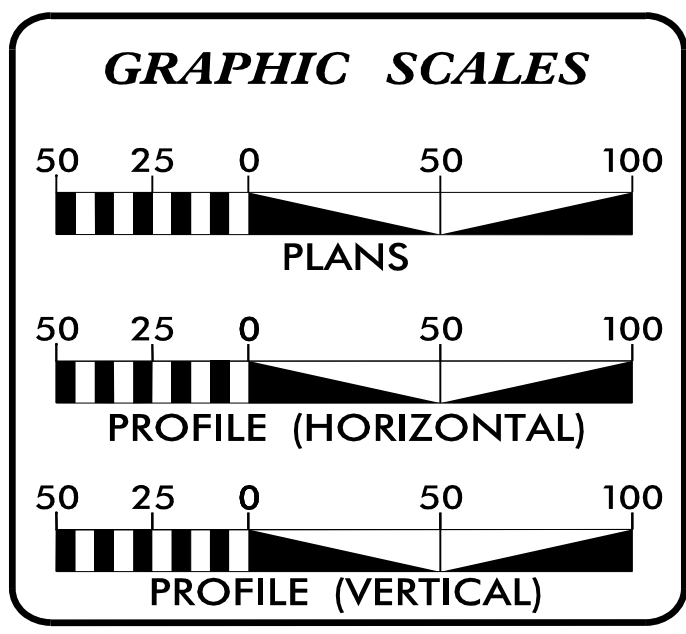
**UTILITY CONSTRUCTION PLANS
PAMLICO COUNTY**

**LOCATION: BRIDGE NO. 57 ON SR 1302 (JANIERO ROAD)
OVER DAWSON CREEK**

**TYPE OF WORK:
WATER LINE RELOCATION**



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS	
SHEET NO.:	DESCRIPTION:
UC-01	TITLE SHEET
UC-02	UTILITY SYMBOLOGY
UC-03	NOTES
UC-03A - UC-03B	DETAILS
UC-04	UTILITY PLAN /PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - PAMLICO COUNTY PUBLIC UTILITY

(B) SANITARY SEWER - N/A

PREPARED IN THE OFFICE OF
Weston & Sampson
2052 Energy Drive
Apex, NC 27502
Phone: 919.297.0220
NC License: C-4847

FOR
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

KEVIN S. HUTCHENS, PE PROJECT ENGINEER
JIM FORBES PROJECT UTILITY MANAGER

SEAL

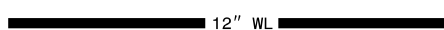























**DIVISION OF HIGHWAYS
DIVISION 2**
2815 ROUSE ROAD EXTENSION
KINSTON, NC 28504
PHONE (252) 375-6100
FAX (252) 208-7862

MICHAEL AMAN, PE DIVISION PROJECT MANAGER
DAVID KRAMER DIVISION UTILITIES ENGINEER
HEATHER LANE, PE DIV. PROJECT DEVELOPMENT ENGINEER

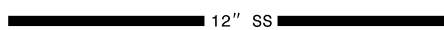
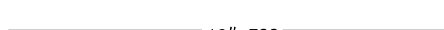


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS





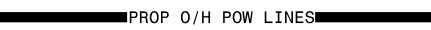



PROPOSED WATER SYMBOLS

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	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

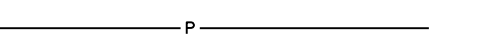
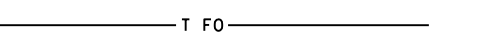
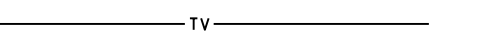

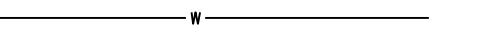

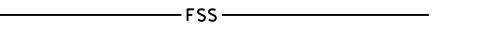

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	


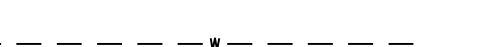
PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

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	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

*For Existing Utilities
 Utility Line Drawn from Record (Type as Shown) 
 Designated Utility Line (Type as Shown) 

8/17/99
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UTILITY CONSTRUCTION

Weston & Sampson
 WSE of North Carolina, PC
 2052 Energy Drive
 Phone: 919.297.0220

NC Licensee: C-4847
 Apex, NC 27502
 westonandsampson.com

PROJECT REFERENCE NO.	SHEET NO.
B-5995	UC-03
DESIGNED BY: KSH	
DRAWN BY: ACJ	
CHECKED BY: KSH	
APPROVED BY: KSH	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	
UTILITY CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED	

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 2024.
2. THE EXISTING WATER LINE UTILITIES BELONG TO PAMLICO COUNTY.

CONTACT: JEFFREY SANDERS
OFFICE: 252-745-5453
CELL PHONE: 252-670-7519
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH.
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. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. 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.

PROJECT NOTES:

1. THERE ARE NO KNOWN SANITARY SEWER LINES WITHIN THE PROJECT LIMITS.
2. THE EXISTING WATER LINE IS FED FROM BOTH DIRECTIONS ALONG JANEIRO ROAD, ACCORDING TO PAMLICO COUNTY.
3. 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, STREAM, CREEK, WETLANDS, OR BUFFER ZONES.
4. PVC PIPE MANUFACTURED MORE THAN TWELVE (12) MONTHS BEFORE THE INSTALLATION DATE WILL NOT BE ACCEPTED.
5. IN THE EVENT THAT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED DURING PIPE CONSTRUCTION, THE CONTRACTOR SHALL EMPLOY ALL METHODS NECESSARY TO KEEP THE TRENCHES DRY AS DIRECTED BY THE ENGINEER.
6. ALL WATER LINE FITTINGS, 4-INCHES THROUGH 12-INCHES IN DIAMETER, SHALL BE DUCTILE IRON.
7. ALL PROPOSED WATER LINE FITTINGS (BENDS, TEES, CROSSES, REDUCERS, PLUGS, ETC.) SHALL BE ADEQUATELY RESTRAINED. PIPE RESTRAINT METHODS SHALL BE RESTRAINED JOINT CONSTRUCTION, MECHANICAL JOINT RESTRAINT, OR AS DIRECTED BY THE ENGINEER AND APPROVED BY THE UTILITY OWNER. RESTRAINED JOINT FITTINGS SHALL BE OF THE SAME MANUFACTURER AS THE RESTRAINED JOINT DUCTILE IRON PIPE. JOINT RESTRAINT ON PVC PIPE SHALL CONFORM TO ASTM F1674.
8. PROPOSED OPEN TRENCH WATER LINE SHALL BE 6" PVC SDR-21 PIPE WITH GASKETED JOINTS THAT CONFORMS TO ASTM D2241 AND NSF-61.
9. PROPOSED WATER LINE FOR HORIZONTAL DIRECTIONAL DRILLING (HDD) SHALL BE 6" FUSIBLE PVC C-900 DR-18 PIPE THAT CONFORMS TO NSF-61.
10. ALL VALVES ON THE 6" WATER LINE SHALL BE RESILIENT SEATED GATE VALVES CONFORMING TO AWWA C509.
11. VALVES SHALL HAVE RESTRAINED JOINT CONNECTIONS OR USE MECHANICAL JOINT RESTRAINTS.
12. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING WATER SYSTEM. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF EXISTING VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.
13. ALL TESTING AND DISINFECTION SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER AND WITNESSED BY THE UTILITY OWNER'S REPRESENTATIVE.
14. FINAL CONNECTIONS TO EXISTING FACILITIES SHALL BE WITNESSED BY UTILITY OWNER'S REPRESENTATIVE.
15. WATER SERVICE PIPING SHALL BE POLYETHYLENE (PE) TUBING THAT CONFORMS TO AWWA C901 WITH A MINIMUM PRESSURE CLASS OF 200 PSI.
16. WATER SERVICE PIPING SHALL BE ONE CONTINUOUS PIECE OF TUBING FROM THE CORPORATION STOP ON THE WATER LINE TO THE WATER METER.
17. TRACER WIRE MUST BE ATTACHED TO ANY PVC PIPE AS REQUIRED BY NC GENERAL STATUE CHAPTER 87-121G. USE #12 AWG SOLID COPPER WIRE FOR TRACER WIRE. THE UTILITY OWNER WILL CONDUCT A CONTINUITY TEST ON ALL TRACER WIRE AFTER INSTALLATION.

5/14/99

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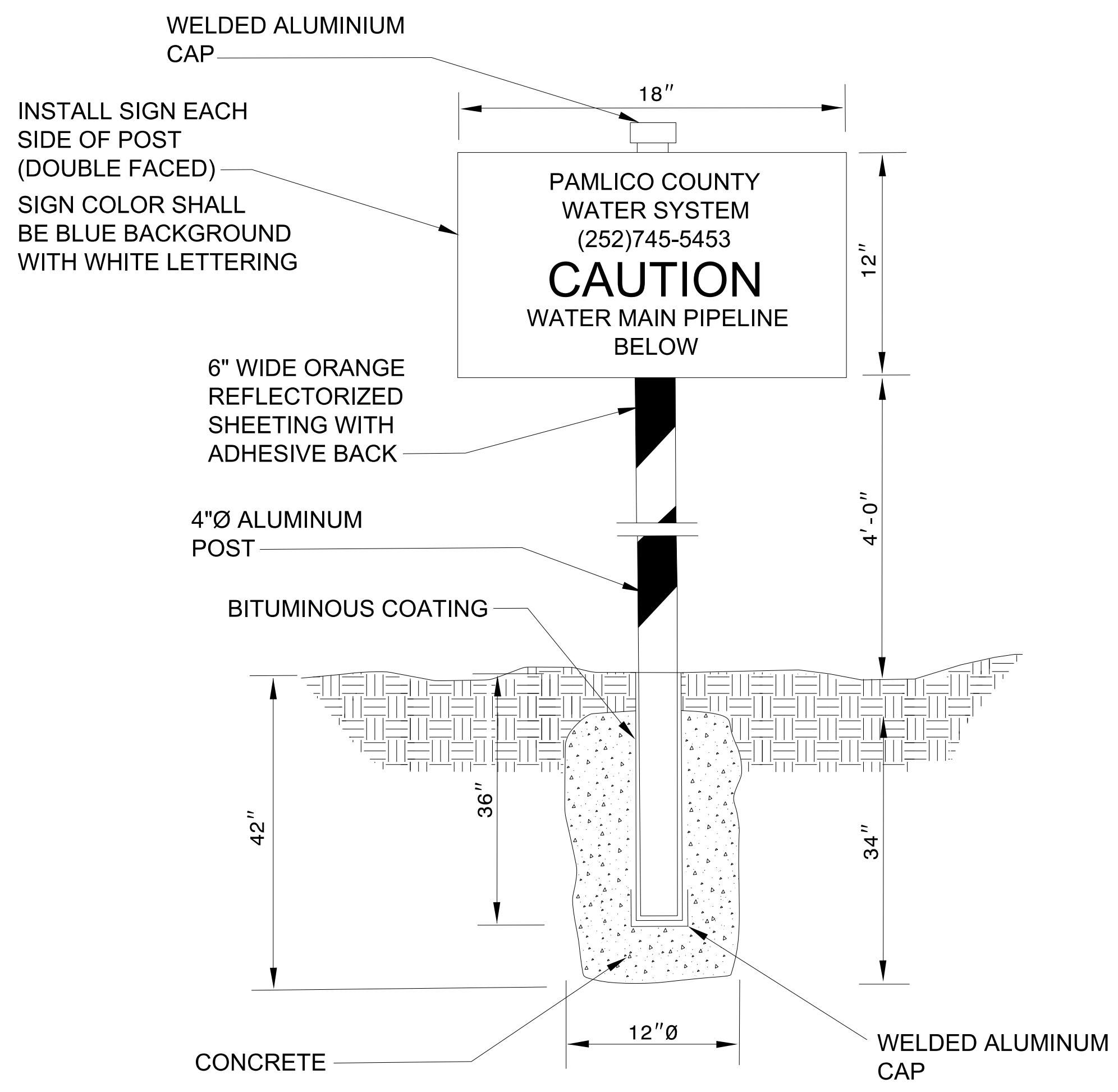
PROJECT REFERENCE NO.	SHEET NO.
B-5995	UC-03B
DESIGNED BY: KSH	
DRAWN BY: AJC	
CHECKED BY: KSH	
APPROVED BY: KSH	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	
<i>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</i>	

RESTRAINED JOINT DESIGN TABLE FOR PVC PIPE

FITTING	REQUIRED RESTRAINED LENGTH (FT) OF PVC PIPE BY DEPTH OF COVER							
	3FT	4FT	5FT	6FT	7FT	8FT	9FT	10FT
HORIZONTAL BENDS								
6 INCH - 11.25 DEG	3	3	2	2	2	2	2	2
6 INCH - 22.5 DEG	5	5	4	4	3	3	3	3
6 INCH - 45 DEG	10	9	8	7	7	6	6	5
VERTICAL DOWN BENDS								
6 INCH - 11.25 DEG	9	8	7	6	6	5	5	5
6 INCH - 22.5 DEG	17	15	13	12	11	10	9	9
6 INCH - 45 DEG	36	31	27	24	22	20	19	17
VERTICAL UP BENDS								
6 INCH - 11.25 DEG	3	3	2	2	2	2	2	2
6 INCH - 22.5 DEG	5	5	4	4	3	3	3	3
6 INCH - 45 DEG	10	9	8	7	7	6	6	5

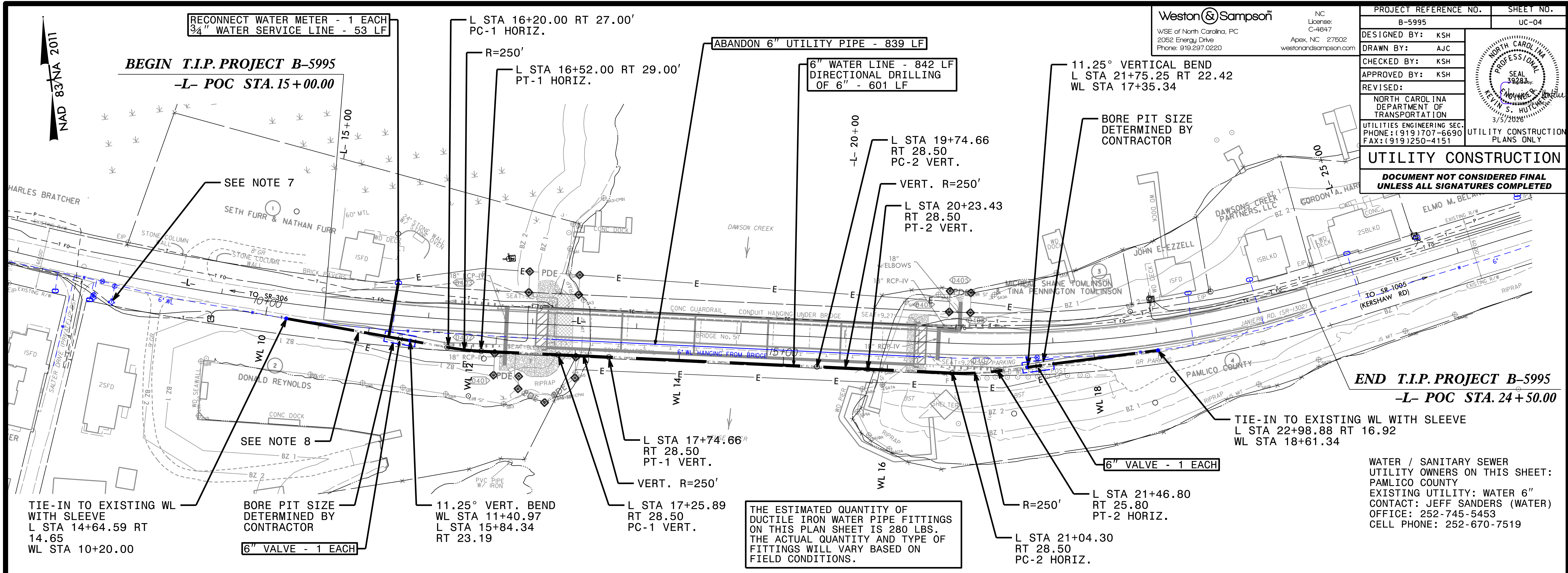
ASSUMPTIONS:
 SAFETY FACTOR = 1.5
 DESIGN PRESSURE = 200 PSI (TEST PRESSURE)
 LAYING CONDITION = TYPE 4
 SOIL DESIGNATION: CL (TAN SANDY CLAY)

NOTES:
 1. RESTRAINED LENGTH IS MEASURED FROM THE CENTER OF THE BEND AS FOLLOWS:
 A. HORIZONTAL AND VERTICAL BENDS: ALONG EACH SIDE OF THE BEND.
 B. HORIZONTAL AND VERTICAL BENDS - OFFSET OR COMBINED: ALONG THE OUTER SIDE OF EACH BEND. ALL PIPE BETWEEN THE TWO BENDS SHALL BE RESTRAINED JOINT WHEN:
 1) THE DISTANCE BETWEEN THEM IS EQUAL THE REQUIRED LENGTH
 2) THE DISTANCE BETWEEN THEM LESS THAN THE REQUIRED LENGTH
 3) AS NOTED ON THE PLANS
 4) AS DIRECTED BY THE ENGINEER



WATER MAIN CROSSING SIGN DETAIL
 NOT TO SCALE

WATER LINE DETAILS



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PROJECT REFERENCE NO. B-5995	SHEET NO. UC-04
DESIGNED BY: KSH	
DRAWN BY: AJC	
CHECKED BY: KSH	
APPROVED BY: KSH	
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