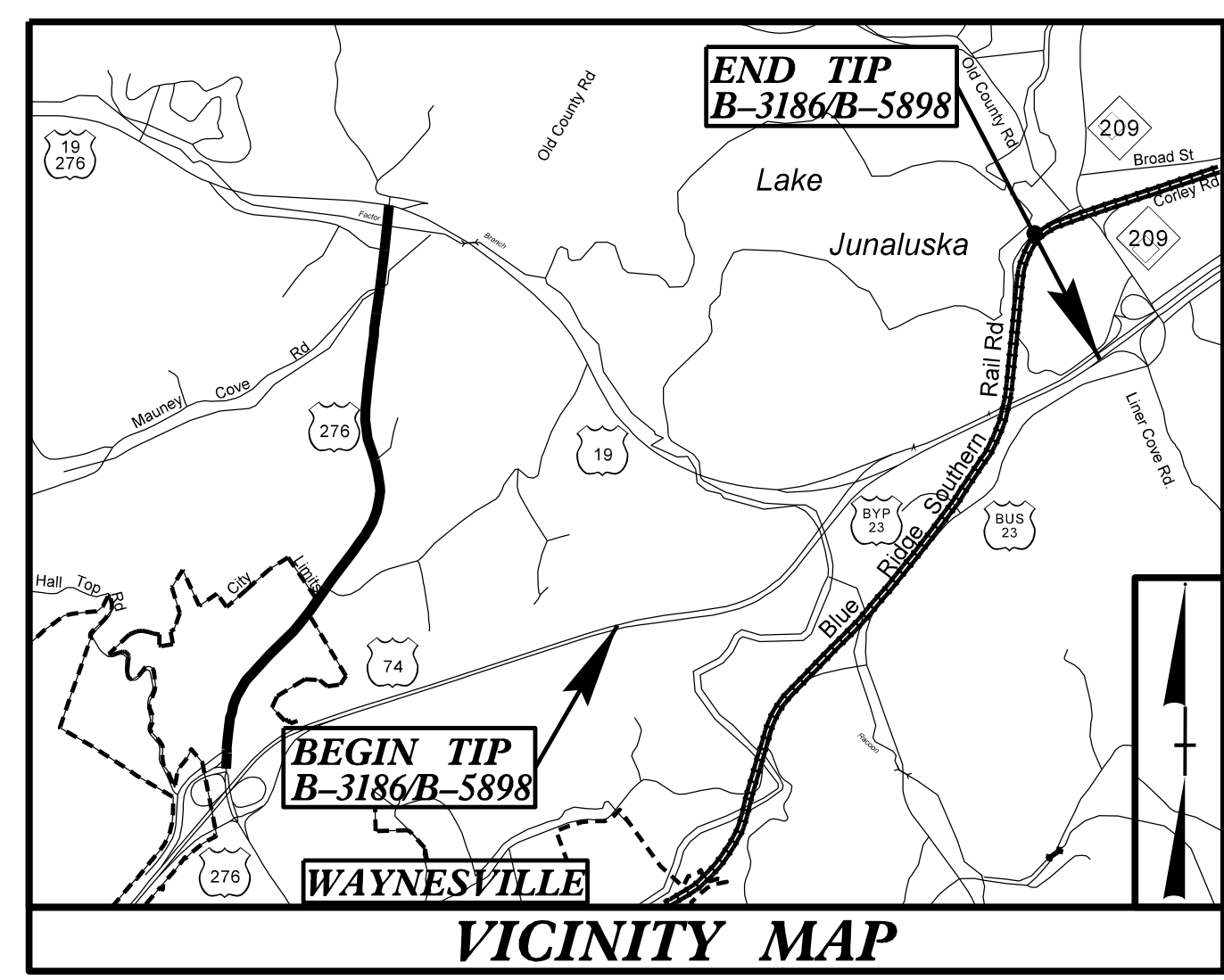


09/08/19

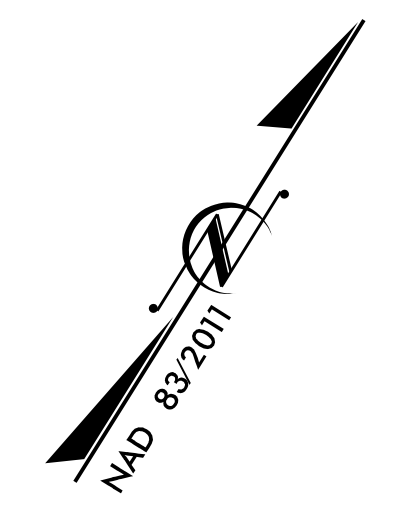
**TIP PROJECT: B-3186/B-5898**



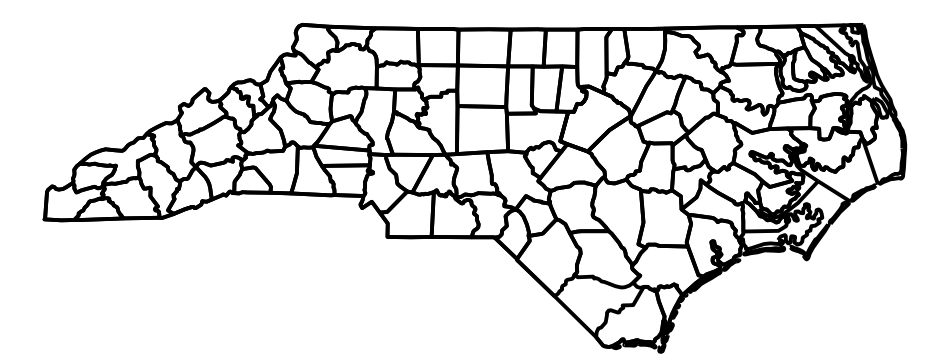
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS  
HAYWOOD COUNTY**

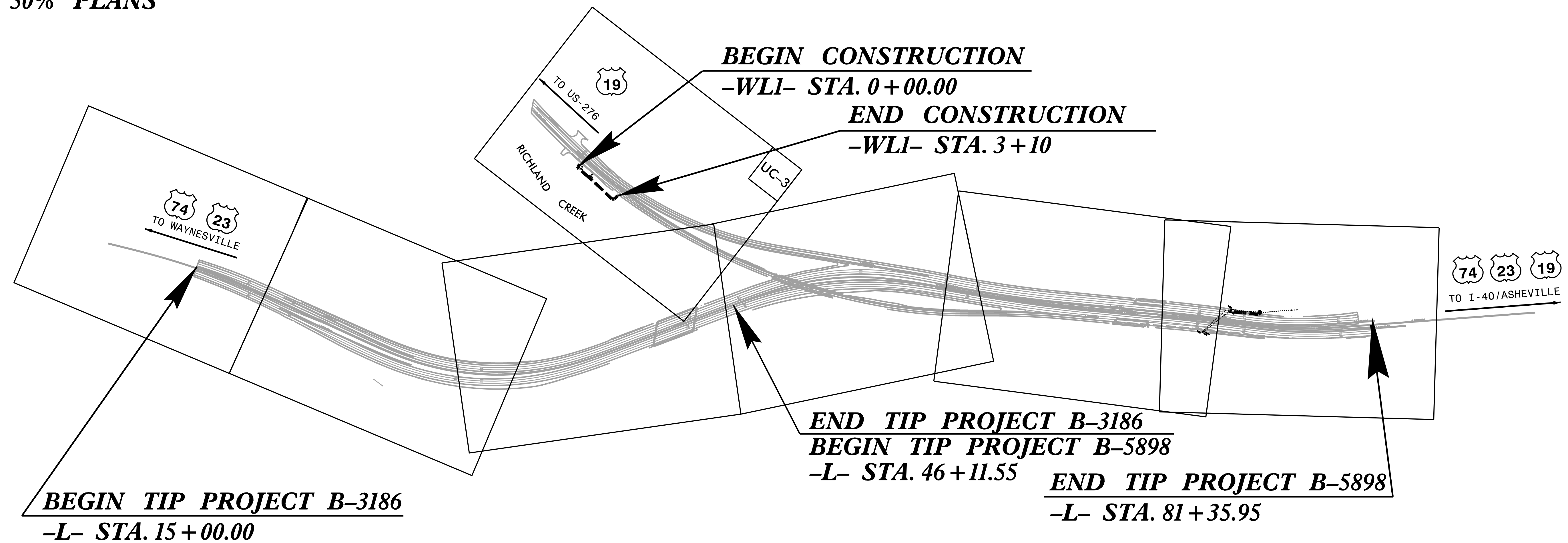
**LOCATION: US 19 ALONG RICHLAND CREEK  
TYPE OF WORK: WATER LINE RELOCATION**



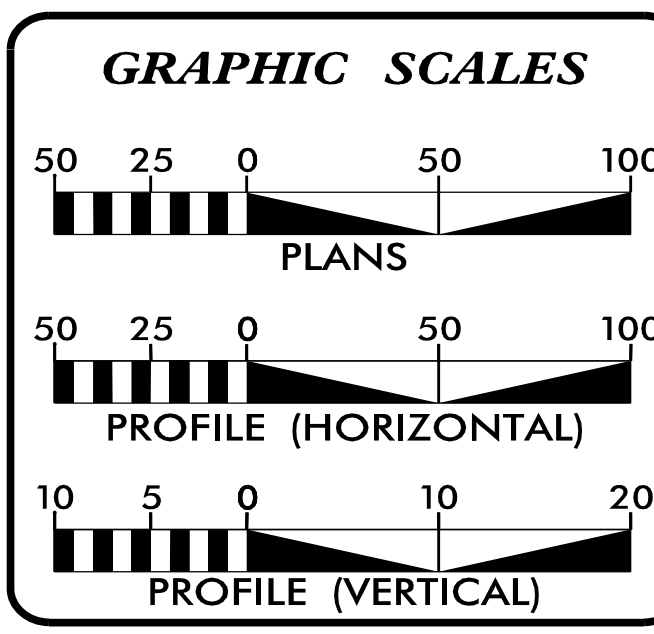
T.I.P. NO.	SHEET NO.
B-3186/B-5898	UC-1



**50% PLANS**



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UNTIL ALL SIGNATURES ARE COMPLETED



**INDEX OF SHEETS**

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	NOTES
UC-3A THRU 3B	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-5	PROFILE SHEET

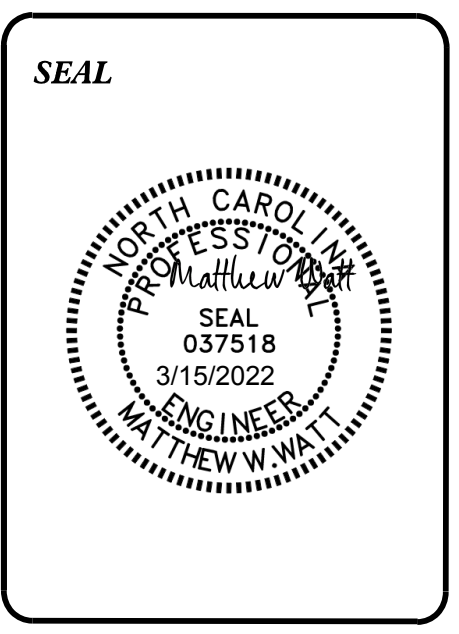
**WATER OWNER ON PROJECT**

(A) WATER - JUNALUSKA SANITARY DISTRICT

PREPARED IN THE OFFICE OF

**HDR** 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

MATTHEW WAIT, PE CONSULTANT CONTACT #1  
CONSULTANT CONTACT #2  
CONSULTANT CONTACT #3



**DIVISION OF HIGHWAYS  
UTILITIES UNIT**

1555 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1555  
PHONE (919) 707-6600  
FAX (919) 250-4151

UTILITIES REGIONAL ENGINEER  
UTILITIES ENGINEER  
UTILITIES AREA COORDINATOR  
UTILITIES COORDINATOR

2/24/2022 11:52:24 AM J:\B3186-B5898\_UC\_TSH.dgn



PROJECT REFERENCE NO.		SHEET NO.	
B-3186 / B-5898		UC-2	
DESIGNED BY:	VHM		
DRAWN BY:	VHM		
CHECKED BY:	MWW		
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

# PROJECT GENERAL NOTES

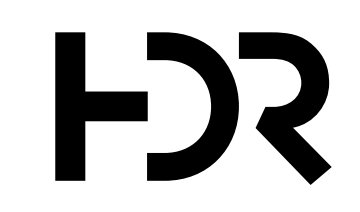
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS PROJECT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- CONTRACTOR SHALL USE ADEQUATE SHORING METHODS TO ENSURE:
  - COMPLIANCE WITH OSHA REGULATIONS
  - PROTECTION OF EXISTING PAVEMENT AND ROAD SHOULDERS
  - CONSTRUCTION ACTIVITIES ARE CONFINED TO RIGHTS-OF-WAY OR EASEMENTS AS INDICATED.
- CONTRACTOR SHALL INSTALL THE WATER LINE AS INDICATED ON PLANS AND SHALL NOT DISTURB ANY AREA OUTSIDE THE RIGHT OF WAY AND/OR THE EASEMENT LIMITS SHOWN ON THE PLANS.
- CONTRACTOR TO REPAIR/REPLACE ALL MAINTAINED PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES TO SATISFACTION OF NCDOT. NO SEPARATE PAYMENT SHALL BE MADE FOR PAVEMENT REPAIR EXCEPT AS NOTED ON PLANS. CONDITIONS OF EXISTING ROADS SHALL BE PHOTOGRAPHED BY CONTRACTOR IN ADVANCE OF CONSTRUCTION.
- LOCATION OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE NOT INTENDED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. LOCATE WELL AHEAD OF PIPE LAYING OPERATIONS TO ALLOW FOR ADJUSTMENT. NO SEPARATE PAYMENT WILL BE MADE FOR FIELD VERIFICATION OR ADJUSTMENT AS REQUIRED. ADJUSTMENTS TO LAYOUT SHOWN SHALL BE SUBJECT TO ENGINEER APPROVAL. CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY DAMAGE CAUSED BY CONSTRUCTION-RELATED ACTIVITIES TO EXISTING UTILITY LINES.
- 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 AT NO COST TO OWNER.
- THE CONTRACTOR SHALL RECONSTRUCT ALL ROAD SHOULDERS, DRAINAGE DITCHES AND SWALES DISTURBED BY CONSTRUCTION ACTIVITIES TO THEIR ORIGINAL GRADE AND LOCATION, AND IN EQUAL OR BETTER CONDITION OR AS DIRECTED BY DISTRICT ENGINEERS OFFICE.
- IT WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH POWER AND TELEPHONE COMPANIES FOR RELOCATING OR STABILIZING ANY EXISTING POLES AND/OR GUY WIRES WHICH WILL BE DISTURBED BY CONSTRUCTION. ALL COSTS TO THE CONTRACTOR SHALL BE INCIDENTAL TO THE PIPE INSTALLATION.
- CONTRACTOR SHALL NOTIFY OCCUPANTS A MINIMUM OF 24 HOURS AND 2 HOURS IN ADVANCE OF CLOSING PRIVATE DRIVES. CLOSURE TIME WILL BE LIMITED TO A MAXIMUM OF 2 HOURS.
- TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE OWNER AND NCDOT SPECIFICATIONS AND REQUIREMENTS.
- ALL HOLES, TRENCHES, AND OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY BARRICADES, LIGHTS OR OTHER PROTECTIVE DEVICES.
- REMOVAL OF EXCAVATED MATERIALS AND DAILY CLEANUP OPERATIONS SHALL BE PERFORMED IN COMPLIANCE WITH THE SPECIFICATIONS AND TO THE SATISFACTION OF THE OWNER/ENGINEER, AND/OR NCDOT.
- ALL ROCKS, BRUSH, TIMBER, AND OTHER DEBRIS THAT IS CLEARED FROM THE RIGHTS-OF-WAY SHALL BE REMOVED FROM THE PREMISES AND SHALL NOT BE BURIED WITHIN THE RIGHT-OF-WAY OR PLACED ON ADJOINING LANDS, EXCEPT WHERE ARRANGEMENTS FOR SUCH PLACEMENT OR DISPOSAL ARE MADE WITH THE APPROPRIATE PROPERTY OWNERS.
- ALL TREE PROTECTION AND EROSION AND SEDIMENTATION CONTROLS SHALL BE IMPLEMENTED BEFORE CONSTRUCTION COMMENCES AND SHALL NOT BE REMOVED UNTIL RE-VEGETATION HAS BEEN ESTABLISHED.

- THERE IS NO PAY ITEM FOR DEWATERING AND NO SEPARATE PAYMENT WILL BE MADE FOR DEWATERING. ANY DEWATERING OF THE TRENCH REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE PIPE OR STRUCTURE. ALL DISCHARGE SHALL BE THROUGH A FILTER BAG.
- ANY AGREEMENT BETWEEN THE CONTRACTOR AND PROPERTY OWNERS SHALL BE MADE IN WRITING AND COPIED TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ENGINEER WITH A SET OF SURVEY RECORD (AS-BUILT) DRAWINGS PREPARED BY A NORTH CAROLINA REGISTERED LAND SURVEYOR CERTIFYING THE ACCURACY OF THE SURVEY HORIZONTAL AND VERTICAL LOCATIONS TO ONE TENTH (0.10) OF A FOOT. SURVEY SHALL BE TIED TO THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83 FEET) HORIZONTALLY, AND ELEVATIONS SHALL BE NORTH AMERICAN VERTICAL DATUM (NAVD88). SURVEY INFORMATION SHALL BE PROVIDED IN AN ELECTRONIC AUTOCAD DWG AND IN A TAB DELINEATED FILE FOR IMPORT INTO GIS.
 

A SURVEY SHOT SHALL BE TAKEN ON THE TOP OF THE PIPE AT A MINIMUM DISTANCE OF 100 FEET, TOP OF EVERY FITTING, TOP OF EACH END OF ALL CASING PIPE, ALL VALVE LIDS, ALL AIR VALVE VAULTS, ALL BLOW-OFF PIPES, ALL CATHODIC PROTECTION TEST STATION BOXES, ALL ANODE LOCATIONS, AND ALL CONNECTION POINTS OF CATHODIC PROTECTION WIRES TO PIPES.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND STAKING.
- 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 AND SUBMITTED FOR APPROVAL TO THE OWNER PRIOR TO CONSTRUCTION.
- NOT ALL TREES OR VEGETATION ARE SHOWN ON DRAWINGS. NO EXTRA PAYMENT WILL BE GIVEN FOR REMOVING TREES NOT SHOWN.
- AT THE END OF EACH WORK DAY, AND DURING WORKDAY IF REQUESTED, THE CONTRACTOR SHALL SWEEP THE EXISTING ROADWAYS TO THE SATISFACTION OF THE OWNER. WATER JETTING SHALL NOT BE USED AS THE RUNOFF MAY IMPACT DOWNSTREAM WATERS.
- DRIVEWAYS AND ROADS USED TO ACCESS THE WATERLINE EASEMENT SHALL BE REPAIRED TO ORIGINAL CONDITIONS AT NO COST.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS. SUBMITTED SEPARATELY.
- FOR TRAFFIC CONTROL PLANS, SEE TRANSPORTATION MANAGEMENT PLANS. SUBMITTED SEPARATELY.
- THE EXISTING UTILITIES BELONG TO JUNALUSKA SANITARY SEWER DISTRICT. THE CONTACT FOR THE JUNALUSKA SANITARY SEWER DISTRICT IS JOSH NICKOL AT 828-452-1178.

## UTILITY CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116



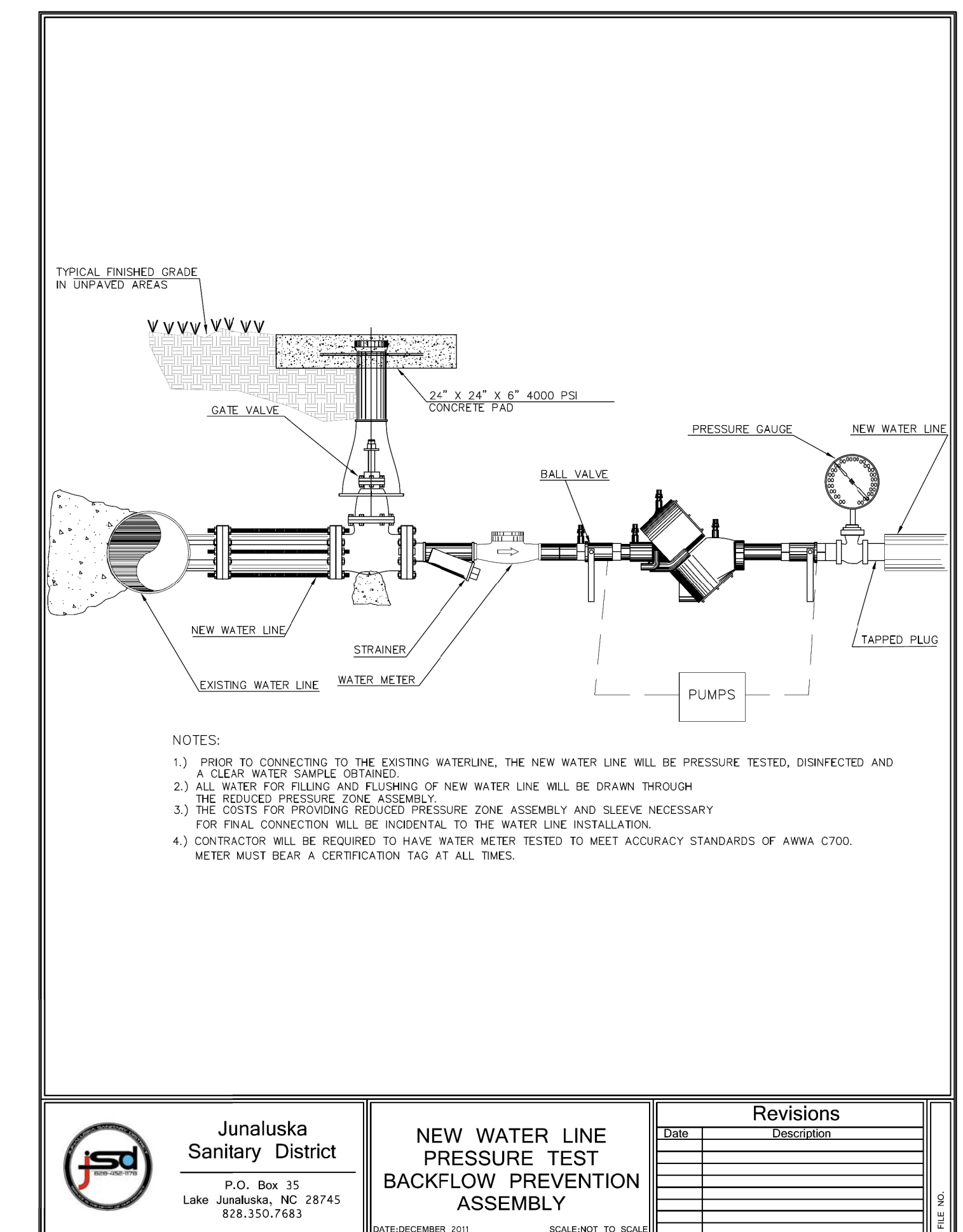
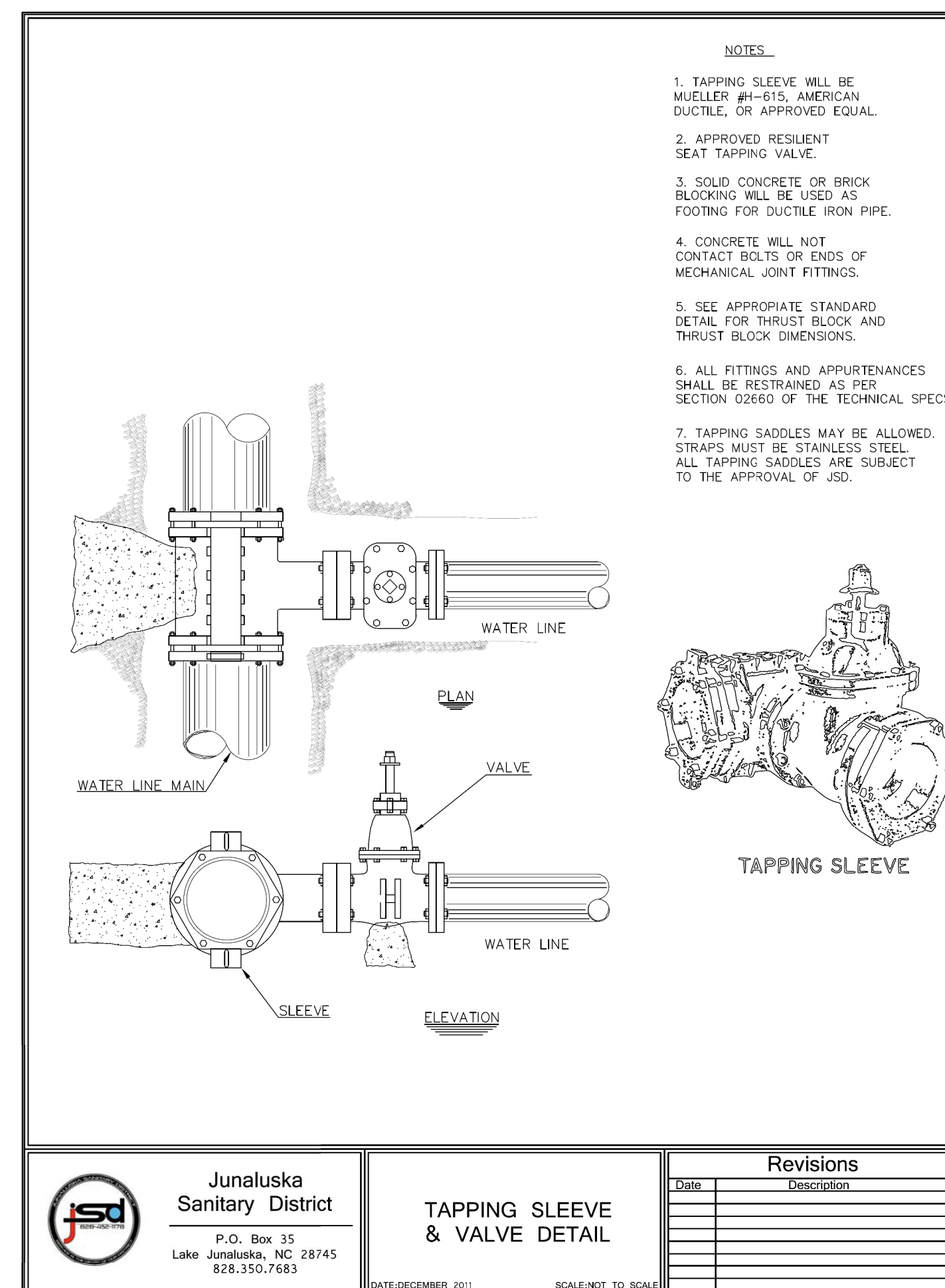
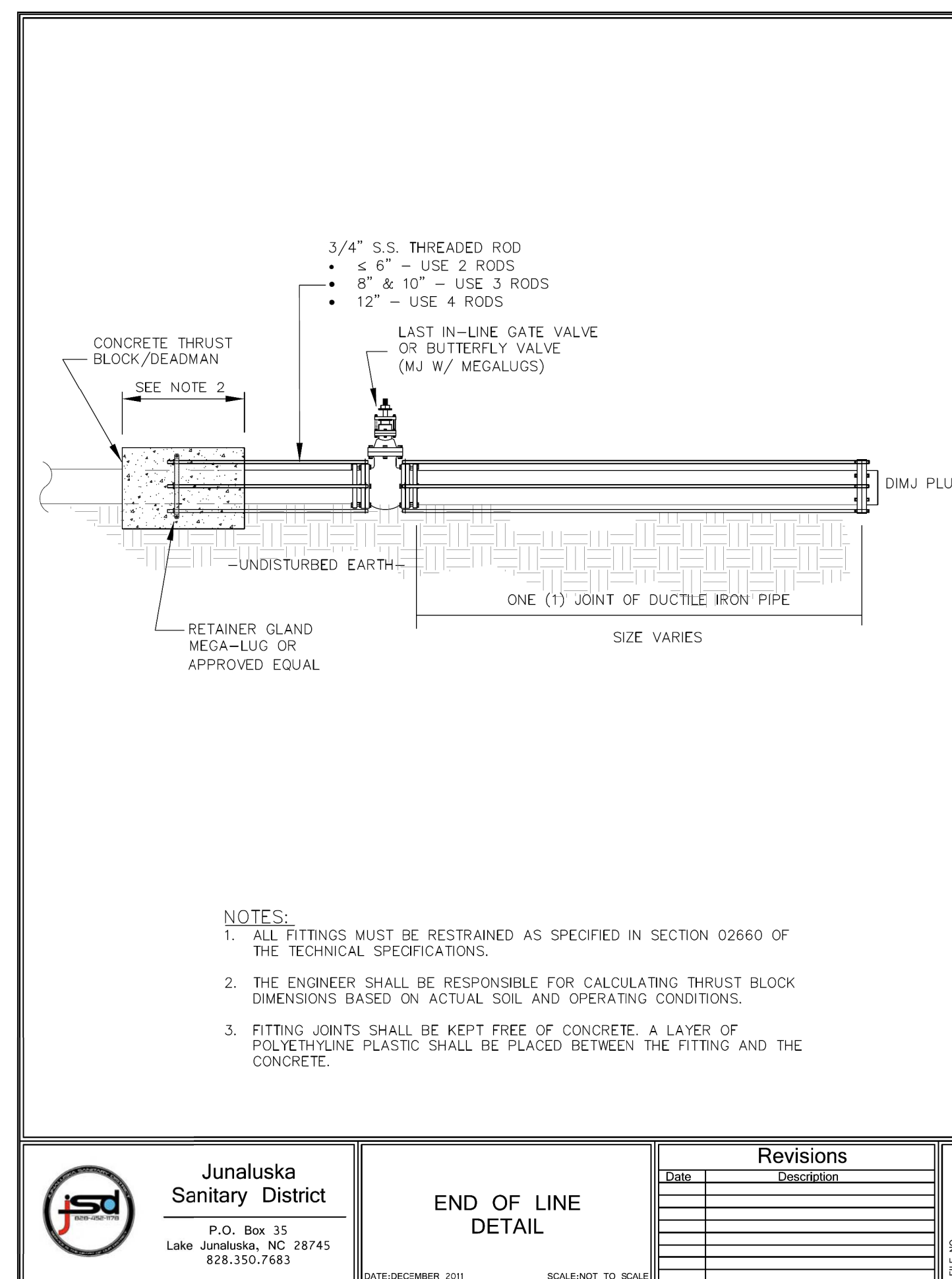
HDR Engineering, Inc. of the Carolinas  
 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
 N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. B-3186 / B-5898	SHEET NO. UC-3A
DESIGNED BY: VHM	
DRAWN BY: VHM	
CHECKED BY: MWW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

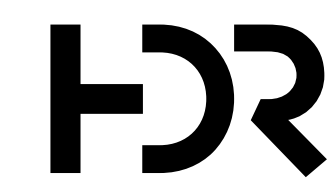
# JUNALUSKA SANITARY DISTRICT DETAILS

UTILITY CONSTRUCTION

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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

PROJECT REFERENCE NO. B-3186 / B-5898	SHEET NO. UC-3B
DESIGNED BY: VHM	
DRAWN BY: VHM	
CHECKED BY: MWW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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# JUNALUSKA SANITARY DISTRICT DETAILS

UTILITY CONSTRUCTION  
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TABLE OF "A" DIMENSIONS (IN FEET)					
BEND	90	45	22 1/2	11 1/4	TEE
6	1.4	1.1	1.0	1.0	1.2
8	1.9	1.5	1.5	1.5	1.6
10	2.4	1.8	1.8	1.8	2.0
12	2.8	2.1	2.0	2.0	2.4
16	3.8	2.8	2.5	2.5	2.8
24	5.6	4.2	3.0	3.0	4.5

NOTES:  
 1. ALL FITTINGS MUST BE RESTRAINED AS SPECIFIED IN SECTION 02660 OF THE TECHNICAL SPECIFICATIONS.  
 2. DIMENSION TABLE GIVEN IS A GUIDE ONLY. ENGINEER SHALL BE RESPONSIBLE TO CALCULATE THRUST BLOCK DIMENSIONS BASED ON ACTUAL SOIL AND OPERATING PRESSURE CONDITIONS.  
 3. FITTING JOINTS SHALL BE KEPT FREE OF CONCRETE. A LAYER OF POLYETHYLENE PLASTIC SHALL BE PLACED BETWEEN THE FITTING AND THE CONCRETE.  
 4. PRE-CAST THRUST BLOCKS ARE NOT ACCEPTABLE.  
 5. CONCRETE SHALL HAVE 4000 P.S.I. COMPRESSIVE STRENGTH.

**TYPICAL THRUST BLOCK FOR TEES**  
 NTS

**TYPICAL THRUST BLOCK FOR BENDS**  
 NTS

**Junaluska Sanitary District**  
 P.O. Box 35  
 Lake Junaluska, NC 28745  
 828.350.7683

Revisions	
Date	Description

DATE: DECEMBER 2011    SCALE: NOT TO SCALE

**CLASS "C" ALTERNATE**  
**CLASS "C" BEDDING**  
 NOT TO SCALE

**CLASS "D" BEDDING**  
 NOT TO SCALE

NOTE: FOR USE WITH TRENCH EXCAVATED BY BACKHOE. HAND SHAPED BOTTOM - SHAPE BELL HOLES FOR USE IN DRY EARTH TRENCHES ONLY.

NOTE: FOR USE WITH TRENCHING MACHINE. USE IN DRY EARTH TRENCHES ONLY.

**Junaluska Sanitary District**  
 P.O. Box 35  
 Lake Junaluska, NC 28745  
 828.350.7683

Revisions	
Date	Description

DATE: DECEMBER 2011    SCALE: NOT TO SCALE

**PRIMARY & SECONDARY ROAD PAVEMENT REPLACEMENT DETAIL**

**CONCRETE DRIVEWAY REPLACEMENT DETAIL**

**DRIVEWAY & PARKING LOT ASPHALT REPLACEMENT DETAIL**

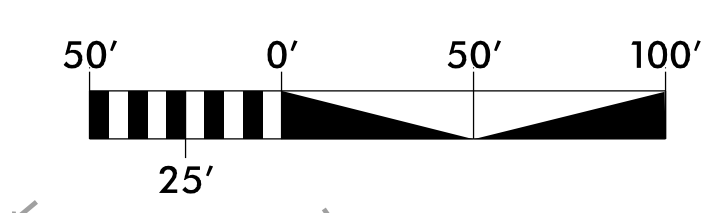
**Junaluska Sanitary District**  
 P.O. Box 35  
 Lake Junaluska, NC 28745  
 828.350.7683

Revisions	
Date	Description

DATE: DECEMBER 2011    SCALE: NOT TO SCALE



PROJECT REFERENCE NO. B-3186 / B-5898	SHEET NO. UC-4
DESIGNED BY: VHM	
DRAWN BY: VHM	
CHECKED BY: MWW	
APPROVED BY:	
REVISED:	UTILITY CONSTRUCTION PLANS ONLY
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**UTILITY CONSTRUCTION**

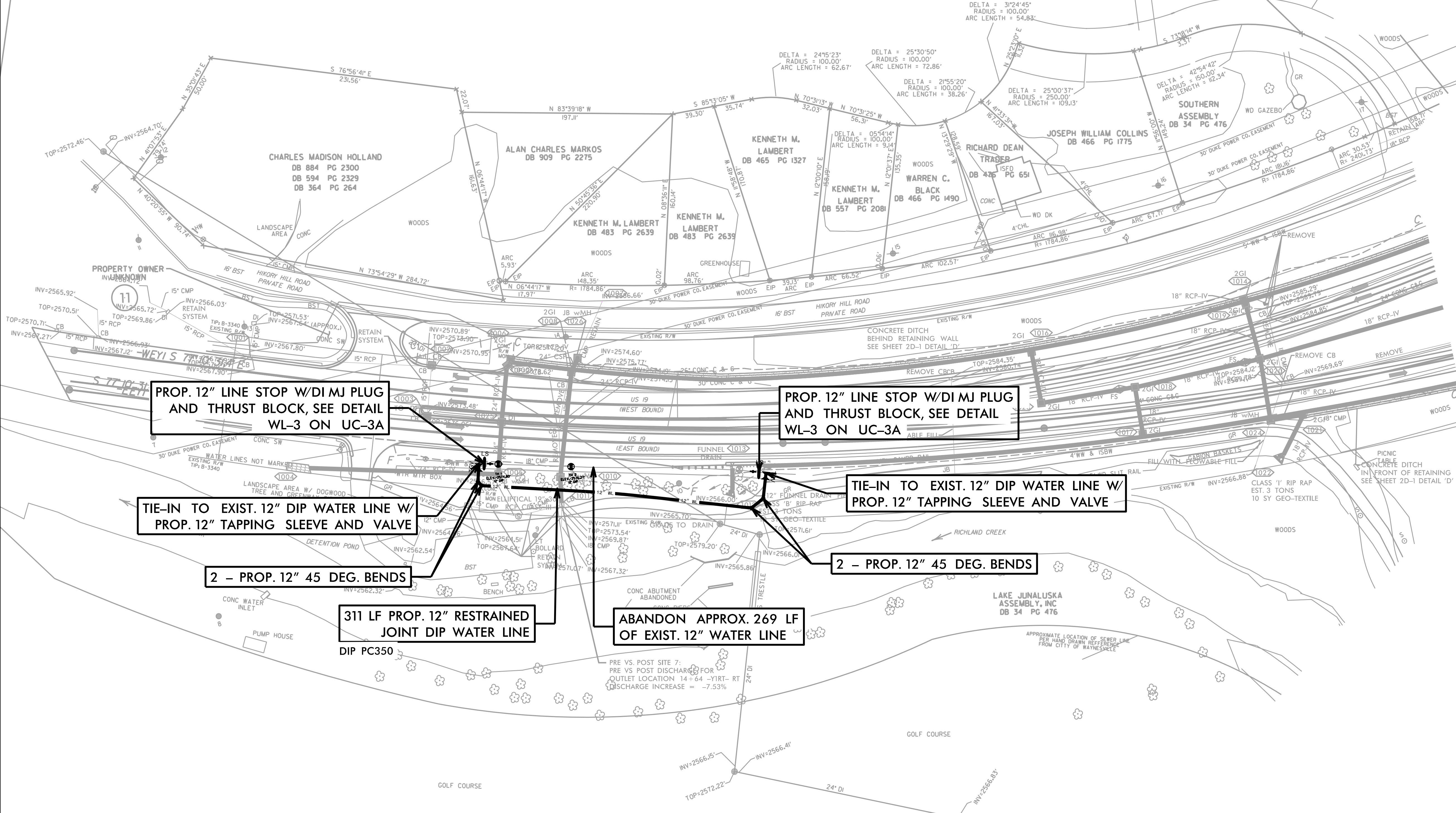
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**HDR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

**UTILITY OWNERS**  
DUKE ENERGY CAROLINAS  
217 CRAIG MANOR ROAD  
LANCASTER, S.C. 29720  
AT&T  
P.O. BOX 53704  
ATLANTA, GA, 30353  
TOWN OF WAYNESVILLE  
16 SOUTH MAIN STREET  
P.O. BOX 100  
WAYNESVILLE, N.C. 28786  
TOWN OF WAYNESVILLE  
16 SOUTH MAIN STREET, P.O. BOX 100  
WAYNESVILLE, N.C. 28786  
LAKE JUNALUSKA ASSEMBLY PUBLIC WORKS  
91N. LAKESHORE DRIVE  
LAKE JUNALUSKA, N.C. 28745  
JUNALUSKA SANITARY DISTRICT  
558 OLD CLYDE ROAD  
CLYDE, N.C. 28721

PRE VS. POST SITE 4:  
(LOCATED IN EXISTING DRAW  
TO RICHLAND CREEK; 42' PAST  
END OF PLANSHEET)  
  
PRE VS. POST DISCHARGE FOR  
OUTLET LOCATION 8+53 -YILT- LT  
DISCHARGE INCREASE = 0.61%

LAKE JUNALUSKA  
ASSEMBLY, INC  
DB 34 PG 476



**PROP. 12" LINE STOP W/DI MJ PLUG  
AND THRUST BLOCK, SEE DETAIL  
WL-3 ON UC-3A**

**PROP. 12" LINE STOP W/DI MJ PLUG  
AND THRUST BLOCK, SEE DETAIL  
WL-3 ON UC-3A**

**TIE-IN TO EXIST. 12" DIP WATER LINE W/  
PROP. 12" TAPPING SLEEVE AND VALVE**

**TIE-IN TO EXIST. 12" DIP WATER LINE W/  
PROP. 12" TAPPING SLEEVE AND VALVE**

**2 - PROP. 12" 45 DEG. BENDS**

**2 - PROP. 12" 45 DEG. BENDS**

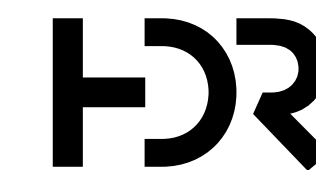
**311 LF PROP. 12" RESTRAINED  
JOINT DIP WATER LINE  
DIP PC350**

**ABANDON APPROX. 269 LF  
OF EXIST. 12" WATER LINE**

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5/14/99



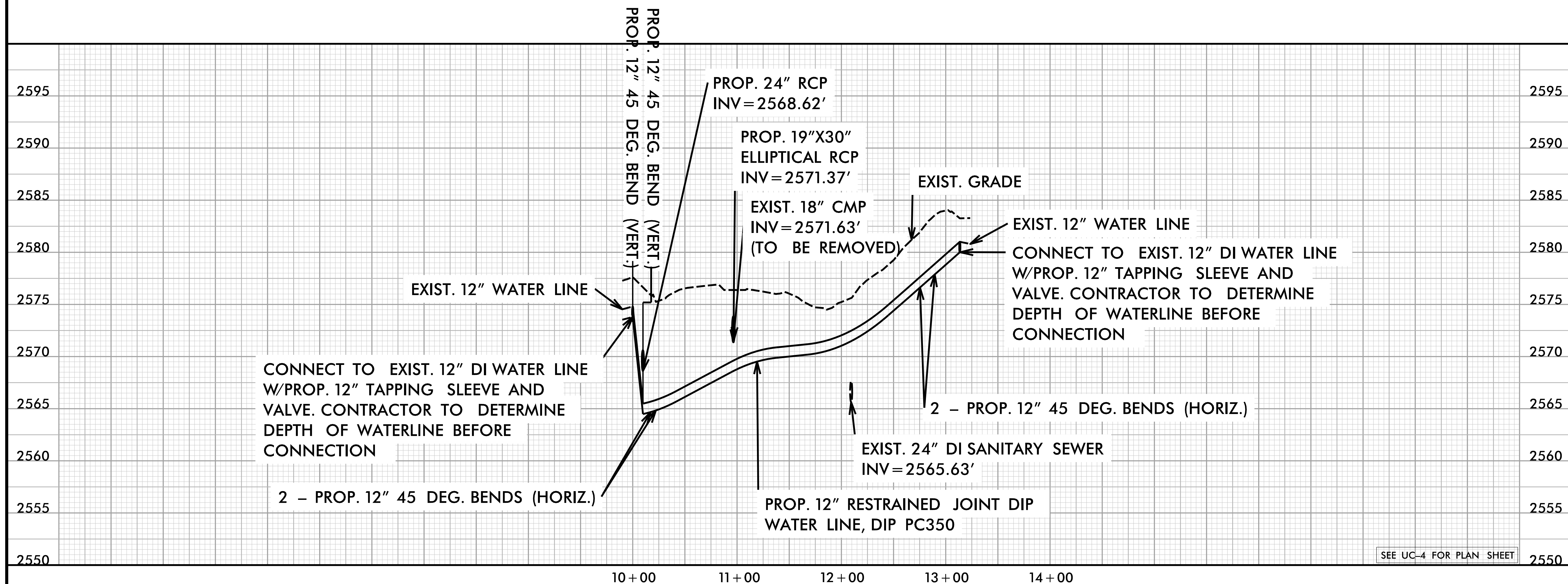
HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. B-3186 / B-5898	SHEET NO. UC-5
DESIGNED BY: VHM	
DRAWN BY: MWW	
CHECKED BY: MWW	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

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# WATER LINE PROFILE



SEE UC-4 FOR PLAN SHEET

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