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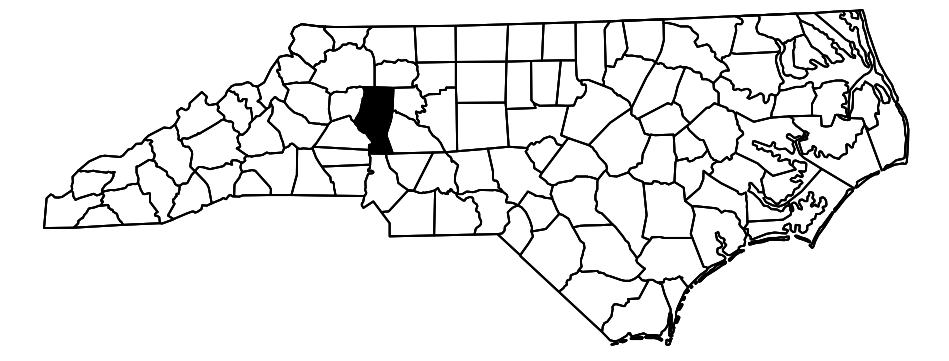
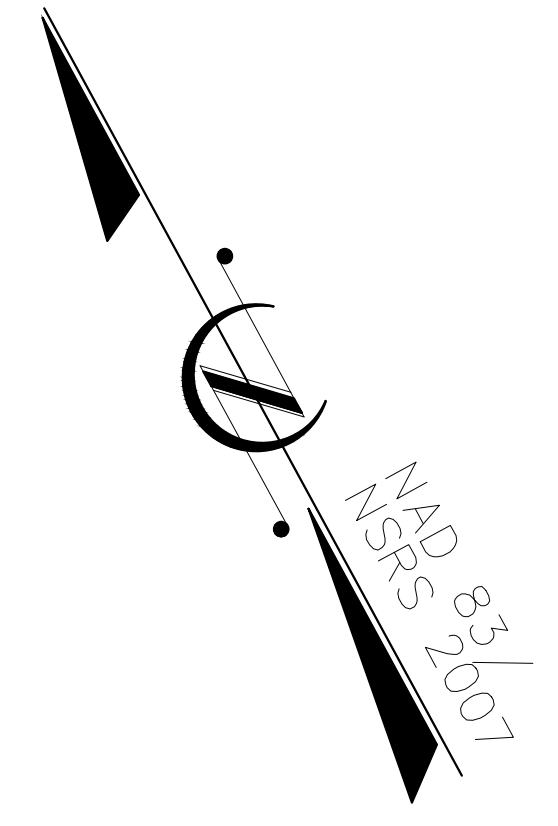
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

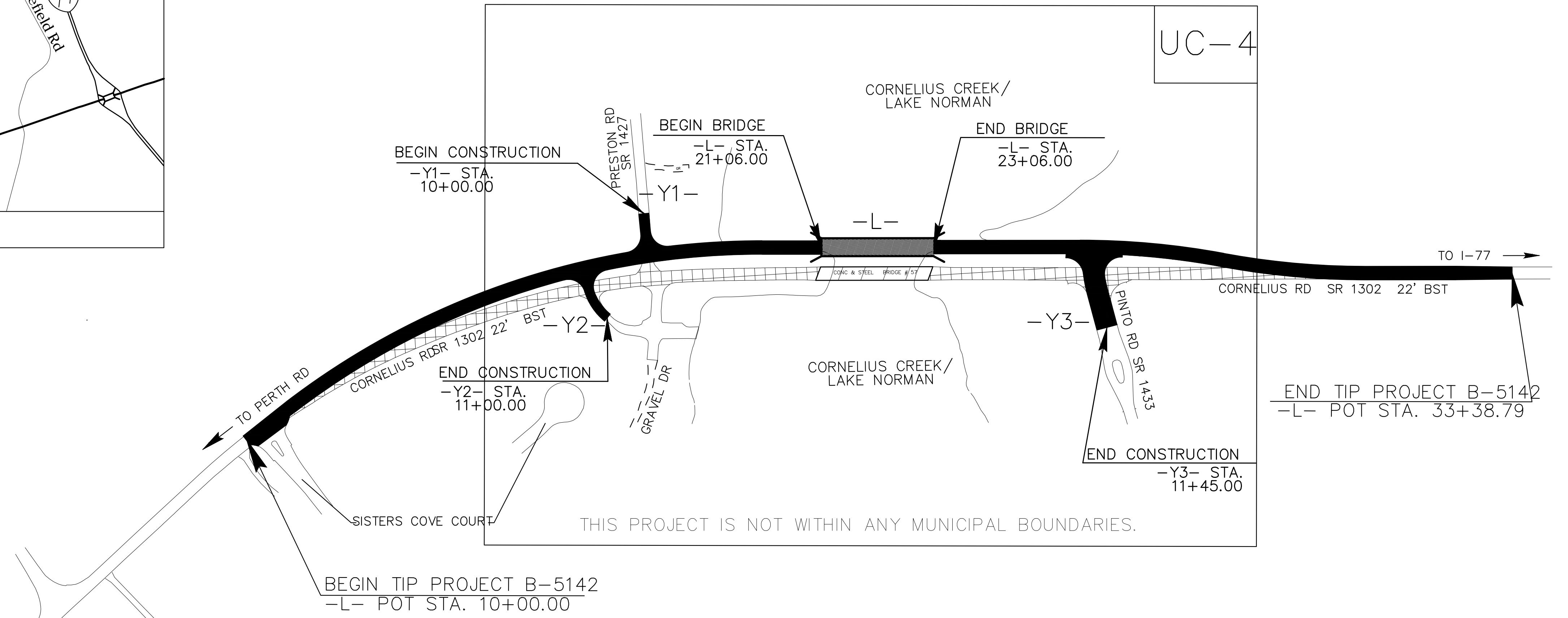
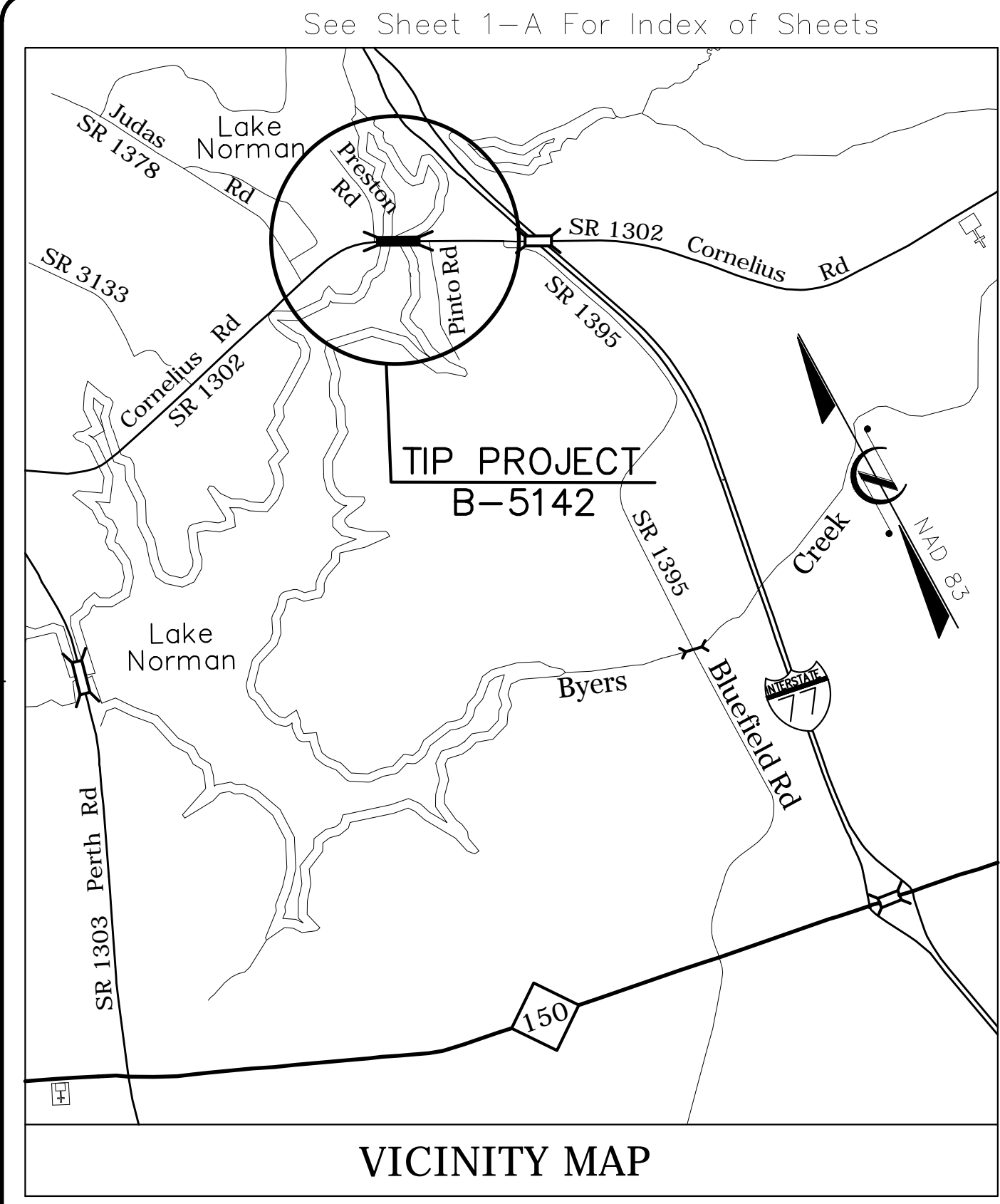
UTILITY CONSTRUCTION PLANS IREDELL COUNTY

LOCATION: BRIDGE NO. 57 ON SR 1302
OVER CORNELIUS CREEK

TYPE OF WORK: WATER AND FM SEWER UTILITIES



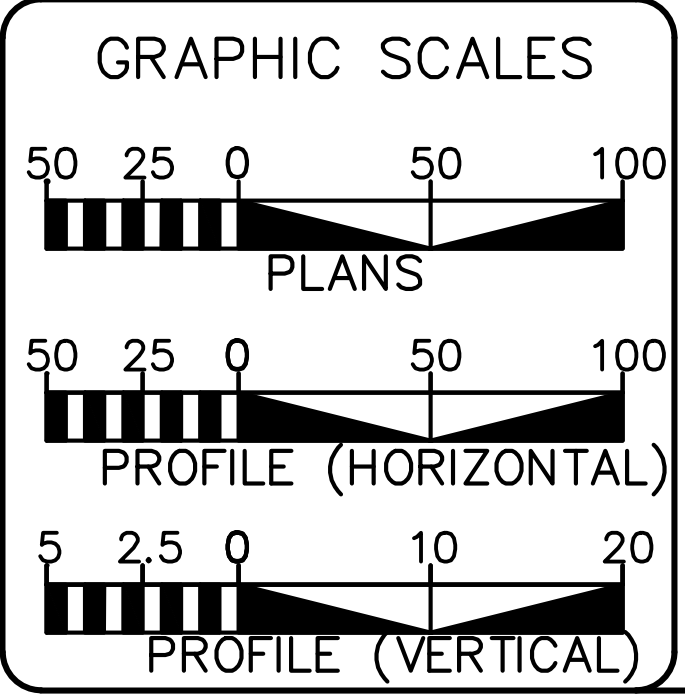
TIP PROJECT: B-5142



NOTE TO CONTRACTOR: ALL VALVES FOR WATER AND SEWER ARE TO BE "GATE VALVES".

INDEX OF SHEETS (REFER TO STRUCTURAL UTILITY PLANS)

SHEET NO.	DESCRIPTION
SU-1	UTILITY ATTACHMENT SEC & DETAILS
SU-2	END BENT & INTERMEDIATE DIAPHRAGM
SU-3	PLAN-INTEGRAL END BENT & DETAILS
SU-4	UTILITY STORM CROSSING SECTIONS

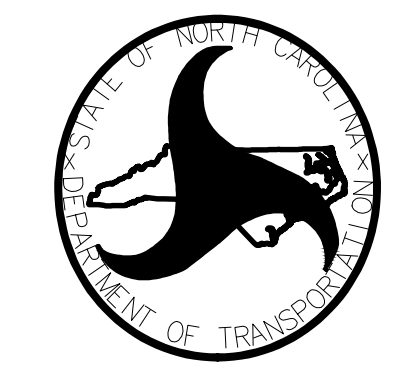
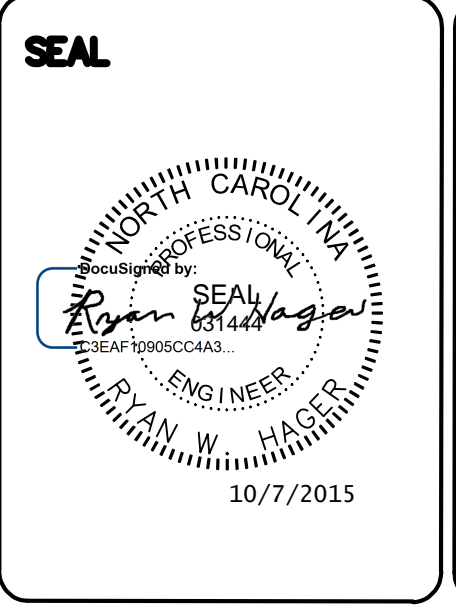


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-3B	DETAILS
UC-4	UTILITY CONSTRUCTION PLAN
UC-5 THRU UC-6	UTILITY PROFILES

WATER AND SEWER OWNERS ON PROJECT

- (1) WATER-TOWN OF MOORESVILLE
- (2) FM SANITARY SEWER-TOWN OF MOORESVILLE



PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
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Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
James E. Swinson UTILITIES PROJECT DESIGNER



UTILITY CONSTRUCTION

CARRIER PIPE		DIMENSIONS		
NOMINAL DIA.	O. D.	A	B	C
6"	6.90"	11"	1 1/4"	5/8"
8"	9.05"	16 1/2"	2 1/4"	1"
12"	13.20"	22 1/2"	3"	1 1/4"
16"	17.40"	28 1/2"	3 1/2"	1 1/2"
24"	25.80"	34 1/4"	4"	2"

PIPE SUPPORT ASSEMBLY MARK NUMBER				
NOMINAL DIA.	1	2	3	4
6"	8" x 2" x 1/4" PL	6" x 1 1/2" x 1/4" PL	6" x 1/4" PL	3/8" NUT & BOLT
8"	8" x 3" x 1/4" PL	6" x 3 1/4" x 1/4" PL	6" x 1/4" PL	1/2" NUT & BOLT
12"	8" x 4" x 1/4" PL	6" x 5 5/8" x 3/8" PL	6" x 3/8" PL	1/2" NUT & BOLT
16"	8" x 4" x 3/8" PL	6" x 5 3/4" x 3/8" PL	6" x 3/8" PL	1/2" NUT & BOLT
24"	8" x 4" x 3/8" PL	6" x 5 1/2" x 3/8" PL	6" x 3/8" PL	1/2" NUT & BOLT

NOTES:

- PROVIDE TWO SPIDERS PER JOINT OF CARRIER PIPE.
- SPIDERS, NUTS, & WASHERS SHALL BE STAINLESS STEEL. Alternative spiders may be used for cathodic protection conditions.
- ADJUST HEIGHT OF SPIDERS AS NECESSARY TO MAINTAIN SPECIFIED SLOPE.
- CASING PIPE NOT SHOWN.
- LEGS ROTATED OUT OF POSITION FOR CLARITY.

	TOWN OF MOORESVILLE	SEWER SYSTEMS	January 2009
	STANDARD DETAIL	CASING SPIDER	Revision 1
			NTS S - 22.0

NOTES:

- HYDRANTS SHALL CONFORM TO AWWA SPEC. C-502.
- HYDRANTS SHALL HAVE MAIN VALVE OPENINGS OF 5 1/4" WITH (1) 5" STORZ PUMPER CONNECTION FACING THE STREET AND TWO 2.5 INCH HOSE OUTLETS.
- ALL HYDRANTS SHALL OPEN COUNTERCLOCKWISE
- PUBLIC HYDRANTS SHALL BE PAINTED WITH SAFETY YELLOW ENAMEL. PRIVATE HYDRANTS SHALL BE PAINTED SILVER.
- PUMP NOZZLE SHALL BE ONE-PIECE DESIGN COMPATIBLE WITH STORZ HOSE COUPLING. NOZZLE SHALL BE INTEGRAL TO THE FIRE HYDRANT ASSEMBLED AT THE FACTORY. STORZ ADAPTERS WILL NOT BE ACCEPTED.

	TOWN OF MOORESVILLE	WATER SYSTEMS	January 2009
	STANDARD DETAIL	FIRE HYDRANT	Revision 1
			NTS W - 1.0

FITTING	DIMENSION "A"			
	4"	6"	8"	12"
11 1/4 BEND	1'-6"	1'-6"	1'-6"	2'-0"
22 1/2 BEND	1'-6"	1'-6"	2'-0"	2'-8"
45 BEND	1'-6"	2'-0"	2'-6"	3'-8"
90 BEND	1'-8"	2'-6"	3'-4"	5'-0"
TEE	1'-8"	2'-6"	3'-4"	5'-0"

NOTES:

- ALL FACES OF THE BLOCK SHALL REST AGAINST UNDISTURBED SOIL.
- PIPE JOINTS, BOLTS, NUTS, RETAINER GLANDS ARE NOT TO BE ENCASED IN CONCRETE.
- DIMENSIONS BASED ON 150 PSI TEST PRESSURE 1,000 PSF BEARING CAPACITY.
- THRUST BLOCKS ARE ALLOWED ONLY WHEN THERE IS NOT ENOUGH PIPE LENGTH TO PROVIDE SUFFICIENT THRUST RESTRAINT VIA RESTRAINED JOINT PIPE, OR WHEN CONNECTING TO AN EXISTING PIPE THAT IS NOT RESTRAINED JOINT.

	TOWN OF MOORESVILLE	WATER SYSTEMS	January 2009
	STANDARD DETAIL	THRUST BLOCK	Revision 1
			NTS W - 6.0

BEDDING	LIMITING INVERT DEPTHS			
	PIPE DIAMETER			
	6"	8"	10"	12"
ORDINARY	4'-20'	4'-15'	4'-10'	4'-10'
TYPE "A"	-	15'-20'	10'-20'	10'-20'

NOTES:

- PIPES AT DEPTHS GREATER THAN 12' MUST BE APPROVED BY THE DIRECTOR OF ENGINEERING.
- PIPE BEDDING SHALL BE DESIGNED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- PIPE EMBEDMENT SHALL BE PLACED IN A MAXIMUM OF 6" LAYERS & COMPACTED TO 95% OF THE MAXIMUM LABORATORY DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR METHOD.
- PIPE EMBEDMENT SHALL EXTEND TO FINISHED GRADE FOR PIPELINES WITHIN ROAD RIGHT-OF-WAY.

	TOWN OF MOORESVILLE	WATER SYSTEMS	January 2009
	STANDARD DETAIL	WATERLINE PIPING TRENCHING & BACKFILLING (UP TO 20' DEEP)	Revision 1
			NTS W - 8.0

	TOWN OF MOORESVILLE	WATER SYSTEMS	January 2009
	STANDARD DETAIL	TEMPORARY 2" BLOWOFF ASSEMBLY	Revision 1
			NTS W - 10.0

NOTE:

PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

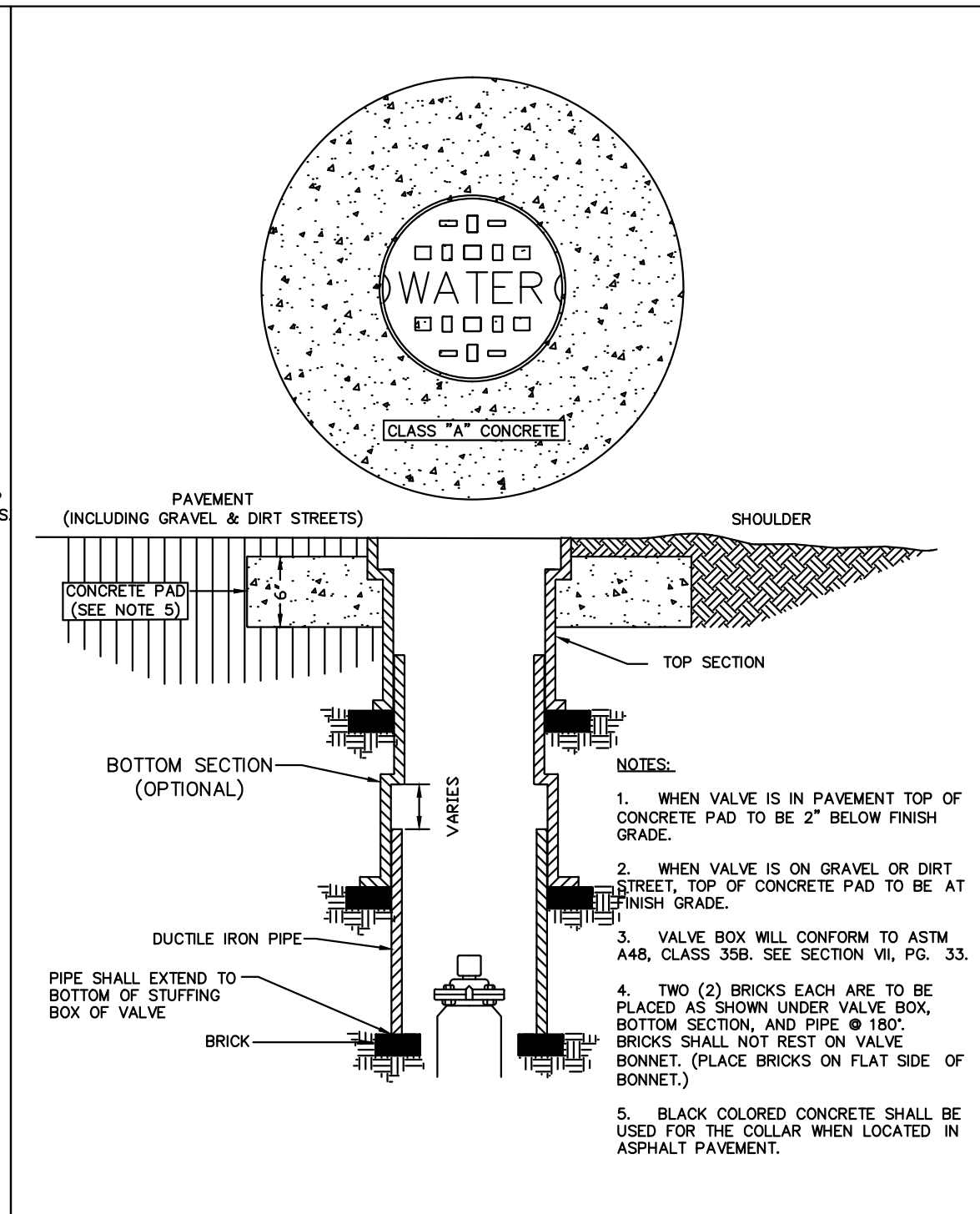
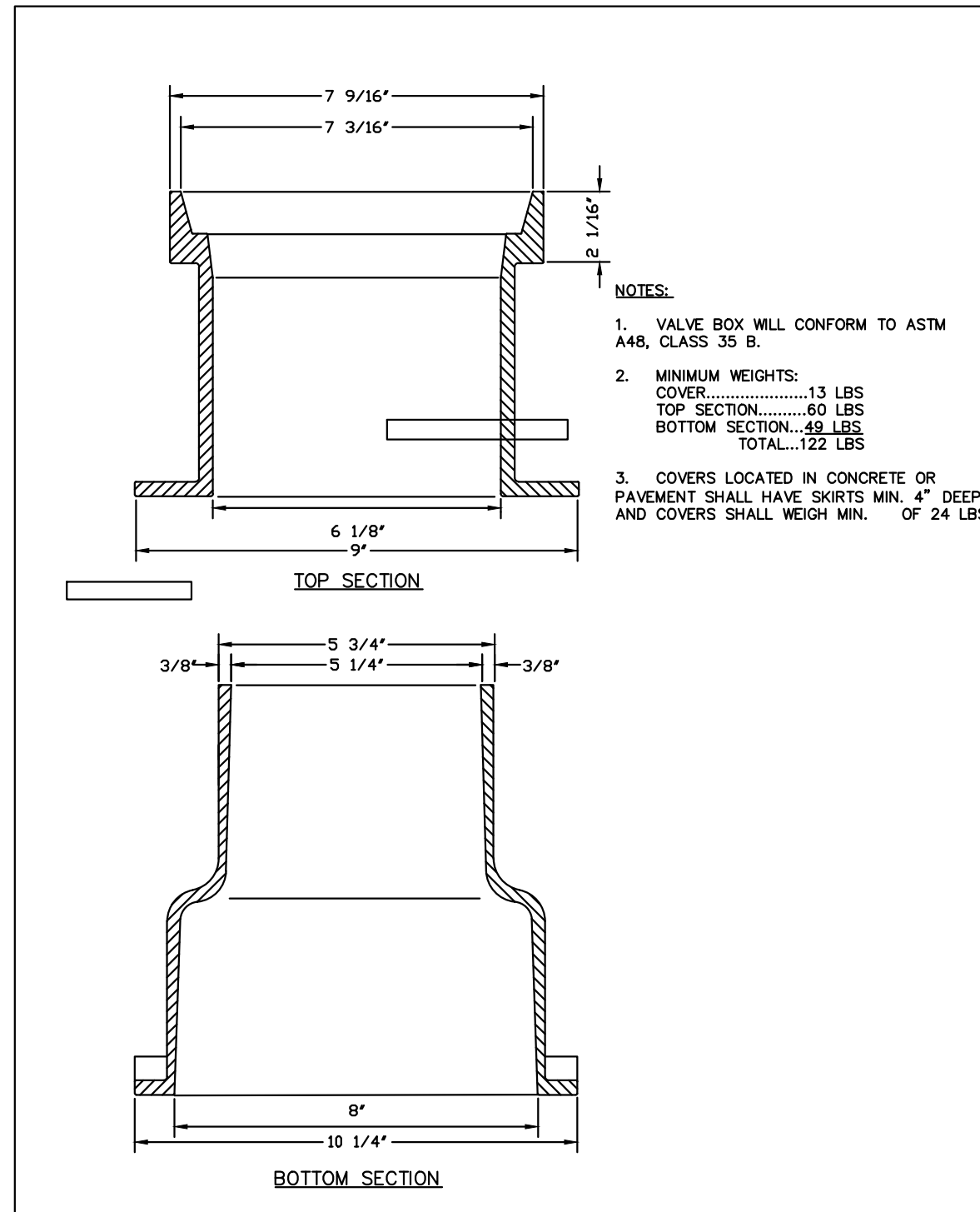
NOTES:

- 4" TYPICAL, 6" DEPTH IF IN ROCK.
- FOUNDATION STONE REQUIRED WHEN SOIL CONDITIONS ARE UNSTABLE.
- INITIAL BACKFILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED. INITIAL BACKFILL SHALL CONTAIN NO MATERIAL OVER 1 1/2" IN DIAMETER, FROZEN LUMPS, OR DEBRIS.
- BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY UP TO 1' BELOW SUBGRADE. REFER TO ROADWAY STANDARD FOR FINAL 1'.

	TOWN OF MOORESVILLE	SEWER SYSTEMS	January 2014
	STANDARD DETAIL	DUCTILE IRON PIPE SEWER BEDDING (UP TO 12" DIAMETER)	Revision 2
			NTS S - 12.0

PROJECT REFERENCE NO.	SHEET NO.
B-5142	UC-3B
DESIGNED BY: MOS	
DRAWN BY: MOS	
CHECKED BY: RW#1	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



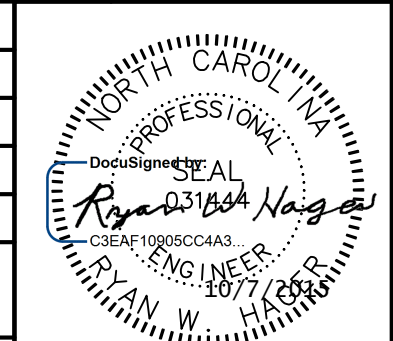
TOWN OF MOORESVILLE STANDARD DETAIL	WATER SYSTEMS CAST IRON VALVE BOX	January 2009 Revision 1	TOWN OF MOORESVILLE STANDARD DETAIL	WATER SYSTEMS ROUND TOP VALVE BOX INSTALLATION	January 2009 Revision 1
		NTS			W - 14.0

community infrastructure consultants

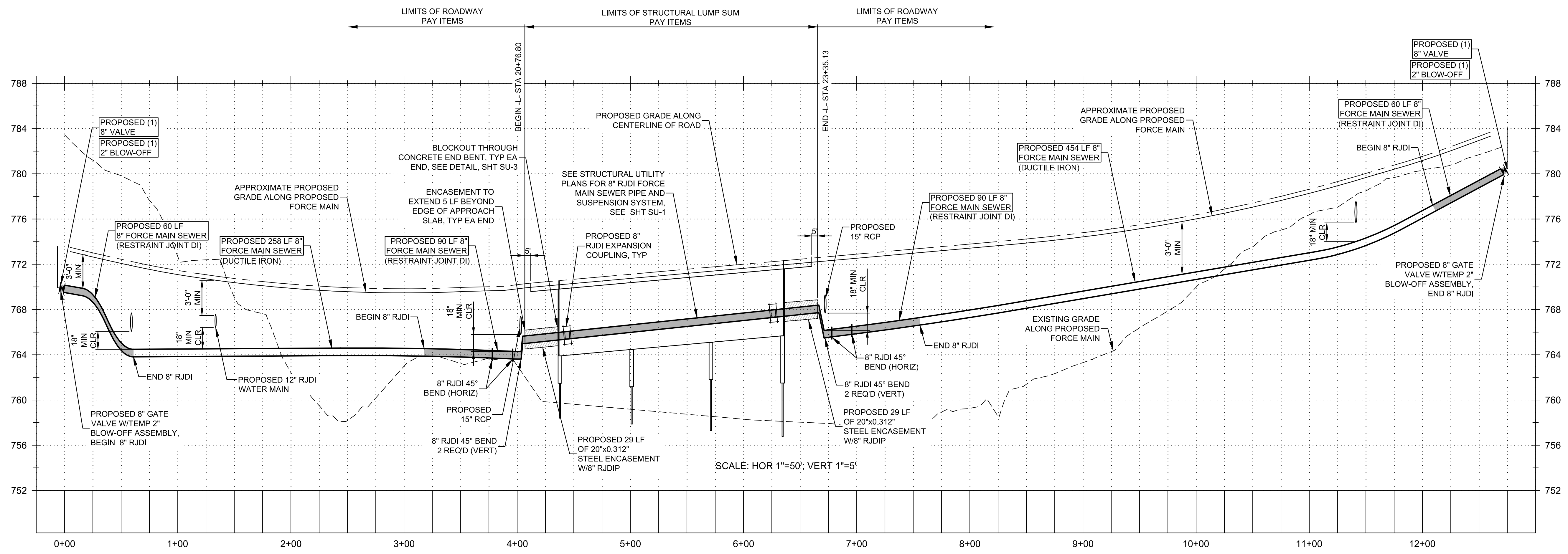
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NC LICENSE NO. F-0374

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5142	UC-5
DESIGNED BY: MOS	
DRAWN BY: MOS	
CHECKED BY: RWH	
APPROVED BY:	
REVISED:	
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UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



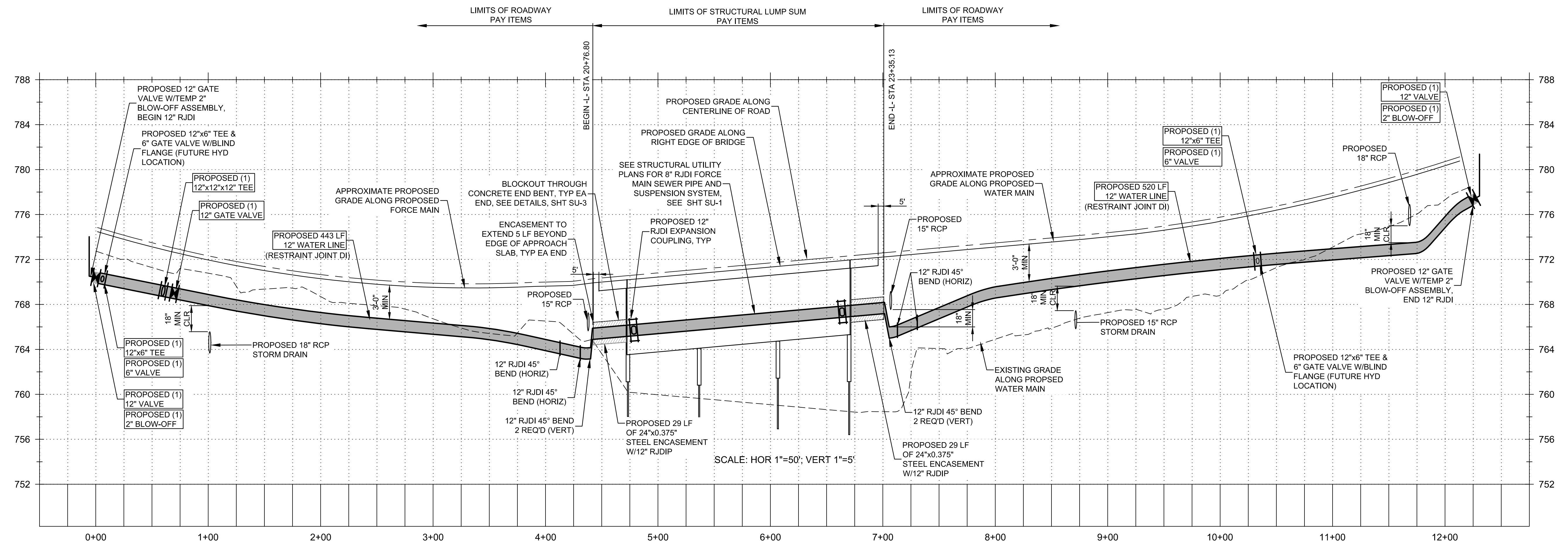
SANITARY SEWER FORCE MAIN PROFILE

5/14/99

5/14/99

PROJECT REFERENCE NO. B-5142	SHEET NO. UC-6
DESIGNED BY: MOS	
DRAWN BY: MOS	
CHECKED BY: RWH	
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



WATER MAIN PROFILE