

PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
Y-4807B	UC-3C
DESIGNED BY: ABN	
DRAWN BY: ABN	
CHECKED BY: ASV	
APPROVED BY:	
REVISER:	1/18/2024
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 UNLESS ALL SIGNATURES COMPLETED

STV STV Engineers, Inc.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

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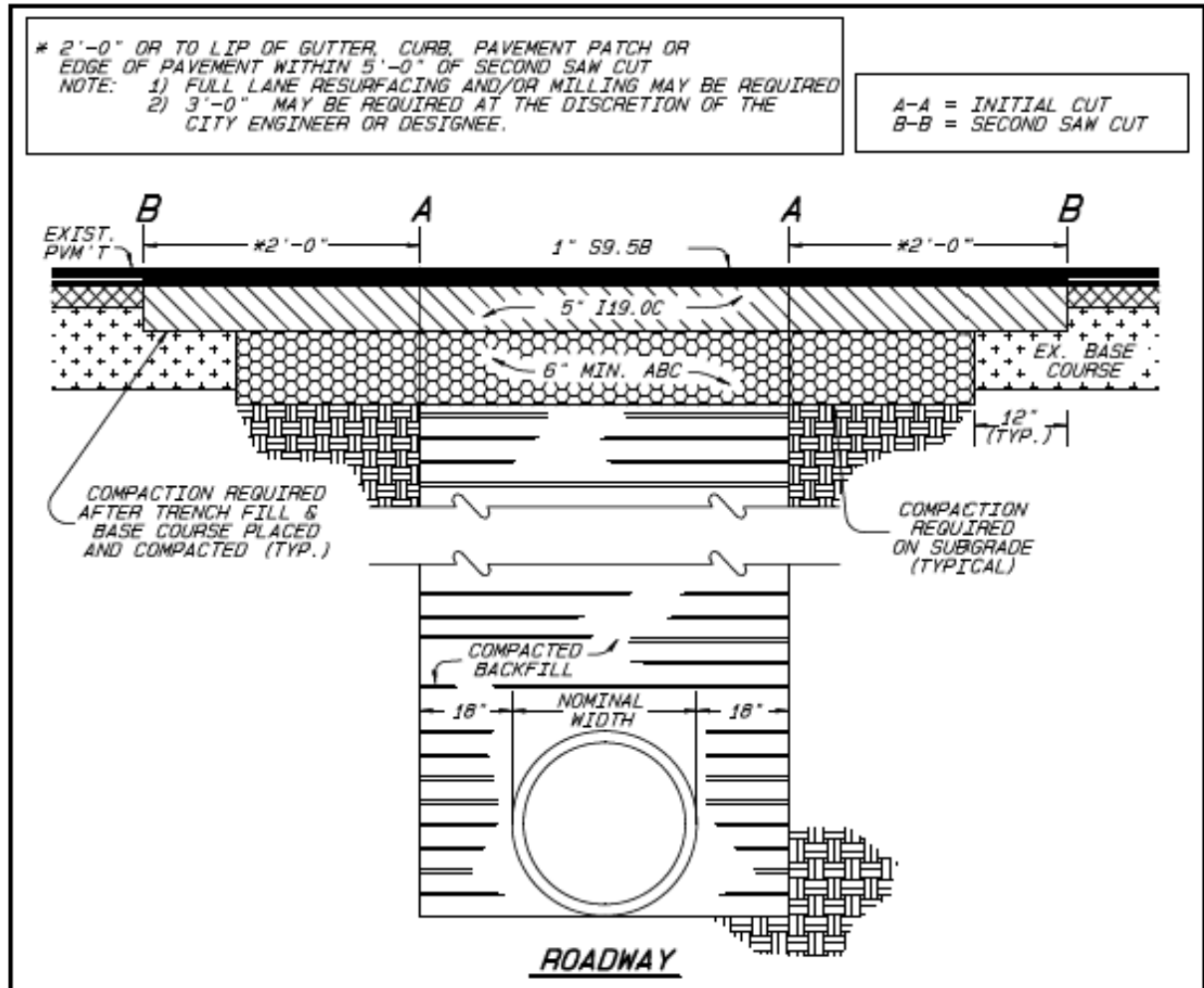
SIZE AND DEPTH OF HOLE	STAT. THREAT IN	FAT. PLS. OR CLAY	SPRT. CLAY	GRAVEL COURSE	ALUMS. OR CLAY	SAND & GRAVEL	CONCRETE	SAND CLAY RY	GRAVEL COURSE	PROCT. 90% TO 95%
6"										
11-1/4"	812	1 FT ²	1	1	1	1	1	1	1	1
22-1/2"	1653	1 FT ²	1	1	1	1	1	1	2	1
45"	3247	1 FT ²	2	1	1	1	1	1	4	1
90"	5994	2 FT ²	3	1	1	1	2	6	1	1
PLUG	4239	1 FT ²	2	1	1	1	1	4	1	1
8"										
11-1/4"	1444	1 FT ²	1	1	1	1	1	2	1	1
22-1/2"	2939	1 FT ²	2	1	1	1	1	3	1	1
45"	5773	2 FT ²	3	1	1	1	2	6	1	1
90"	10656	3 FT ²	6	1	2	2	3	11	2	2
PLUG	7536	2 FT ²	4	1	1	1	2	8	1	1
12"										
11-1/4"	3248	1 FT ²	2	1	1	1	1	3	1	1
22-1/2"	6612	2 FT ²	4	1	1	1	2	7	1	1
45"	12988	3 FT ²	7	1	2	2	3	13	2	2
90"	23976	6 FT ²	12	2	3	3	6	24	3	3
PLUG	16956	4 FT ²	9	1	2	2	4	17	2	2
16"										
11-1/4"	5775	2 FT ²	3	1	1	1	2	6	1	1
22-1/2"	11756	3 FT ²	6	1	2	1	3	12	1	1
45"	23090	6 FT ²	12	2	3	3	6	23	3	3
90"	42624	11 FT ²	22	3	6	6	11	43	4	4
PLUG	30144	8 FT ²	15	2	4	4	8	30	3	3

BASED ON TEST PRESSURE OF 150 PSI

NOTES:
 REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
 USE 6"-90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY.

CITY OF GREENSBORO

STANDARD REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS	STD. NO.	REV.
	106	

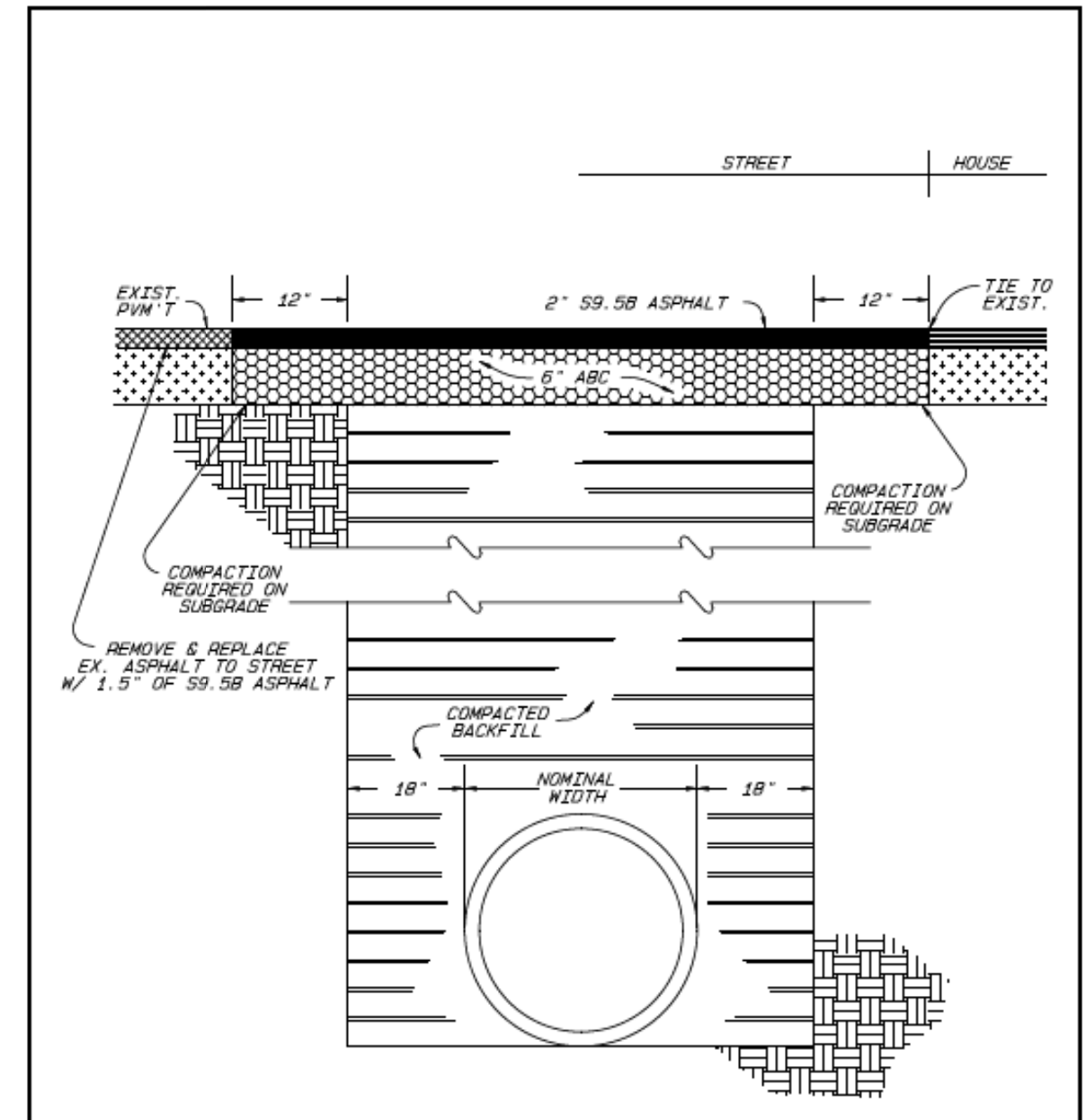


INSTALLATION NOTES:
 19.00 INSTALLED IN TWO LIFTS OF 2-1/2". MATERIAL DEPTHS SHOULD EQUAL EXISTING, PLUS 1", OR MINIMUMS SHOWN (WHICH EVER IS GREATER). FILL MATERIAL COMPACTED TO 95% STANDARD PROCTOR LIFTS NOT TO EXCEED 8 INCHES. PROVIDE TACK COAT TO ALL VERTICAL PAVEMENT SURFACES. SECOND PAVEMENT REMOVAL LINE B-B TO BE SAW CUT ONLY. MAY VARY BASED ON FIELD CONDITIONS AT DISCRETION OF FIELD INSPECTOR.

ADDITIONAL NOTES:
 1. TEMPORARY STEEL PLATES ARE ALLOWED TO BE INSTALLED OVER A TRENCH OPENING.
 2. EDGES OF STEEL PLATE MUST BE MILLED TO ALLOW THE PLATE TO SIT FLUSH WITH THE ADJACENT ASPHALT SURFACE OR ASPHALT COLD PATCH MATERIAL MUST BE PLACED AT THE EDGES OF THE PLATE.
 3. ANCHORS ARE REQUIRED TO TEMPORARILY FASTEN THE STEEL PLATE TO THE ASPHALT TO PREVENT SLIDING OF THE PLATE.
 4. STEEL PLATE SHALL BE MAINTAINED UNTIL THE AREA IS READY FOR A PERMANENT ASPHALT REPAIR.
 5. STEEL SLATES ARE NOT TO BE USED DURING THE WINTER MONTHS.
 6. ADVANCE WARNING SIGNS INDICATING "BUMP AHEAD" OR "UNEVEN PAVEMENT AHEAD" SHALL BE UTILIZED WHEN STEEL PLATES ARE USED.

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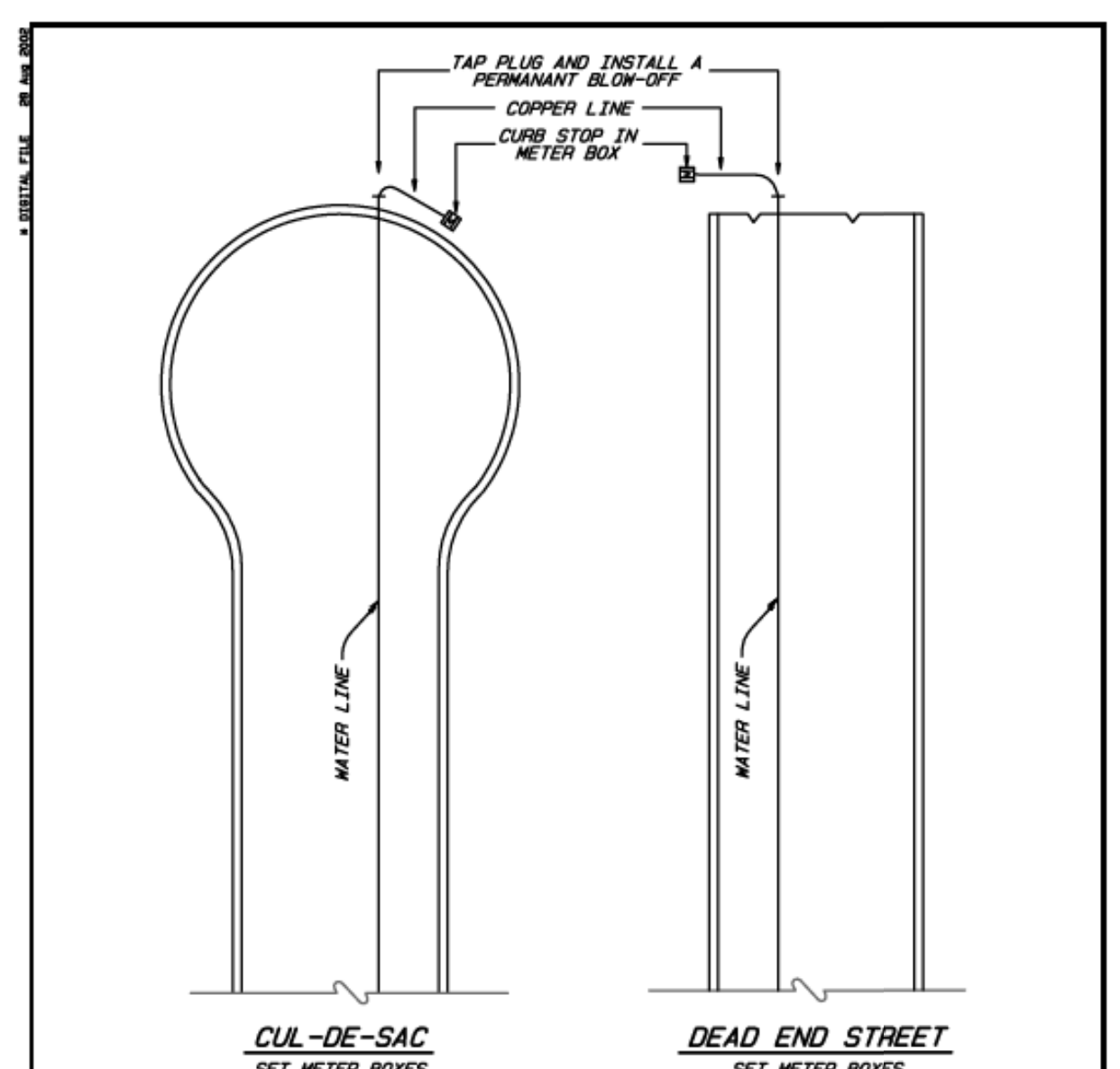
PAVEMENT REPAIR FOR PIPE/UTILITY PLACED UNDER EXISTING PAVEMENT (ROADWAY)	STD. NO.	REV.
	107	03-12 03-15 03-18



ASPHALT DRIVEWAYS

CITY OF GREENSBORO

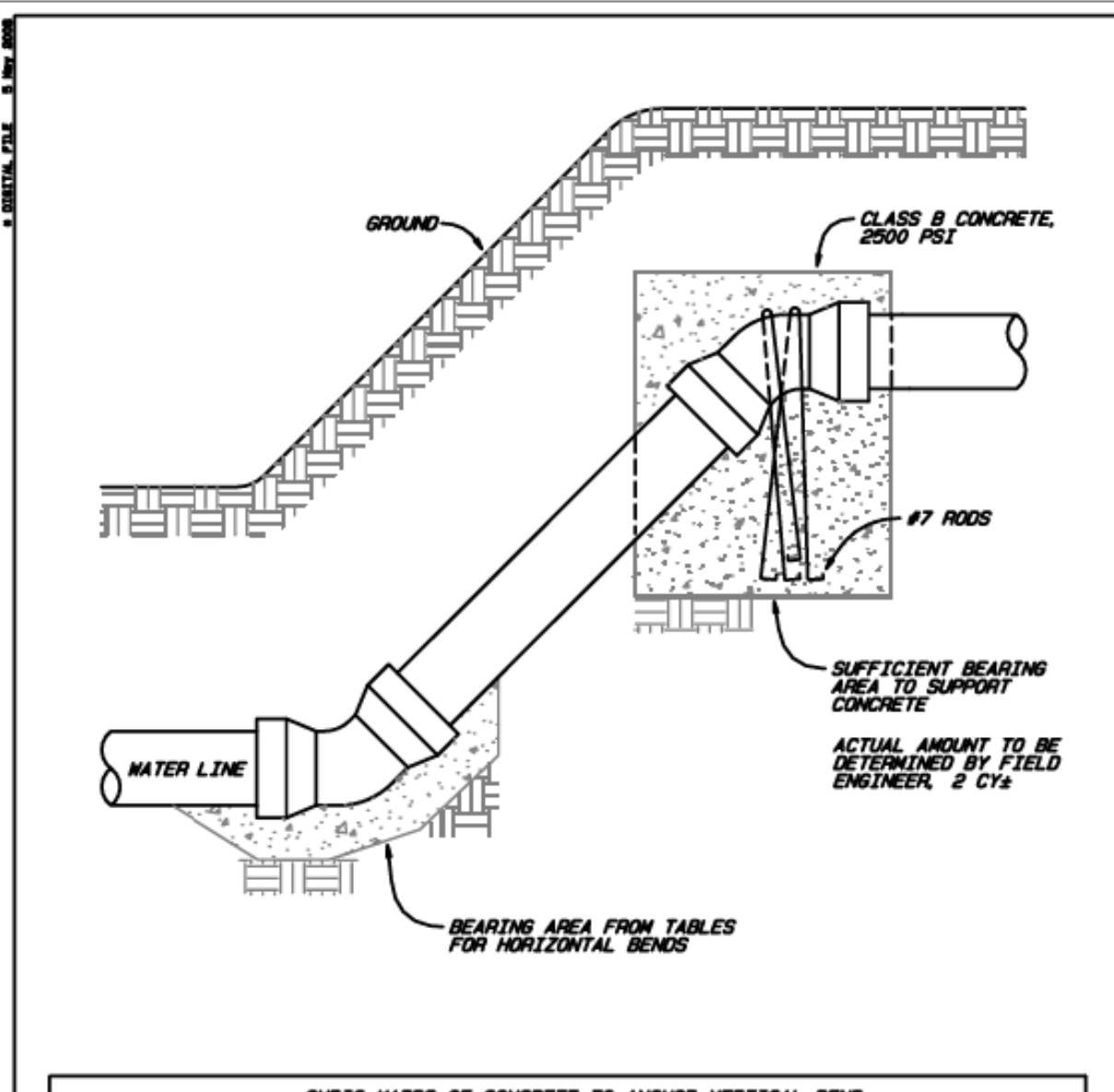
PAVEMENT REPAIR FOR PIPE/UTILITY PLACED UNDER EXISTING PAVEMENT (ASPHALT DRIVEWAYS)	STD. NO.	REV.
	107-A	03-03 03-15 03-18



NOTE:
 INSTALL "L" OR 90° BEND LOOKING UP IN METER BOX (TO COPPER).

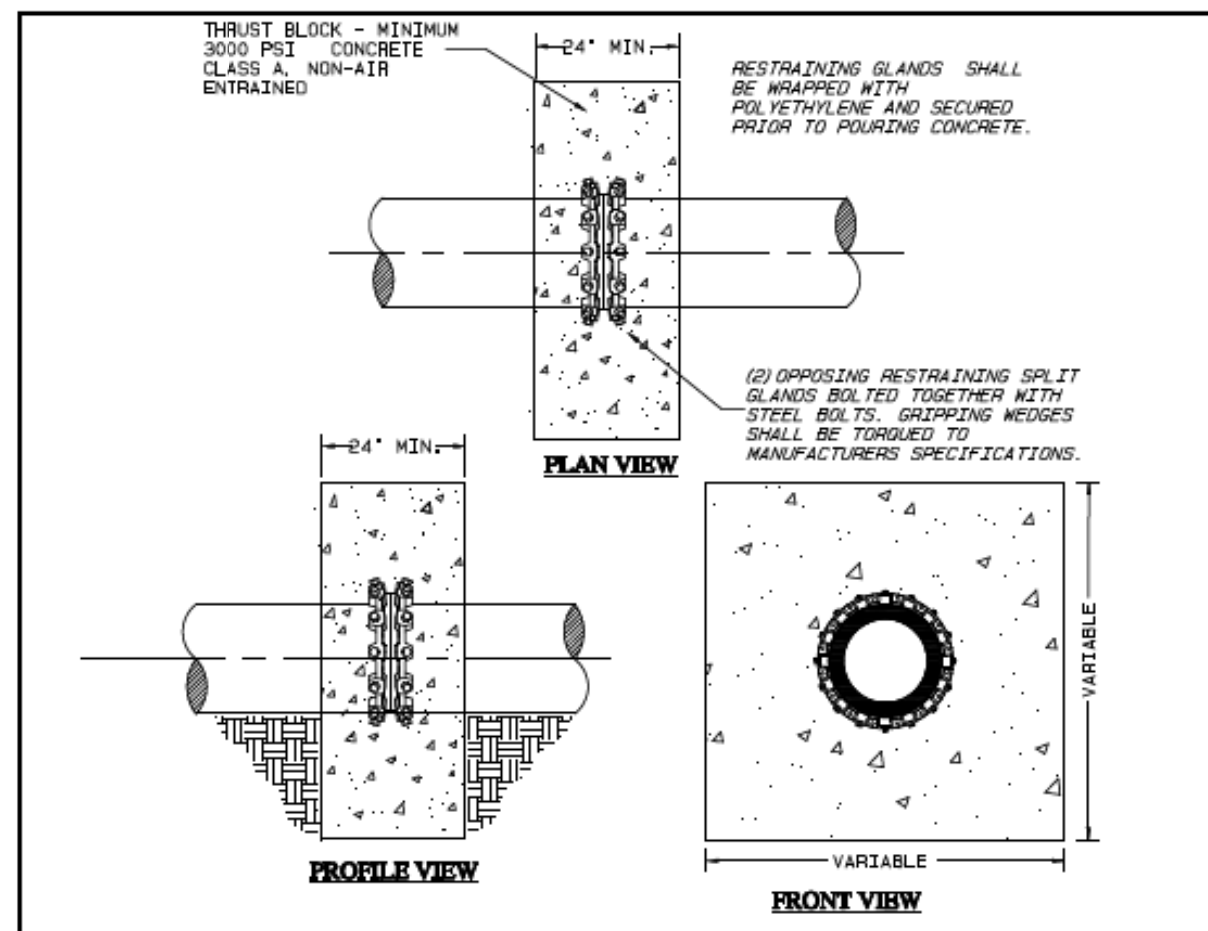
CITY OF GREENSBORO

STANDARD WATER LINE BLOW-OFF	STD. NO.	REV.
	108	08-02



CITY OF GREENSBORO

STANDARD VERTICAL BEND ANCHORS	STD. NO.	REV.
	110	08-05 03-03



NOTES:
 1. SEE CITY OF GREENSBORO - WATER LINE AND SEWER LINE STANDARD CONSTRUCTION SPECIFICATIONS, SUB-ARTICLE 3.02 & 3.03 FOR (TRENCH AND BACKFILL) AND (TRENCH STABILIZATION) REQUIREMENTS.
 2. THRUST BLOCK SHALL BE ORIENTED APPROXIMATELY CENTER OF PIPE JOINT.
 3. OPTIONAL # 4 WELDED COLLAR (INSTALLED BY PIPE MANUFACTURER) MAY BE USED IN LIEU OF RESTRAINING GLANDS. ALL OTHER DESIGN REQUIREMENTS SHALL APPLY AS SHOWN.
 4. FOR PIPES LARGER THAN 16" DIAMETER, THE DEADMAN THRUST RESTRAINT WITH BLOCKING MUST BE DESIGNED AND SEALED BY A N.C. PROFESSIONAL ENGINEER.
 5. ANY PROPOSED MODIFICATIONS TO THIS STANDARD BASED ON THE FIELD CONDITIONS MUST BE PRE-APPROVED BY THE CITY OF GREENSBORO FIELD INSPECTOR AND/OR THE ENGINEER OF RECORD.
 6. QUANTITIES SHOWN BELOW ARE TO THE NEAREST QUARTER YARD AND ARE BASED ON MINIMUM MASS WEIGHT REQUIREMENTS OF THE TEST PRESSURES SHOWN.

CITY OF GREENSBORO

DEADMAN THRUST RESTRAINT WITH MASS WEIGHT BLOCKING	STD. NO.	REV.
	118	08-13 06-15