

THRUST BLOCKING DETAIL

NOT TO SCALE

90° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	84	60	51	42	32	24	18
B	72	60	51	42	32	24	18
C	30	18	16	12	12	9	9
D	34	30	24	17	13	9	9

45° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	58	43	38	32	24	18	12
B	58	43	38	32	24	18	12
C	24	16	14	12	12	8	8
D	24	18	15	12	9	6	6

22 1/2° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	42	32	27	24	18	12	9
B	42	32	27	24	18	12	9
C	18	16	14	12	10	8	8
D	18	13	11	9	6	4	4

11 1/4° BEND							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	30	24	21	17	12	9	9
B	30	24	21	17	12	9	9
C	18	16	14	12	10	8	8
D	12	9	8	6	5	4	4

PLUG							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	66	52	43	34	27	20	18
B	66	52	43	34	27	20	18
C	12	12	12	12	12	12	12
D	44	32	22	15	11	11	11

TEE							
SIZE	16"	12"	10"	8"	6"	4"	2"
A	66	52	43	34	43	26	26
B	66	52	43	34	43	26	26
C	30	12	12	12	12	12	12
D	30	26	21	14	21	13	13

DIMENSIONS ARE IN INCHES

90° BEND							
SIZE	30"	24"	16"	12"	8"	6"	
	179	162	108	90	72	54	

45° BEND							
SIZE	30"	24"	16"	12"	8"	6"	
	74	72	54	36	36	20	

22 1/2° BEND							
SIZE	30"	24"	16"	12"	8"	6"	
	36	36	36	18	18	18	

11 1/4° BEND							
SIZE	30"	24"	16"	12"	8"	6"	
	18	18	18	18	18	18	

DEAD ENDS/VALVES							
SIZE	30"	24"	16"	12"	8"	6"	
	319	270	198	162	108	90	

TEE							
SIZE	30"	24"	16"	24"	16"	12"	12"
	225	125	235	140	81	157	105

REDUCER							
SIZE	30"	24"	16"	12"	8"	6"	
	112	145	-	-	-	-	-

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VERTICAL DOWN BEND							
45° BEND							
SIZE		30"	24"	16"	12"		
		132	110	77	60		

22 1/2° BEND							
SIZE		30"	24"	16"	12"		
		63	54	54	36		

11 1/4° BEND							
SIZE		30"	24"	16"	12"		
		31	26	18	18		

DIMENSIONS ARE IN FEET & ARE THE MINIMUM LENGTH REQUIRED ON EACH SIDE OF THE FITTING, UNLESS OTHERWISE NOTED.

**USE ONLY WITH THE APPROVAL OF THE ENGINEER.

- NOTES:
- RESTRAINED JOINT PIPING TO BE USED IN CONJUNCTION WITH THRUST BLOCKS FOR FITTINGS & VALVES UNLESS OTHERWISE INDICATED.
 - RESTRAINED JOINT PIPING REQUIREMENTS DESIGNED FOR 300 p.s.i. PRESSURE TYPE 3 LAYING CONDITION, AND M.L. SOIL CLASSIFICATION PER ASTM STANDARD D248 UNLESS OTHERWISE NOTED. FOR GREATER PRESSURE OR DIFFERENT LAYING AND SOIL CONDITIONS, QUANTITIES WILL HAVE TO BE RECALCULATED.
 - IF EXACT FITTING SIZE IS NOT SHOWN, USE NEXT LARGER SIZE.
 - VERTICAL DOWNWARD FITTINGS WILL NOT BE ACCEPTABLE ON 12" AND LARGER LINES UNLESS APPROVED BY THE ENGINEER IN AREAS WHERE AVOIDANCE OF USE COULD NOT BE ACCOMPLISHED. WHERE VERTICAL DOWNWARD FITTINGS ARE APPROVED FOR USE, REQUIREMENTS FOR RESTRAINED JOINT PIPING SHALL BE FOLLOWED. 90° AND 45° BENDS WILL NOT BE ACCEPTABLE. THE SMALLEST ANGLE POSSIBLE SHALL BE USED.

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VERTICAL UP BEND							
45° BEND							
SIZE		30"	24"	16"	12"		
		132	110	77	60		

22 1/2° BEND							
SIZE		30"	24"	16"	12"		
		63	54	54	36		

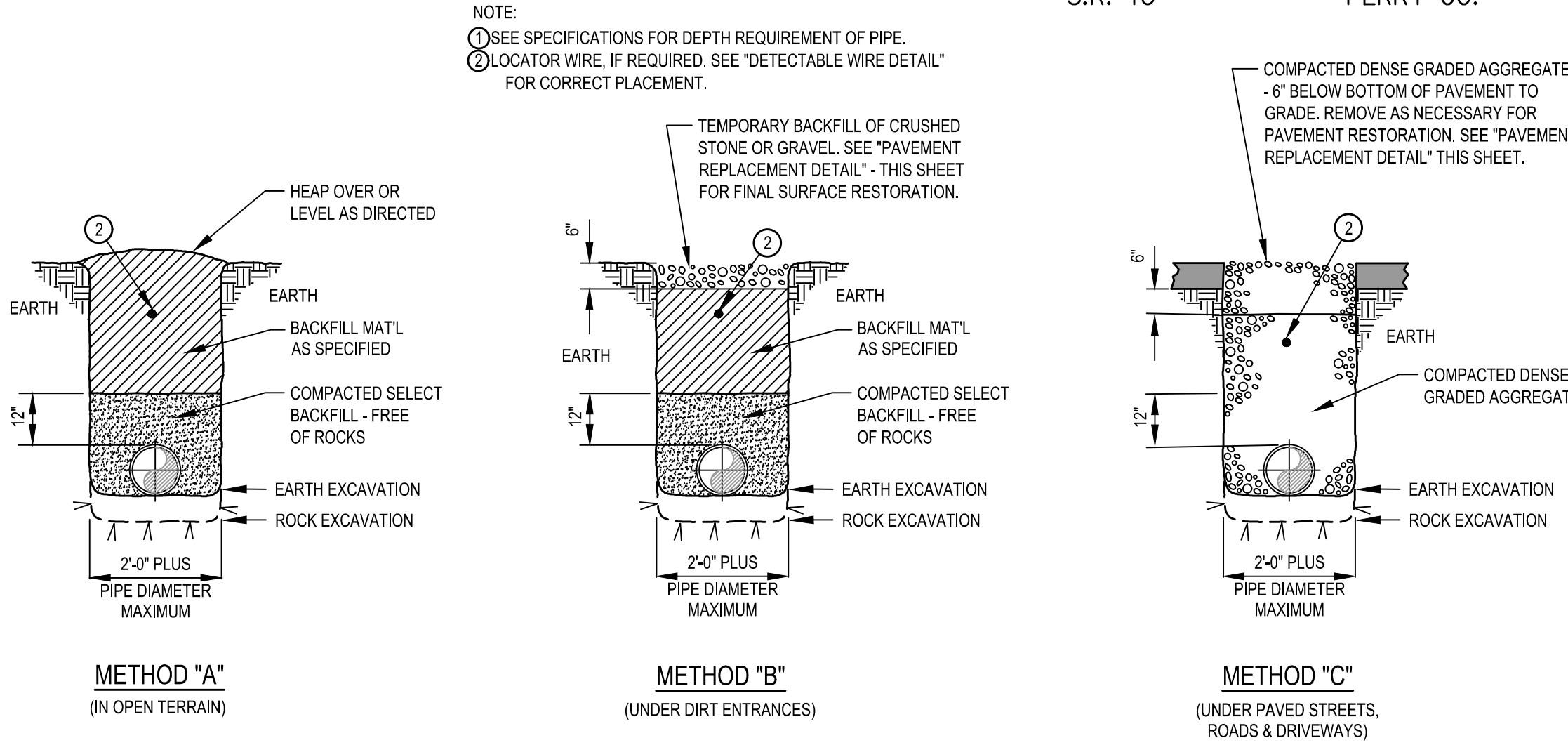
11 1/4° BEND							
SIZE		30"	24"	16"	12"		
		31	26	18	18		

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VERTICAL UP BEND							
45° BEND							
SIZE		30"	24"	16"	12"		
		74	62	44	35		

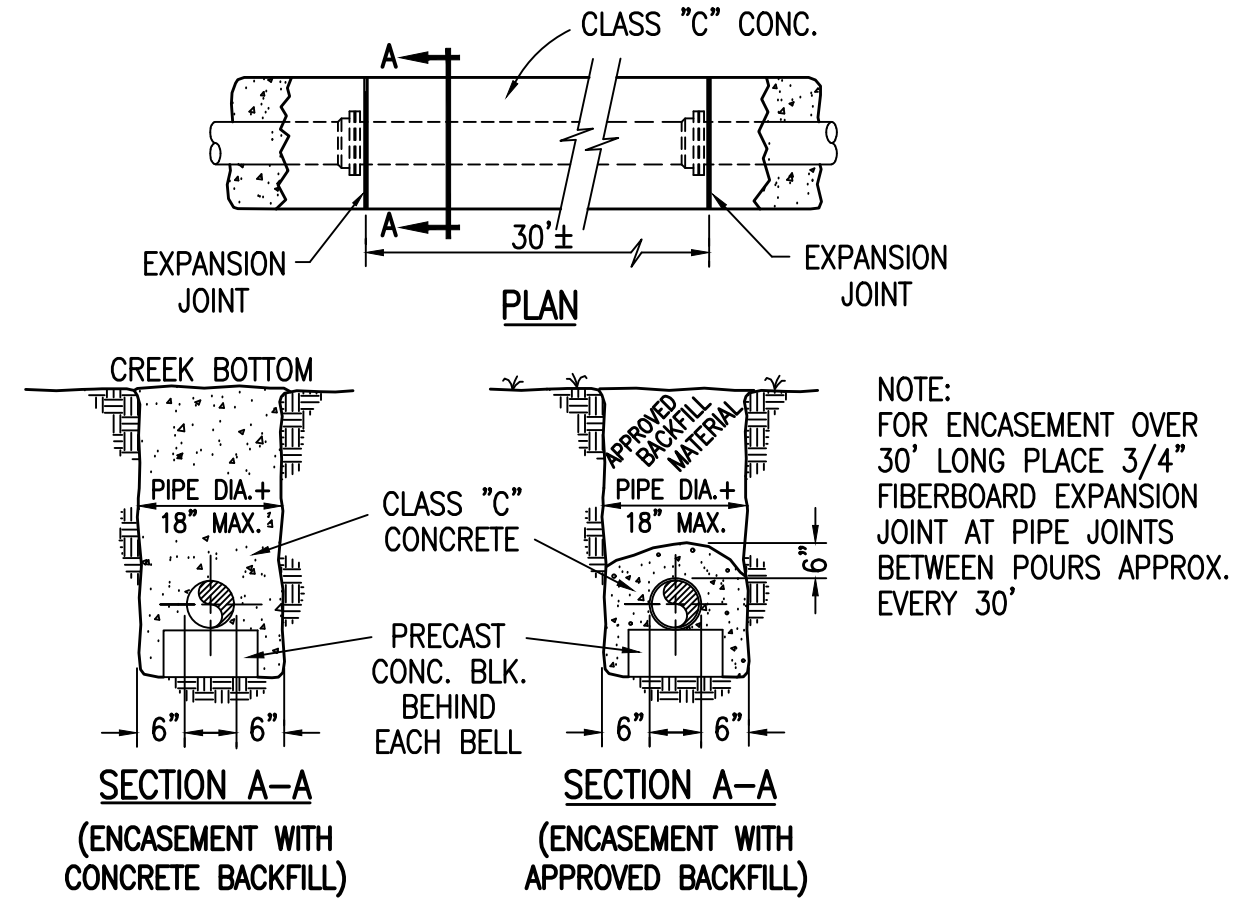
22 1/2° BEND							
SIZE		30"	24"	16"	12"		
		36	30	21	17		

11 1/4° BEND							
SIZE		30"	24"	16"	12"		
		18	15	11	8		



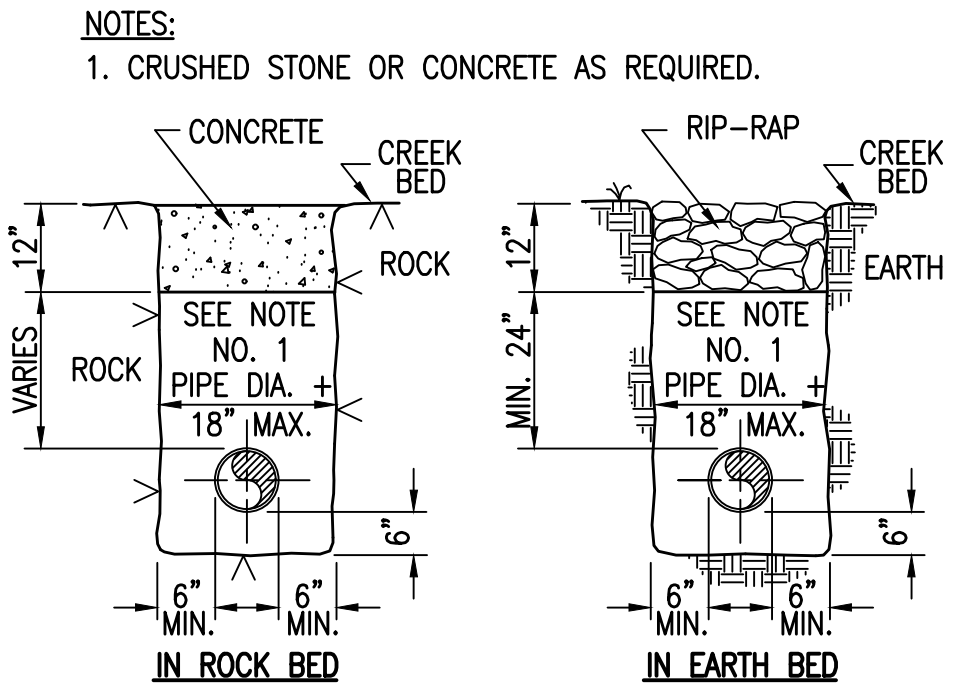
PRESSURE PIPE BEDDING & BACKFILLING DETAILS

NOT TO SCALE



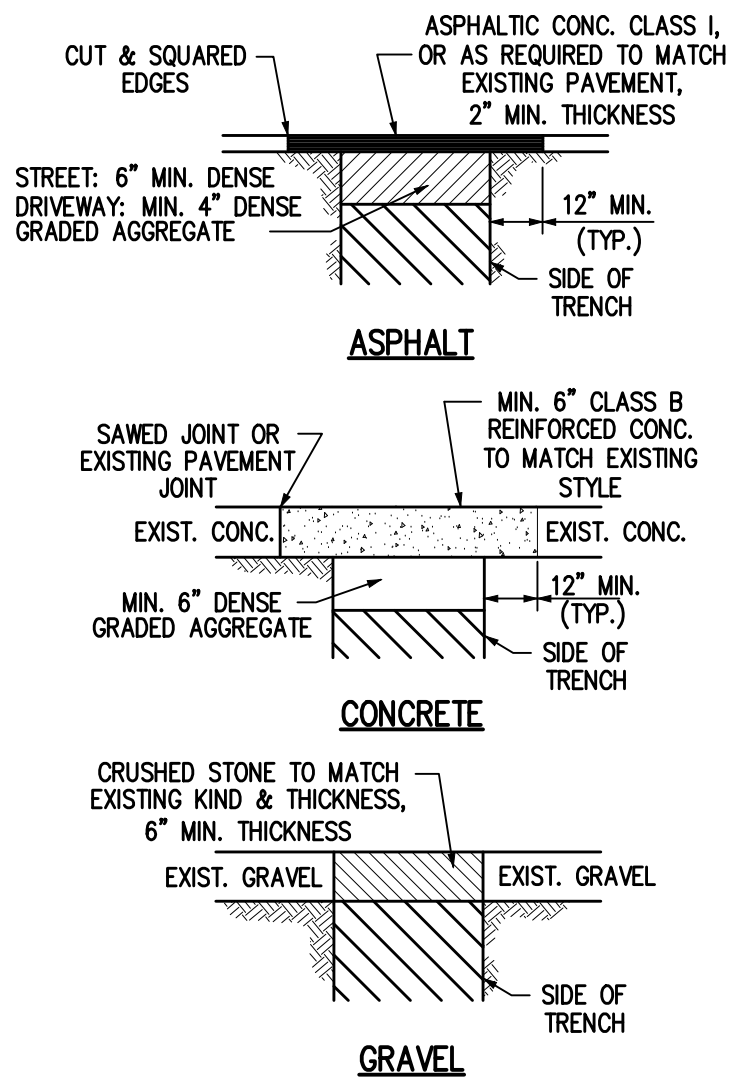
STANDARD CONCRETE ENCASEMENT

NOT TO SCALE



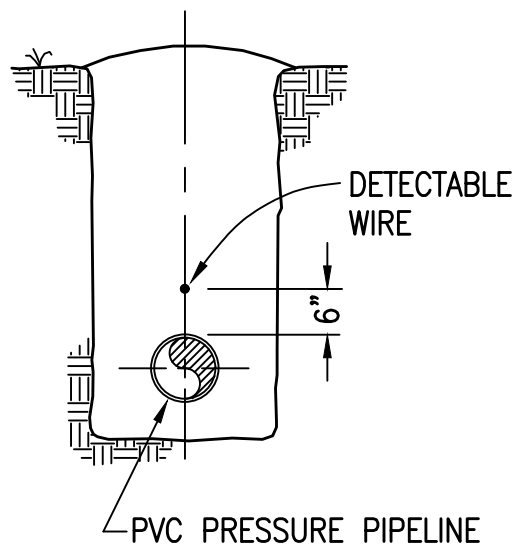
STANDARD DITCH CROSSING DETAIL

NOT TO SCALE



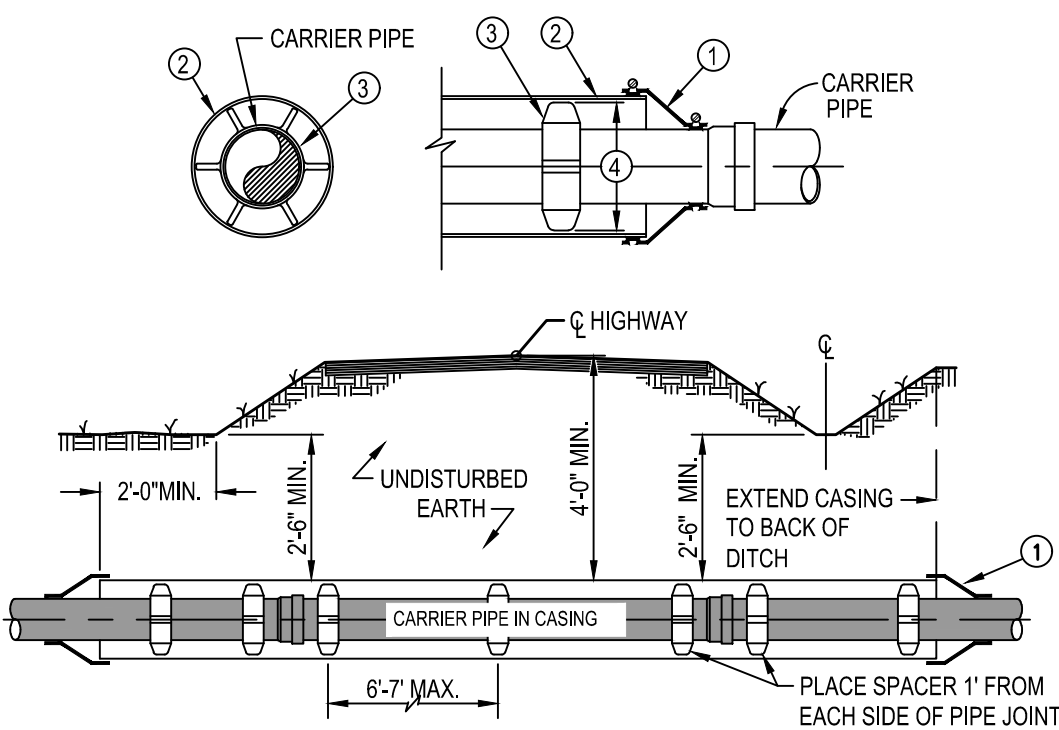
PAVEMENT REPLACEMENT DETAILS

NOT TO SCALE



DETECTABLE WIRE DETAIL

NOT TO SCALE



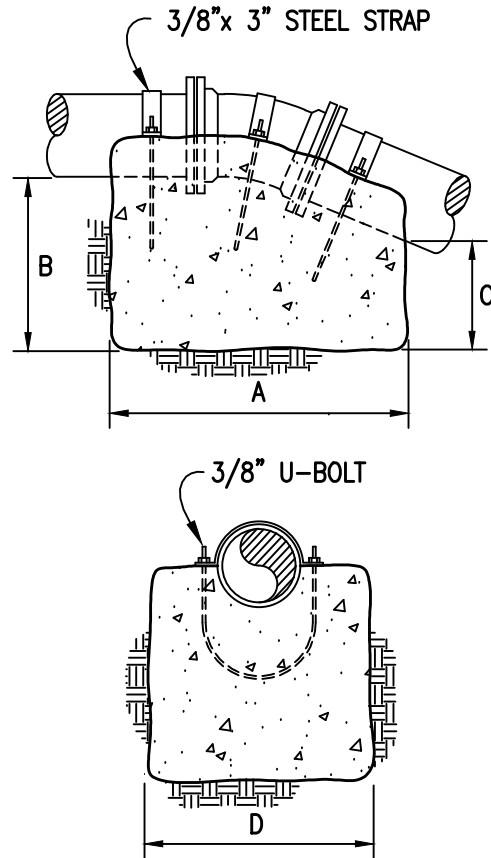
- USE WATERTIGHT WRAP AROUND END SEALS WITH STAINLESS STEEL BANDS.
- SMOOTH WALL STEEL CASING PIPE WITH BITUMINOUS COATING OUTSIDE.
- CASING SPACERS SHALL BE INSTALLED IN A CENTERED/RESTRAINED CONFIGURATION.
- SPACER RISERS/RUNNERS SHALL BE SIZED AND TRIMMED TO MAINTAIN 1/2" MAXIMUM CLEARANCE BETWEEN RUNNER AND CASING PIPE.

NOTE: CARRIER PIPE IN ALL CASING OVER 60 FEET IN LENGTH SHALL BE DUCTILE IRON WITH LOCKING GASKETS.

(STEEL CASING w/D.I. OR PVC CARRIER PIPE)

ROADWAY CROSSING INSTALLATION

NOT TO SCALE



- NOTES:
- THRUST BLOCKS DESIGNED FOR 150 PSI PRESSURE. FOR GREATER PRESSURE QUANTITIES WILL HAVE TO BE RECALCULATED.
 - THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
 - IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN, USE NEXT LARGER SIZE.
 - THRUST BLOCKING TO BE POURED IN PLACE -- CLASS "C" CONCRETE.

This document, originally issued, sealed and signed by James W. Hilborn, IV, Tennessee Professional Engineer No. 16514, on July 11, 2019, shall not be used in lieu of a certified document.

VERTICAL CONCRETE ANCHOR

NOT TO SCALE

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2020	68001-3251-14	U2-15

S.R. 13 PERRY CO.

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ENGINEER/ARCHITECT: JAMES W. HILBORN, IV
CONSTRUCTION COMPANY: MARBURY CONSTRUCTION, LLC

DATE: 7/14/2021

DRAWING SCALE CHECK:		THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED
DESIGNED:	JWH	DATE: JULY 2019
DRAWN:	DM	REVISION DATE:
REVIEWED:	JWH	SCALE: 1" = 50'
APPROVED:	JWH	PROJECT NO. 3827-09

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CITY OF LOBELVILLE
S.R. 13 WATER RELOCATIONS

WATER
RELOCATIONS
STANDARD WATER LINE
CONSTRUCTION DETAILS
NOT TO SCALE