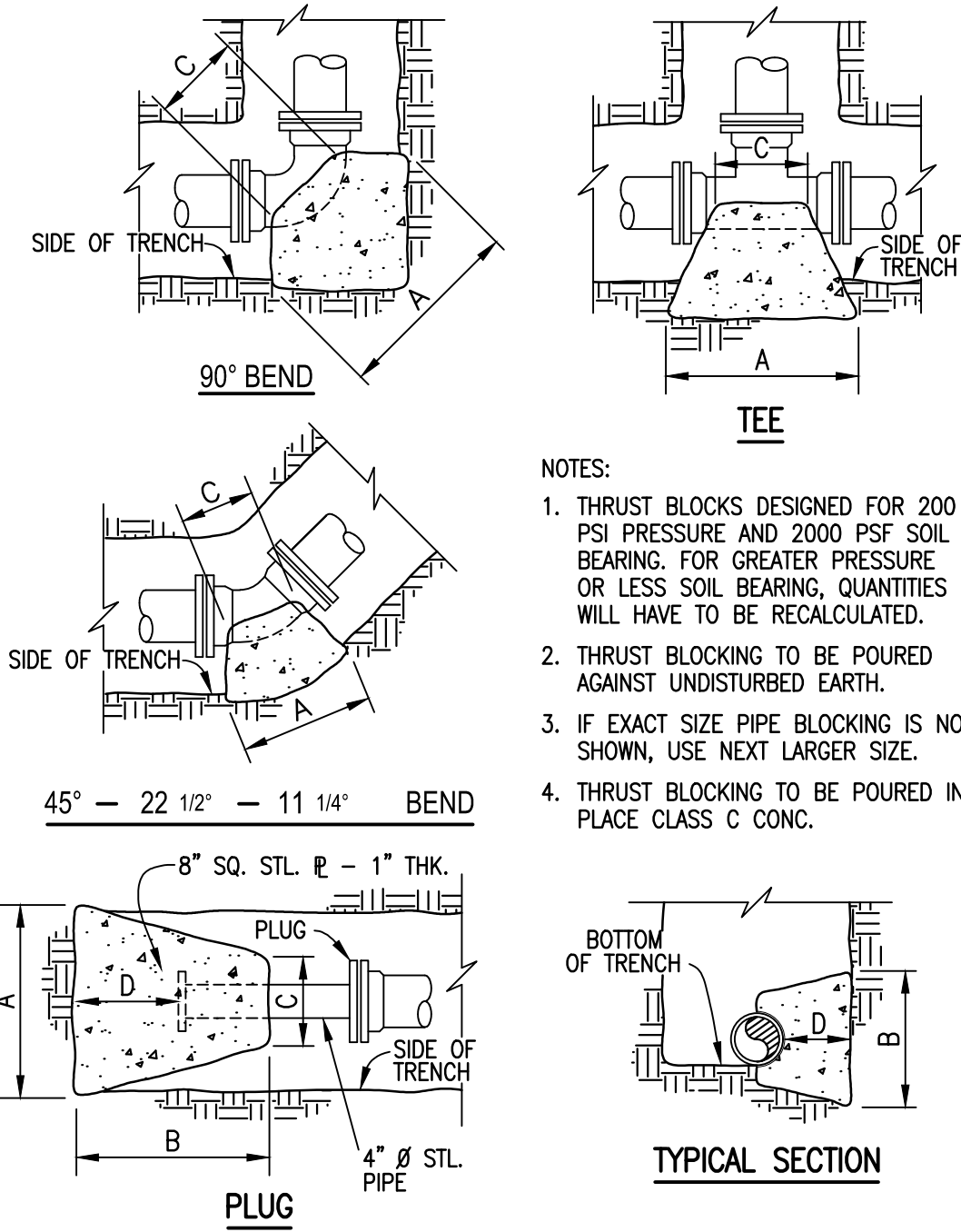


PLOTTED BY: Nazad

PRINTED: 12/10/2019 @ 11:16AM

FILE NAME: G:\4691-Perry Co\Ind01-San Sewer\Working Drawings\RECORD DWGS\4691-01_G-02.dwg



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	MAIN BRANCH	16"	12"	10"	8"	6"	4"	2"	
A	66	52	43	34	27	20	18		
B	66	52	43	34	27	20	18		
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	MAIN BRANCH	30"	30"	24"	24"	16"	16"
		24"	16"	24"	16"	12"	12"
		225	125	235	140	81	157

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

**

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

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

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

RESTRAINED JOINT PIPING REQUIREMENTS
NOT TO SCALE

NOTES:

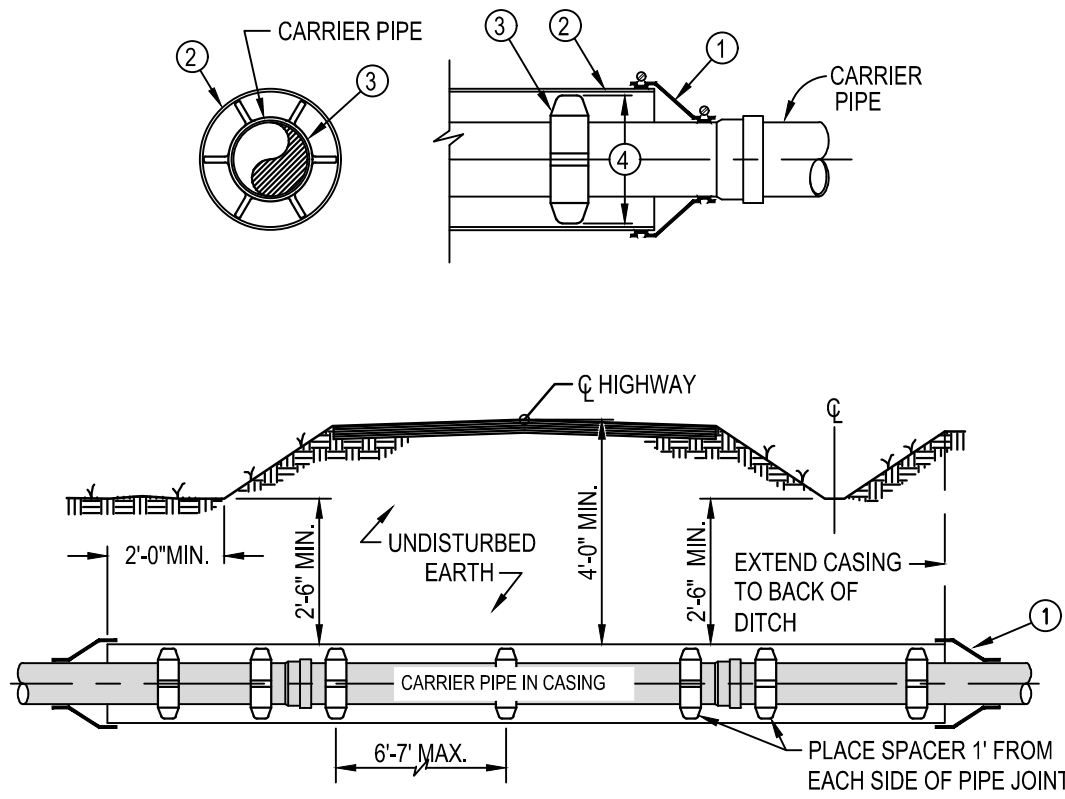
- RESTRAINED JOINT PIPING TO BE USED IN CONJUNCTION WITH THRUST BLOCKS FOR FITTINGS & VALVES UNLESS OTHERWISE INDICATED.
- RESTRAINED JOINT PIPING REQUIREMENTS DESIGNED FOR 300 p.s.i. PRESSURE, TYPE 3 LAYING CONDITION, AND ML SOIL CLASSIFICATION PER ASTM STANDARD D248 UNLESS OTHERWISE NOTED. FOR GREATER 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.

**

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

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

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

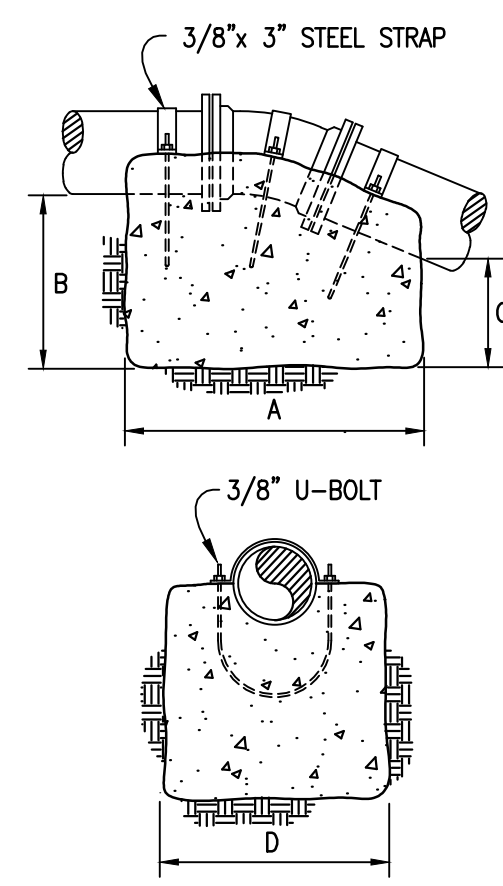


- USE WATERTIGHT WRAP AROUND END SEALS WITH STAINLESS STEEL BANDS.
- SMOOTH WALL STEEL CASING PIPE WITH BITUMINOUS COATING OUTSIDE.
- CASING SPACERS SHALL BE INSTALLED IN A CENTERED/RESTRAINED CONFIGURATION. CASING SPACER MODELS AS PER SPECIFICATIONS.
- SPACER RISERS/RUNNERS SHALL BE SIZED AND TRIMMED 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.

VERTICAL CONCRETE ANCHOR
NOT TO SCALE

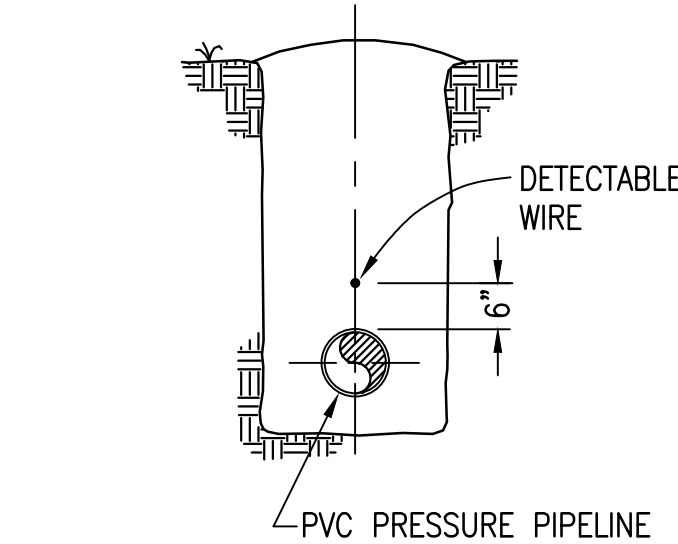
90° BEND									
SIZE	16"	12"	10"	8"	6"	4"	2"		
A	85	67	60	54	42	34	30		
B	85	67	60	54	42	34	18		
C	80	63	56	50	38	30	16		
D	76	66	60	48	48	36	24		

45° BEND									
SIZE	16"	12"	10"	8"	6"	4"	2"		
A	72	60	50	46	35	30	24		
B	72	60	50	46	35	28	24		
C	68	56	46	42	30	24	18		
D	72	60	60	48	48	36	24		

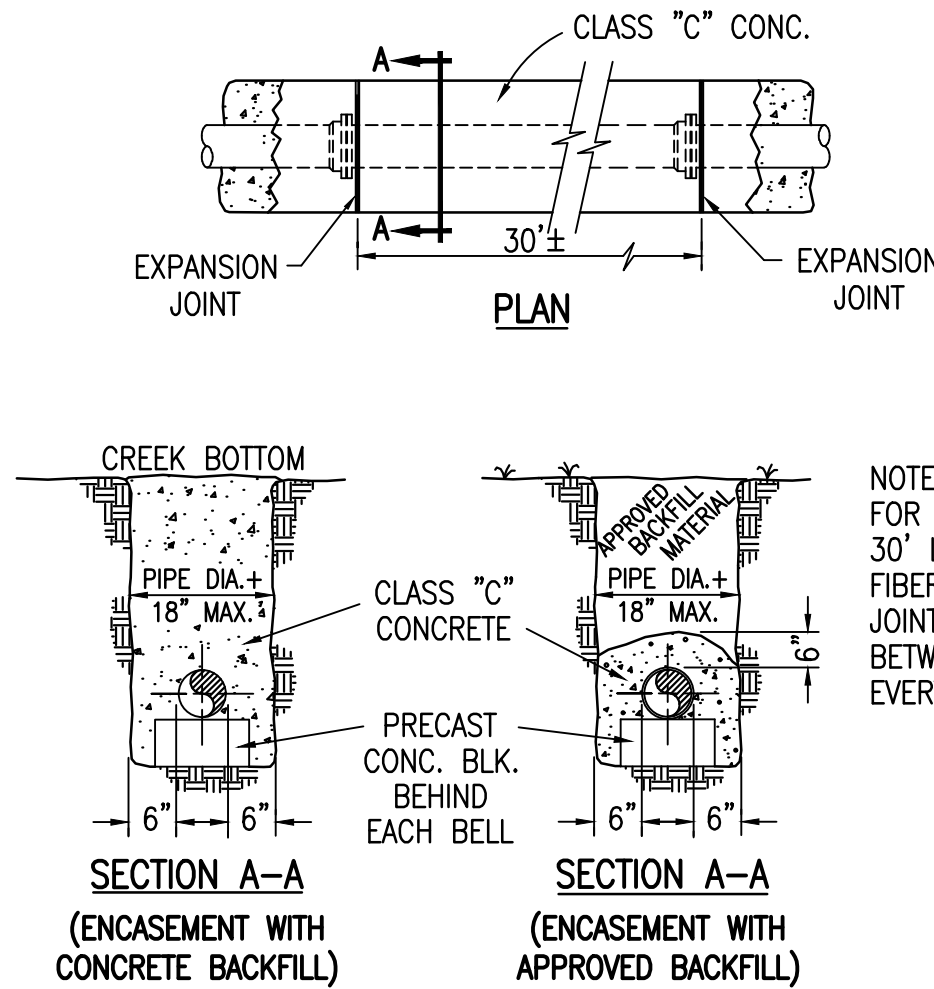
22 1/2° BEND									
SIZE	16"	12"	10"	8"	6"	4"	2"		
A	58	50	42	38	30	24	18		
B	58	48	42	38	30	24	18		
C	54	44	38	34	26	20	14		
D	60	48	48	36	36	30	24		

11 1/4° BEND									
SIZE	16"	12"	10"	8"	6"	4"	2"		
A	42	36	30	29	24	20	18		
B	42	36	30	29	24	20	18		
C	38	32	26	24	20	16	14		
D	60	48	48	36	30	24	24		

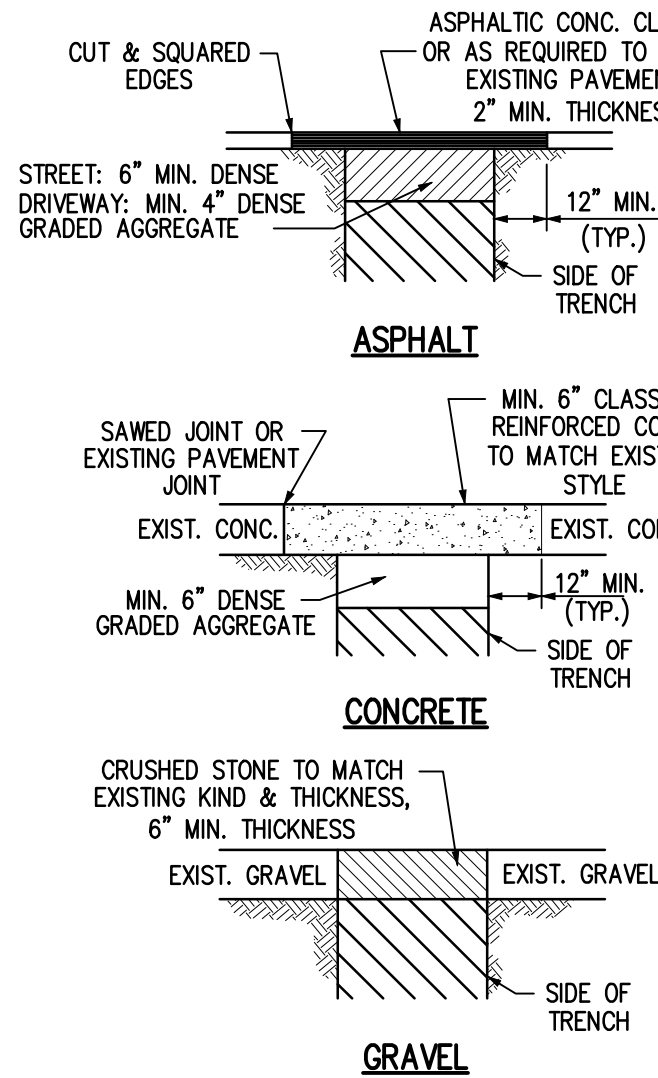
DIMENSIONS ARE IN INCHES



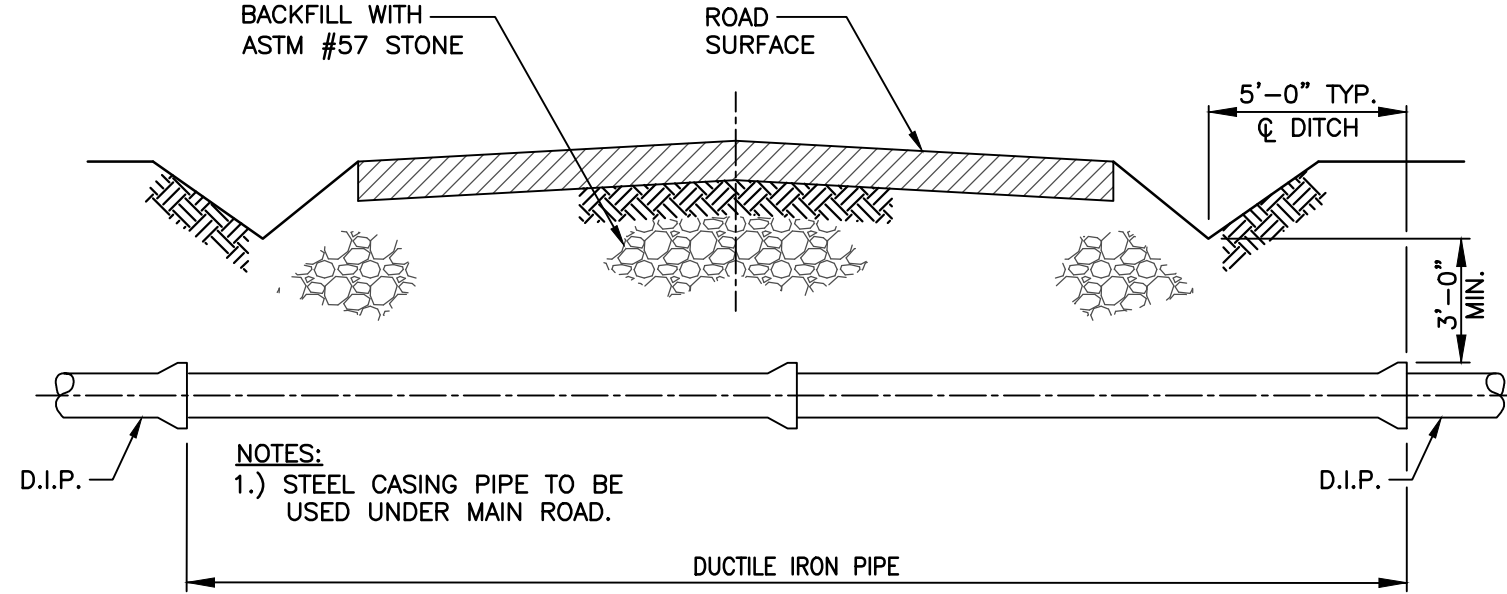
DETECTABLE WIRE DETAIL
NOT TO SCALE



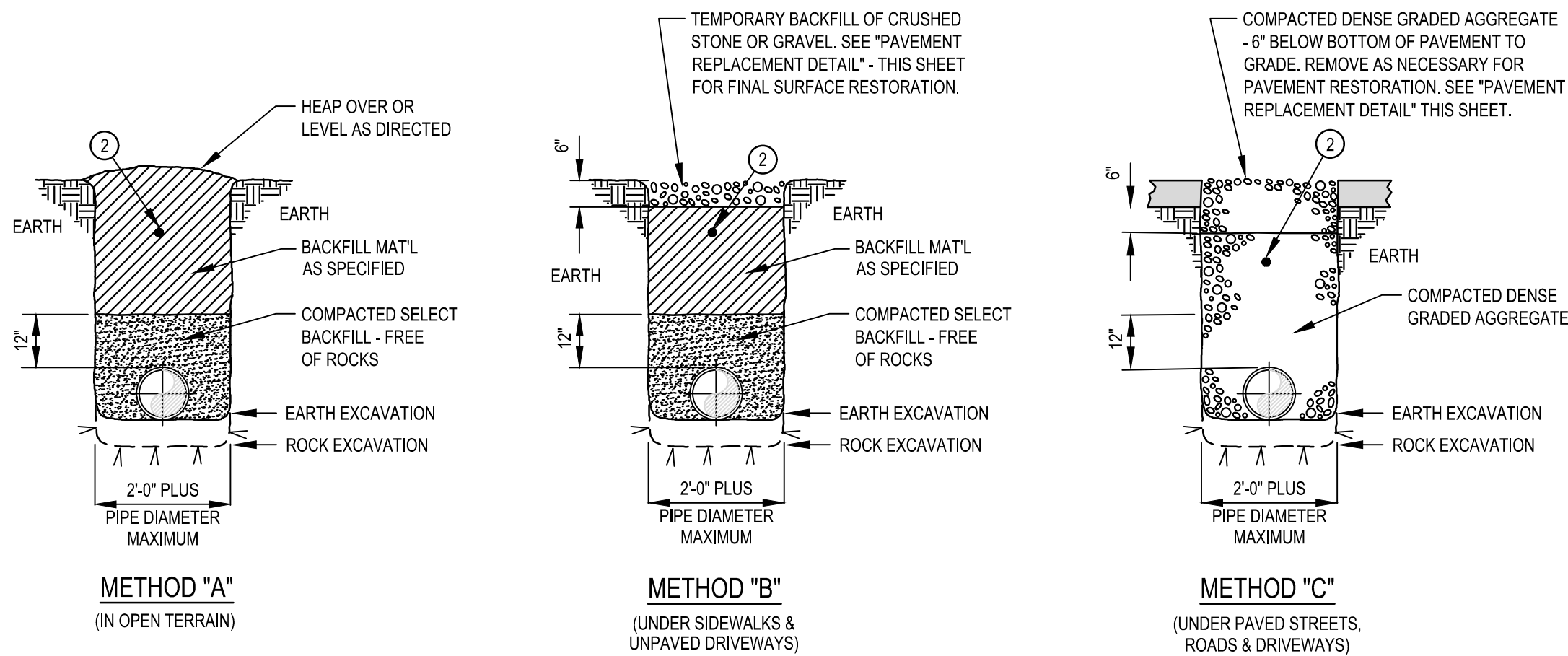
STANDARD CONCRETE ENCASEMENT
NOT TO SCALE



PAVEMENT REPLACEMENT DETAILS
OPEN CUT STREETS & DRIVEWAY CROSSINGS
NOT TO SCALE

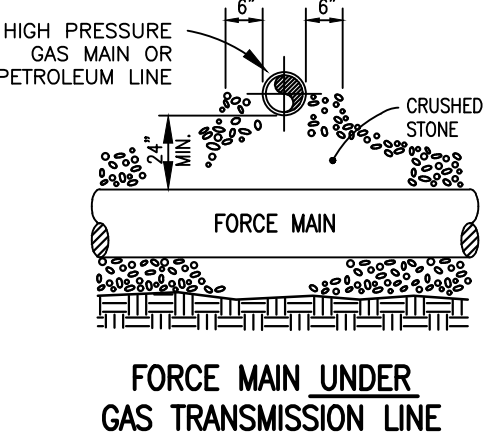


OPEN CUT ROAD CROSSING
NOT TO SCALE



- NOTE:
- SEE SPECIFICATIONS FOR DEPTH REQUIREMENT OF PIPE.
 - LOCATOR WIRE, IF REQUIRED. SEE "DETECTABLE WIRE DETAIL" FOR CORRECT PLACEMENT.

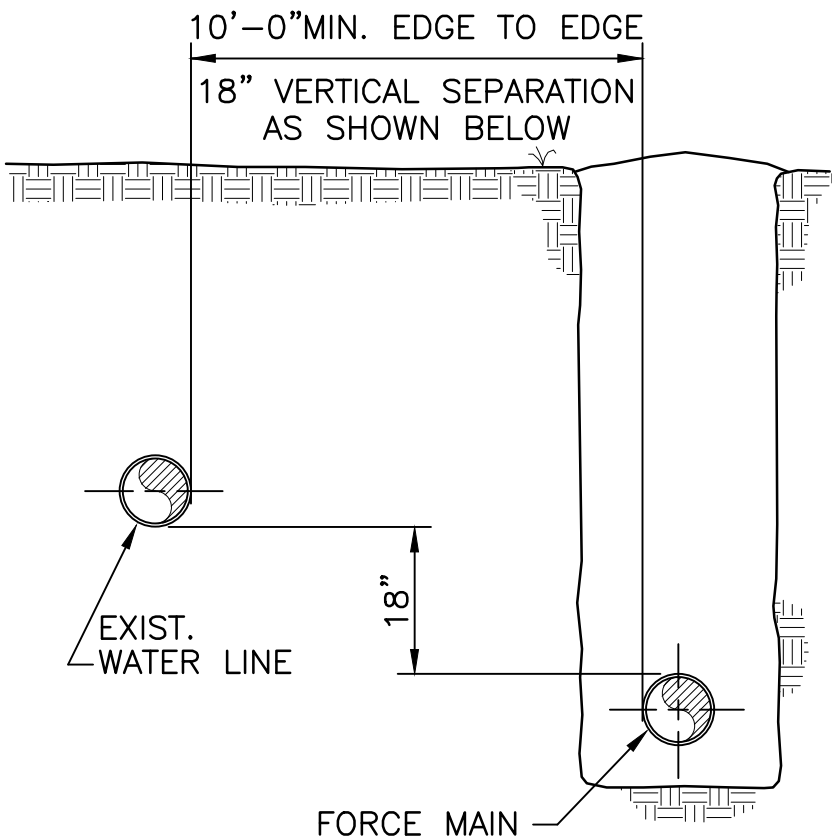
PRESSURE PIPE BEDDING & BACKFILLING DETAILS
NOT TO SCALE



PIPE CROSSING FOR FORCE MAIN @ GAS MAIN
NOT TO SCALE

NOTES:

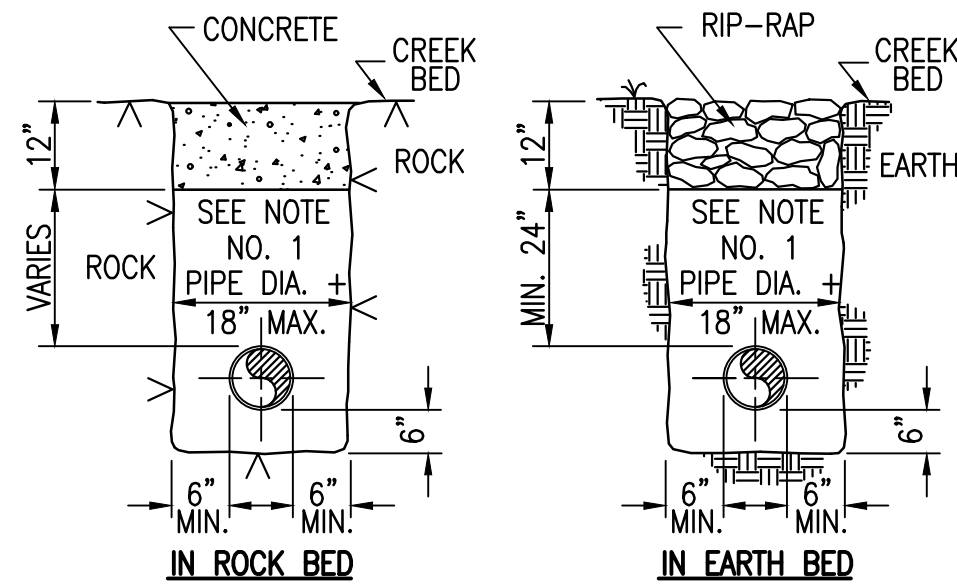
- SEE SHEET C-104
- BOTH PIPES ARE 22" DIAMETER
- GAS COMPANY REQUIRES 2-FT VERTICAL CLEARANCE FOR OUR PIPE
- GAS COMPANY WOULD LIKE TO ATTEND EITHER THE PRE-CONSTRUCTION CONFERENCE OR A MEET WITH THE CONTRACTOR PRIOR TO THE WORK
- GAS COMPANY EMPLOYEE MUST BE ON SITE WHEN CONTRACTOR IS WORKING IN THE EASEMENT
- GAS COMPANY WOULD PREFER ONE CONSISTENT GRADE FOR OUR PIPE ACROSS THE EASEMENT
- BACKHOLE MUST BE SMOOTH, NO TEETH OR SIDE CUTTERS
- WITHIN 18-IN OF THE GAS LINES MUST BE EXCAVATED BY HAND



PIPELINE SEPARATION DETAIL
NOT TO SCALE

NOTES:

- CRUSHED STONE OR CONCRETE AS REQUIRED.



STANDARD DITCH CROSSING DETAIL
NOT TO SCALE

"AS-BUILT" DRAWINGS

GRW PROJECT NO. 4691-01

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SEWAGE FORCE MAIN STANDARD DETAILS

I-40 INDUSTRIAL PARK SITE - 8" FORCE MAIN

INDUSTRIAL DEVELOPMENT BOARD OF PERRY CO., TENNESSEE

DESIGNED	JWH	BY	DATE	DRAWN	SH	REVIEWED	JWH	APPROVED	JWH
NO.									

DATE: OCTOBER 2018

SCALE: AS NOTED

SHEET NO.

G-02

RECORD DRAWINGS