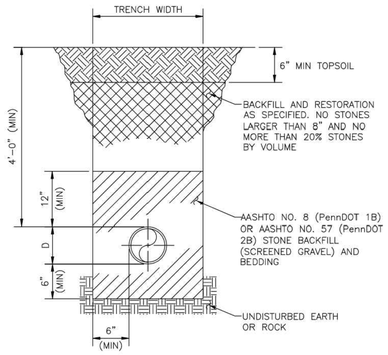


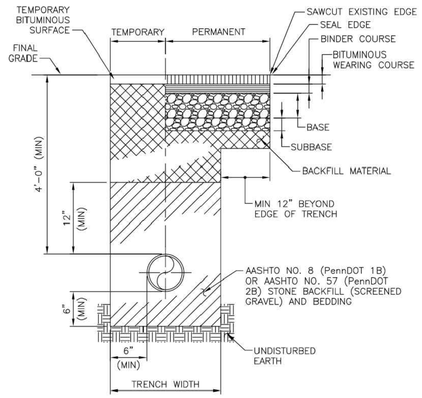
NOTE:
TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. BEGIN SIDE SLOPES, IF USED, APPROXIMATELY 18" ABOVE TOP OF PIPE (TYPICAL ALL BEDDING TYPES).

RIGHT-OF-WAY RESTORATION

DETAIL -

NO SCALE

1



NOTES:

1. BACKFILL & PAVEMENT RESTORATION IN STATE ROADS SHALL BE AS SPECIFIED BY PADOT.

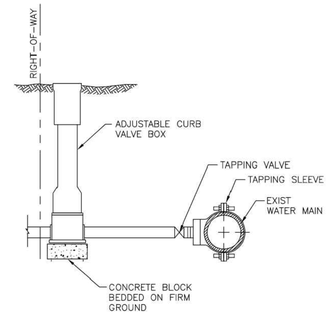
2. BACKFILL & PAVEMENT RESTORATION IN TOWNSHIP ROADS, ACCESS DRIVES, PARKING AREAS AND LOADING AREAS SHALL BE AS SPECIFIED IN THE EAST COCALICO TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

PAVEMENT RESTORATION

DETAIL -

NO SCALE

3



NEW LATERAL CONNECTION
(LARGER THAN 2")
TO AN EXISTING WATER MAIN

DETAIL -

NO SCALE

7

MINIMUM RESTRAINED PIPE LENGTH (FT) FOR VERTICAL BENDS (WITHOUT POLYETHYLENE ENCASEMENT)			
DIAMETER (IN)	VERTICAL BEND ANGLE (DEGREES)		
	45	22½	11¼
6	20	1	5
8	26	12	6
10	32	15	8
12	37	18	9
14	43	21	10
16	48	23	12
18	54	26	13
20	59	28	14
24	70	34	17

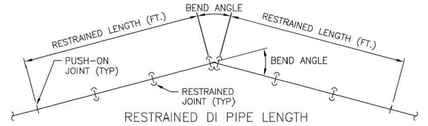
MINIMUM RESTRAINED PIPE LENGTH (FT) FOR HORIZONTAL BENDS (WITHOUT POLYETHYLENE ENCASEMENT)				
DIAMETER (IN)	HORIZONTAL BEND ANGLE (DEGREES)			
	90	45	22½	11¼
6	15	6	3	1
8	19	8	4	2
10	23	10	5	2
12	28	11	5	3
14	32	13	6	3
16	36	15	7	4
18	40	16	8	4
20	43	18	9	4
24	51	21	10	5

MINIMUM RESTRAINED PIPE LENGTH (FT) FOR VERTICAL BENDS (WITH POLYETHYLENE ENCASEMENT)			
DIAMETER (IN)	VERTICAL BEND ANGLE (DEGREES)		
	45	22½	11¼
6	29	14	7
8	37	18	9
10	45	22	11
12	53	26	13
14	61	29	15
16	69	33	16
18	77	37	18
20	85	41	20
24	100	48	24

MINIMUM RESTRAINED PIPE LENGTH (FT) FOR HORIZONTAL BENDS (WITH POLYETHYLENE ENCASEMENT)				
DIAMETER (IN)	HORIZONTAL BEND ANGLE (DEGREES)			
	90	45	22½	11¼
6	16	7	3	2
8	21	9	4	2
10	26	11	5	3
12	30	13	6	3
14	35	14	7	3
16	39	16	8	4
18	44	18	9	4
20	48	20	9	5
24	56	23	11	6

NOTES:

1	DESIGN PRESSURE	= 150 PSI
2	DEPTH OF COVER	= 4 FEET
3	SAFETY FACTOR	= 1.5
4	SOIL TYPE	= COHESIVE ANGULAR
5	SOIL INTERNAL FRICTION ANGLE	= 20 DEGREES
6	SOIL COHESION	= 200 PSF
7	SOIL DENSITY	= 90 PCF

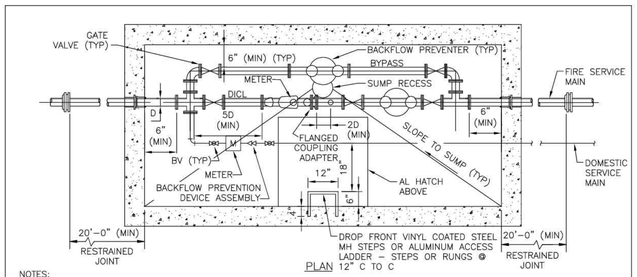


RESTRAINED DI PIPE LENGTH

DETAIL -

NO SCALE

18



PLAN

NOTES:

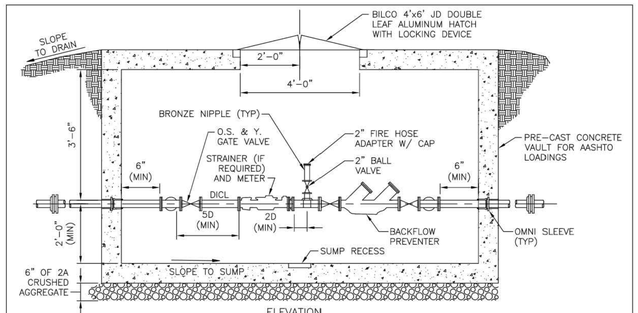
1. MINIMUM DIMENSIONS SHOWN. DIMENSIONS WILL VARY WITH METER AND PIPE SIZE.
2. VAULT AND HATCH SHALL BE DESIGNED FOR H-20 WHEEL LOADING IN TRAVELED AREAS.
3. ONLY A DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTER CAN BE INSTALLED IN THE METER PIT. IF A REDUCED PRESSURE ZONE BACKFLOW PREVENTER IS REQUIRED IT MUST BE INSTALLED IN A STRUCTURE ABOVE GRADE PROVIDED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING AND MUST BE PROTECTED FROM FREEZING.
4. PREVENT FLOTATION WITH GROUND WATER LEVEL AT FINISHED GROUND SURFACE BY DEAD WEIGHT OF STRUCTURE ONLY.
5. BYPASS PIPING IS RECOMMENDED, BUT MAY BE OMITTED AT THE DISCRETION OF THE AUTHORITY.
6. LADDER MAY BE ROTATED 90-DEG W/ 18-IN CLEARANCE AT THE BASE.

TYPICAL METER PIT FOR LARGE METERS

DETAIL -

NO SCALE

14



ELEVATION

NOTES:

1. MINIMUM DIMENSIONS SHOWN. DIMENSIONS WILL VARY WITH METER AND PIPE SIZE.
2. VAULT AND HATCH SHALL BE DESIGNED FOR H-20 WHEEL LOADING IN TRAVELED AREAS.
3. ONLY A DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTER CAN BE INSTALLED IN THE METER PIT. IF A REDUCED PRESSURE ZONE BACKFLOW PREVENTER IS REQUIRED IT MUST BE INSTALLED IN A STRUCTURE ABOVE GRADE PROVIDED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING AND MUST BE PROTECTED FROM FREEZING.

NOTES CONT'D:

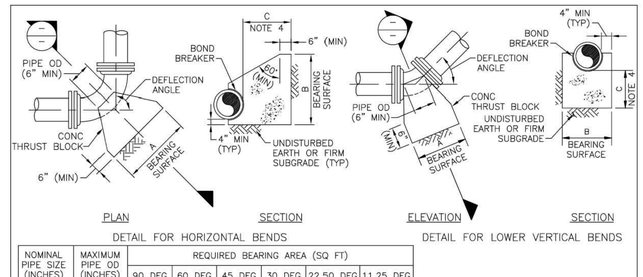
4. PREVENT FLOTATION WITH GROUND WATER LEVEL AT FINISHED GROUND SURFACE BY DEAD WEIGHT OF STRUCTURE ONLY.
5. BYPASS PIPING IS RECOMMENDED, BUT MAY BE OMITTED AT THE DISCRETION OF THE AUTHORITY.
6. HATCH TO BE 4'x6' UNLESS BYPASS IS OMITTED AT WHICH TIME IT MAY BE 4'x4'.

TYPICAL METER PIT FOR LARGE METERS

DETAIL -

NO SCALE

15



DETAIL FOR HORIZONTAL BENDS

DETAIL FOR LOWER VERTICAL BENDS

NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	REQUIRED BEARING AREA (SQ FT)					
		90 DEG	60 DEG	45 DEG	30 DEG	22.50 DEG	11.25 DEG
4	4.80	2.9	2.0	1.6	1.1	0.8	0.4
8	9.05	10	7	6	4	3	1.4
12	13.20	22	15	12	8	6	3
18	19.50	48	34	26	17	13	7
20	21.60	58	41	32	21	16	8
24	25.80	83	59	45	30	23	12

THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS

NOTES:

1. MAXIMUM TEST PRESURE = 1.5 x 150 PSI
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
3. BEARING AREA = A x B
4. C SHALL BE GREATER THAN A/2 AND B/2.

THRUST BLOCKS
FOR HORIZONTAL BENDS
AND LOWER VERTICAL BENDS

DETAIL -

NO SCALE

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Internet www.consolidatedengineers.com

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AEM ARCHITECTS INC.
3700 PERKIOMEN AVENUE, READING, PA. 19606-2795
Phone: 610.779.3220 Fax: 610.779.9022
www.aem-arch.com

SITE DETAILS

RENOVATIONS TO THE
REAMSTOWN ELEMENTARY SCHOOL
COCALICO SCHOOL DISTRICT
SOUTH REAMSTOWN ROAD, REAMSTOWN, PENNSYLVANIA, LANCASTER COUNTY, PA

All DIMENSIONS and EXISTING CONDITIONS shall be CHECKED and VERIFIED by the CONTRACTOR at the SITE.

JOB NO.: 22011.00
DRAWN BY: SA
DATE: 04.14.23

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