

NOTE:
 LOOSE STRAW SHALL BE
 CHINKED BETWEEN BALES TO
 PROVIDE A TIGHT JOINT.

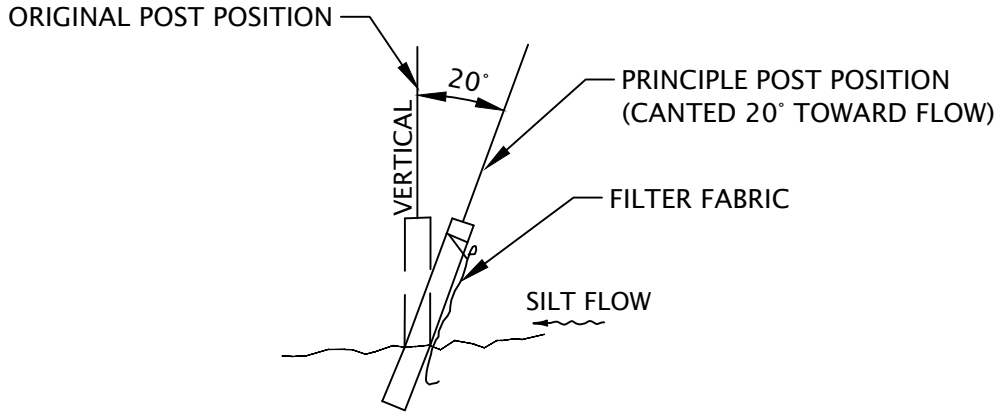


BAY COUNTY
 UTILITIES
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**STAKED
 HAY BALE**

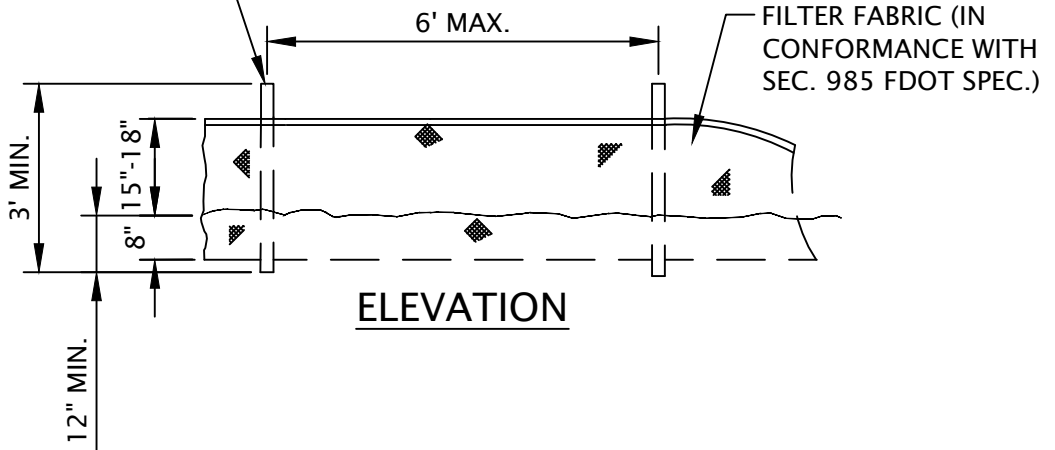
DATE : SEP 2017
 SCALE : NTS

FIGURE : **G-1**



SECTION

POST OPTIONS:
 SOFTWOOD 2½" MIN. DIA.
 SOFTWOOD 2" X 4"
 HARDWOOD 1½" X 1½"
 STEEL 1.33 LBS/FT MIN.



ELEVATION



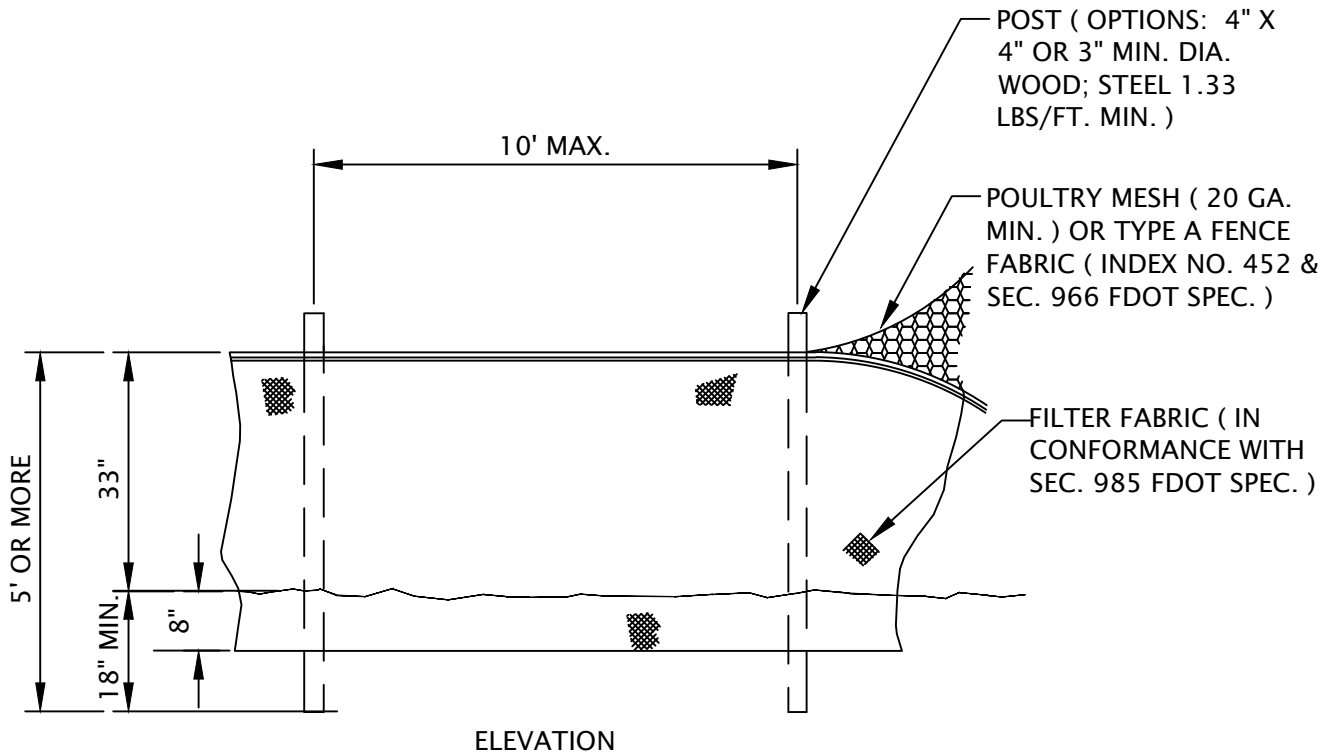
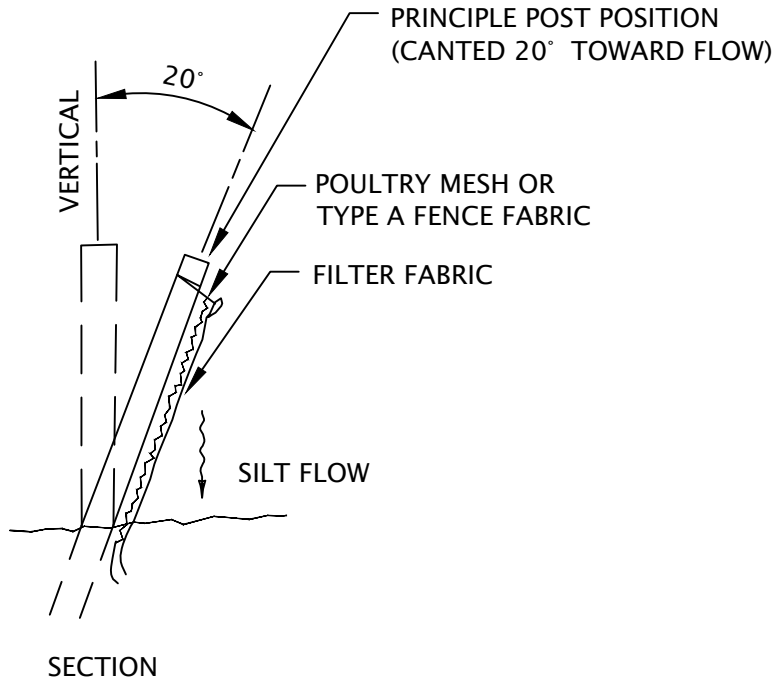
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TYPE III SILT FENCE
 (FDOT INDEX 102)

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FIGURE :

G-2

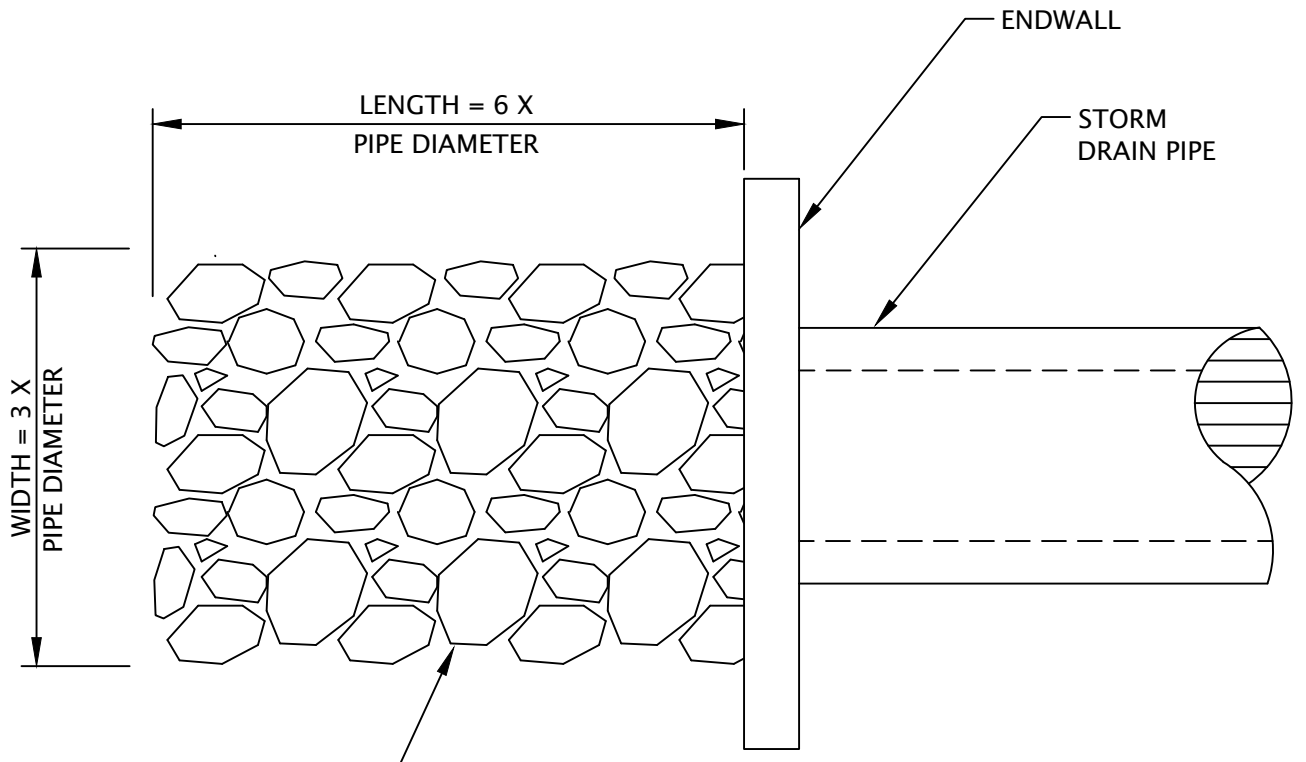


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**TYPE IV SILT FENCE
(FDOT INDEX 102)**

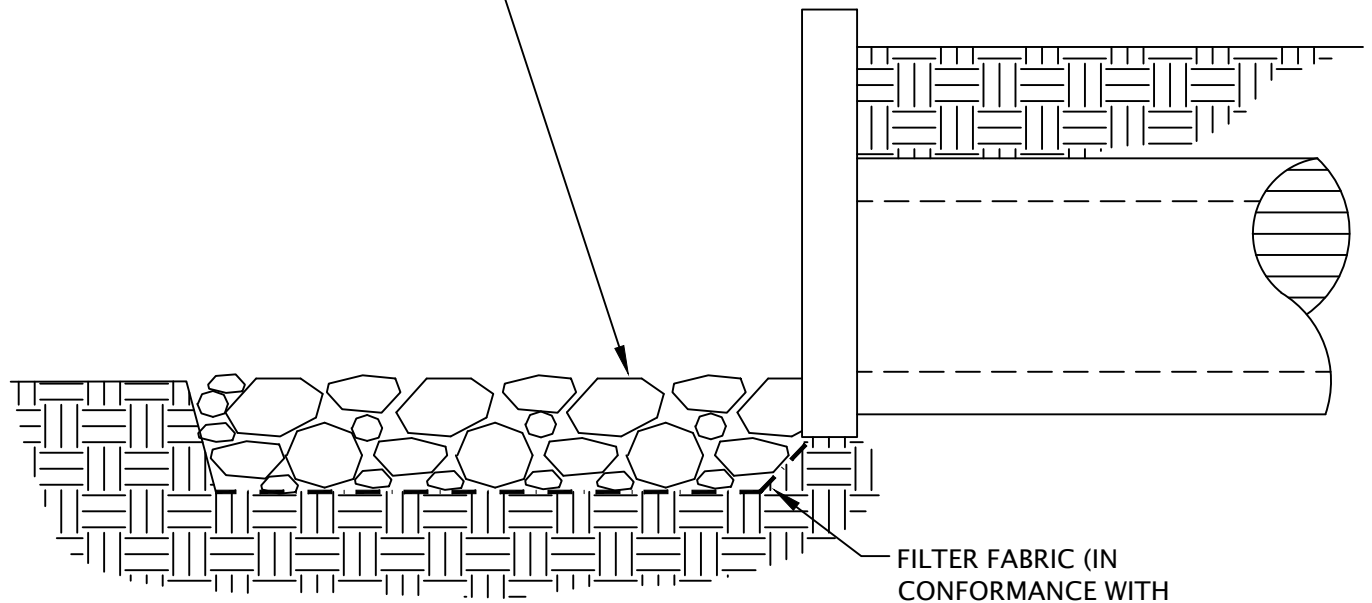
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FIGURE : **G-3**



FDOT RIP-RAP
RUBBLE WITH FILTER
FABRIC

PLAN



FILTER FABRIC (IN
CONFORMANCE WITH
SEC. 985 FDOT SPEC.)

SECTION

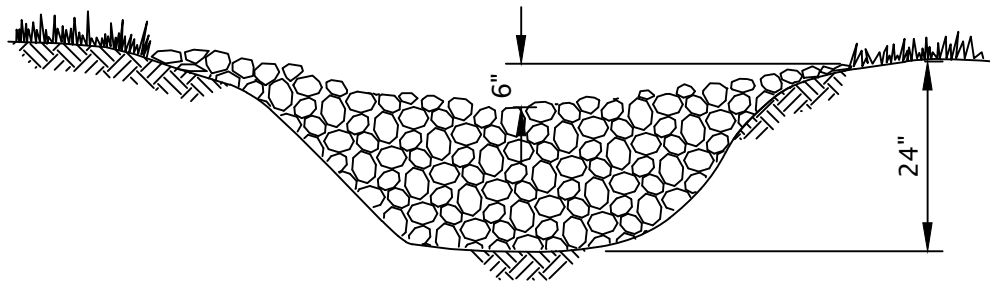


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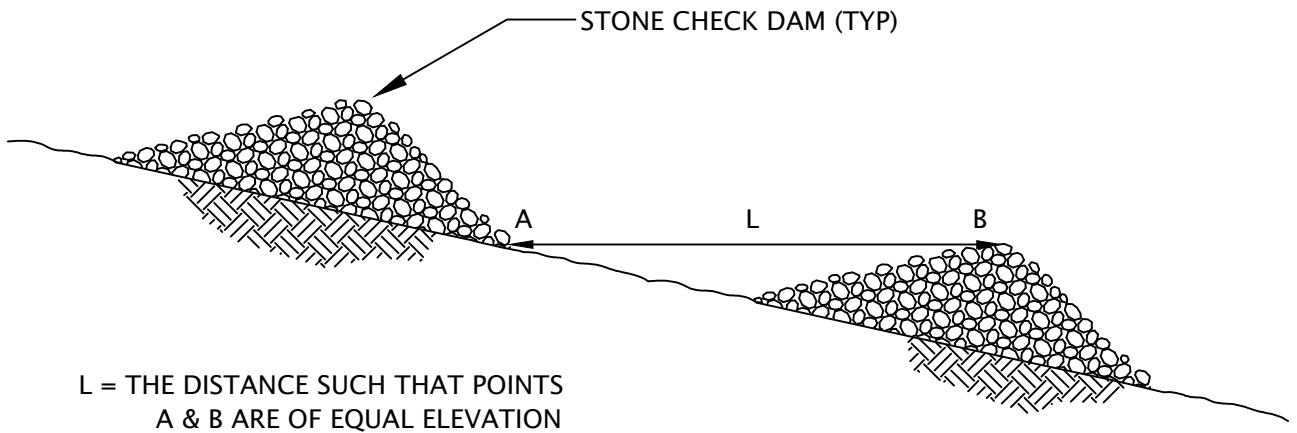
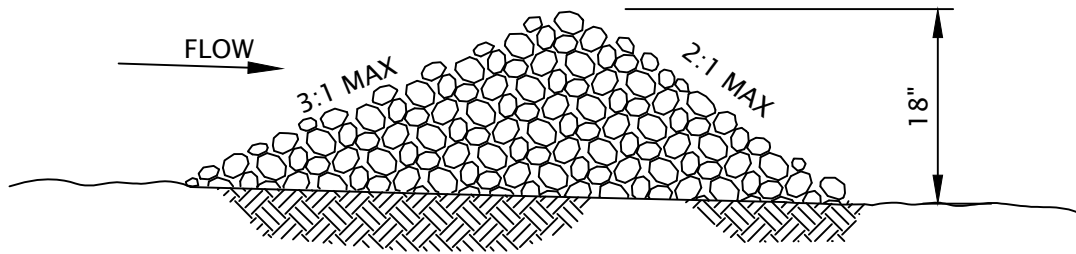
STORM DRAIN OUTLET
PROTECTION

DATE : SEP 2017
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FIGURE : G-4



F.D.O.T. NO. 1
COURSE
AGGREGATE



L = THE DISTANCE SUCH THAT POINTS
A & B ARE OF EQUAL ELEVATION

NOTE TO DESIGNER: SHOW CHECK DAMS AT APPROXIMATE
LOCATIONS ON PLAN BASED UPON LENGTH (L).

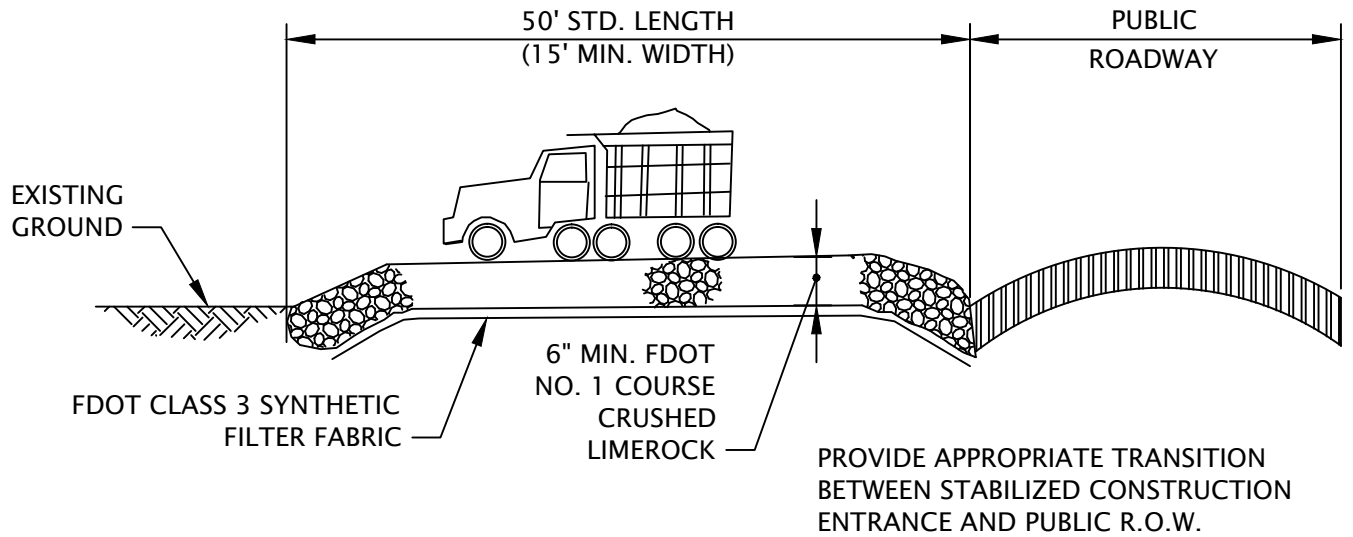


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STONE CHECK DAM

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FIGURE : **G-5**



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STABILIZED CONSTRUCTION ENTRANCE

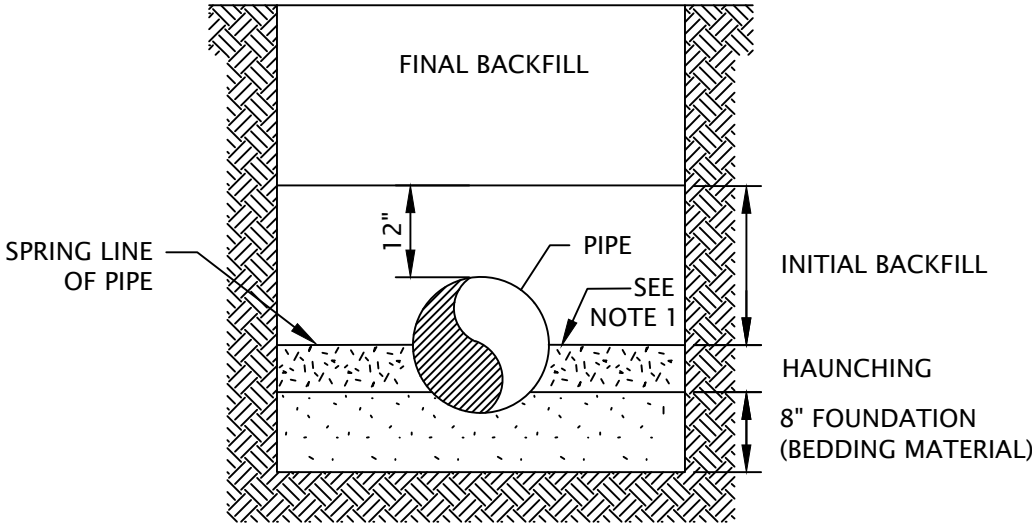
DATE : SEP 2017

SCALE : NTS

FIGURE :

G-6

SEE SPECIFICATIONS
FOR BACKFILL AND
COMPACTION
REQUIREMENTS



NOTES:
1. FOR PVC AND HDPE HAUNCHING/BEDDING MATERIAL
SHALL EXTEND TO 6-INCHES ABOVE THE TOP OF PIPE

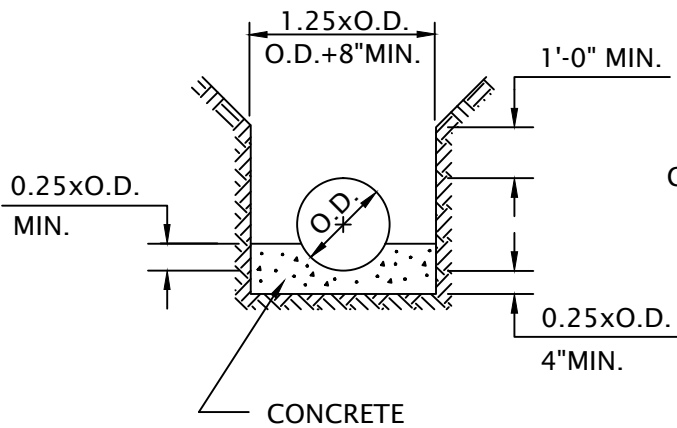


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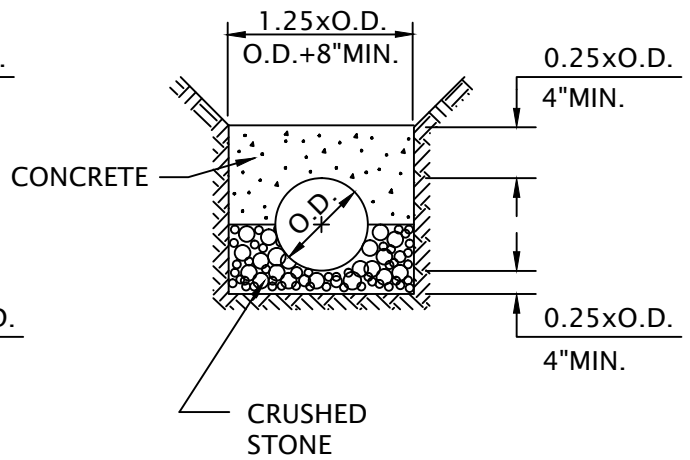
TRENCH TERMINOLOGY

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SCALE : NTS

FIGURE : **G-7**

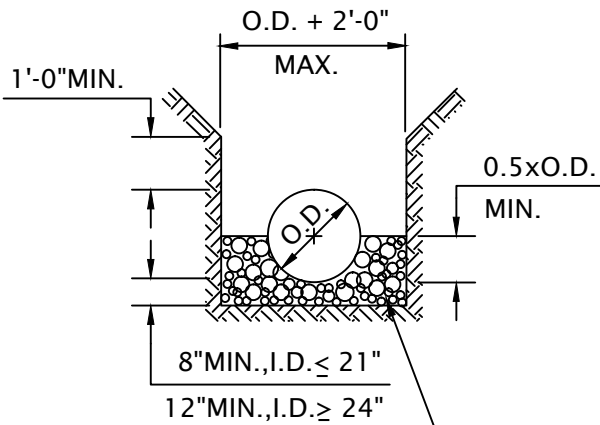


CONCRETE CRADLE

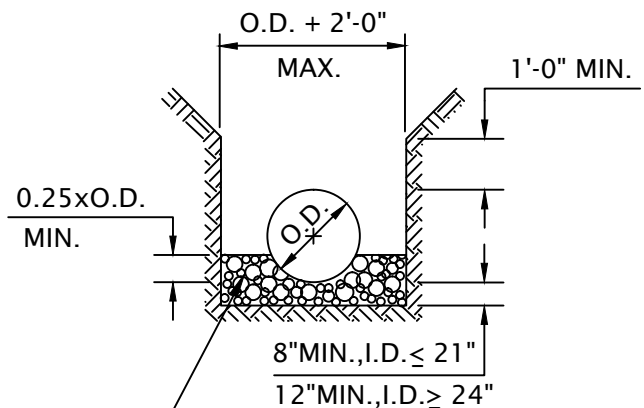


CONCRETE ARCH

CLASS "A"



CLASS "B"



CLASS "C"

BEDDING/
HAUNCHING MATERIAL

NOTES:

1. FOR PVC AND HDPE HAUNCHING/BEDDING MATERIAL SHALL EXTEND TO 6-INCHES ABOVE THE TOP OF PIPE



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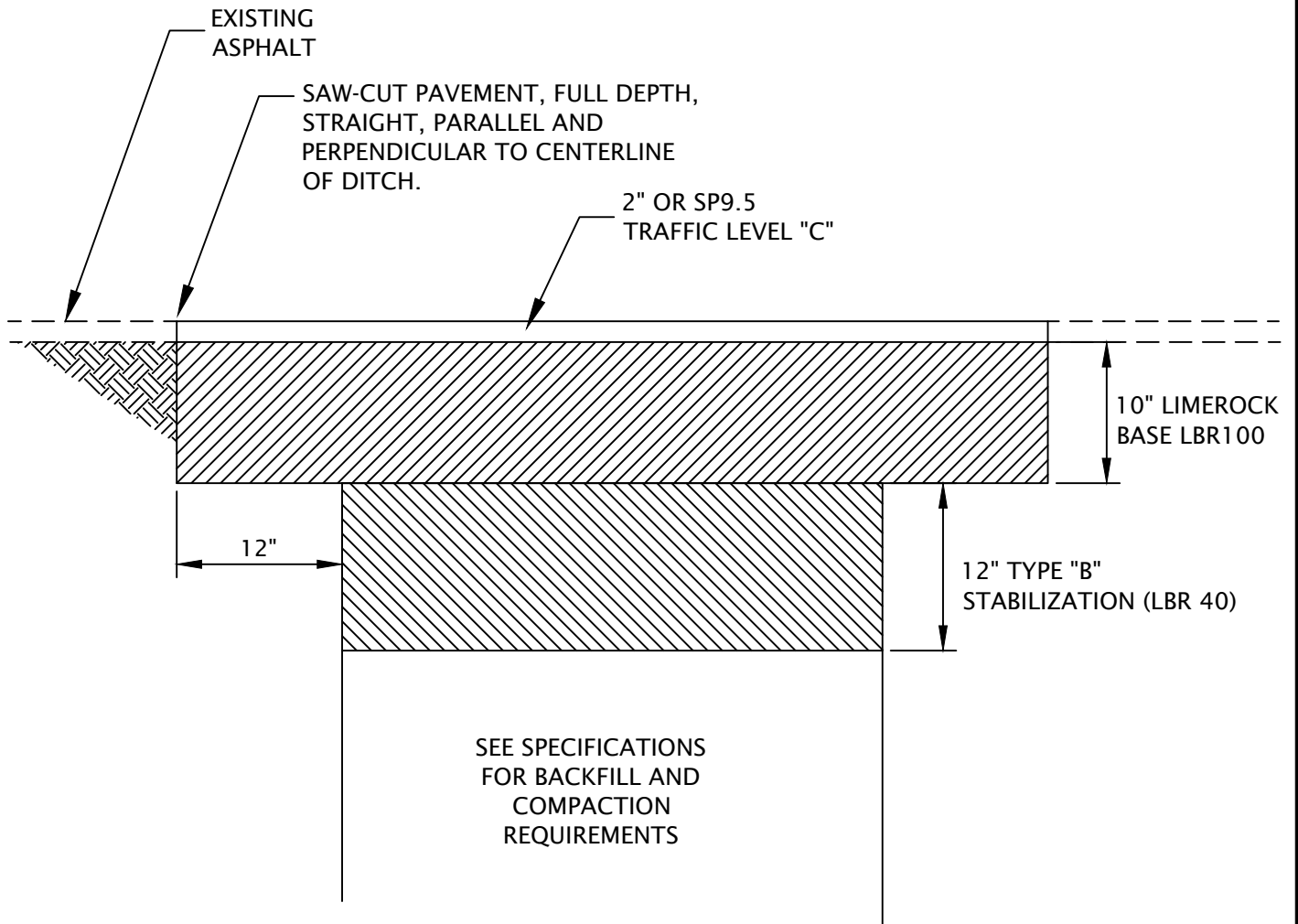
PIPE BEDDING
AND HAUNCHING

DATE : SEP 2017

SCALE : NTS

FIGURE :

G-8



NOTE:
 DETAIL FOR FOR DRIVEWAYS, PARKING AREAS, AND
 LOW DENSITY RESIDENTIAL. CONTACT BAY COUNTY
 ENGINEERING DEPARTMENT TO DETERMINE
 REQUIREMENTS FOR REPLACING PAVEMENT ON
 COUNTY ROADS.

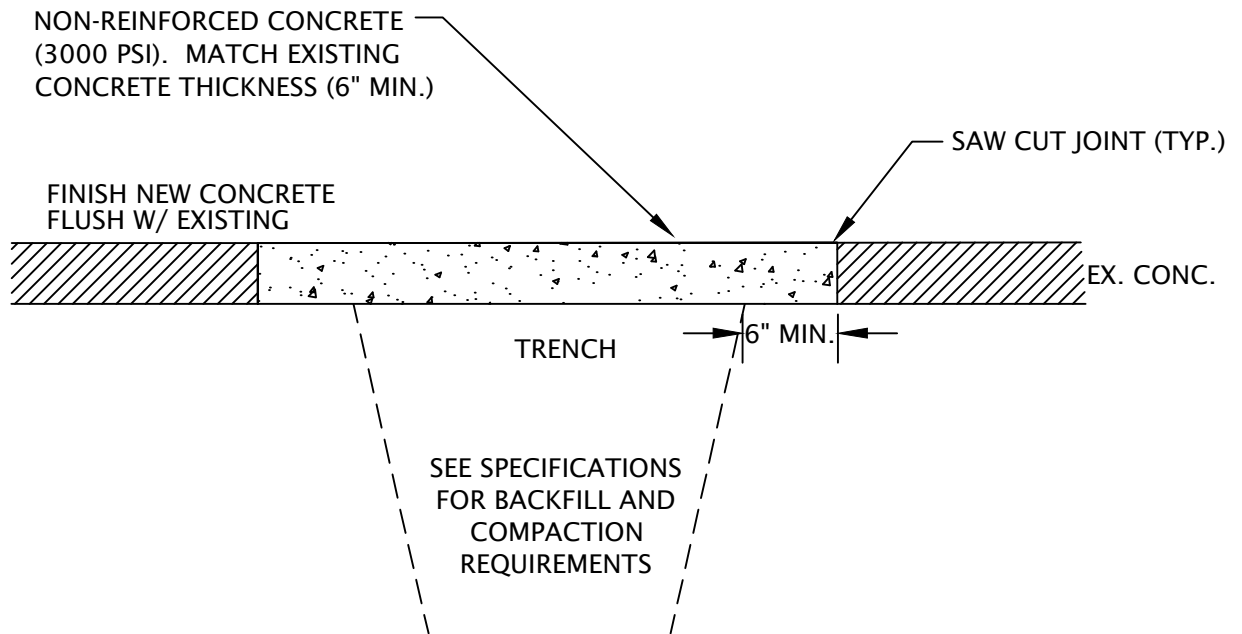


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ASPHALT PAVEMENT REPLACEMENT

DATE : SEP 2017
 SCALE : NTS

FIGURE : **G-9**

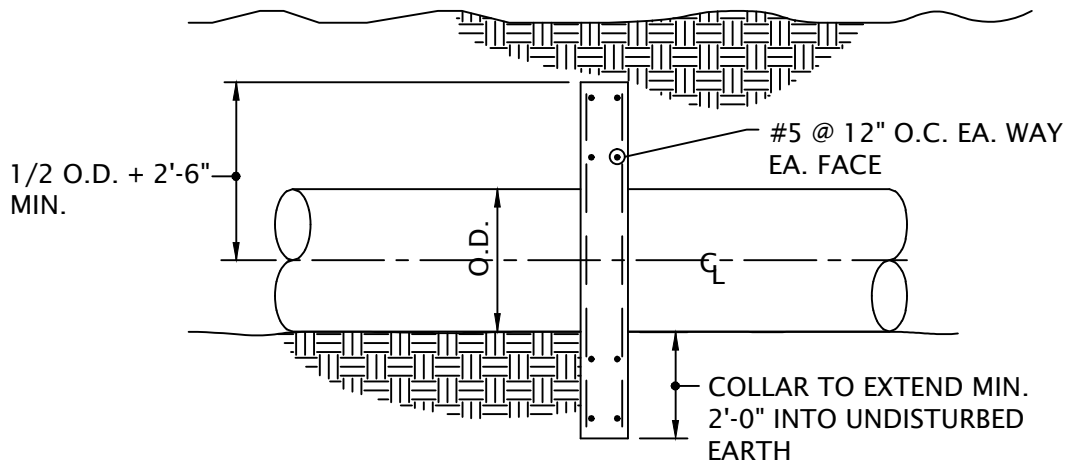
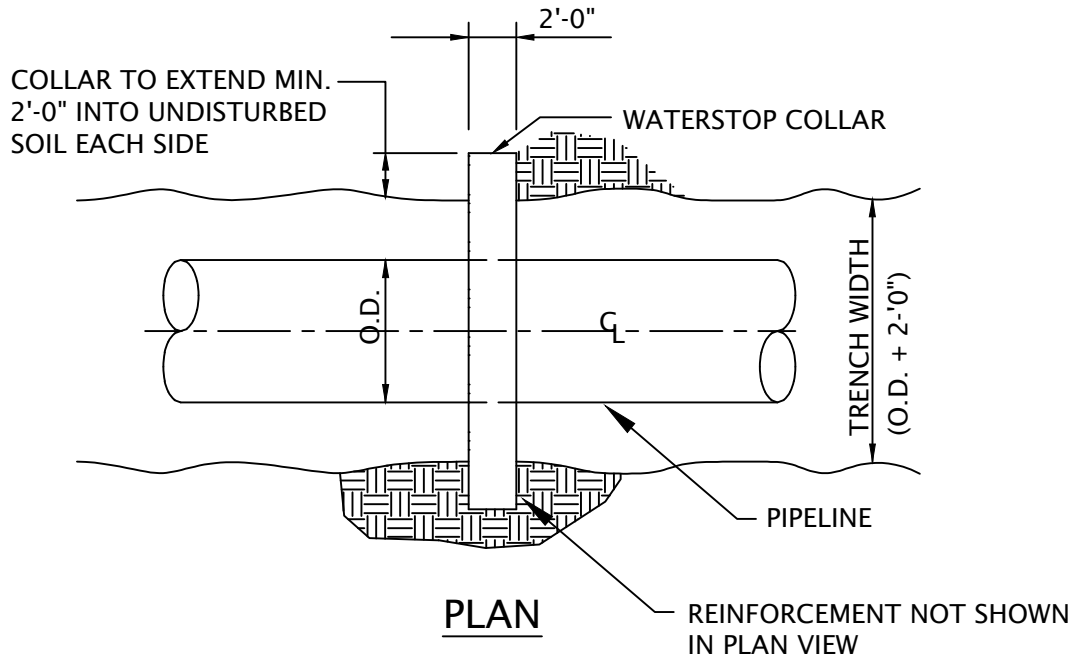


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CONCRETE PAVEMENT REPLACEMENT

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FIGURE : **G-10**



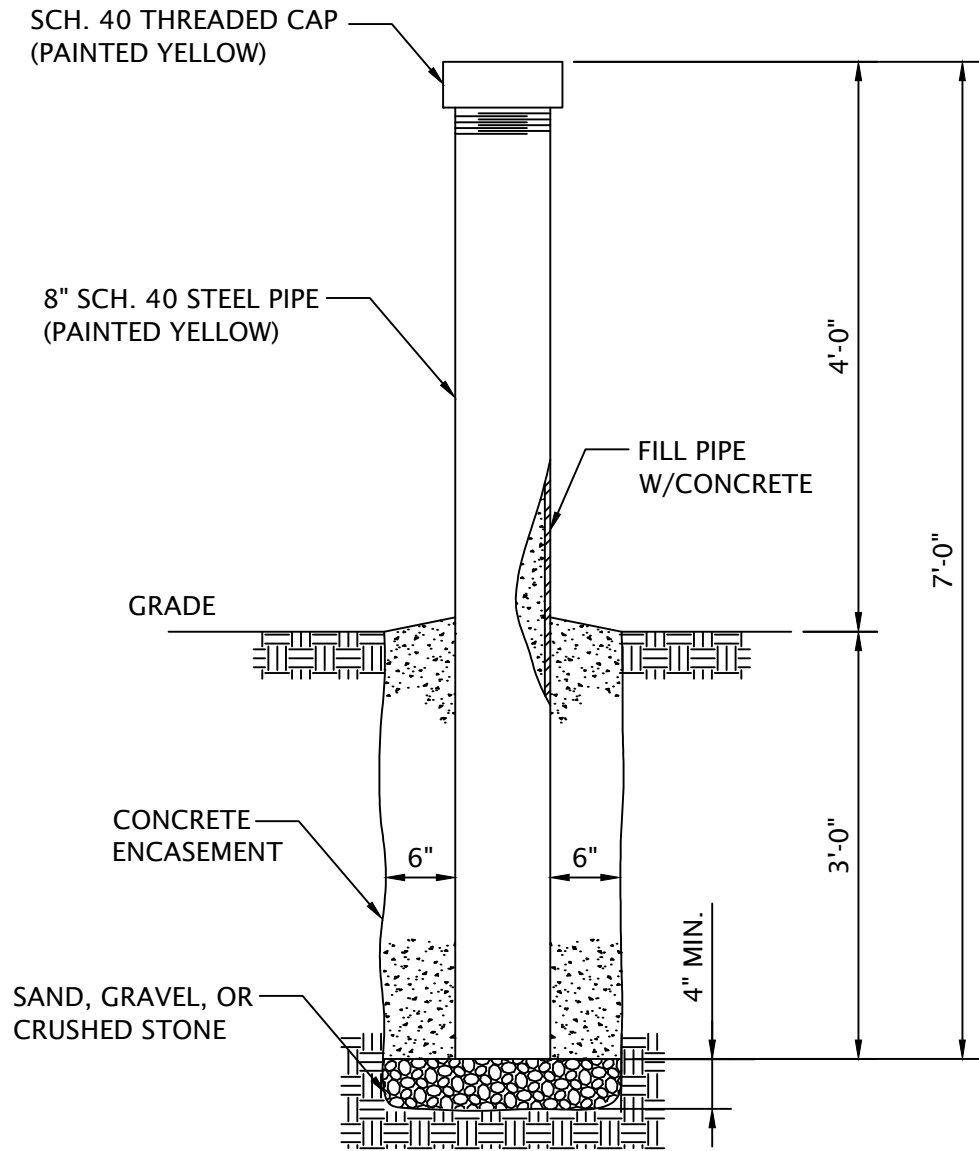
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WATERSTOP COLLAR

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FIGURE : **G-11**

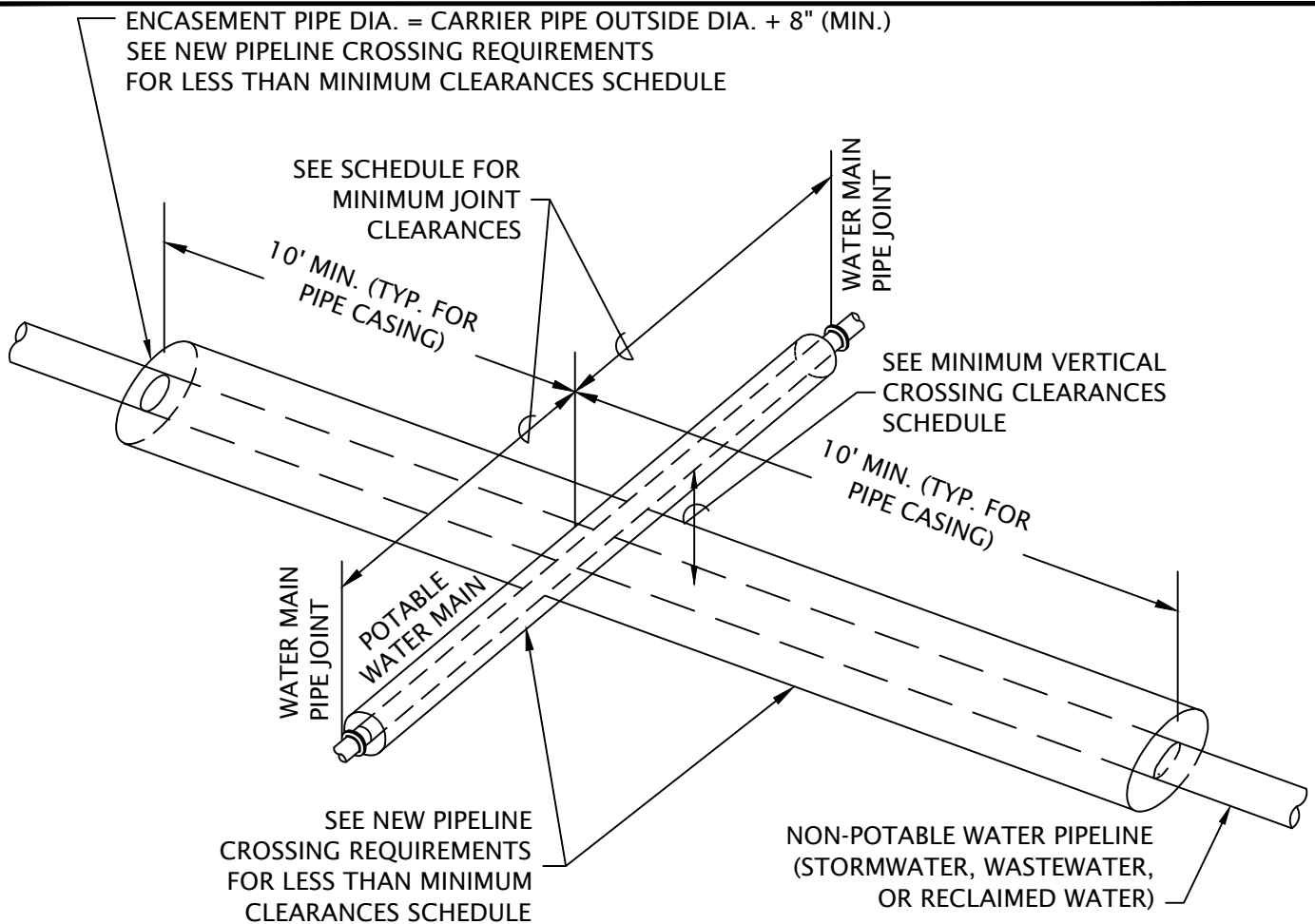


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BOLLARD

DATE : SEP 2017
SCALE : NTS

FIGURE : **G-13**



MINIMUM VERTICAL CROSSING CLEARANCES

1. WATER MAIN ABOVE STORMWATER (GRAVITY) OR WASTEWATER (GRAVITY & VACUUM): 6" (MIN.) 12"+ (PREFERRED)
2. WATER MAIN BELOW STORMWATER (GRAVITY) OR WASTEWATER (GRAVITY & VACUUM): 12" (MIN.)
3. WATER MAIN ABOVE OR BELOW STORMWATER, WASTEWATER & RECLAIMED WATER (PRESSURE): 12" (MIN.)

MINIMUM WATER MAIN JOINT SPACING

1. STORMWATER (GRAVITY & PRESSURE), WASTEWATER (VACUUM) OR RECLAIMED WATER (PRESSURE): 3' O.C.
2. WASTEWATER (GRAVITY & PRESSURE): 6' O.C.

NEW PIPELINE CROSSING REQUIREMENTS FOR LESS THAN MINIMUM VERTICAL CROSSING CLEARANCES

1. POTABLE WATER MAIN:

WATER MAIN OR WATER MAIN IN CASING PIPE OF AWWA C-150 DUCTILE IRON PIPE (DIP):

- 4"-12" - CLASS 350 OR EQUIVALENT WALL STRENGTH PIPE
- 14"-24" - CLASS 250 OR EQUIVALENT WALL STRENGTH PIPE
- 30"+ - CLASS 150 OR EQUIVALENT WALL STRENGTH PIPE

2. WASTEWATER / RECLAIMED WATER MAIN:

WASTEWATER / RECLAIMED WATER MAIN OR WASTEWATER / RECLAIMED WATER MAIN IN CASING PIPE OF AWWA C-150 DUCTILE IRON PIPE (DIP):

- 4"-12" - CLASS 350 OR EQUIVALENT WALL STRENGTH PIPE
- 14"-24" - CLASS 250 OR EQUIVALENT WALL STRENGTH PIPE
- 30"+ - CLASS 150 OR EQUIVALENT WALL STRENGTH PIPE

VERTICAL CROSSING SEPARATION REQUIREMENTS (SEE F.D.E.P. RULE 62-555.314(1) & (2) F.A.C.)

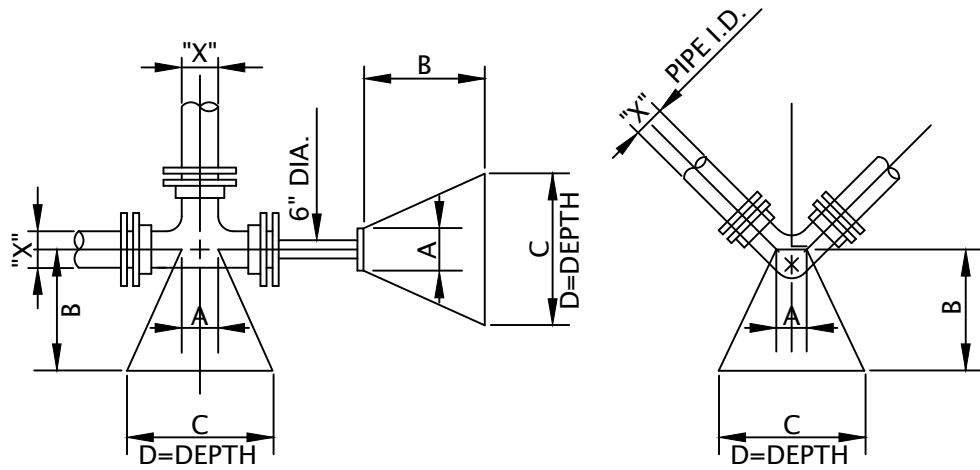


BAY COUNTY
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PIPELINE SEPARATION
REQUIREMENT

DATE : SEP 2017
SCALE : NTS

FIGURE : **G-14**



150 PSI TEST PRESSURE
2000 PSF SOIL BEARING

		X*	A	B	C	D
DEAD END & TEES		16"	1'-3"	3'-6"	7'-6"	4'-9"
		12"	1'-0"	3'-0"	5'-6"	3'-6"
		10"	1'-0"	2'-6"	4'-9"	3'-0"
		8"	0'-10"	2'-0"	4'-0"	2'-6"
		6"	0'-8"	1'-6"	2'-9"	1'-9"
BENDS	90°	16"	1'-3"	5'-6"	9'-0"	5'-6"
		12"	1'-0"	4'-0"	6'-9"	4'-3"
		10"	1'-0"	3'-0"	5'-9"	3'-6"
		8"	0'-10"	2'-6"	4'-9"	3'-0"
		6"	0'-8"	1'-6"	3'-6"	2'-9"
	45°	16"	1'-3"	3'-6"	6'-9"	4'-3"
		12"	1'-0"	2'-3"	5'-3"	3'-3"
		10"	1'-0"	2'-3"	4'-6"	2'-9"
		8"	0'-10"	1'-6"	3'-6"	2'-3"
		6"	0'-8"	1'-3"	2'-6"	1'-6"
	22 1/2°	16"	1'-3"	1'-6"	4'-9"	3'-0"
		12"	1'-0"	1'-6"	3'-6"	2'-3"
		10"	1'-0"	1'-3"	3'-0"	2'-0"
		8"	0'-10"	1'-0"	2'-6"	1'-6"
		6"	0'-8"	1'-0"	1'-9"	1'-3"
11 1/4°	16"	1'-3"	1'-6"	3'-3"	2'-0"	
	12"	1'-0"	1'-6"	2'-6"	1'-6"	
	10"	1'-0"	1'-0"	2'-3"	1'-3"	
	8"	0'-10"	1'-0"	1'-9"	1'-0"	
	6"	0'-8"	1'-0"	1'-6"	0'-6"	

X* = DIAMETER OF PIPE TO BE BLOCKED



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CONCRETE THRUST BLOCK REQUIREMENTS

DATE : SEP 2017
SCALE : NTS

FIGURE :

G-15

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS			TEES					REDUCERS			PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH					SIZE / LENGTH			
24	90	38	18	X24 / 169	X20 / 132	X16 / 90	X12 / 38	X10 / 6	X20 / 64	X16 / 117	X12 / 158	214
20	78	32	16	X20 / 141	X16 / 101	X12 / 53	X10 / 24	X8 / 1	X16 / 65	X12 / 115	X10 / 149	184
16	66	27	13	X16 / 111	X12 / 67	X10 / 41	X8 / 12		X12 / 64	X10 / 107	X8 / 111	151
12	52	22	10	X12 / 80	X10 / 56	X8 / 31	X6 / 1		X10 / 58	X8 / 62	X6 / 86	118
10	44	18	9	X10 / 63	X8 / 40	X6 / 7			X8 / 33	X6 / 61	X4 / 81	100
8	37	15	7	X8 / 49	X6 / 18	X4 / 1			X6 / 35	X4 / 60		83
6	29	12	6	X6 / 29	X4 / 1				X4 / 33			63
4	21	8	4	X4 / 12								45

NOTES:

1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.



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RESTRAINED JOINT REQUIREMENTS FOR PVC PIPE

DATE : SEP 2017
SCALE : NTS

FIGURE : **G-16**

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
				x36	x30	x24	x20	x16	x12	x30	x24	x20	x16	
36	142	59	28	393	318	232	165	84	1	137	247	309	359	453
30	124	51	25	333	252	189	115	23	1	137	213	276		391
24	106	44	21	270	211	143	61	10	1	98	178	241		327
20	92	38	18	225	161	85	39	8	1	98	176	227		280
16	77	32	15	177	107	65	19	6	1	98	163	169		231
12	61	25	12	127	89	50	6	1		88	96	131		181
10	52	22	10	101	64	11				51	94	125		153
8	44	18	9	78	30	1				54	92			128
6	34	14	7	46	1					50				98
4	24	10	5	19										69

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
				x36	x30	x24	x20	x16	x12	x30	x24	x20	x16	
36	100	42	20	163	132	96	68	35	1	57	103	128	149	188
30	88	37	18	138	104	78	48	10	1	57	88	114		162
24	75	31	15	112	87	59	25	4	1	40	74	100		135
20	65	27	13	93	67	35	16	8	1	41	73	94		116
16	54	22	11	73	44	27	8	6	1	41	68	70		96
12	43	18	8	53	37	21	1			37	40	54		75
10	37	15	7	42	26	5				21	39	52		63
8	30	13	6	32	12	1				22	38			53
6	24	10	5	19	1					21				41
4	17	7	3	8										29

NOTE:

SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

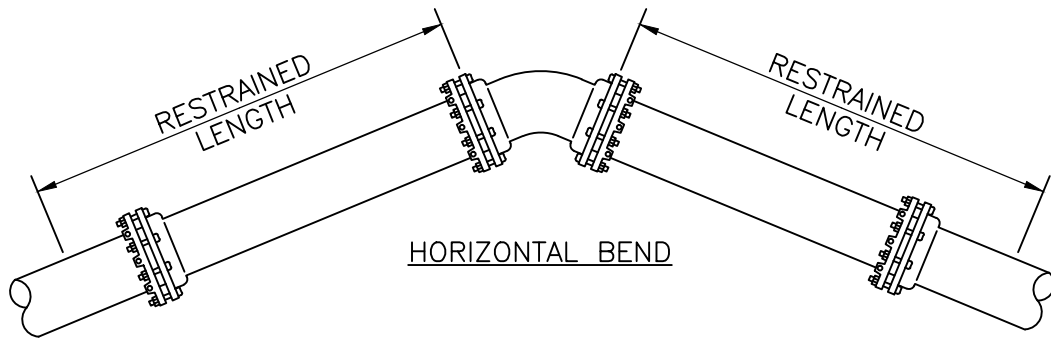


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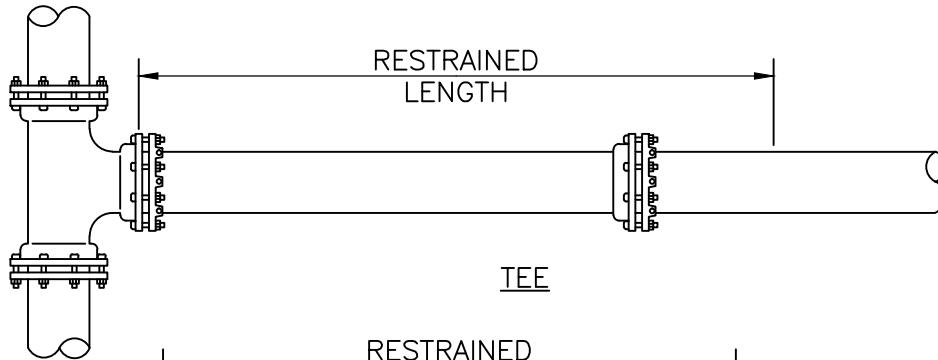
RESTRAINED JOINT REQUIREMENTS FOR DUCTILE IRON PIPE

DATE : SEP 2017
SCALE : NTS

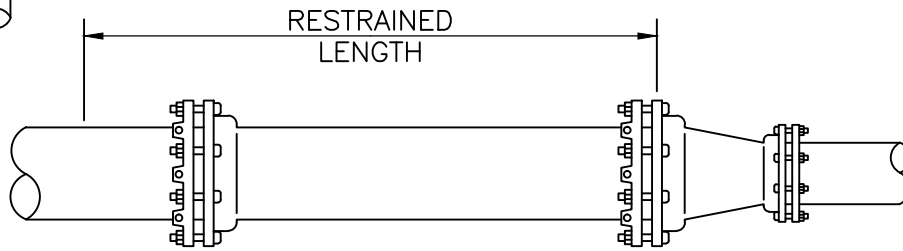
FIGURE : **G-17**



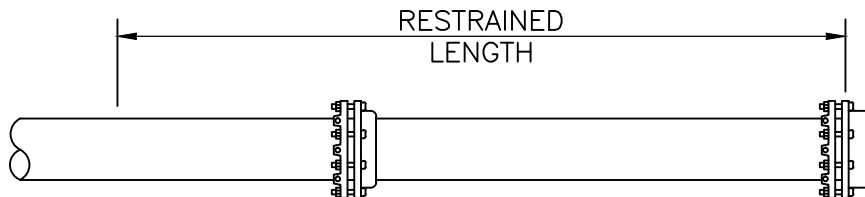
HORIZONTAL BEND



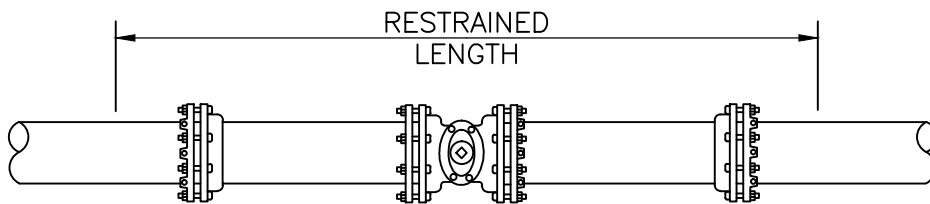
TEE



REDUCER



CAP OR PLUG



ISOLATION VALVE

RESTRAINED LENGTHS FOR PIPE

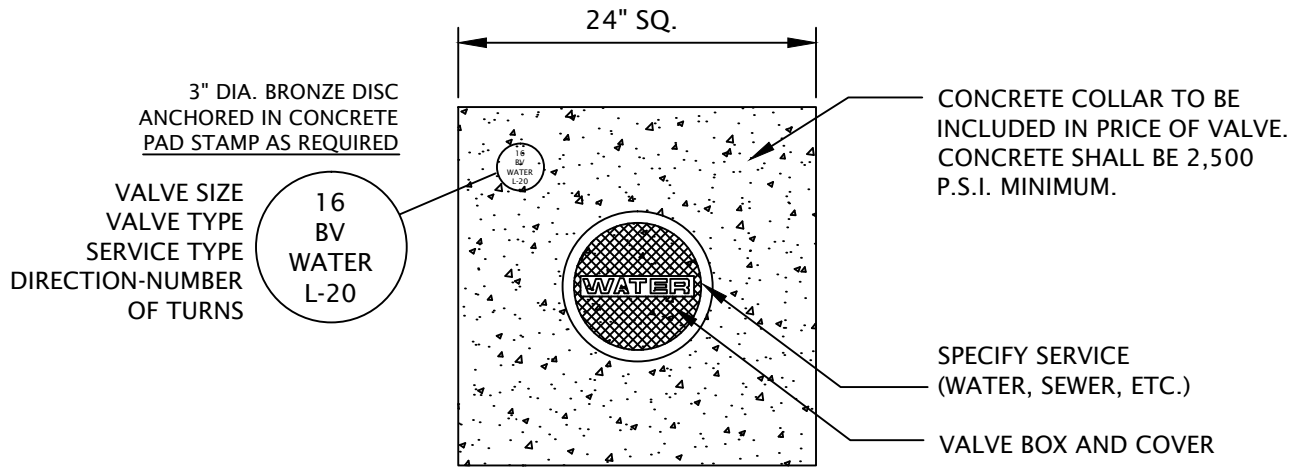


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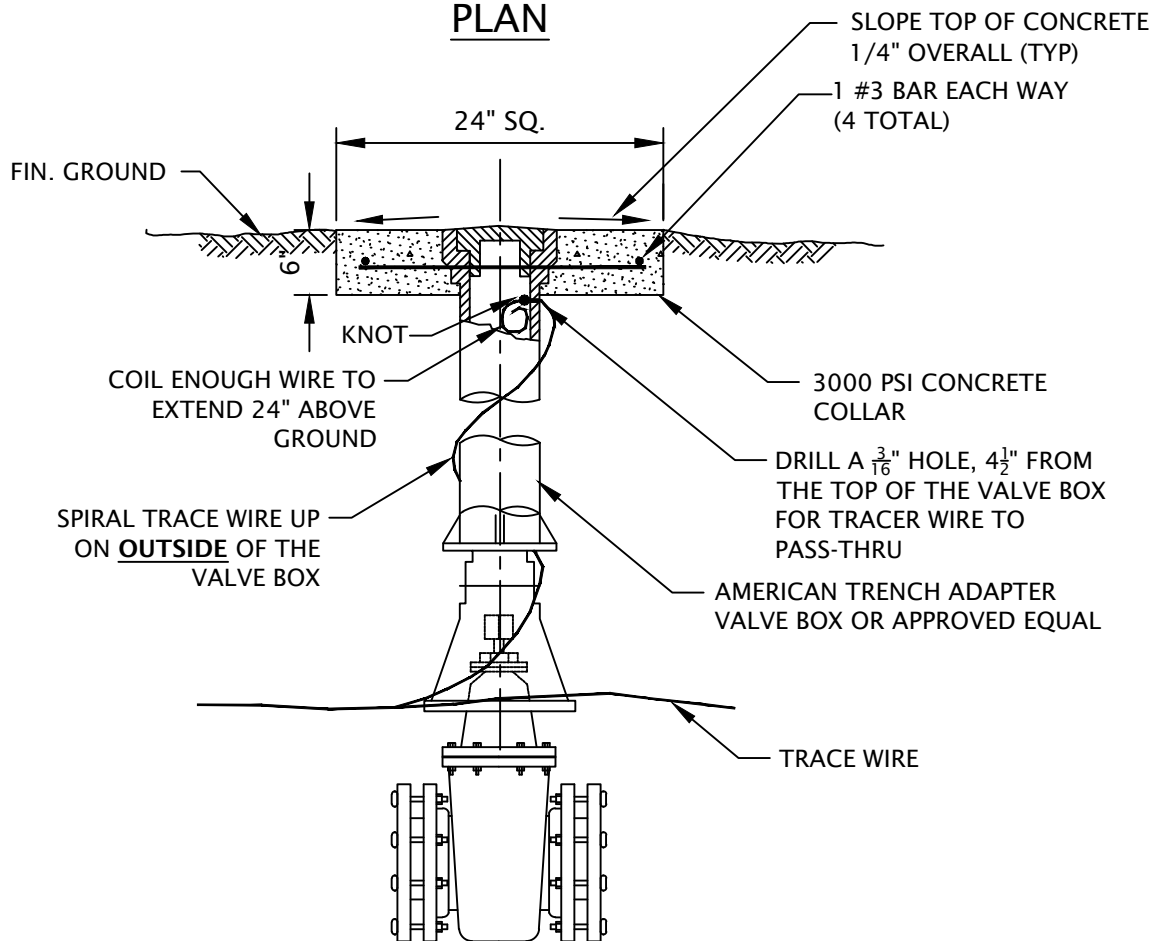
**RESTRAINED JOINT
REQUIREMENTS
TYPICAL LENGTHS**

DATE : SEP 2017
SCALE : NTS

FIGURE : **G-18**



PLAN



NOTES:

1. SEE SPECIFICATIONS FOR TECHNICAL REQUIREMENTS AND APPROVED GATE VALVES AND VALVE BOXES.
2. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
3. THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 2 FOOT DEPTH BELOW FINISHED GRADE.

SECTION



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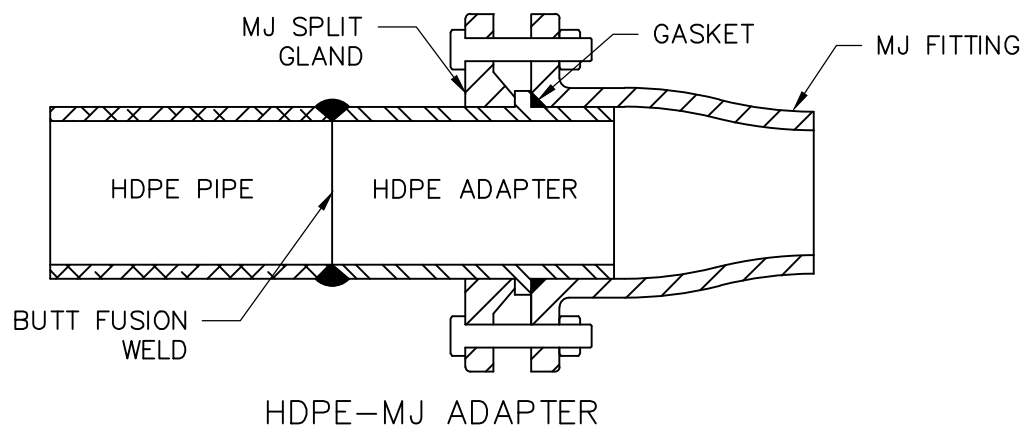
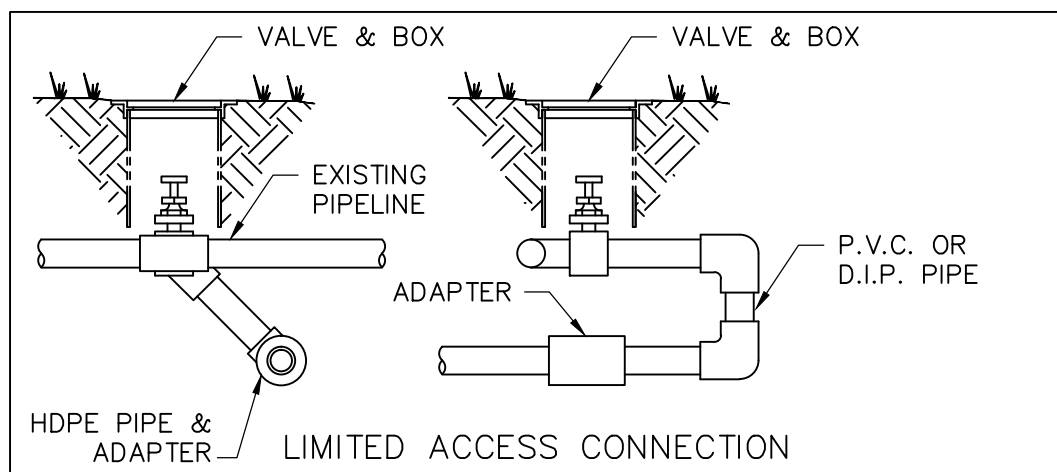
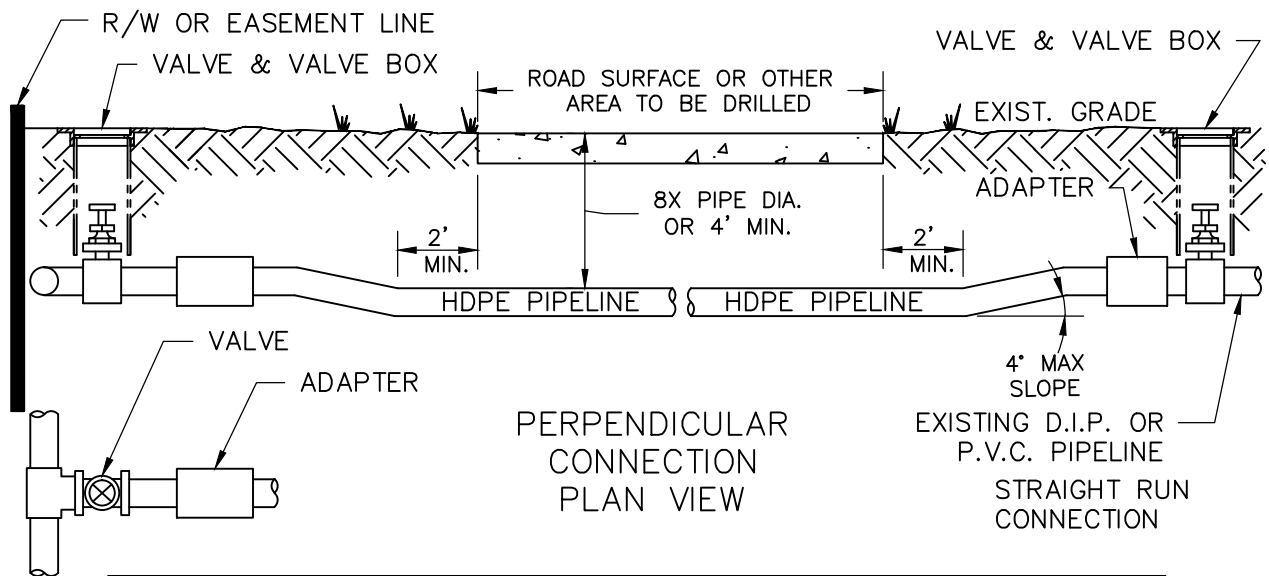
**VALVE AND
VALVE BOX COLLAR**

DATE : SEP 2017

SCALE : NTS

FIGURE :

G-19



NOTES:

1. DIRECTIONAL DRILLS SHALL BE COMPLETED USING DR11 HDPE PIPE, DUCTILE IRON SIZE.
2. ALL DIRECTIONAL DRILLS SHALL BE AT A DEPTH OF 8X PIPE DIAMETER BELOW THE ROADWAY SURFACE OR 4' WHICHEVER IS GREATER.
3. ALL HDPE MUST BE COLOR CODED (SAFETY BLUE-WATER, SAFETY GREEN FOR SEWER AND PANTONE PURPLE FOR RECLAIMED WATER); BUTT FUSION WELDED; AND CONNECTED WITH HDPE-MJ ADAPTER.



BAY COUNTY UTILITIES STANDARD DETAILS

DIRECTIONAL BORE DETAIL

DATE : SEP 2017
SCALE : NTS

FIGURE : G-20