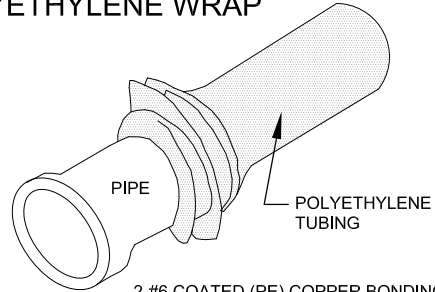


FIELD INSTALLATION OF POLYETHYLENE WRAP

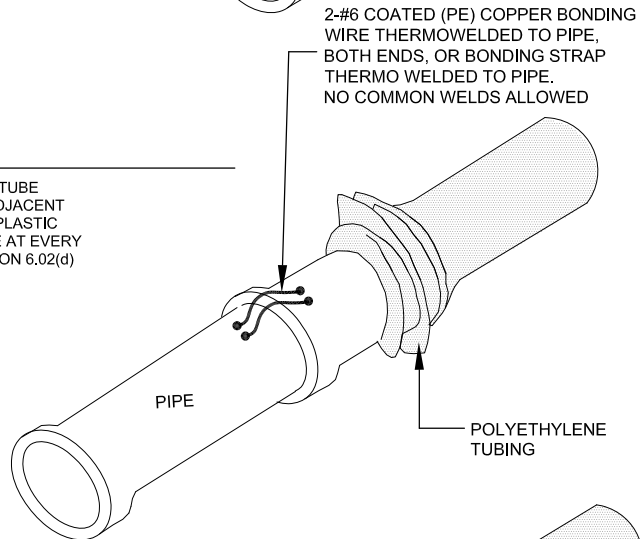
STEP 1:

PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.



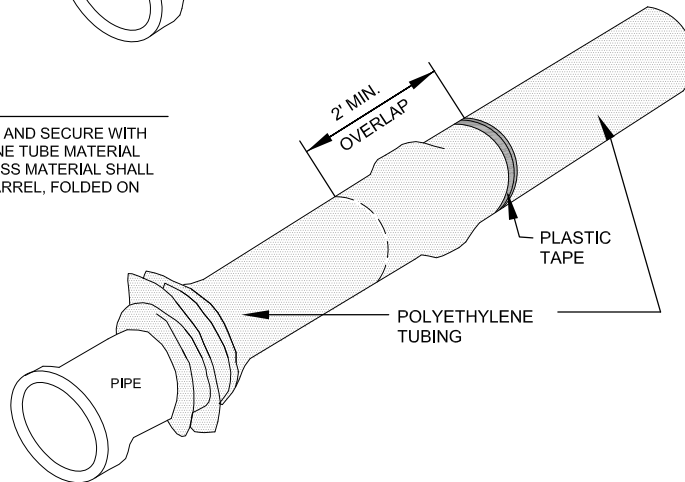
STEP 2:

PULL TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO END AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE. INSTALL BONDING STRAP OR WIRE AT EVERY JOINT OF PIPE PRIOR TO WRAPPING AS PER SECTION 6.02(d) OF THE STANDARD SPECIFICATIONS.



STEP 3:

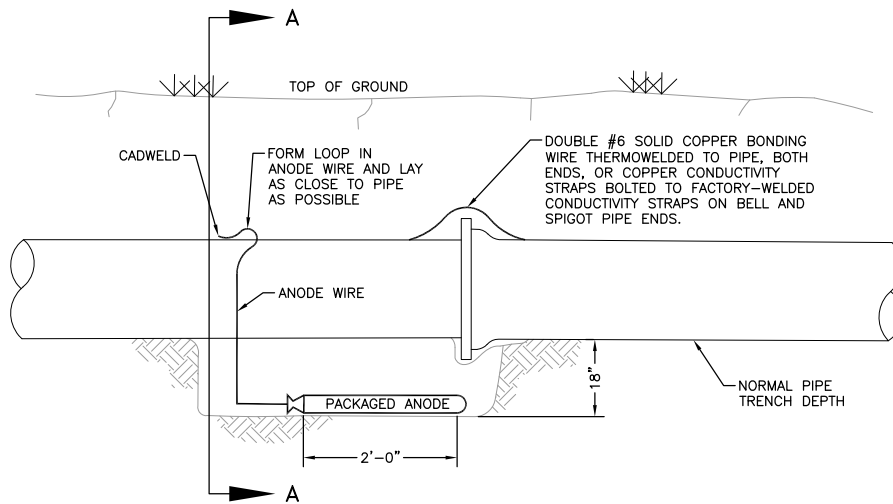
OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.



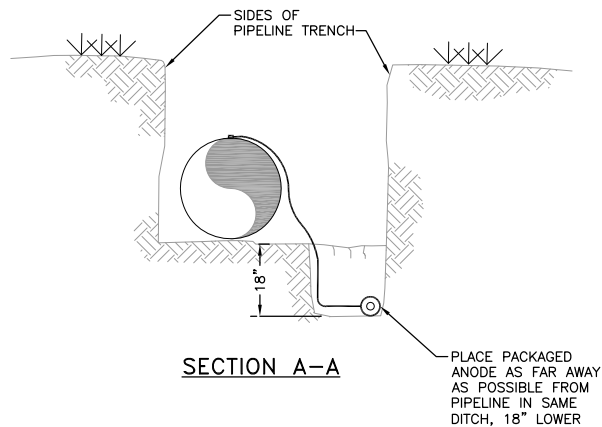
**STRASBURG SANITATION
AND WATER DISTRICT**

POLYETHYLENE WRAP

APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF <small>Scale: NONE</small>
DESIGN	DATE:	JOB NO.	
PLOTTED	L. OTTO	DATE: 12/82	PA NO.
REVISION	10/31/16		



ELEVATION



SECTION A-A

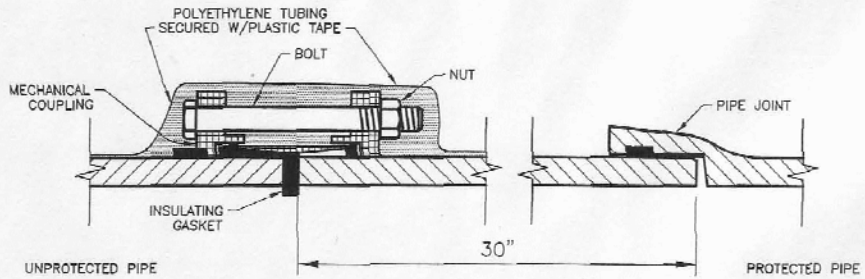
NOTES:

1. CADWELD CONNECTION TO BE PRIMED AND COATED CAREFULLY. PACKAGED ANODE SHOULD BE COVERED WITH FINE SOIL CONTAINING NO ROCKS OR DIRT CLUMPS, TAMPED.
2. WHEN ANODES ARE REQUIRED WITH METAL FITTINGS AND APPURTENANCES TOGETHER WITH PVC PIPE INSTALLATION, THE ANODES SHALL BE PLACED AND ATTACHED TO THE METAL IN SAME MANNER AS SHOWN ON THIS DRAWING. 9LB. ANODES CAN BE USED ON METAL FITTINGS 12" AND LESS IN DIAMETER AND 17LB. ANODES FOR METAL FITTINGS GREATER THAN 12" DIAMETER WHEN USING PVC PIPE.
3. PACKAGED ANODE TO BE WETTED AND COVERED WITH SOIL PRIOR TO BACKFILLING.
4. CADWELD COATING TO BE PRE-PACKAGED PILL OR FIELD APPLIED ROSKOTE A-51.

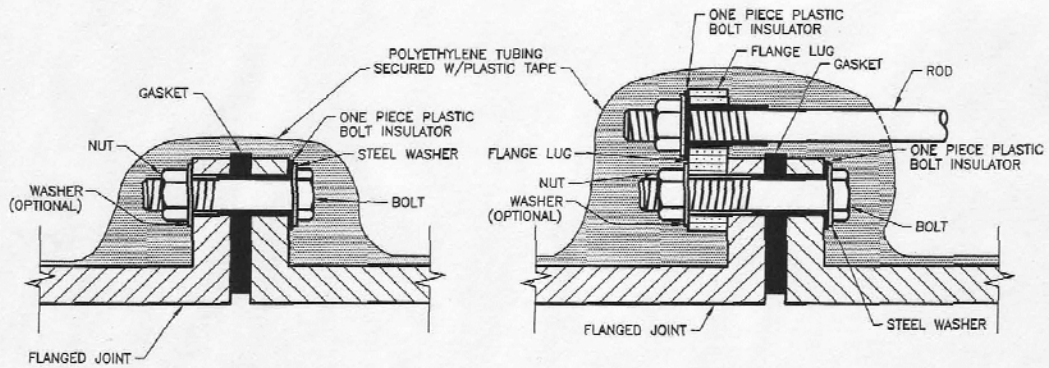
STRASBURG SANITATION AND WATER DISTRICT

BONDING JOINT AND ANODE INSTALLATION

APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED L. OTTO	DATE: 2/83	PA NO.	
REVISION	7/90, 10/31/16		



INSULATED MECHANICAL COUPLING



INSULATED FLANGE JOINT

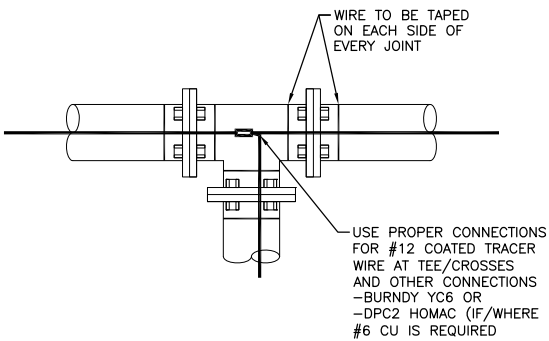
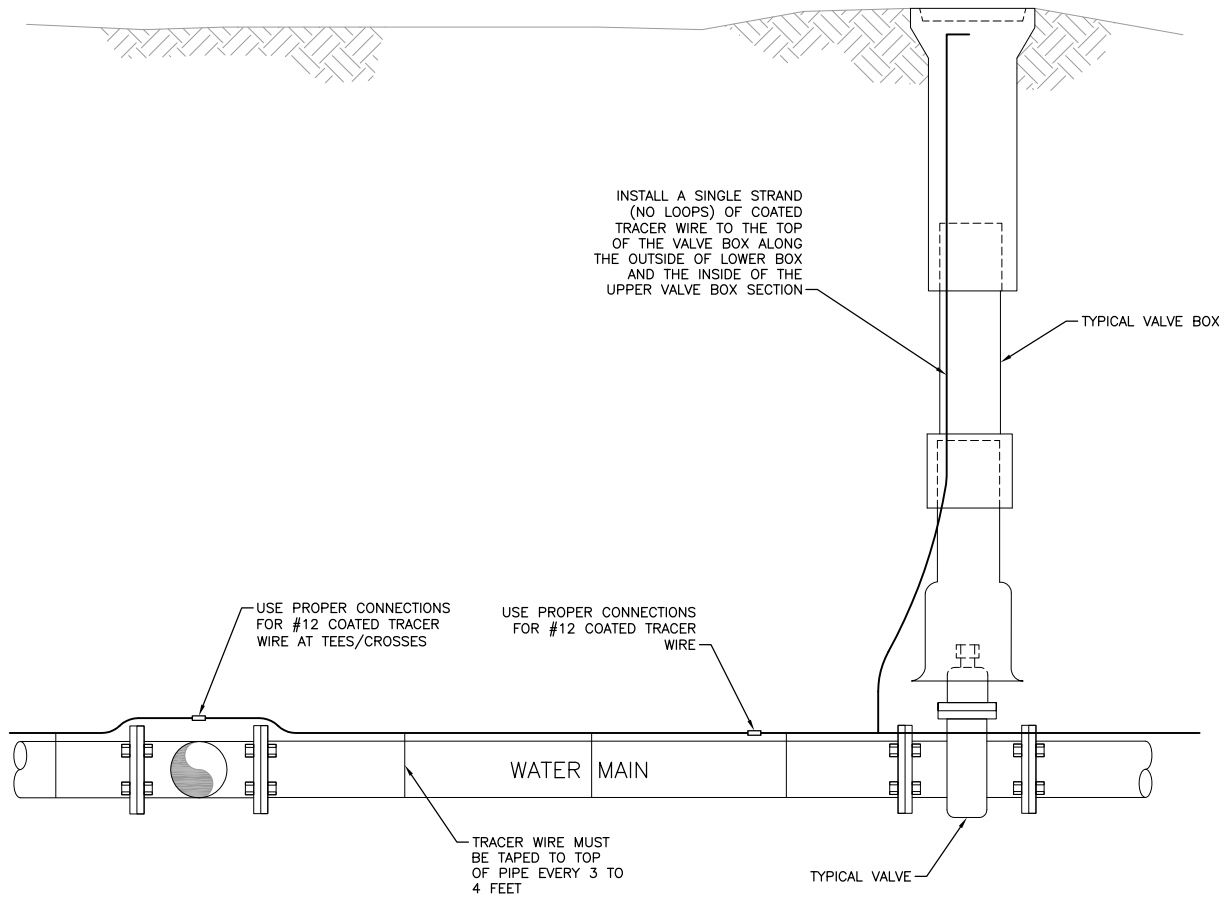
INSULATED TIE BACK ROD

NOTE:
TEST WIRES TO BE USED WHEN REQUIRED.

**STRASBURG SANITATION
AND WATER DISTRICT**

INSULATOR INSTALLATION

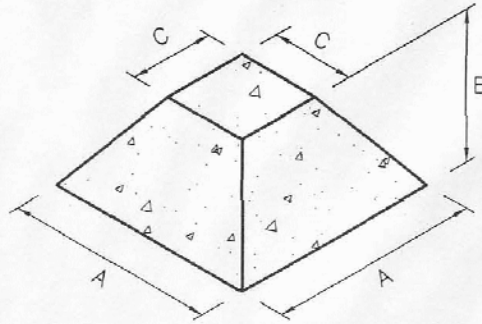
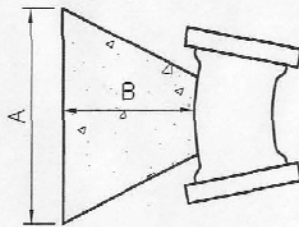
APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF
DESIGN	DATE:	JOB NO.	Scale: NONE
PLOTTED L. OTTO	DATE: 3/83	PA NO.	
REVISION	10/31/16		



**STRASBURG SANITATION
AND WATER DISTRICT**

COPPER TRACE WIRE ON PVC PIPE

APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED E. BUCK	DATE: 2/83	PA NO.	
REVISION	2/96, 10/31/16		



NOTE: USE THE FOLLOWING VALUES FOR 'C'

PIPE SIZE =	C =
12" & UNDER	1'-6"
16" TO 24"	2'-0"
30" TO 36"	3'-0"
OVER 36"	A, B & C WILL BE GIVEN IN EACH INSTANCE

VOL. (yds)	A	B if C=1'-6"	B if C=2'-0"	B if C=3'-0"
1/8	2'-6"	0'-10"	0'	0'
1/4	2'-8"	1'-7"	0'	0'
1/2	3'-2"	2'-5"	2'-0"	0'
3/4	4'-0"	2'-6"	2'-2"	0'
1	4'-4"	3'-0"	2'-7"	2'-0"
1 1/4	4'-10"	3'-1"	2'-9"	2'-2"
1 1/2	5'-3"	3'-3"	2'-11"	2'-4"
1 3/4	5'-7"	3'-5"	3'-1"	2'-6"
2	5'-10"	3'-7"	3'-3"	2'-8"
2 1/4	6'-3"	3'-8"	3'-4"	2'-9"
2 1/2	6'-4"	3'-11"	3'-7"	3'-0"
2 3/4	6'-9"	3'-11"	3'-7"	3'-0"
3	6'-10"	4'-1"	3'-9"	3'-2"
3 1/4	7'-3"	4'-1"	3'-9"	3'-2"
3 1/2	7'-4"	4'-3"	3'-11"	3'-4"
3 3/4	7'-7"	4'-4"	4'-0"	3'-5"
4	7'-11"		4'-0"	3'-5"
4 1/4	8'-1"		4'-0"	3'-6"
4 1/2	8'-4"		4'-0"	3'-6"
4 3/4	8'-8"		4'-1"	3'-7"

VOL. (yds)	A	B if C=1'-6"	B if C=2'-0"	B if C=3'-0"
5	8'-8"		4'-2"	3'-8"
5 1/4	8'-11"		4'-2"	3'-8"
5 1/2	9'-1"		4'-3"	3'-9"
5 3/4	9'-3"		4'-4"	3'-10"
6	9'-4"		4'-5"	3'-11"
6 1/4	9'-6"		4'-6"	4'-0"
6 1/2	9'-8"		4'-6"	4'-0"
6 3/4	9'-11"		4'-6"	4'-0"
7	10'-2"		4'-6"	4'-0"
7 1/4	10'-3"		4'-7"	4'-1"
7 1/2	10'-4"		4'-8"	4'-2"
7 3/4	10'-5"		4'-8"	4'-3"
8	10'-6"		4'-10"	4'-4"
8 1/4	10'-8"		4'-10"	4'-4"
8 1/2	10'-9"		4'-11"	4'-5"
8 3/4	10'-11"		4'-11"	4'-5"
9	11'-1"		4'-11"	4'-5"
9 1/4	11'-2"		5'-0"	4'-6"
9 1/2	11'-4"		5'-0"	4'-6"
9 3/4	11'-6"		5'-0"	4'-6"
10	11'-8"		5'-0"	4'-6"

ALL WATER MAINS GREATER THAN 12 - INCHES IN DIAMETER SHALL HAVE THRUST BLOCK DESIGNED & SHOWN ON THE CONSTRUCTION DOCUMENTS.

SEE VOLUMES ABOVE FOR A, B & C DIM.

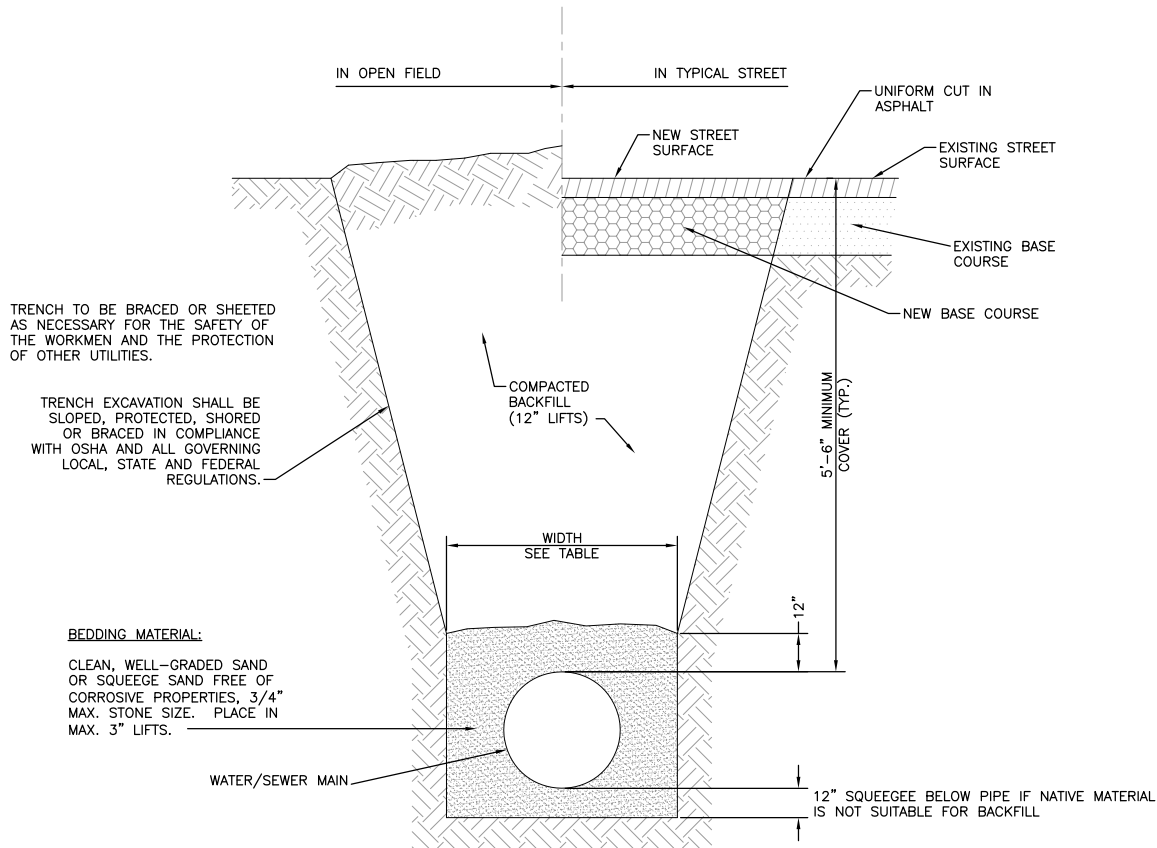
FITTING	4"	6"	8"	12"
TEE	1/8 yd.	1/2 yd.	3/4 yd.	2 yd.
90° BEND	1/8 yd.	3/4 yd.	1 1/4 yd.	3 yd.
45° BEND	1/8 yd.	1/2 yd.	3/4 yd.	1 1/2 yd.
22-1/2° BEND	1/8 yd.	1/8 yd.	1/4 yd.	3/4 yd.
11-1/4° BEND	1/8 yd.	1/8 yd.	1/8 yd.	1/4 yd.

DO NOT COVER NUTS AND/OR BOLTS WITH CONCRETE

STRASBURG SANITATION AND WATER DISTRICT

THRUST BLOCK DATA

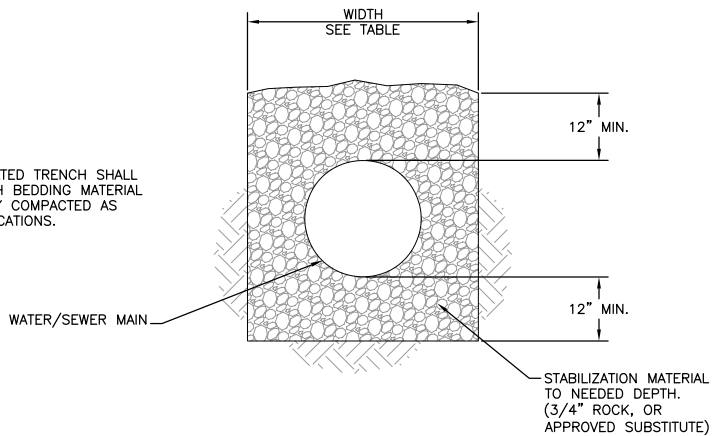
APPVD.	DATE:	SUVD.	DATE:
CHECKED	DATE:	SHEET	OF
DESIGN	DATE:	JOB NO.	Scale: NONE
PLOTTED	L. OTTO	DATE:	PA NO.
REVISION	10/31/16		



TYPICAL TRENCH SECTION
SCALE: N.T.S.

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	2'-2"	3'-0"
6"	2'-2"	3'-0"
8"	2'-2"	3'-0"
10"	2'-4"	3'-0"
12"	2'-6"	3'-6"
18"	2'-10"	3'-9"
24"	3'-2"	4'-3"

NOTE:
AN OVER-EXCAVATED TRENCH SHALL BE REFILLED WITH BEDDING MATERIAL AND THOROUGHLY COMPACTED AS PER THE SPECIFICATIONS.



UNSTABLE TRENCH BEDDING DETAIL
SCALE: N.T.S.

STRASBURG SANITATION AND WATER DISTRICT

TYPICAL TRENCH CROSS SECTION

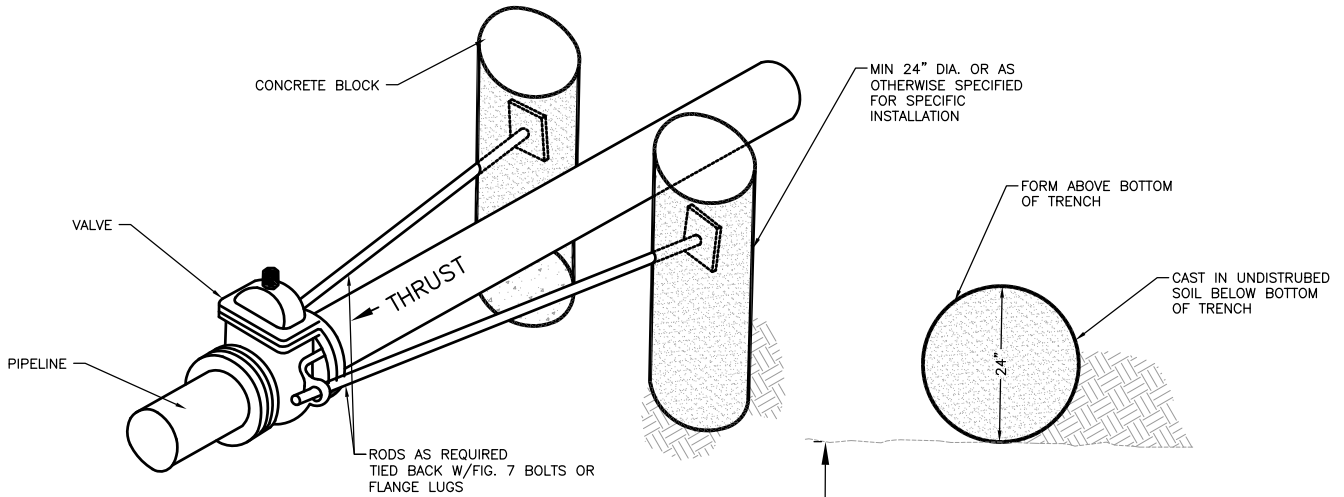
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CHECKED	DATE:	SHEET OF	Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED	B. MAC DATE:	PA NO.	
REVISION	10/31/16		

MAXIMUM DEFLECTION
PER SLIP JOINT OF D.I.P.

PIPE DIAMETER			MFRS. DEFL.	DESIGN DEFLECTION (80% MAX.)		APPROX. RADIUS FOR DEFLECTING CURVES WITHOUT BENDS		
I.D. (IN)	O.D. (IN)	O.D. (FT)		MAX. DEFL. DIST.		20'L	18'L	
				(1)	(2)			
4"	4.80"	.400'	5'00"00"	4'00"00"	16"	15"	286'	258'
6"	6.90"	.575'	5'00"00"	4'00"00"	16"	15"	286'	258'
8"	9.05"	.754'	5'00"00"	4'00"00"	16"	15"	286'	258'
10"	11.10"	.925'	5'00"00"	4'00"00"	16"	15"	286'	258'
12"	13.20"	1.100'	5'00"00"	4'00"00"	16"	15"	286'	258'
14"	15.30"	1.275'	3'00"00"	2'24"00"	10"	9"	477'	430'
16"	17.40"	1.450'	3'00"00"	2'24"00"	10"	9"	477'	430'
18"	19.50"	1.625'	3'00"00"	2'24"00"	10"	9"	477'	430'
20"	21.60"	1.800'	3'00"00"	2'24"00"	10"	9"	477'	430'
24"	25.80"	2.150'	3'00"00"	2'24"00"	10"	9"	477'	430'
30"	32.00"	2.666'	2'30"00"	2'00"00"	8"	7"	573'	516'
36"	38.30"	3.192'	2'00"00"	1'36"00"	6"	6"	716'	645'
42"	44.50"	3.708'	2'00"00"	1'36"00"	6"	6"	716'	645'

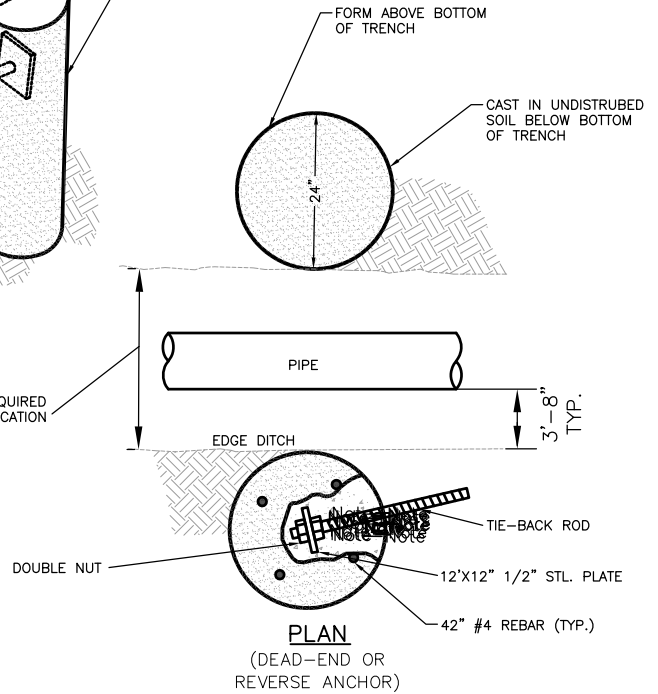
- (1) 20'L = NORMAL 20-FOOT JOINT LAYING LENGTH
(2) = NORMAL 18-FOOT JOINT LAYING LENGTH

STRASBURG SANITATION AND WATER DISTRICT			
MAXIMUM PIPELINE DEFLECTION DATA			
APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED L. OTTO	DATE: 3/83	PA NO.	
REVISION	10/31/16		

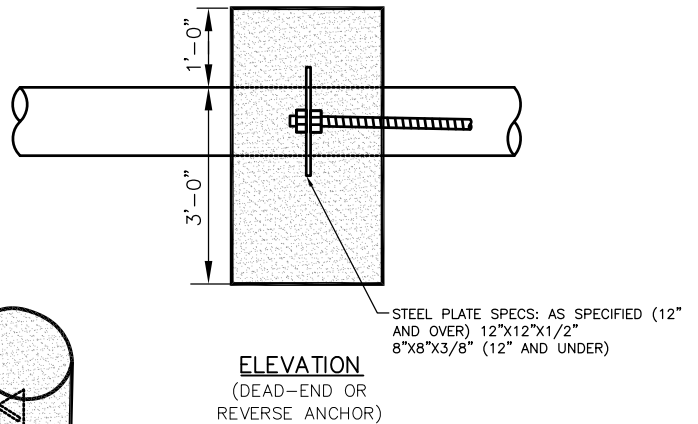


TYPICAL VALVE ANCHOR

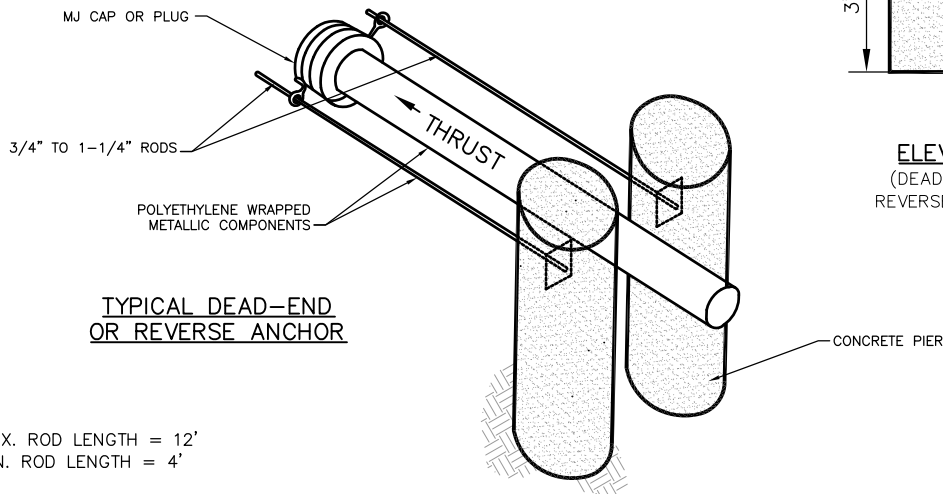
NOTE: NARROW DITCH REQUIRED AT ANCHOR LOCATION



PLAN
(DEAD-END OR REVERSE ANCHOR)



ELEVATION
(DEAD-END OR REVERSE ANCHOR)

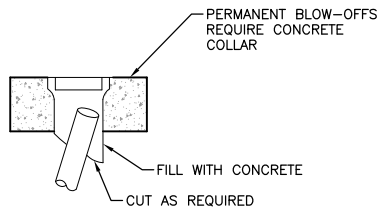


TYPICAL DEAD-END OR REVERSE ANCHOR

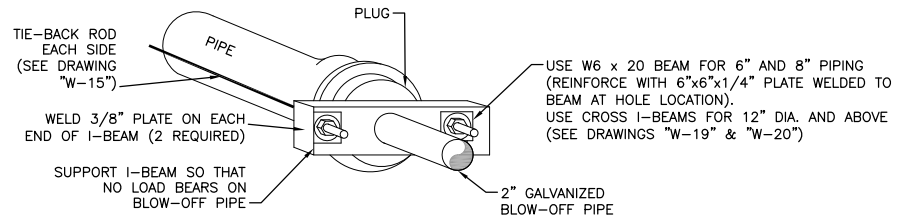
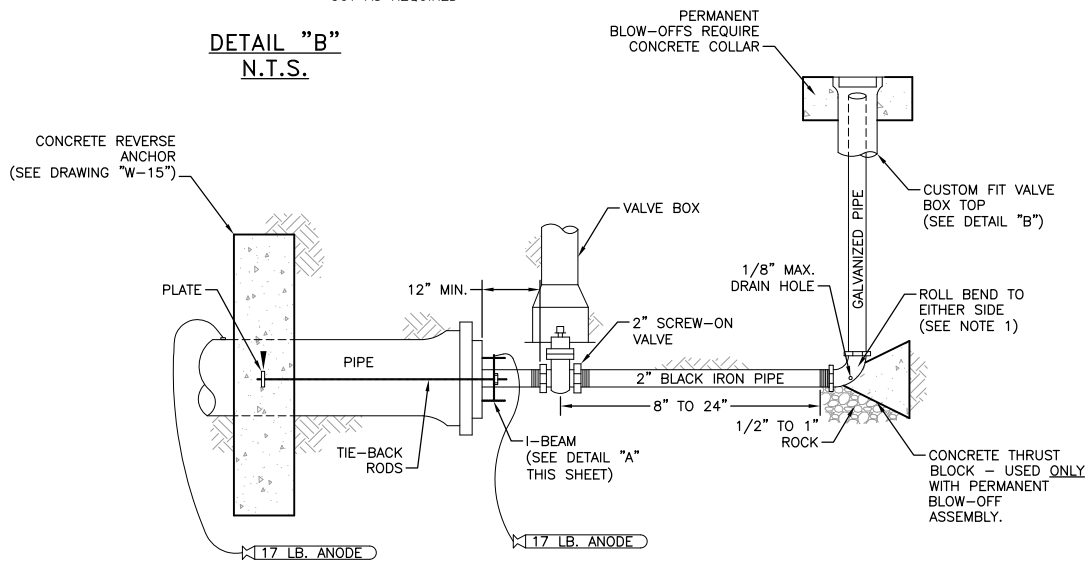
NOTES:

1. MAX. ROD LENGTH = 12'
MIN. ROD LENGTH = 4'
2. ALL METALLIC COMPONENTS TO BE ENCASED IN CONCRETE OR POLYETHYLENE TUBING.

STRASBURG SANITATION AND WATER DISTRICT			
REVERSE ANCHOR DETAIL			
APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED L. OTTO	DATE: 2/83	PA NO.	
REVISION	2/86, 7/90, 10/31/16		



DETAIL "B"
N.T.S.



DETAIL "A"
N.T.S.

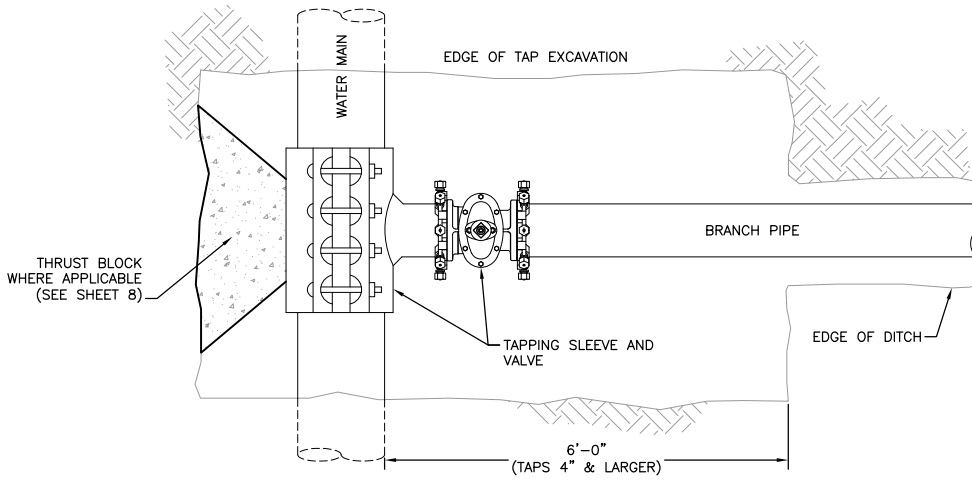
NOTES:

1. IF APPROPRIATE LOCATION FOR DISCHARGED WATER CANNOT BE REACHED BY ROLLING THE BEND, ADDITIONAL BENDS MAY BE REQUIRED BY THE INSPECTOR.
2. COAT TIE RODS, BEAM AND BLACK IRON PIPE WITH EPOXY POLYAMIDE COATING, 10 MILS MIN.
3. ENTIRE BLOW OFF ASSEMBLY MUST BE FULLY SUPPORTED, CONCRETE STEPPING STONES MAY BE REQUIRED.
4. PIPE DOPE APPROVED FOR USE IN POTABLE WATER SYSTEMS MUST BE USED ON ALL THREADED JOINTS.
5. SSWD CAN PROVIDE A SEPARATE DETAIL FOR BLOW OFFS ON MAINS LARGER THAN 8".

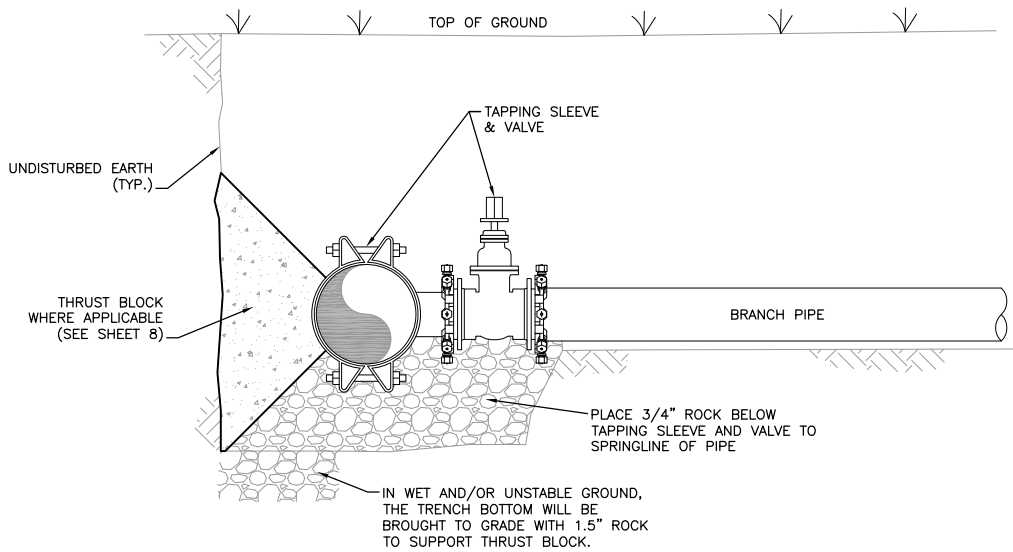
**STRASBURG SANITATION
AND WATER DISTRICT**

**TEMPORARY & PERMANENT BLOW-OFF
ASSEMBLIES - 6" & 8" MAINS**

APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF
DESIGN	DATE:	JOB NO.	Scale: NONE
PLOTTED	L. OTTO	DATE: 2/83	PA NO.
REVISION	4/84, 7/90, 10/31/16		



PLAN VIEW
N.T.S.

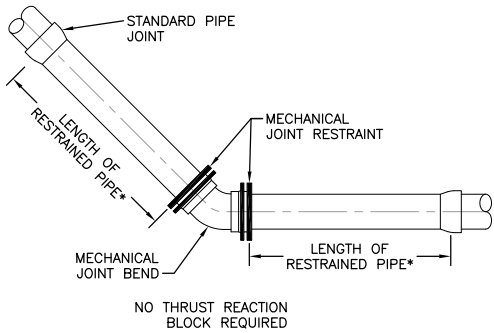


PROFILE VIEW
N.T.S.

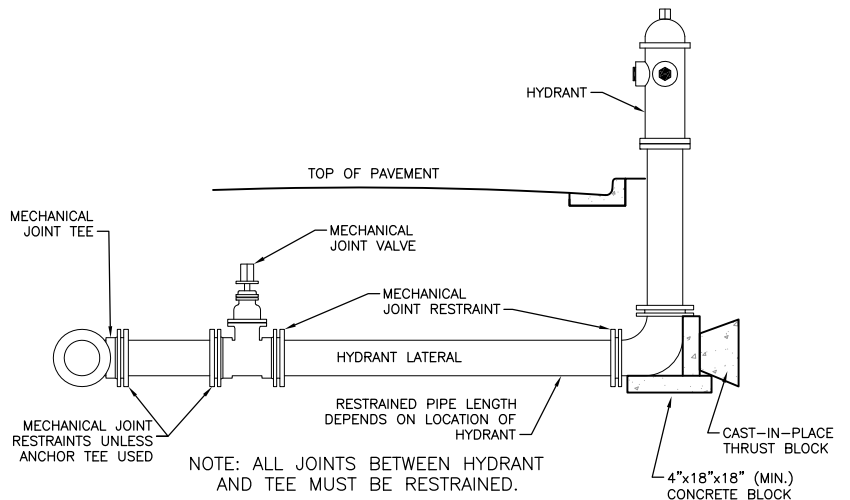
**STRASBURG SANITATION
AND WATER DISTRICT**

PIPE TAPPING DETAIL

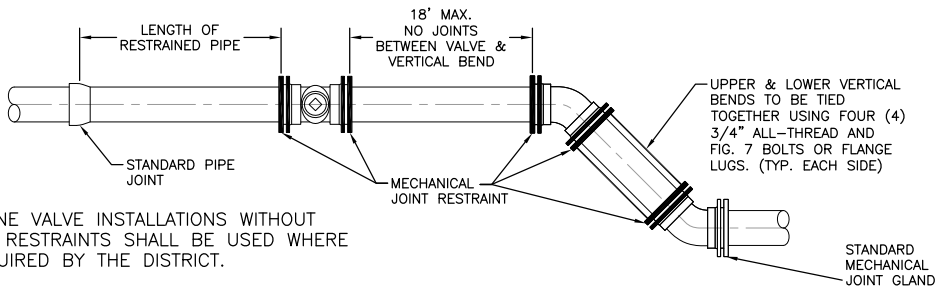
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CHECKED	DATE:	SHEET	OF Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED L. OTTO	DATE:	PA NO.	
REVISION	2/86, 7/90, 10/31/16		



INSTALLATION FOR BENDS

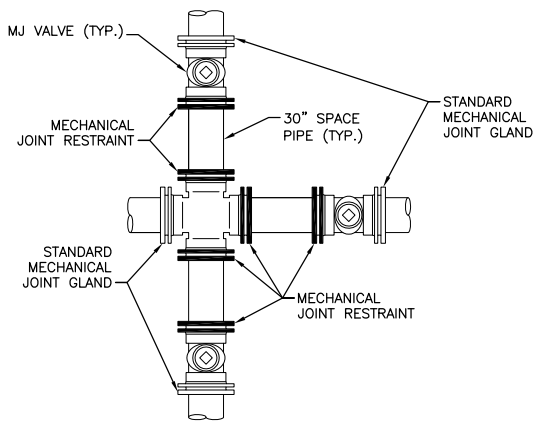


INSTALLATION FOR BENDS

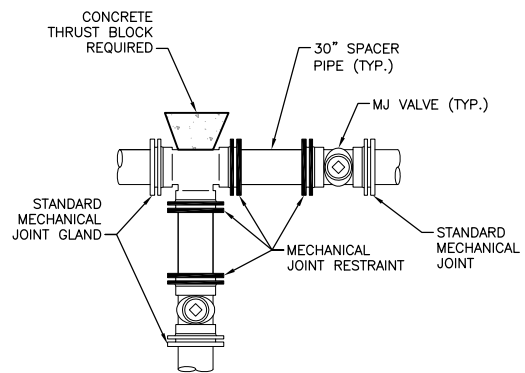


NOTE: FOR LINE VALVE INSTALLATIONS WITHOUT LOWERING, JOINT RESTRAINTS SHALL BE USED WHERE REQUIRED BY THE DISTRICT.

INSTALLATION FOR LINE VALVE & LOWERING



CROSS INSTALLATION



TEE INSTALLATION

NOTES:

1. MECHANICAL JOINTS SHALL BE APPROVED ACCORDING TO MATERIAL SPECIFICATION FOR DIP AND PVC PIPE.
2. LENGTH OF PIPE REQUIRING JOINT RESTRAINT SHALL BE DETERMINED FROM CHART ON DRAWING 15.
3. RESTRAINED JOINT PVC PIPE SHALL NOT BE USED FOR LOWERINGS.

STRASBURG SANITATION AND WATER DISTRICT

APPLICATIONS FOR MECHANICAL JOINT RESTRAINTS

APPVD.	DATE:	SUVYD.	DATE:
CHECKED	DATE:	SHEET	OF Scale: NONE
DESIGN	DATE:	JOB NO.	
PLOTTED	E. BUCK DATE: 89	PA NO.	
REVISION	7/90, 10/31/16		

RESTRAINED M.J. PIPE LENGTH (FT)

6-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	12	18	24
45° BEND	5	8	10
22-1/2" BEND	2	4	5
11-1/4" BEND	1	2	2

16-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	29	43	58
45° BEND	12	18	24
22-1/2" BEND	6	9	12
11-1/4" BEND	3	4	6

8-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	16	24	32
45° BEND	7	10	13
22-1/2" BEND	3	5	6
11-1/4" BEND	2	2	3

18-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	32	48	64
45° BEND	14	20	27
22-1/2" BEND	7	10	13
11-1/4" BEND	3	5	7

12-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	23	34	45
45° BEND	9	14	19
22-1/2" BEND	5	7	9
11-1/4" BEND	2	3	4

20-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	35	52	70
45° BEND	15	22	29
22-1/2" BEND	7	10	14
11-1/4" BEND	3	5	7

24-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	41	61	81
45° BEND	17	25	34
22-1/2" BEND	8	12	16
11-1/4" BEND	4	6	8

NOTES:

1. PRESSURES GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY THE DISTRICT.
2. LENGTH IS BASED ON MINIMUM 5'-0" OF GROUND COVER AND SOIL COMPACTED ACCORDING TO SECTION 5.15 OF THESE SPECIFICATIONS.
3. APPROVED METHODS OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE:
 - A. FOR DUCTILE IRON PIPE, 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON MECHANICAL JOINT PIPE OR DOUBLE 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON PUSH ON JOINT PIPE.
 - B. FOR PVC PIPE, SERIES 1500 OR SERIES 2800 RESTRAINTS BY EBAA IRON OR EQUAL.

STRASBURG SANITATION AND WATER DISTRICT

RESTRAINED M.J. PIPE LENGTH DATA

APPVD.	DATE:	SUVD.	DATE:
CHECKED	DATE:	SHEET	OF
DESIGN	DATE:	JOB NO.	Scale: NONE
PLOTTED	E. BUCK	DATE: 89	PA NO.
REVISION	10/31/16		