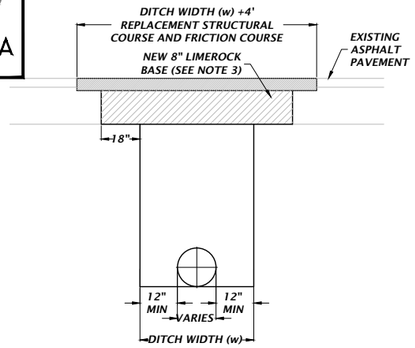


GENERAL NOTE(S):

1. SEE BEDDING AND TRENCHING DETAIL (303) FOR SPECIFICATIONS ON BACKFILL OVER A PIPE.
2. NEW 8" LIMEROCK BASE SHALL BE COMPACTED TO NOT LESS THAN 98% OF MAX DENSITY AS SPECIFIED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION 200-7.2. THE WIDTH OF THE LIMEROCK BASE SHALL BE THE WIDTH OF THE PIPE TRENCH PLUS 18" ON BOTH SIDES SEE DETAIL.
3. UNLESS OTHERWISE SPECIFIED, MATERIALS AND METHODS OF OPERATION REQUIRED TO INSTALL NEW AND REPLACEMENT PAVEMENT SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. PAVEMENT SHALL BE REMOVED TO NEATLY SAWED STRAIGHT EDGES.
5. THE TYPE AND THICKNESS OF NEW SURFACE MATERIAL SHALL BE CONSISTENT WITH THAT OF THE EXISTING SURFACE, BUT IN ALL CASES SHALL MEET THE MINIMUM STANDARDS ESTABLISHED BY THE PLANS AND SPECIFICATIONS.
6. THE BACKFILLING AND PAVEMENT REPLACEMENT MUST BE DONE IN ACCORDANCE WITH FDOT INDEX.

300 **BACKFILL OVER PIPE/PAVEMENT REPAIR DETAIL**
NTS

GENERAL NOTE(S):

1. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
2. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
3. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. FIELD DETERMINE REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION. THE BOTTOM OF THE TRENCH SHALL NOT BE EXCAVATED BELOW THE SPECIFIED GRADE. IF UNDERCUTTING OCCURS, THE BOTTOM OF THE TRENCH SHALL BE BROUGHT UP TO THE ORIGINAL GRADE WITH APPROVED MATERIAL AND THOROUGHLY COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR.
4. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES.

KEYED NOTE(S):

(1) TRENCH STABILIZATION SHALL BE PROVIDED TO A DEPTH OF 12-INCHES. THE MATERIAL SHALL BE NO. 57 STONE.

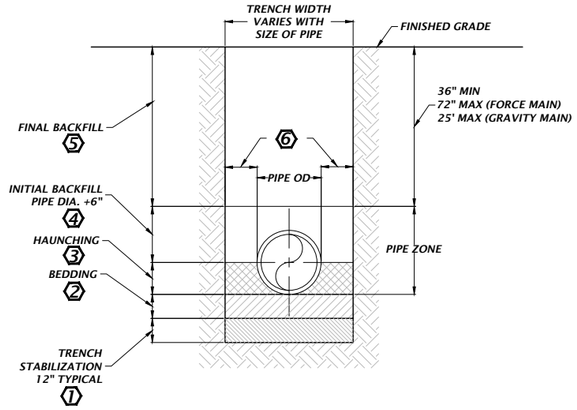
(2) BEDDING SHALL BE A MINIMUM OF 6-INCHES AND COMPOSED OF IMPORTED GRANULAR FILL. COMPACT TO 95% STANDARD PROCTOR, AASHTO T-99.

(3) HAUNCHING PORTION OF THE PIPE ZONE SHALL BE PLACED TO THE SPRINGLINE OF THE PIPE AND COMPOSED OF IMPORTED GRANULAR FILL. COMPACT TO 95% STANDARD PROCTOR ASSHTO T-99.

(4) INITIAL BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. FROM THE SPRINGLINE OF THE PIPE TO TWO (2) FEET ABOVE THE PIPE, THE SOIL SHALL BE CAREFULLY BACKFILLED IN 6-INCH LIFTS AND THE SOIL CONSOLIDATED WITH THE HAND OPERATED TAMPING MACHINE (OR AS REQUIRED BY CITY, COUNTY, OR STATE INSPECTORS).

(5) FINAL BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. AFTER PLACEMENT AND COMPACTION OF THE INITIAL BACKFILL, THE BALANCE OF THE BACKFILL MATERIAL MAY BE MACHINE PLACED OR AS REQUIRED BY THE INSPECTOR AND SHALL NOT CONTAIN ANY ROCKS OR DEBRIS.

(6) 12" MINIMUM



303 **BEDDING AND TRENCHING DETAIL**
NTS

PAINT SYSTEM NO. 5

SURFACE PREPARATION -PRESSSURE WASH SURFACE TO BE PAINTED

OPTIMAL APPLICATION CONDITIONS

- AMBIENT TEMPERATURE BETWEEN 55 AND 75 DEGREES F.
- HUMIDITY BELOW 60 PERCENT
- IF OUTSIDE THESE LIMITS, REQUEST PERMISSION TO APPLY PAINT FROM COA INSPECTOR OR SERVICES DURING CONSTRUCTION ENGINEER

APPLY (SPRAY) FIRST COAT

APPLY (SPRAY) SECOND COAT EITHER WITHIN TWO HOURS OR MORE THAN 48 HOURS AFTER APPLYING FIRST COAT.

PRODUCT

- KRYLON SPRAY PAINT
- FUSION ALL-IN-ONE
- PAINT PLUS PRIMER

COLORS

- POTABLE WATER - GLOSS PATRIOTIC BLUE
- WASTEWATER - GLOSSY SPRING GRASS
- RECLAIMED - GLOSSY ICY GRAPE

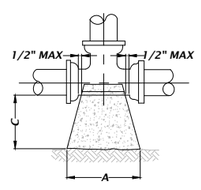
307 **PAINT SYSTEM NO. 5**
NTS

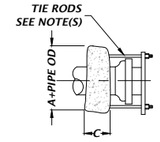
GENERAL NOTE(S):

1. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED SOIL.
2. THESE TABLES SHOW MINIMUM SIZES FOR THRUST BLOCKS IN GOOD SOIL (A-1 THRU A-3, CLEAN SANDS AND GRAVELS) WITH MINIMUM BEARING CAPACITY OF 2000 psi.
3. POOR SOILS A-4 THRU A-8, SILTY SOILS, CLAYS, MUCK AND PEAT WILL REQUIRE LARGER THRUST BLOCKING.
4. BOTH CONCRETE THRUST BLOCKS AND TIE RODS MUST BE USED WHEN, IN THE JUDGEMENT OF THE ENGINEER, THE NATURE AND CRITICALITY OF AN INSTALLATION IS SUCH AS TO REQUIRE POSITIVE ASSURANCE OF STABILITY.
5. THE USE OF THRUST BLOCKS SHALL BE LIMITED TO SITUATIONS SUCH AS POINT REPAIR WHERE EXPOSING SEVERAL JOINTS OF PIPE IS NOT FEASIBLE DUE TO EXISTING GROUND CONDITIONS.
6. CONCRETE COLLARS WITH TIE RODS MAY BE USED ON DEAD END LINES AT THE CONTRACTOR'S DISCRETION. NUMBER OF TIE RODS REQUIRED IS AS FOLLOWS:

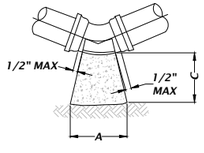
3" - 8"	DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (5/8" ROD)
10" - 12"	DIAMETER MAIN - 4 TIE RODS REQUIRED PER JOINT (5/8" ROD)
14" - 16"	DIAMETER MAIN - 6 TIE RODS REQUIRED PER JOINT (5/8" ROD)

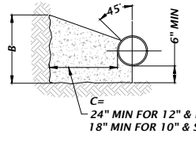
7. TIE RODS AND NUTS SHALL CONFORM TO AWWA/ANSI CIII/A21.11
8. TIE RODS AND NUTS SHALL PROVIDE MIN YIELD AND TENSILE STRENGTH OF 45,000 PSI AND 60,000 PSI, RESPECTIVELY.
9. MAXIMUM TEST PRESSURE TO BE 150 PSI.
10. SAFETY FACTOR = 1.5





* HEIGHT = B + PIPE OD





THRUST BLOCK FOR BENDS

SIZE	90° BEND A	90° BEND B	90° BEND C	SF BEARING SURFACE	45° BEND A	45° BEND B	45° BEND C	SF BEARING SURFACE	22-1/2° BEND A	22-1/2° BEND B	22-1/2° BEND C	SF BEARING SURFACE	11-1/4° BEND A	11-1/4° BEND B	11-1/4° BEND C	SF BEARING SURFACE
4"	16"	16"	18"	1.78	14"	16"	18"	1.56	14"	16"	18"	1.56	14"	16"	18"	1.56
6"	22"	32"	18"	4.89	16"	18"	18"	2.00	14"	16"	18"	1.56	14"	16"	18"	1.56
8"	32"	36"	18"	8.00	24"	28"	18"	4.67	16"	18"	18"	2.00	14"	16"	18"	1.56
10"	36"	46"	18"	11.50	26"	36"	18"	6.50	20"	24"	18"	3.33	14"	18"	18"	1.75
12"	44"	56"	24"	17.11	32"	40"	24"	8.89	24"	30"	24"	5.00	16"	20"	24"	2.22
14"	52"	62"	24"	22.39	36"	48"	24"	12.00	26"	36"	24"	6.50	20"	24"	24"	3.33
16"	58"	72"	24"	29.00	40"	54"	24"	15.00	32"	38"	24"	8.44	22"	26"	24"	3.97

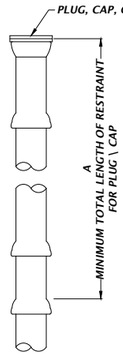
THRUST BLOCK FOR TEES AND PLUGS

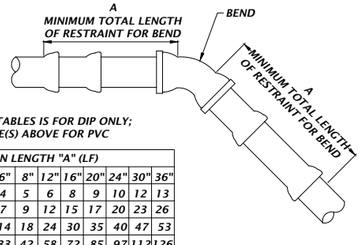
SIZE	90° BEND A	90° BEND B	90° BEND C	SF BEARING SURFACE
4"	16"	16"	18"	1.78
6"	20"	24"	18"	3.33
8"	26"	32"	18"	5.78
10"	32"	40"	18"	8.89
12"	36"	48"	24"	12.00
14"	40"	56"	24"	15.56
16"	48"	60"	24"	20.00

306 **THRUST BLOCK AND TIE ROD DETAILS**
NTS

GENERAL NOTE(S):

1. THIS TABLE IS BASED ON THE RESTRAINT CALCULATION SOFTWARE PROVIDED FREE OF CHARGE BY EBAA IRON INC. AT http://www.ebaa.com/engineering.htm AND THE FOLLOWING INPUT VARIABLES:
   A. MAXIMUM TEST PRESSURE OF 150 PSI
   B. LAYING CONDITION TYPE 3
   C. POOR SOIL CONDITIONS (SOIL TYPE ML)
   D. USING DIP
   E. 2 FEET OF COVER
   F. HORIZONTAL BENDS ONLY - ENGINEER TO SUBMIT CALCULATIONS FOR VERTICAL RESTRAINTS
   G. SAFETY FACTOR = 1.5 TO 1
2. FOR POLYWRAPPED DIP, MULTIPLY THE FOOTAGE BY 1.50
3. FOR PVC PIPE, MULTIPLY FOOTAGE BY 1.34
4. RESTRAIN PUSH-ON JOINTS OR MECHANICAL JOINTS WITH EBBA MEGALUG PRODUCTS. PIPE VENDOR'S RESTRAINED JOINT SYSTEM WILL BE SUBJECT TO SUBMITTAL REVIEW AND APPROVAL BY ENGINEER / COA.
5. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.



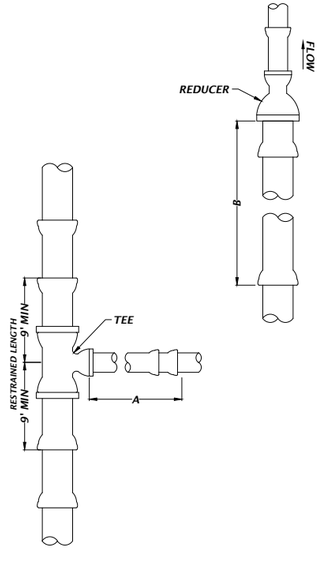


NOTE: THIS TABLES IS FOR DIP ONLY; SEE NOTE(S) ABOVE FOR PVC

RESTRAIN LENGTH "A" (LF)

FITTING	4"	6"	8"	12"	16"	20"	24"	30"	36"
11¼° BEND	3	4	5	6	8	9	10	12	13
22½° BEND	5	7	9	12	15	17	20	23	26
45°/OFFSET	10	14	18	24	30	35	40	47	53
90° BEND	24	33	42	58	72	85	97	112	126
DEAD END	42	58	75	104	131	157	181	213	243

A=MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED.



FITTING SIZE	RESTRAIN (LF) TEE "A"	RESTRAIN (LF) REDUCER "B"
4x4	21	*
6x4	10	30
6x6	37	*
8x4	A.T.	54
8x6	28	32
8x8	54	*
12x4	A.T.	90
12x6	11	76
12x8	37	55
12x12	82	*
16x6	A.T.	111
16x8	21	96
16x12	66	56
16x16	109	*
20x6	A.T.	141
20x8	8	130
20x12	51	99
20x16	93	55
20x20	134	*
24x6	A.T.	168
24x8	A.T.	159
24x12	37	134
24x16	77	99
24x20	117	54
24x24	157	*
30x6	A.T.	203
30x8	A.T.	196
30x12	20	177
30x16	57	150
30x20	94	116
30x24	132	75
30x30	189	*
36x6	A.T.	235
36x8	A.T.	229
36x12	7	214
36x16	40	193
36x20	74	166
36x24	109	133
36x30	162	74
36x36	218	*

A.T.=RESTRAINT REQUIRED AT TEE ONLY.
*-NOT APPLICABLE

309 **JOINT RESTRAINT**
NTS

03A WATER AND WASTEWATER DETAILS - SEE (151) FOR ABBREVIATIONS