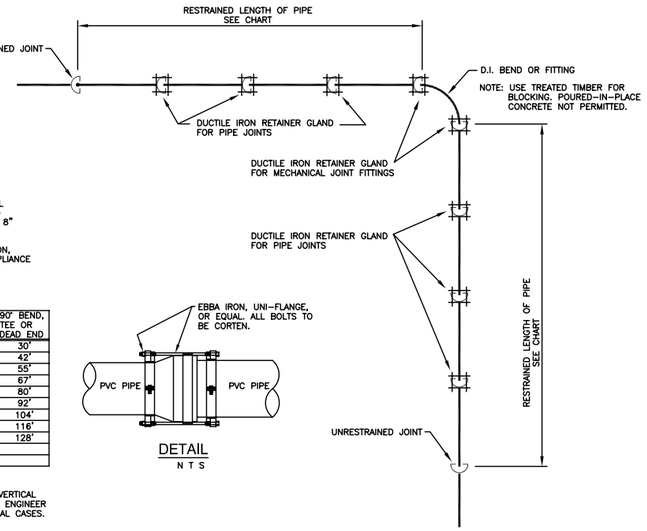
NOTES:

1. DISTANCES OF RESTRAINTS SHALL BE REQUIRED ON EVERY JOINT(S) ON EACH SIDE OF FITTING, IN ADDITION TO TIMBER BLOCKING. NO CONCRETE BLOCKING IS ALLOWED.
2. PIPE RESTRAINTS REQUIRED INSIDE OF CASING.
3. RESTRAINT SYSTEM:
   EITHER: (A) RODS FOR USE WITH MECHANICAL JOINT FITTINGS – 2 REQUIRED – 5/8" DIA. STAINLESS STEEL FOR 8" PIPE & BELOW
   (B) RETAINER GLANDS: USE EBAA IRON, UNI-FLANGE, OR EQUAL IN COMPLIANCE WITH PIPE MATERIAL USED
4. DUCTILE IRON FITTINGS & ADJOINING PIPE SHALL BE RESTRAINED AS DETAILED & BY MINIMUM LENGTH ON EACH SIDE OF FITTING AS CHARTED BELOW:

NOMINAL PIPE SIZE	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	90° BEND, TEE OR DEAD END
4"	4'	6'	11'	27'	30'
6"	4'	7'	16'	37'	42'
8"	5'	10'	20'	49'	55'
10"	6'	12'	25'	59'	67'
12"	7'	14'	29'	70'	80'
14"	8'	16'	33'	80'	92'
16"	9'	18'	38'	91'	104'
18"	10'	20'	42'	101'	116'
20"	11'	22'	46'	111'	128'

5. FOR REDUCERS, UNEQUAL BRANCH VS. RUN TEES AND VERTICAL OFFSETS RESTRAINING WILL BE CASE SPECIFIC. PROJECT ENGINEER SHALL PROVIDE MINIMUM RESTRAINING FOR THESE SPECIAL CASES.
6. ALL JOINTS THAT FALL WITHIN THE DISTANCES SHOWN MUST BE RESTRAINED. BRANCHES OF TEES & DEAD ENDS TAKE THE SAME VALUE AS 90° BEND.



1 RESTRAINED PIPE AND FITTINGS

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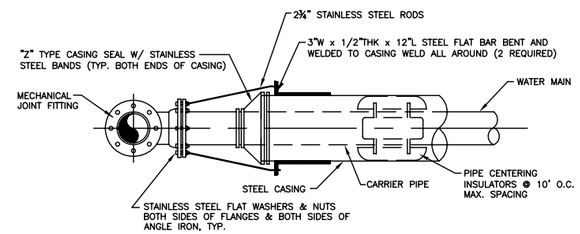
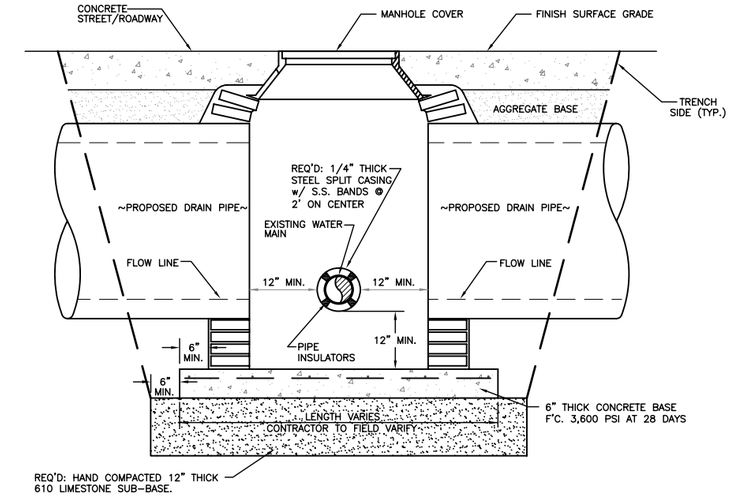
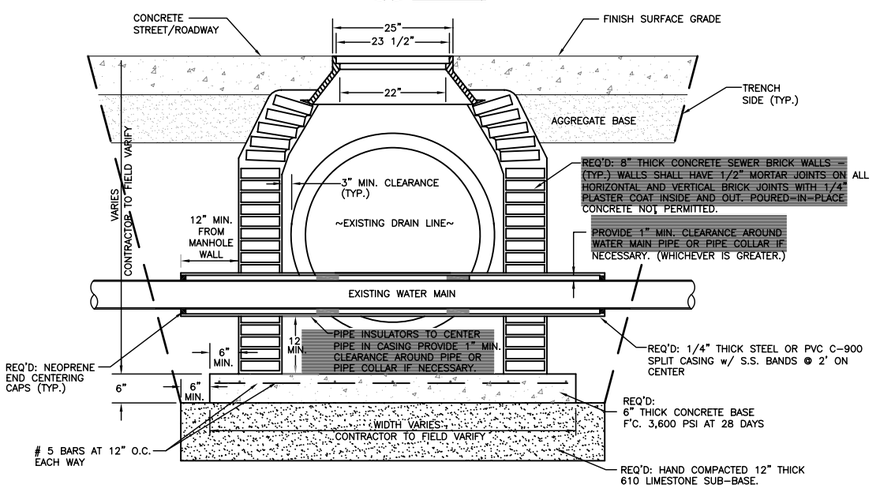


2 RESTRAINED TO STEEL CASING PIPE

N T S

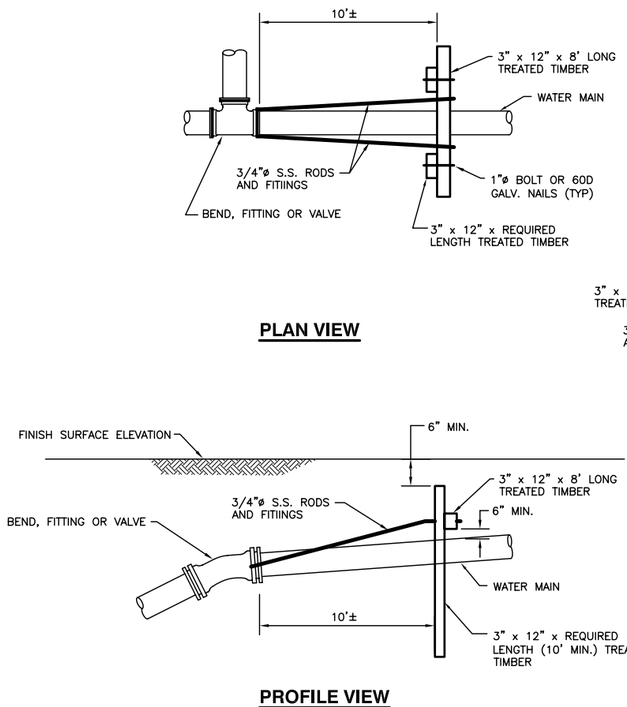


REQ'D:
CONFLICT MANHOLE COVER AND FRAME TO BE MACHINE SEATED HEAVY TRAFFIC CONFORMING TO VULCAN FOUNDRY PATTERN NO. VM-1, REFERENCE S & WB D-871/LDH RCB-13 APPROX. WT. 440 LBS. COVERS SHALL BE EMBOSSED WITH THE LEGEND "DRAIN" USING STD. 4" HIGH RAISED FACE LETTERS.
COST FOR GRATE & FRAME TO BE INCLUDED IN UNIT COST FOR CONFLICT MANHOLE. NO DIRECT PAYMENT.



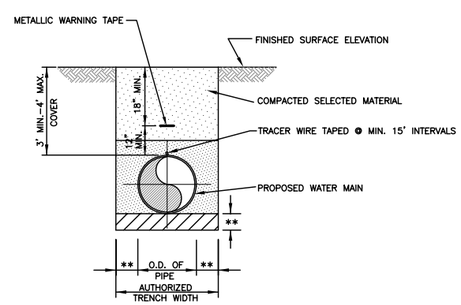
5 CONFLICT MANHOLE DETAIL FOR EXISTING WATER MAINS

N T S



3 DEADMAN DETAILS

N T S



**NOTE:
AGGREGATE FOUNDATION AND ADDED TRENCH WIDTH MAYBE REQUIRED BELOW AND/OR AROUND WATERLINE IN SPECIAL CIRCUMSTANCES OR UNSTABLE SOIL CONDITIONS AS DIRECTED BY PROJECT ENGINEER

RIVERSAND OR AGGREAGTE REQUIRED UNDER IMPROVED OR HARD SURFACE. SEE DETAIL 4, SHEET 3

4 TYPICAL WATERLINE TRENCH SECTION

N T S

CONSOLIDATED WATERWORKS DISTRICT NO. 1
8814 MAIN STREET
P.O. BOX 630
HOUMA, LOUISIANA 70361

STANDARD WATERMAIN DETAILS & GENERAL NOTES

FOR
WATER LINE CONSTRUCTION

DESIGNED BY:
COMPILED BY:
APPROVED BY:

DATE: APRIL, 2010
SCALE: NOT TO SCALE

DATE:
REVISIONS:
REMARKS:
DATE:
REVISIONS:
REMARKS:
FILE: ACAD\DIST\AREA3\2-14B

AREA:
SHEET: 2 OF 4