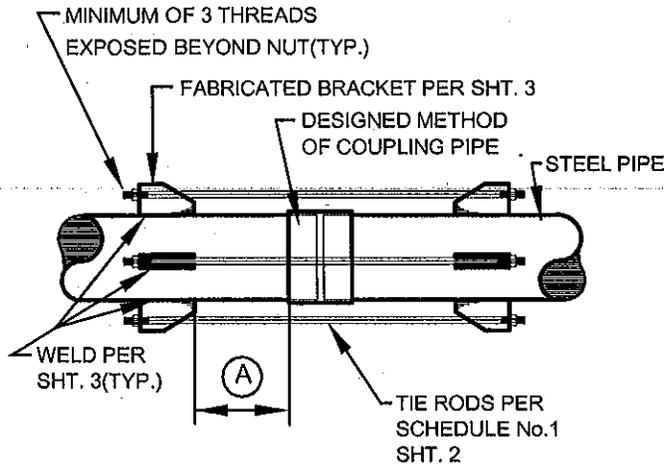


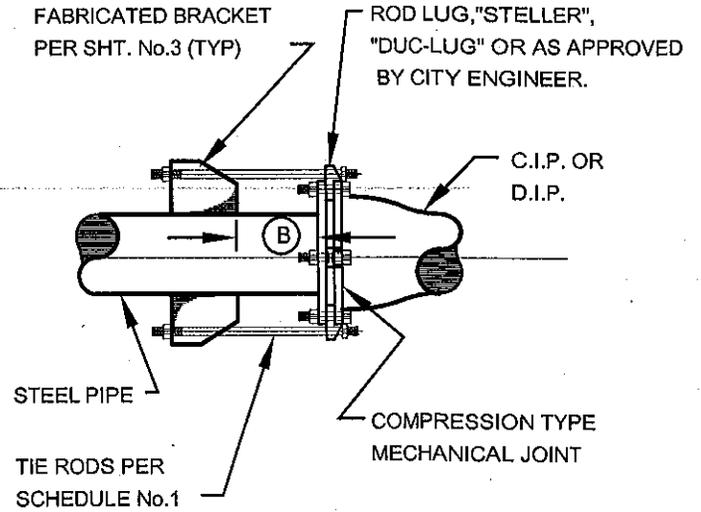
FABRICATED BRACKET to BRACKET



(A) 6" MINIMUM CLEARANCE FROM DESIGNED COUPLING APPARATUS TO REAR EDGE OF ROD BRACKET, (TYP. OF ALL BRACKETS).

FIGURE 1

FABRICATED BRACKET to ROD LUG



(B) 6" MIN. CLEARANCE FROM MECHANICAL JOINT FLANGE FACE TO END OF BRACKET.

FIGURE 2

ROD LUG to ROD LUG

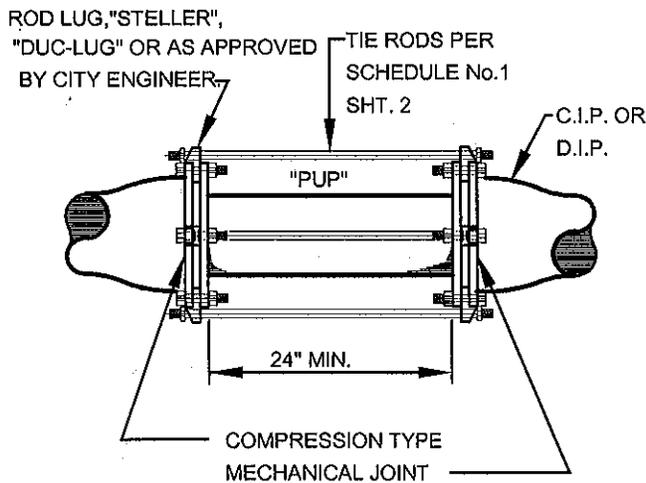
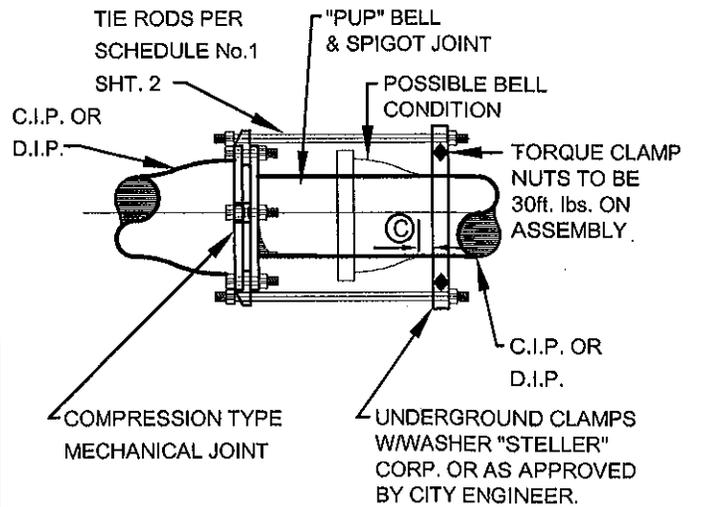


FIGURE 3

ROD LUG to UNDERGROUND CLAMP



(C) ON BELL END PIPE, CLAMPS SHALL BE PLACED ADJACENT TO BUT NO CLOSER THAN 1' TO THE TANGENT POINT OF THE BELL FAIRING RADIUS.

FIGURE 4

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TENSION ROD ANCHORING

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WATER MANAGER

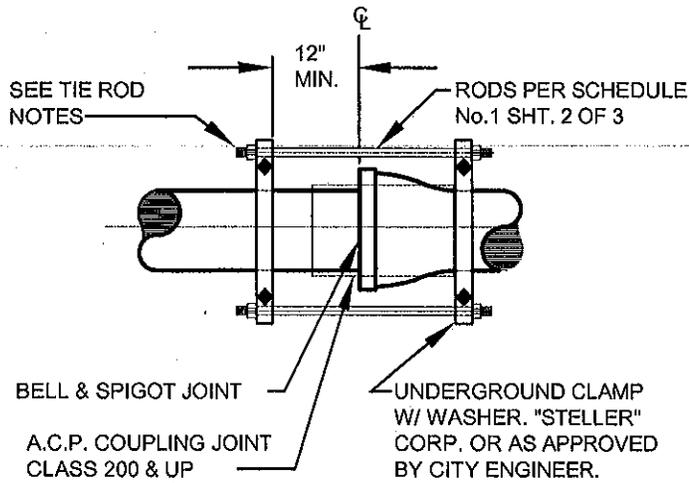
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DATE 10-31-12

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**UNDERGROUND CLAMP
to
UNDERGROUND CLAMP
(UP TO 8" PIPE)**



NOTE: SEE (C) FIG. 4 FOR BELL CLEARANCE

FIGURE 5

TIE ROD NOTES

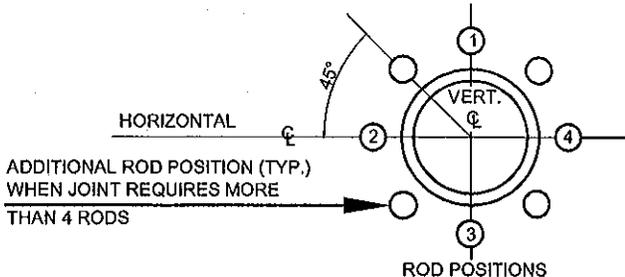
1. ALL TIE RODS SHALL BE SAE 1020 -1025 STEEL RODS.
2. THE RODS MAY BE THREADED FOR THEIR ENTIRE LENGTH.
3. WHEN UNTHREADED ROD IS USED A MINIMUM OF 3" NATIONAL STANDARD THREADS AS SPECIFIED WILL BE REQUIRED ON EACH END. PRIOR TO THREADING OF ROD BLANK EACH END SHALL BE CHAMFERED 1/16"x45° TO ACCEPT THREADING DIE.
4. THE FOLLOWING THREAD GAUGES WILL BE REQUIRED ON ROD SIZES LISTED.

DIA.	1/2"	THREAD N.S.	1/2"-12
"	3/4"	"	2/4"-10
"	1"	"	1" -8
5. ALL ROD NUTS SHALL BE SEMIFINISHED HEAVY HEXAGON OF THE SAME SIZE ACROSS THE THREAD AS A TEE BOLT NUT OF THE SAME SIZE.
6. ALL ROD NUTS TO BE TORQUED TO 50ft. lbs. ON ASSEMBLY.
7. COAT ALL EXPOSED METAL SURFACES WITH A MINIMUM OF 2 COATS KOPPERS BITUMASTIC No. 50 OR APPROVED EQUAL AFTER ASSEMBLY.

TENSION ROD SCHEDULE 1

PER THE FOLLOWING SCHEDULE WHEN REQUIRED IN THE FIELD OR CALLED FOR BY DESIGN. TENSION RODDING SHALL EQUAL OR EXCEED THE MINIMUM INDICATED. SCHEDULE No.1 BASED ON - (V=10 f.p.s. MAXIMUM ESTIMATED WATER HAMMER 700 P.S.I.).

	PIPE SIZE	No. ROD PER JOINT	SIZE	PER JOINTS					
				BRACKETS OR LUGS	UNDERGROUND CLAMPS	1	2	3	4
DUCTILE IRON PIPE CAST IRON PIPE STEEL PIPE	4"	2	1/2"	4	2		●		●
	6"	2	3/4"	4	2		●		●
	8"	2	3/4"	4	2		●		●
	10"	2	3/4"	4	2		●		●
	12"	2	3/4"	4	2		●		●
	14"	4	1"	8	4	●	●	●	●
	16"	4	1"	8	4	●	●	●	●



SCHEDULE FOR STEEL PIPE (BRACKETS) & MECHANICAL JOINT (LUGS)

SCHEDULE FOR UNDERGROUND CLAMPING OF CAST IRON OR ASBESTOS CEMENT PIPE OR DUCTILE IRON PIPE

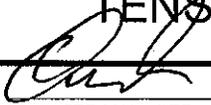
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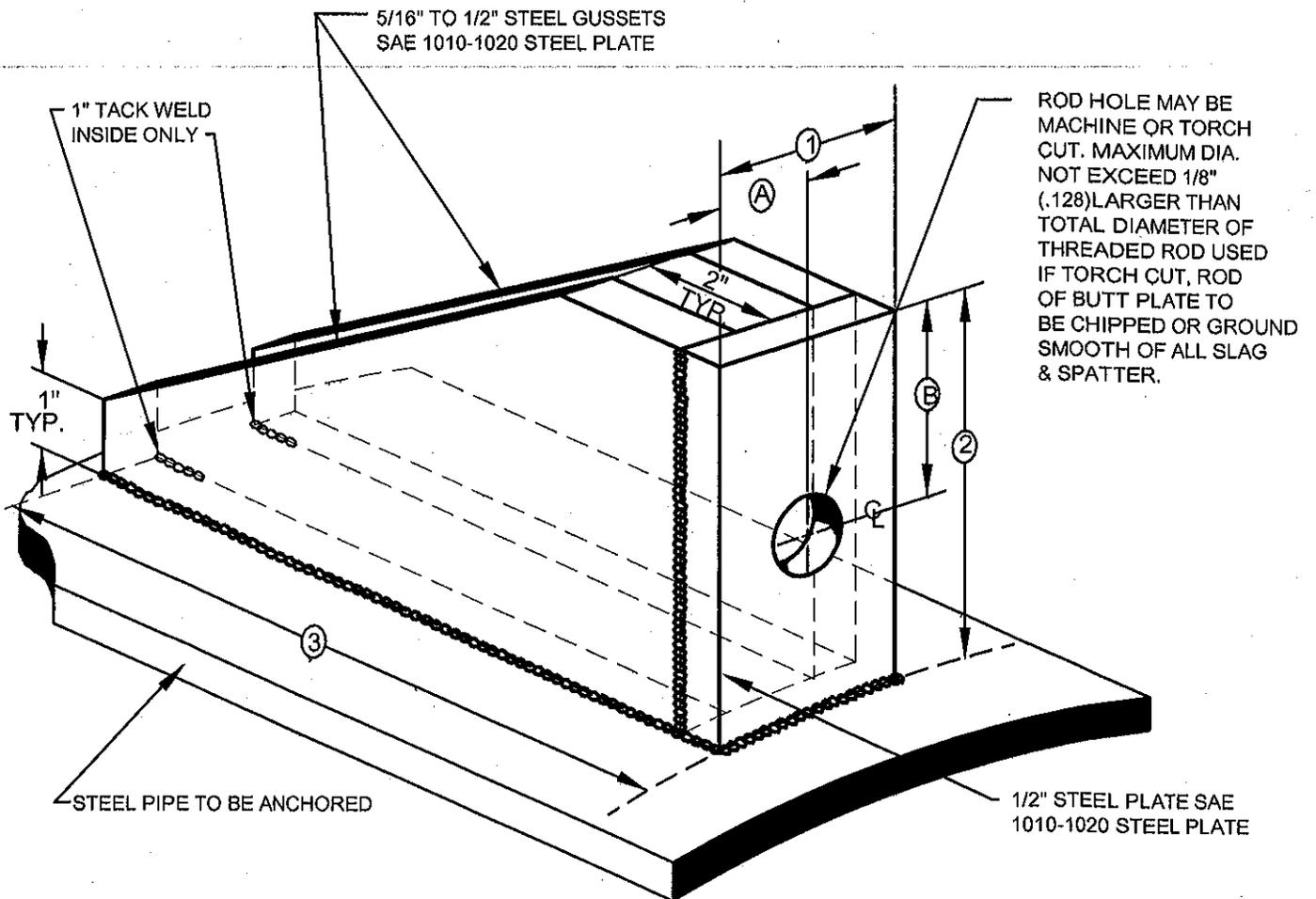
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TENSION ROD ANCHOR BRACKET DETAIL

FOR STEEL PIPE UP TO 16 INCHES IN DIAMETER



NOTES

1. CHAMFER ALL EDGES FOR WELDING 1/8"x45°. 100%-1/4" BUTT & FILLET WELDS WILL BE REQUIRED UNLESS OTHERWISE NOTED.
2. BURR AND BREAK ALL SHARP EDGES. CHIP & WIRE BRUSH ALL WELDS.
3. WELDING ROD SHALL BE GRAY FLUX COATED STEEL ELECTRODE (ALL PURPOSE) YIELD POINT 55,000-60,000 P.S.I. TENSION STRENGTH 70,000-80,000 P.S.I.

LEGEND

- | | |
|--------------------------------|--|
| ① 3 x DIAMETER OF THREADED ROD | Ⓐ, Ⓑ HORIZONTAL & VERTICAL CENTER LINES OF BUTT PLATE. LOCATE ROD HOLE AT CENTER LINE INTERSECTION |
| ② 4 x DIAMETER OF THREADED ROD | |
| ③ 6 x DIAMETER OF THREADED ROD | |

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APPROVED BY:

[Signature]
WATER MANAGER

APPROVED BY:

[Signature]
CITY ENGINEER R.C.E. 37064

DATE 10-31-12

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