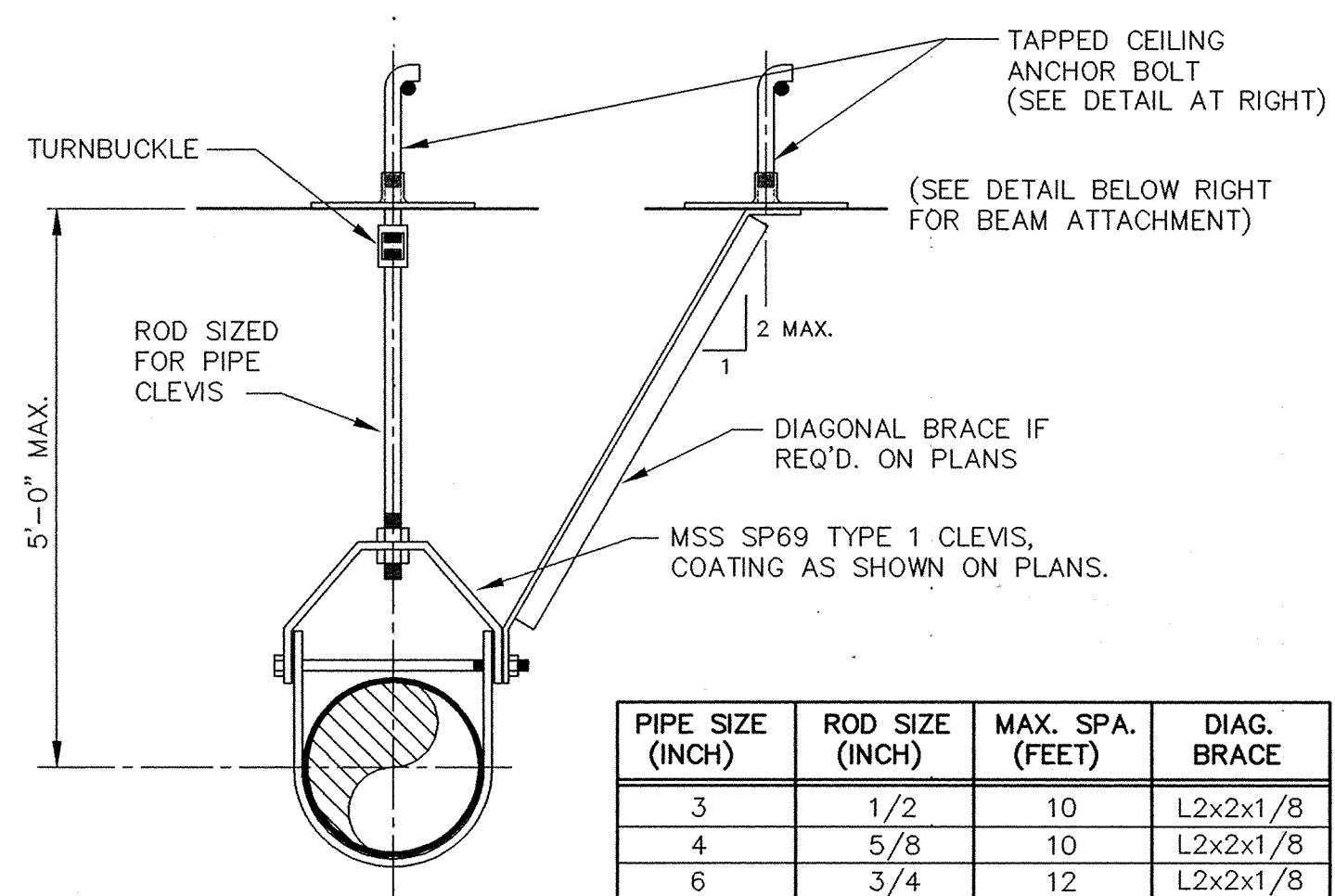


EXISTING CONCRETE ROD ATTACHMENT



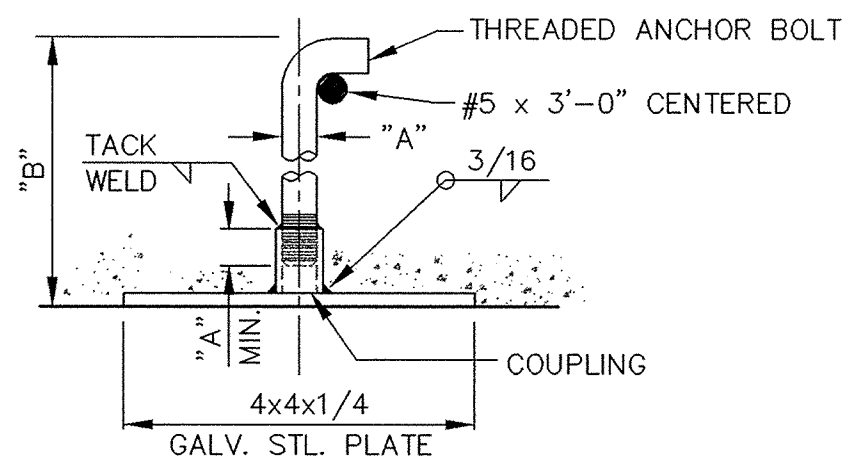
NEW CONCRETE ROD ATTACHMENT

PIPE SIZE (INCH)	ROD SIZE (INCH)	MAX. SPA. (FEET)	DIAG. BRACE
3	1/2	10	L2x2x1/8
4	5/8	10	L2x2x1/8
6	3/4	12	L2x2x1/8
8	7/8	12	L3x3x1/4
10	7/8	14	L3x3x1/4
12	7/8	14	L3x3x1/4
14	1	16	L3x3x1/4
16	1	16	L3x3x1/4

**TYPE 1 CLEVIS PIPE HANGER**

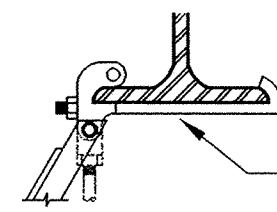
No Scale

1 P22

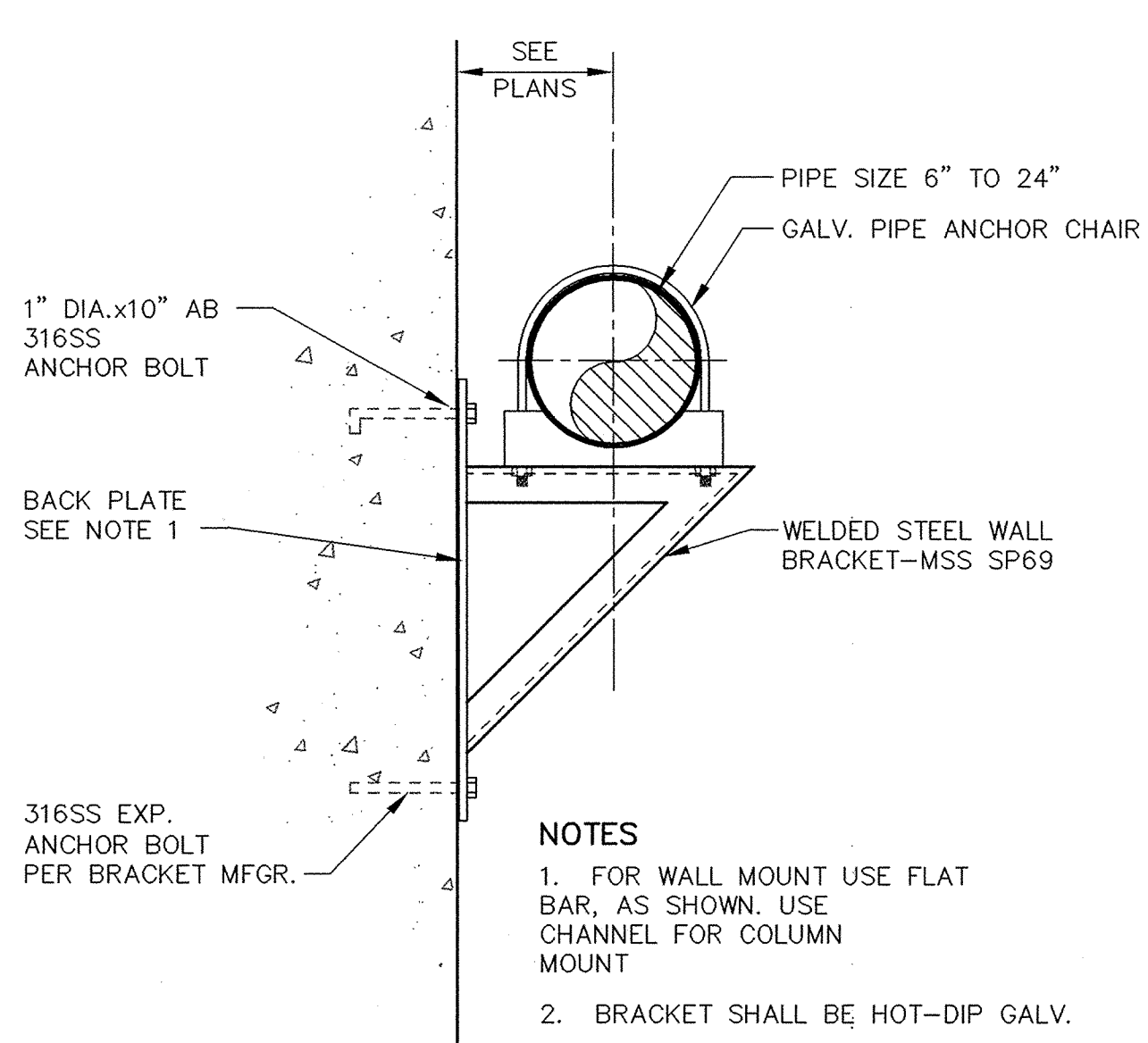


- ALL METAL PARTS SHALL BE GALV. STL.
  - ROD DIAMETER EMBEDMENT LENGTH
- | "A"    | "B" |
|--------|-----|
| 3/8"   | 5"  |
| 1/2"   | 6"  |
| 5/8"   | 7"  |
| 3/4"   | 8"  |
| 7/8"   | 9"  |
| 1"     | 10" |
| 1 1/8" | 11" |
| 1 1/4" | 12" |
| 1 3/8" |     |

**TAPPED CEILING ANCHOR BOLT**



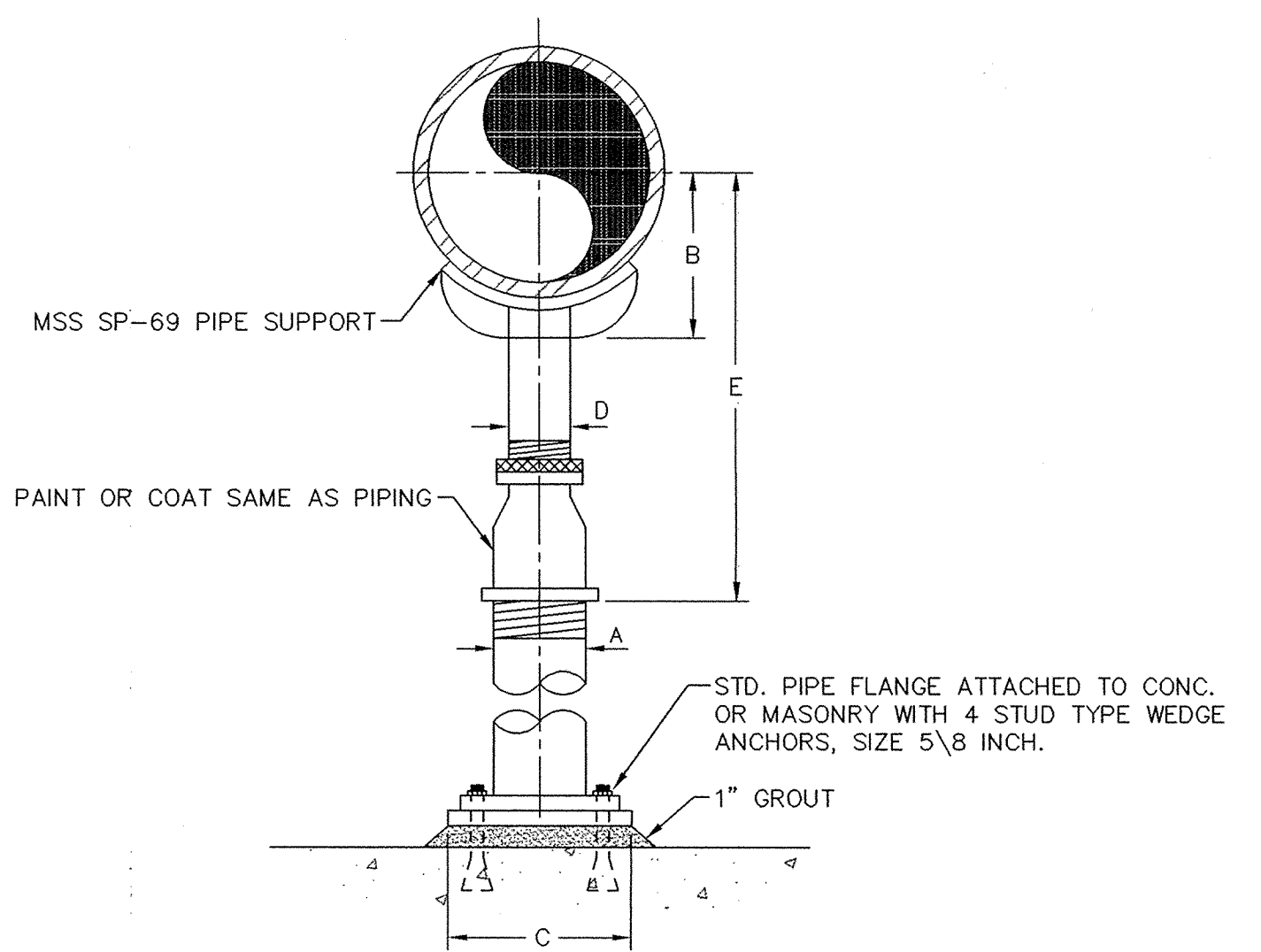
**BEAM ATTACHMENT**



**WALL PIPE SUPPORT**

No Scale

2 P22



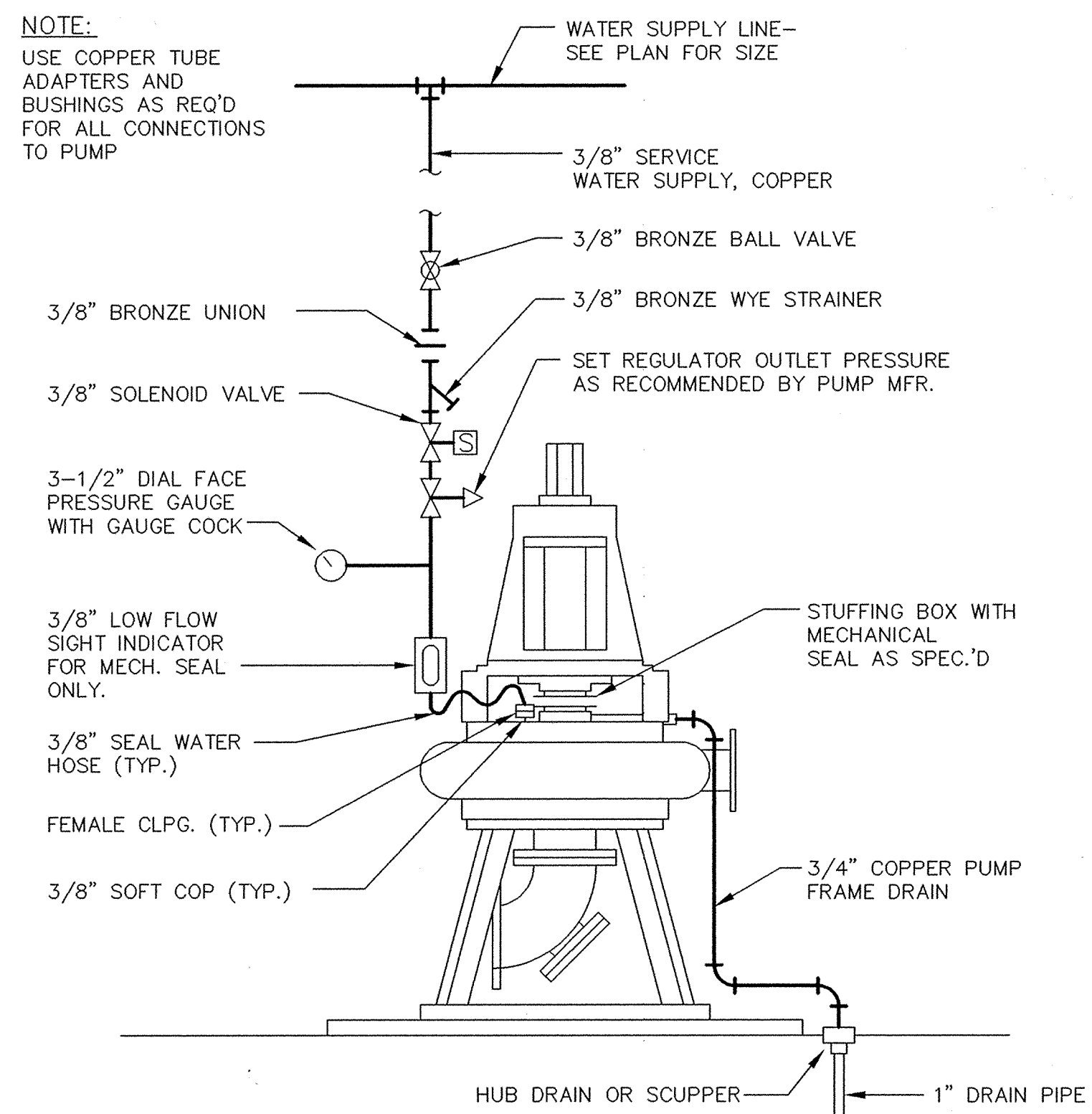
- NOTES:**
- PROVIDE HALF ROUND RIGID INSULATION & INSULATION PROTECTION SHIELD, SIMILAR TO GRINNELL-FIG. 167 OR ELCCN FIG. 219, WHEN PIPING IS INSULATED
  - PROVIDE NEOPRENE WAFFLE ISOLATION PAD SIMILAR TO MASON TYPE "W" OR KORFUND KORPAD 40, UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO EQUIPMENT
  - FOR BASE, HEIGHT, & FLANGE DIMENSIONS, SEE TABLE AT RIGHT.

PIPE SIZE	A	B	C	D	E	
					MIN	MAX
2-1/2	2-1/2	3-1/2	9	1-1/2	8	13
3	2-1/2	3-3/4	9	1-1/2	8-1/4	13-1/4
3-1/2	2-1/2	4	9	1-1/2	8-1/2	13-1/2
4	3	4-1/4	9	2-1/2	9-1/4	14
5	3	4-7/8	9	2-1/2	10	14-3/4
6	3	5-1/2	9	2-1/2	10-1/2	15-1/4
8	3	6-7/8	9	2-1/2	11-3/4	16-1/2
10	3	8-1/2	9	2-1/2	13-1/2	18-1/4
12	3	9-15/16	9	2-1/2	15	19-3/4
14	4	10-15/16	11	3	16-1/4	20-3/4
16	4	12-3/8	11	3	17-3/4	22-1/4
18	6	13-7/8	13-1/2	3-1/2	19-1/2	24
20	6	15-3/8	13-1/2	3-1/2	21	25-1/2
24	6	17-15/16	13-1/2	4	23-3/4	28-1/4

**TYPICAL PIPE SUPPORT**

Not to Scale

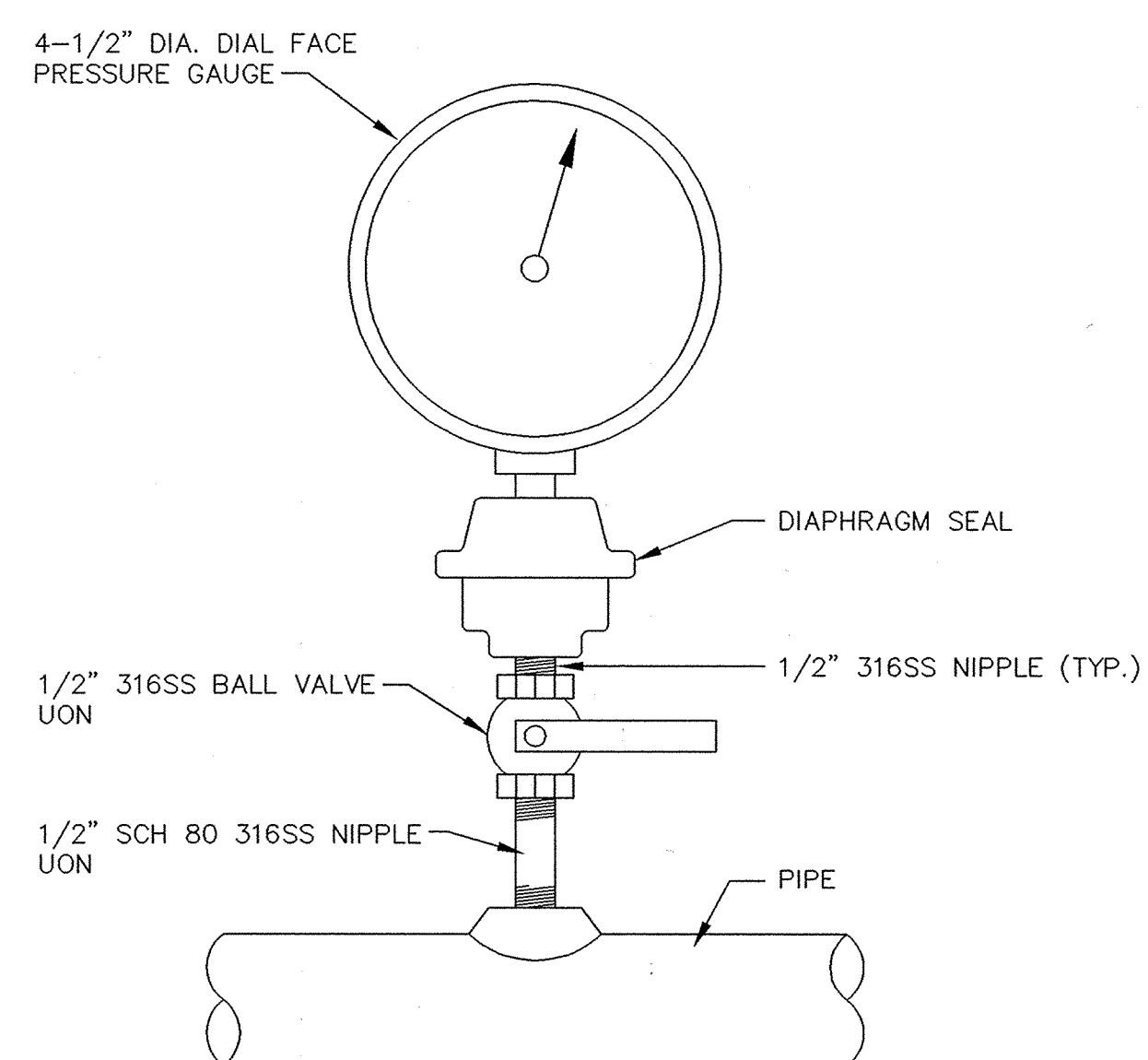
3 P22



**VERTICAL CENTRIFUGAL PUMP SEAL WATER PIPING**

No Scale

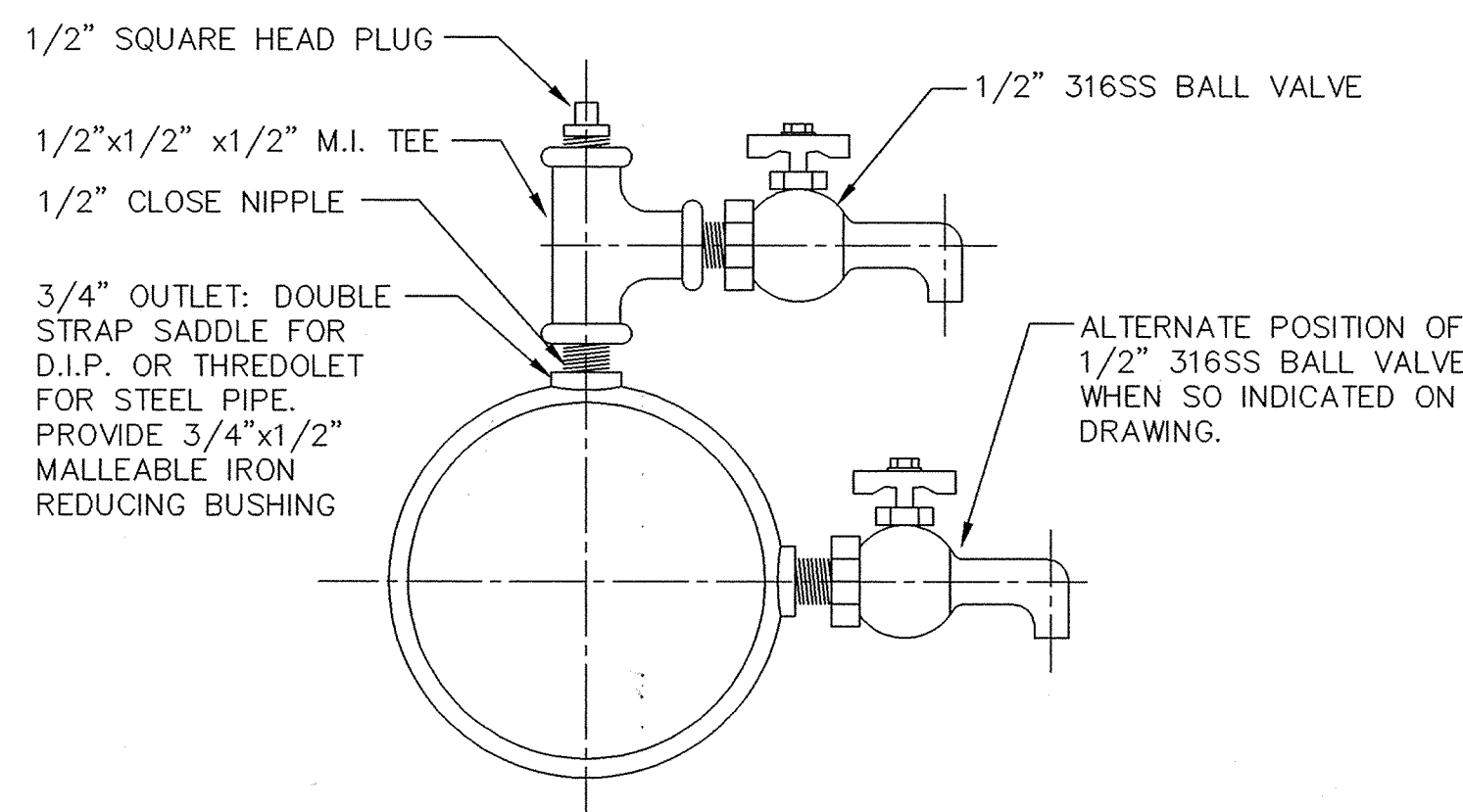
5 P22



**PRESSURE GAUGE**

No Scale

6 P22

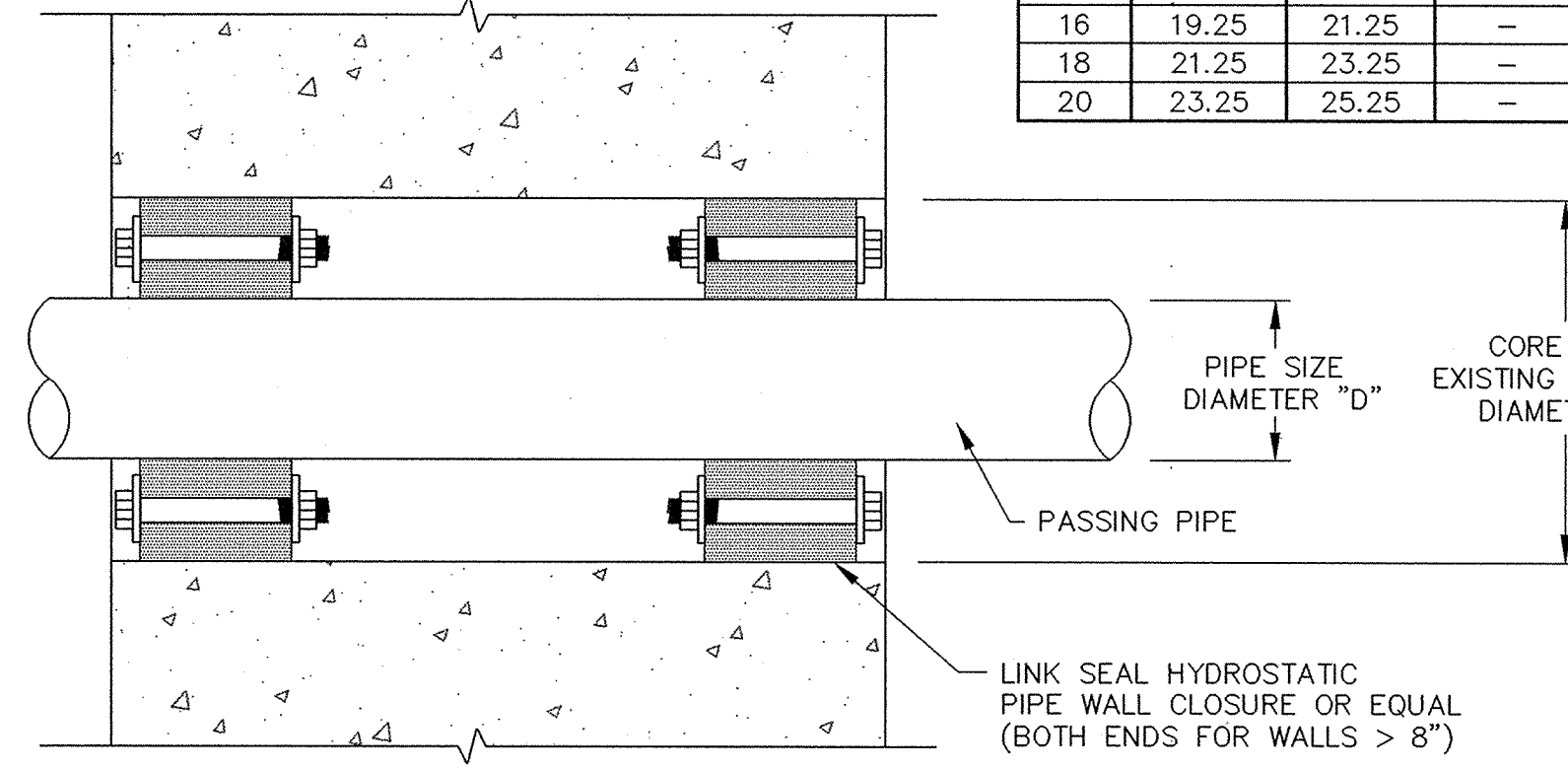


**SAMPLING COCK DETAIL**

No Scale

4 P22

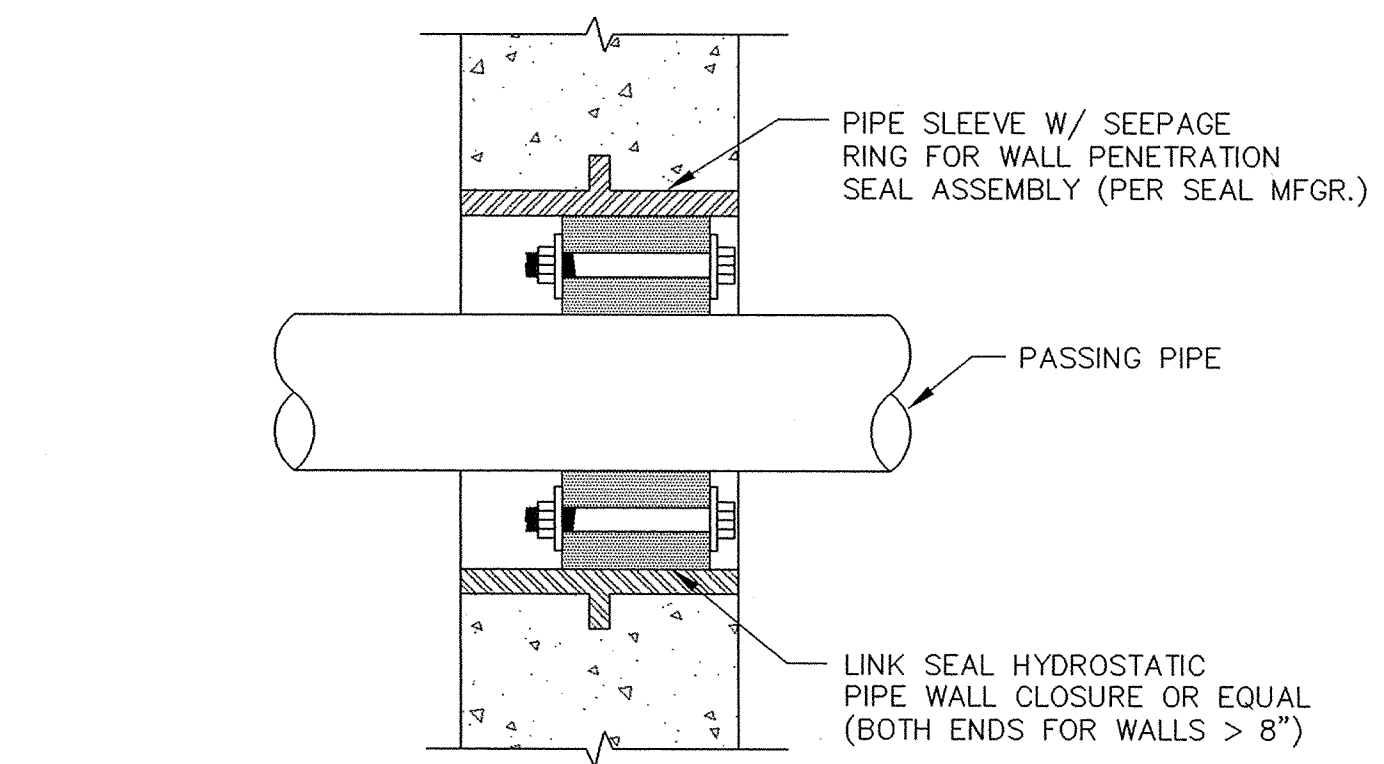
PIPE SIZE "D" (INCH)	CORED DIAMETER "A" (INCH)		
	SP, PVC	DIP	CISP
1	2.50	-	-
1-1/4	3.50	-	-
1-1/2	3.50	-	-
2	4.00	-	4.00
2-1/2	4.00	-	-
3	5.00	5.00	5.00
4	6.00	6.00	6.00
6	10.00	10.00	8.00
8	12.00	12.00	10.00
10	13.25	13.50	13.25
12	15.25	15.50	15.25
14	17.25	19.25	-
16	19.25	21.25	-
18	21.25	23.25	-
20	23.25	25.25	-



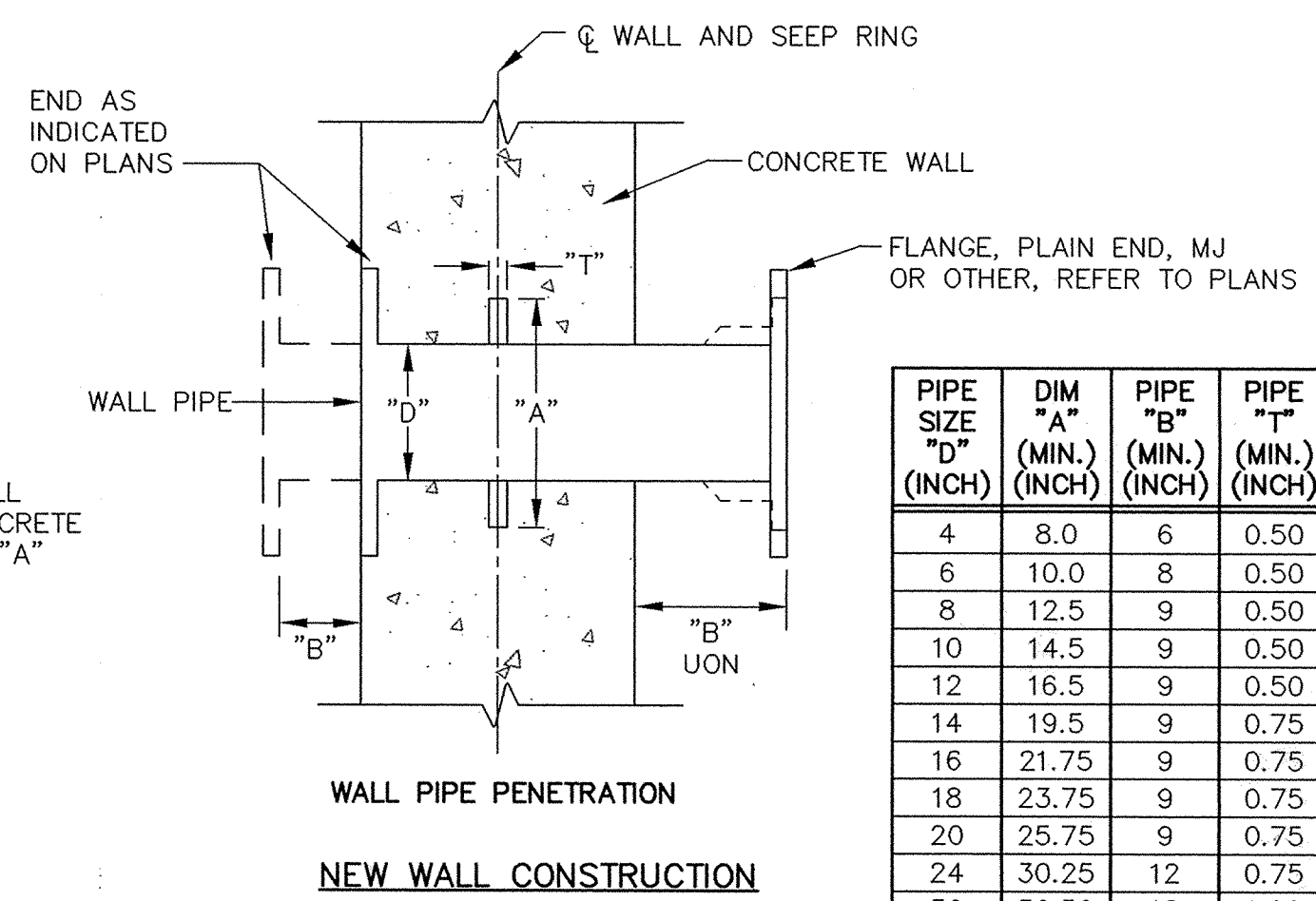
**WALL PENETRATION DETAILS**

No Scale

7 P22



**SLEEVE PENETRATION**



**NEW WALL CONSTRUCTION**

PIPE SIZE "D" (INCH)	DIM "A" (MIN.) (INCH)	PIPE "B" (MIN.) (INCH)	PIPE "C" (MIN.) (INCH)
4	8.0	6	0.50
6	10.0	8	0.50
8	12.5	9	0.50
10	14.5	9	0.50
12	16.5	9	0.50
14	19.5	9	0.75
16	21.75	9	0.75
18	23.75	9	0.75
20	25.75	9	0.75
24	30.25	12	0.75
30	36.50	12	1.00
36	43.00	12	1.00
42	49.50	12	1.25
48	56.50	12	1.25
54	62.75	12	1.25

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

*William J. G...*  
DATE 11/18/95 REG. NO. 022610



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ST. PAUL, MINNESOTA 55108  
(612) 644-4389

9800 SHELARD PARKWAY  
MINNEAPOLIS, MINNESOTA 55441  
(612) 546-0432

REVISIONS	DATE	DESCRIPTION	DESIGNED BC GG	CHECKED TAR	DRAWN GG

GRAPHIC SCALE  
0 HORIZ. 2  
0 VERT. 2

CITY OF ELK RIVER  
WASTEWATER TREATMENT FACILITY UPGRADE

TYPICAL PROCESS DETAILS

DATE OCT. 1995 SHEET 75 OF 112 SHEETS PROJECT NO. 230-151

P22