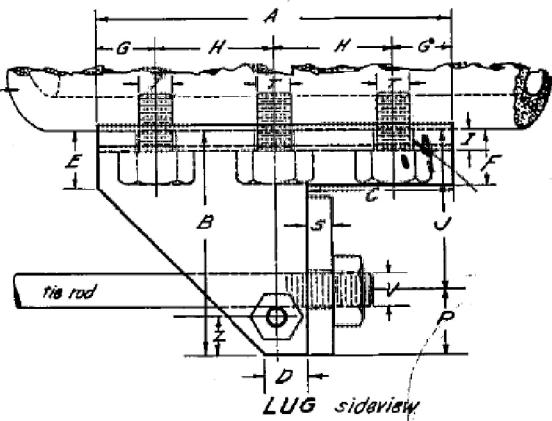
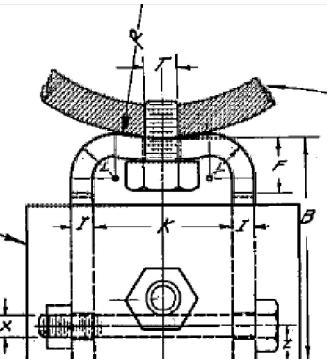


Basis of Design
Material
 Ultimate Strength
 Yield Point
 Elongation
 Use

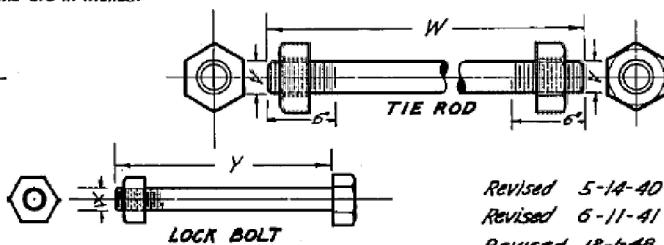
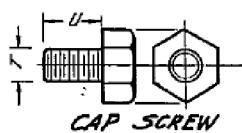
Mild Steel
 60,000 lbs per sq inch
 41,000 lbs
 38%
 100" unbalanced static pressure at 60,000 lbs

LUG front view



SIZE	LUG												WASHER					STUD			TIE ROD		LOCK BOLT			
	A	B	C	D	E	F	G	H	I	J	K	L	R	Z	M	N	O	P	Q	S	T	U	V	W	X	Y
4	4	3 1/8	1 9/16	1/2	3/4	5/8	1 1/2	1 1/2	1/4	2 7/16	1/2	1/2	2.40	9/16	3	2 1/8	1 1/2	7/16	11/16	3/8	3/8	1/2	19	11/16	2 1/2	
6	5	3 1/2	2 1/4	3/4	1/2	7/8	1 1/2	2 1/16	1/4	2 7/16	1/2	1/2	3.45	9/16	3	2 1/8	1 1/2	1 1/8	9/16	3/8	1	5/8	21	3/8	3	
8	6	4 1/2	2 3/8	1 1/4	1/2	3/4	9/16	2 3/8	1/4	2 7/16	1/2	1/2	4.53	1/2	9/16	3 1/8	1 1/2	1 1/8	9/16	1/2	1	5/8	23	1 1/2	3 1/2	
12	8	4 7/8	3	1 1/4	3/4	1	2 1/2	3 1/8	1/8	3	2 1/2	3/4	6.60	11/16	4	3 1/8	2	1 1/8	1 1/8	5/8	1 1/2	1	27	5/8	3 1/2	
16	8	5 1/2	3 1/8	1 3/4	1	1 1/2	1 1/2	3 1/8	1/8	3 1/8	3	1	8.90	13/16	4 1/2	4	2 1/2	2 1/2	1 1/8	9/16	3/4	1 1/2	11/16	30	3/4	5

Note All dimensions are in inches.



Revised 5-14-40
 Revised 6-11-41
 Revised 12-1-48
 Revised 4-12-49

Revised 3-28-53

NOTE:
 LUGS, TIE RODS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL
 TYPE 304 OR 316



San Francisco
**Water
 Power
 Sewer**

Services of the San Francisco Public Utilities Commission

WATER ENTERPRISE - CITY DISTRIBUTION DIVISION STANDARD PLANS

MISCELLANEOUS LUGS AND TIE RODS

DATE	10/1/2016	REV.	DRAWING NO.	SHEET
SCALE	N.T.S.	0	CDD-LP-301	93