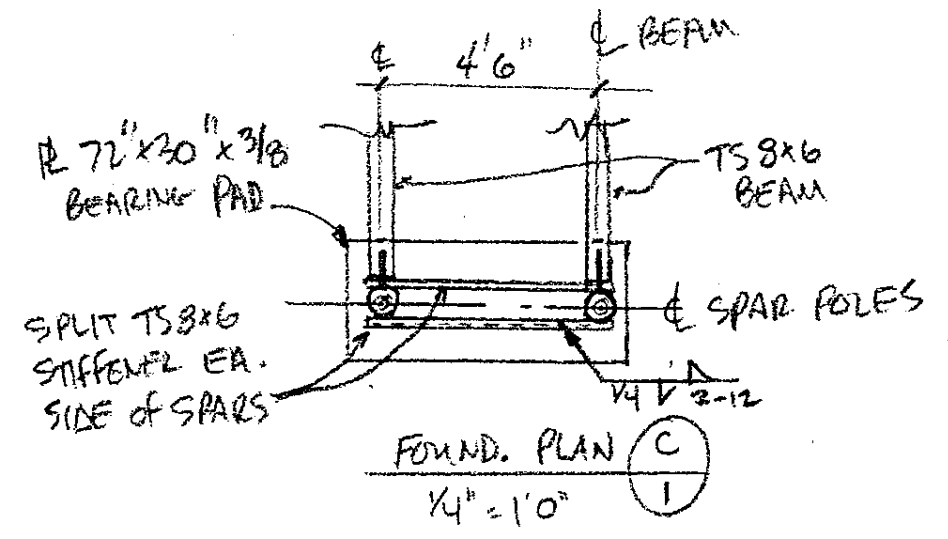
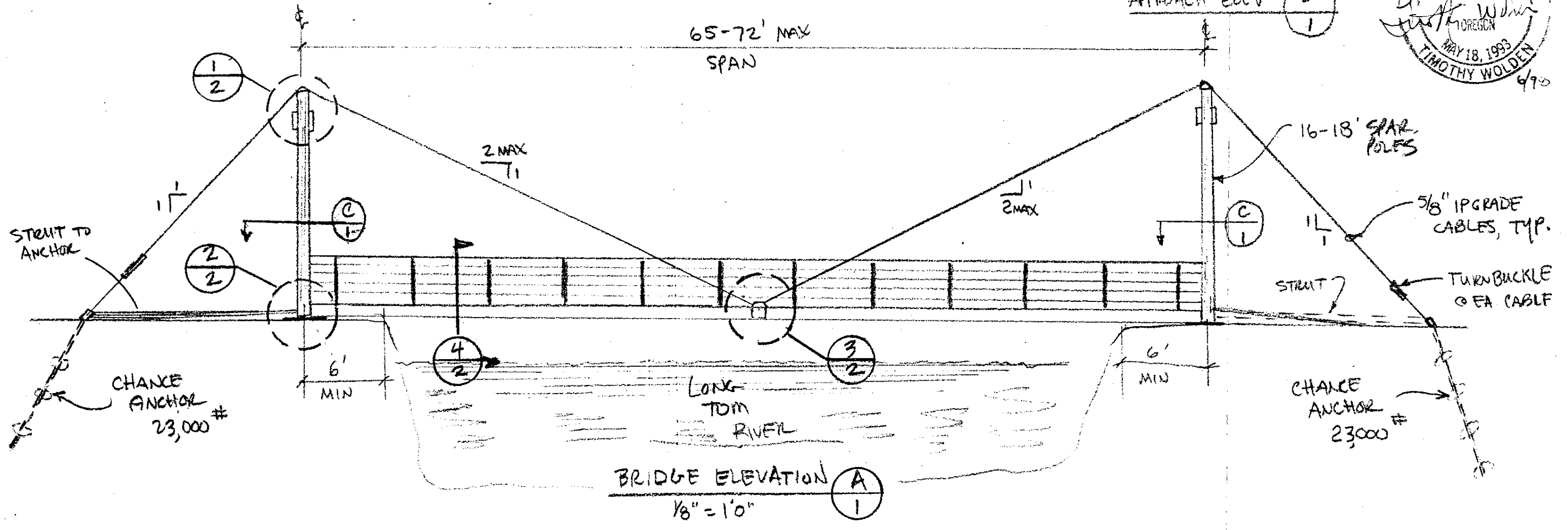
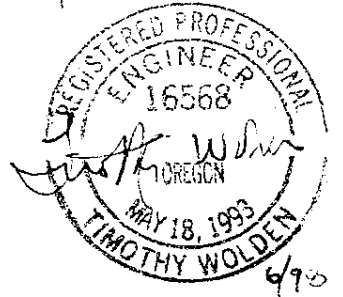
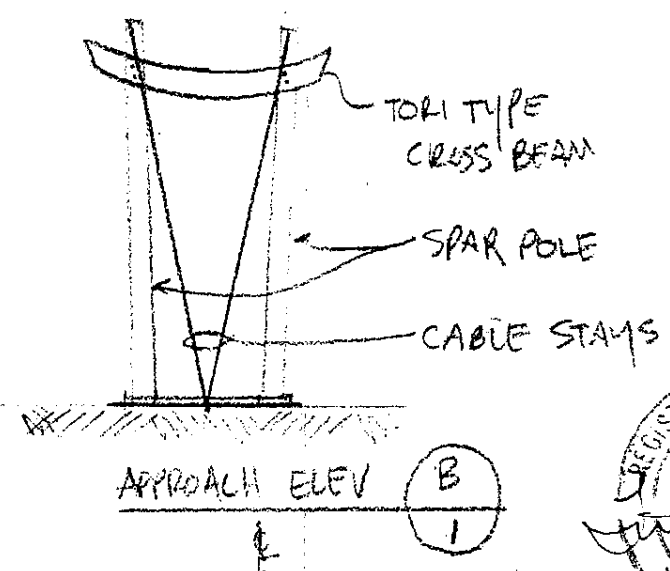
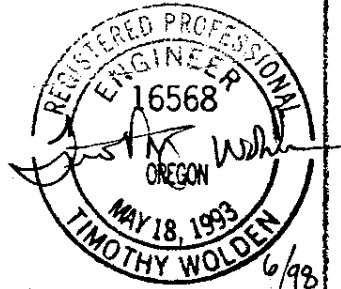
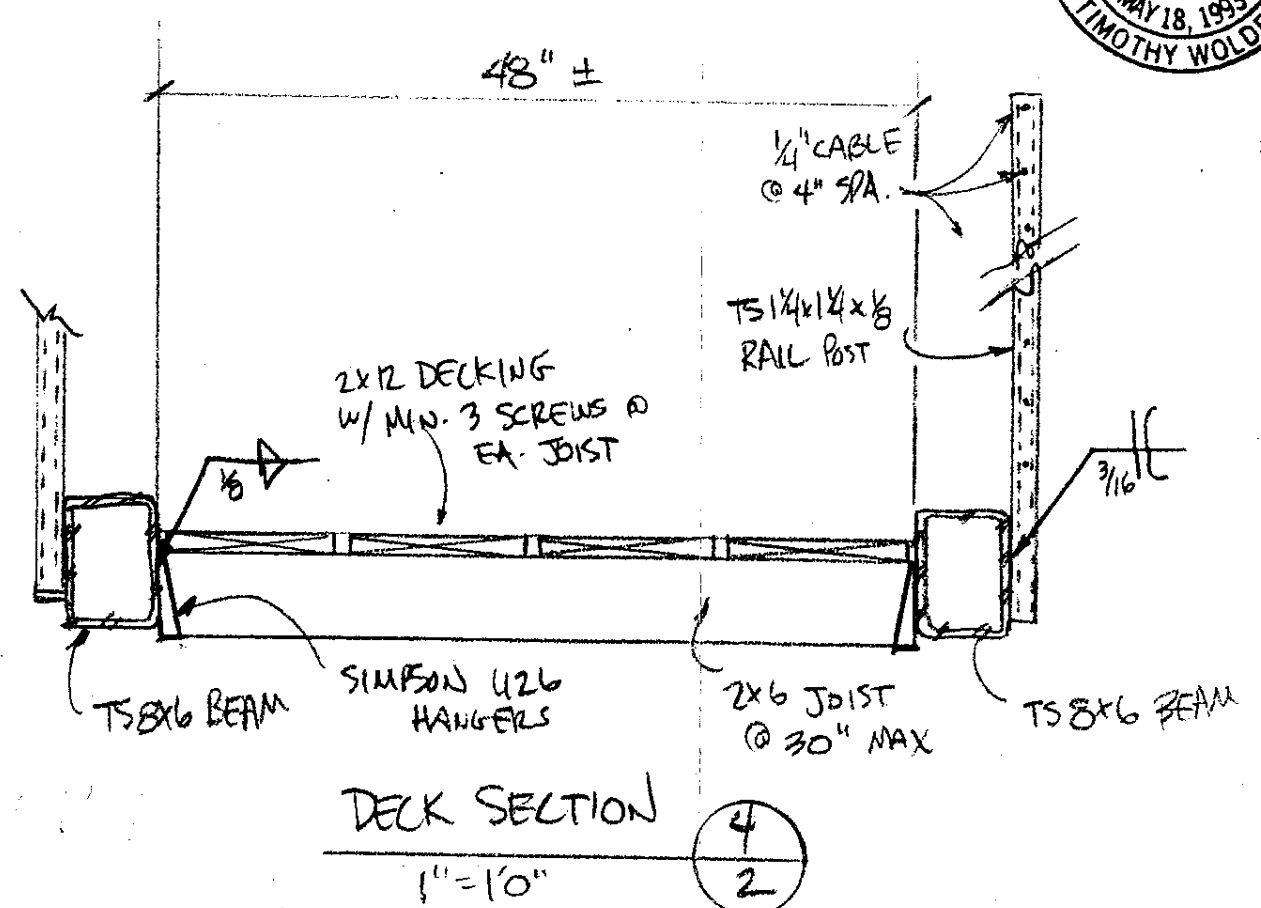
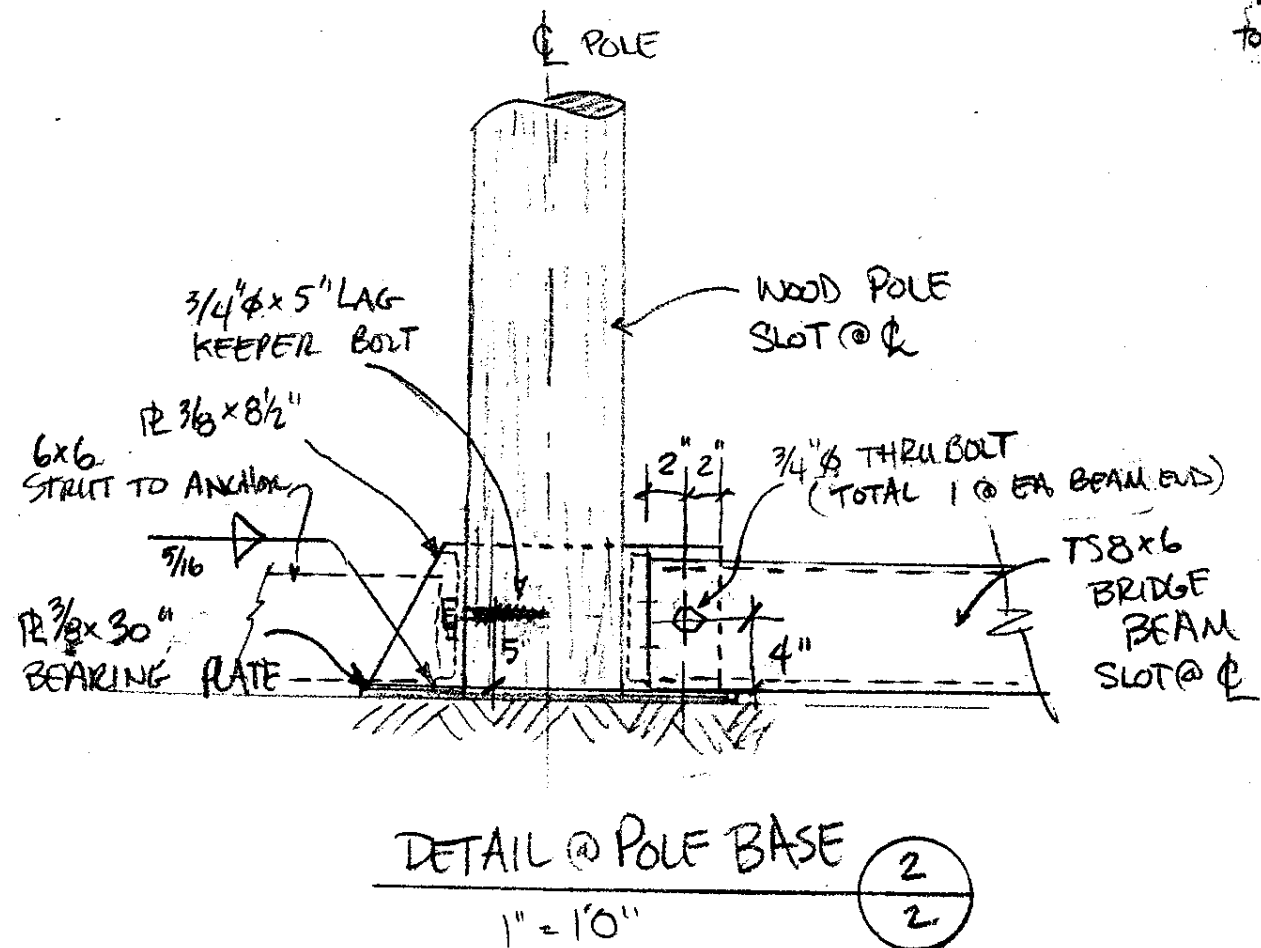
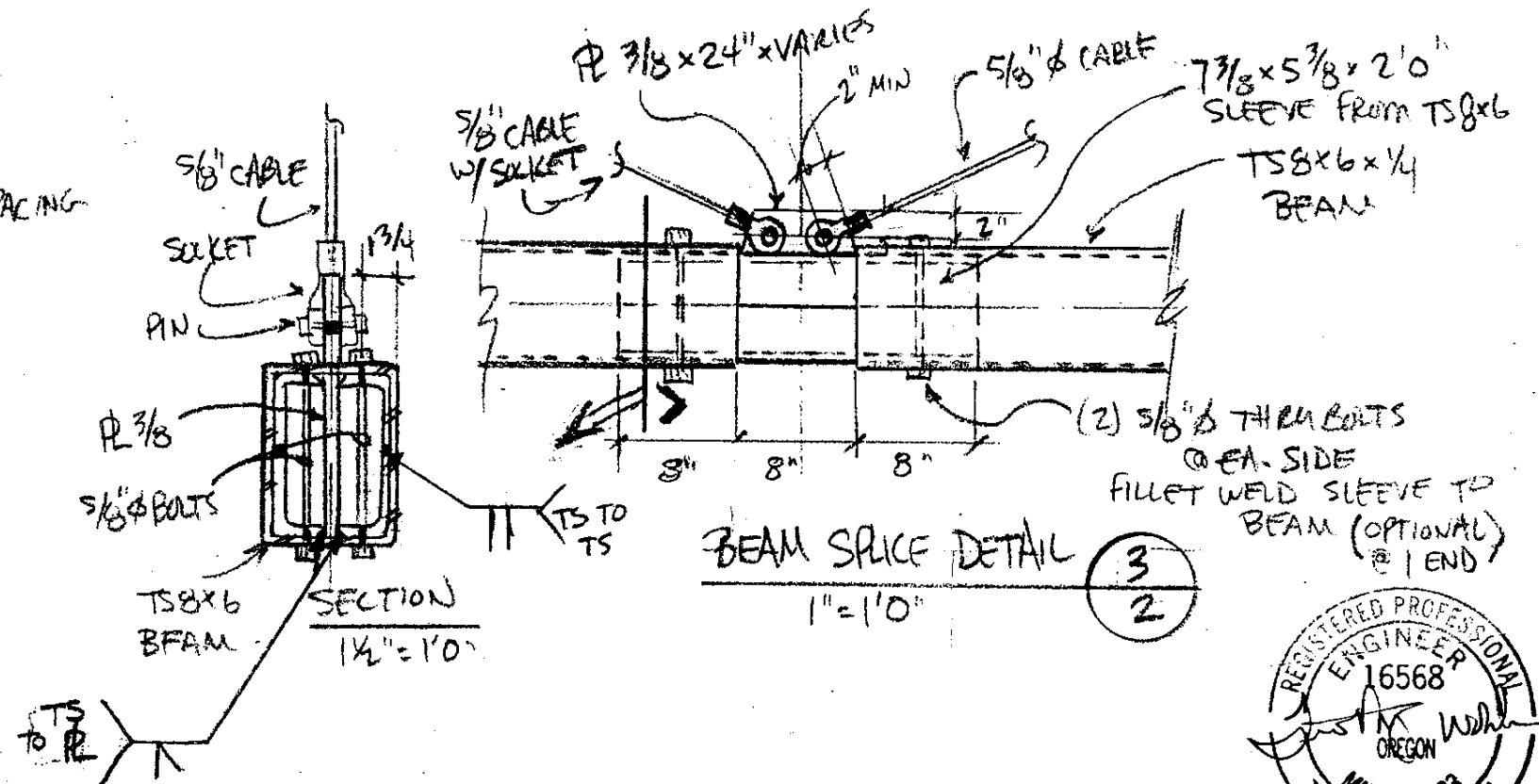
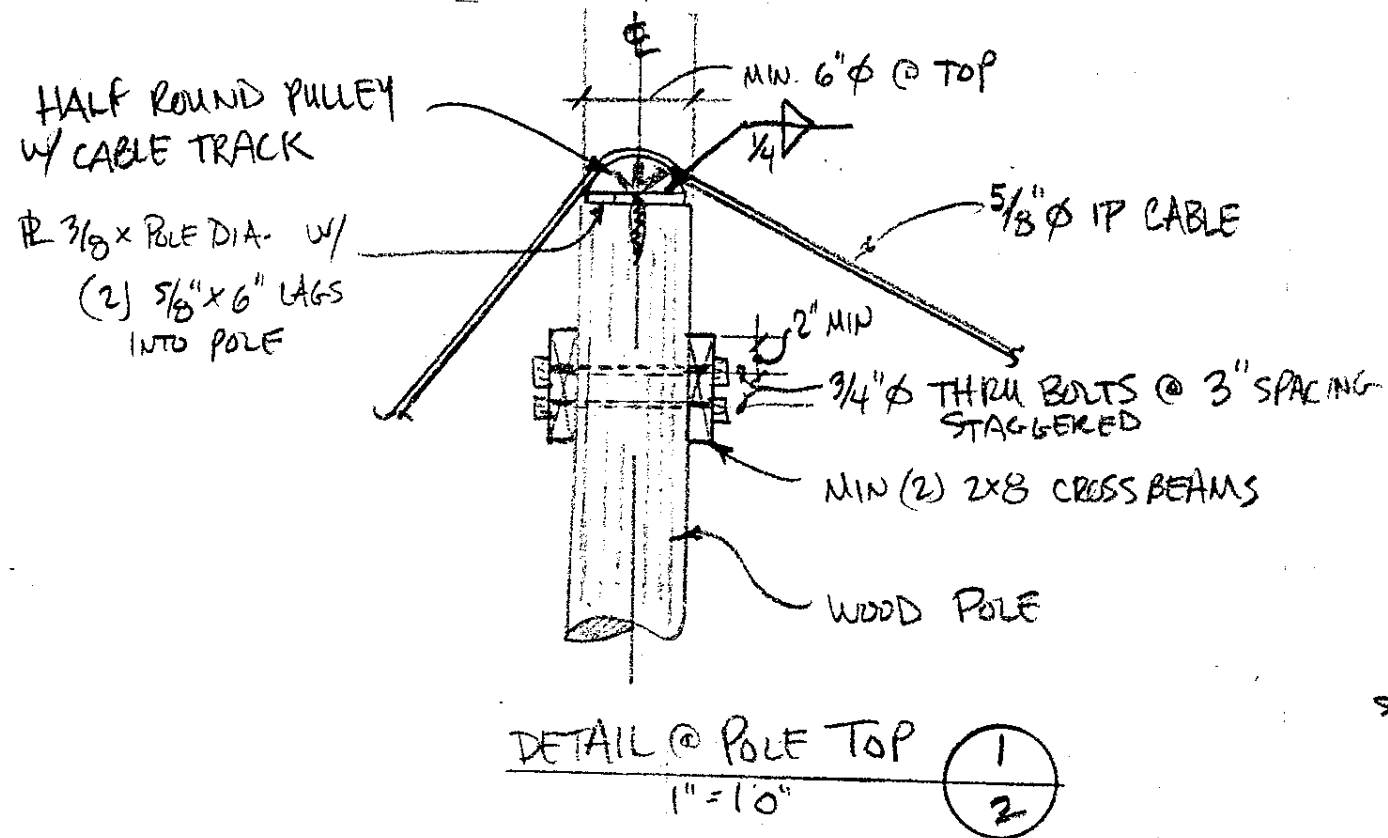


OREGON COUNTRY FAIR - PEDESTRIAN BRIDGE
 (LONG TOM CROSSING)



STRUCTURAL NOTES
 LIVE LOAD: 50 psf (1 PERSON/FT)
 SOIL BEARING: 1000 psf (CODE MIN.)
 POLES - DOUGLAS FIR #2
 STEEL PLATES - ASTM A36
 STEEL TUBES - ASTM A500 GRADE B
 SCREW ANCHORS - CHANCE-TYPE
 CABLES - E.H.S OR IP GRADE





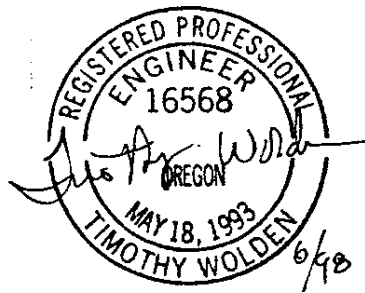
DATE: 2/26/97
REV:
BY: TAN

OREGON COUNTRY FAIR - PEDESTRIAN BRIDGE
(LONG TON CROSSING)

SHEET
2

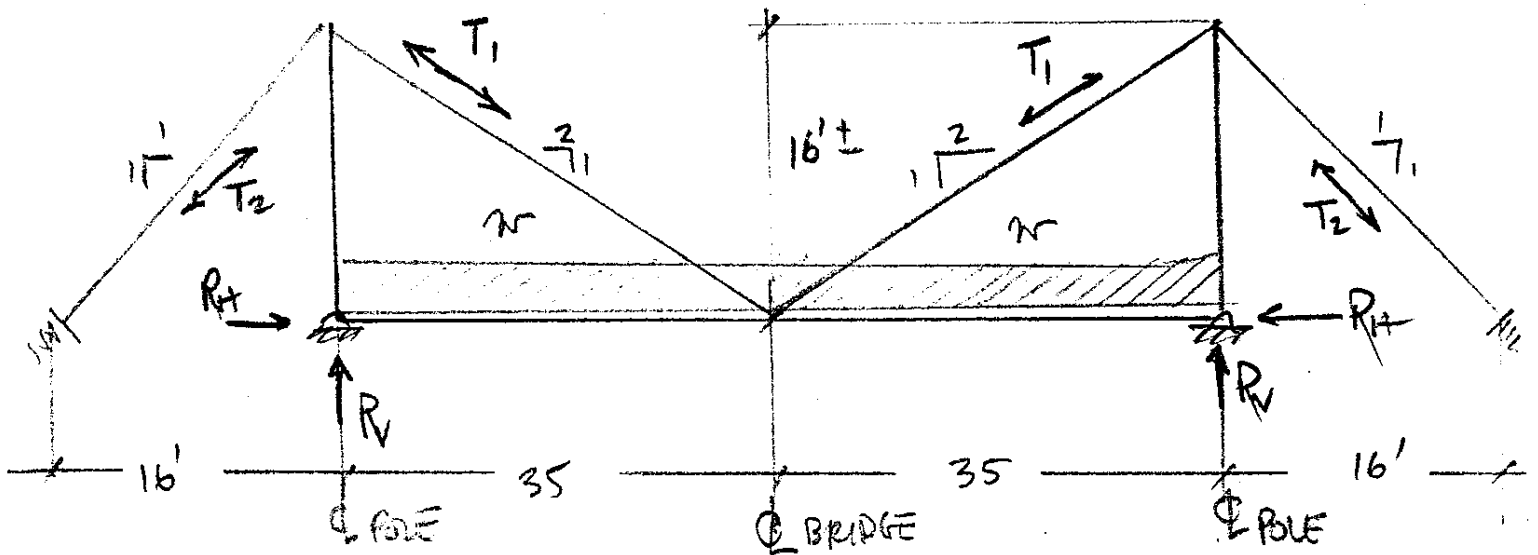
STRUCTURAL CALCULATIONS

Long Tom River Crossing at Oregon Country Fair



March 3, 1997

ANALYZE STRUCTURE AS CABLE STAYED CANTILEVER from Ea SIDE



$$W = (100 \text{ psf} + 10 \text{ psf}) \times 2 = 220 \text{ plf}$$

LL DL Areas

Determine $T_1 = \text{Reaction @ BRIDGE} \times \frac{\sqrt{35^2 + 16^2}}{16} \leftarrow 38.5'$

$$\text{Reaction} = 220 \text{ plf} \times \frac{35}{2} = 3850 \#$$

$$T_1 = 3850 \left(\frac{38.5}{16} \right) = 9264 \# \quad T_1 = T_2$$

$$R_H = 9264 \left(\frac{35}{38.5} \right) = 8443 \#$$

$$T_2 = 9264 \quad R_V = 3850 \times 2 + 9264 \frac{16}{38.5} = 11600 \#$$

TOW HEIGHT

LIMIT BRIDGE @ 50 psf \approx 70 people max

$$\therefore W = (50 + 10) \times 2 = 120 \text{ plf}$$

$$\text{Reaction} = 120 \times \left(\frac{35}{2} \right) = 2100 \#$$

$$T_1 = 2100 \times \frac{38.5}{16} = 5040 \#$$

$$R_H = 5040 \frac{35}{38.5} = 4594 \#$$

$$R_V = 2100 \times 2 + \frac{5040}{\sqrt{2}} = 7764 \#$$

PROJECT	OCF LONG TDM CROSSING	DATE	2-20
		BY	JANIL

DESIGN BEAM

$P_{axial} = 4600 \#$

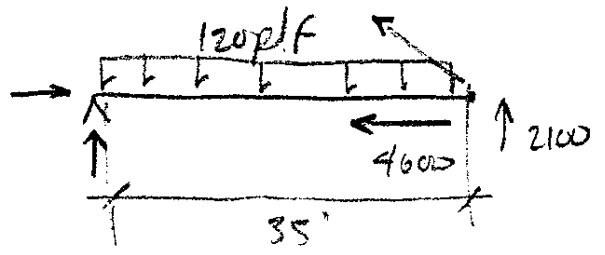
$M = \frac{.12(35)^2}{8} \cdot 12 = 220 \text{ k in}$

$S_{req} = \frac{220}{.6(46)} = 8 \text{ in}^3$

TRY 8x12x1/4 $S = 11.3 \text{ in}^3$ $I = 45.1 \text{ in}^4$

$\sqrt{\Delta_{TL}} = \left(\frac{5}{384}\right) \cdot \frac{.12(35)^4}{29000(45.1)} = 3" \text{ OK } l/135 \text{ HIGH INCREASE } I$

TRY TS 8x12x1/4 $= 3" \left(\frac{45.1}{60.1}\right) = 2.3" \text{ OK } l/180 \text{ OK}$



SIZE BOLT @ REACTION POINT

$R_H = 4600 \#$ USE (1) A 307 IN DOUBLE SHEAR

Allowable $= 8800 \#$ OK

SIZE

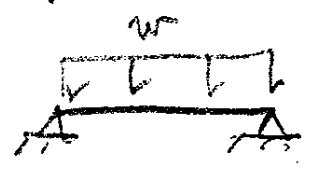
POLE BASE PLATE @ $R_V = 7764 \#$

Bearing Pressure $= 1000 \#/\text{ft}^2 \therefore \text{SIZE} = 7.7 \text{ ft}^2$

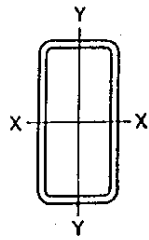
TRY 3' x 2'6" $= 7500 \#$ Close Enough

SIZE: DECK JOISTS

TRY 2x6 $w = 120 \text{ psf @ } 4' \text{ span}$



FIND MAX ATTRIB. $M = f_b S$ $f_b S = 1000 \left(\frac{1.5}{6}\right) 5.5^2 = 7562$

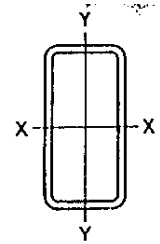


STRUCTURAL TUBING Rectangular Dimensions and properties

Dimensions			Properties**										
Nominal* Size	Wall Thickness	Weight per Ft	Area	X-X Axis				Y-Y Axis				J	
				I _x	S _x	Z _x	r _x	I _y	S _y	Z _y	r _y		
In.	In.	Lb.	In. ²	In. ⁴	In. ³	In. ³	In.	In. ⁴	In. ³	In. ³	In.	In. ⁴	
10×2	0.3750	3/16	27.48	8.08	75.4	15.1	21.5	3.06	4.85	4.85	6.05	0.775	16.5
	0.3125	1/8	23.34	6.86	66.1	13.2	18.5	3.10	4.42	4.42	5.33	0.802	14.9
	0.2500	1/4	19.02	5.59	55.5	11.1	15.4	3.15	3.85	3.85	4.50	0.830	12.8
	0.1875	3/16	14.53	4.27	43.7	8.74	11.9	3.20	3.14	3.14	3.56	0.858	10.3
9×7	0.6250	3/8	59.32	17.4	183	40.6	51.0	3.24	123	35.1	42.8	2.66	248
	0.5625	1/2	54.17	15.9	170	37.9	47.1	3.27	115	32.8	39.5	2.69	229
	0.5000	3/4	48.85	14.4	157	34.8	42.9	3.30	106	30.2	36.1	2.71	209
	0.3750	1/2	37.69	11.1	126	27.9	33.8	3.37	85.1	24.3	28.4	2.77	164
	0.3125	3/8	31.84	9.36	108	24.0	28.8	3.40	73.5	21.0	24.3	2.80	140
	0.2500	1/4	25.82	7.59	89.4	19.9	23.6	3.43	60.8	17.4	19.9	2.83	114
0.1875	3/16	19.63	5.77	69.2	15.4	18.1	3.46	47.2	13.5	15.3	2.86	87.7	
9×6	0.6250	3/8	55.06	16.2	161	35.8	45.8	3.15	84.5	18.2	34.4	2.28	189
	0.5625	1/2	50.34	14.8	150	33.4	42.3	3.19	79.2	16.5	31.9	2.31	175
	0.5000	3/4	45.45	13.4	139	30.8	38.7	3.22	73.2	14.4	29.1	2.34	160
	0.3750	1/2	35.13	10.3	112	24.8	30.6	3.29	59.4	19.8	23.1	2.40	127
	0.3125	3/8	29.72	8.73	96.4	21.4	26.1	3.32	51.4	17.1	19.8	2.43	108
	0.2500	1/4	24.12	7.09	79.8	17.7	21.4	3.36	42.7	14.2	16.2	2.46	88.8
0.1875	3/16	18.35	5.39	61.9	13.8	16.5	3.39	33.3	11.1	12.5	2.48	68.2	
9×5	0.5625	1/2	46.51	13.7	130	29.0	37.6	3.09	50.9	20.4	24.7	1.93	126
	0.5000	3/4	42.05	12.4	121	26.8	34.4	3.12	47.4	18.9	22.7	1.96	115
	0.3750	1/2	32.58	9.58	97.8	21.7	27.3	3.20	38.8	15.5	18.1	2.01	92.2
	0.3125	3/8	27.59	8.11	84.6	18.8	23.4	3.23	33.8	13.5	15.6	2.04	79.2
	0.2500	1/4	22.42	6.59	70.3	15.6	19.3	3.27	28.2	11.3	12.8	2.07	65.2
0.1875	3/16	17.08	5.02	54.7	12.1	14.8	3.30	22.1	8.84	9.90	2.10	50.2	
9×3	0.5000	1/2	35.24	10.4	84.4	18.8	25.9	2.86	13.7	9.11	11.3	1.15	41.6
	0.3750	3/8	27.48	8.08	69.9	15.5	20.9	2.94	11.7	7.79	9.29	1.20	34.9
	0.3125	1/2	23.34	6.86	61.0	13.6	18.0	2.98	10.4	6.92	8.08	1.23	30.5
	0.2500	1/4	19.02	5.59	51.1	11.4	14.9	3.02	8.84	5.90	6.73	1.26	25.6
	0.1875	3/16	14.53	4.27	40.1	8.91	11.5	3.06	7.06	4.70	5.26	1.29	20.1

*Outside dimensions across flat sides.

**Properties are based upon a nominal outside corner radius equal to two times the wall thickness.



STRUCTURAL TUBING Rectangular Dimensions and properties

Dimensions			Properties**										
Nominal* Size	Wall Thickness	Weight per Ft	Area	X-X Axis				Y-Y Axis				J	
				I _x	S _x	Z _x	r _x	I _y	S _y	Z _y	r _y		
In.	In.	Lb.	In. ²	In. ⁴	In. ³	In. ³	In.	In. ⁴	In. ³	In. ³	In.	In. ⁴	
8×6	0.5625	3/16	46.51	13.7	112	27.9	35.2	2.86	70.8	23.6	28.8	2.28	147
	0.5000	1/2	42.05	12.4	103	25.8	32.2	2.89	65.7	21.9	26.4	2.31	135
	0.3750	3/8	32.58	9.58	83.7	20.9	25.6	2.96	53.5	17.8	21.0	2.36	107
	0.3125	1/2	27.59	8.11	72.4	18.1	21.9	2.99	46.4	15.5	18.0	2.39	91.3
	0.2500	3/8	22.42	6.59	60.1	15.0	18.0	3.02	38.6	12.9	14.8	2.42	74.9
0.1875	1/2	17.08	5.02	46.8	11.7	13.9	3.05	30.1	10.0	11.4	2.45	57.6	
8×4	0.5625	3/16	38.86	11.4	80.5	20.1	26.9	2.65	26.2	13.1	16.2	1.51	69.0
	0.5000	1/2	35.24	10.4	75.1	18.8	24.7	2.69	24.6	12.3	15.0	1.54	64.1
	0.3750	3/8	27.48	8.08	61.9	15.5	19.9	2.77	20.6	10.3	12.2	1.60	52.2
	0.3125	1/2	23.34	6.86	53.9	13.5	17.1	2.80	18.1	9.05	10.5	1.62	45.2
	0.2500	1/4	19.02	5.59	45.1	11.3	14.1	2.84	15.3	7.63	8.72	1.65	37.5
0.1875	3/16	14.53	4.27	35.3	8.83	11.0	2.88	12.0	6.02	6.77	1.68	29.1	
8×3	0.5000	1/2	31.84	9.36	61.0	15.3	21.0	2.55	12.1	8.05	10.1	1.14	35.7
	0.3750	3/8	24.93	7.33	51.0	12.7	17.0	2.64	10.4	6.92	8.31	1.19	29.9
	0.3125	1/2	21.21	6.23	44.7	11.2	14.7	2.68	9.25	6.16	7.24	1.22	26.3
	0.2500	1/4	17.32	5.09	37.6	9.40	12.2	2.72	7.90	5.26	6.05	1.25	22.1
	0.1875	3/16	13.25	3.89	29.6	7.40	9.49	2.76	6.31	4.21	4.73	1.27	17.3
8×2	0.3750	3/8	22.37	6.58	40.1	10.0	14.2	2.47	3.85	3.85	4.83	0.765	12.6
	0.3125	1/2	19.08	5.61	35.5	8.87	12.3	2.51	3.52	3.52	4.28	0.792	11.4
	0.2500	3/4	15.62	4.59	30.1	7.52	10.3	2.56	3.08	3.08	3.63	0.819	9.84
	0.1875	1/2	11.97	3.52	23.9	5.97	8.02	2.60	2.52	2.52	2.88	0.847	7.94
7×5	0.5000	1/2	35.24	10.4	63.5	18.1	23.1	2.48	37.2	14.9	18.2	1.90	79.9
	0.3750	3/8	27.48	8.08	52.2	14.9	18.5	2.54	30.8	12.3	14.6	1.95	64.2
	0.3125	1/2	23.34	6.86	45.5	13.0	15.9	2.58	26.9	10.8	12.6	1.98	55.3
	0.2500	3/4	19.02	5.59	38.0	10.9	13.2	2.61	22.6	9.04	10.4	2.01	45.6
0.1875	1/2	14.53	4.27	29.8	8.50	10.2	2.64	17.7	7.10	8.10	2.04	35.3	

*Outside dimensions across flat sides.

**Properties are based upon a nominal outside corner radius equal to two times the wall thickness.

PROJECT

OCF Lower TBM CROSSING

DATE 2/20

BY Nowlin

$$M = \frac{W \times A_T \times L^2}{8} \times 12 = 7562$$

$$A_T = \frac{8 \times 7562}{(4)^2 (120) 12} = 2.6' \text{ OR } 30''$$

Max 2x6 Spacing = 30"

✓ Deflection of 2x Decking @ 30" (Assume Point Load @ Midspan)

$$\Delta_{TL} = \frac{PL^3}{48EI} = \frac{.2(2.5)^3 1728}{48(1.5^4) 2.1} = .04'' \text{ OK}$$

(1.5² = 11.25 / 12)

SIZE CABLE FOR SUPPORT

$$T = 5040 \#$$

USE 5/8 EHS (min) CABLE BREAKING STR = 42,400 #

$$\frac{1}{8} \times 42,400 = 5300 \# \text{ OK}$$

USE 3/4" Ø TURNBUCKLE PER CROSBY CATALOG (See Attached)

USE SPELTEL SOCKETS @ CENTER BEAM CONN. (See Attached)

AMERICAN TIGER BRAND

STRENGTHS AND WEIGHTS OF WIRE ROPES AND STRANDS

Diameter in Inches	BREAKING STRENGTH IN POUNDS				APPROX. WEIGHT PER THOUSAND FT. IN LBS.			
	19-Wire Strand	6 x 7	7 x 7	7 x 19	19-Wire Strand	6 x 7	7 x 7	7 x 19
Carbon Steel Aircraft Cables								
1/32	*185				*2.5			
3/64	*375				*5.5			
1/16	500	400	480		8.5	6.8	7.5	
5/64	800	550	650		14	10	11	
3/32	1200	800	920		20	14.5	16	
7/64	1600	1050	1260		27	20	22	
1/8	2100	1440	1700	2000	35	25.5	28	29
5/32	3300	2200	2600	2800	55	39	43	45
3/16	4700	3150	3700	4200	77	56	62	65
7/32	6300	4100	4800	5600	102	75	83	86
1/4	8200	5200	6100	7000	135	97	106	110
9/32	10300	6600	7600	8000	170	122	134	139
5/16	12500	8000	9200	9800	210	152	167	173
11/32		9500	11100	12500		182	201	207
3/8		11500	13100	14400		215	236	243

*7-Wire.

Strand Diameter Inches	BREAKING STRENGTH IN POUNDS				Approx. Weight per Foot in Lbs.
	Extra High Strength	High Strength	Siemens-Martin	Common	

7-Wire Galvanized Strand

1/8	1830	1330	910	540	0.032
5/32	2940	2140	1470	870	.051
3/16	3990	2850	1900	1150	.073
7/32	5400	3850	2560	1540	.098
1/4	6650	4750	3150	1900	.121
9/32	8950	6400	4250	2570	.164
5/16	11200	8000	5350	3200	.205
3/8	15400	10800	6950	4250	.273
7/16	20800	14500	9350	5700	.399
1/2	26900	18800	12100	7400	.517
9/16	35000	24500	15700	9600	.671
5/8	42400	29600	19100	11600	.813

19-Wire Galvanized Strand

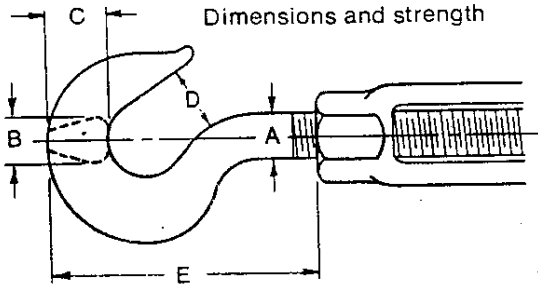
1/2	26700	19100	12700	7620	0.504
9/16	33700	24100	16100	9640	.637
5/8	40200	28100	18100	11000	.796
3/4	58300	40800	26200	16000	1.155
7/8	79700	55800	35900	21900	1.581
1	104500	73200	47000	28700	2.073

USE F.S. = 8 ∴ Tallow = $\frac{42400}{8} = 5300^{\#} > 5040^{\#}$
 OK

TURNBUCKLE ENGINEERING DATA

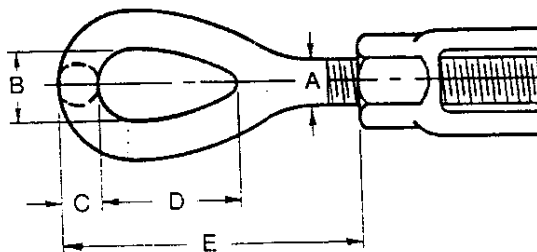
Proof Load twice Safe Working Load • Ultimate Load five times Safe Working Load.

HOOK
Dimensions and strength



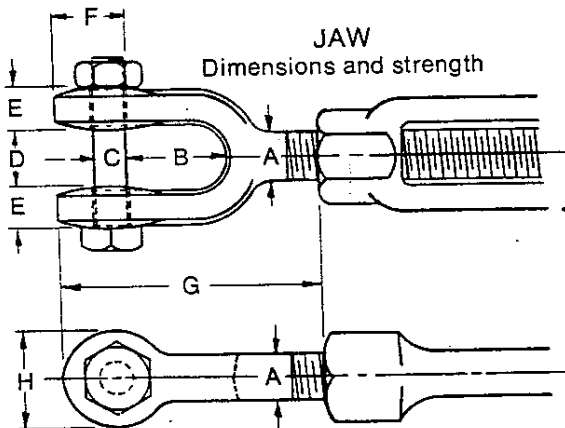
1/4	1/4	13/32	29/64	12 1/32	400
5/16	5/16	1/2	3/2	13 1/32	700
3/8	3/8	39/64	9/16	22 3/64	1,000
1/2	1/2	25/32	2 1/32	2 15/16	1,500
5/8	5/8	1	2 1/32	3 1 1/16	2,250
3/4	3/4	1 13/64	63/64	4 33/64	3,000
7/8	7/8	1 3/8	1 1/8	5 3/16	4,000
1	1	1 11/32	1 1/4	5 27/32	5,000
1 1/4	1 1/4	1 13/16	1 1/2	7 7/32	5,000
1 1/2	1 5/16	1 3/4	1 7/8	8 1 1/32	7,500

EYE
Dimensions and strength



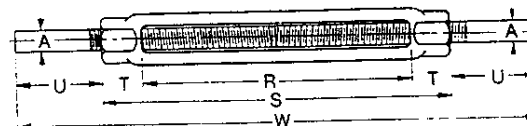
1/4	1 1/32	7/32	25/32	12 5/32	500
5/16	7/16	9/32	15/16	2 3/16	800
3/8	1 1/32	1 1/32	1 1/8	2 9/16	1,200
1/2	2 3/32	7/16	1 7/16	3 7/32	2,200
5/8	7/8	1/2	1 3/4	3 3/8	3,500
3/4	1	5/8	2 1/8	4 1 1/16	5,200
7/8	1 1/4	3/4	2 3/8	5 1/4	7,200
1	1 7/16	7/8	3	6 3/8	10,000
1 1/4	1 13/16	1 1/8	3 9/16	7 3/4	15,200
1 1/2	2 1/8	1 1/4	4 1/8	8 5/8	21,400
1 3/4	2 3/8	1 1/2	4 1 1/16	10	28,000
2	2 1 1/16	1 3/4	5 3/4	12 1/8	37,000
2 1/2	3 1/8	2	6 1/2	13 9/16	60,000
2 3/4	3 1/4	2 1/4	7	15	75,000

JAW
Dimensions and strength



1/4	5/8	1/4	13/32	9/32	1/2	1 5/8	5/8	500
5/16	7/8	1/4	15/32	9/32	1/2	2	1 1/16	800
3/8	7/8	5/16	1/2	5/16	1 1/32	2 3/16	1 3/16	1,200
1/2	1 1/16	3/8	5/8	13/32	3/4	2 3/4	1	2,200
5/8	1 5/16	1/2	3/4	1/2	1 1/32	3 1/2	1 5/16	3,500
3/4	1 1/2	5/8	15/16	9/16	1 3/32	4 1/8	1 5/8	5,200
7/8	1 3/4	3/4	1 1/8	1 1/16	1 15/32	4 27/32	1 7/8	7,200
1	2 1/16	7/8	1 3/16	25/32	1 21/32	5 17/32	2 1/8	10,000
1 1/4	2 13/16	1 1/8	1 3/4	1	2 3/32	7 3/16	2 5/8	15,200
1 1/2	2 13/16	1 3/8	2 1/16	1 1/16	2 15/32	7 7/8	3 1/8	21,400
1 3/4	3 3/8	1 5/8	2 3/8	1 1/4	2 29/32	9 3/8	3 1/2	28,000
2	3 1 1/16	2	2 1/2	1 9/16	3 17/32	10 7/8	4 3/16	37,000
2 1/2	4 7/16	2 1/4	2 7/8	1 9/16	4 5/8	13 1 1/32	5 5/8	60,000
2 3/4	4 3/16	2 3/4	3 1/2	1 5/8	5 3/8	15	6 1/8	75,000

STUB END TURNBUCKLES
Dimensions and strength



1/4	4	4 3/4	3/8	2 5/8	10	500
5/16	4 1/2	5 7/16	15/32	2 21/32	10 3/4	800
3/8	6	7 1/8	9/16	4 7/16	16	1,200
1/2	6	7 1/2	3/4	4 1/4	16	2,200
5/8	6	7 7/8	15/16	4 1 1/16	16	3,500
3/4	6	8 1/4	1 1/8	4 3/8	17	5,200
7/8	6	8 5/8	1 5/16	4 1 1/16	18	7,200
1	6	9	1 1/2	5	19	10,000
1 1/8	6	9 1/8	1 9/16	4 15/16	19	12,400
1 1/4	6	9 1/8	1 9/16	5 7/16	20	15,200
1 3/8	6	9 3/4	1 7/8	5 3/8	20 1/2	18,000
1 1/2	6	9 3/4	1 7/8	5 3/8	20 1/2	21,400
1 5/8	6	10 3/8	2 3/16	5 5/16	21	25,000
1 3/4	6	10 3/8	2 3/16	5 13/16	22	28,000
2	6	11	2 1/2	6	23	37,000
2 1/2	6	13 1/2	3 3/4	6 1/4	26	60,000

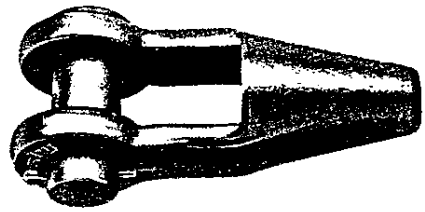
Dimension "W" figured with stubs screwed in as shown. To determine overall length of longer takeup turnbuckles add the difference in takeup.

OPEN SPELTER SOCKETS

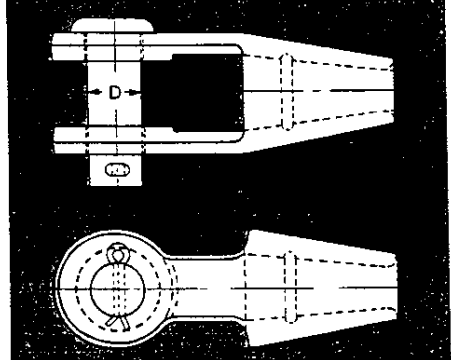
Forged Sockets 1 5/8" thru 2 3/8" available upon request
 Alloy cast steel 1 5/8" thru 4".

NOTICE: All cast steel spelter sockets 1 5/8" and larger are magnetic particle inspected and ultrasonic inspected.
 Proof testing available on special order.

1/4	4.56	.69	.75	.38	2.25	1.56	1.31	.31	.75
5/16-3/8	4.88	.81	.88	.50	2.25	1.75	1.56	.44	1.30
7/16-1/2	5.56	1.00	1.00	.56	2.50	2.00	1.94	.50	2.25
9/16-5/8	6.75	1.25	1.19	.69	3.00	2.50	2.25	.56	4.00
3/4	7.94	1.50	1.38	.81	3.50	3.00	2.63	.63	5.83
7/8	9.25	1.75	1.63	.97	4.00	3.50	3.13	.75	9.85
1	10.56	2.00	2.00	1.13	4.50	4.00	3.75	.88	15.25
1 1/8	11.81	2.25	2.25	1.25	5.00	4.50	4.13	1.00	21.50
1 1/4-1 3/8	13.19	2.50	2.50	1.50	5.50	5.00	4.75	1.13	31.00
1 1/2	15.12	3.00	2.75	1.63	6.00	6.00	5.38	1.19	47.25
1 5/8	16.25	3.00	3.00	1.75	6.50	6.50	5.75	1.31	60.00
1 3/4-1 7/8	18.25	3.50	3.50	2.00	7.50	7.00	6.50	1.56	84.00
2-2 1/8	21.50	4.00	3.75	2.25	8.50	9.00	7.00	1.81	125.00
2 1/4-2 3/8	23.50	4.50	4.25	2.56	9.00	10.00	7.75	2.13	167.00
2 1/2-2 5/8	25.50	5.00	4.75	2.88	9.75	10.75	8.50	2.38	252.00
2 3/4-2 7/8	27.25	5.25	5.00	3.12	11.00	11.00	9.00	2.88	315.00
3-3 1/8	29.00	5.75	5.25	3.38	12.00	11.25	9.50	3.00	380.00
3 1/4-3 3/8	30.88	6.25	5.50	3.62	13.00	11.75	10.00	3.12	434.00
3 1/2-3 5/8	33.25	6.75	6.00	3.88	14.00	12.50	10.75	3.25	563.00
3 3/4-4	36.25	7.50	7.00	4.25	15.00	13.50	12.50	3.50	783.00



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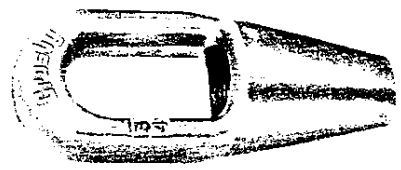


Note: Above drawing illustrates one groove used on sockets 3/4" and smaller. Sizes 7/8" to 1 1/2" inclusive use 2 grooves. Sizes 1 5/8" and larger use 3 grooves.

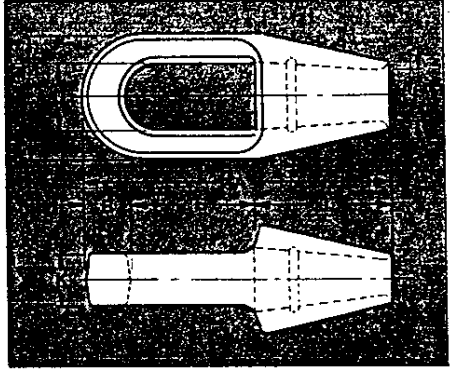
CLOSED SPELTER SOCKETS

Forged Sockets 1 5/8" thru 2 3/8" available upon request
 Alloy cast steel 1 5/8" thru 4".

1/4	4.56	.50	1.50	.81	.38	2.25	.50	1.81	.50
5/16-3/8	4.94	.62	1.69	.94	.50	2.25	.69	2.06	.75
7/16-1/2	5.50	.69	2.00	1.13	.56	2.50	.88	2.31	1.50
9/16-5/8	6.38	.81	2.63	1.38	.69	3.00	1.00	2.56	2.50
3/4	7.63	1.06	3.00	1.63	.81	3.50	1.25	3.06	4.25
7/8	8.88	1.31	3.63	1.88	.97	4.00	1.50	3.56	7.25
1	10.00	1.44	4.13	2.25	1.13	4.50	1.75	4.06	10.50
1 1/8	11.13	1.56	4.50	2.50	1.25	5.00	2.00	4.56	14.25
1 1/4-1 3/8	12.31	1.69	5.00	2.75	1.50	5.50	2.25	5.13	19.75
1 1/2	14.13	3.00	5.38	3.13	1.63	6.00	2.50	6.13	28.00
1 5/8	15.38	2.13	5.75	3.25	1.75	6.50	2.75	6.75	38.25
1 3/4-1 7/8	17.50	2.19	6.75	3.53	2.00	7.50	3.00	7.81	57.25
2-2 1/8	19.75	2.44	7.63	3.78	2.25	8.50	3.25	8.81	77.25
2 1/4-2 3/8	21.63	2.88	8.50	4.28	2.50	9.00	3.63	9.75	105.00
2 1/2-2 5/8	23.50	3.12	9.50	5.50	2.88	9.75	4.00	10.62	140.00
2 3/4-2 7/8	25.50	3.00	10.75	6.25	3.12	11.00	4.88	11.25	220.00
3-3 1/8	27.00	3.25	11.50	6.75	3.38	12.00	5.25	11.75	276.00
3 1/4-3 3/8	29.25	4.00	12.25	7.25	3.62	13.00	5.75	12.25	313.00
3 1/2-3 5/8	31.00	4.00	13.00	7.75	3.88	14.00	6.25	13.00	400.00
3 3/4-4	33.25	4.25	14.25	8.50	4.25	15.00	7.00	14.00	540.00



G-417 S-417



Note: Above drawing illustrates one groove used on sockets 3/4" and smaller. Sizes 7/8" to 1 1/2" inclusive use 2 grooves. Sizes 1 5/8" and larger use 3 grooves.