USE BLACK INK BALL POINT PEN — PRESS FIRMLY

SIGN PERMIT APPLICATION

8908 ELDER CREEK

Elder Creek @ SWC of Watt Ave, Sacramento S-20836

ASSESSOR PARCEL No. 064-0033-024

PERMIT NO. 9909232

M-1 ZONE

BUSINESS OWNER: INVESTNET INC. PO BOX 60700 Sacramento, CA 95860 916-929-6300

SIGN INFORMATION

☐ ATTACHED	☐ INTERIOR LIT	☐ SINGLE FACED
☐ ILLUMINATED	☒ NON-ILLUMINATED	☐ BILLBOARD SUBDIVISION
☐ INDIVIDUAL LETTERS	☐ PAINTED ON BUILDING	☐ LOGO
☒ METAL	☒ POLE	☒ DOUBLE FACED
☐ PLASTIC	☐ MONUMENT	☐ VINYL GATOR FOAM
☐ WOODEN	☐ PROJECTING	☐ RE-FACE

HEIGHT 35' LENGTH 24'

SIGN AREA 12' x ~~24'~~ 288 ☐

POLE SIZE 24" FOOTING SIZE 3'6"

STREET FRONTAGE (FT) 373'

SIGN COST

CITY OF SACRAMENTO
BUILDING INSPECTION DIVISION

PERMIT SERVICES
264-7619

WORKER'S COMPENSATION DECLARATION

X

State Fund

8-23-00

8/10/99 25.00

TOTAL $

CONSTRUCTION LENDING AGENCY

Lender's Address

LICENSED CONTRACTORS DECLARATION

I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class ________ Lic. Number ________

Date ________ Contractor ________
(Signature)

OWNER - BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Contractors License Law for the following reason (Sec. 7031.5 Business and Professions Code.

USE BLACK INK BALL POINT PEN   PRESS FIRMLY

SIGN PERMIT APPLICATION

8908 Elder Creek

S-20835

Watt Ave @ SWC Elder Creek, Sacramento, CA

ASSESSOR PARCEL NO. 064-0033-029 ~~064-0033-024~~

PERMIT NO. 9909225

NAME

LICENSED CONTRACTOR

M-1 ZONE

BUSINESS OWNER

Investing Inc   PO Box 60700 Sacramento, CA 95860   916-929-6300

SIGN INFORMATION

☐ ATTACHED	☐ INTERIOR EFFECT	☐ SINGLE FACED
☐ ILLUMINATED	☒ NON-ILLUMINATED	☐ BILLBOARD SUBDIVISION
☐ INDIVIDUAL LETTERS	☐ PAINTED ON BUILDING	☐ LOGO
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CITY OF SACRAMENTO
BUILDING INSPECTION DIVISION

PERMIT SERVICES
264-7619

WORKER'S COMPENSATION DECLARATION

State Fund

4

8-23-00

8-17-99

$

CONSTRUCTION LENDING AGENCY

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Date ______ Contractor ______
(Signature)

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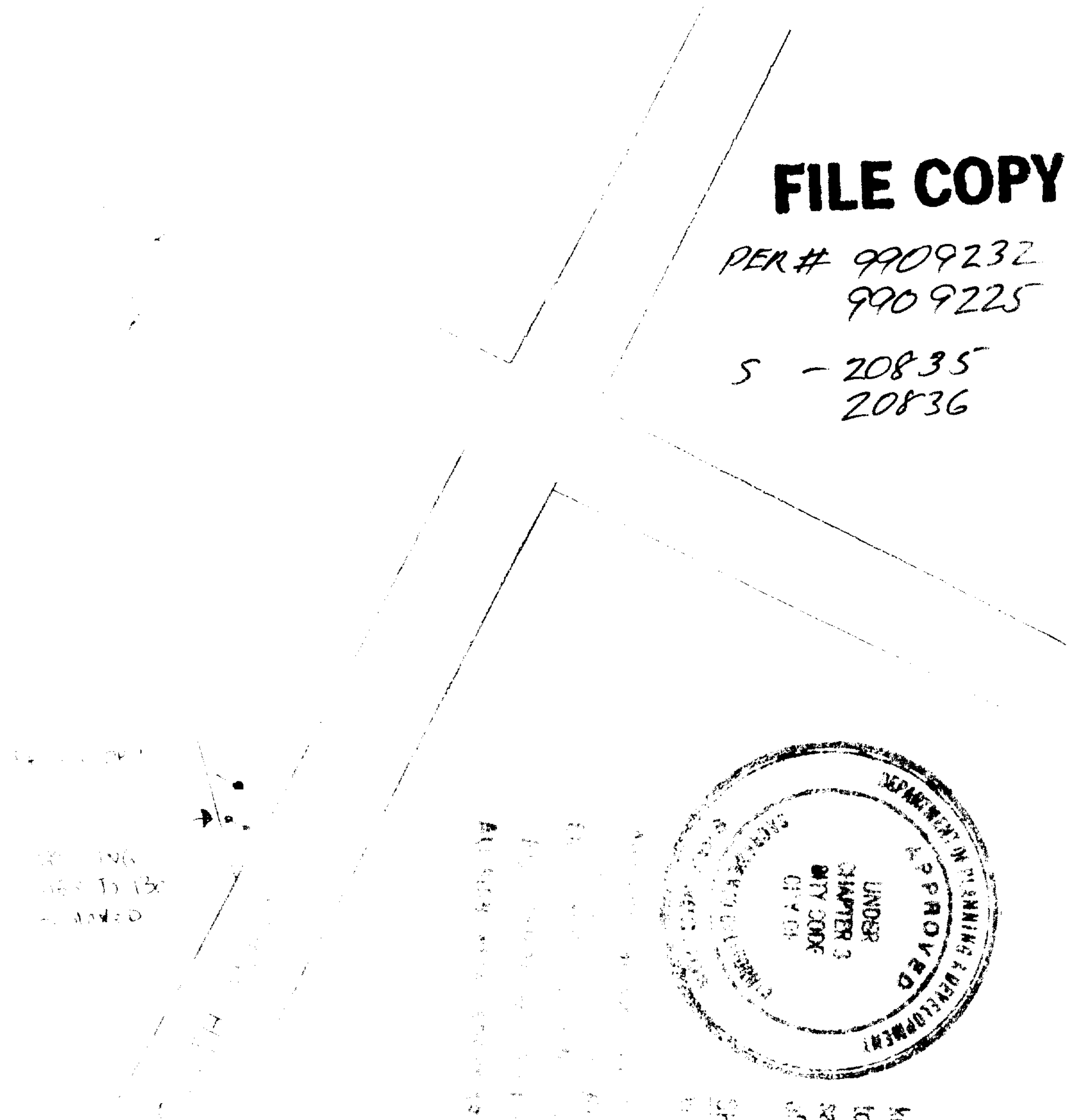
N



FILE COPY

PER # 9909232
9909225

S - 20835
20836

DEPARTMENT OF PLANNING & DEVELOPMENT
APPROVED
UNDER
CHAPTER 3
CITY CODE

This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the City of Sacramento Sign Section.

The approval of this plan and specification

Drawing #: 97-102

12' x 24'

Back to Back

Centermount

21' H.A.G.L.

(New Build)

Design Wind Load

30 psf w/ 0% eccentricity

These structural calculations must be submitted with **<u>wet seal</u>** dated not over **<u>180 days</u>** prior to permit application

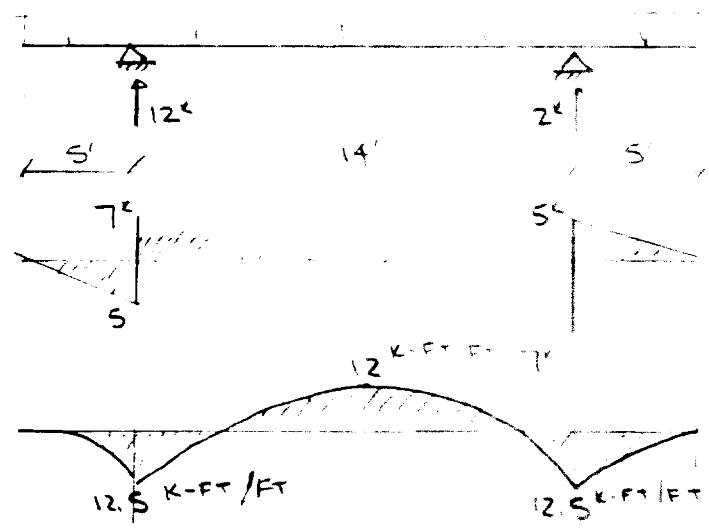
REGISTERED PROFESSIONAL ENGINEER
GERALD R. CARSTENS
C.E. 25418
CIVIL
STATE OF CALIFORNIA

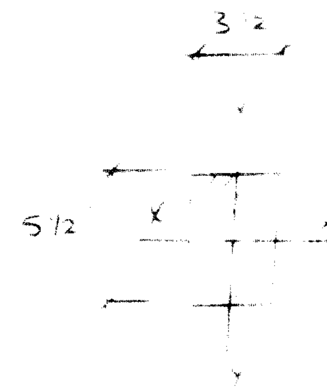
9-3-97

Date: August 30, 1997

STRINGERS

assume $1^{k}/FT$





try 4 stringers 4x6 (Nom) NO 2 or BETTER douglas FIR ($3\frac{1}{2} \times 5\frac{1}{2}$)

$W_{LL} = 30\,psf(12')/4\ stringers = 90^{\#}/FT \quad .09^{k}/FT$

$W_{DL} = [2.5\,psf(12')/4\ stringers] + 4^{\#}/FT = .0075^{\#}/FT$

$S_x = 3.5(5.5)^2/6 = 17.65\ in^3$

$S_y = 5.5(3.5)^2/6 = 11.23\ in^3$

Minimum Fb= 825 psi (worst case of douglas firs)

$F_b'{}_{y\text{-}y} = .825(1.6)(.85)(1.0)(1.3)(1.05) = 1.53^{ksi}$

Fb CD CM Ct Cf 24u

$F_b'{}_{x\text{-}x} = .825(.9)(.85)(1.0)(1.3) = .820^{ksi}$

$f_{b\,y\text{-}y} = [12.5(.09)](12)/11.23 = 1.2^{ksi}$

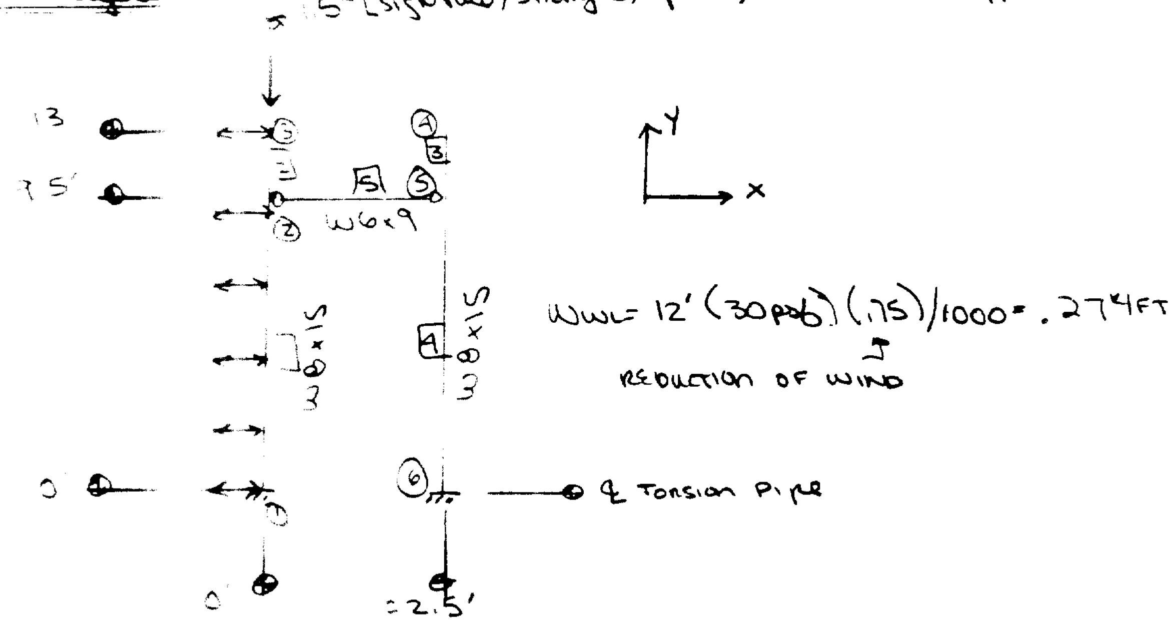
$f_{b\,x\text{-}x} = [12.5(.0075)](12)/17.65 = .0637^{ksi}$

$RATIO = \dfrac{1.2}{1.53} + \dfrac{.0637}{.82} = .86 < 1.0 \quad ok$

∴ use 4x6 (Nom) NO. 2 OR BETTER douglas FIR

w/ MIN Fb= 825 psi (4/face)

Frame Analysis



$W_{WL} = 12'(30\,psf)(.75)/1000 = .27^{k}/FT$

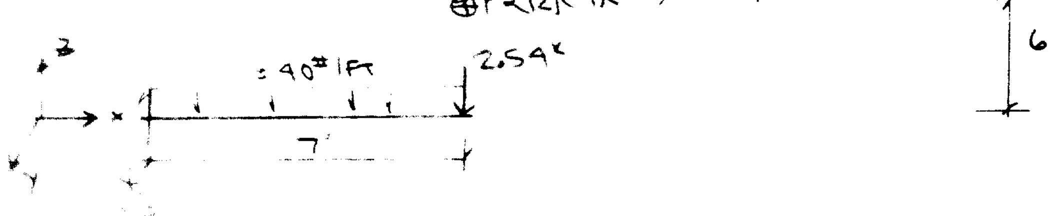
REDUCTION OF WIND

– SEE COMPUTER Analysis –

TORSION PIPE

wind reduction

$P = (12)(14)(30)(.75)/1000 = 3.78^{k}$



$M_y = [.04(7)(7/2) - 2.54(7)](12) = 225.12^{k\text{-}in}$

$M_z = 3.78(7)(12) = 317.5^{k\text{-}in}$

$M_x = 3.78(6)(12) = 272.16^{k\text{-}in}$ $\quad I = 137.42\ in^4$

$F_y = 35^{ksi}$ try $10\,3/4\,\phi \times .307$ $\quad S = 25.57$ $\quad J = 274.84$ $\quad D/t < 3300/F_y$ ∴ ok

$f_{by} = 225.12/25.57 = 12.42$ ksi

$f_{bz} = 317.5/25.57 = 8.81$

$f_{bx} = 272.16(5.375)/274.84 = 5.32$

$$RATIO = \frac{\sqrt{12.42^2 + 8.81^2}}{.66(35)} + \frac{5.32^2}{[.4(35)]^2} = .80 \quad \underline{ok}$$

Check Deflection

$$\Delta = 2.54(7\times12)^3 / 3(29000)(137.4) + .0033^{k/in}(7\times12)^4 / 8(29{,}000)(137.4) = .131''$$

$L/360 = .23'' > .131$ ok

USE $10\,3/4''\,\phi \times .307$ $F_y = 35^{ksi}$

RISA-3D (R) Version 2.1

Job : 97-102
Page: 1
Date: 8/30/97

National Advertising Company
?850 S Harlem Avenue
Bedford Park IL 6? 900

Frame Analysis of 1

Dead + Wind >================

Moment y-y	Moment z-z
-------	K-ft---
	$\boxed{12.52}$
	7.52
	4.04
	2.09
	1.65
	1.65
	0.93
	0.41
	0.10
	-0.00
	0.00
	0.00
0	0.00
0	0.00
00	0.00
.00	0.00
0.00	2.57
0.00	5.15
0.00	7.72
0.00	10.30
0.00	0.00
0.00	-0.01
0.00	-0.01
0.00	-0.01
0.00	0.00

8 1/2"φ A-325 A = .1963 in²

$2(2)^2] = 22.77^{in^4}$

$5)/22.77 + \frac{2.43}{8(.1963)} = 37.54^{ksi}$

$13.94^{ksi} > 37.54^{ksi}$

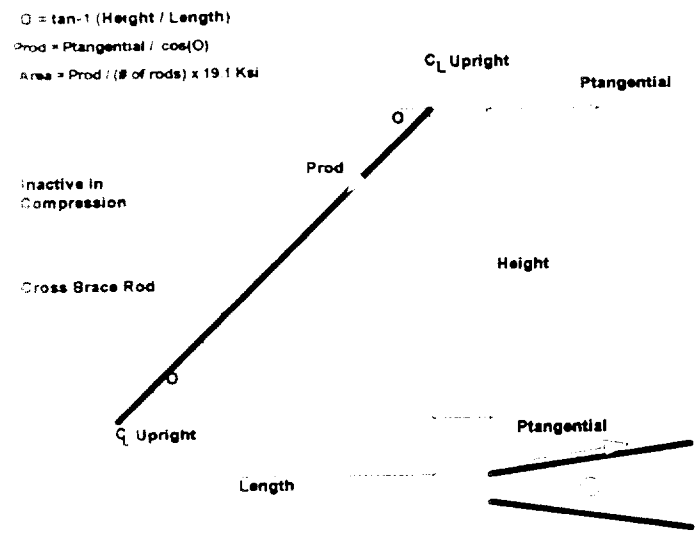
CROSS BRACING ROD

DATE
02-Sep-97

SIGN FACE & WINDLOAD PROPERTIES

Sign Face Height	12	(Feet)
Sign Face Length	24	(Feet)
Apron Height	2	(Feet)
Windload	30	(Psf)
Tangential Wind Force (Ptangential	3.79	(Kips)

Note Ptangential is 1/2 of Pnormal by geometry)



CROSS BRACE PROPERTIES

Height	9.5	(Feet)
Length	14	(Feet)
# of Rods (Active in Tension only)	1	
Theta	34.16	(Degrees)
Tension Force in Rods (Prod)	4.58	(Kips)
Area of a Single Rod Required	0.240	(In^2)

CLIP LEG SIZES

Leg perpendicular to Rod	4.42	(Inches)
Leg parallel to Rod	3	(Inches)

Assumptions

In lieu of allowable stress being increased by 33% per AISC A5.2 the wind force in the rod is reduced by 25% (i.e. .75 (Wind load))
via equations developed in spreadsheet.
Maximum tangential wind force is the component of the resultant of wind blowing at a 45 degree angle to the sign face.
This maximum tangential wind force component is 1/2 of the normal resultant wind force based on geometry.
A 36 material used for rods. Allowable tensile stress = .33 (Fu) = .33 (58) = 19.1 ksi per AISC ASD table I-B page 4-3

∴ use 5/8" ϕ 200

PRYING-TYPE CONNECTION

DATE
30-Aug-97

Method of Analysis & Design based on pg. 4-90 of AISC Allowable Stress Design - 9th Edition

- calculation of W6x9 to W8x15 connection

INPUT PROPERTIES

Actual bolt tensile force (T)	0.54	(Kips)	
Flange width (Bf)	7	(Inches)	
Flange thickness (tf)	0.25	(Inches)	∴ 1/4" ℞ or 7"x5"
Web thickness (tw)	0.17	(Inches)	
Bolt gage (g)	2.25	(Inches)	
Bolt diameter (d)	0.5	(Inches)	
Actual bolt shear stress (fv)	0	(Ksi)	
Tributary flange length (P)	4	(Inches)	*Bending length attributed to 1 bolt*

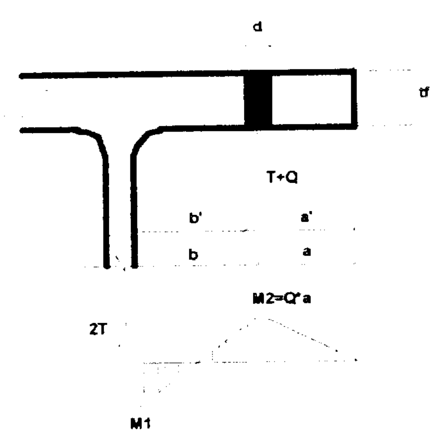
OUTPUT PROPERTIES

(a)	2.375	(Inches)	
(b)	1.040	(Inches)	
(a')	2.625	(Inches)	
(b')	0.790	(Inches)	
(row)	0.301	(Ratio)	
(d')	0.563	(Inches)	
(delta)	0.859	*Ratio of net area at bolt line & gross area at web*	
Allowable bolt tension stress (Ft)	44.00	(Ksi) -->	*Per equation in AISC Table J3.3, if different bolts used accomodate for them.*
Allowable bolt tension force (Ba)	8.64	(Kips)	
Flange thickness req'd to develop Ba with no prying (tc)	0.62	(Inches)	
(alpha prime)	4.53	*Value for alpha where (treq'd) is a min or (Tall) is a max*	
(alpha)	Alpha <= 0	*Ratio of moment at bolt line to moment at web line*	

FLANGE BENDING

Allowable bolt force on Flanges (Ta1)	2.65	(Kips)
Actual bolt force on Flanges (T)	0.54	(Kips)
	$\boxed{T <= Ta1\ (O.K.)}$	

T = Applied tension per bolt (exclusive of intial tightening & prying force)



TENSION ON BOLTS WITH PRYING ACTION

Prying force (Q)	0.00	(Kips)
Allowable bolt force (Ta2)	8.64	(Kips)
Actual bolt force (T)	0.54	(Kips)
	$\boxed{T <= Ta2\ (O.K.)}$	

ASSUMPTIONS

Tributary flange length (P) is a value based on engineering judgement for the particular connection type

A-36 steel

Allowable tension stress for A-325 bolts based on bearing-type connection with threads included in shear plane

Concept of Prying Action

As the flange gets in elastic range and flange begins to rotate, the tip comes in contact with other material and a couple is somewhat formed. This causes a decrease in the flange stress, but it increases stress in bolt.

RISA 3D (R) Version 2.1

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6850 S. Harlem Avenue
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Job : 97-102
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Frame Analysis of 12x24

===================< Member Stresses, LC 1 : Dead + Wind >==================

Member	Sec	Axial Ksi	Shear y-y Ksi	Shear z-z Ksi	Bending y-top Ksi	Bending y-bot Ksi	Bending z-top Ksi	Bending z-bot Ksi
1		0.38	4[illegible]	0.00	-12.69	12.69	0.00	0.00
		0.38	08	0.00	-7.62	7.62	0.00	0.00
		0.37	69	0.00	-4.10	4.10	0.00	0.00
	4	0.36	30	0.00	-2.11	2.11	0.00	0.00
		0.35	08	0.00	-1.68	1.68	0.00	0.00
2		0.35	57	0.00	-1.68	1.68	0.00	0.00
		0.35	43	0.00	-0.94	0.94	0.00	0.00
		0.34	29	0.00	-0.42	0.42	0.00	0.00
	4	0.34	14	0.00	-0.10	0.10	0.00	0.00
		0.34	0[illegible]	0.00	0.00	-0.00	0.00	0.00
		0.00	0[illegible]	0.00	0.00	0.00	0.00	0.00
		0.00	0[illegible]	0.00	0.00	0.00	0.00	0.00
		0.01	0[illegible]	0.00	0.00	0.00	0.00	0.00
	4	0.01	00	0.00	0.00	0.00	0.00	0.00
		0.01	00	0.00	0.00	0.00	0.00	0.00
4	1	0.01	65	0.00	0.00	0.00	0.00	0.00
		0.02	65	0.00	-2.61	2.61	0.00	0.00
		0.03	65	0.00	-5.22	5.22	0.00	0.00
	4	0.04	65	0.00	-7.83	7.83	0.00	0.00
		0.05	65	0.00	-10.44	10.44	0.00	0.00
5		0.40	0[illegible]	0.00	0.00	0.00	0.00	0.00
		0.40	0[illegible]	0.00	0.01	-0.01	0.00	0.00
		0.40	00	0.00	0.02	-0.02	0.00	0.00
	4	0.40	0[illegible]	0.00	0.01	-0.01	0.00	0.00
	5	0.40	0[illegible]	0.00	0.00	0.00	0.00	0.00

upright / outrigger connection

.52

1/4

$J = 2\pi(5.375)^3 = 975.7\,(2\text{ sides}) = 1951.39\ in^4$

$f_v = (.52)(12)(5.375)/1951.4 = .41^k/in$

$a = \frac{.41}{10(.8)} = .03'' < 1/4''$ ∴ 1/4" Δ a.a. ok

Member AISC Unity Checks, LC 1 : Dead + Wind

Member	Joints I	Joints J	Unity Chk	Loc	Shear Chk	Loc	Fa (Ksi)	Fb yy (Ksi)	Fb zz (Ksi)	Cb	Cm yy	Cm zz	ASD Eqn
[illegible]	[illegible]	[illegible]	0.791 ok	[illegible]	0.102	1y	8.82	27.00	16.42	1.00	0.60	0.85	H1-2
[illegible]	[illegible]	[illegible]	0.087	[illegible]	0.040	1y	18.53	27.00	23.76	1.00	0.60	0.85	H1-2
[illegible]	4	[illegible]	0.001	[illegible]	0.000	1y	18.53	27.00	23.76	1.00	0.60	0.60	H1-1
[illegible]	[illegible]	[illegible]	0.638	[illegible]	0.045	1y	8.82	27.00	16.42	1.00	0.60	0.60	H1-2
[illegible]	[illegible]	[illegible]	0.021	[illegible]	0.001	1y	19.71	27.00	23.76	1.00	0.60	1.00	H1-3

DEAD LOAD CALCULATIONS PER FRAME

30-Aug-97

***Note: If 2 Faces apply, then accomodate for it in the QUANTITY column.*
(TORSION PIPE weight is NOT included!!)

Tributary Span Length =	**12**	**(Feet)**	Frame 'A' + 'B'
Upright Length =	**15.5**	**(Feet)**	
Outrigger Length =	**1.5**	**(Feet)**	
Rear Catwalk Support Length =	**1.33**	**(Feet)**	
Saddle Length =		**(Feet)**	

Quantity	Description	(#/Ft or psf)	(#)
[illegible]	4 x 6 (nom) Douglas Fir (Walkrail)	4	96.00
[illegible]	4 x 6 (nom) Douglas Fir (Stringer)	4	384.00
[illegible]	4 x 3 x 1/4 (Front C.W. Angle)	5.8	278.40
	24" Wide (Front C.W. Grating)	3.14	150.72
	12' Height (Sign Face)	2.5	720.00
	2' Height (Apron)	2	96.00
	W6 x 9 (4' LG.) (Fnt C.W. Support)	9	72.00
	W6 x 9 (Rear C.W. Support)	9	11.97
	W8 x 15 (Upright)	15	465.00
	W16 x 26 (Outrigger)	26	39.00
2313.09	**Subtotal**		
231.31	**10% Misc.**		
2.54	***Total Load (Kips)***		

Column Pipe

← [illegible] construction

$P_{[illegible]} = 4(24)(30)(.75)/1000 = 7.56^{k}$

$P_{[illegible]} = 42(21)(30)[illegible]/1000 = .95^{k}$

$M = [7.56[[illegible] + 2[illegible]] + .95(21/2)](12) = 2660^{k\text{-}in}$

Try $24"\phi \times .3125$ $F_y = 35^{ksi}$ $D/t < 3300/F_y$ ∴ $F_b = .66(F_y)$

$S = 135.94\ in^3$

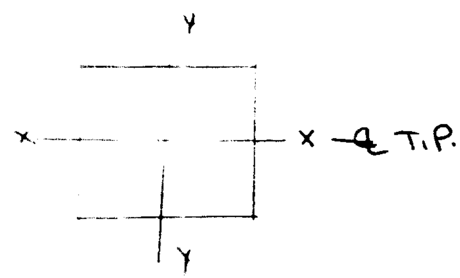
$f_b = 2660/135.94 = 19.56^{ksi} < 23.1^{ksi}$ ∴ ok

Use $24"\phi \times .3125$

Foundation Load

$M = 2660(1.33) = 3537.8^{k\text{-}in}$

Head Connection Loads



$P_y = 7.56^{k}$

$M_x = 7.56[14/2 - 1 + [illegible]](12)$

$= [illegible]35^{k\text{-}in}$

HEAD CONNECTION BOLT ANALYSIS

(X-X Axis is Parallel with Torsion Pipe)

DATE
30-Aug-97

BOLT

Diameter	0.625	(Inches)
Area	0.3068	(Inches^2)
Number	3	

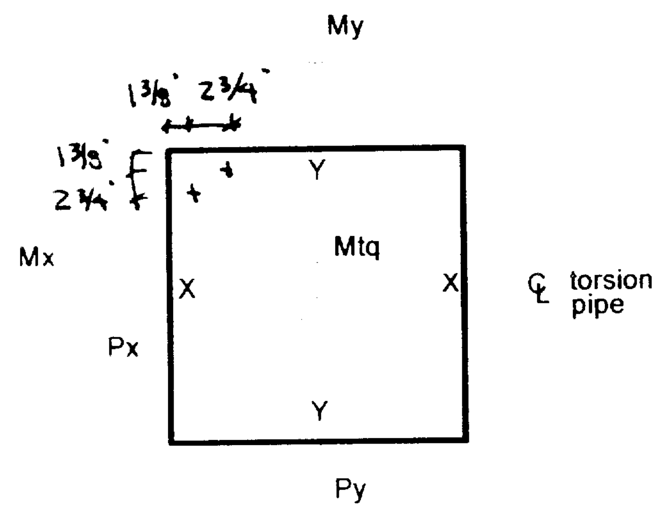
COLUMN PIPE

Diameter	**24**	(Inches)

BOLT DISTANCES FROM CENTERLINE OF HEAD PLATE (Enter 0 if no bolt)

IMPORTANT: X-X Axis is parallel with Torsion Pipe

	X-Direction (In)	Y-Direction (In)	Dist to C.P.
Bolt #1	11.625	8.875	2.63
Bolt #2	3.375	11.625	2.63
Bolt #3	0	0	
Bolt #4	0	0	
Bolt #5	0	0	
Bolt #6	0	0	
Head Plate	[illegible]	24	



LOADS

Px		(Kips)
Py	56	(Kips)
Mx	[illegible]35	(Kip-In)
My		(Kip-In)
Mtq		(Kip-In)

PROPERTIES

Ix-x	262.50	(Inches^4)
Iy-y	262.50	(Inches^4)
J	525.00	(Inches^4)

SHEAR / TENSILE STRESSES & TENSILE FORCES

	Tensile Stress			Tensile Force	Shear Stress		
	ft(x)	ft(y)	ft(combined)	Pt(combined)	fv(x)	fv(y)	fv(resultant)
	(Ksi)	(Ksi)	(Ksi)	(Kips)	(Ksi)	(Ksi)	(Ksi)
Bolt #1	21.47	0.00	21.47	6.59	0.00	3.08	3.08
Bolt #2	28.12	0.00	28.12	8.63	0.00	3.08	3.08
Bolt #3							
Bolt #4							
Bolt #5							
Bolt #6							

BEARING TYPE CONNECTION WITH STANDARD HOLE SIZE

∴ 5/8"φ A-325

CHOOSE ONE

(1) = A-325-N	(Threads included)	*Fv = 21 Ksi*
(2) = A-325-X	(Threads excluded)	*Fv = 30 Ksi*
(3) = A-490-N	(Threads included)	*Fv = 28 Ksi*
(4) = A-490-X	(Threads excluded)	*Fv = 40 Ksi*

ACTUAL & ALLOWABLE STRESSES

	fv	Fv	ft	Ft	Stress Ratio	Equation
	(Ksi)	(Ksi)	(Ksi)	(Ksi)		
Bolt #1	3.08	21	21.47	43.52	0.493	Ft = [(44^2)-4.39*(3.08^2)]^.5
Bolt #2	3.08	21	28.12	43.52	0.646	Ft = [(44^2)-4.39*(3.08^2)]^.5
Bolt #3						Ft = [(44^2)-4.39*(0.00^2)]^.5
Bolt #4						Ft = [(44^2)-4.39*(0.00^2)]^.5
Bolt #5						Ft = [(44^2)-4.39*(0.00^2)]^.5
Bolt #6						Ft = [(44^2)-4.39*(0.00^2)]^.5

Note: If Ft & Stress Ratio reads "ERR" then try a higher strength bolt

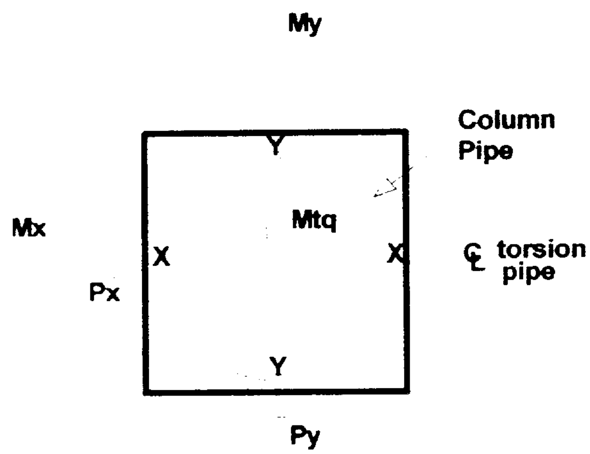
ASSUMPTIONS

Bolt # 1 is designated as the critical bolt
No gap exists between connection materials
In lieu of stresses being increased by 33% per AISC A5.2, the loads are inputed with the following factored equation: 1.0(D.L.) + .75 (W.L.)
A zero (0) has to be present in bolt location table
If a zero is present in the X-Direction column of the table then it is assumed that no bolt exists
Bolts are designed with the envelope approach which may be conservative (i.e. direction of loads is not accounted for).

HEAD CONNECTION PLATE TO COLUMN PIPE WELD ANALYSIS

(X-X Axis is Parallel with Torsion Pipe)

DATE
30-Aug-97



COLUMN PIPE

Diameter	**24**	(Inches)

LOADS

Px		(Kips)
Py	7.56	(Kips)
Mx	635	(Kip-In)
My		(Kip-In)
Mtq		(Kip-In)

WELD PROPERTIES

NOTE: Properties based on Leg of weld being 1"

Area	75.4	(In^2 / in)
Section Modulus (S)	452.4	(In^3 / in)
Polar Moment of Inertia (J)	10857.3	(In^4 / in)

STRESSES

NOTE: Stresses based on Leg of weld being 1"

			EQUATIONS
Tensile Stress (ft)	1.40	(Kips / In)	**[(635.0)^2 + (0.0)^2]^.5 / 452.4**
Shear Stress (fv)	0.20	(Kips / In)	**[2 * [((0.0)^2 + (7.6)^2)^.5] / 75.4] + [(0.0 * 12) / 10857.3]**
Resultant Stress (R)	1.42	(Kips / in)	**[(1.40)^2 + (0.20)^2]^.5**

WELD LEG SIZE (a)

a	0.11	(Inches)	**1.42 / (.707 * 18)**	∴ 1/4" ⊿ a.a.

ASSUMPTIONS

E60xx Electrodes
Shear on circular section = 2 * Force / Area
Weld of gussets to head plate is not accounted for
In lieu of stresses being increased by 33% per AISC A5.2, the loads are inputed with the following factored equation: 1.0(D.L.) + .75 (W.L.)
Weld is designed with the envelope approach which may be conservative (i.e. direction of loads is not accounted for).

gussets

M = (.59 + 8.63)(2.63) = 40 k-in

1/2 x 8" ℞

S = .5(8)²/6 = 5.33

fb = 40/5.33 = 7.5 ksi ok

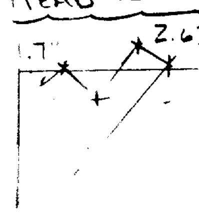
gusset horizontal weld

fv = (.59 + 8.63) / (2 sides (6" long)) = .152 k/in

a = .152 / (.707(18)) = .119 < .25

use 1/2 x 8 gusset w/ 1/4 ⊿ a.a.

HEAD ℞ thickness



$\ell_1 = 2.63"$ $\ell_2 = 1.7"$

$P_1\ell_1^3 = P_2\ell_2^3$

$P_1 = \frac{1.7^3}{2.63^3} P_2 = .27 P_2$

$P_1 + P_2 = 8.63^k$

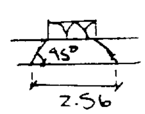
$1.27P_2 = 8.63 \Rightarrow P_2 = 6.8^k$

$\therefore P_1 = 1.83^k$

$M_1 = \frac{1.83^k(2.63 - \frac{.53}{2})}{2} = 2.16^{k\text{-in}}$

$M_2 = \frac{6.8^k(1.7 - \frac{.53}{2})}{2} = 4.88^{k\text{-in}} \rightarrow$ governs

try 3/4" ℞



$S = 2.56(.75)^2/6$
$= .24$

$f_b = 4.88/.24 = 20.33^{ksi} < 27^{ksi}$ ∴ ok

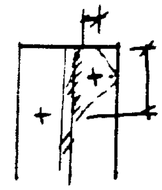
∴ use 3/4" x 26" x 26"

Head Connection Cont.

Check top gussets

- try W16x31 connecting riggers

$t_{fl} = .44$ in



$M = Pe/2 = 8.63^{k}(.625)/2 = 2.69^{k\text{-}in}$

$S = 3.375(.44)^2/6 = .109\ in^3$

$f_b = 2.69/.109 = 24.6^{ksi} < 27^{ksi}$ ∴ ok

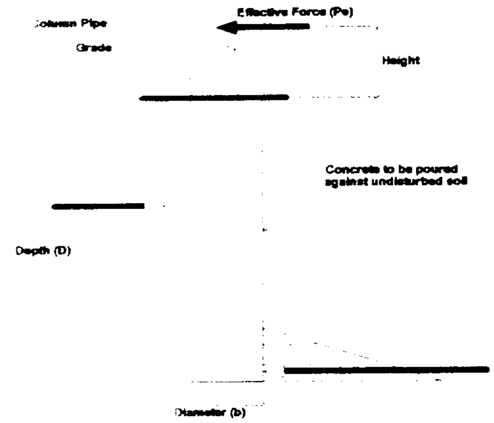
∴ use W16x31 (no top gussets req'd)

Dellzo shaft

Laterally Loaded Footing with Nonconstrained Condition

30-Aug-97

Foundation Design based on Equations From the Uniform Building Code)



SIGN CONFIGURATION

Sign Face Height	12	(Feet)
Apron Height	2	(Feet)
H.a.g.l.	21	(Feet)

FOOTING

Diameter (b)	**3.5**	(Feet)

WORKING LOADS (i.e. 1.0(D.L.) + 1.0(W.L.)

Live Load Moment	3537 8	(Kip-In)
Dead Load Moment		(Kip-In)
Effective Force (Pe)	10.5	(Kips)
Height from Grade to Pe (H)	28	(Feet)

AllOWABLE LATERAL BEARING SOIL PRESSURE CALCULATION TO DETERMINE DEPTH

Soil pressure	**0.15**	(ksf per ft of depth)	
Trial Depth	13.2	(Feet)	*IMPORTANT: After iterations are complete this value is to be as close to actual depth value (d) but not greater than*
Effective Depth	4.40	(Feet)	*Based on 1/3 the depth of embedment, but not to exceed 12'.*

Allowable Stress Increase Factors

2 = allowance for 1/2" deflection @ grade

1.33 = Allowable stress increase factor per 1603.5 (Choose 1 or 2 for increase)

(1=Yes or 2=No)=> 1

Allowable Soil Pressure (S1)	**1.76**	(ksf)	**S1=2 x 4.40 x 1.33 x 0.150**
A	4.01		**A = (2.34 x 10.5) / (1.76 x 3.5)**
Depth (d)	13.2	(Feet)	**d = (4.01 / 2) x [1 + (1 + (4.36 x 28.0 / 4.01))^.5]**
	O.K		

USE 3'-6" ϕ x 13'-6" depth

April 19, 2000
File 23-484280

Mr. Ed Cook
County of Sacramento
Building Inspection Division
4101 Branch Center Road
Sacramento, CA 95827

Subject: **Final Report**
Construction Materials Testing and Special Inspection Services
Billboard Sign
8908 Elder Creek Road
Sacramento, CA 95814
City of Sacramento Permit No. 990-9225 & 990-9232 8908 Elder Creek Rd.

During construction of the subject project, personnel of our firm have provided special inspection services in general conformance with Section 1701 of the Uniform Building Code. These construction observation services were performed on April 4th, 2000. The scope of our services consisted of the following:

- Concrete placement observation and testing.

Based on the construction observations and testing of our representatives, it is our opinion the work observed requiring special inspection was, to the best of our inspector's knowledge, in conformance with the approved plans and specifications. Our services did not include architectural detailing observations such as dimensioning, color, fit, or finish.

We have performed our services in a manner consistent with the level of care and skill ordinarily exercised by inspection firms practicing in the same locality under similar conditions. No other representation, expressed or implied, and no warranty or guarantee is included or intended. Our services have been completed within the responsibilities, authority, and legal protection of an agency Deputy Inspector.

If you have any questions regarding the contents of this report or require additional information, please contact this office.

Sincerely,

KLEINFELDER, INC.

Theodore Oien

Theodore Oien
Project Manager

CC: Lawrence Obie
23-484280/23100R150