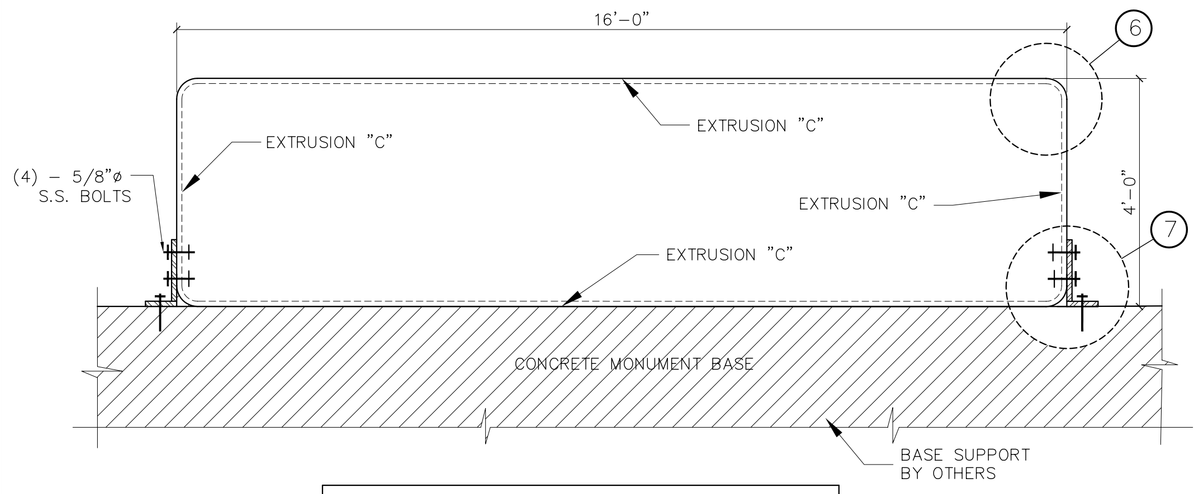
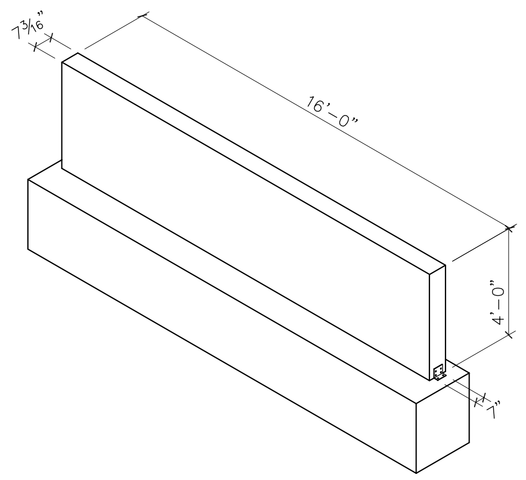
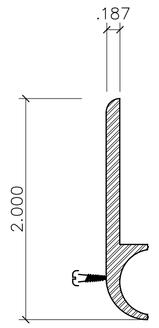


PROPERTIES SCHEDULE				
SIGN SIZE HxW	PIPE SIZE	UPPER PLATE	LOWER PLATE	BOLTS (ø)
4' x 16'	TS 6' x 6"	ANGLE 11 x 5 x 5/8" 7" LONG	ANGLE 11 x 5 x 5/8" 7" LONG	5/8

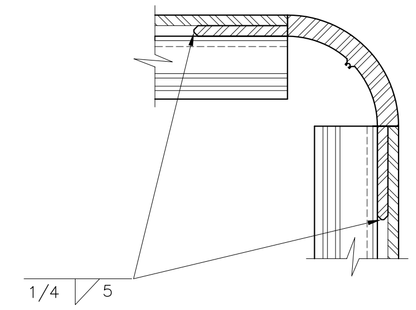
ELEVATION N.T.S. 1



ISOMETRIC VIEW N.T.S. 2



EXTRUSION "D" N.T.S. 5



CORNER DETAIL N.T.S. 6

GENERAL NOTES & SPECIFICATIONS

1. GOVERNING CODES:

SOUTH FLORIDA BUILDING CODE (ASCE 7-98)	120 MPH, EXP. C
SOUTHERN STANDARD BUILDING CODE	138 MPH
UNIFORM BUILDING CODE, 1997	124 MPH, EXP. C

2. DESIGN LOADS:

DEAD LOAD	6 LBS. PER SQ. FT.
WIND LOAD	66.0 LBS. PER SQ. FT.

3. RESTRICTIONS:

A. THE DESIGN LOADS ABOVE ARE BASED ON A HEIGHT ABOVE GROUND OF 25 FEET MAXIMUM.

4. LIMITATIONS:

THE DESIGN AND CONSTRUCTION OF THE SIGN SHOWN HEREON CONFORMS TO THE ABOVE GOVERNING CODES WHEN INSTALLED AS SPECIFIED ON THIS DRAWING. NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. ANY ALTERATIONS OF THIS DRAWING WILL VOID THE SHEET. THIS SHEET IS VALID ONLY IF SIGNED IN INK BY THE ENGINEER. THE METHOD OF ATTACHMENT TO SUPPORTS (POLES, WALLS, ETC.) IS NOT A PART OF THIS WORK AND MUST BE DESIGNED AND DETAILED BY OTHERS.

5. MATERIALS:

A. ALUMINUM – ALLOY 6061-T6 OR 6005-T5
BOLTS – ASTM F593
SIGN PANELS – TO BE UNDERWRITERS LABORATORY APPROVED. USE ONLY APPROVED PLASTICS.

B. PROVIDE ISOLATION OF DISSIMILAR MATERIALS.

6. WORKMANSHIP:

ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE GOVERNING CODE (LATEST EDITION) AND THE LOCAL BUILDING OFFICIAL. WELDING SHALL CONFORM TO ALL APLICABLE CODES. CERTIFIED WELDERS ARE REQUIRED.

7. WELD SPECIFICATIONS:

STEEL WELDING
ALL WELDING SHOULD BE PERFORMED BY CERTIFIED WELDERS. WELDS USING E70 ELECTRODES OR WIRES AND AWS APPROVED SYSTEMS AND PROCEDURES ARE ACCEPTABLE. PROVIDE PERIODIC SPECIAL INSPECTION FOR FIELD WELDING IN ACCORDANCE WITH UBC SECTION 1701.5.

ALUMINUM WELDING
ALL WELDING SHALL BE DONE IN ACCORDANCE WITH LATEST EDITION OF THE AMERICAN WELDING SOCIETY D1.2 STRUCTURAL WELDING CODE ALUMINUM.

4' x 16' SIGN

WIND:
W = 66 x 4' x 0.5 = 132 LB/FT
M = 132 x (16)^2 /8 = 4225 FT LB
f = 4225 x 12 / 5.028 = 10084 PSI < 28000 PSI O.K.

GRAVITY:
LOWER FRAME SUPPORTS ENTIRE DEAD LOAD

LOWER FRAME:
W = 6 x 16/2 = 48 LB/FT
M = 48 x (4)^2 /2 = 384 FT LB = 4608 INCH-LB
f (FLG)= 4608 / 0.630 IN.^{3} = 7315 PSI
f (WEB)= 4608 / 1.845 IN.^{3} = 2498 PSI

COMBINED STRESS:
10084/17500 + 7315/28000 = 0.577 + 0.262 = 0.839 < 1.33 O.K.

MOMENT AT CORNER:
W= 66 x (4/2) = 132 LB/FT
M = 132 x (16/2) (48 – 6.5) = 43830 LB-IN

BOLTS AT FRAME:
T = 43830 LB-IN / 2 x 6.7 =3270 LB

USE (4) – 5/8" ø S.S. BOLTS

BOLTS AT BASE:
M = 66 x (16/2) x 4 x 0.5 x 12 = 12672 LB-IN
P(T) = 12672 /5 = 2534 LB
P(V) = 66 x 16 x 4 x 0.5 x 0.5 =1056 LB

USE (2) – 5/8" ø S.S. BOLTS

CHECK ATTACHMENT ANGLE:
CANTILEVER BENDING MOMENT
M = 66 x (4/2) x 4 x 12 = 6336 LB-IN
S = 0.625 x (7)^2 / 6 = 5.1 IN^3

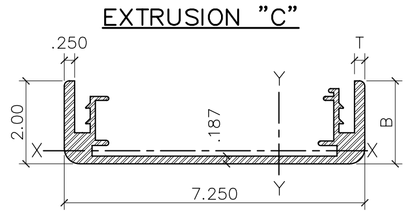
BENDING STRESS:
f(b) = 6336 LB-IN / 5.1 IN^3 = 1240 PSI O. K.

SHEAR STRESS:
f(s) = 6336 LB-IN / 0.3 x 7 x (0.625) = 7724 PSI

ALLOWABLE SHEAR STRESS:
F(s) = 8500 PSI x 1.33 = 11300 PSI > 7724 PSI O. K.

USE WELDED ANGLE 11" x 5" x 5/8" x 7" LONG

EXTRUSION "C"



X-X AXIS
A = 2.50
I = 1.03
S = 1.845 BOTTOM
S = 0.630 TOP

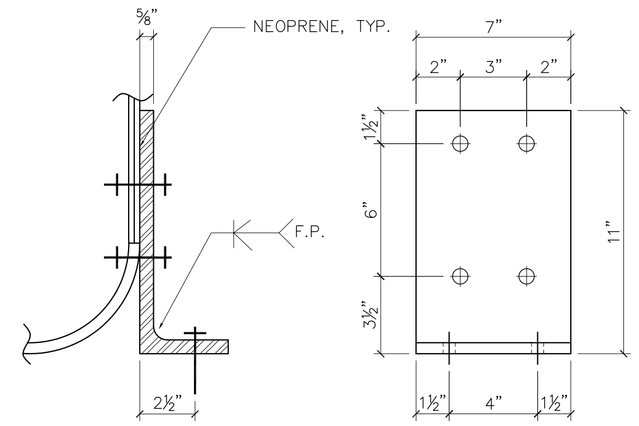
Y-Y AXIS
A = 2.50
I = 18.23
S = 5.028 LEFT
S = 5.028 RIGHT

ALLOWABLE STRESSES:

BENDING TENSION:
X-X AXIS
Fb = 28 KSI
Y-Y AXIS
Fb = 19 KSI

BENDING COMPRESSION:
X-X AXIS
FLANGES:
b/t = 2.00 / .250 = 8.0 < 9.8
Fb = 28 KSI

Y-Y AXIS
FLANGES:
b / t = 2.00 / .250 = 8.0
Fb = 27.3 – 0.93 b / t = 19.9 KSI
WEB:
Lb / ry = $\frac{12 \times 12}{2.78}$ = 51.86
Fb = 23.9 – 0.124 $\frac{Lb}{ry}$ = 17.5 KSI



CONN. AT SIGN BASE N.T.S. 7

REVISIONS	BY	DATE
1	YV	8/06/01

STRUCTURAL TECHNOLOGY
CONSULTANTS INCORPORATED
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651 ARROYO DRIVE
SAN DIEGO, CA 92103

SIGNTRON
1445 W. SEPULVEDA BLVD. TORRANCE CA. 90509
(310) 534-7500

UPPER MONUMENT

SIGN ELEVATION,EXTRUSIONS AND MISCELLANEOUS DETAILS

DATE: 05/10/01
JOB No. 489 D
DESIGNED: WTN
DRAWN BY: JSG
APPROVED BY: WTN

489 – UM

SHEET 13 OF 14