CARL E. THOMPSON, JR., P.E.

Mailing Address: P.O. Box 305, Athens, TN 37371
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Email: Carl.E.Thompson.Jr.PE@gmail.com

Project #: **23-0238**

Structural Calculations

2022 Oregon Structural Specialty Code (OSSC) (ASCE 7-16) Risk Category II, 100-mph
On Running | Blade Wall Sign A 1'-11" x 1'-4 3/4"
Location: On Running, 529 NW 23rd Ave, Portland, OR 97210

for

TRIANGLE SIGN SERVICES

11 Azar Court • P.O. Box 24186
Baltimore, Maryland 21227
T: 410-247-5300 • F: 410-247-1944

P.O.#: 070329

This document has been electronically signed and sealed by **Carl E. Thompson, Jr., P.E.** using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

RENEWS: 06/30/2024

SUBMITTED 1/2/2024

October 20, 2023

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On Running	Blade Wall Sign A 1'-11" x 1'-4 3/4"	23-0238
Location: On Running, 529 NW 23rd Ave, Portland, OR 97210	
Section: Structural Calculations	Sheet no./rev.: 2

Calc. by	Date	Chk'd by	Date
D.J.W.	10/20/2023	C.E.T.	10/20/2023

REGISTERED PROFESSIONAL ENGINEER 88057 10/20/2023 OREGON JUN. 10, 2014 CARL EVERETT THOMPSON, JR.

RENEWS: 06/30/2024

Building Codes

2022 Oregon Structural Specialty Code (OSSC)
2021 International Building Code, ASCE 7-16, ACI 318-19

DESIGN LOADS

WIND LOADING

In accordance with ASCE7-16
Using the components and cladding design method

Tedds calculation version 2.1.14

Building data

Type of roof	Flat	Length of building	b = 200.00 ft
Width of building	d = 60.00 ft	Height to eaves	H = 30.00 ft
Mean height	h = 30.00 ft		
End zone width	a = 6.00 ft		

General wind load requirements

Basic wind speed	V = 100.0 mph	Risk category	II
Exponent coef (Table 26.6-1)	K_d = 0.85	Elevation above sea level	z_{gl} = 0 ft
Ground elevation factor	K_e = 1.00	Exposure category (cl 26.7.3)	B
Enclosure class (cl.26.12)	Enclosed buildings	Int pres coef +ve	GC_{pi_p} = 0.18
Int pres coef –ve	GC_{pi_n} = -0.18		
Gust effect factor	G_f = 0.85		

Topography

Topo factor not significant K_{zt} = 1.0

Velocity pressure

Velocity pressure coefficient	K_z = 0.70	Velocity pressure	q_h = 15.2 psf

Peak velocity pressure for internal pressure

Peak velocity pressure – int q_i = 15.23 psf

Equations used in tables

Net pressure $p = q_h \times [GC_p - GC_{pi}]$

Components and cladding pressures - Wall (Table 30.3-1)

Component	Zone	Length (ft)	Width (ft)	Eff. area (ft^2)	$+GC_p$	$-GC_p$	Pres (+ve) (psf)	Pres (-ve) (psf)
Blade Wall Sign	5	1.9	1.4	2.7	0.90	-1.26	16.5	-21.9

Ultimate Design Wind Pressure, P_{ULT} = **21.9** psf

SNOW LOAD REQUIREMENTS

In accordance with ASCE 7-16

Design Ground Snow Load, S_{Snow} = 25.0 psf
Weight of Snow Load, $W_s = S_{Snow}$ * (16.75 in) * (2 in) = 5.816 lbs (on the top of the sign)

SEISMIC LOAD REQUIREMENTS

In accordance with ASCE 7-16

Seismic Design Parameters: Seismic Design Category D, Risk Category II, Site Class D (Default): S_S= 0.887 S_1= 0.399

Seismic Demands on Non-Structural Components (Billboards & Signs) (Sect 13.3.1)

Numerical Seismic design Value at 0.2s SA S_{DS} = 0.710
Effective seismic weight of the structure W_p = 30 lbs (conservative approximation)
Componant Importance Factor (section 13.1.3) I_p = 1.0
Componant Amplification Factor (table 13.5-1) a_p = 2.5
Componant Respone Modification Factor (table 13.5-1) R_p = 3.0
Height in structure of point of attachment of component with respect to the base, z = (14 ft + 0 in) = 14.000 ft
Average roof (top) height of structure with respect to the base., h = (30 ft + 0 in) = 30.000 ft
Seismic Design Force (Eq 13.3-1), $F_p = (0.4 * a_p * S_{DS} * W_p)/(R_p / I_p) * (1+2 * (\min(z/h, 1)))$ = 13.7 lbs
Concurrent Vertical Force (Section 13.3.1.2), $F_c = W_p * S_{DS} * 0.2$ = 4.260 lbs

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REGISTERED PROFESSIONAL ENGINEER
88057
10/20/2023
OREGON
JUN. 10, 2014
CARL EVERETT THOMPSON, JR.

RENEWS: 06/30/2024

Design Load Geometry

Tributary Load Area,
$Area_1 = (1\ ft + 11\ in) * (1\ ft + 4.75\ in) = 2.675\ ft^2$
$Area_2 = (0\ ft + 2\ in) * (0\ ft + 4.375\ in) = 0.061\ ft^2$

Centroid of Area,
$Centroid_1 = (1\ ft + 4.75\ in)/2 + (0\ ft + 4.375\ in) = 1.062\ ft$
$Centroid_2 = (0\ ft + 4.375\ in)/2 = 0.182\ ft$

Total Area,
$Area_{Total} = Area_1 + Area_2 = 2.736\ ft^2$

Distance of resultant lateral force,
$d_r = (((Area_1 * Centroid_1) + (Area_2 * Centroid_2))/Area_{Total}) = 1.043\ ft$

Moment of Area,
$Area_{Moment} = d_r * Area_{Total} = 2.854\ ft^3$

Load Factor for 2-Support Design,
$LCB_F = 1/2$

Design Loads per Support

Vertical Dead Load Moment,
$M_{oment\_Dead} = (W_p) * d_r = 31.289\ lb\_ft$
Vertical Dead Load Shear,
$S_{hear\_Dead} = (W_p) = 30.000\ lbs$

Horizontal Wind Load Moment,
$M_{oment\_Wind} = P_{ULT} * Area_{Moment} = 62.495\ lb\_ft$
Horizontal Wind Load Shear,
$S_{hear\_Wind} = P_{ULT} * Area_{Total} = 59.921\ lbs$

Horizontal Seismic Moment,
$M_{oment\_Seismic\_H} = F_p * d_r = 14.316\ lb\_ft$
Horizontal Seismic Shear,
$S_{hear\_Seismic\_H} = F_p = 13.727\ lbs$

Vertical Seismic Load Moment,
$M_{oment\_Seismic\_V} = (F_c) * d_r = 4.443\ lb\_ft$
Vertical Seismic Load Shear,
$S_{hear\_Seismic\_V} = (F_c) = 4.260\ lbs$

Vertical Snow Load Moment,
$M_{oment\_Snow} = (W_s) * d_r = 6.066\ lb\_ft$
Vertical Snow Load Shear,
$S_{hear\_Snow} = (W_s) = 5.816\ lbs$

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Structural Calculations	4

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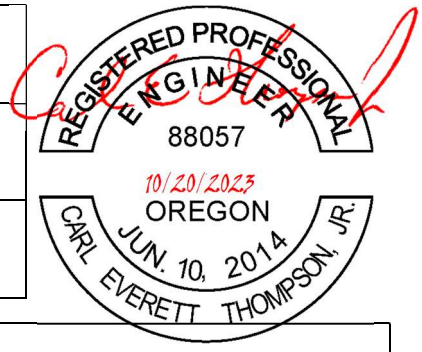

RENEWS: 06/30/2024

ASD Load Combinations

(#) Denotes Concurrent Combination Number

ASD Vertical Shear Load Combinations

(1) 1.0 x D, $V_{1V} = S_{hear\_Dead} = \mathbf{30.000}$ lb
(2) 1.0 x D + 0.6 x W, $V_{2V} = S_{hear\_Dead} + 0.6* 0.0$ lb $= \mathbf{30.000}$ lb
(3) 1.0 x D + 1.0 x S, $V_{3V} = S_{hear\_Dead} + S_{hear\_Snow} = \mathbf{35.816}$ lb
(4) 1.0 x D + 0.75(0.6* W) + 0.75 x S, $V_{4V} = S_{hear\_Dead} + 0.75* S_{hear\_Snow} = \mathbf{34.362}$ lb
(5) 1.0 x D + 0.7 x E, $V_{5V} = S_{hear\_Dead} + 0.7* S_{hear\_Seismic\_V} = \mathbf{32.982}$ lb
(6) 1.0 x D + 0.75*(0.7 x E)+ 0.75 x S, $V_{6V} = S_{hear\_Dead} + 0.75*(0.7* S_{hear\_Seismic\_V}) + 0.75* S_{hear\_Snow} = \mathbf{36.598}$ lb

ASD Horizontal Shear Load Combinations

(1) 1.0 x D, $V_{1H} = 0.0$ lb $= \mathbf{0.000}$ lb
(2) 1.0 x D + 0.6 x W, $V_{2H} = 0.0$ lb $+ 0.6* S_{hear\_Wind} = \mathbf{35.953}$ lb
(3) 1.0 x D + 1.0 x S, $V_{3H} = 0.0$ lb $+ 0.0$ lb $= \mathbf{0.000}$ lb
(4) 1.0 x D + 0.75(0.6* W) + 0.75 x S, $V_{4H} = 0.0$ lb $+ 0.75* (0.6* S_{hear\_Wind}) + 0.75* 0.0$ lb $= \mathbf{26.964}$ lb
(5) 1.0 x D + 0.7 x E, $V_{5H} = 0.0$ lb $+ 0.7* S_{hear\_Seismic\_H} = \mathbf{9.609}$ lb
(6) 1.0 x D + 0.75(0.7* E) + 0.75 x S, $V_{6H} = 0.0$ lb $+ 0.75*(0.7* S_{hear\_Seismic\_H}) + 0.75* 0.0$ lb $= \mathbf{7.206}$ lb

ASD Vertical Moment Load Combinations

(1) 1.0 x D, $M_{1V} = M_{oment\_Dead} = \mathbf{31.289}$ lb_ft
(2) 1.0 x D + 0.6 x W, $M_{2V} = M_{oment\_Dead} + 0.6* 0.0$ lb_ft $= \mathbf{31.289}$ lb_ft
(3) 1.0 x D + 1.0 x S, $M_{3V} = M_{oment\_Dead} + M_{oment\_Snow} = \mathbf{37.354}$ lb_ft
(4) 1.0 x D + 0.75(0.6* W) + 0.75 x S, $M_{4V} = M_{oment\_Dead} + 0.75*(0.6* 0.0$ lb_ft$) + 0.75* M_{oment_Snow} = \mathbf{35.838}$ lb_ft
(5) 1.0 x D + 0.7* E, $M_{5V} = M_{oment\_Dead} + 0.7* M_{oment\_Seismic\_V} = \mathbf{34.399}$ lb_ft
(6) 1.0 x D + 0.75(0.7* E) + 0.75 x S, $M_{6V} = M_{oment\_Dead} + 0.75*(0.7* M_{oment\_Seismic\_V}) + 0.75* M_{oment\_Snow} = \mathbf{38.170}$ lb_ft

ASD Horizontal Moment Load Combinations

(1) 1.0 x D, $M_{1H} = 0.0$ lb_ft $= \mathbf{0.000}$ lb_ft
(2) 1.0 x D + 0.6 x W, $M_{2H} = 0.0$ lb_ft $+ 0.6* M_{oment\_Wind} = \mathbf{37.497}$ lb_ft
(3) 1.0 x D + 1.0 x S, $M_{3H} = 0.0$ lb_ft $+ 0.0$ lb_ft $= \mathbf{0.000}$ lb_ft
(4) 1.0 x D + 0.75(0.6* W) + 0.75 x S, $M_{4H} = 0.0$ lb_ft $+ 0.75* (0.6* M_{oment\_Wind}) + 0.75* 0.0$ lb_ft $= \mathbf{28.123}$ lb_ft
(5) 1.0 x D + 0.7* E, $M_{5H} = 0.0$ lb_ft $+ 0.7* M_{oment\_Seismic\_H} = \mathbf{10.021}$ lb_ft
(6) 1.0 x D + 0.75(0.7* E) + 0.75 x S, $M_{6H} = 0.0$ lb_ft $+ 0.75*(0.7* M_{oment\_Seismic\_H}) + 0.75* 0.0$ lb_ft $= \mathbf{7.516}$ lb_ft

Worst Case Concurrent ASD Factored Design Loads (per support) (load combination 2 controls)

Vertical Moment, $M_{oment\_V} = M_{2V} * LCB_F = \mathbf{15.644}$ lb_ft
Vertical Shear, $S_{hear\_V} = V_{2V} * LCB_F = \mathbf{15.000}$ lbs

Horizontal Moment, $M_{oment\_H} = M_{2H} * LCB_F = \mathbf{18.748}$ lb_ft
Horizontal Shear, $S_{hear\_H} = V_{2H} * LCB_F = \mathbf{17.976}$ lbs

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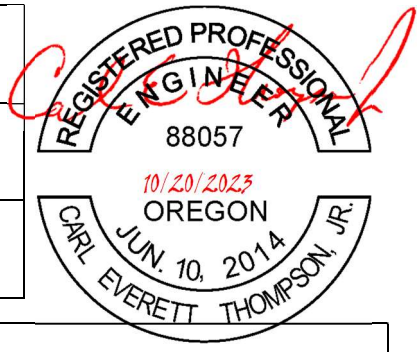

Wall Fastener Design

Use: (4) 1/4"Ø 316A Class 2A Stainless Steel Threaded Rod &Equivalent Nuts & Washers. RENEWS: 06/30/2024

F_u = **75** ksi $F_t = (0.75/2) * F_u$ = **28.125** ksi $F_v = (0.450/2) * F_u$ = **16.875** ksi

Bolt Diameter, $Bolt_{dia}$ = **0.250** in

Bolt Area, $Bolt_{area} = (\pi * (Bolt_{dia})^2 / 4)$ = **0.049** in^2

Vertical Plate Width, Y = **1.38** in Horizontal Plate Width, X = **1.38** in Support Depth, d = **1** in

Vertical Bolt Spacing, $Bolt_{spacing\_Y}$ = **1.38** in Horizontal Bolt Spacing, $Bolt_{spacing\_X}$ = **1.38** in

Vertical Plate Prying Distance (Dead Load), $Plate_{Prying\_Distance\_Y}$ = **16.375** in

Horizontal Plate Prying Distance (Wind Load), $Plate_{Prying\_Distance\_X}$ = **2.17** in

Shear Check

Number of Bolts in Shear,	$N\_Bolt_{shear\_Y}$ = 2
Number of Bolts in Shear,	$N\_Bolt_{shear\_X}$ = 2
Shear Vertical Load per Bolt,	$Bolt_{shear\_Y} = S_{hear\_V} / N\_Bolt_{shear}$ = **7.500** lbs
Shear Horizontal Load per Bolt,	$Bolt_{shear\_X} = S_{hear\_H} / N\_Bolt_{shear}$ = **8.988** lbs
Shear Total Load per Bolt (worst case),	$Bolt_{shear} = Bolt_{shear\_Y} + Bolt_{shear\_X}$ = **16.488** lbs
Shear Stress on Bolt,	$f_v = Bolt_{shear} / Bolt_{area}$ = **0.336** ksi
Unity Check: Mounting Bolt Shear,	$UC_v = f_v / F_v$ = **2.0** % **< 100% OK**

Tension Check

Number of Bolts in Tension per Column,	$N\_Bolt_{tension\_Y}$ = 2
Number of Bolts in Tension per Column,	$N\_Bolt_{tension\_X}$ = 2
Number of Threads Per Inch,	n_t = **20.0** per AISC13, Table 7-18
Tensile Area of Bolt,	$A_t = (\pi / 4) * (Bolt_{dia} - 0.9743 \text{ in} / n_t)^2$ = **0.032** in^2
Tension Vertical Load per Bolt,	$Bolt_{tension\_Y} = M_{oment\_V} / (N\_Bolt_{tension} * Bolt_{spacing\_Y})$ = **17.005** lbs
Tension Horizontal Load per Bolt,	$Bolt_{tension\_X} = M_{oment\_H} / (N\_Bolt_{tension} * Bolt_{spacing\_X})$ = **20.379** lbs
Tension Total Load per Bolt (worst case),	$Bolt_{tension} = Bolt_{tension\_Y} + Bolt_{tension\_X}$ = **37.383** lbs
Tensile Stress in Bolt,	$f_t = Bolt_{tension} / A_t$ = **1.175** ksi
Unity Check: Mounting Bolt Tension,	$UC_t = f_t / F_t$ = **4.2** % **< 100% OK**

Combined Tension & Shear

$UC_{tv} = UC_t^2 + UC_v^2$ = **0.2** % **< 100% OK**

HILTI HIT-HY 270 Adhesive Anchoring System (1/4"Ø with 3.125" minimum embedment)

Ultimate Design Tension Strength, N_{des} = **530** lb Per HILTI, Section 3.2.5, Table 11 (hollow brick)

Allowable Stress Safety Factor, α_{ASD} = **1.6** (HILTI Section 3.1.8.6)

ASD Tension Strength (non-static loads), $N_{des\_ASD} = (N_{des} / \alpha_{ASD}) * 0.705$ = **233.531** lb **Pass, > $Bolt_{tension}$**

HILTI Quick-Con II+ Concrete Screw Anchor (1/4"Ø with 1.0" minimum embedment)

ASD Tension Strength (Per HILTI, Section 3.3.19, Table 4 (Clay Brick)) N_{des_ASD} = **205** lb **Pass, > $Bolt_{tension}$**

HILTI HLC Sleeve Anchor (1/4"Ø " with 1.0" minimum embedment)

ASD Tension Strength (Per HILTI, Section 3.3.18, Table 6 (Clay Brick)) N_{des_ASD} = **350** lb **Pass, > $Bolt_{tension}$**

Mounting Plate Design

ASTM AISI 304 Stainless Steel: F_y = **31.2** ksi Ω_b = **1.67** Ω_v = **1.67**

$M_{plate\_Y} = M_{oment\_V} / 2$ = **7.822** lb_ft

Thickness Required Without Gussets (Vertical), $t_y = \sqrt{((M_{plate\_Y}) / ((F_y * X / 4) / \Omega_b))}$ = **0.121** in

$M_{plate\_X} = M_{oment\_H}$ = **18.748** lb_ft

Thickness Required Without Gussets (Horizontal), $t_x = \sqrt{((M_{plate\_X}) / ((F_y * Y / 4) / \Omega_b))}$ = **0.187** in

Use: Plate Thickness: 3/8 in Plate Width: 2.95" [75 mm], Gusset Plates: (0)

Side to Side Bolt Spacing: 2 @ 0.32 in, Top to Bottom Bolt Spacing: 3 @ 0.32 in

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REGISTERED PROFESSIONAL ENGINEER 88057 10/20/2023 OREGON JUN. 10, 2014 CARL EVERETT THOMPSON, JR.

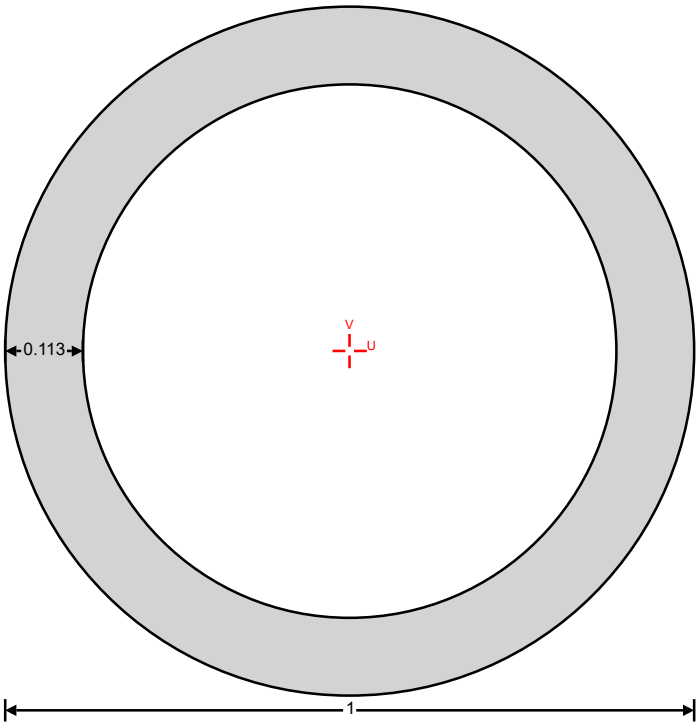
RENEWS: 06/30/2024

Support Design

Round 1.0"Ø x 0.113" Wall Tube (Top & Bottom).

CALCULATION OF SECTION PROPERTIES

Tedds calculation version 2.0.07



$A = 0.31$ in^2

$I_{uu} = 31.5\times10^{-3}$ in^4 $I_{vv} = 31.5\times10^{-3}$ in^4 $I_{xx} = 31.5\times10^{-3}$ in^4 $I_{yy} = 31.5\times10^{-3}$ in^4

$r_{uu} = 0.32$ in $r_{vv} = 0.32$ in $r_{xx} = 0.32$ in $r_{yy} = 0.32$ in

$Z_{xx} = 0.000$ in^3 $Z_{yy} = 0.000$ in^3

$X_e = 0.00$ in $Y_e = 0.00$ in

$X_p = 0.00$ in $Y_p = 0.00$ in

$S_{xx} = 62.9\times10^{-3}$ in^3 $S_{yy} = 62.9\times10^{-3}$ in^3

ASTM AISI 304 Stainless Steel: $F_y = 31.2$ ksi $\Omega_b = 1.67$ $\Omega_v = 1.67$

Allowable Shear Capacity (X-Axis), $S_{X\_Allowable} = 0.6* (F_y *A / 2) / \Omega_v = 1764.864$ lbs

Allowable Shear Capacity (Y-Axis), $S_{Y\_Allowable} = 0.6* (F_y *A / 2) / \Omega_v = 1764.864$ lbs

Unity Check: Biaxial Shear, $UC_v = (S_{hear\_H} / S_{X\_Allowable}) + (S_{hear\_V} / S_{Y\_Allowable}) = 1.9$ % < 100% OK

Allowable Moment Capacity (X-Axis), $M_{X\_Allowable} = (F_y *S_{xx}) / \Omega_b = 97.991$ lb_ft

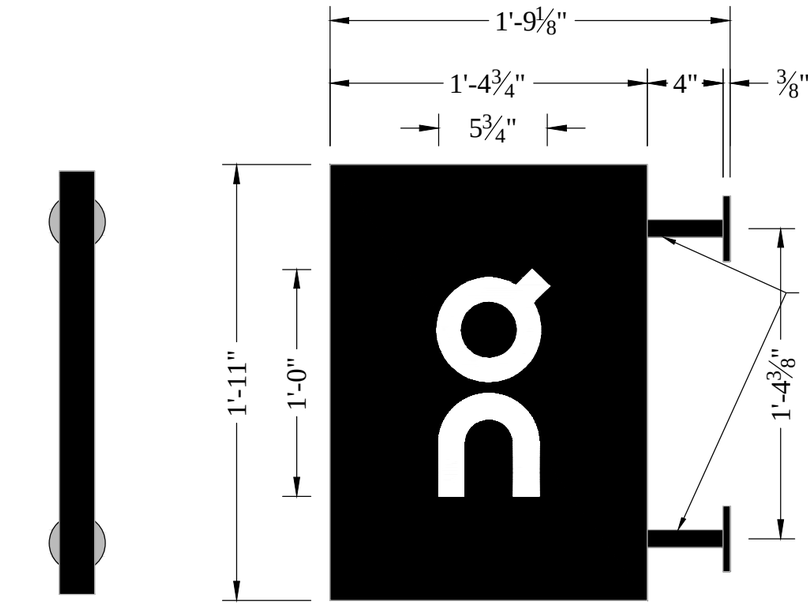
Allowable Moment Capacity (Y-Axis), $M_{Y\_Allowable} = (F_y *S_{yy}) / \Omega_b = 97.991$ lb_ft

Unity Check: Biaxial Bending, $UC_b = (LCB_F * M_{oment\_H} / M_{X\_Allowable}) + (LCB_F * M_{oment\_V} / M_{Y\_Allowable}) = 17.5$ % < 100% OK

TRIANGLE SIGN SERVICES

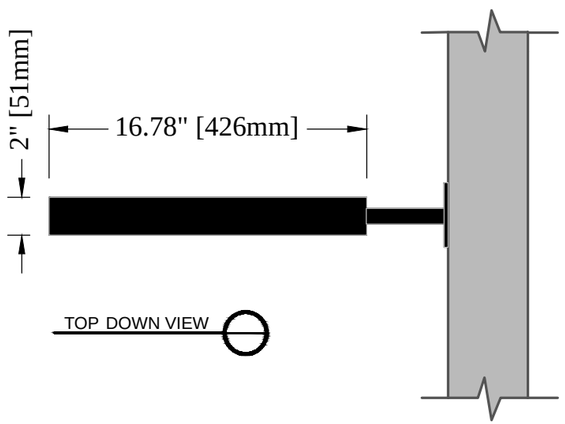
NON-ILLUM. D/S BLADE SIGN W/ ROUTED BACKED UP COPY (A)

SCALE: N.T.S.
AREA: 23" x 16.375" = 2.68 SQ. FT.
QTY: FOUR (4)

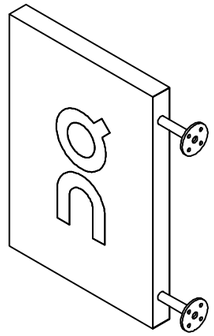


TYP. SIDE

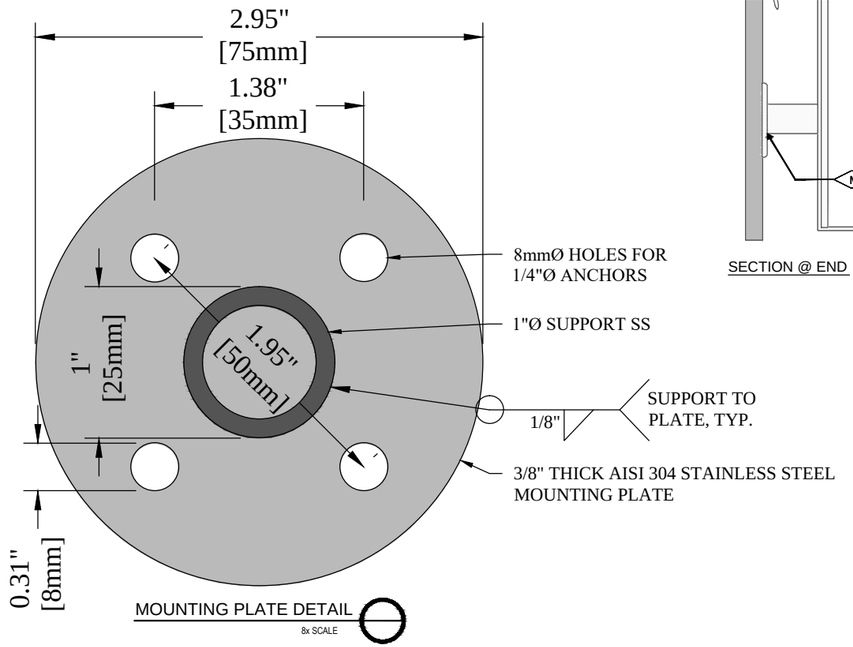
TYP. FRONT



TOP DOWN VIEW



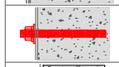
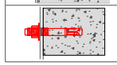
ISOMETRIC VIEW

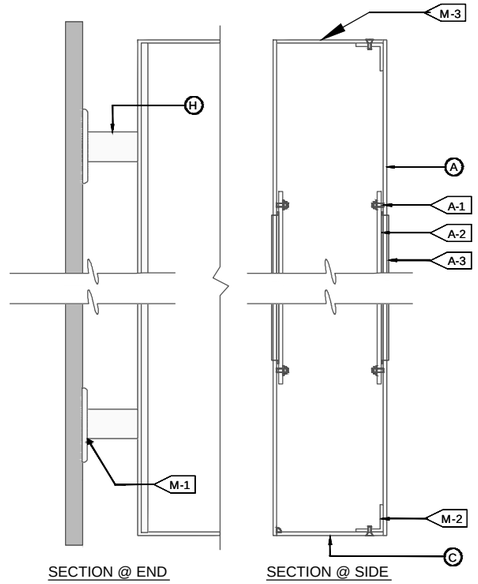


MOUNTING PLATE DETAIL
8x SCALE

ANCHOR SCHEDULE

(ALL FASTENERS TO BE STAINLESS STEEL) (ALL PENETRATIONS SHALL BE SEALED)

	1/4" Ø 316 SS THREADED ROD WITH BEARING PLATES	FOR ANY WALL TYPE
	1/4" Ø SS MASONRY SCREW (TAPCON)	FOR BRICK OR CONCRETE 5" EMBEDMENT MIN.
	1/4" Ø 316 SS THREADED ROD w/ HILTI HIT-HY 270 ADHESIVE	FOR BRICK OR CONCRETE 5" EMBEDMENT MIN.
	1/4" Ø SS SLEEVE ANCHOR	FOR BRICK OR CONCRETE 5" EMBEDMENT MIN.



SECTION @ END

SECTION @ SIDE

GENERAL NOTES :

1. All design, detailing, fabricating and construction shall conform to the following codes and specifications:
   a. The 2022 Oregon Structural Specialty Code (OSSC)
      The 2021 International Building Code. (ASCE 7-16)
   b. American Society of Testing and Materials (ASTM) specifications.
   c. Building Code Requirements for Reinforced concrete (ACI 318-(Current Edition)).
   d. Code for Welding in Building Construction of the American Welding Society.
   e. Specification for the Design, Fabrication and Erection of Structural Steel for Buildings by The American Institute of Steel Construction (AISC) (Current Edition).
   f. Aluminum Association Aluminum Design Manual (Current Edition).
2. **Site Design Criteria (per ASCE7 Hazard Tool):** Risk Category II
   a. Seismic Design Category D, Site Soil Class D (Default): S_S = 0.887, S_1 = 0.399, S_{DS} = 0.710.
   b. Wind Speed, V_{ULT} = 100 mph (3 Sec Wind Gusts), Exposure B, Equivalent Wind Load, P_{ULT}= -21.9 PSF or +16.5 PSF C&C, Zone 5 @ <16'-0" above the ground.
      The building owners structural engineer shall determine the adequacy of the supporting structure (if necessary).
   c. Ground Snow Load = 25 psf.
3. Structural Material Specifications:
   a. Threaded rods shall be Galvanized or Zinc plated F-1554 Grade 36, A307 Grade A, A307 Grade B, A307 Grade C, SAE J429 Grade 1 or SAE J429 Grade 2, unless otherwise noted.
   b. Anchor Bolts shall be Galvanized F-1554 Grade 36 Rod, unless otherwise noted.
   c. Stainless Steel bolts for connections shall be ASTM 316A SS Class 2A , unless otherwise noted.
   d. Standard strength bolts for connections shall be Galvanized ASTM A-307, unless otherwise noted.
   e. High strength bolts for connections shall be Galvanized ASTM A-325, unless otherwise noted.
   f. Aluminum Threaded rods shall be ASTM F-468 Grade 6061, unless otherwise noted.
   g. Aluminum shapes shall be extruded from 6061-T6 alloy. Welding filler alloy shall be 5183, 5356, 5556 or approved alternative.
   h. Structural Steel and Plates shall be ASTM A-36 (F_y=36 ksi)
   i. W-Shape beams shall be ASTM A-992 (F_y=50 ksi) Minimum
   j. Structural tubing shall be ASTM A-500, Grade B, (F_y=46 ksi)
   k. Structural piping shall be ASTM A-53, Grade B, Type E or S, (F_y=35 ksi), ASTM A572 Grade 42 (F_y=42 ksi) or ASTM A572 Grade 50 (F_y=50 ksi), (see drawing for individual member specifications).
4. All bolted connections to have snug tight condition, & if required, be verified with Turn-of-Nut method, unless otherwise noted.
5. Welding electrodes shall comply with AWS D1.2-(Current Edition). (All welding to be done by welder certified for specified weld type.)
6. Engineer is not responsible for the safety on the job site (before, during or after) the installation of this structure. It is the responsibility of the owners, contractors & installers to ensure that the installation & erection are in compliance with OSHA regulations.
7. Contractor shall verify all dimensions and conditions in the field before erection and notify the Engineer of any discrepancies. The scope of this engineer does not include on-site observations, unless specifically contracted.

NON-ILLUM. D/S BLADE SIGN SECTION DETAILS

SCALE: N.T.S.

(A) FACE	
MATERIAL:	1/8" MET AL. ROUTED w/ LOGO COPY .
COLOR/ FINISH:	PAINT TO MATCH RAL9004
A-1:	BACKUP MOUNTS w/ 10/24 WELDED STUDS & NUTS.
A-2 BACKUP:	3/16" CLEAR ACRYLIC #2447.
A-3 LOGO:	3/16" OP AL ACR YLIC.
A-3 FINISH:	SANDED FINISH
(C) RETURNS	
DEPTH:	2".
MATERIAL:	1/8" METAL.
COLOR/ FINISH:	PAINTED TO MATCH RAL9004
(H) SUPPOR TS	
MATERIAL:	1" x 4" x 1/8" ALUM. TUBE.
COLOR/ FINISH:	PAINTED TO MATCH RAL9004
(M)	SEE MOUNTING NOTE. REQ'D. BLOCKING BY OTHERS.
M-1:	3" STAINLESS STEEL MOUNTING PLA TE
M-2:	ALUM. ANGLE ATTACHES TO BACK OF F ACE
M-3:	FLUSH MOUNTING SCREWS

NOTE:
Carl E. Thompson, Jr., P.E. is responsible for new blade sign support & wall connection design only, all else is shown for informational purposes only & is the responsibility of the sign manufacturer or others. Existing wall is by others, this engineer shall be indemnified & held harmless for the design thereof. This drawing is for permit procurement purposes only. Unauthorized use is strictly prohibited. Any deviations from these plans without prior written consent entirely voids this design. On-site observation are not included in the scope of engineering responsibility. Design is based on items such as existing field data, & site surveys provided by others, neither Carl E. Thompson, Jr., P.E. nor Triangle Sign Services can certify the accuracy of the data provided.

This document has been electronically signed and sealed by Carl E. Thompson, Jr., P.E. using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

REGISTERED PROFESSIONAL ENGINEER
88057
OREGON
JUN. 10, 2014
10/20/23
CARL EVERETT THOMPSON, JR.

RENEWS: 06/30/2024

Carl E. Thompson, Jr., P.E.

SUBMITTED 1/2/2024

NOTE:
INSTALLATION OF CUSTOMER SUPPLIED NON-ILLUM. BLADE SIGNS ONLY
TRIANGLE SIGN IS NOT TO FABRICATE BLADE SIGNS.

VIEW: Wall Sign A Layout & Details

DESCRIPTION: On Running | Blade Wall Sign A 1'-11" x 1'-4 3/4"

INSTALLATION ADDRESS: On Running, 529 NW 23rd Ave, Portland, OR 97210

CLIENT P.O.#: 070329

TRIANGLE SIGN SERVICES
11 Azar Court • P.O. Box 24186
Baltimore, Maryland 21227
T: 410-247-5300 • F: 410-247-1944

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Email: Carl.E.Thompson.Jr.PE@gmail.com

DRAWN BY:	DATE:	DWG #:	SCALE:	SHEET SIZE:
D.P.Ward	October 20, 2023	23-0238	1-1/2" = 1'-0"	11"x17"

REVISIONS: N/A

SHEET 1 OF 1