



January 6, 2023

To: City of Richmond
Department of Planning and Zoning

Re: VUU Tower Signage – Engineering Approval

Please find attached the report from KLF Engineering verifying the signage install on the Belgium Tower is properly installed and meets the current City of Richmond building code.

Also attached is the UL certification and the UL registration identification numbers issued by UL for each sign installed on the tower. This certification documents the electrical components of the signs have been UL inspected and meets the electrical UL standard.

Respectfully submitted,

A handwritten signature in black ink that reads "Mike Salmon".

Mike Salmon, President
Talley Sign Company

1908 Chamberlayne Avenue
P.O. BOX 27386, Richmond, VA. 23261 PHONE 804-649-0325 – FAX 804- 643-1721
www.talleysign.com

KEVIN L. FLOYD, P.E., L.S.
ENGINEERING and LAND SURVEYING

P.O. BOX 1178 CHESTERFIELD, VIRGINIA 23832 PHONE: (804) 778-4518

January 6, 2023

TALLEY SIGN COMPANY
1908 CHAMBERLAYNE AVENUE
RICHMOND, VIRGINIA 23222

PROJECT MEMORANDUM

RE: VIRGINIA UNION UNIVERSITY SIGN
BELL TOWER- BELGIAN FRIENDSHIP BUILDING
1500 N. LOMBARDY STREET
RICHMOND, VIRGINIA

Issue/Task: Provide a structural review/evaluation of the design documents for the Virginia Union University, VUU Logo signs installed at the above referenced location. Reference is made to the plans by Talley Sign Company, dated 1/4/23; titled: VIRGINIA UNION UNIVERSITY TOWER SIGN. Copy of these documents are attached hereto.

Findings: The subject signs are approximately 300sqft with approximately 150sqft of aluminum panels yielding 50% open space. The total weight of the sign is 425# with 24 attachment points. The attachments consist of 4"x4"x $\frac{3}{8}$ " angle iron, 4"x4"x $\frac{1}{4}$ " tube steel, $\frac{3}{8}$ " Grade 8 bolts, being bolted to the towers I-beam supper structure and sign itself. VUU logo signs are positioned on the four sides of the tower's louvered belfry. Noting that the entire bell tower is a steel skeleton structure with exterior cladding.

Site inspection was made indicating the sign installation is/was installed consistent with the construction drawings. Computational evaluation indicates the construction methods and material used are adequate for the design vertical and wind loads.

Should you have any questions, please contact us.

Sincerely,

Kevin L Floyd PE LS

ATTACHMENTS:
Sign Drawing
Wind Load Calcs
Structure Calcs

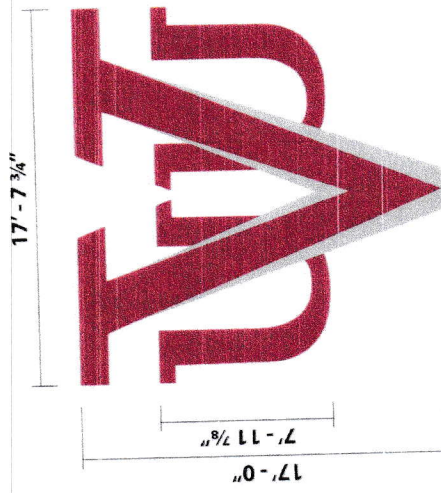


JN 01-00123.STR/KLF
TALLEY SIGN

ILLUMINATED CHANNEL SHAPES

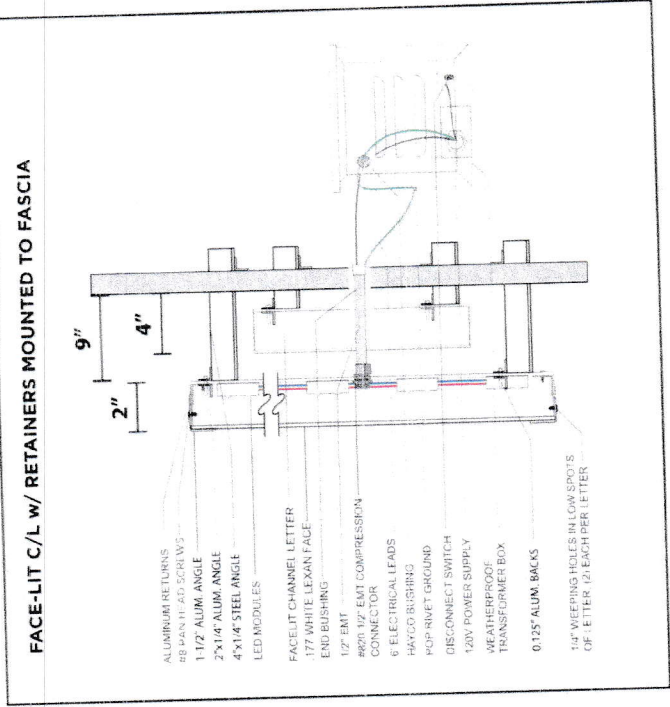
QUANTITY (4)

300.16 SQ.FT. EACH



SCALE: 1/8" = 1'-0"

END VIEW



FACE-LIT C/L w/ RETAINERS MOUNTED TO FASCIA

- ALUMINUM RETURNS
- #8 HEX HEAD SCREWS
- 1 1/2" ALUM. ANGLE
- 2"x1/4" ALUM. ANGLE
- 4"x1/4" STEEL ANGLE
- LED MODULES
- FACELIT CHANNEL LETTER
- .177" WHITE LEXAN FACE
- END BUSHING
- 1/2" EMT
- #200 1/2" EMT COMPRESSION CONNECTOR
- 6 ELECTRICAL LEADS
- RAYCO BUSHING
- POP RIVET GROUND
- DISCONNECT SWITCH
- 120V POWER SUPPLY
- WEATHERPROOF TRANSFORMER BOX
- 0.125" ALUM. BACKS
- 1/4" WEERINGS HOLES IN LEXAN SPOTS OF LETTER (2 EACH PER LETTER)

- FACES:** .177" WHITE LEXAN (C/L)
- BACKS:** 0.125" ALUM.
- RETAINERS:** 1" PAINTED BLACK 0.125" ALUM.
- RETURNS:** 0.090" ALUM. (C/L); 2" (FL-CL) PAINTED BLACK
- ILLUMINATION:** WHITE L.E.D. 120 V 60 W POWER SUPPLY
- COLOR KEY:** Day/Night Day/Night

Attention:
This drawing is the sole property of Talley Sign Company. Upon receipt of this drawing, the client agrees it shall not be copied, plagiarized or reproduced in part or whole, that includes supplying this drawing to another vendor for any reason, nor used for any other purpose without written permission of Talley Sign Company. To do so is copyright infringement and theft of intellectual property.

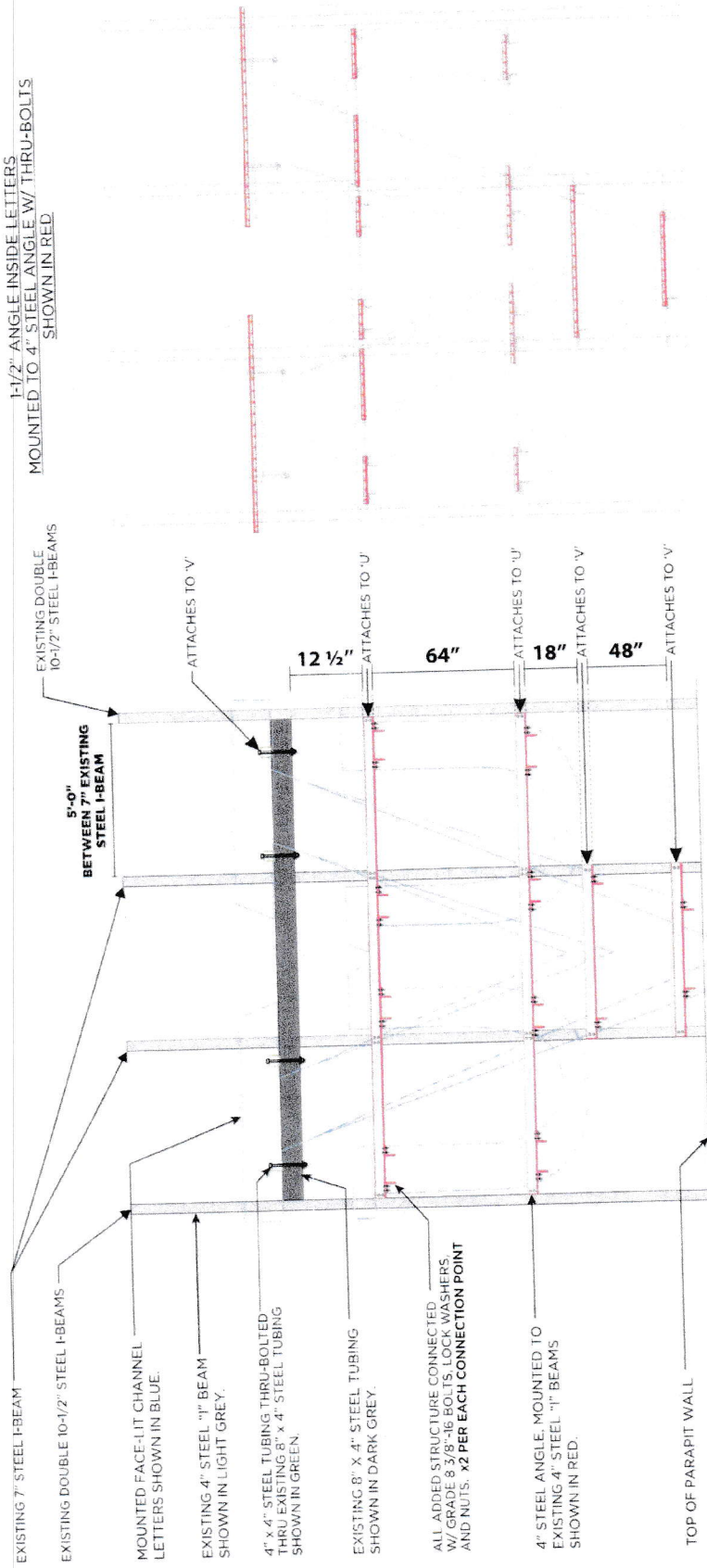
REVISION:	REVISION:
1	
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TALLEY SIGN COMPANY
ARCHITECTURAL & COMMERCIAL
1908 Chamberlayne Ave. P.O. Box 27386 Richmond, Va. 23261
Phone 804-649-0325 Fax 804-643-1721

CLIENT: **VIRGINIA UNION UNIVERSITY TOWER SIGN**
DATE: 1/4/2023
JOB#: MOUNTING DETAIL
REP: MIKE SALMON
BY: JDA
LOC: RICHMOND, VA

300.16 SQ.FT. EACH

ILLUMINATED CHANNEL SHAPES
MOUNTING DETAIL



LETTER WEIGHTS
V 275 lb
U 75 lb
U 75 lb

BACK VIEW LETTER ALUMINUM ANGLE
ATTACHMENT TO STRUCTURAL STEEL ANGLE

BACK VIEW STRUCTURAL STEEL
USED TO ATTACH STEEL ANGLE ARMS & UPPER STEEL TUBES

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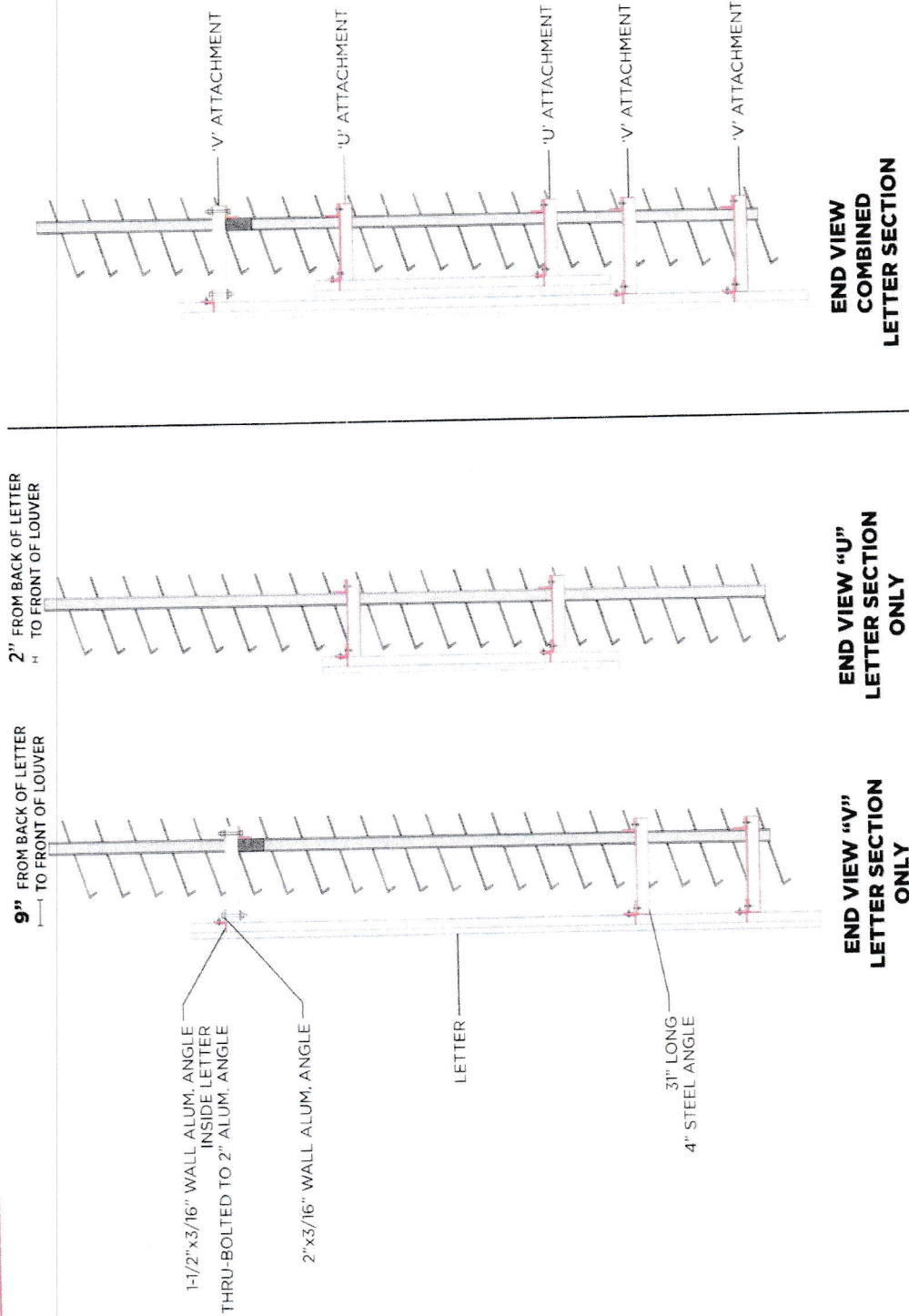
REVISION:	CLIENT: VIRGINIA UNION UNIVERSITY TOWER SIGN
1	JOB#: MOUNTING DETAIL
2	DATE: 1/4/2023
3	REP: MIKE SALMON
4	BY: JDA
5	LOC: RICHMOND, VA

TALLEY SIGN COMPANY
 ARCHITECTURAL & COMMERCIAL
 1968 Chamberlayne Ave. P.O. Box 27386 Richmond, Va 23261
 Phone 804-649-0325 Fax 804-643-1721

300.16 SQ.FT. EACH

ILLUMINATED CHANNEL SHAPES

MOUNTING DETAIL



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REVISION:	
1	
2	
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CLIENT: VIRGINIA UNION UNIVERSITY TOWER SIGN
DATE: 1/4/2023
REP: MIKE SALMON
LOC: RICHMOND, VA
JOB#: MOUNTING DETAIL
BY: JDA

TALLEY SIGN COMPANY
ARCHITECTURAL & COMMERCIAL

1908 Chamberlayne Ave. P.O. Box 27386 Richmond, Va. 23261
Phone 804-649-0325 Fax 804-643-1721

MecaWind v2405

Software Developer: Meca Enterprises Inc., www.meca.biz, Copyright © 2020

Calculations Prepared by:
 KLF ENGINEERING
 P.O. Box 1178
 Chesterfield, Virginia, 23832
 Date: Jan 06, 2023
 Designer: KLF

Calculations Prepared For:
 Client: Talley Sign Company
 Project #: 01-00123
 Location: 1500 N Lombardy St Richmond VA
 Description:
 VUU Sign Bell Tower

File Location:
 C:\Users\klf\OneDrive - KLF Engineering\Documents\MecaWind ProjFiles\
 01-00123 TalleySign-VUU BellTower.wnd

Basic Wind Parameters

Wind Load Standard	= ASCE 7-16	Exposure Category	= C
Wind Design Speed	= 115.0 mph	Risk Category	= II
Structure Type	= Other	Other Structure Type	= Open Sign

General Wind Settings

Incl_LF	= Include ASD Load Factor of 0.6 in Pressures	= True
DynType	= Dynamic Type of Structure	= Rigid
Zg	= Altitude (Ground Elevation) above Sea Level	= 0.000 ft
Bdist	= Base Elevation of Structure	= 0.000 ft
Reacs	= Show the Base Reactions in the output	= False
MWFRStype	= MWFRS Method Selected	= Ch 29

Topographic Factor per Fig 26.8-1

Topo	= Topographic Feature	= None
Kzt	= Topographic Factor	= 1.000

Open Sign Inputs

h	: Height to Top of Sign	= 148.500 ft	B	: Horizontal Width of Sign	= 17.670 ft
s	: Vertical Height of Sign	= 17.000 ft	e	: Solidity Ratio	= 0.500
Rnd	: Composed of Round Members	= False			

Exposure Constants per Table 26.11-1:

Alpha: Table 26.11-1 Const	= 9.500	Zg: Table 26.11-1 Const	= 900.000 ft
At: Table 26.11-1 Const	= 0.105	Bt: Table 26.11-1 Const	= 1.000
Am: Table 26.11-1 Const	= 0.154	Bm: Table 26.11-1 Const	= 0.650
C: Table 26.11-1 Const	= 0.200	Eps: Table 26.11-1 Const	= 0.200

Gust Factor Calculation:

Gust Factor Category I Rigid Structures - Simplified Method	= 0.85
G1 = For Rigid Structures (Nat. Freq.>1 Hz) use 0.85	
Gust Factor Category II Rigid Structures - Complete Analysis	= 89.100 ft
Zm = Max(0.6 * Ht, Zmin)	= 0.169
Izm = Cc * (33 / Zm) ^ 0.167	= 609.878
Lzm = L * (Zm / 33) ^ Eps	= 17.670 ft
B = Structure Width Normal to Wind	= 0.885
Q = (1 / (1 + 0.63 * ((B + Ht) / Lzm)^0.63))^0.5	= 0.872
G2 = 0.925 * ((1 + 0.7 * Izm * 3.4 * Q) / (1 + 0.7 * 3.4 * Izm))	
Gust Factor Used in Analysis	= 0.850
G = Lessor Of G1 Or G2	

Main Wind Force Resisting System (MWFRS) Calculations for Open Sign per Ch 29:

LF	= Load Factor based upon ASD Design	= 0.60
hs	= Overall height of structure	= 148.500 ft
h	= Mean Roof Height above grade	= 148.500 ft
Kh	= 15 ft [4.572 m] < Z < Zg --> (2.01 * (Z/zg)^(2/Alpha)) {Table 26.10-1}	= 1.375
Kzt	= Topographic Factor Ls 1 since no Topographic feature specified	= 1.000
Kd	= Wind Directionality Factor per Table 26.6-1	= 0.85
qh	= (0.00256 * Kh * Kzt * Kd * Ke * V^2) * LF	= 23.75 psf

MWFRS Pressures on Open Sign per Fig 29.4-2:

Cf	= Force Coefficient per Fig 29.4-2	= 1.60
Ag	= Gross Area of Sign: B * s	= 300.39 sq ft
An	= Net Area: Ag * e	= 150.20 sq ft
F	= Design Wind force: qh * G * Cf * An	= 4851 lb

KLF ENGINEERING
P.O. Box 1178
Chesterfield, Virginia 23832
804-778-4518

Project Title: Talley Sign: VUU Bell Tower Logo/Sign
Engineer:
Project ID: 01-00123 Talley Sign VUU
Project Descr: sign attachment

Printed: 5 JAN 2023, 4:21PM

Project File: 01-00123 TalleySign VUU.ec6

(c) ENERCALC INC 1983-2022

Steel Beam

LIC# KW-06019265, Build:20.22.12.28

KEVIN FLOYD ENGINEERING

DESCRIPTION: Sign Support

CODE REFERENCES

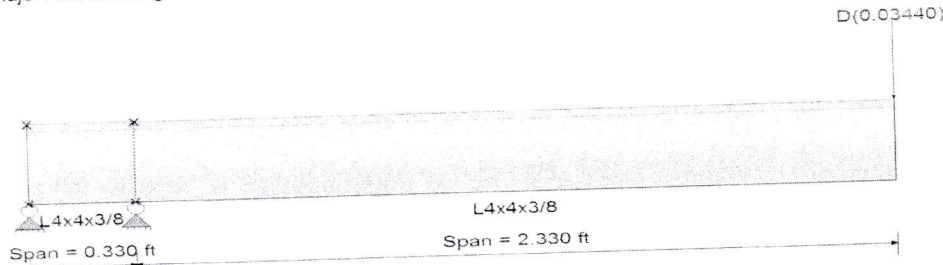
Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method: Load Resistance Factor Design
Beam Bracing: Completely Unbraced
Bending Axis: Major Axis Bending

Fy : Steel Yield : 50.0 ksi
E: Modulus : 29,000.0 ksi

Vertical Leg Up



Service loads entered. Load Factors will be applied for calculations.

Applied Loads

Beam self weight calculated and added to loading
Load(s) for Span Number 2
Point Load : D = 0.03440 k @ 2.330 ft

Design OK

DESIGN SUMMARY

Maximum Bending Stress Ratio =	0.023 : 1	Maximum Shear Stress Ratio =	0.011 : 1
Section used for this span	L4x4x3/8	Section used for this span	L4x4x3/8
Mu : Applied	0.149 k-ft	Vu : Applied	0.4552 k
Mn * Phi : Allowable	6.488 k-ft	Vn * Phi : Allowable	40.50 k
Load Combination	+1.40D	Load Combination	+1.40D
Span # where maximum occurs	Span # 2	Location of maximum on span	0.330 ft
		Span # where maximum occurs	Span # 1
Maximum Deflection			
Max Downward Transient Deflection	0.000 in Ratio = 0 <360		
Max Upward Transient Deflection	0.000 in Ratio = 0 <360		
Max Downward Total Deflection	0.003 in Ratio = 19497 >=180	Span: 2 : D Only	
Max Upward Total Deflection	-0.000 in Ratio = 383735 >=180	Span: 2 : D Only	

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios		Summary of Moment Values					Summary of Shear Values				
			M	V	max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	VuMax	Vnx	Phi*Vnx
+1.40D														
Dsgn. L =	0.33 ft	1	0.022	0.011	-0.15	0.15	7.50	6.75	1.67	1.00	0.46	45.00	40.50	
Dsgn. L =	2.33 ft	2	0.023	0.002	-0.15	0.15	7.21	6.49	1.00	1.00	0.08	45.00	40.50	
+1.20D														
Dsgn. L =	0.33 ft	1	0.019	0.010	-0.13	0.13	7.50	6.75	1.67	1.00	0.39	45.00	40.50	
Dsgn. L =	2.33 ft	2	0.020	0.002	-0.13	0.13	7.21	6.49	1.00	1.00	0.07	45.00	40.50	
+0.90D														
Dsgn. L =	0.33 ft	1	0.014	0.007	-0.10	0.10	7.50	6.75	1.67	1.00	0.29	45.00	40.50	
Dsgn. L =	2.33 ft	2	0.015	0.001	-0.10	0.10	7.21	6.49	1.00	1.00	0.05	45.00	40.50	

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D Only	1	0.0000	0.000	D Only	-0.0000	0.191
	2	0.0029	2.330		0.0000	0.191

Vertical Reactions

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions		0.382	
Max Upward from Load Combinations		0.229	
Max Upward from Load Cases		0.382	
Max Downward from all Load Conditions (Resis)	-0.322		

Support notation : Far left is #

Values in KIPS

KLF ENGINEERING
P.O. Box 1178
Chesterfield, Virginia 23832
804-778-4518

Project Title: Talley Sign: VUU Bell Tower Logo/Sign
Engineer:
Project ID: 01-00123 Talley Sign VUU
Project Descr: sign attachment

Printed: 5 JAN 2023, 4:21PM

Project File: 01-00123 TalleySign VUU.ec6

(c) ENERCALC INC 1983-2022

Steel Beam

LIC# KW-06019265, Build:20.22.12.28

KEVIN FLOYD ENGINEERING

DESCRIPTION: Sign Support

Vertical Reactions

Support notation : Far left is #

Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Max Downward from Load Combinations (Resi:	-0.193		
Max Downward from Load Cases (Resisting Up	-0.322		
D Only	-0.322	0.382	
+0.60D	-0.193	0.229	

KLF ENGINEERING
P.O. Box 1178
Chesterfield, Virginia 23832
804-778-4518

Project Title: Talley Sign: VUU Bell Tower Logo/Sign
Engineer:
Project ID: 01-00123 Talley Sign VUU
Project Descr: sign attachment

Printed: 5 JAN 2023, 4 23PM

Project File: 01-00123 TalleySign VUU.ec6

(c) ENERCALC INC 1983-2022

Steel Beam

LIC# KW-06019265, Build:20 22.12.28

KEVIN FLOYD ENGINEERING

DESCRIPTION: 4x4x1/4 tube of Sign Support

CODE REFERENCES

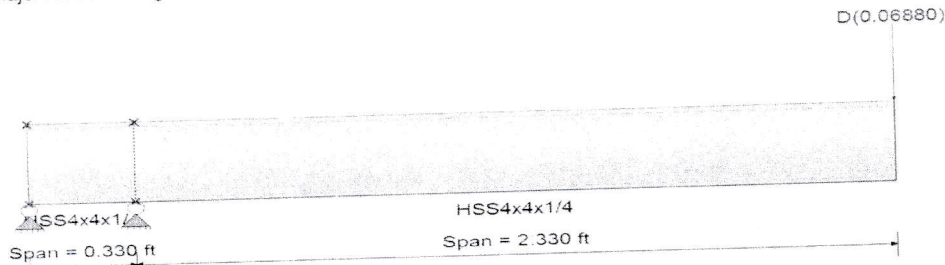
Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method: Load Resistance Factor Design
Beam Bracing : Completely Unbraced
Bending Axis : Major Axis Bending

Fy : Steel Yield : 50.0 ksi
E: Modulus : 29,000.0 ksi

Vertical Leg Up



Service loads entered. Load Factors will be applied for calculations.

Applied Loads

Beam self weight calculated and added to loading
Load(s) for Span Number 2
Point Load : D = 0.06880 k @ 2.330 ft

Design OK

DESIGN SUMMARY

Maximum Bending Stress Ratio =	0.015 : 1	Maximum Shear Stress Ratio =	0.020 : 1
Section used for this span	HSS4x4x1/4	Section used for this span	HSS4x4x1/4
Mu : Applied	0.271 k-ft	Vu : Applied	0.8235 k
Mn * Phi : Allowable	17.588 k-ft	Vn * Phi : Allowable	41.533 k
Load Combination	+1.40D	Load Combination	+1.40D
Span # where maximum occurs	Span # 1	Location of maximum on span	0.330 ft
		Span # where maximum occurs	Span # 1
Maximum Deflection			
Max Downward Transient Deflection	0.000 in Ratio = 0 <360		
Max Upward Transient Deflection	0.000 in Ratio = 0 <360		
Max Downward Total Deflection	0.003 in Ratio = 19082 >=180	Span: 2 : D Only	
Max Upward Total Deflection	-0.000 in Ratio = 382115 >=180	Span: 2 : D Only	

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios		Summary of Moment Values					Summary of Shear Values			
			M	V	max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	VuMax	Vnx
+1.40D	Dsgn. L = 0.33 ft	1	0.015	0.020	-0.27	0.27	19.54	17.59	1.67	1.00	0.82	46.15	41.53
	Dsgn. L = 2.33 ft	2	0.015	0.003	-0.27	0.27	19.54	17.59	1.00	1.00	0.14	46.15	41.53
+1.20D	Dsgn. L = 0.33 ft	1	0.013	0.017	-0.23	0.23	19.54	17.59	1.67	1.00	0.71	46.15	41.53
	Dsgn. L = 2.33 ft	2	0.013	0.003	-0.23	0.23	19.54	17.59	1.00	1.00	0.12	46.15	41.53
+0.90D	Dsgn. L = 0.33 ft	1	0.010	0.013	-0.17	0.17	19.54	17.59	1.67	1.00	0.53	46.15	41.53
	Dsgn. L = 2.33 ft	2	0.010	0.002	-0.17	0.17	19.54	17.59	1.00	1.00	0.09	46.15	41.53

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D Only	1	0.0000	0.000	D Only	-0.0000	0.191
	2	0.0029	2.330		0.0000	0.191

Vertical Reactions

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions		0.685	
Max Upward from Load Combinations		0.411	
Max Upward from Load Cases		0.685	
Max Downward from all Load Conditions (Resist)	-0.584		

Support notation : Far left is #

Values in KIPS

KLF ENGINEERING
P.O. Box 1178
Chesterfield, Virginia 23832
804-778-4518

Project Title: Talley Sign: VUU Bell Tower Logo/Sign
Engineer:
Project ID: 01-00123 Talley Sign VUU
Project Descr: sign attachment

Printed: 5 JAN 2023, 4:23PM

Steel Beam

Project File: 01-00123 TalleySign VUU.ec6

LIC# : KW-06019265, Build:20.22.12.28

KEVIN FLOYD ENGINEERING

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4x4x1/4 tube of Sign Support

Vertical Reactions

Support notation : Far left is #

Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Max Downward from Load Combinations (Resi:	-0.351		
Max Downward from Load Cases (Resisting U:	-0.584		
D Only	-0.584	0.685	
+0.60D	-0.351	0.411	

KLF ENGINEERING
P.O. Box 1178
Chesterfield, Virginia 23832
804-778-4518

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Project Descr: sign attachment

Printed: 5 JAN 2023, 4:23PM

Project File: 01-00123 TalleySign VUU.ec6

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Steel Beam

LIC# KW-06019265 Build:20.22 12.28

KEVIN FLOYD ENGINEERING

DESCRIPTION: Wind Load Check Sign Support

CODE REFERENCES

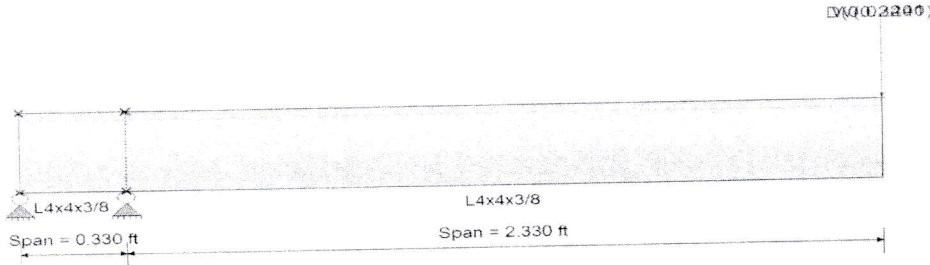
Calculations per AISC 360-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2021

Material Properties

Analysis Method: Load Resistance Factor Design
Beam Bracing : Completely Unbraced
Bending Axis : Major Axis Bending

Fy : Steel Yield : 50.0 ksi
E : Modulus : 29,000.0 ksi

Vertical Leg Up



Service loads entered. Load Factors will be applied for calculations.

Applied Loads

Beam self weight calculated and added to loading
Load(s) for Span Number 2
Point Load : D = 0.03440 k @ 2.330 ft

Point Load : W = 0.2201 k @ 2.330 ft

Design OK

DESIGN SUMMARY

Maximum Bending Stress Ratio =	0.099 : 1	Maximum Shear Stress Ratio =	0.048 : 1
Section used for this span	L4x4x3/8	Section used for this span	L4x4x3/8
Mu : Applied	0.641 k-ft	Vu : Applied	1.944 k
Mn * Phi : Allowable	6.488 k-ft	Vn * Phi : Allowable	40.50 k
Load Combination	+1.20D+W	Load Combination	+1.20D+W
Span # where maximum occurs	Span # 2	Location of maximum on span	0.330 ft
		Span # where maximum occurs	Span # 1
Maximum Deflection			
Max Downward Transient Deflection	0.015 in Ratio = 3.836	>=360	Span: 2 : W Only
Max Upward Transient Deflection	0.000 in Ratio = 0	<360	Span: 2 : W Only
Max Downward Total Deflection	0.012 in Ratio = 4815	>=180	Span: 2 : +D+0.60W
Max Upward Total Deflection	-0.000 in Ratio = 98696	>=180	Span: 2 : +D+0.60W

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios		Summary of Moment Values					Summary of Shear Values			
			M	V	max Mu +	max Mu -	Mu Max	Mnx	Phi*Mnx	Cb	Rm	VuMax	Vnx
+1.40D	Dsgn. L = 0.33 ft	1	0.022	0.011	-0.15	0.15	7.50	6.75	1.67	1.00	0.46	45.00	40.50
	Dsgn. L = 2.33 ft	2	0.023	0.002	-0.15	0.15	7.21	6.49	1.00	1.00	0.08	45.00	40.50
+1.20D	Dsgn. L = 0.33 ft	1	0.019	0.010	-0.13	0.13	7.50	6.75	1.67	1.00	0.39	45.00	40.50
	Dsgn. L = 2.33 ft	2	0.020	0.002	-0.13	0.13	7.21	6.49	1.00	1.00	0.07	45.00	40.50
+1.20D+0.50W	Dsgn. L = 0.33 ft	1	0.057	0.029	-0.38	0.38	7.50	6.75	1.67	1.00	1.17	45.00	40.50
	Dsgn. L = 2.33 ft	2	0.059	0.004	-0.38	0.38	7.21	6.49	1.00	1.00	0.18	45.00	40.50
+1.20D+W	Dsgn. L = 0.33 ft	1	0.095	0.048	-0.64	0.64	7.50	6.75	1.67	1.00	1.94	45.00	40.50
	Dsgn. L = 2.33 ft	2	0.099	0.007	-0.64	0.64	7.21	6.49	1.00	1.00	0.29	45.00	40.50
+0.90D+W	Dsgn. L = 0.33 ft	1	0.090	0.046	-0.61	0.61	7.50	6.75	1.67	1.00	1.85	45.00	40.50
	Dsgn. L = 2.33 ft	2	0.094	0.007	-0.61	0.61	7.21	6.49	1.00	1.00	0.27	45.00	40.50
+0.90D	Dsgn. L = 0.33 ft	1	0.014	0.007	-0.10	0.10	7.50	6.75	1.67	1.00	0.29	45.00	40.50
	Dsgn. L = 2.33 ft	2	0.015	0.001	-0.10	0.10	7.21	6.49	1.00	1.00	0.05	45.00	40.50

KLF ENGINEERING
P.O. Box 1178
Chesterfield, Virginia 23832
804-778-4518

Project Title: Talley Sign: VUU Bell Tower Logo/Sign
Engineer:
Project ID: 01-00123 Talley Sign VUU
Project Descr: sign attachment

Printed: 5 JAN 2023, 4 23PM

Project File: 01-00123 TalleySign VUU.ec6

(c) ENERCALC INC 1983-2022

Steel Beam

LIC# : KW-06019265, Build:20.22 12.28

KEVIN FLOYD ENGINEERING

DESCRIPTION: Wind Load Check Sign Support

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
	1	0.0000	0.000	W Only	-0.0000	0.191
W Only	2	0.0146	2.330		0.0000	0.191

Support notation : Far left is #

Values in KIPS

Vertical Reactions

Load Combination	Support 1	Support 2	Support 3
Max Upward from all Load Conditions		1.774	
Max Upward from Load Combinations		1.447	
Max Upward from Load Cases		1.774	
Max Downward from all Load Conditions (Resis	-1.554		
Max Downward from Load Combinations (Resi:	-1.254		
Max Downward from Load Cases (Resisting Up	-1.554		
D Only	-0.322	0.382	
+D+0.60W	-1.254	1.447	
+D+0.450W	-1.021	1.181	
+0.60D+0.60W	-1.126	1.294	
+0.60D	-0.193	0.229	
W Only	-1.554	1.774	

TALLEY
SIGN COMPANY
ARCHITECTURAL & COMMERCIAL

January 6, 2023

To: City of Richmond
Department of Planning and Zoning

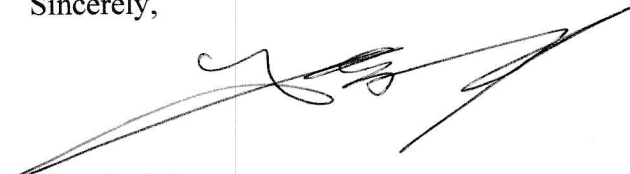
Re: VUU Tower Signage – Electrical UL Approval.

Please find attached the Electrical UL registration identification tag numbers for each of the four signs installed on the Belgium Tower at VUU. These numbers are specific to each sign and registered with UL.

The identification tags confirm each sign has been inspected for electrical compliance by me, Timothy Marston, certified Electrical UL inspector registered with UL (Certificate attached).

The signs meet all Electrical UL standards and are approved as installed on the tower.

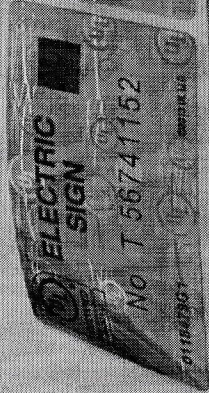
Sincerely,



Timothy Marston
Certified UL Inspector

1908 Chamberlayne Avenue
P.O. BOX 27386, Richmond, VA. 23261 PHONE 804-649-0325 – FAX 804- 643-1721
www.talleysign.com

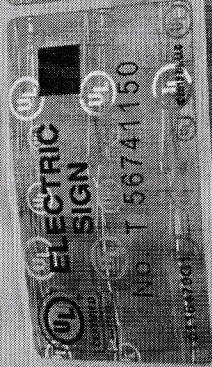
Sign # 1
South elevation



Sign # 2
West elevation



Sign # 3
North elevation



Sign # 4
East elevation



Certificate of Completion

This certificate has been awarded to

TIMOTHY MARSTON

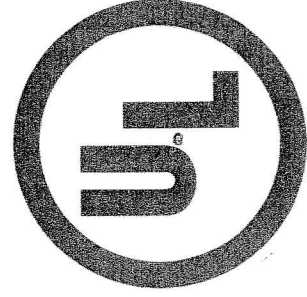
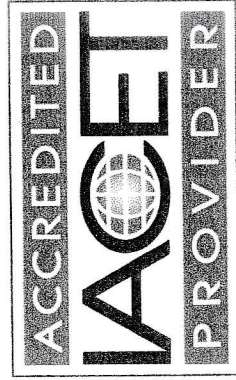
for completion of the following course

Signs UL 48 Online Curriculum Series

Credits, if available: 1.4

03/11/2021

Awarded On



A handwritten signature in cursive script that reads "Blewitt".

Thomas V. Blewitt
Vice President, Chief Technical Officer-
Connected Technologies