COMMISSION OF ARCHITECTURAL REVIEW

APPLICATION / CERTIFICATE OF APPROPRIATENESS

PROPERTY (Location of Work)

Address 1600 W. LABURNUM AVE, RICHMOND, VA

Historic District HERMITAGE ROAD

PROPOSED ACTION

☐ Alteration (including paint colors)
☐ Addition
☐ Rehabilitation
☑ New Construction (Conceptual Review required)
☐ Conceptual Review ☐ Final Review
☐ Demolition

OWNER

Name City of RICHMOND
Company
Mailing Address
Phone
Email
Signature
Date

APPLICANT (if other than owner)

Name HOWARD SMITH
Company MTS RECREATIONS
Mailing Address 140 BEVERLY RD
ASHLAND, VA 23005
Phone 804-441-0520
Email SMITH.HOWARD@VERIZON.NET
Signature Howard Smith
Date 1-3-2017

ACKNOWLEDGEMENT OF RESPONSIBILITY

Requirements: A complete application includes all applicable information requested on checklists to provide a complete and accurate description of existing and proposed conditions. Preliminary review meeting or site visit with staff may be necessary to process the application. Owner contact information and signature is required. Late or incomplete applications will not be considered.

Zoning Requirements: Prior to CAR review, it is the responsibility of the applicant to determine if zoning approval is required and application materials should be prepared in compliance with zoning.

Compliance: If granted, you agree to comply with all conditions of the COA. Revisions to approved work require staff review and may require a new application and CAR approval. Failure to comply with the COA may result in project delays or legal action. The COA is valid for one (1) year and may be extended for an additional year, upon written request.

(Space below for staff use only)

Application received RECEIVED

Date/Time JAN 04 2017 9:00 am

By

Complete ☐ Yes ☐ No

Created 7/2016

USASHADE
& Fabric Structures

Corporate Headquarters-
8505 Chancellor Row
Dallas, TX 75247

November 7, 2016

RE: 60069

Howard Smith
General Manager
MTS Recreations
140 Beverly Road
Ashland, VA 23006

RE: Linwood Holton Elementary School
SINGLE POST PYRAMID CANTILEVER 20' x 20' x 8'

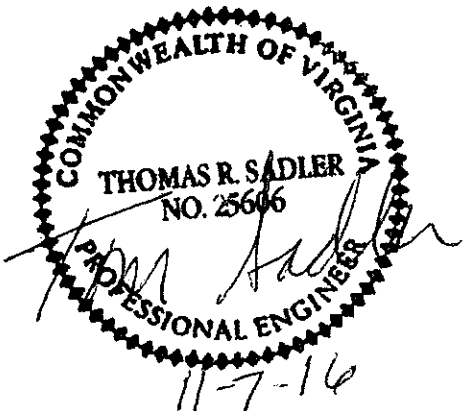
Dear Mr. Smith,

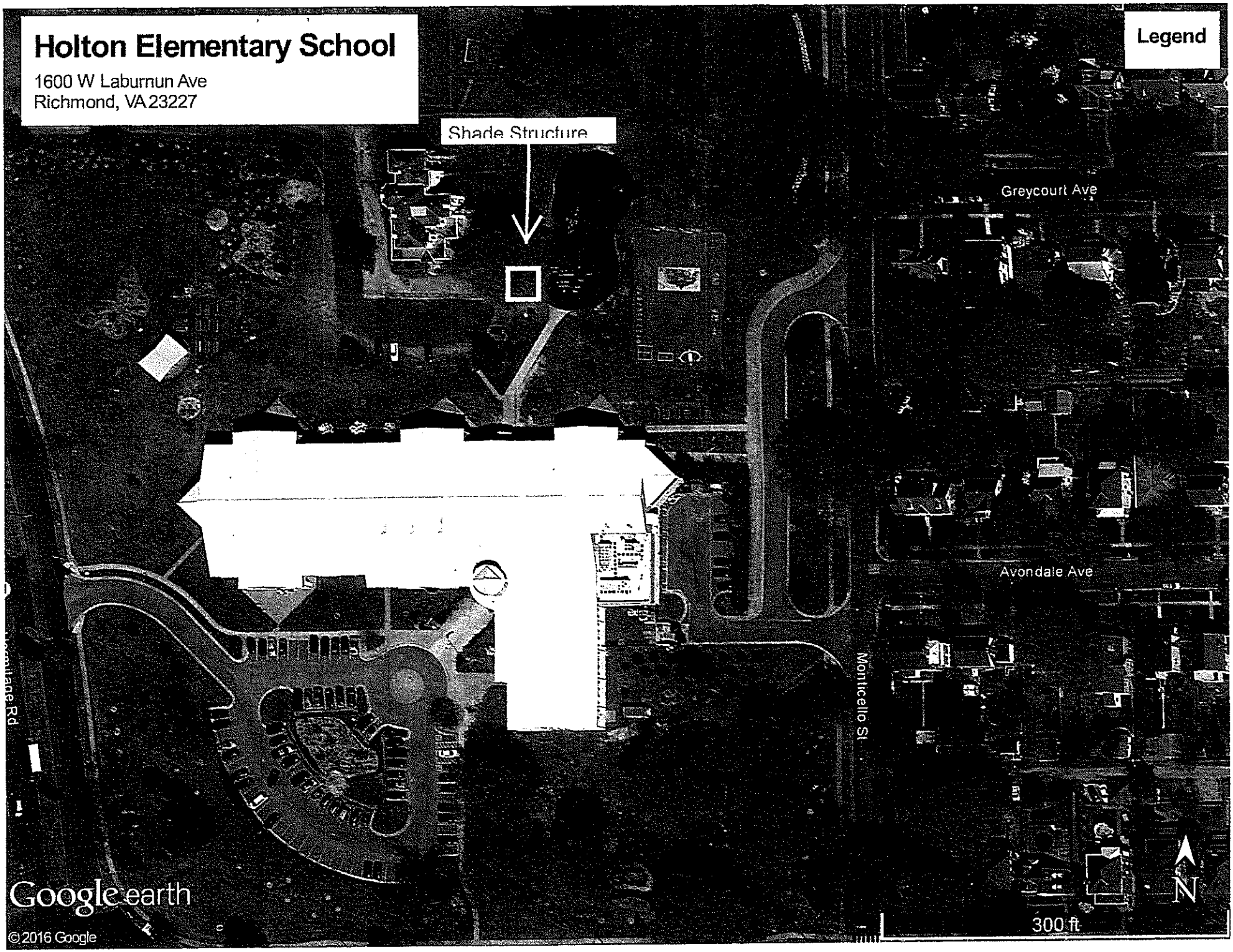
The column for the above referenced shade structure can be offset up to 25" from the center of the 7'-0" square spread footing.

Please feel free to contact this office if you have any questions or need additional information.

Sincerely,

Thomas R. Sadler, P.E.




Holton Elementary School
1600 W Laburnun Ave
Richmond, VA 23227
Shade Structure
Legend
Greycourt Ave
Avondale Ave
Monticello St
Google earth
©2016 Google
300 ft
N

INSTRUCTIONS:
DO NOT DETACH THIS STUB

COMPLETE *ALL* ITEMS ON THIS SIDE OF FORM
NOTE: FAILURE TO FOLLOW THESE INSTRUCTIONS WILL VOID APPLICATION.

DEPARTMENT OF PLANNING AND DEVELOPMENT REVIEW
BUREAU OF PERMITS AND INSPECTION
ROOM 110 CITY HALL
900 E. BROAD STREET
RICHMOND, VIRGINIA 23219
PHONE (804) 646-4169
FAX (804) 646-1569

BUILDING PERMIT/CERTIFICATE APPLICATION

PERMIT NO. B

TRACK 1 | TRACK 2

THIS IS AN APPLICATION ONLY. IT IS NOT AUTHORIZATION TO START ANY WORK. NO WORK SHALL START UNTIL A PERMIT IS POSTED ON THE JOB SITE.

CONTRACTOR/OWNER INFORMATION

1 JOB/PROPERTY ADDRESS *(STREET & NUMBER)* | 2 FLOOR/ROOM NO.

3 CONTRACTOR NAME | 4 LICENSE TYPE | 5 CLASS ☐ A ☐ B ☐ C | 6 STATE LICENSE NO.

7 CONTRACTOR STREET ADDRESS | 8 CONTRACTOR TELEPHONE NO. / EMAIL ADDRESS

9 CITY | STATE | ZIP CODE | 10 CONTRACTOR FAX NO.

11 PROPERTY OWNER NAME | 12 PROPERTY OWNER ADDRESS/ZIP | 13 OWNER DAYTIME TELEPHONE NO.

BUILDING INFORMATION

14 DESCRIBE CURRENT STRUCTURE USE | 15 DESCRIBE PROPOSED STRUCTURE USE

OFFICE USE ONLY

16 NEW ACCESSORY BLDG. ☐ ACC	17 ADDITION ☐ ADD	18 RESIDENTIAL GARAGE ☐ ADI	19 RESIDENTIAL DECK ☐ ADC	20 OPEN PORCH ☐ ADS	21 ENCLOSED PORCH ☐ ADA	22 ALTER/ REMODEL LIGHT ☐ ALT	
23 ALTER/ REMODEL HEAVY ☐ ALC	24 DEMOLITION ☐ DEM	25 TENANT FIUP ☐ FUP	26 FOUNDATION ONLY ☐ FOU	27 NEW BUILDING ☐ NB	28 MOVING/ RELOCATION ☐ REL	29 REPAIR/ REPLACEMENT ☐ REP	

30 IF 1 OR 2 FAMILY ➡ ATTACHED ☐ 1 FAMILY ☐ 2 FAMILY | DETACHED ☐ 1 FAMILY ☐ 2 FAMILY

31 IF MULTIFAMILY, NUMBER OF UNITS PER STRUCTURE ➡

32 CHECK ONE *(IF APPLICABLE)* ☐ 1. LODGING HOUSE ☐ 2. NURSING HOME ☐ 3. ADULT CARE RESIDENCE

CONSTRUCTION COSTS

INSTRUCTIONS: ENTER APPROPRIATE AMOUNTS FOR A, B, C, D, E & F. TOTAL B, C, D, E & F. SUBTRACT THIS TOTAL FROM A TO OBTAIN G. COSTS ARE TO INCLUDE MATERIAL, LABOR, SUBCONTRACTS OVERHEAD & PROFIT

A. TOTAL CONST. COST OF ENTIRE JOB	$	C. MECH. COST	$	E. SPRINKLER COST	$	G. TOTAL CONSTRUCTION COST LESS TRADE PERMITS	$
B. ELEC. COST	$	D. PLUMB. COST	$	F. ELEVATOR COST	$		

WORK DESCRIPTION

33 DESCRIBE SCOPE OF WORK

LIEN AGENT INFORMATION

34 LIEN AGENT NAME | 35 PHONE NO.

37 ADDRESS | ZIP CODE

CONTACT INFORMATION

38 CONTACT PERSON | 39 CONTACT PHONE NO. | 40 CONTACT FAX NO.

41 CONTACT ADDRESS | ZIP CODE | 42 EMAIL

43 DO YOU WANT TO BE CALLED TO PICK UP PERMIT WHEN ISSUED? ☐ YES ☐ NO | NAME | PHONE NO.

44 ENGINEER/ARCHITECT NAME | 45 ENGINEER/ARCHITECT PHONE NO. | 46 ENGINEER/ARCHITECT FAX NO. | 47 EMAIL

ROOF TYPE

48 ROOF TYPE 1 *(SEE BACK FOR LIST)* | 49 NO. OF SQUARES | 50 ROOF TYPE 2 *(SEE BACK FOR LIST)* | 51 NO. OF SQUARES

FIRE SUPPRESSION

NOT REQUIRED FOR 1 & 2 FAMILY ➡ | 52 AUTOMATIC SPRINKLERS ☐ YES ☐ NO | 53 FIRE ALARM SYSTEM ☐ YES ☐ NO

LOT & BUILDING SIZE

54 BUILDING FINISHED AREA NEW OR ADDITION *(SQ. FT.)*	55 BUILDING UNFINISHED AREA NEW OR ADDITION *(SQ. FT.)*	56 GARAGE AREA *(SQ. FT.)*	57 OPEN PORCH AREA *(SQ. FT.)*	58 ENCLOSED PORCH AREA *(SQ. FT.)*
59 DECK AREA *(SQ. FT.)*	60 BUILDING AREA EXISTING *(SQ. FT.) (PER FLOOR)*	61 TOTAL AREA AT COMPLETION *(SQ. FT.) (PER FLOOR)*	62 TOTAL BUILDING HEIGHT	63 NUMBER OF FLOORS

SITE PLANS

64 NO. OF ON SITE PARKING SPACES *(STREET SPACES DO NOT COUNT)* | 65 NO. OF SPACES AT ANOTHER LOCATION | 66 LOCATION | LEASE ATTACHED? ☐ YES ☐ NO

SITE WORK

67 WILL THERE BE A ☐ NEW CURB ☐ RELOCATED CURB ☐ DRIVEWAY | 68 WILL THERE BE ANY SITE GRADING OR LAND DISTURBING ACTIVITY? ☐ YES ☐ NO | 69 TOTAL AREA TO BE DISTURBED *(SQ. FT.)* | 70 IS SURVEY OR SITE PLAN ATTACHED? ☐ YES ☐ NO

AFFIDAVIT

I HEREBY AFFIRM THAT UNDER THE PROVISIONS OF TITLE 54.1-1101 OF THE CODE OF VIRGINIA, I AM NOT SUBJECT TO LICENSURE AS A CONTRACTOR OR SUBCONTRACTOR. BY THIS AFFIDAVIT I ASSUME FULL RESPONSIBILITY FOR COMPLETION OF THE PROPOSED WORK IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LAW. I ALSO UNDERSTAND IT IS A VIOLATION OF STATE LAW TO KNOWINGLY HIRE AN UNLICENSED CONTRACTOR.

PRINTED NAME | SIGNATURE | DATE

ASBESTOS CERTIFICATION

I _____ (NAME OF APPLICANT) CERTIFY THAT THE BUILDING AT _____ (ADDRESS(ES), FLOOR OR SUITE)

HAS BEEN INSPECTED OR MEETS THE EXCEPTIONS OF SECTION 1101.3 THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE. THE ASBESTOS ABATEMENT WILL BE DONE AS PER REQUIREMENT OF THE "CLEAN AIR ACT" NATIONAL EMISSION STANDARD FOR THE HAZARDOUS AIR POLLUTANT (NESHAPS) AND OSHA "STANDARDS FOR CONSTRUCTION WORKERS".

SIGNATURE _____

OFFICE USE ONLY

ARB DISTRICT ☐ YES ☐ NO	HISTORICAL DISTRICT ☐ YES ☐ NO	VIOLATION ON PROPERTY ☐ YES ☐ NO	DELINQUENT TAXES DUE? ☐ YES ☐ NO	BOCA TYPE OF CONSTRUCTION	
EXISTING USE GROUP	PROPOSED USE GROUP	FEE CALC. TYPE ☐ s ☐ u ☐ a ☐ c	PERMIT FEE	FEE RECEIVED	RECEIPT NO. ☐ CASH ☐ CHECK ☐ CREDIT CARD
IS PROPERTY IN 100 YR FLOOD PLAIN? ☐ YES ☐ NO	FLOOD ELEV.	SITE ELEV.	CHESAPEAKE BAY PROTECTION AREA? ☐ YES ☐ NO	CHESAPEAKE BAY MANAGEMENT AREA? ☐ YES ☐ NO	
APPLICATION APPROVED BY	DATE	APPLICATION DISAPPROVED BY	DATE		

A COPY OF YOUR STATE CONTRACTOR'S LICENSE AND BUSINESS LICENSE MUST BE ON FILE BEFORE A PERMIT WILL BE ISSUED.

USA Shade and Fabric Structures 8505 Chancellor Row, Dallas, TX, 75247 (800)966-5005 usa-shade.com

USASHADE
& Fabric Structures

SHADE STRUCTURES

Sun Ports

VPS

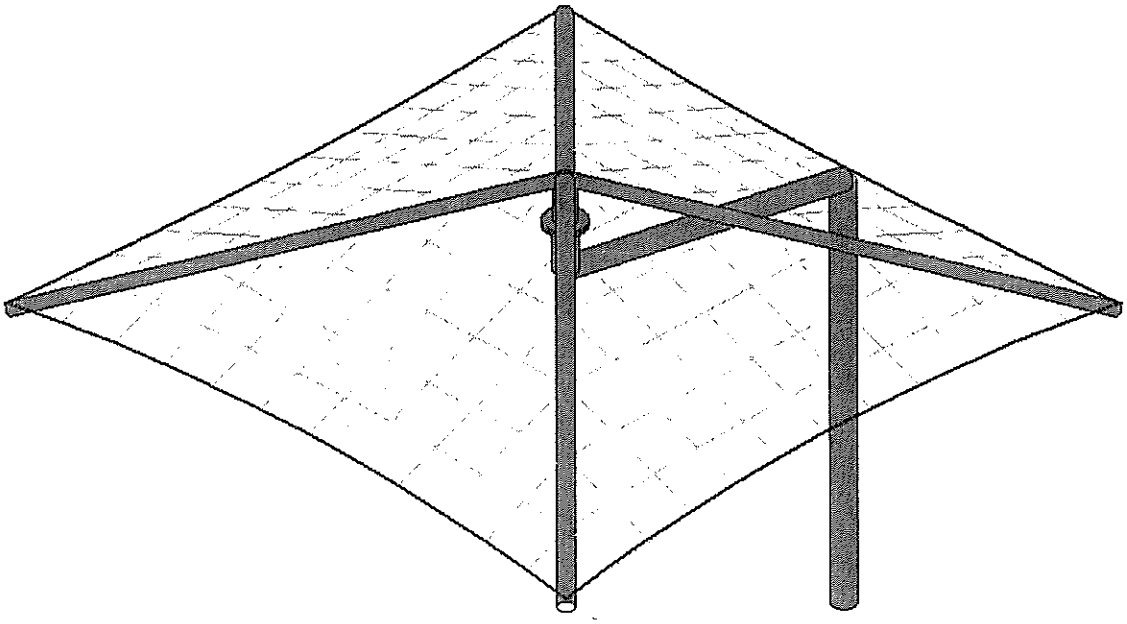
11-4-16

COMMONWEALTH OF VIRGINIA
THOMAS R. SADLER
NO. 25606
PROFESSIONAL ENGINEER

STRUCTURAL CALCULATIONS

PROJECT: LINWOOD HOLTON ES-PTA
LOCATION: RICHMOND, VA

STRUCTURE: **20 ft x 20 ft x 12 ft** SINGLE POST PYRAMID CANTI UNIT
(APPLIES FOR 20 ft x 20 ft x 8 ft SINGLE POST PYRAMID CANTI UNIT)



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GENERAL INFORMATION

USA Shade Units are constructed from shop-welded Structural Hollow Steel Shapes Sections and Plate Materials. Primary pieces such as Columns, Rafters or Ridges are field bolt connected unless noted otherwise. Once the steel frame is properly erected one or more pieces of HDPE fabric are stretched using sleeve-embedded wirerope cables until the fabric reach a rigid appearance and is securely anchored to the corners and/or edges of the steel frame.

The structural analysis of this type of frame supported membrane requires acknowledge that loads applied to the fabric may induce a combination of non-uniform pressure against the HSS members and tension on the cables. This is especially critical when loads such as wind uplift act upon the fabric surface when the attachment is at the steel frame corners (see graphic below).

Our Structural analysis approach is to create a web of compression-only members (low or no resistance to tension) linking fabric plate elements to the steel frame at various points through the model. This will provide a more realistic loading mechanism with forces acting on different directions on the steel frame.

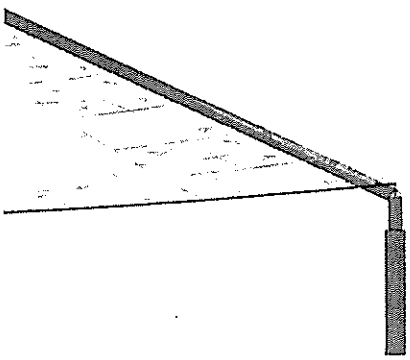


Figure 1a.

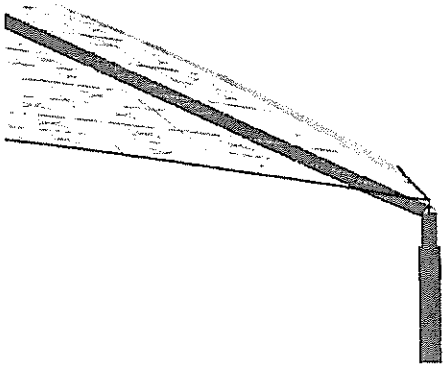


Figure 1b.

Corner details show an example of a typical case when the fabric deflects under live load (pressing downward on the rafters on Figure 1a) or uplift wind (Figure 1b). Uplift forces are carried to the frame corner as tension on the cables rather than an otherwise assumed upward uniform load applied to the rafters.

PARAMETERS AND ASSUMPTIONS:

1) CODE COMPLIANCE: IBC 2012, ASCE 7-10, ACI 318-11 & ASD 14TH Edition.

2) DESIGN SOFTWARE: Risa3D 10.0

3) BASIC LOAD CONDITIONS:

A) Dead Load (DL): Selfweight is calculated by the program.

B) Roof Live Load (RLL): 5 psf applied to the fabric.

C) Snow Load: 5 psf applied to the fabric.

D) Wind Load: Ultimate wind speed (Vult): 115 MPH
based on the ASCE 7-10 ultimate wind speed map 1609A for 3 sec gust, Risk Category II & Exposure C.
Refer to next page for detailed Wind Forces calculation.

E) Seismic Load: Seismic Design Category: D
Building Risk Category : Type II
Site Class: D
Seismic Risk Category: II
Spectral response coefficients: SDS = 1.33 & SD1 = 1
(based on worst case conditions of 2.0g and 1.0g for Ss and S1 respectively)
Response Modification Coeff: (Cantilevered Column special frame) (R^a=2 1/2)
Seismic Response coefficient (C_s): 0.53
Structure DL (see take-off report): **1,600 lbs**
Design Base Shear: V= Cs (W) = **848 lbs**
Seismic loads are usually smaller than Wind loads for light steel frames, and will not govern the lateral analysis.

4) LOAD COMBINATIONS:

DL + LL	0.6 DL + WL (UPLIFT)
0.6 DL + 0.6 WL (XA)	DL + 0.75 [LL + 0.6 WL (XA)]
0.6 DL + 0.6 WL (ZA)	DL + 0.75 [LL + 0.6 WL (ZA)]
0.6 DL + 0.6 WL (XB)	DL + 0.75 [LL + 0.6 WL (XB)]
0.6 DL + 0.6 WL (ZB)	DL + 0.75 [LL + 0.6 WL (ZB)]

5) SOILS PARAMETERS:

Per section 1806 and assuming Material Classification Number 5:
a) Allowable End Bearing Pressure: 1,500 psf
b) Allowable Lateral Bearing Pressure: 100 psf (2x Allowed)
c) A skin friction of 100 PSF is assumed based on section 1810.3.3.1.4

WIND FORCE CALCULATION:

Per IBC 2012 section 1609.1.1 , Wind loads on every building or structure shall be determined in accordance with Chapter 26 through 30 of ASCE 7-10.
Per ASCE 7-10 Chapter 27.4.3 (Directional Procedure):

$p = q_h \times G \times C_N$

$q_h = 0.00256 \times K_z \times K_{zt} \times K_d \times V^2$

$K_z = 0.85$

$K_{zt} = (1 + K_1 \times K_2 \times K_3)^2$

$K_1 = 0.00$
$K_2 = 1.00$
$K_3 = 1.00$

$K_{zt} = (1 + 0.00)^2 = 1.00$

$K_d = 0.85$

$V_{fabric\ on}$= 115 MPH [FABRIC ON] per IBC 2012 3105.4.2.1.
Per IBC 2012 Eq 16-32, the Nominal Design Wind Load is V0.6*Valt = 89 MPH

$q_z = 0.00256 \times 0.85 \times 1.00 \times 0.85 \times 115^2 =$ **24.46** PSF [FABRIC ON]

$G = 0.85$

From Figure 27.4-5: Clear wind flow, Roof Angle θ=22.5°, Wind direction γ=0°,180°
Load Case A C_{NW} = 1.1
Load Case A C_{NL} = 0.1
Load Case B C_{NW} = -0.1
Load Case B C_{NL} = -0.8

Load Case A

p = 24.46 x 0.85 x 1.10 = 22.9 PSF 115 MPH WINDWARD (FABRIC ON)
p = 24.46 x 0.85 x 0.10 = 2.08 PSF 115 MPH LEEWARD (FABRIC ON)

Load Case B

p = 24.46 x 0.85 x (-0.1) = -2.1 PSF 115 MPH WINDWARD (FABRIC ON)
p = 24.46 x 0.85 x(-0.8) = -17 PSF 115 MPH LEEWARD (FABRIC ON)

Worst Case

F = 24.46 x 0.85 x 1.1 x Af= 22.9 PSF x Tributary Vertical Projected Area

Wind forces obtained govern the lateral design of this steel frame,
since seismic base shear value is 848 lbs total.

DRILLED PIER FOOTING DESIGN
1.0 Non-Constrained Case

Computation of Cast in Place Concrete Footing according to IBC 2012

Table 1806.2

Class of Materials	*Allowable Foundation Pressure (psf)*	*Lateral Bearing lbs/ft² /ft*	
1. Massive crystalline bedrock	12000	1200	
2. Sedimentary and foliated rock	4000	400	
3. Sandy gravel and/or gravel (GW and GP)	3000	200	
4. Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM, SC, GM and GC)	2000	150	
5. Clay, sandy clay, silty clay, and clayey silt (CL, ML, MH, and CH)	1500	100	*Double this value is allowed section 1806.3.4*

Type of soil to use:

5	1500	200

1807.3.2.1 Nonconstrained Case

The following formula may be used in determining the depth of embedment required to resist lateral loads where NO constraint is provided at the ground surface such as rigid floor or rigid ground surface pavement.

Design Reactions, Worst Case (refer to envelope joint reactions)

Max Moment =	39809	*lb-ft*
Max Shear (P)=	671	*lb, applied lateral force*
Max Axial =	4028	*lb*
Max Uplift =	-2671	*lb*

Then:

b =	2.5	*diameter of round post or footing or diagonal dimension of square post or footing, feet*
d =	8.8	*depth of embedment in earth in feet but not over 12 ft for purpose of computing lateral pressure (change until it matches formula obtained value)*
h =	59.3	*distance in ft from ground surface to point of application of "P", calculated as Max Moment / Max Shear = 39809 / 671*
S_1 =	586.7	*allowable lateral soil-bearing pressure as set forth in Table 1806.2 based on a depth of one third the depth of embedment*
A =	1.07	*and:*
Match at:	8.9	*ft*
d =	9.0	*ft*

Axial Loading Check:

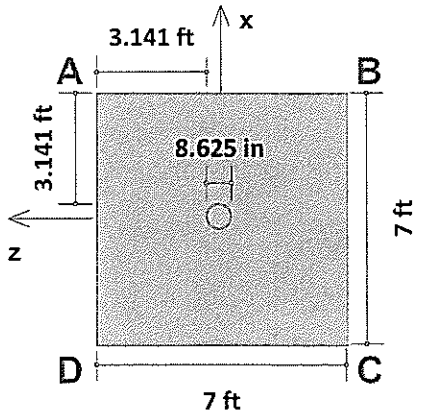
Area of footing =	4.9	ft^2	
Volume of Footing =	44.2	ft^3	
Weight =	6405.9	*lbs*	
Max Axial Load =	4028.0	*lbs*	
Total vertical Load =	10433.9	*lbs*	
AFR=	100.0	*psf*	*AFR=Allowable Frictional Resistance Section 1810.3.3.1.4 (max 500 psf)*
Friction Resistance=	5497.8	*lbs*	*Excluding upper two feet*
Actual Load=	4936.1	*lbs*	
Actual Pressure =	1005.6	*psf*	*OK is less than allowable*
Pier Weight +Friction =	3967.91	*lbs*	*Using a safety factor of 3*
Max Uplift =	2671.00	*lbs*	
Actual Lift Force =	-1296.91	*psf*	*OK is less than allowable*

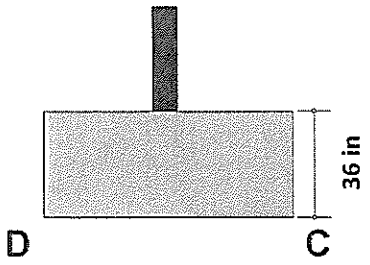
Minimum Vertical Reinforcing Steel:

As min =	7.07	in^2
# bar =	8	
Qty =	9	

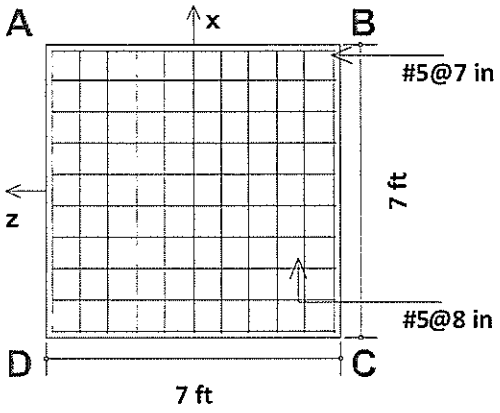
Use a footing with **2.5** ft. Diameter and a minimum of **9.0** ft. Deep

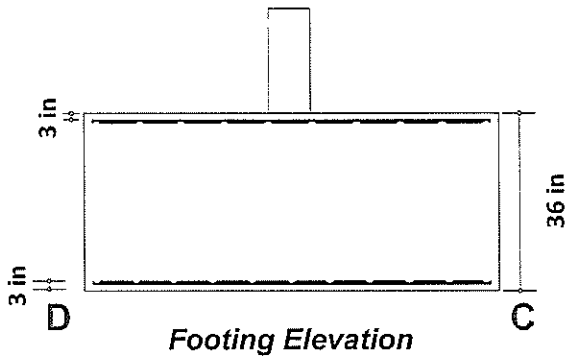
Sketch





Details



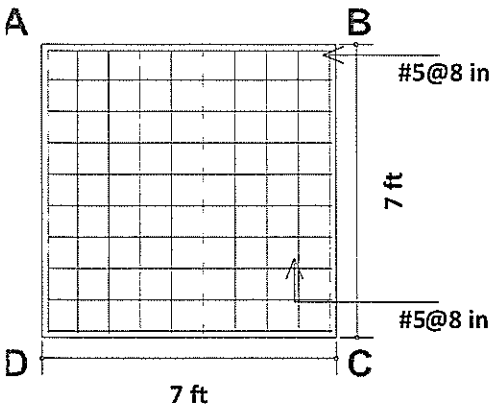


Footing Elevation

x Dir. Steel: 3.37 in^2 (min)(11 #5)

z Dir. Steel: 3.07 in^2 (min)(10 #5)

Bottom Rebar Plan



x Dir. Steel: 3.07 in^2 (min)(10 #5)

z Dir. Steel: 3.07 in^2 (min)(10 #5)

Top Rebar Plan

Geometry, Materials and Criteria

Length	:7 ft	eX	:0 in	Net Allowable Bearing	:1.5 ksf (net)	Steel fy	:60 ksi
Width	:7 ft	eZ	:0 in	Concrete Weight	:.145 k/ft^3	Minimum Steel	:.002
Thickness	:36 in	pX	:8.625 in	Concrete f'c	:2.5 ksi	Maximum Steel	:.002
Height	:0 in	pZ	:8.625 in	Design Code	:ACI 318-11		
Rot. Angle	:Orient to Column						

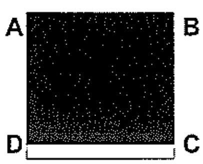
Footing Top Bar Cover	:3 in	Overturning / Sliding SF	:1.5	Phi for Flexure	:0.9
Footing Bottom Bar Cover	:3 in	Coefficient of Friction	:0.3	Phi for Shear	:0.75
Pedestal Longitudinal Bar Cover	:3 in	Passive Resistance of Soil	:0 k	Phi for Bearing	:0.65

Loads

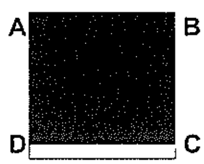
	P (k)	Vx (k)	Vz (k)	Mx (k-ft)	Mz (k-ft)	Overburden (ksf)
DL	1.639			.018	-11.112	.1
LL	1.829			.03	-18.29	
WL	1.468		-1.971	5.042	-14.667	

Soil Bearing

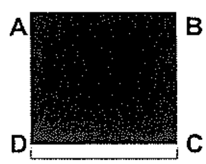
Description	Categories and Factors	Gross Allow.(ksf)	Max Bearing (ksf)	Max/Allowable Ratio
DL+LL	1DL+1LL	2.035	1.154 (C)	.567
.6DL + 0.6W(X..	.6DL+.6WL+X	2.035	.459 (C)	.226
.6DL + 0.6W(Z..	.6DL+.6WL+Z	2.035	.459 (C)	.226
.6DL + 0.6W(X..	.6DL+.6WL-X	2.035	.459 (C)	.226
.6DL + 0.6W(Z..	.6DL+.6WL-Z	2.035	.459 (C)	.226
.6DL + UPLIFT	.6DL+1WL+Y	2.035	.459 (C)	.226
DL + 0.75 [L..	1DL+.75LL+.45WL+X	2.035	1.054 (C)	.518
DL + 0.75 [L..	1DL+.75LL+.45WL+Z	2.035	1.054 (C)	.518
DL + 0.75 [L..	1DL+.75LL+.45WL-X	2.035	1.054 (C)	.518
DL + 0.75 [L..	1DL+.75LL+.45WL-Z	2.035	1.054 (C)	.518



1DL+1LL
QA: .058 ksf
QB: .06 ksf
QC: 1.154 ksf
QD: 1.152 ksf
NAZ: 51876.561 in
NAX: 88.587 in



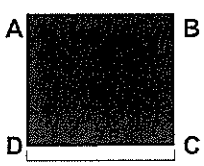
.6DL+.6WL+X
QA: .223 ksf
QB: .223 ksf
QC: .459 ksf
QD: .459 ksf
NAZ: 83180.444 in
NAX: 163.327 in



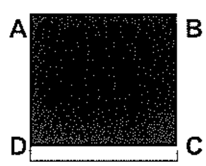
.6DL+.6WL+Z
QA: .223 ksf
QB: .223 ksf
QC: .459 ksf
QD: .459 ksf
NAZ: 83180.444 in
NAX: 163.327 in

.6DL+.6WL-X
QA: .223 ksf
QB: .223 ksf
QC: .459 ksf
QD: .459 ksf
NAZ: 83180.444 in
NAX: 163.327 in

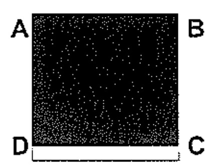
.6DL+.6WL-Z
QA: .223 ksf
QB: .223 ksf
QC: .459 ksf
QD: .459 ksf
NAZ: 83180.444 in
NAX: 163.327 in



.6DL+1WL+Y
QA: .223 ksf
QB: .223 ksf
QC: .459 ksf
QD: .459 ksf
NAZ: 83180.444 in
NAX: 163.327 in

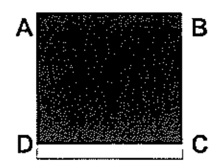


1DL+.75LL+.4..
QA: .139 ksf
QB: .14 ksf
QC: 1.054 ksf
QD: 1.052 ksf
NAZ: 48280.392 in
NAX: 96.905 in



1DL+.75LL+.4..
QA: .139 ksf
QB: .14 ksf
QC: 1.054 ksf
QD: 1.052 ksf
NAZ: 48280.392 in
NAX: 96.905 in

1DL+.75LL+.4..
QA: .139 ksf
QB: .14 ksf
QC: 1.054 ksf
QD: 1.052 ksf
NAZ: 48280.392 in
NAX: 96.905 in



1DL+.75LL+.4..
QA: .139 ksf
QB: .14 ksf
QC: 1.054 ksf
QD: 1.052 ksf
NAZ: 48280.392 in
NAX: 96.905 in

Footing Flexure Design (Bottom Bars)

As-min x-dir (Top Flexure): **9.065 in^2**
As-min z-dir (Top Flexure): **9.065 in^2**
As-min x-dir (Bot Flexure): **9.065 in^2**
As-min z-dir (Bot Flexure): **9.065 in^2**

As-min x-dir (T & S): **5.443 in^2**
As-min z-dir (T & S): **5.443 in^2**

Description	Categories and Factors	Mu-xx UC Max	Mu-xx (k-ft)	z-Dir As Required (in^2)	z-Dir As Provided (in^2)	Mu-zz UC Max	Mu-zz (k-ft)	x-Dir As Required (in^2)	x-Dir As Provided (in^2)
ACI 9.2 1...	1.2DL+1.6LL	.00791	3.48	.024	3.068	.04811	23.24	.16	3.375
ACI 9.3 XA	1.2DL+1.6LL+.5WL..	.00791	3.48	.024	3.068	.04811	23.24	.16	3.375
ACI 9.3 ZA	1.2DL+1.6LL+.5WL..	.00791	3.48	.024	3.068	.04811	23.24	.16	3.375
ACI 9.3 XB	1.2DL+1.6LL+.5WL..	.00791	3.48	.024	3.068	.04811	23.24	.16	3.375
ACI 9.3 ZB	1.2DL+1.6LL+.5WL..	.00791	3.48	.024	3.068	.04811	23.24	.16	3.375
ACI 9.4 XA	1.2DL+.5LL+.8WL..	.00466	2.05	.014	3.068	.02482	11.99	.082	3.375
ACI 9.4 ZA	1.2DL+.5LL+.8WL..	.00466	2.05	.014	3.068	.02482	11.99	.082	3.375
ACI 9.4 XB	1.2DL+.5LL+.8WL..	.00466	2.05	.014	3.068	.02482	11.99	.082	3.375
ACI 9.4 ZB	1.2DL+.5LL+.8WL..	.00466	2.05	.014	3.068	.02482	11.99	.082	3.375
ACI 9.6 XA	.9DL+1WL+X	.00238	1.05	.007	3.068	.01109	5.36	.037	3.375
ACI 9.6 ZA	.9DL+1WL+Z	.00238	1.05	.007	3.068	.01109	5.36	.037	3.375
ACI 9.6 XB	.9DL+1WL-X	.00238	1.05	.007	3.068	.01109	5.36	.037	3.375
ACI 9.6 ZB	.9DL+1WL-Z	.00238	1.05	.007	3.068	.01109	5.36	.037	3.375

Footing Flexure Design (Top Bars)

Description	Categories and Factors	Mu-xx (k-ft)	z Dir As (in^2)	Mu-zz (k-ft)	x Dir As (in^2)
SW+OB	1SW+1OB-(ACI 9.6 ..,ACI 9.2 ..)	.817	.006	12.495	.086

Moment Capacity of Plain Concrete Section Along xx and zz= **0k-ft,0k-ft** Per Chapter 22 of ACI 318.

Footing Shear Check

Two Way (Punching) Vc: **1013.961 k** One Way (x Dir. Cut) Vc **271.95 k** One Way (z Dir. Cut) Vc: **271.95 k**

Description	Categories and Factors	Punching Vu(k)	Punching Vu/⌀Vc	x Dir. Cut Vu(k)	x Dir. Cut Vu/⌀Vc	z Dir. Cut Vu(k)	z Dir. Cut Vu/⌀Vc
ACI 9.2 1.2D..	1.2DL+1.6LL	3.851	.005	.314	.002	2.686	.013
ACI 9.3 XA	1.2DL+1.6LL+.5WL+X	3.851	.005	.314	.002	2.686	.013
ACI 9.3 ZA	1.2DL+1.6LL+.5WL+Z	3.851	.005	.314	.002	2.686	.013
ACI 9.3 XB	1.2DL+1.6LL+.5WL-X	3.851	.005	.314	.002	2.686	.013
ACI 9.3 ZB	1.2DL+1.6LL+.5WL-Z	3.851	.005	.314	.002	2.686	.013
ACI 9.4 XA	1.2DL+.5LL+.8WL+X	2.254	.003	.184	0	1.377	.007
ACI 9.4 ZA	1.2DL+.5LL+.8WL+Z	2.254	.003	.184	0	1.377	.007
ACI 9.4 XB	1.2DL+.5LL+.8WL-X	2.254	.003	.184	0	1.377	.007
ACI 9.4 ZB	1.2DL+.5LL+.8WL-Z	2.254	.003	.184	0	1.377	.007
ACI 9.6 XA	.9DL+1WL+X	1.154	.002	.094	0	.611	.003
ACI 9.6 ZA	.9DL+1WL+Z	1.154	.002	.094	0	.611	.003
ACI 9.6 XB	.9DL+1WL-X	1.154	.002	.094	0	.611	.003
ACI 9.6 ZB	.9DL+1WL-Z	1.154	.002	.094	0	.611	.003

Overturning Check (Service)

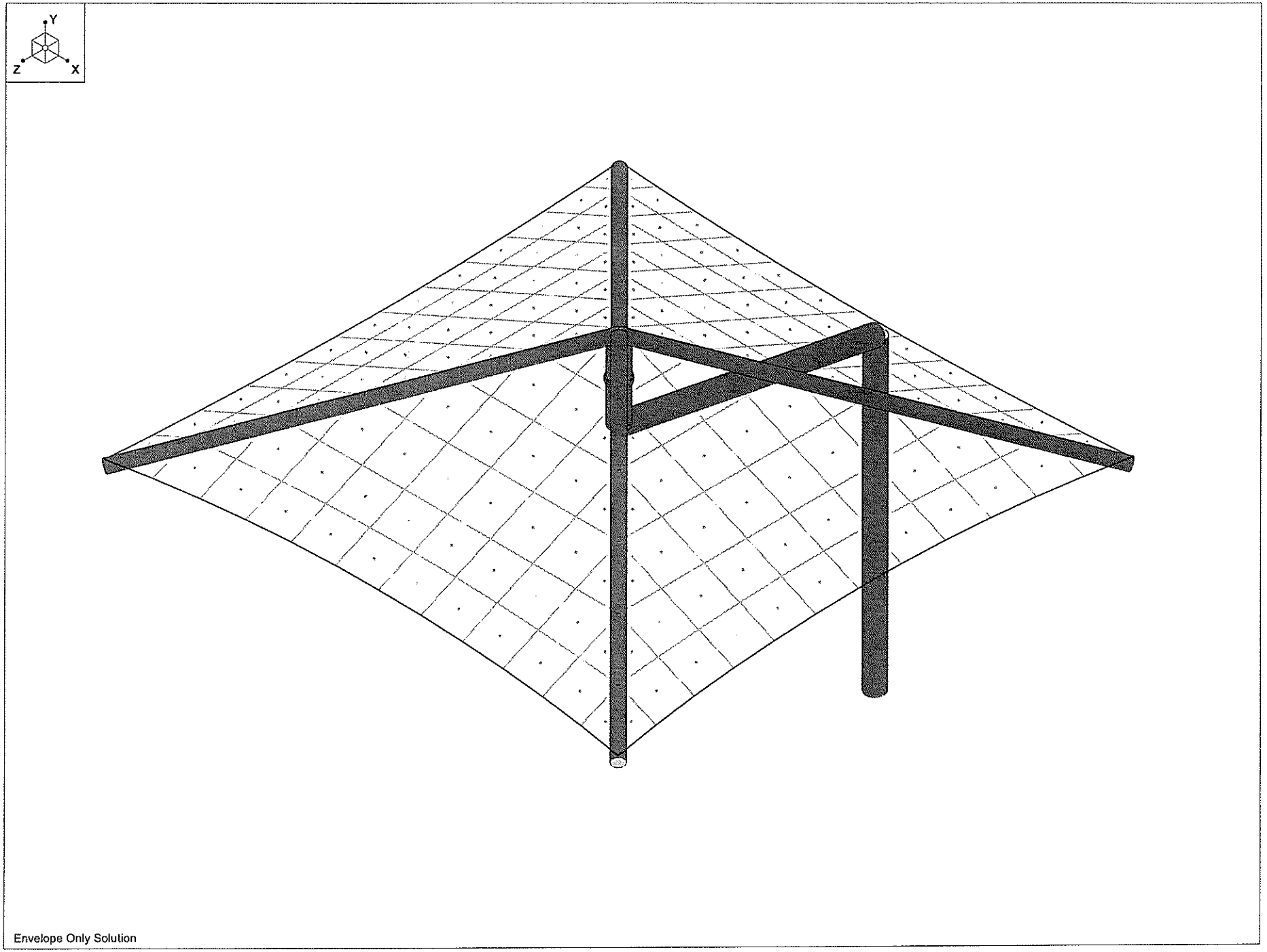
Description	Categories and Factors	Mo-xx (k-ft)	Ms-xx (k-ft)	Mo-zz (k-ft)	Ms-zz (k-ft)	OSF-xx	OSF-zz
DL+LL	1DL+1LL	0	103.936	29.402	103.888	NA	3.533
.6DL + 0.6W(X..	.6DL+.6WL+X	0	58.504	6.667	58.493	NA	8.773
.6DL + 0.6W(Z..	.6DL+.6WL+Z	0	58.504	6.667	58.493	NA	8.773
.6DL + 0.6W(X..	.6DL+.6WL-X	0	58.504	6.667	58.493	NA	8.773
.6DL + 0.6W(Z..	.6DL+.6WL-Z	0	58.504	6.667	58.493	NA	8.773
.6DL + UPLIFT	.6DL+1WL+Y	0	58.504	6.667	58.493	NA	8.773
DL + 0.75 [L..	1DL+.75LL+.45WL..	0	102.329	24.829	102.288	NA	4.12
DL + 0.75 [L..	1DL+.75LL+.45WL..	0	102.329	24.829	102.288	NA	4.12
DL + 0.75 [L..	1DL+.75LL+.45WL..	0	102.329	24.829	102.288	NA	4.12
DL + 0.75 [L..	1DL+.75LL+.45WL..	0	102.329	24.829	102.288	NA	4.12

Mo-xx: Governing Overturning Moment about AD or BC
Ms-xx: Governing Stablizing Moment about AD or BC
OSF-xx: Ratio of Ms-xx to Mo-xx

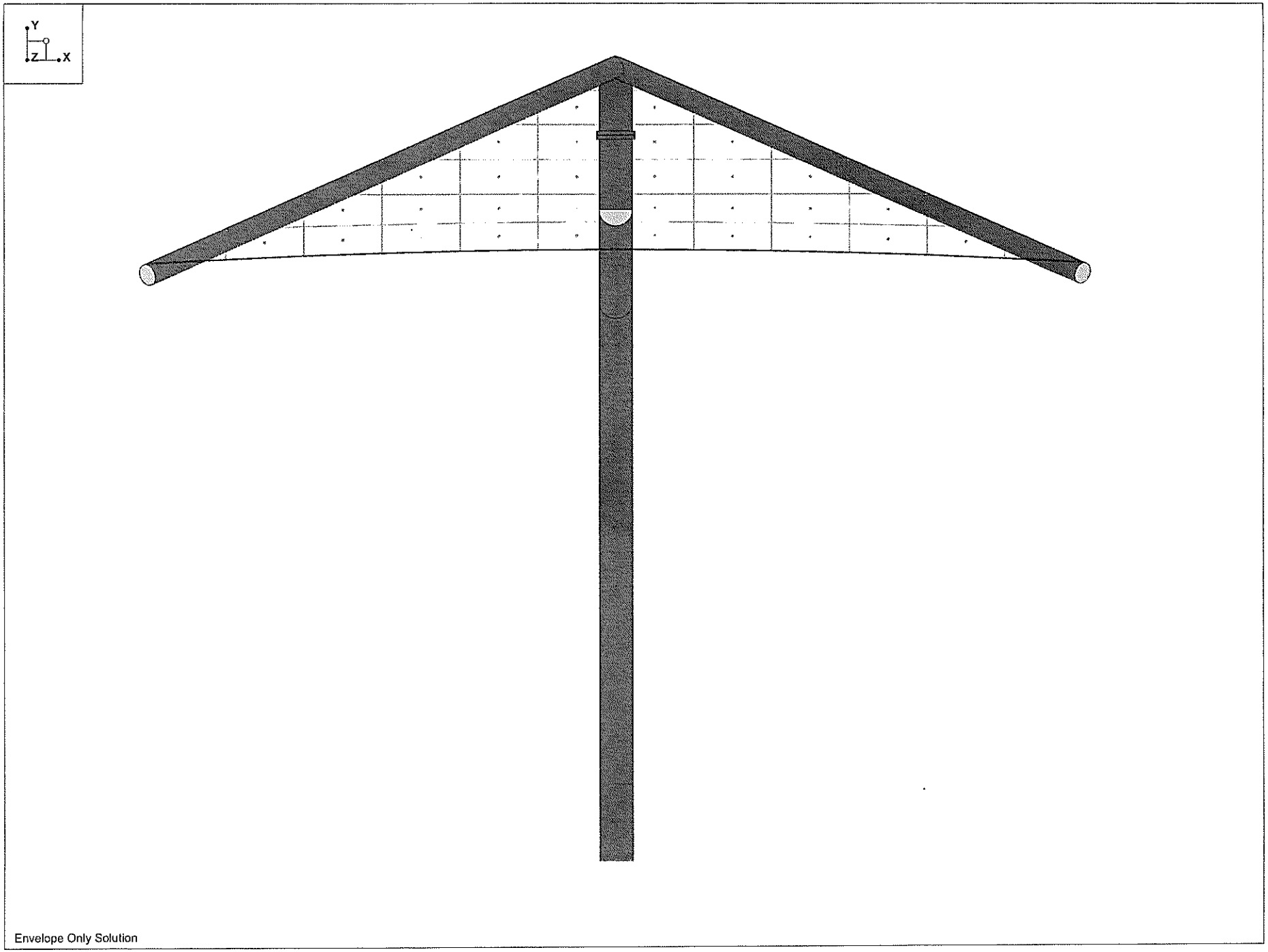
Sliding Check (Service)

Description	Categories and Factors	Va-xx (k)	Vr-xx (k)	Va-zz (k)	Vr-zz (k)	SR-xx	SR-zz
DL+LL	1DL+1LL	.0002574	8.893	3.143e-6	8.893	34541.679	NA
.6DL + 0.6W(X..	.6DL+.6WL+X	5.13e-5	5.006	5.555e-7	5.006	NA	NA
.6DL + 0.6W(Z..	.6DL+.6WL+Z	5.13e-5	5.006	5.555e-7	5.006	NA	NA
.6DL + 0.6W(X..	.6DL+.6WL-X	5.13e-5	5.006	5.555e-7	5.006	NA	NA
.6DL + 0.6W(Z..	.6DL+.6WL-Z	5.13e-5	5.006	5.555e-7	5.006	NA	NA
.6DL + UPLIFT	.6DL+1WL+Y	5.13e-5	5.006	5.555e-7	5.006	NA	NA
DL + 0.75 [L..	1DL+.75LL+.45WL..	.0002706	8.755	1.384e-6	8.755	32359.742	NA
DL + 0.75 [L..	1DL+.75LL+.45WL..	.0002706	8.755	1.384e-6	8.755	32359.742	NA
DL + 0.75 [L..	1DL+.75LL+.45WL..	.0002706	8.755	1.384e-6	8.755	32359.742	NA
DL + 0.75 [L..	1DL+.75LL+.45WL..	.0002706	8.755	1.384e-6	8.755	32359.742	NA

Va-xx: Applied Lateral Force to Cause Sliding Along xx Axis
Vr-xx: Resisting Lateral Force Against Sliding Along xx Axis
SR-xx: Ratio of Vr-xx to Va-xx



Envelope Only Solution



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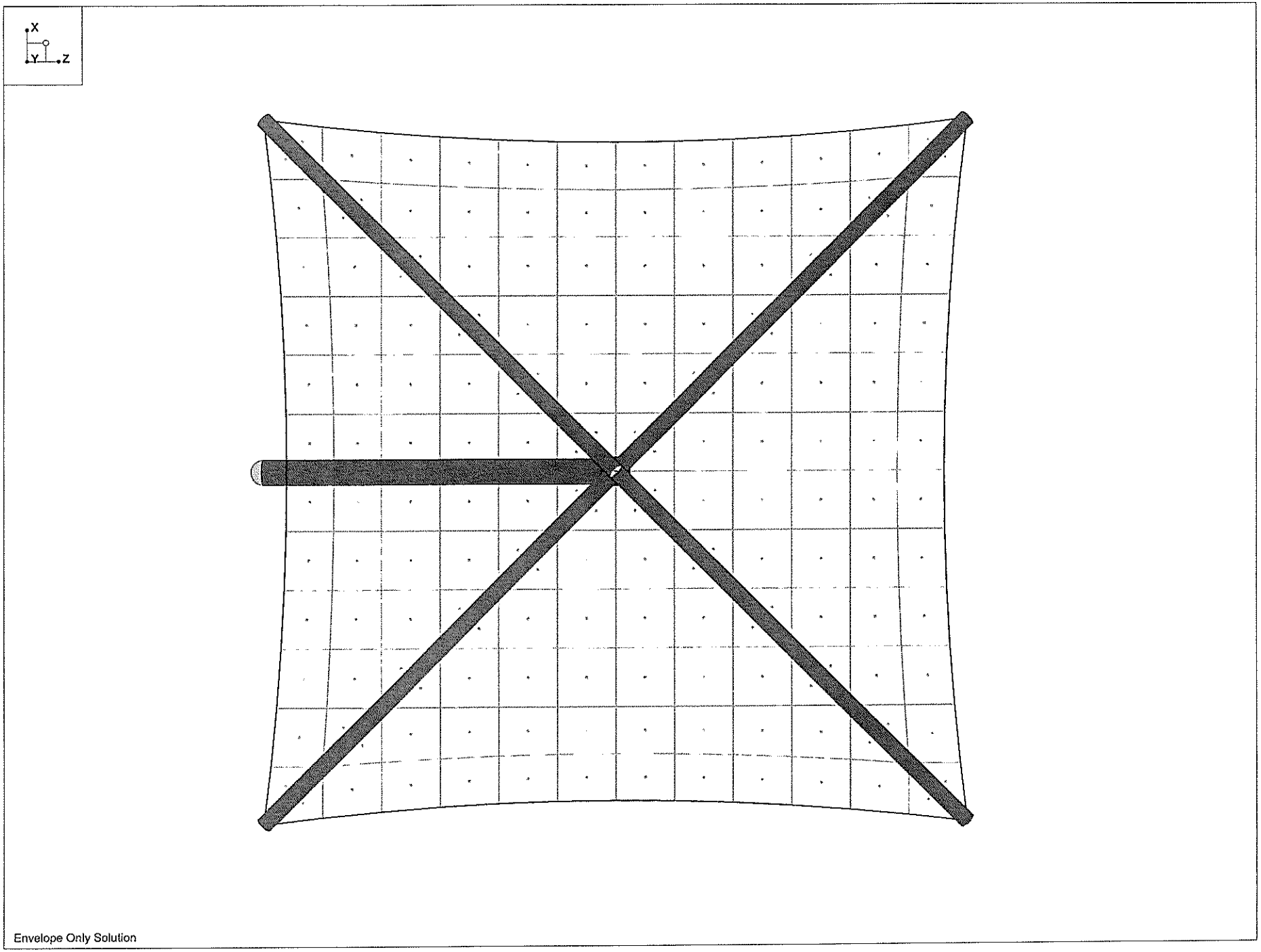

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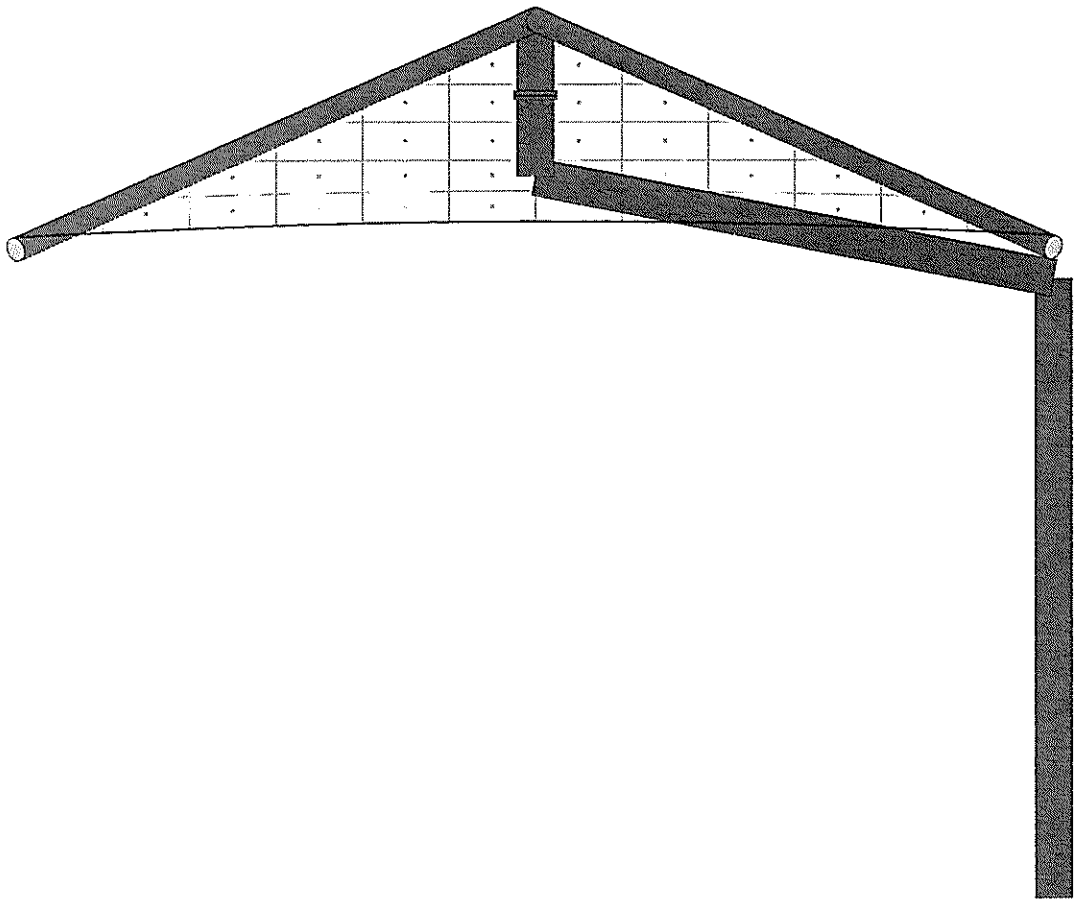

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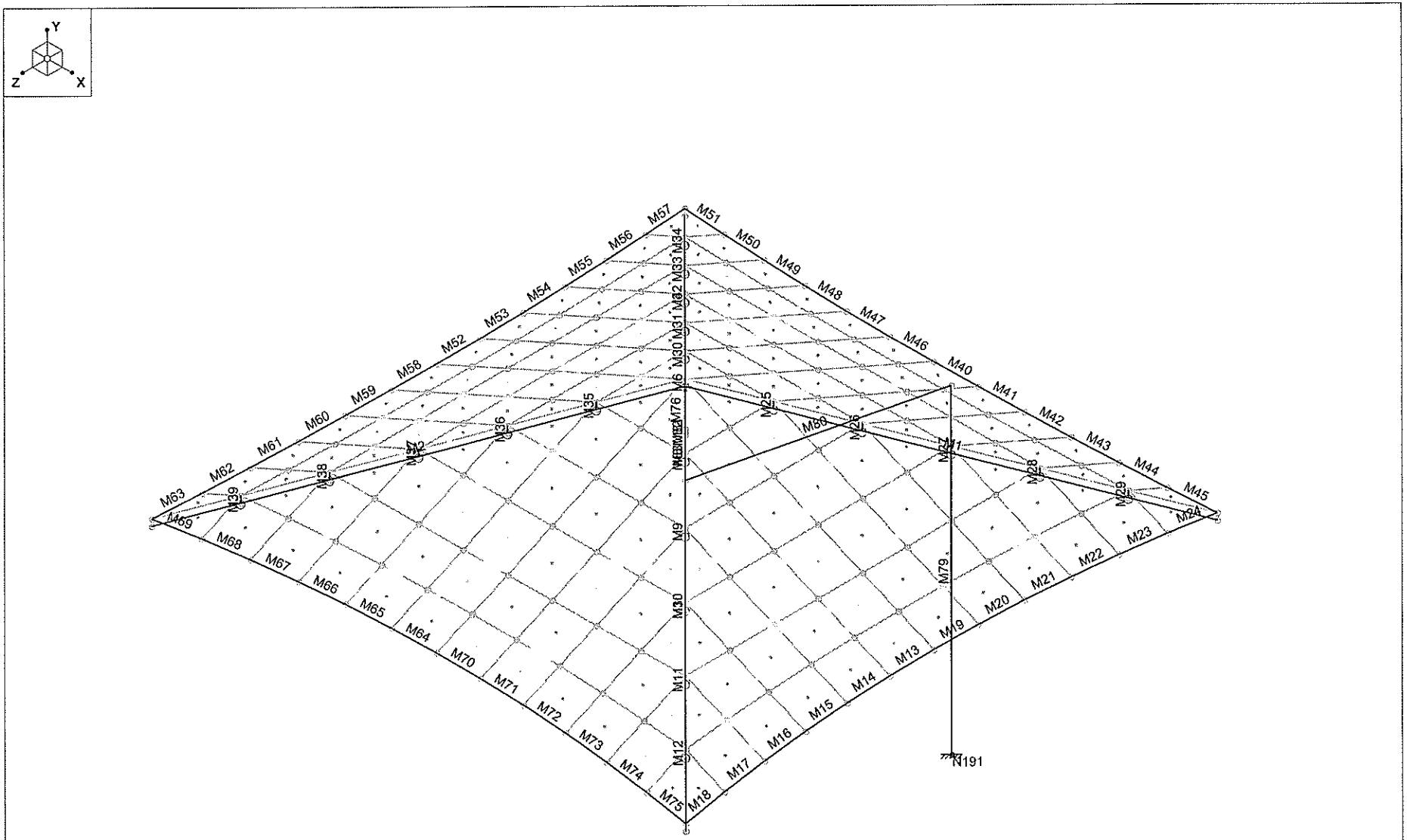

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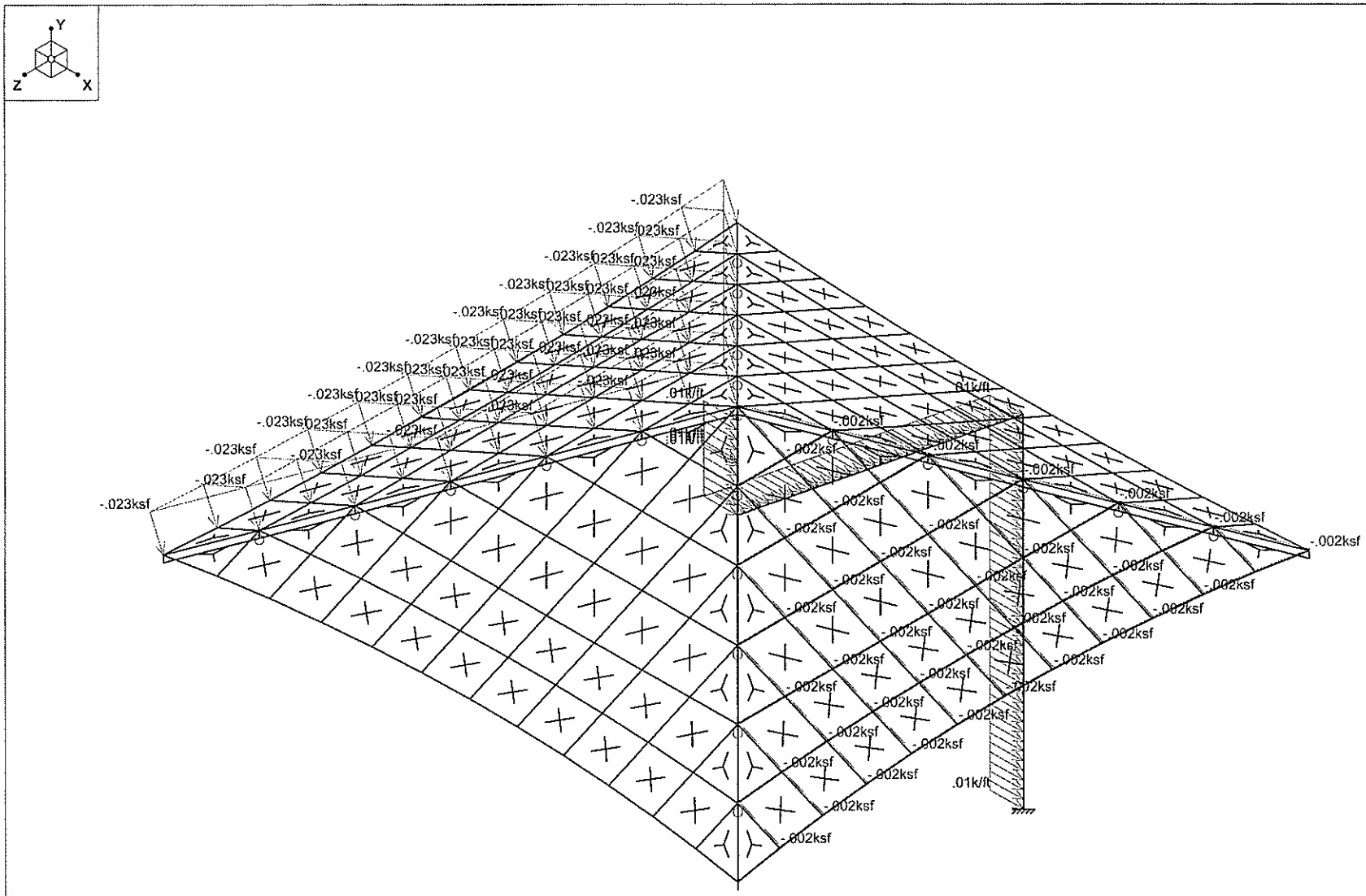
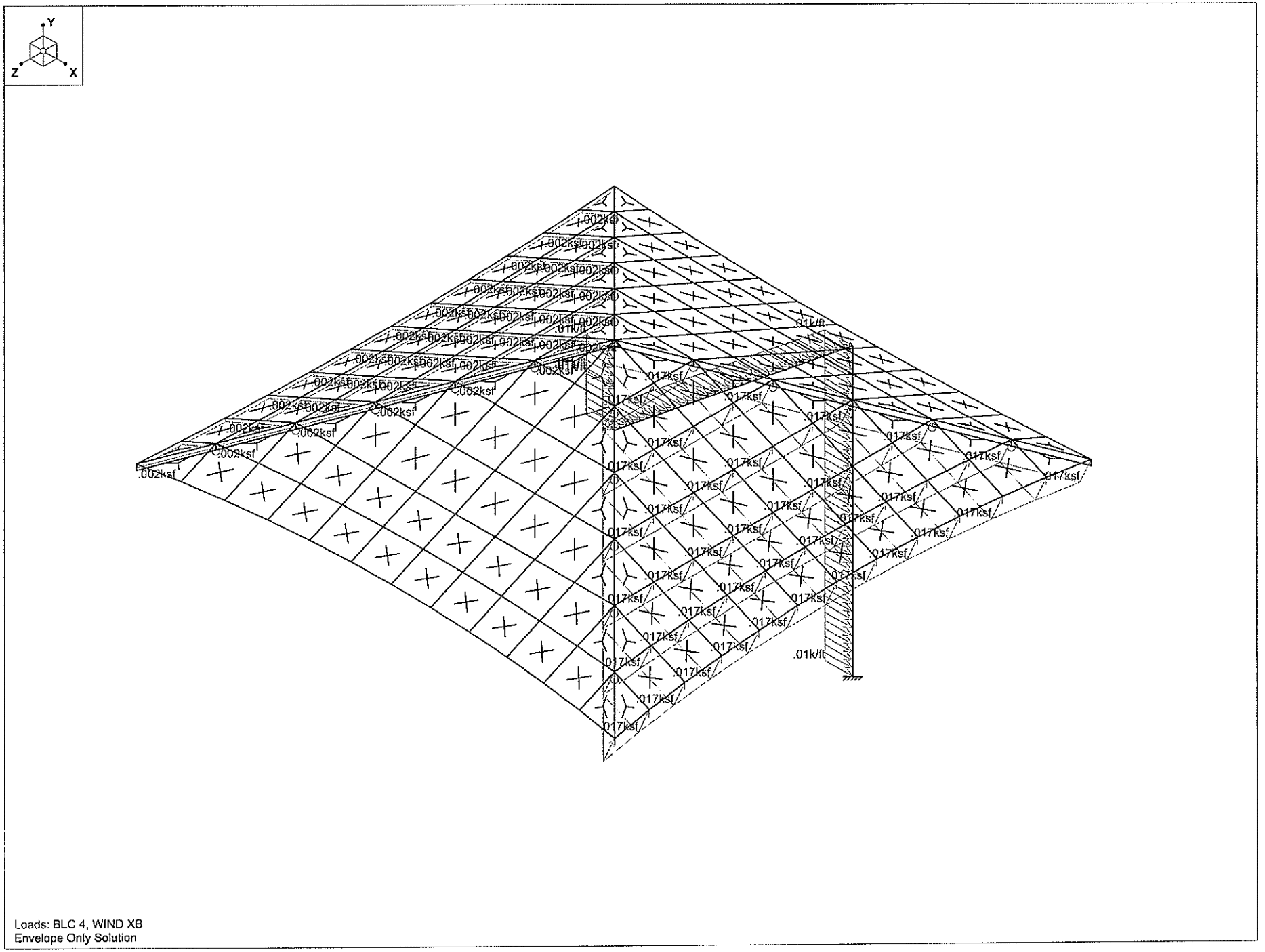
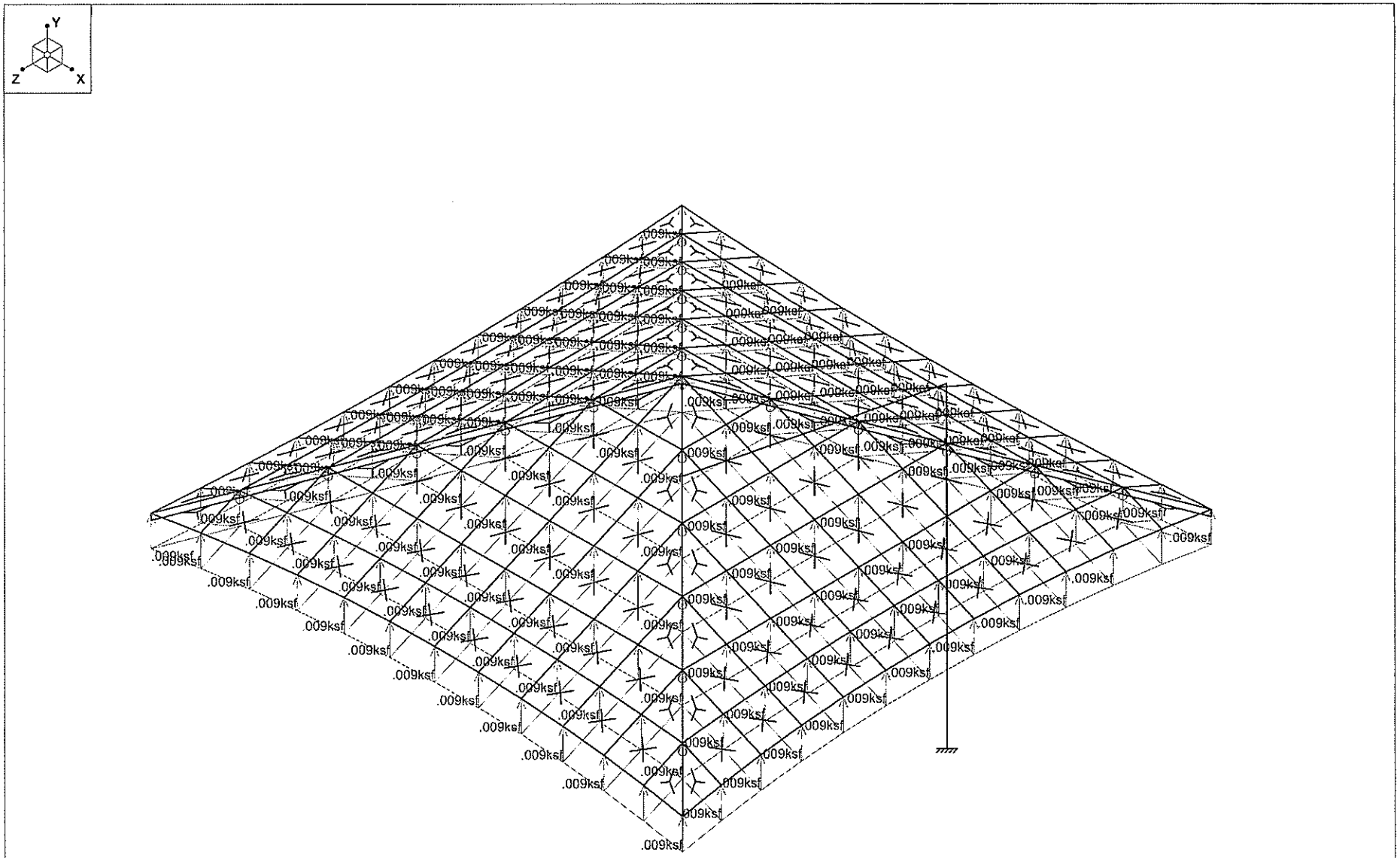


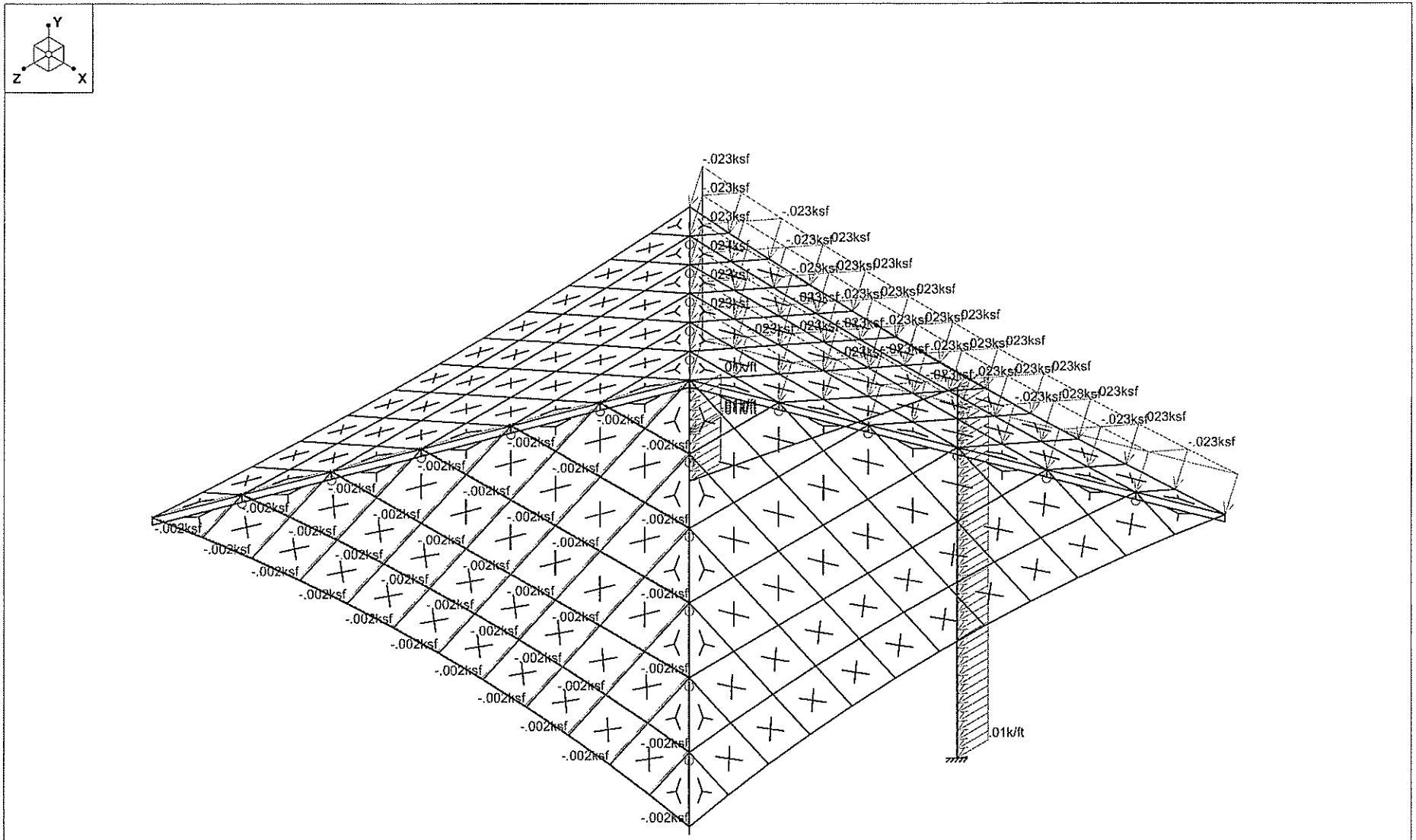
Loads: BLC 3, WIND XA
Envelope Only Solution



Loads: BLC 4, WIND XB
Envelope Only Solution



Loads: BLC 5, UPLIFT
Envelope Only Solution



Loads: BLC 6, WIND ZA
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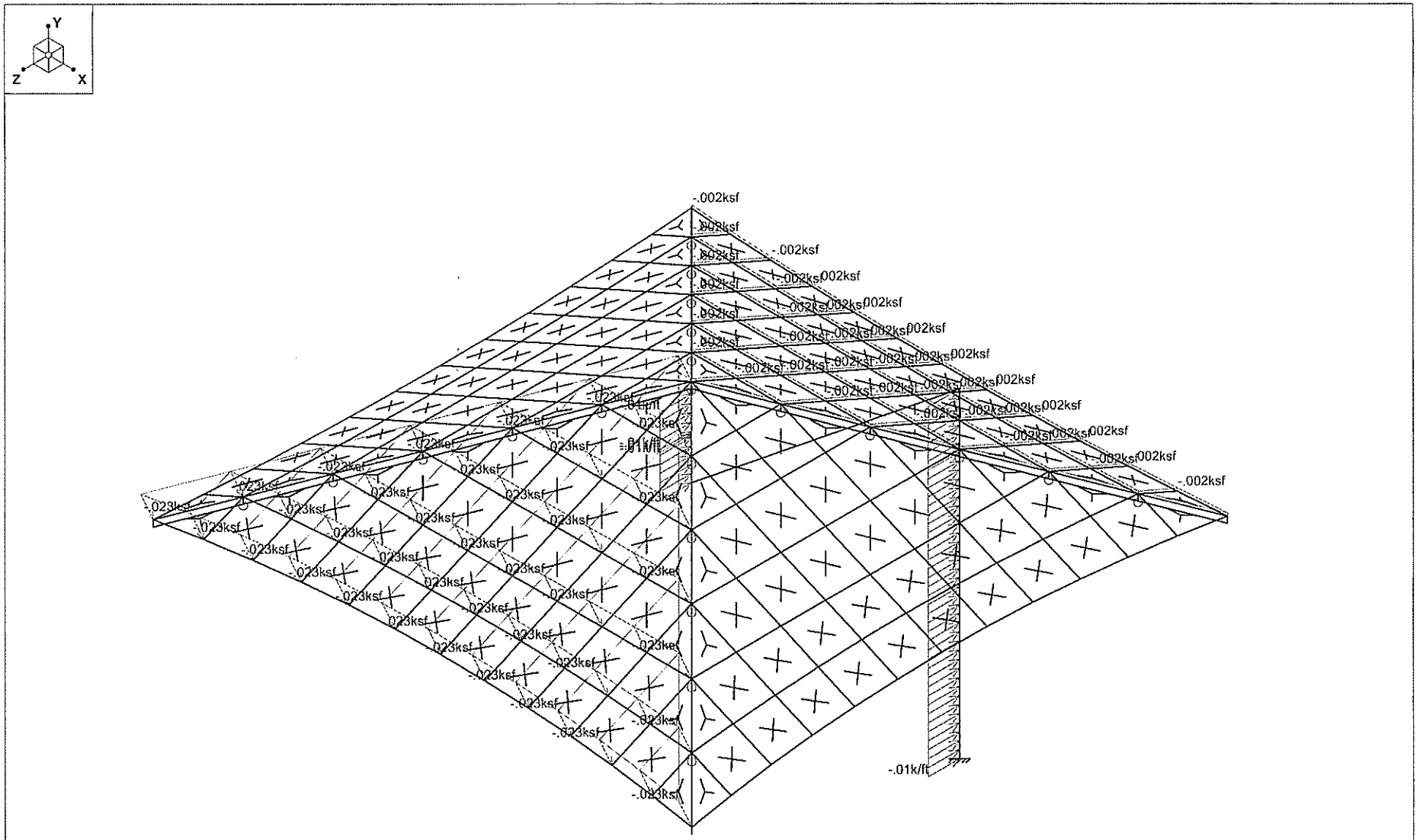


Loads: BLC 7, WIND ZB
Envelope Only Solution

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	No
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Standard Skyline
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	None
Aluminum Code	None - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	PCA Load Contour
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	None
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct X	.035
Ct Z	.035
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	2.5
R Z	2.5
Footing Overturning Safety Factor	1.5
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	.145
Footing Concrete f'c (ksi)	2.5
Footing Concrete Ec (ksi)	2850
Lambda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.002
Maximum Steel	0.002
Footing Top Bar	#5
Footing Top Bar Cover (in)	3
Footing Bottom Bar	#5
Footing Bottom Bar Cover (in)	3
Pedestal Bar	#8
Pedestal Bar Cover (in)	3
Pedestal Ties	#4

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	50KSI	29000	11154	.3	.65	.49	50	1.1	58	1.2
2	45KSI	29000	11154	.3	.65	.49	45	1.3	58	1.1
3	WIREROPE	12000		.3	.65	0	86	1.1	58	1.2

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]
1	LINK	1e+6		.3	.65	0
2	FABRIC	1500		.5	.65	.002
3	C-ONLY	10		.3	.65	0

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	20.02	12.596	0	0	
2	N2	20.02	12.596	20.02	0	
3	N3	11.679	16.287	11.679	0	
4	N4	13.346	15.55	13.346	0	
5	N5	15.015	14.811	15.015	0	
6	N6	16.684	14.072	16.684	0	
7	N7	18.351	13.335	18.351	0	
8	N8	19.818	12.921	18.351	0	
9	N9	19.654	12.994	16.684	0	
10	N10	19.527	13.05	15.015	0	
11	N11	19.435	13.09	13.346	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
12	N12	19.381	13.114	11.679	0	
13	N13	19.364	13.123	10.01	0	
14	N14	19.381	13.114	8.341	0	
15	N15	19.435	13.09	6.674	0	
16	N16	19.527	13.05	5.005	0	
17	N17	19.654	12.994	3.336	0	
18	N18	19.818	12.921	1.669	0	
19	N19	18.234	13.622	16.684	0	
20	N20	18.141	13.663	15.015	0	
21	N21	18.075	13.692	13.346	0	
22	N22	18.037	13.709	11.679	0	
23	N23	18.024	13.715	10.01	0	
24	N24	18.037	13.709	8.341	0	
25	N25	18.075	13.692	6.674	0	
26	N26	18.141	13.663	5.005	0	
27	N27	18.234	13.622	3.336	0	
28	N28	16.684	14.308	15.015	0	
29	N29	16.684	14.308	13.346	0	
30	N30	16.684	14.308	11.679	0	
31	N31	16.684	14.308	10.01	0	
32	N32	16.684	14.308	8.341	0	
33	N33	16.684	14.308	6.674	0	
34	N34	16.684	14.308	5.005	0	
35	N35	15.015	15.046	13.346	0	
36	N36	15.015	15.046	11.679	0	
37	N37	15.015	15.046	10.01	0	
38	N38	15.015	15.046	8.341	0	
39	N39	15.015	15.046	6.674	0	
40	N40	13.346	15.785	11.679	0	
41	N41	13.346	15.785	10.01	0	
42	N42	13.346	15.785	8.341	0	
43	N43	11.679	16.523	10.01	0	
44	N44	11.679	16.287	8.341	0	
45	N45	13.346	15.55	6.674	0	
46	N46	15.015	14.811	5.005	0	
47	N47	16.684	14.072	3.336	0	
48	N48	18.351	13.335	1.669	0	
49	N49	8.341	16.287	8.341	0	
50	N50	6.674	15.55	6.674	0	
51	N51	5.005	14.811	5.005	0	
52	N52	3.336	14.072	3.336	0	
53	N53	1.669	13.335	1.669	0	
54	N54	8.341	16.287	11.679	0	
55	N55	6.674	15.55	13.346	0	
56	N56	5.005	14.811	15.015	0	
57	N57	3.336	14.072	16.684	0	
58	N58	1.669	13.335	18.351	0	
59	N59	20.02	12.831	0	0	
60	N60	18.351	12.921	.202	0	
61	N61	16.684	12.994	.366	0	
62	N62	15.015	13.05	.493	0	
63	N63	13.346	13.09	.585	0	
64	N64	11.679	13.114	.639	0	
65	N65	10.01	13.123	.656	0	
66	N66	8.341	13.114	.639	0	
67	N67	6.674	13.09	.585	0	
68	N68	5.005	13.05	.493	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
69	N69	3.336	12.994	.366	0	
70	N70	1.669	12.921	.202	0	
71	N71	18.351	13.57	1.669	0	
72	N72	16.684	13.622	1.786	0	
73	N73	15.015	13.663	1.879	0	
74	N74	13.346	13.692	1.945	0	
75	N75	11.679	13.709	1.983	0	
76	N76	10.01	13.715	1.996	0	
77	N77	8.341	13.709	1.983	0	
78	N78	6.674	13.692	1.945	0	
79	N79	5.005	13.663	1.879	0	
80	N80	3.336	13.622	1.786	0	
81	N81	16.684	14.308	3.336	0	
82	N82	15.015	14.308	3.336	0	
83	N83	13.346	14.308	3.336	0	
84	N84	11.679	14.308	3.336	0	
85	N85	10.01	14.308	3.336	0	
86	N86	8.341	14.308	3.336	0	
87	N87	6.674	14.308	3.336	0	
88	N88	5.005	14.308	3.336	0	
89	N89	15.015	15.046	5.005	0	
90	N90	13.346	15.046	5.005	0	
91	N91	11.679	15.046	5.005	0	
92	N92	10.01	15.046	5.005	0	
93	N93	8.341	15.046	5.005	0	
94	N94	6.674	15.046	5.005	0	
95	N95	13.346	15.785	6.674	0	
96	N96	11.679	15.785	6.674	0	
97	N97	10.01	15.785	6.674	0	
98	N98	8.341	15.785	6.674	0	
99	N99	11.679	16.523	8.341	0	
100	N100	10.01	16.523	8.341	0	
101	N101	.202	12.921	1.669	0	
102	N102	.366	12.994	3.336	0	
103	N103	.493	13.05	5.005	0	
104	N104	.585	13.09	6.674	0	
105	N105	.639	13.114	8.341	0	
106	N106	.656	13.123	10.01	0	
107	N107	.639	13.114	11.679	0	
108	N108	.585	13.09	13.346	0	
109	N109	.493	13.05	15.015	0	
110	N110	.366	12.994	16.684	0	
111	N111	.202	12.921	18.351	0	
112	N112	1.669	13.57	1.669	0	
113	N113	1.786	13.622	3.336	0	
114	N114	1.879	13.663	5.005	0	
115	N115	1.945	13.692	6.674	0	
116	N116	1.983	13.709	8.341	0	
117	N117	1.996	13.715	10.01	0	
118	N118	1.983	13.709	11.679	0	
119	N119	1.945	13.692	13.346	0	
120	N120	1.879	13.663	15.015	0	
121	N121	1.786	13.622	16.684	0	
122	N122	3.336	14.308	3.336	0	
123	N123	3.336	14.308	5.005	0	
124	N124	3.336	14.308	6.674	0	
125	N125	3.336	14.308	8.341	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
126	N126	3.336	14.308	10.01	0	
127	N127	3.336	14.308	11.679	0	
128	N128	3.336	14.308	13.346	0	
129	N129	3.336	14.308	15.015	0	
130	N130	5.005	15.046	5.005	0	
131	N131	5.005	15.046	6.674	0	
132	N132	5.005	15.046	8.341	0	
133	N133	5.005	15.046	10.01	0	
134	N134	5.005	15.046	11.679	0	
135	N135	5.005	15.046	13.346	0	
136	N136	6.674	15.785	6.674	0	
137	N137	6.674	15.785	8.341	0	
138	N138	6.674	15.785	10.01	0	
139	N139	6.674	15.785	11.679	0	
140	N140	8.341	16.523	8.341	0	
141	N141	8.341	16.523	10.01	0	
142	N142	1.669	12.921	19.818	0	
143	N143	3.336	12.994	19.654	0	
144	N144	5.005	13.05	19.527	0	
145	N145	6.674	13.09	19.435	0	
146	N146	8.341	13.114	19.381	0	
147	N147	10.01	13.123	19.364	0	
148	N148	11.679	13.114	19.381	0	
149	N149	13.346	13.09	19.435	0	
150	N150	15.015	13.05	19.527	0	
151	N151	16.684	12.994	19.654	0	
152	N152	20.02	12.831	20.02	0	
153	N153	18.351	12.921	19.818	0	
154	N154	1.669	13.57	18.351	0	
155	N155	3.336	13.622	18.234	0	
156	N156	5.005	13.663	18.141	0	
157	N157	6.674	13.692	18.075	0	
158	N158	8.341	13.709	18.037	0	
159	N159	10.01	13.715	18.024	0	
160	N160	11.679	13.709	18.037	0	
161	N161	13.346	13.692	18.075	0	
162	N162	15.015	13.663	18.141	0	
163	N163	18.351	13.57	18.351	0	
164	N164	16.684	13.622	18.234	0	
165	N165	3.336	14.308	16.684	0	
166	N166	5.005	14.308	16.684	0	
167	N167	6.674	14.308	16.684	0	
168	N168	8.341	14.308	16.684	0	
169	N169	10.01	14.308	16.684	0	
170	N170	11.679	14.308	16.684	0	
171	N171	13.346	14.308	16.684	0	
172	N172	16.684	14.308	16.684	0	
173	N173	15.015	14.308	16.684	0	
174	N174	5.005	15.046	15.015	0	
175	N175	6.674	15.046	15.015	0	
176	N176	8.341	15.046	15.015	0	
177	N177	10.01	15.046	15.015	0	
178	N178	11.679	15.046	15.015	0	
179	N179	15.015	15.046	15.015	0	
180	N180	13.346	15.046	15.015	0	
181	N181	6.674	15.785	13.346	0	
182	N182	8.341	15.785	13.346	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
183	N183	10.01	15.785	13.346	0	
184	N184	13.346	15.785	13.346	0	
185	N185	11.679	15.785	13.346	0	
186	N186	8.341	16.523	11.679	0	
187	N187	11.679	16.523	11.679	0	
188	N188	10.01	16.523	11.679	0	
189	N189	10.01	17.261	10.01	0	
190	N190	10.01	17.026	10.01	0	
191	N191	10.01	0	0	0	
192	N192	0	12.596	0	0	
193	N193	0	12.831	0	0	
194	N194	0	12.596	20.02	0	
195	N195	0	12.831	20.02	0	
196	N196	10.01	13.981	10.01	0	
197	N197	10.01	12	0	0	
198	N198	10.01	15.647	10.01	0	
199	N199	10.01	15.556	10.01	0	
200	N200	10.01	15.468	10.01	0	

Member Primary Data

	Label	I Joint	J Joint	K J...	Rot...	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N190			RAFTER	Beam	Pipe	45KSI	Typical
2	M2	N194	N190			RAFTER	Beam	Pipe	45KSI	Typical
3	M3	N190	N2			RAFTER	Beam	Pipe	45KSI	Typical
4	M4	N190	N192			RAFTER	Beam	Pipe	45KSI	Typical
5	M5	N1	N59			RIGID	None	None	LINK	Typical
6	M6	N190	N189			C-ONLY	None	None	C-ONLY	TRUSS-RU...
7	M7	N2	N152			RIGID	None	None	LINK	Typical
8	M8	N3	N187			C-ONLY	None	None	C-ONLY	TRUSS-RU...
9	M9	N4	N184			C-ONLY	None	None	C-ONLY	TRUSS-RU...
10	M10	N5	N179			C-ONLY	None	None	C-ONLY	TRUSS-RU...
11	M11	N6	N172			C-ONLY	None	None	C-ONLY	TRUSS-RU...
12	M12	N7	N163			C-ONLY	None	None	C-ONLY	TRUSS-RU...
13	M13	N13	N12			CABLES	Beam	None	WIREROPE	Typical
14	M14	N12	N11			CABLES	Beam	None	WIREROPE	Typical
15	M15	N11	N10			CABLES	Beam	None	WIREROPE	Typical
16	M16	N10	N9			CABLES	Beam	None	WIREROPE	Typical
17	M17	N9	N8			CABLES	Beam	None	WIREROPE	Typical
18	M18	N8	N152			CABLES	Beam	None	WIREROPE	Typical
19	M19	N13	N14			CABLES	Beam	None	WIREROPE	Typical
20	M20	N14	N15			CABLES	Beam	None	WIREROPE	Typical
21	M21	N15	N16			CABLES	Beam	None	WIREROPE	Typical
22	M22	N16	N17			CABLES	Beam	None	WIREROPE	Typical
23	M23	N17	N18			CABLES	Beam	None	WIREROPE	Typical
24	M24	N18	N59			CABLES	Beam	None	WIREROPE	Typical
25	M25	N44	N99			C-ONLY	None	None	C-ONLY	TRUSS-RU...
26	M26	N45	N95			C-ONLY	None	None	C-ONLY	TRUSS-RU...
27	M27	N46	N89			C-ONLY	None	None	C-ONLY	TRUSS-RU...
28	M28	N47	N81			C-ONLY	None	None	C-ONLY	TRUSS-RU...
29	M29	N48	N71			C-ONLY	None	None	C-ONLY	TRUSS-RU...
30	M30	N49	N140			C-ONLY	None	None	C-ONLY	TRUSS-RU...
31	M31	N50	N136			C-ONLY	None	None	C-ONLY	TRUSS-RU...
32	M32	N51	N130			C-ONLY	None	None	C-ONLY	TRUSS-RU...
33	M33	N52	N122			C-ONLY	None	None	C-ONLY	TRUSS-RU...
34	M34	N53	N112			C-ONLY	None	None	C-ONLY	TRUSS-RU...

Member Primary Data (Continued)

	Label	I Joint	J Joint	K J...	Rot...	Section/Shape	Type	Design List	Material	Design Rules
35	M35	N54	N186			C-ONLY	None	None	C-ONLY	TRUSS-RU...
36	M36	N55	N181			C-ONLY	None	None	C-ONLY	TRUSS-RU...
37	M37	N56	N174			C-ONLY	None	None	C-ONLY	TRUSS-RU...
38	M38	N57	N165			C-ONLY	None	None	C-ONLY	TRUSS-RU...
39	M39	N58	N154			C-ONLY	None	None	C-ONLY	TRUSS-RU...
40	M40	N65	N64			CABLES	Beam	None	WIREROPE	Typical
41	M41	N64	N63			CABLES	Beam	None	WIREROPE	Typical
42	M42	N63	N62			CABLES	Beam	None	WIREROPE	Typical
43	M43	N62	N61			CABLES	Beam	None	WIREROPE	Typical
44	M44	N61	N60			CABLES	Beam	None	WIREROPE	Typical
45	M45	N60	N59			CABLES	Beam	None	WIREROPE	Typical
46	M46	N65	N66			CABLES	Beam	None	WIREROPE	Typical
47	M47	N66	N67			CABLES	Beam	None	WIREROPE	Typical
48	M48	N67	N68			CABLES	Beam	None	WIREROPE	Typical
49	M49	N68	N69			CABLES	Beam	None	WIREROPE	Typical
50	M50	N69	N70			CABLES	Beam	None	WIREROPE	Typical
51	M51	N70	N193			CABLES	Beam	None	WIREROPE	Typical
52	M52	N106	N105			CABLES	Beam	None	WIREROPE	Typical
53	M53	N105	N104			CABLES	Beam	None	WIREROPE	Typical
54	M54	N104	N103			CABLES	Beam	None	WIREROPE	Typical
55	M55	N103	N102			CABLES	Beam	None	WIREROPE	Typical
56	M56	N102	N101			CABLES	Beam	None	WIREROPE	Typical
57	M57	N101	N193			CABLES	Beam	None	WIREROPE	Typical
58	M58	N106	N107			CABLES	Beam	None	WIREROPE	Typical
59	M59	N107	N108			CABLES	Beam	None	WIREROPE	Typical
60	M60	N108	N109			CABLES	Beam	None	WIREROPE	Typical
61	M61	N109	N110			CABLES	Beam	None	WIREROPE	Typical
62	M62	N110	N111			CABLES	Beam	None	WIREROPE	Typical
63	M63	N111	N195			CABLES	Beam	None	WIREROPE	Typical
64	M64	N147	N146			CABLES	Beam	None	WIREROPE	Typical
65	M65	N146	N145			CABLES	Beam	None	WIREROPE	Typical
66	M66	N145	N144			CABLES	Beam	None	WIREROPE	Typical
67	M67	N144	N143			CABLES	Beam	None	WIREROPE	Typical
68	M68	N143	N142			CABLES	Beam	None	WIREROPE	Typical
69	M69	N142	N195			CABLES	Beam	None	WIREROPE	Typical
70	M70	N147	N148			CABLES	Beam	None	WIREROPE	Typical
71	M71	N148	N149			CABLES	Beam	None	WIREROPE	Typical
72	M72	N149	N150			CABLES	Beam	None	WIREROPE	Typical
73	M73	N150	N151			CABLES	Beam	None	WIREROPE	Typical
74	M74	N151	N153			CABLES	Beam	None	WIREROPE	Typical
75	M75	N153	N152			CABLES	Beam	None	WIREROPE	Typical
76	M76	N190	N198			CROWN	Column	Pipe	45KSI	Typical
77	M77	N192	N193			RIGID	None	None	LINK	Typical
78	M78	N194	N195			RIGID	None	None	LINK	Typical
79	M79	N191	N197			COLUMN/CANTI	Column	Pipe	45KSI	Typical
80	M80	N197	N196			COLUMN/CANTI	Column	Pipe	45KSI	Typical
81	M81	N198	N199			CONN PLATE	Column	None	50KSI	Typical
82	M82	N199	N200			CONN PLATE	Column	None	50KSI	Typical
83	M83	N200	N196			COLUMN/CANTI	Column	Pipe	45KSI	Typical

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design ...	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	COLUMN/CANTI	HSS8.625x0.375	Column	Pipe	45KSI	Typical	9.07	77.8	77.8	156
2	CROWN	HSS8.625x0.375	Column	Pipe	45KSI	Typical	9.07	77.8	77.8	156
3	RAFTER	5 SCH 40 (5.563X0.258)..	Beam	Pipe	45KSI	Typical	4.01	14.3	14.3	28.6

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design ...	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
4	CABLES	3/8 5	Beam	None	WIRERO...	Typical	.11	5	5	5
5	CONN PLATE	SPPYR PLATE	Column	None	50KSI	Typical	78.54	490.8...	490.8...	981.7...

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	RIGID		None	LINK	1e+6	1e+8	1e+8	1e+6
2	C-ONLY	ARB_C-ONLY_1	None	C-ONLY	.1	1	.1	.1

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N191	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface...
1	DL	DL		-1				48		
2	LL	LL								168
3	WIND XA	WL+X						6		84
4	WIND XB	WL-X						6		84
5	UPLIFT	WL+Y								168
6	WIND ZA	WL+Z						5		84
7	WIND ZB	WL-Z						5		84

Load Combinations

	Description	S...	P...	...	BLC	Fa...	BLC	Fa...	BLC	Fac...	BLC	Fact...	F...	...	F...	...	F...	...	F...	...	F...	...	F...
1	DL + LL	Yes	C		DL	1	LL	1															
2	0.6 DL + 0.6 WL (XA)	Yes	C		DL	.6	WL+X	.6															
3	0.6 DL + 0.6 WL (ZA)	Yes	C		DL	.6	WL+Z	.6															
4	0.6 DL + 0.6 WL (XB)	Yes	C		DL	.6	WL-X	.6															
5	0.6 DL + 0.6 WL (ZB)	Yes	C		DL	.6	WL-Z	.6															
6	0.6 DL + WL (UPLIFT)	Yes	C		DL	.6	WL+Y	1															
7	DL + 0.75 [LL + 0.6 WL (XA)]	Yes	C		DL	1	LL	.75	WL+X	.45													
8	DL + 0.75 [LL + 0.6 WL (ZA)]	Yes	C		DL	1	LL	.75	WL+Z	.45													
9	DL + 0.75 [LL + 0.6 WL (XB)]	Yes	C		DL	1	LL	.75	WL-X	.45													
10	DL + 0.75 [LL + 0.6 WL (ZB)]	Yes	C		DL	1	LL	.75	WL-Z	.45													

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N191	max	0	1	4.028	8	.61	5	39.809	6	.001	8	1.436	2
2		min	-.671	2	-2.671	6	-.61	3	-37.695	10	-5.722	2	-.113	6
3	Totals:	max	0	1	4.028	8	.61	5						
4		min	-.671	2	-2.671	6	-.61	3						

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp ...	L-to...	Kyy	Kzz	Cb	Fun...
1	M1	RAFTER	14.833									Late...
2	M2	RAFTER	14.833									Late...
3	M3	RAFTER	14.833									Late...
4	M4	RAFTER	14.833									Late...

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp ...	L-to...	Kyy	Kzz	Cb	Fun...
5	M13	CABLES	1.669									Late..
6	M14	CABLES	1.668									Late..
7	M15	CABLES	1.672									Late..
8	M16	CABLES	1.675									Late..
9	M17	CABLES	1.677									Late..
10	M18	CABLES	1.684									Late..
11	M19	CABLES	1.669									Late..
12	M20	CABLES	1.668									Late..
13	M21	CABLES	1.672									Late..
14	M22	CABLES	1.675									Late..
15	M23	CABLES	1.677									Late..
16	M24	CABLES	1.684									Late..
17	M40	CABLES	1.669									Late..
18	M41	CABLES	1.668									Late..
19	M42	CABLES	1.672									Late..
20	M43	CABLES	1.675									Late..
21	M44	CABLES	1.677									Late..
22	M45	CABLES	1.684									Late..
23	M46	CABLES	1.669									Late..
24	M47	CABLES	1.668									Late..
25	M48	CABLES	1.672									Late..
26	M49	CABLES	1.675									Late..
27	M50	CABLES	1.677									Late..
28	M51	CABLES	1.684									Late..
29	M52	CABLES	1.669									Late..
30	M53	CABLES	1.668									Late..
31	M54	CABLES	1.672									Late..
32	M55	CABLES	1.675									Late..
33	M56	CABLES	1.677									Late..
34	M57	CABLES	1.684									Late..
35	M58	CABLES	1.669									Late..
36	M59	CABLES	1.668									Late..
37	M60	CABLES	1.672									Late..
38	M61	CABLES	1.675									Late..
39	M62	CABLES	1.677									Late..
40	M63	CABLES	1.684									Late..
41	M64	CABLES	1.669									Late..
42	M65	CABLES	1.668									Late..
43	M66	CABLES	1.672									Late..
44	M67	CABLES	1.675									Late..
45	M68	CABLES	1.677									Late..
46	M69	CABLES	1.684									Late..
47	M70	CABLES	1.669									Late..
48	M71	CABLES	1.668									Late..
49	M72	CABLES	1.672									Late..
50	M73	CABLES	1.675									Late..
51	M74	CABLES	1.677									Late..
52	M75	CABLES	1.684									Late..
53	M76	CROWN	1.379									Late..
54	M79	COLUMN/CANTI	12						2.1	2.1		Late..
55	M80	COLUMN/CANTI	10.204						2.1	2.1		Late..
56	M81	CONN PLATE	.091									Late..
57	M82	CONN PLATE	.088									Late..
58	M83	COLUMN/CANTI	1.487									Late..

Envelope AISC 14th(360-10): ASD Steel Code Checks

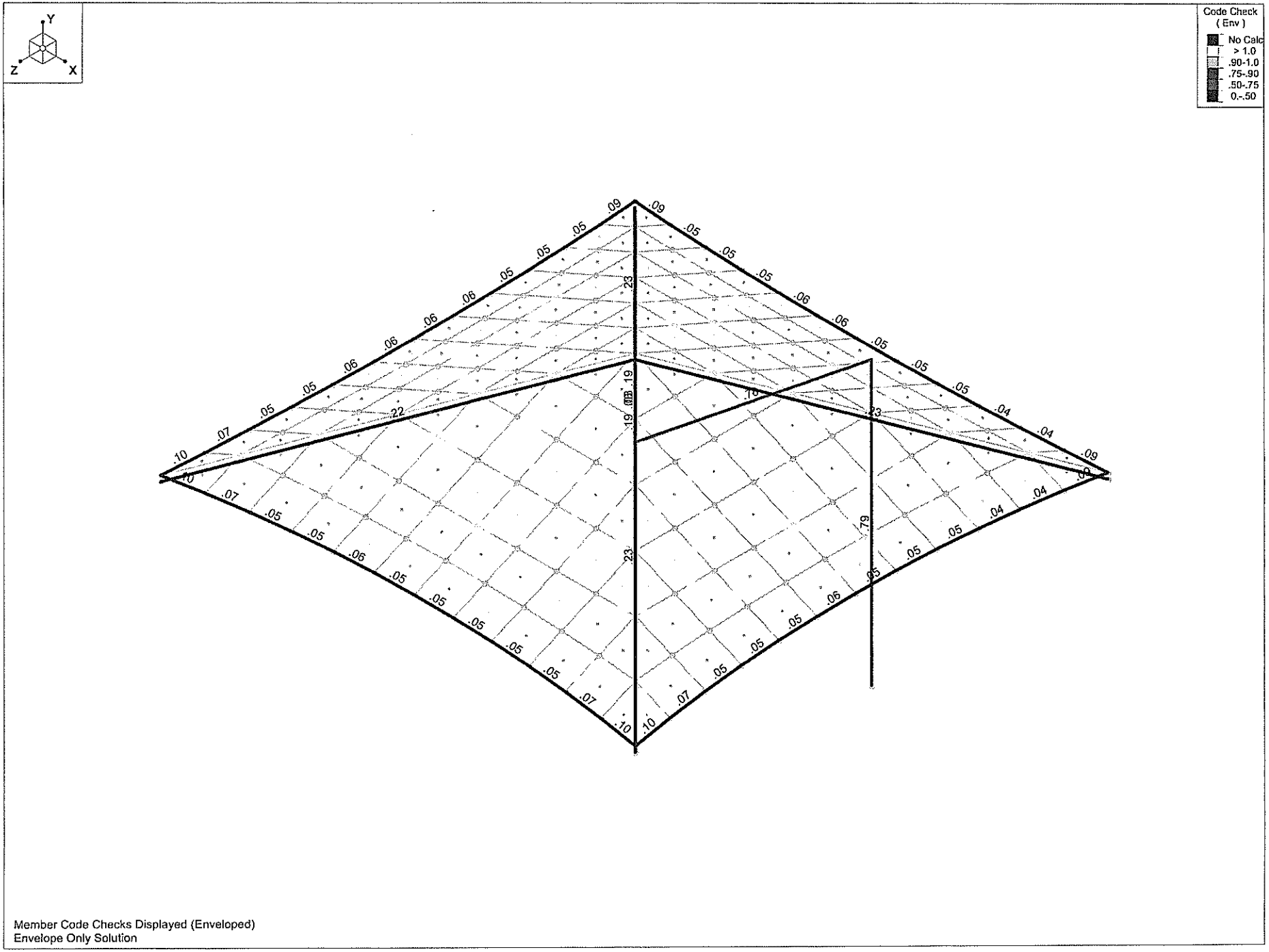
	Member	Shape	Code Ch...	Loc[ft]	LC	Shear Ch...	Loc[.....	LC	Pnc/o...	Pnt/om ...	Mny...	Mnz...	Cb	Eqn
1	M1	5 SCH 40 (5.563X0.258)_...	.226	14.833	6	.064	14.8...	3	60.218	108.054	15.3...	15.3...	1.766	H1-1b
2	M2	5 SCH 40 (5.563X0.258)_...	.224	14.833	6	.064	14.8...	5	60.218	108.054	15.3...	15.3...	1.838	H1-1b
3	M3	5 SCH 40 (5.563X0.258)_...	.232	0	6	.064	0	5	60.218	108.054	15.3...	15.3...	1.833	H1-1b
4	M4	5 SCH 40 (5.563X0.258)_...	.226	0	6	.064	0	2	60.218	108.054	15.3...	15.3...	1.769	H1-1b
5	M13	3/8 5	.057	0	9	3.631	0	6	5.649	5.665	.039	.039	1.031	H1-1b
6	M14	3/8 5	.049	0	9	5.357	0	6	5.65	5.665	.039	.039	1.033	H1-1b
7	M15	3/8 5	.051	0	6	7.725	0	4	5.649	5.665	.039	.039	1.159	H1-1b
8	M16	3/8 5	.054	0	6	7.956	0	4	5.649	5.665	.039	.039	1.763	H1-1b
9	M17	3/8 5	.073	0	6	9.640	0	4	5.649	5.665	.039	.039	1.256	H1-1b
10	M18	3/8 5	.104	0	6	6.870	0	4	5.649	5.665	.039	.039	1.182	H1-1b
11	M19	3/8 5	.049	0	9	2.026	0	5	5.649	5.665	.039	.039	1.025	H1-1b
12	M20	3/8 5	.050	0	9	4.449	0	4	5.65	5.665	.039	.039	1.046	H1-1b
13	M21	3/8 5	.048	0	9	7.651	0	4	5.649	5.665	.039	.039	1.212	H1-1b
14	M22	3/8 5	.043	0	9	7.877	0	4	5.649	5.665	.039	.039	1.842	H1-1b
15	M23	3/8 5	.038	0	9	9.558	0	4	5.649	5.665	.039	.039	1.211	H1-1b
16	M24	3/8 5	.089	0	6	6.425	0	4	5.649	5.665	.039	.039	1.062	H1-1b
17	M40	3/8 5	.050	0	9	2.682	0	3	5.649	5.665	.039	.039	1.025	H1-1b
18	M41	3/8 5	.052	0	9	6.380	0	3	5.65	5.665	.039	.039	1.058	H1-1b
19	M42	3/8 5	.048	0	9	9.999	0	3	5.649	5.665	.039	.039	1.215	H1-1b
20	M43	3/8 5	.044	0	9	9.999	0	3	5.649	5.665	.039	.039	1.589	H1-1b
21	M44	3/8 5	.039	0	9	9.999	0	3	5.649	5.665	.039	.039	1.114	H1-1b
22	M45	3/8 5	.092	0	6	5.917	0	3	5.649	5.665	.039	.039	1.078	H1-1b
23	M46	3/8 5	.058	0	9	2.760	0	3	5.649	5.665	.039	.039	1.02	H1-1b
24	M47	3/8 5	.055	0	9	6.459	0	3	5.65	5.665	.039	.039	1.067	H1-1b
25	M48	3/8 5	.052	0	9	9.999	0	3	5.649	5.665	.039	.039	1.22	H1-1b
26	M49	3/8 5	.051	0	9	9.999	0	3	5.649	5.665	.039	.039	1.65	H1-1b
27	M50	3/8 5	.048	0	9	9.999	0	3	5.649	5.665	.039	.039	1.171	H1-1b
28	M51	3/8 5	.092	0	6	5.615	0	2	5.649	5.665	.039	.039	1.023	H1-1b
29	M52	3/8 5	.055	0	6	2.701	0	2	5.649	5.665	.039	.039	1.041	H1-1b
30	M53	3/8 5	.056	0	9	6.401	0	2	5.65	5.665	.039	.039	2.026	H1-1b
31	M54	3/8 5	.053	0	9	9.999	0	2	5.649	5.665	.039	.039	1.245	H1-1b
32	M55	3/8 5	.050	0	9	9.999	0	2	5.649	5.665	.039	.039	1.093	H1-1b
33	M56	3/8 5	.047	0	9	9.999	0	2	5.649	5.665	.039	.039	1.066	H1-1b
34	M57	3/8 5	.088	0	6	5.944	0	2	5.649	5.665	.039	.039	1.011	H1-1b
35	M58	3/8 5	.059	0	9	3.553	0	6	5.649	5.665	.039	.039	1.075	H1-1b
36	M59	3/8 5	.055	0	9	6.441	0	2	5.65	5.665	.039	.039	2.148	H1-1b
37	M60	3/8 5	.052	0	9	9.999	0	2	5.649	5.665	.039	.039	1.238	H1-1b
38	M61	3/8 5	.054	0	6	9.999	0	2	5.649	5.665	.039	.039	1.737	H1-1b
39	M62	3/8 5	.072	0	6	9.999	0	2	5.649	5.665	.039	.039	1.265	H1-1b
40	M63	3/8 5	.104	0	6	6.302	0	6	5.649	5.665	.039	.039	1.193	H1-1b
41	M64	3/8 5	.055	0	9	2.657	0	5	5.649	5.665	.039	.039	1.016	H1-1b
42	M65	3/8 5	.055	0	9	6.355	0	5	5.65	5.665	.039	.039	1.059	H1-1b
43	M66	3/8 5	.053	0	9	9.999	0	5	5.649	5.665	.039	.039	1.225	H1-1b
44	M67	3/8 5	.051	0	9	9.999	0	5	5.649	5.665	.039	.039	1.671	H1-1b
45	M68	3/8 5	.067	0	6	9.999	0	5	5.649	5.665	.039	.039	1.129	H1-1b
46	M69	3/8 5	.100	0	6	5.956	0	2	5.649	5.665	.039	.039	1.094	H1-1b
47	M70	3/8 5	.054	0	9	2.789	0	5	5.649	5.665	.039	.039	1.007	H1-1b
48	M71	3/8 5	.051	0	9	6.488	0	5	5.65	5.665	.039	.039	1.074	H1-1b
49	M72	3/8 5	.048	0	6	9.999	0	5	5.649	5.665	.039	.039	2.182	H1-1b
50	M73	3/8 5	.052	0	6	9.999	0	5	5.649	5.665	.039	.039	1.148	H1-1b
51	M74	3/8 5	.068	0	6	9.999	0	5	5.649	5.665	.039	.039	1.135	H1-1b
52	M75	3/8 5	.100	0	6	5.779	0	2	5.649	5.665	.039	.039	1.106	H1-1b
53	M76	HSS8.625x0.375	.191	0	6	.013	1.212	4	244.005	244.401	53.6...	53.6...	1	H1-1b
54	M79	HSS8.625x0.375	.788	12	10	.127	0	2	121.179	244.401	53.6...	53.6...	1.014	H1-1b
55	M80	HSS8.625x0.375	.777	0	10	.177	0	2	147.162	244.401	53.6...	53.6...	1.527	H1-1b
56	M81	SPPYR PLATE	.026	0	6	.002	.091	4	2351.4...	2351.497	391....	391....	1	H1-1b

Envelope AISC 14th(360-10): ASD Steel Code Checks (Continued)

	Member	Shape	Code Ch...	Loc[ft]	LC	Shear Ch...	Loc[...	LC	Pnc/o...	Pnt/om ...	Mny...	Mnz...	Cb	Eqn
57	M82	SPPYR PLATE	.026	0	6	.002	.088	4	2351.4..	2351.497	391...	391....	1	H1-1b
58	M83	HSS8.625x0.375	.191	0	6	.013	1.487	4	243.805	244.401	53.6...	53.6...	1	H1-1b

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General				
2	LINK		4	.9	0
3	C-ONLY	ARB C-ONLY 1	21	4.9	0
4	Total General		25	5.9	0
5					
6	Hot Rolled Steel				
7	45KSI	5 SCH 40 (5.563X0.258)_HRA	4	59.3	.8
8	45KSI	HSS8.625x0.375	4	24.9	.8
9	50KSI	SPPYR PLATE	2	.2	0
10	WIREROPE	3/8 5	48	80.4	0
11	Total HR Steel		58	164.8	1.6



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

GENERAL NOTES

DESIGN LOADS

BUILDING CODE	IBC 2012
LIVE LOADS	5 PSF
SNOW LOAD	5 PSF
WIND LOADS	115 MPH[1] 3-Sec. Gust, RISK CATEGORY II & EXPOSURE C

1.- 115 MPH ACCORDING THE ULTIMATE WIND SPEED MAPS OF ASCE 7-10 IS EQUIVALENT TO THE NOMINAL WIND SPEED OF 90 MPH ACCORDING ASCE 7-05 AND IBC 2012 EQ 16-32.

STRUCTURAL STEEL

1.- ALL STRUCTURAL SHAPES SHALL BE COLD FORMED HSS ASTM A500 GRADE C, UNLESS OTHERWISE NOTED. TYPICAL MECHANICAL PROPERTIES FOR HSS PRODUCTS:

SQUARE AND RECTANGULAR	50,000 PSI YIELD / 62,000 PSI TENSILE
ROUND PIPE	46,000 PSI YIELD / 62,000 PSI TENSILE

2.- ALL GALVANIZED STEEL TUBE PRODUCTS ARE MANUFACTURED PER ASTM A500, TYPICAL MECHANICAL PROPERTIES ACHIEVED FOR GALVANIZED TUBE PRODUCTS:

ROUND TUBE	45,000 PSI YIELD / 48,000 PSI TENSILE

3.- ALL PLATES SHALL COMPLY WITH ASTM A572 GRADE 50.

4.- ALL STEEL TUBING SHALL BE TRIPLE COATED FOR RUST PROTECTION USING THE IN-LINE ELECTROPLATING COAT PROCESS. TUBING SHALL BE INTERNALLY COATED WITH ZINC AND ORGANIC COATINGS TO PREVENT CORROSION AS MANUFACTURED BY ALLIED TUBE & CONDUIT.

5.- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS.

6.- ALL SHOP WELDS SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1 SPECIFICATIONS. ALL WELDS SHALL BE CONTINUOUS WHERE LENGTH IS NOT GIVEN, UNLESS OTHERWISE SHOWN OR NOTED ON DRAWINGS. ALL WELDS SHALL DEVELOP THE FULL STRENGTH OF THE WEAKER MEMBER. ALL WELDS SHALL BE MADE USING E70XX .045 WIRE.

7.- SHOP CONNECTIONS SHALL BE WELDED UNLESS NOTED OTHERWISE. FIELD CONNECTIONS SHALL BE AS INDICATED ON THE DRAWINGS (IF REQUIRED). ALL FILLET WELDS SHALL BE A MINIMUM OF 3/16" UNLESS OTHERWISE NOTED. FIELD WELDS SHALL NOT BE ALLOWED.

8.- ALL HIGH STRENGTH BOLTS SHALL COMPLY WITH ASTM A325 TYPE 1 OR A490 TYPE 1. ALL NUTS SHALL COMPLY WITH ASTM A563DH, AND WASHERS SHALL COMPLY WITH ASTM F436.

9.- ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION.

10.- ALL STAINLESS STEEL BOLTS SHALL COMPLY WITH ASTM F-593, ALLOY GROUP 1 OR 2 ALL NUTS SHALL COMPLY WITH ASTM F-594 ALLOY GROUP 1 OR 2.

11.- ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP COAT (2.5 TO 3.5 MILS THICK MIN). THIS COAT IS A WEATHER RESISTANT POWDER COATING BASED ON POLYESTER TGIC (MANUFACTURED BY SHERWIN WILLIAMS OR TIGER DRYLAC). TO ACHIEVE OPTIMUM ADHESION, IT IS RECOMMENDED THAT THE PROPER TREATMENT AND DRYING TAKE PLACE BEFORE COATING. POLYESTER POWDER (TGIC) SPECIFICATIONS SHALL BE AS FOLLOWS:

- PENCIL HARDNESS (ASTM D-3363)
- HUMIDITY (ASTM D-2247)
- SOLVENT RESISTANCE (PCI METHOD) - 50 DBL RUBS SL. SOFTNES

FABRIC SPECIFICATION

1.- FABRIC SHALL BE A HIGH DENSITY POLYETHYLENE WITH ULTRA VIOLET ADDITIVES, WITH MONOFILAMENT AND TAPE CONSTRUCTION GIVING A STABLE MATERIAL AND RACHEL KNITTED TO ENSURE MATERIAL WILL NOT UNRAVEL IF CUT.

2.- FABRIC SPECIFICATIONS:

	SOLID COLORS	STRIPE COLORS
-TEAR STRENGTH	WARP 220.4622 LB	WARP 182.9836LB
	WEFT 462.9707 LB	WEFT 401.2413LB
- BURST STRENGTH	37.7098 PSIA	33.0686 PSIA
- FADING	MINIMUM FADING AFTER 5 YEARS	
- LIFE EXPECTANCY	A MINIMUM OF 8 YEARS CONTINUOUS EXPOSURE TO THE SUN	

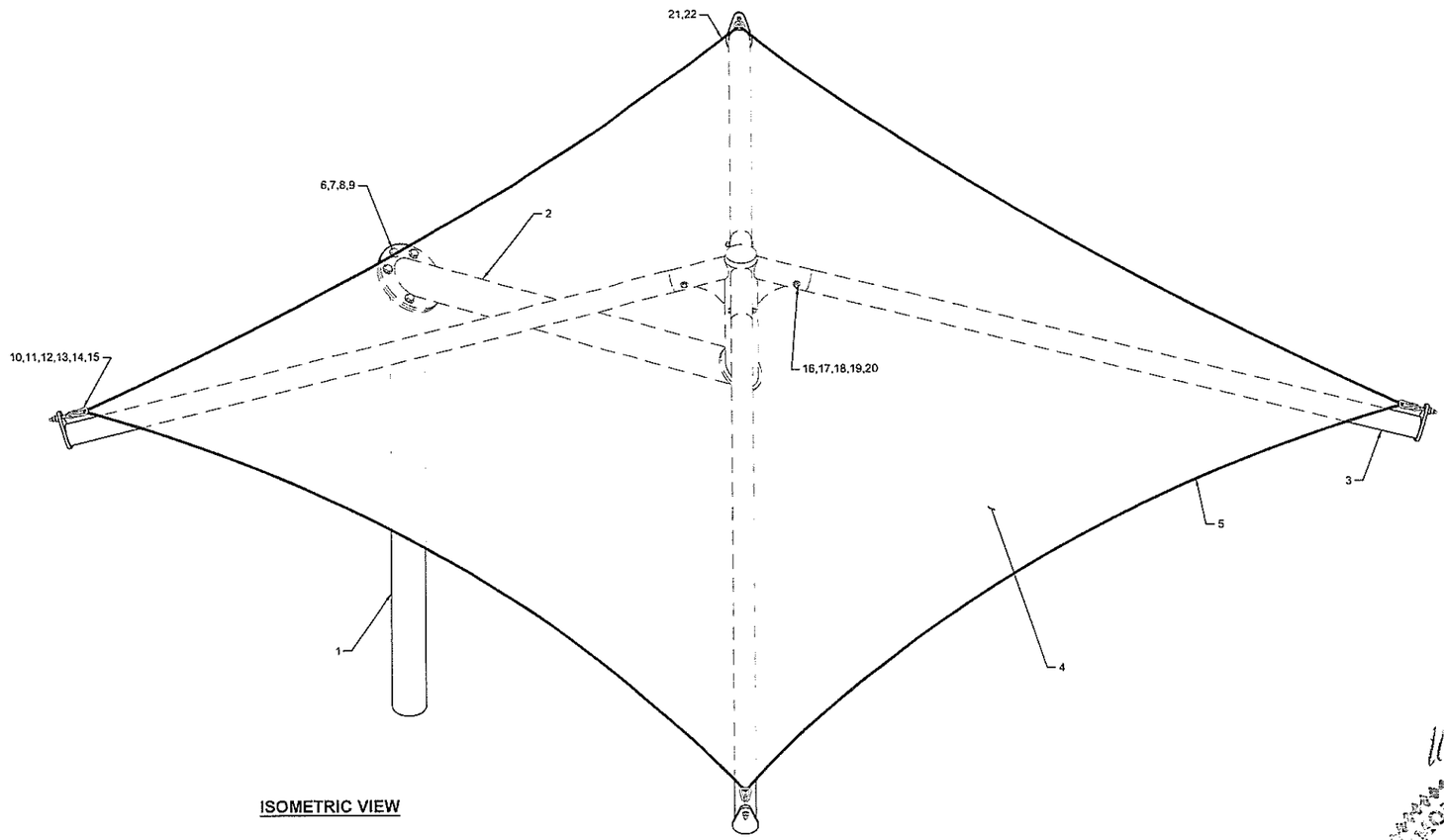
3.- FIRE TEST ON FABRIC: NFPA 701 TEST 2 AND ASTM E 84

4.- THREAD-PTFE (TEFLON) USED MEET THE FOLLOWING SPECIFICATIONS: HIGH STRENGTH, LOW SHRINKAGE, WIDE TEMPERATURE RANGE, FLEX & ABRASION RESISTANT AND UV RADIATION IMMUNITY. LOCKSTITCH - 1200 DENIER. CHAINSTITCH THREAD - 2400 DENIER.

AIRCRAFT CABLE

1.- WIRE ROPE CABLE SHALL BE 7x19 STRAND CORE GALVANIZED WIRE ROPE WITH A BREAKING STRENGTH VALUE OF 14,400 LBS (3/8" DIAMETER).

2.- CABLES SHALL BE FED THROUGH THE FABRIC SLEEVES AROUND THE PERIMETER OF THE CANOPY AND TENSIONED UNTIL THE FABRIC PANELS (DESIGNED PURPOSELY UNDERSIZED) REACH A TAUNT APPEARANCE. ANY LONG TERM CABLE SAG SHALL BE MINIMIZED DURING THE MAINTENANCE RE-TIGHTENING VISITS AS REQUIRED.



ISOMETRIC VIEW

CODE ANALYSIS

BUILDING	OCCUPANCY	CONSTRUCTION TYPE	AREA (SQF)	OCCUPANT LOAD
SHADE STRUCTURE	U	V-B	400	N/A
20'-0" x 20'-0"				

NOTICE

FABRIC TOP NEEDS TO BE REMOVED IF SNOW EXCEEDING 5 PSF IS ANTICIPATED

FABRIC TOP NEEDS TO BE REMOVED IF WINDS EXCEEDING 115 MPH ARE ANTICIPATED, SEE NOTE 1 OF DESIGN LOADS

LIST OF MATERIALS

ITEM	QTY.	DESCRIPTION	MATERIAL / DWG	SMI PART NO.
1	1	COLUMN	HSS Ø8.625 x 0.375	N/A
2	1	COLUMN ARM	HSS Ø8.625 x 0.375	N/A
3	4	RAFTER	PIPE Ø5.00 SCH 40 (5.563 x 0.258)	N/A
4	1	FABRIC TOP SPP QRE 20X20	HDPE MESH	20'x20' (AREA:400 SQF, WEIGHT:17.2LBS)
5	4	3/8 STEEL CABLE	GALVANIZED CABLE	30 FT OF 3/8 STEEL CABLE
6	5	Ø1"-8NC x 4" HEX BOLT	ASTM A325 GALVANIZED	307722
7	5	Ø1"-8NC HEX NUT	ASTM A563 GALVANIZED	307968
8	10	Ø1" FLAT WASHER	ASTM F436 GALVANIZED	307619
9	5	Ø1" SPLIT LOCK WASHER	ASTM F436 GALVANIZED	307620
10	4	3/4" x 6" JAW END (RH)	GALVANIZED	308048
11	4	Ø3/4" FLAT WASHER	GALVANIZED	307624
12	4	Ø3/4"-11NC HEX NUT	GALVANIZED	307687
13	4	Ø3/4"-11NC JAM NUT	GALVANIZED	308250
14	4	3/4" HEMISPHERICAL WASHER+CUP	GALVANIZED	308188
15	4	5/8" DELTA QUICK LINK	ZINC PLATED	307695
16	4	Ø5/8"-11NC x 7" HEX BOLT	18-8 SS	308248
17	4	Ø5/8"-11NC HEX NUT	18-8 SS	110401
18	8	Ø5/8" FLAT WASHER	18-8 SS	117925
19	8	Ø5/8" FLAT WASHER	DELRIN (ACETAL)	308084
20	4	Ø5/8" SPLIT LOCK WASHER	18-8 SS	200165638
21	16	Ø3/8" CABLE CLAMPS	GALVANIZED	307629
22	8	Ø3/8" THIMBLE	GALVANIZED	308064

USASHADE & Fabric Structures

VPS

CORPORATE HEADQUARTERS
8505-A CHANCELLOR ROW
DALLAS, TX, 75247
800-966-5005

CERTIFICATIONS:
IAS CERTIFICATION No: FA-428
CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

CUSTOMER:
PLAYPOWER LT FARMINGTON, INC.

PROJECT NAME:
LINWOOD HOLTON ES-PTA

LOCATION:
RICHMOND, VA

PROJECT NUMBER.
60069

STRUCTURE TYPE:
SINGLE POST PYR CANTI PRODUCT #124-CUST

SIZE:
20' x 20' x 8'e

SCALE : AS NOTED

DRAWING SIZE: B

11-4-16

COMMONWEALTH OF VIRGINIA
THOMAS R. SADLER
NO. 43606
PROFESSIONAL ENGINEER

NC	CUSTOM SIZE	DESCRIPTION	DRW	CHK	ENG
			BM	JC	JC

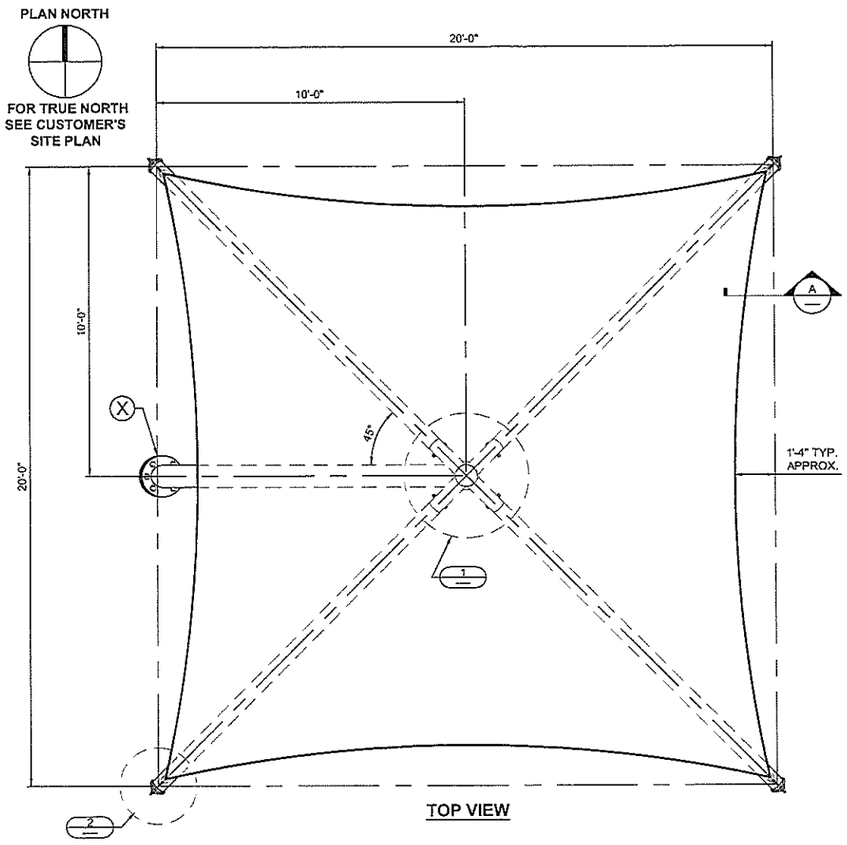
Eng. By :	JO	8/31/16
Design By :	RL	8/31/16
Approved By :	JO	8/31/16

DRAWING DESCRIPTION:
NOTES / LOM

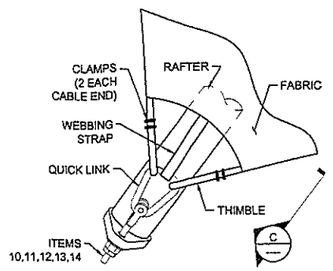
DWG.
60069-1.1

PAGE
1000

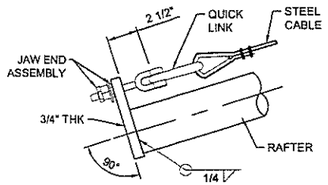
REV.
NC



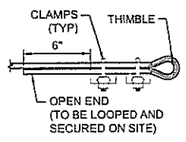
TOP VIEW



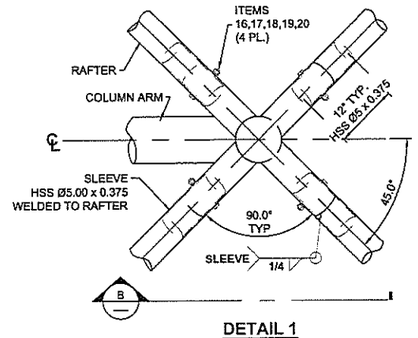
DETAIL 2



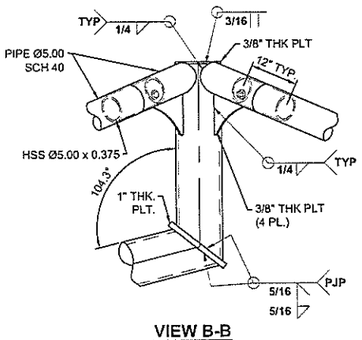
VIEW C-C



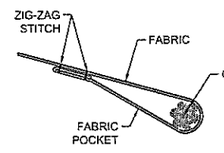
TYPICAL CABLE ASSEMBLY



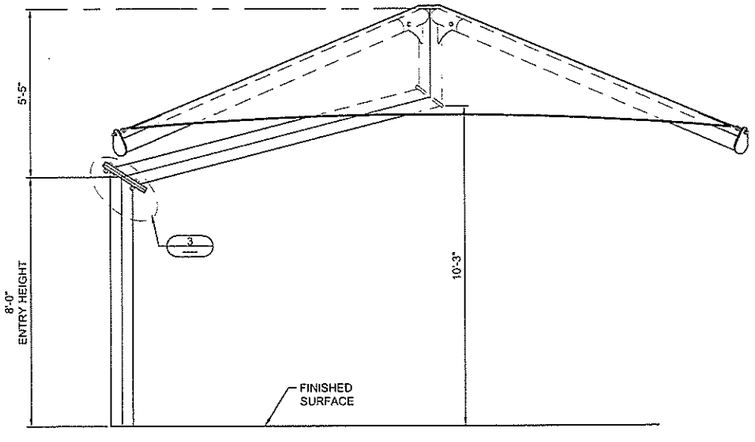
DETAIL 1



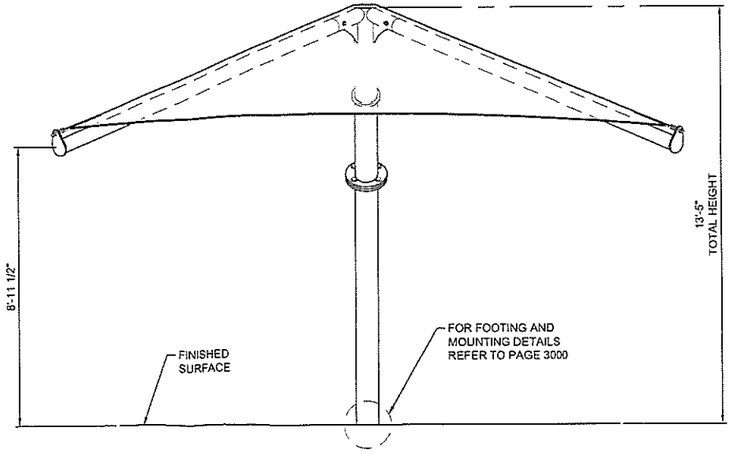
VIEW B-B



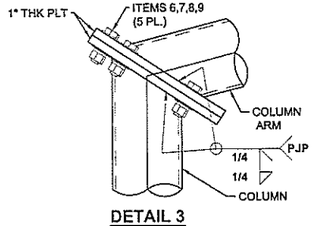
SECTION A-A



FRONT ELEVATION



SIDE ELEVATION



DETAIL 3

USASHADE & Fabric Structures

VPS

CORPORATE HEADQUARTERS
8505-A CHANCELLOR ROW
DALLAS, TX, 75247
800-966-5005

CERTIFICATIONS:
IAS CERTIFICATION No FA-428
CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

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LOCATION:
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PRODUCT #124-CUST

SIZE:
20' x 20' x 8'e

SCALE : AS NOTED

DRAWING SIZE: B

REV	DESCRIPTION	DATE	DRW	CHK	ENG
NC	CUSTOMER (SIZE)	11/02/16	BM	JC	JC

11-4-16

COMMONWEALTH OF VIRGINIA
THOMAS SADLER
No. 506
PROFESSIONAL ENGINEER

Eng. By :	JO	8/31/16
Design By :	RL	8/31/16
Approved By :	JO	8/31/16

DRAWING DESCRIPTION:
VIEWS & DETAILS

DWG.
60069-1.1

PAGE
2000

REV.
NC

REINFORCED CONCRETE NOTES

1.- CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE. CONCRETE SPECIFICATIONS , SHALL BE AS FOLLOWS:
- 28 DAY STRENGTH: 2500 PSI
- SLUMP: 3-5
- PORTLAND CEMENT SHALL CONFORM TO C-150
- AGGREGATE SHALL CONFORM TO ASTM C-33

2.- ALL REINFORCEMENT STEEL SHALL CONFORM TO ASTM A-615 GRADE 60; AND SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL AND CRSI MANUAL OF STANDARD PRACTICE.

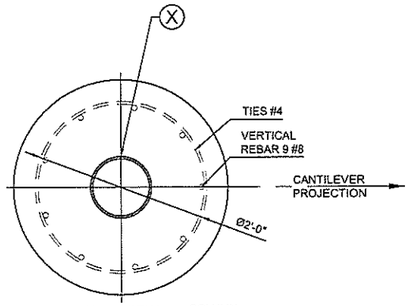
3.- ALL ANCHOR BOLTS SET IN NEW CONCRETE (WHEN APPLICABLE) SHALL COMPLY WITH ASTM F-1554 GRADE 55 (GALVANIZED).

4.- ALL NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 5000 PSI, AND SHALL COMPLY THE REQUIREMENTS OF ASTM C109, ASTM C939, ASTM C1090, ASTM C1107, WHEN APPLICABLE.

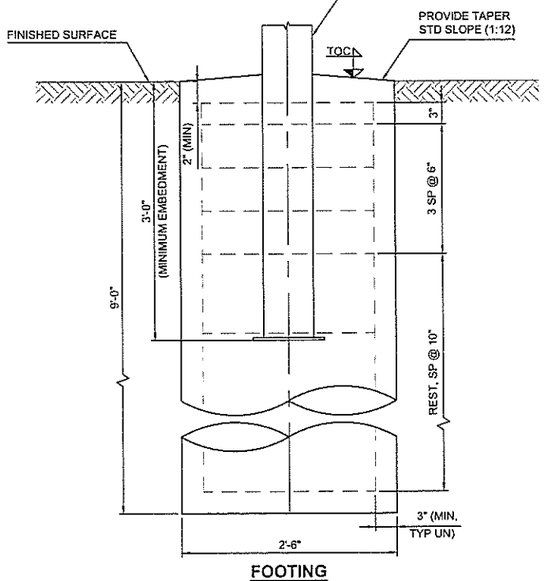
5.- SOIL PARAMETERS FOR FOOTING ANALYSIS; TABLE 1806.2, CLASS : 5

PLAN NORTH

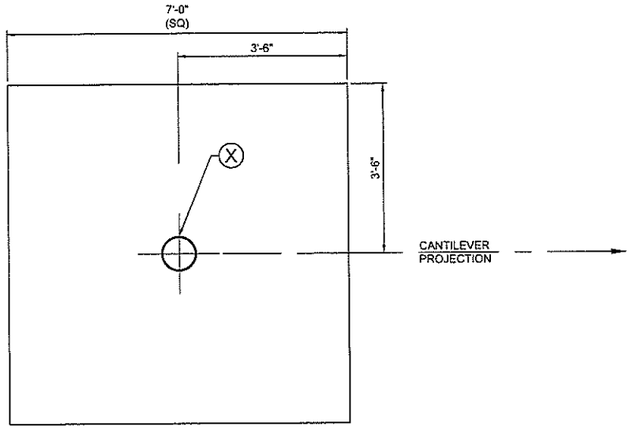
FOR TRUE NORTH
SEE CUSTOMER'S
SITE PLAN



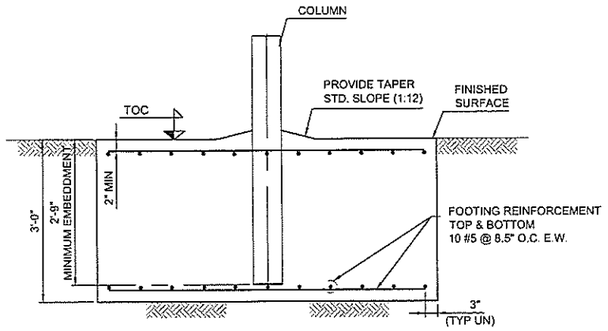
TOP VIEW



FOOTING
(EMBEDDED, PIH)
(USE FOR NON-CONSTRAINED CASES)



TOP VIEW
(SCHEMATIC VIEW ONLY)



ALTERNATE SPREAD FOOTING
(SF TYPE 11)
(SCHEMATIC VIEW ONLY)

USASHADE & Fabric Structures®

VPS

CORPORATE HEADQUARTERS
8505-A CHANCELLOR ROW
DALLAS, TX, 75247
800-966-5005

CERTIFICATIONS:
IAS CERTIFICATION No: FA-428
CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

CUSTOMER:
PLAYPOWER LT FARMINGTON, INC.

PROJECT NAME:
LINWOOD HOLTON ES-PTA

LOCATION:
RICHMOND, VA

PROJECT NUMBER.
60069

STRUCTURE TYPE:
SINGLE POST PYR CANTI
PRODUCT #124-CUST

SIZE:
20' x 20' x 8'e

SCALE : AS NOTED

DRAWING SIZE: B

4-4-16

COMMONWEALTH OF VIRGINIA
THOMAS P. SADLER
NO. 37606
PROFESSIONAL ENGINEER

NC	CUSTOM (SIZE)	DESCRIPTION	11/02/16	DATE	BM	DRW	JC	CHK	JC	ENG

Eng. By :	JO	8/31/16
Design By :	RL	8/31/16
Approved By :	JO	8/31/16

DRAWING DESCRIPTION:
FOOTING DETAILS

DWG.
60069-1.1

PAGE
3000

REV.
NC