STAFF APPROVAL LETTER

81-SA-2013

Sails at McDowell Mtn Community Church

STEP 1 — STAFF APPROVAL NOTIFICATION

This letter is notification that your request has been conceptually approved by Current Planning Services staff.

Additional review and permits may be required. Refer to Final Plan Review Submittal Requirements below.

This approval expires two (2) years from date of approval if a permit has not been issued, or if no permit is required, work for which approval has been granted has not been completed.

PROJECT INFORMATION

LOCATION:	10700 N 124th St	APPLICANT:	Claude
PARCEL:	217-29-032	COMPANY:	Arizona Awnings & Window Shades
Q.S.:	29-57	ADDRESS:	1409 S 21St Dr Phoenix, AZ 85009
CODE VIOLATION #:		PHONE:	602-252-3430

Request: Request for approval of shade structures behind existing church structures.

STIPULATIONS

1. Approval for addition of two (2) shade structures located behind (west of) existing Church Structures. The structures limited to height, size, and locations as shown on site plan and elevations stamped approved with staff date of March 20, 2013.
2. Light Reflective Value shall not exceed 35 LRV.

Related Cases: 117-PA-2013

SIGNATURE: _____ DATE APPROVED: March 20, 2013

Jesus Murillo, Senior Planner

STEP 2 — FINAL PLAN REVIEW SUBMITTAL REQUIREMENTS

Submit one copy of this approval letter, and a completed Owner/Builder form if applicable, along with the following plan set(s) to the One-Stop-Shop for plan review

CIVIL IMPROVEMENT: ☒ 4 sets of civil improvement plans
OTHER: ☒ Structural Calculations

This plan set shall be reviewed by the following departments:

	Staff Reviewer:
PLANNING:	Jesus Murillo
BUILDING:	TBD
FIRE:	TBD

POLICY OF THE CITY OF SCOTTSDALE
ON APPEALS OF DEDICATIONS, EXACTIONS, OR ZONING REGULATIONS

RIGHTS OF PROPERTY OWNER

In addition to other rights granted to you by the U.S. and Arizona Constitution, federal and state law and city ordinances or regulations, you are hereby notified of your right to appeal the following City actions relating to your property:

1) Any dedication or exaction which is required of you by an administrative agency or official of the city as a condition of granting approval of your request to use, improve or develop your real property. This appeal right does not apply to a dedication or exaction required as part of a city legislative act (for example a zoning ordinance) where an administrative agency or official has no discretion to determine the dedication or exaction.
2) The adoption or amendment of a zoning regulation that creates a taking of property in violation of Arizona and federal court decisions.

APPEAL PROCEDURE

The appeal must be in writing and specify the City action appealed and the date final action was taken, and it must be filed with or mailed to the hearing officer designated by the city within 30 days after the final action is taken. Address the appeal as follows:

Hearing Officer, C/O City Clerk
3939 Drinkwater Blvd.
Scottsdale, AZ 85251

- No fee will be charged for filing
- The City Attorney's Office will review the appeal for compliance with the above requirements, and will notify you if your appeal does not comply.
- Eligible appeals will be forwarded to the hearing officer, and a hearing will be scheduled within 30 days of receipt by the hearing officer of your request. Ten days notice will be given to you of the date, time and place of the hearing unless you indicate that less notice is acceptable to you.
- The city will submit a takings impact report to the hearing officer.
- In an appeal from a dedication or exaction, the City will bear the burden of proving that the dedication or exaction to be imposed on your property bears an essential nexus between the requirement and a legitimate governmental interest and that the proposed dedication or exaction is roughly proportional to the impact of the use, improvement or development you proposed.
- In an appeal from the adoption or amendment of a zoning regulation, the City will bear the burden of proving that any dedication or exaction requirement in the zoning regulation is roughly proportional to the impact of the proposed use, improvement, or development, and that the zoning regulation does not create a taking of property in violation of Arizona and federal court cases.
- The hearing officer must render his decision within five working days after the appeal is heard.
- The hearing officer can modify or delete a dedication or exaction or, in the case of an appeal from a zoning regulation, transmit a recommendation to the City Council.
- If you are dissatisfied with the decision of the hearing officer, you may file a complaint for a trial de novo with the Superior Court within 30 days of the hearing officer's decision.

If you have questions about this appeal process, you may contact:

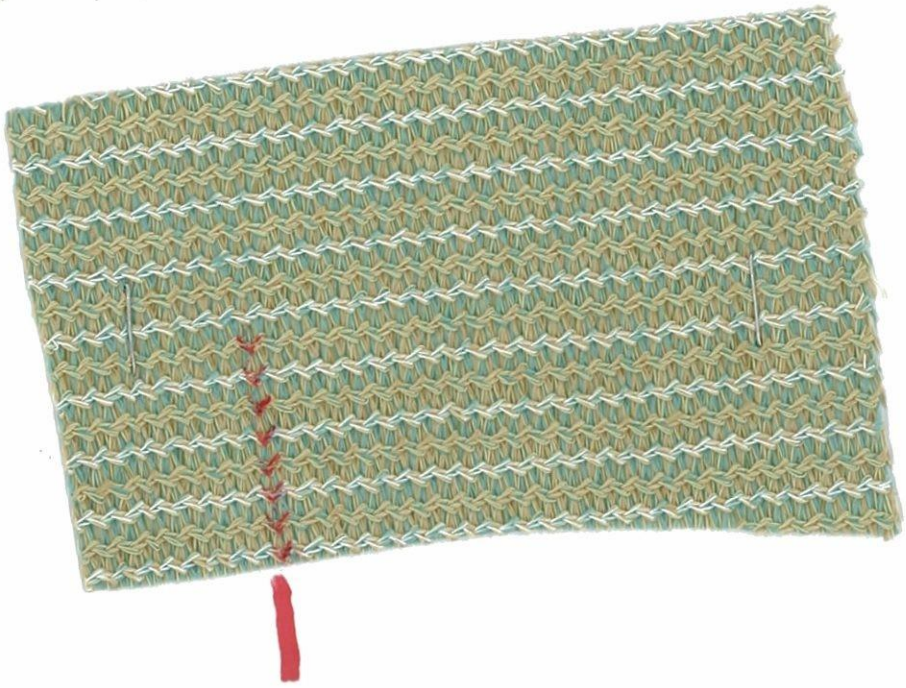
City Manager's Office	City Attorney's Office
3939 Drinkwater Blvd.	3939 Drinkwater Blvd.
Scottsdale, AZ 85251	Scottsdale, AZ 85251
(480) 312-2422	(480) 312-2405

Please be aware that City staff cannot give you legal advice. You may wish, but are not required, to hire an attorney to represent you in an appeal.

SIGNATURE: _____

Planning & Development Services

7447 E. Indian School Road, Suite 105
Scottsdale, AZ 85251



BI-SA-2013

STIPULATION SET
RETAIN FOR RECORDS
APPROVED

3/20/2013
DATE

INITIALS

Pre-Application Request

Development Application Type:
Please check the appropriate box of the Type(s) of Application(s) you are requesting

Zoning	Development Review	Signs
☐ Text Amendment (TA)	☐ Development Review (Major) (DR)	☐ Master Sign Program (MS)
☐ Rezoning (ZN)	☒ Development Review (Minor) (SA)	☐ Community Sign District (MS)
☐ In-fill Incentive (II)	☐ Wash Modification (WM)	Other
☐ Conditional Use Permit (UP)	☐ Historic Property (HP)	☐ Annexation/De-annexation (AN)
Exemptions to the Zoning Ordinance	Land Divisions (PP)	☐ General Plan Amendment (GP)
☐ Hardship Exemption (HE)	☐ Subdivisions	☐ In-Lieu Parking (IP)
☐ Special Exception (SX)	☐ Condominium Conversion	☐ Abandonment (AB)
☐ Variance (BA)	☐ Perimeter Exceptions	Other Application Type Not Listed
☐ Minor Amendment (MA)	☐ Plat Correction/Revision	☐

Submittal Requirements: (fees subject to change every July)

☒ Pre-Application Fee: $ 21 # 108

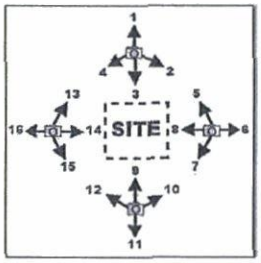
☒ Records Packet Fee: $ 87
Processed by staff. The applicant need not visit the Records desk to obtain the packet.
(Only required for ZN, II, UP, DR, PP, AB applications, or otherwise required by Staff)

☒ Application Narrative:
The narrative shall describe the propose of the request, and all pertinent information related to the request, such as, but not limited to, site circulation, parking and design, drainage, architecture, proposed land use, and lot design.

☒ Property Owner Authorization Letter
(Required for the SA and MS Pre-Applications)

☒ Site / Context Photographs

- Provide color photographs showing the site and the surrounding properties. Use the guidelines below for photos.
- Photos shall be taken looking in towards the project site and adjacent to the site.
- Photos should show adjacent improvements and existing on-site conditions.
- Each photograph shall include a number and direction.
- Sites greater than 500 ft. in length, also take the photo locations shown in the dashed lines.
- Photos shall be provided 8 ½ x 11 paper, max. two per page.



- ***The following list of Additional Submittal Information is not required for a Pre-Application meeting, unless indicated below by staff prior to the submittal of this request.***
- ***Applicants are advised to provide any additional information listed below. This will assist staff to provide the applicant with direction regarding an application.***

Additional Submittal Information

☒ Site Plan (two copies) / more
☐ Subdivision plan (two copies)
☐ Floor Plans (two copies)
☒ Elevations (two copies)
☐ Landscape plans (two copies)
☐ H.O.A. Approval letter
☐ Sign Criteria Regulations & Language (two copies)
☒ Material Samples – color chips, awning fabric, etc.
☐ Cross Sections – for all cuts and fills
☐ Conceptual Grading & Drainage Plan (three copies)
☐ Exterior Lighting – provide cut sheets, details and photometrics for any proposed exterior lighting.
☐ Boundary Survey (required for minor land divisons)
☐ Areal of property that includes property lines and highlighted area abandonment request.
☐ One copy of the recorded document for the area that is requested to be abandoned. Such as: subdivision plat, map of dedication, GLO (General Land Office) federal patent roadway easement, or separate dedication document. A copy of most recorded documents to be abandoned may be purchased at the City of Scottsdale Records Dept. (480-312-2356), or the Maricopa County Recorder's Office (602-506-3535). A copy of the General Land Office (GLO) federal patent roadway easement may be purchased from the Bureau of Land Management (602-417-9200).

Pre-Application Request

Purpose:

The purpose of the Pre-Application submittal, and meeting, is for the applicant and City Staff to discuss a proposed Development Application, and the information and process that is necessary for City Staff to process the proposal.

In accordance with the Zoning Ordinance, no development application shall be accepted before a Pre-Application has been submitted, and a Pre-Application meeting has been conducted with City Staff, unless the Pre-Application meeting has been waived by the Zoning Administrator.

Submittal:

The completed Pre-Application request form, all required materials and fees should be submitted in person to the One-Stop-Shop located at 7447 East Indian School Road. All checks shall be payable to "City of Scottsdale."

Scheduling

After the Pre-Application packet has been accepted at the One-Stop-Shop, a staff member will contact the Applicant within five (5) Staff Working Days to schedule a Pre-Application meeting with the assigned staff member(s). Generally, a Pre-Application meeting is scheduled within five (5) to fifteen (15) Staff Working Days from the date of the submittal.

Project Name: SAILS AT McDOWELL MNT. Community CHURCH

Property's Address: 10700 N. 124th ST

Property's Zoning District Designation:

Property Details:

☐ Single-Family Residential ☐ Multi-Family Residential ☐ Commercial ☐ Industrial ☐ Other

Has a 'Notice of Compliance' been issued? ☐ Yes ☐ No If yes, provide a copy with this submittal

Owner: McDowell Mnt Comm. Church	**Applicant:** Claude Harwood
Company:	**Company:** Arizona Awning
Address: 10700 N. 124th ST	**Address:** 1409 S. 21st Dr Phx
Phone: 602-967-5505 **Fax:**	**Phone:** 602-252-3430 **Fax:**
E-mail: Jimmajor@cox.net	**E-mail:** Claude@AZAwning.com
Owner Signature	Applicant Signature

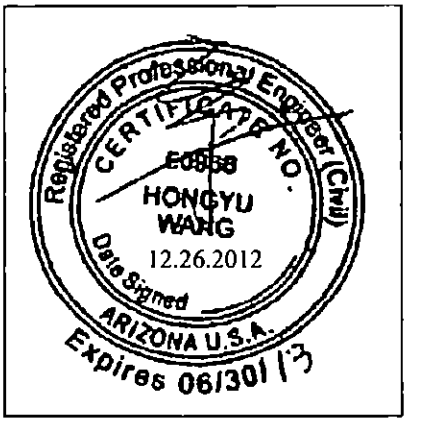
Official Use Only Submittal Date: 2 Application No.: 117 -PA- 2013

STRUCTURAL CALCULATIONS

PROJECT NAME: Sails at McDowell Mtn Community Church
PROJECT ADDRESS: 10700 N. 124th St., Scottsdale, AZ 85350
PROJECT NO: 12331

CLIENT: David Smith
COMPANY: Arizona Awnings & Window Systems
1409 S. 21st Drive
Phoenix, AZ 85009

DATE: December 26, 2012



REV	DATE	BY	DESCRIPTION
Δ			
Δ			
Δ			
Δ			
Δ			

Basis for Design

1.1 BUILDING CODE: 2006 International Building Code

1.2 GRAVITY DESIGN:

ROOF LOADING

Dead Load (psf)	Frame selfweight plus 0.25psf
Live Load (psf)	5.0

1.3 LATERAL DESIGN:

WIND LOADING

Basic Wind Speed (3s – Gust)	90
Importance Factor	0.87
Exposure Category	C

SEISMIC LOADING

Due to light weight, seismic force should not control design(See following seismic cals).

2.1 FOUNDATION DESIGN:

TRADITIONAL FOUNDATIONS DESIGNED IN CONFORMANCE WITH RECOMMENDATIONS IBC2006. ALLOWABLE DEAD PLUS LIVE LOAD SOIL PRESSURE 1500 PSF.

3.1 CONCRETE AND REINFORCING DESIGN:

CONCRETE: FOOTINGS f'c 2500 PSI. REBAR: ASTM A615 GRADE 60 (FY = 60 KSI).

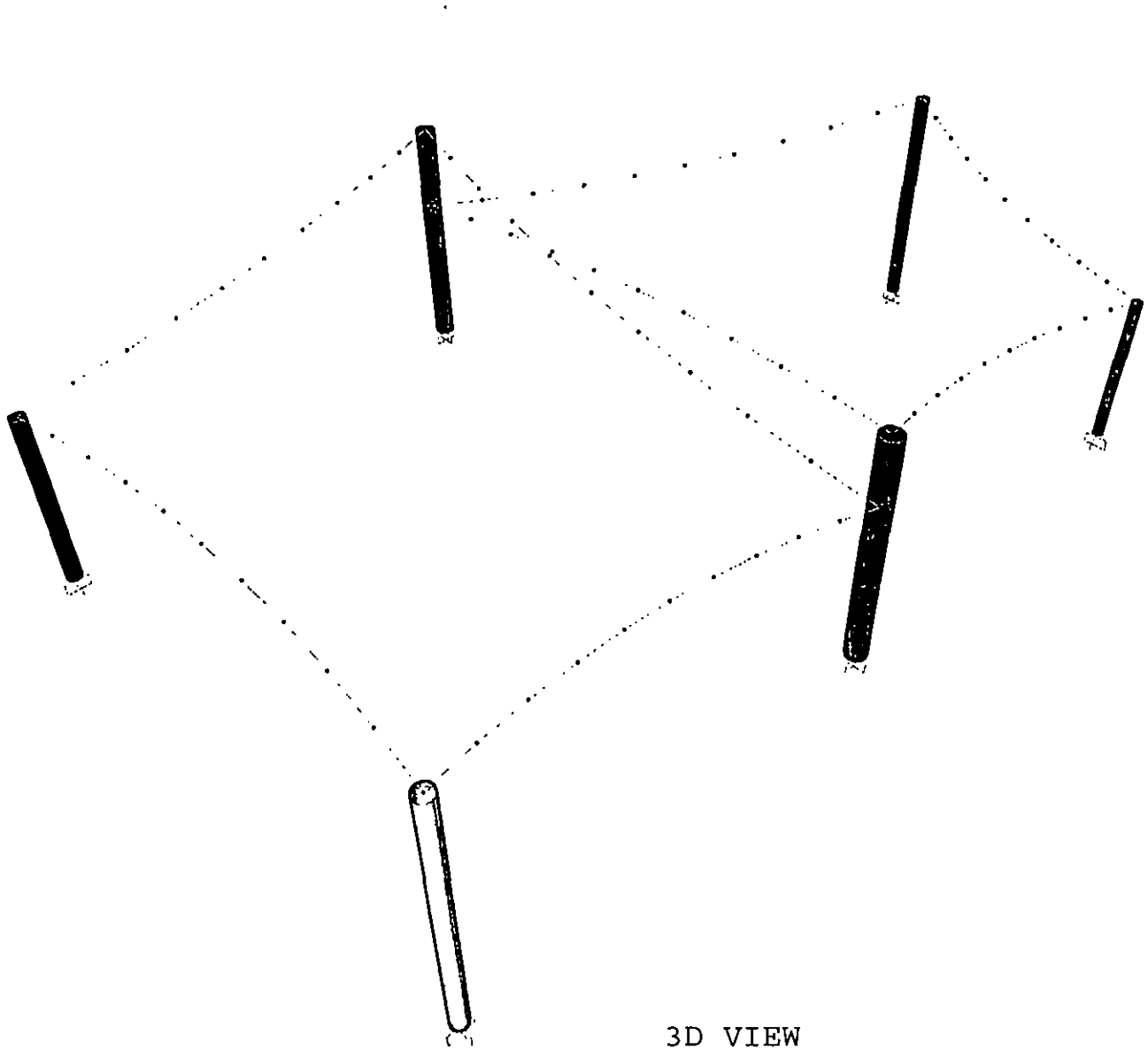
4.1 STRUCTURAL STEEL

STRUCTURAL STEEL MEMBERS SHALL CONFORM WITH THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

SHAPE	STANDARD	YIELD (Fy)
ROLLED WIDE FLANGE SECTIONS	ASTM A992/572	50
OTHER STANDARD STEEL SHAPES AND ROLLED SECTIONS	ASTM A36	36
BARS AND PLATES	ASTM A36	36
THREADED ROD, EPOXY BOLTS, STUDS AND BOLTS IN WOOD CONNECTIONS	ASTM A307	---
HIGH STRENGTH BOLTS	ASTM A325N	---
TUBES(SQUARE AND RECTANGULAR)	ASTM A500 Gr B	46
(ROUND)	ASTM A500 Gr B	42

5.1 INSPECTION, SPECIAL INSPECTION, AND STRUCTURAL OBSERVATION:

AS REQUIRED BY THE GOVERNING MUNICIPALITY.



3D VIEW

Design Summary

The analysis and design of the sail system included herein were performed with the use of a 3D frame analysis and computer design program – **SAP2000**. It is a structural analysis program developed by Computers and Structures, Inc. Detailed information about the software can be found at the Computers and Structures, Inc. website. Sail anchorage and connections were checked by hand calculation.

1. FRAME GEOMETRY

The geometry for the sail model was based on a centerline interpretation of a typical sail. The centerline computer models were developed from client drawings and compiled to create a simplified model for analysis.

2. EXTERNALLY APPLIED LOADS

Loads for this structure have been conservatively determined by referencing the current International Building Code 2006(IBC 2006) and ASCE 7-05 Standards and Provisions. Design dead load was based on the sail's self weight plus an additional dead load of 0.25 psf to account for the weight of the canvas, fasteners, etc. Live load was taken to be 5 psf per IBC 2006 Table 1607.1. Seismic load will not be an issue for the sail due to the small dead load of the structure. Therefore, wind load will control the structure's lateral design. Wind load was calculated based on "MWFRS" pressures for open buildings with mono slope roof (see design load calculation).

3. ANALYSIS FOR MEMBER FORCES

The sail frame will be constructed of HSS10X0.312, HSS10X0.25, HSS14X0.25, HSS14X 0.312, HSS7.5X0.25 steel round tube or better and 3/8" diameter steel cables. Refer to structural drawings for detailed member sizes and locations. From computer structural analysis, all framing members were designed based on the above mentioned design loads. Steel Design AISC-ASD design specifications were used to check the structural capacities of these members based on an applicable minimum yield stress. The demand/capacity ratio of each framing member was calculated and found to be less than 1.0 for all members. All connections were checked by hand calculation based on worst case structural analysis output reactions.

Design Load

cable length per panel $L_1 := 117\ ft$ $L_2 := 108\ ft$

fabric area per panel $A_1 := 705 ft^2$ $A_2 := 569 ft^2$

Design dead load

framing and fabric self weight. Framing weight will be included in computer calcs automatically; a misc. load of 0.25 psf will be included in calculations to account for the weight of fabric, fasteners, etc.

$Dead := 0.25\ psf$ $DL_1 := \frac{Dead\ A_1}{L_1}$ $DL_1 = 1.51\ plf$

$DL_2 := \frac{Dead\ A_2}{L_2}$ $DL_2 = 1.32\ plf$

Design live load $Live := 5psf$ (Non-reducible per ASCE 7-05 Table 4-1)

$LL_1 := \frac{Live\ A_1}{L_1}$ $LL_1 = 30.13\ plf$

$LL_2 := \frac{Live\ A_2}{L_2}$ $LL_2 = 26.34\ plf$

Design wind load

Wind load is based on IBC 2006/ASCE 7-05 "MWFRS" for open buildings with monoslope free roof. Exposure category is C. Roof height is around 15 feet. Slope is around 5 degree.

$I := 0.87$	Table 6-1	$V := 90mph$	Figure 6-1
$k_d := 0.85$	Table 6-4	$k_{zt} := 1.0$	Section 6.5.7.2
$k_h := 0.85$	Table 6-3	$G := 0.85$	Section 6.5.8

$c := 0.00256 \frac{lb\ hr^2}{ft^2\ mi^2}$ Constant term for Equation 6-15

$q_h := c\ k_h\ k_{zt}\ k_d\ V^2\ I$ $q_h = 13.034\ psf$ Velocity pressure per Equation 6-15

ASCE 7-05 Figure 6-18A and 6-18D

Wind direction $\gamma := 0deg$ clear wind flow

$C_{WA0} := 1.2$	$P_{WA0} := q_h\ G\ C_{WA0}$	$P_{WA0} = 13.29\ psf$	*Case A Windward*
$C_{LA0} := 0.3$	$P_{LA0} := q_h\ G\ C_{LA0}$	$P_{LA0} = 3.32\ psf$	*Case A Leeward*
$C_{WB0} := -1.1$	$P_{WB0} := q_h\ G\ C_{WB0}$	$P_{WB0} = -12.19\ psf$	*Case B Windward*
$C_{LB0} := -0.1$	$P_{LB0} := q_h\ G\ C_{LB0}$	$P_{LB0} = -1.11\ psf$	*Case B Leeward*

Wind direction $\gamma := 180deg$ clear wind flow

$C_{WA} := 1.2$	$P_{WA} := q_h\ G\ C_{WA}$	$P_{WA} = 13.29\ psf$	*Case A Windward*
$C_{LA} := 0.3$	$P_{LA} := q_h\ G\ C_{LA}$	$P_{LA} = 3.32\ psf$	*Case A Leeward*
$C_{WB} := -1.1$	$P_{WB} := q_h\ G\ C_{WB}$	$P_{WB} = -12.19\ psf$	*Case B Windward*
$C_{LB} := -0.1$	$P_{LB} := q_h\ G\ C_{LB}$	$P_{LB} = -1.11\ psf$	*Case B Leeward*

Wind direction $\gamma := 90deg$ clear wind flow

$C_C := -0.8$ $P_C := q_h G C_C$ $P_C = -8.86$ psf *Case C Parallel*

$C_D := 0.8$ $P_D := q_h G C_D$ $P_D = 8.86$ psf *Case D Parallel*

uniform wind load to cable

$$Up_1 := \frac{\min\left(\frac{P_{WA0} + P_{LA0}}{2}, \frac{P_{WB0} + P_{LB0}}{2}, P_C\right) A_1}{L_1}$$ $Up_1 = -53.41$ plf wind case C

$$Down_1 := \frac{\max\left(\frac{P_{WA} + P_{LA}}{2}, \frac{P_{WB} + P_{LB}}{2}, P_D\right) A_1}{L_1}$$ $Down_1 = 53.41$ plf wind case D

$$Up_2 := \frac{\min\left(\frac{P_{WA0} + P_{LA0}}{2}, \frac{P_{WB0} + P_{LB0}}{2}, P_C\right) A_2}{L_2}$$ $Up_2 = -46.7$ plf wind case C

$$Down_2 := \frac{\max\left(\frac{P_{WA} + P_{LA}}{2}, \frac{P_{WB} + P_{LB}}{2}, P_D\right) A_2}{L_2}$$ $Down_2 = 46.7$ plf wind case D

Design wind force shall be not less than 10psf according as section 6.1.4.1 of ASCE 7-05

$P_{min} := 10$ psf

$$W10_1 := \frac{P_{min}\ 57.4\ ft^2}{L_1}$$ $W10_1 = 4.91$ plf

$$W10_2 := \frac{P_{min}\ 50\ ft^2}{L_2}$$ $W10_2 = 4.63$ plf

Design Seismic Loads

Design per ASCE7-05

$I := 1.0$ $S_{DS} := 0.234$ $R := 1.25$

sail panel total weight will be around 1 psf $DL := 1$ psf

seismic response coefficient $C_s := \frac{S_{DS}\ I}{R}$ $C_s = 0.187$

Redundancy factor=1.0

Seismic force $F := C_s DL$ $F = 0.187$ psf

Design seismic force at Allowable stress level. $Seismic := 0.7\ F$ $Seismic = 0.13$ psf

total seismic force $F_{seismic} := Seismic\ A_2$ $F_{seismic} = 74.56$ lbf

Minimum wind load for canopy design

$Windmin := 50\ ft^2\ 10$ psf $Windmin = 500$ lbf

$Check := if(Windmin > F_{seismic}, "Wind controls design", "Seismic controls design")$

$Check = "Wind controls design"$

Seismic Data

Conterminous 48 States
2005 ASCE 7 Standard
Latitude = 33.583238
Longitude = -111.813571
Spectral Response Accelerations Ss and S1
Ss and S1 = Mapped Spectral Acceleration Values
Site Class B - Fa = 1.0 ,Fv = 1.0
Data are based on a 0.05 deg grid spacing

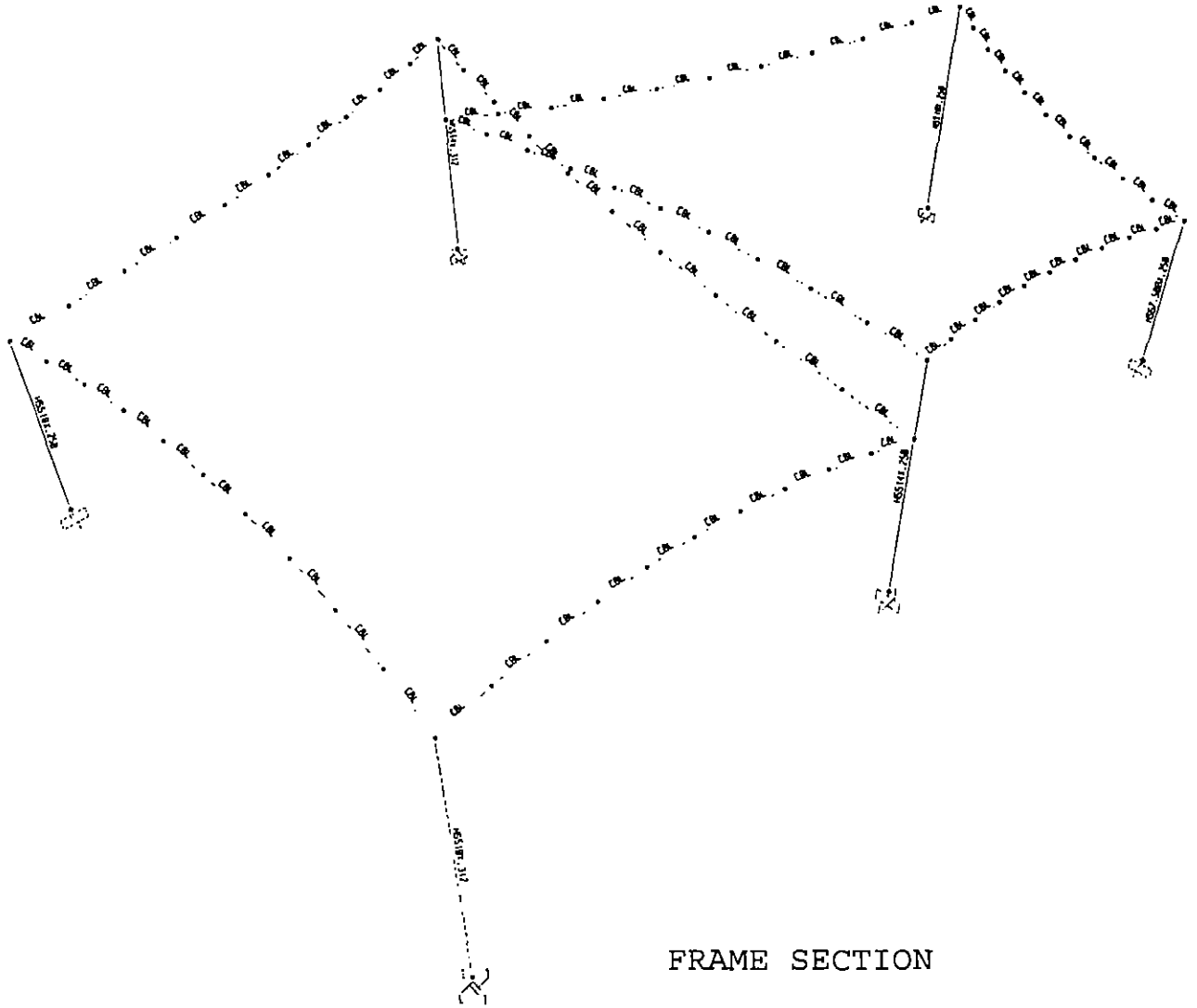
Period (sec)	Sa (g)
0.2	0.219 (Ss, Site Class B)
1.0	0.069 (S1, Site Class B)

Spectral Response Accelerations SMs and SM1
SMs = Fa x Ss and SM1 = Fv x S1
Site Class D - Fa = 1.6 ,Fv = 2.4

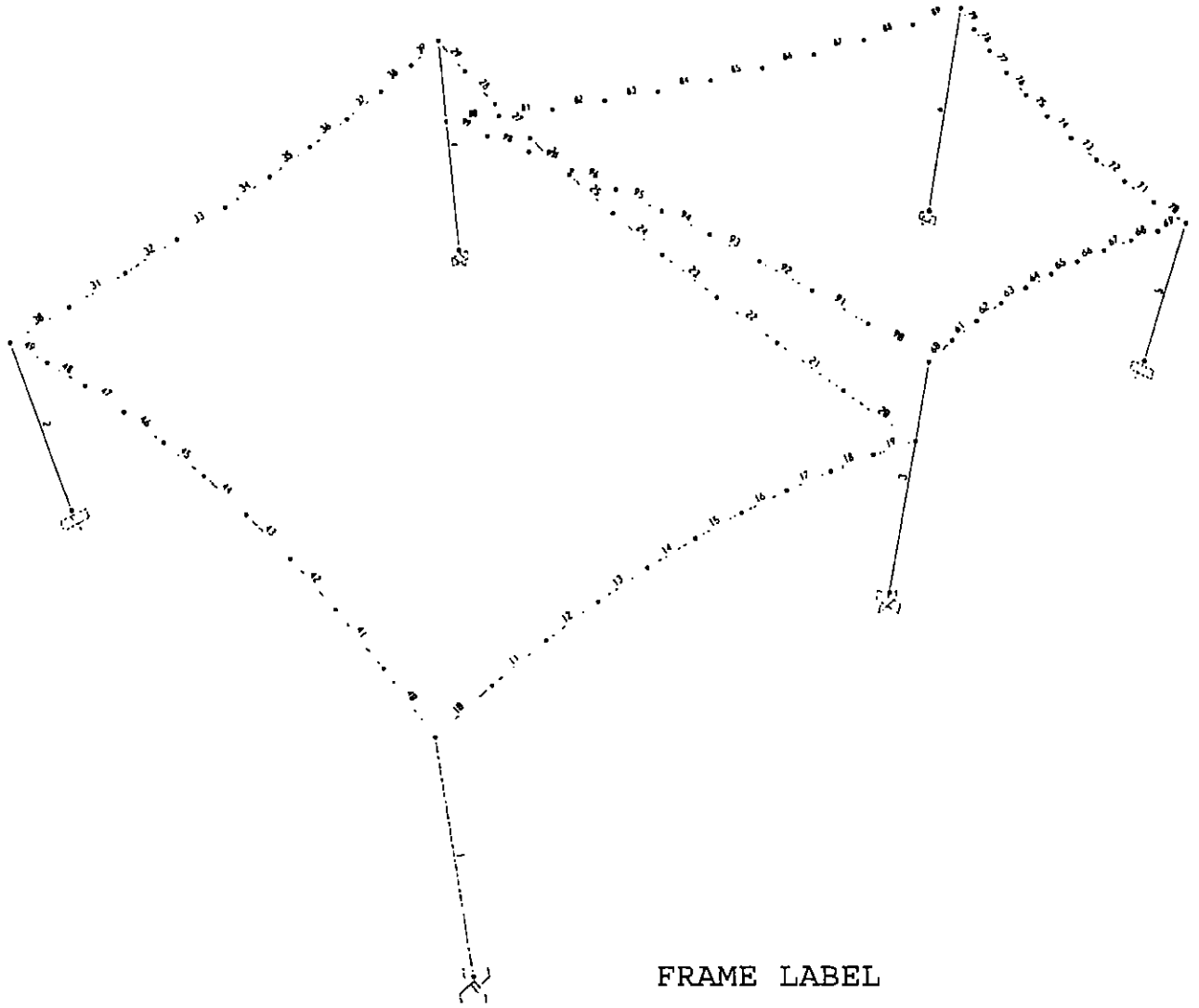
Period (sec)	Sa (g)
0.2	0.351 (SMs, Site Class D)
1.0	0.165 (SM1, Site Class D)

Design Spectral Response Accelerations SDs and SD1
SDs = 2/3 x SMs and SD1 = 2/3 x SM1
Site Class D - Fa = 1.6 ,Fv = 2.4

Period (sec)	Sa (g)
0.2	0.234 (SDs, Site Class D)
1.0	0.110 (SD1, Site Class D)



FRAME SECTION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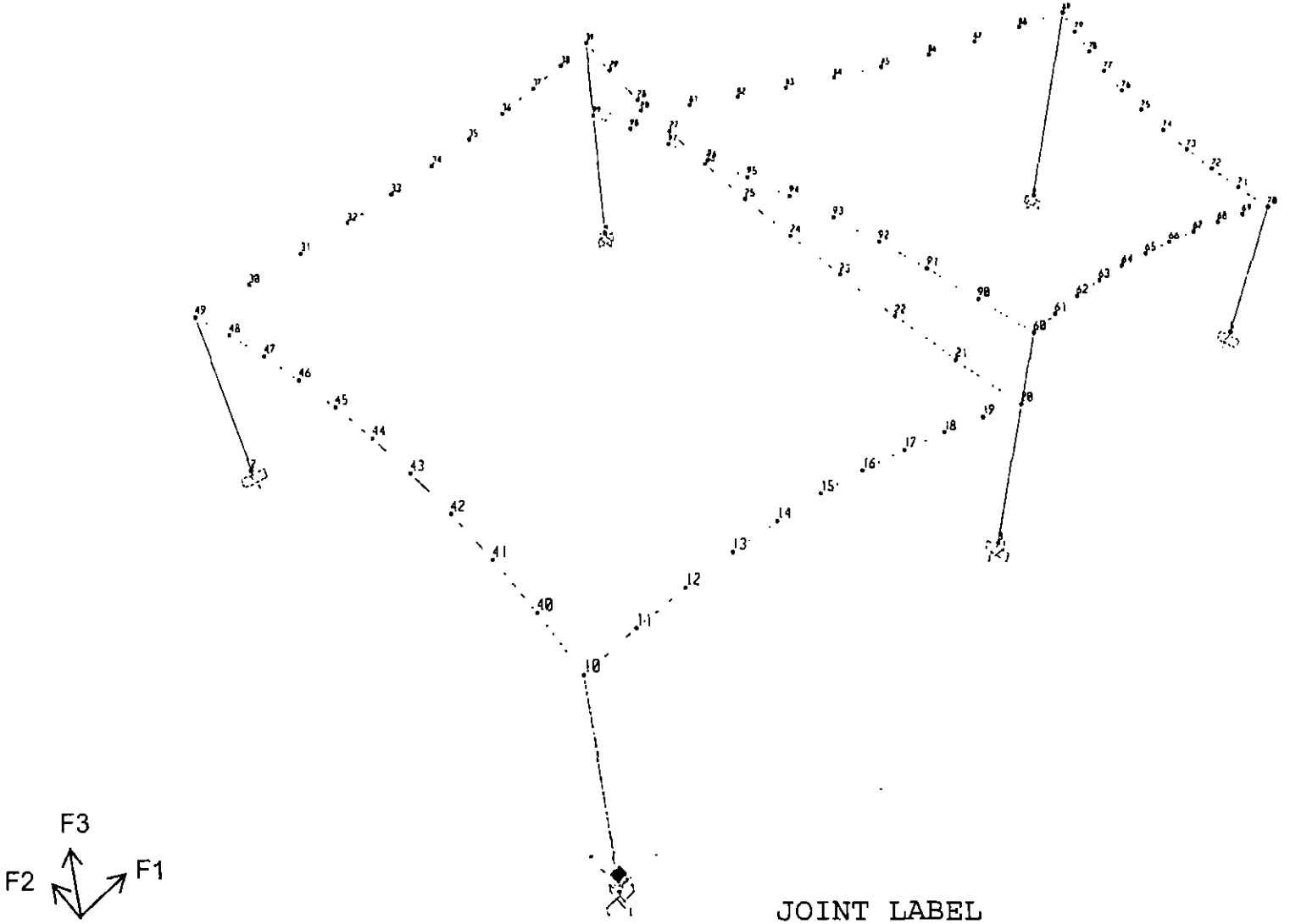
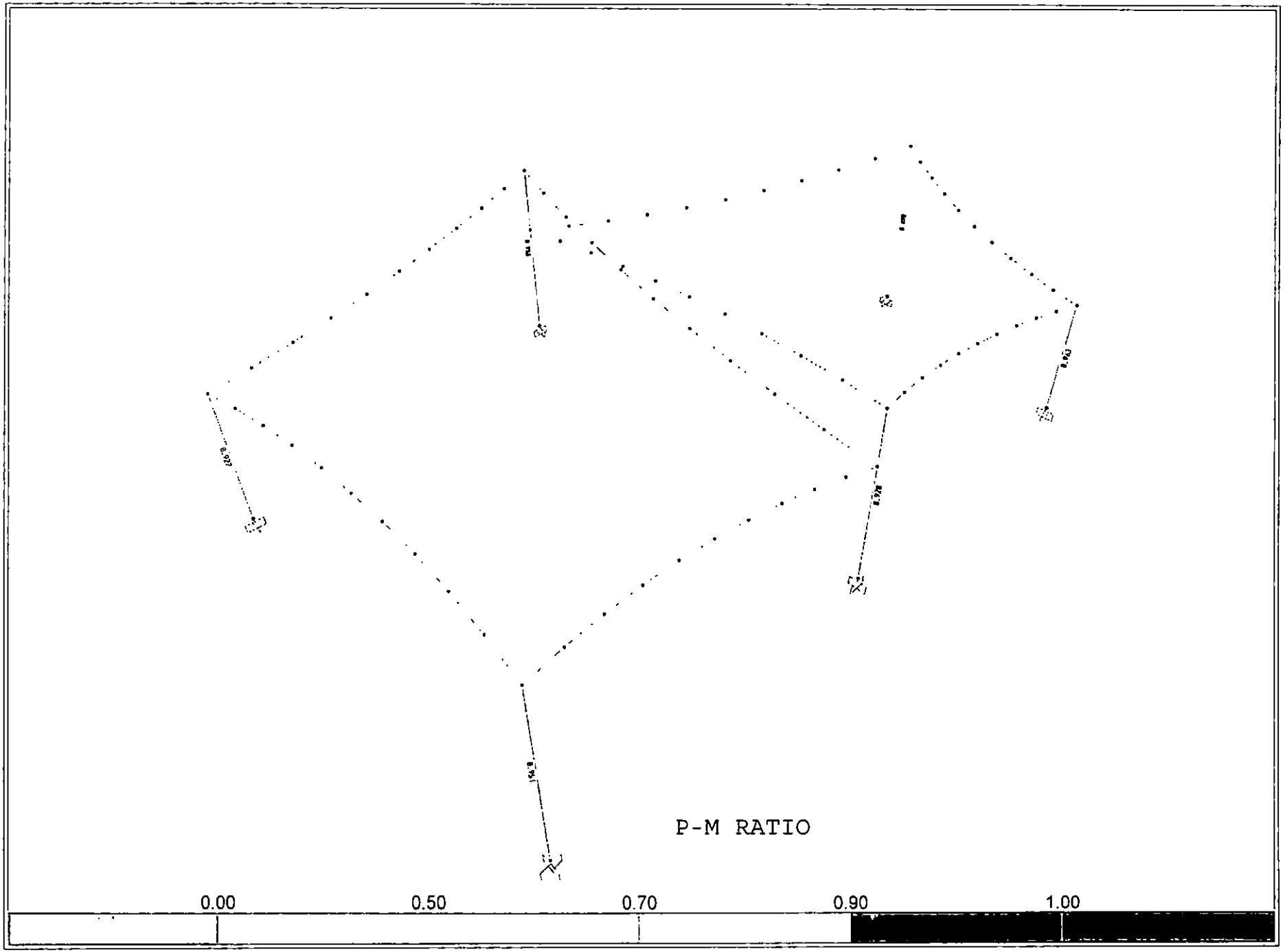

F3
F2
F1
JOINT LABEL



SAP2000 - File:Sails at McDowell Mtn Community Church - Steel P-M Interaction Ratios (AISC360-05)

Project #12331

Table: Material Properties 03a - Steel Data

Material	Fy	Fu	EffFy	EffFu	SSCurveOpt	SSHysType	SHard	SMax
	Kip/in2	Kip/in2	Kip/in2	Kip/in2				
A500GrB42	42.000	58.000	46.200	63.800	Simple	Kinematic	0.020000	0.140000

Material	SRup	FinalSlope
A500GrB42	0.200000	-0.100000

Table: Frame Section Properties 01 - General

SectionName	Material	Shape	t3	tw	Area	TorsConst
			in	in	in2	in4
HSS10X.250	A500GrB42	Pipe	10.0000	0.2500	7.15	171.00
HSS10X.312	A500GrB42	Pipe	10.0000	0.3125	8.88	209.00
HSS14X.250	A500GrB42	Pipe	14.0000	0.2500	10.10	478.00
HSS14X.312	A500GrB42	Pipe	14.0000	0.3125	12.50	589.00
HSS7.500X.250	A500GrB42	Pipe	7.5000	0.2500	5.32	70.30

SectionName	I33	I22	AS2	AS3	S33	S22	Z33
	in4	in4	in2	in2	in3	in3	In3
HSS10X.250	85.30	85.30	6.43	6.43	17.06	17.06	22.20
HSS10X.312	105.00	105.00	7.99	7.99	21.00	21.00	27.40
HSS14X.250	239.00	239.00	9.09	9.09	34.14	34.14	44.20
HSS14X.312	295.00	295.00	11.25	11.25	42.14	42.14	54.70
HSS7.500X.250	35.20	35.20	4.79	4.79	9.39	9.39	12.30

SectionName	Z22	R33	R22	ConcCol	ConcBeam	Color	TotalWt
	in3	in	in				Kip
HSS10X.250	22.20	3.4540	3.4540	No	No	4194304	0.584
HSS10X.312	27.40	3.4387	3.4387	No	No	12615935	0.393
HSS14X.250	44.20	4.8645	4.8645	No	No	10485760	0.447
HSS14X.312	54.70	4.8580	4.8580	No	No	8404992	0.595
HSS7.500X.250	12.30	2.5723	2.5723	No	No	4194432	0.163

SectionName	TotalMass	FromFile	AMod	A2Mod	A3Mod	JMod	I2Mod
	Kip-s2/in						
HSS10X.250	0.0015	Yes	1.000000	1.000000	1.000000	1.000000	1.000000
HSS10X.312	0.0010	Yes	1.000000	1.000000	1.000000	1.000000	1.000000
HSS14X.250	0.0012	Yes	1.000000	1.000000	1.000000	1.000000	1.000000
HSS14X.312	0.0015	Yes	1.000000	1.000000	1.000000	1.000000	1.000000
HSS7.500X.250	4.220E-04	Yes	1.000000	1.000000	1.000000	1.000000	1.000000

SectionName	I3Mod	MMod	WMod	SectInFile	FileName
HSS10X.250	1.000000	1.000000	1.000000	HSS10X.250	

SectionName	I3Mod	MMod	WMod	SectInFile	FileName
HSS10X.312	1.000000	1.000000	1.000000	HSS10X.312	
HSS14X.250	1.000000	1.000000	1.000000	HSS14X.250	
HSS14X.312	1.000000	1.000000	1.000000	HSS14X.312	
HSS7.500X.250	1.000000	1.000000	1.000000	HSS7.500X.250	

Table: Load Pattern Definitions

LoadPat	DesignType	SelfWtMult	AutoLoad	GUID	Notes
DEAD	DEAD	1.000000			
LIVE	LIVE	0.000000			
WIND_UP	WIND	0.000000	None		
WIND_DOWN	WIND	0.000000	None		
WIND10X	WIND	0.000000	None		
WIND10-X	WIND	0.000000	None		

Table: Case - Static 4 - Nonlinear Parameters

Case	Unloading	GeoNonLin	ResultsSave	MaxTotal	MaxNull	MaxIterCS
DL	Unload Entire	None	Final State	200	100	10
LL	Unload Entire	None	Final State	200	50	10
W_UP	Unload Entire	None	Final State	200	50	10
W_DOWN	Unload Entire	None	Final State	200	50	10
W10X	Unload Entire	None	Final State	200	100	10
W10-X	Unload Entire	None	Final State	200	100	10

Case	MaxIterNR	ItConvTol	UseEvStep	EvLumpTol	LSPerIter	LSTol	LSStepFact
DL	40	1.0000E-03	Yes	0.010000	20	0.100000	1.618000
LL	40	1.0000E-04	Yes	0.010000	20	0.100000	1.618000
W_UP	40	1.0000E-04	Yes	0.010000	20	0.100000	1.618000
W_DOWN	40	1.0000E-04	Yes	0.010000	20	0.100000	1.618000
W10X	40	1.0000E-04	Yes	0.010000	20	0.100000	1.618000
W10-X	40	1.0000E-04	Yes	0.010000	20	0.100000	1.618000

Case	StageSave	StageMinIns	StageMinTD	FrameTC	FrameHinge	CableTC
DL				Yes	Yes	Yes
LL				Yes	Yes	Yes
W_UP				Yes	Yes	Yes
W_DOWN				Yes	Yes	Yes
W10X				Yes	Yes	Yes
W10-X				Yes	Yes	Yes

Case	LinkTC	LinkOther	TimeDepMat	TFMaxIter	TFTol	TFAccelFact	TFNoStop
DL	Yes	Yes		10	0.010000	1.000000	No

Case	LinkTC	LinkOther	TimeDepMat	TFMaxIter	TFTol	TFAccelFact	TFNoStop
LL	Yes	Yes		10	0.010000	1.000000	No
W_UP	Yes	Yes		10	0.010000	1.000000	No
W_DOWN	Yes	Yes		10	0.010000	1.000000	No
W10X	Yes	Yes		10	0.010000	1.000000	No
W10-X	Yes	Yes		10	0.010000	1.000000	No

Table: Combination Definitions

ComboName	ComboType	AutoDesign	CaseType	CaseName	ScaleFactor	SteelDesign
DL+LL	Linear Add	No	NonLin Static	DL	1.000000	Strength
DL+LL			NonLin Static	LL	1.000000	
DL+WDONW	Linear Add	No	NonLin Static	DL	1.000000	Strength
DL+WDONW			NonLin Static	W_DOWN	1.000000	
DL+W10X	Linear Add	No	NonLin Static	DL	1.000000	Strength
DL+W10X			NonLin Static	W10X	1.000000	
DL+0.75(W10X+LL)	Linear Add	No	NonLin Static	DL	1.000000	Strength
DL+0.75(W10X+LL)			NonLin Static	W10X	0.750000	
DL+0.75(W10X+LL)			NonLin Static	LL	0.750000	
0.6DL+WUP	Linear Add	No	NonLin Static	DL	0.600000	Strength
0.6DL+WUP			NonLin Static	W_UP	1.000000	
DL+W10-X	Linear Add	No	NonLin Static	DL	1.000000	Strength
DL+W10-X			NonLin Static	W10-X	1.000000	
DL+0.75(LL+W10-X)	Linear Add	No	NonLin Static	DL	1.000000	Strength
DL+0.75(LL+W10-X)			NonLin Static	W10-X	0.750000	
DL+0.75(LL+W10-X)			NonLin Static	LL	0.750000	

Table: Cable Loads - Distributed

Cable	LoadPat	CoordSys	Type	Dir	FOverL Lb/ft	GUID
10	DEAD	GLOBAL	Force	Gravity	1.51	
10	LIVE	GLOBAL	Force	Z	-30.13	
10	WIND_UP	Local	Force	2	53.41	
10	WIND_DOWN	Local	Force	2	-53.41	
10	WIND10X	GLOBAL	Force	X	4.91	
10	WIND10-X	GLOBAL	Force	X	-4.91	
11	DEAD	GLOBAL	Force	Gravity	1.51	
11	LIVE	GLOBAL	Force	Z	-30.13	
11	WIND_UP	Local	Force	2	53.41	
11	WIND_DOWN	Local	Force	2	-53.41	
11	WIND10X	GLOBAL	Force	X	4.91	
11	WIND10-X	GLOBAL	Force	X	-4.91	
12	DEAD	GLOBAL	Force	Gravity	1.51	
12	LIVE	GLOBAL	Force	Z	-30.13	
12	WIND_UP	Local	Force	2	53.41	
12	WIND_DOWN	Local	Force	2	-53.41	
12	WIND10X	GLOBAL	Force	X	4.91	
12	WIND10-X	GLOBAL	Force	X	-4.91	
13	DEAD	GLOBAL	Force	Gravity	1.51	
13	LIVE	GLOBAL	Force	Z	-30.13	

Cable	LoadPat	CoordSys	Type	Dir	FOverL Lb/ft	GUID
13	WIND_UP	Local	Force	2	53.41	
13	WIND_DOWN	Local	Force	2	-53.41	
13	WIND10X	GLOBAL	Force	X	4.91	
13	WIND10-X	GLOBAL	Force	X	-4.91	
-		-			-	
47	DEAD	GLOBAL	Force	Gravity	1.51	
47	LIVE	GLOBAL	Force	Z	-30.13	
47	WIND_UP	Local	Force	2	53.41	
47	WIND_DOWN	Local	Force	2	-53.41	
47	WIND10X	GLOBAL	Force	X	4.91	
47	WIND10-X	GLOBAL	Force	X	-4.91	
48	DEAD	GLOBAL	Force	Gravity	1.51	
48	LIVE	GLOBAL	Force	Z	-30.13	
48	WIND_UP	Local	Force	2	53.41	
48	WIND_DOWN	Local	Force	2	-53.41	
48	WIND10X	GLOBAL	Force	X	4.91	
48	WIND10-X	GLOBAL	Force	X	-4.91	
49	DEAD	GLOBAL	Force	Gravity	1.51	
49	LIVE	GLOBAL	Force	Z	-30.13	
49	WIND_UP	Local	Force	2	53.41	
49	WIND_DOWN	Local	Force	2	-53.41	
49	WIND10X	GLOBAL	Force	X	4.91	
49	WIND10-X	GLOBAL	Force	X	-4.91	
60	WIND10X	GLOBAL	Force	X	4.63	
60	DEAD	GLOBAL	Force	Gravity	1.32	
60	LIVE	GLOBAL	Force	Z	-26.34	
60	WIND_UP	Local	Force	2	46.70	
60	WIND_DOWN	Local	Force	2	-46.70	
60	WIND10-X	GLOBAL	Force	X	-4.63	
61	WIND10X	GLOBAL	Force	X	4.63	
61	DEAD	GLOBAL	Force	Gravity	1.32	
61	LIVE	GLOBAL	Force	Z	-26.34	
61	WIND_UP	Local	Force	2	46.70	
61	WIND_DOWN	Local	Force	2	-46.70	
61	WIND10-X	GLOBAL	Force	X	-4.63	
62	WIND10X	GLOBAL	Force	X	4.63	
62	DEAD	GLOBAL	Force	Gravity	1.32	
62	LIVE	GLOBAL	Force	Z	-26.34	
62	WIND_UP	Local	Force	2	46.70	
62	WIND_DOWN	Local	Force	2	-46.70	
62	WIND10-X	GLOBAL	Force	X	-4.63	
-		-			-	
97	WIND10X	GLOBAL	Force	X	4.63	
97	DEAD	GLOBAL	Force	Gravity	1.32	
97	LIVE	GLOBAL	Force	Z	-26.34	
97	WIND_UP	Local	Force	2	46.70	
97	WIND_DOWN	Local	Force	2	-46.70	

Cable	LoadPat	CoordSys	Type	Dir	FOverL Lb/ft	GUID
97	WIND10-X	GLOBAL	Force	X	-4.63	
98	WIND10X	GLOBAL	Force	X	4.63	
98	DEAD	GLOBAL	Force	Gravity	1.32	
98	LIVE	GLOBAL	Force	Z	-26.34	
98	WIND_UP	Local	Force	2	46.70	
98	WIND_DOWN	Local	Force	2	-46.70	
98	WIND10-X	GLOBAL	Force	X	-4.63	
99	WIND10X	GLOBAL	Force	X	4.63	
99	DEAD	GLOBAL	Force	Gravity	1.32	
99	LIVE	GLOBAL	Force	Z	-26.34	
99	WIND_UP	Local	Force	2	46.70	
99	WIND_DOWN	Local	Force	2	-46.70	
99	WIND10-X	GLOBAL	Force	X	-4.63	

Table: Frame Loads - Distributed

Frame	LoadPat	CoordSys	Type	Dir	DistType	RelDistA	RelDistB	FOverLA Lb/ft	FOverLB Lb/ft
2	WIND10X	GLOBAL	Force	X Proj	RelDist	0.0000	1.0000	10.00	10.00
1	WIND10X	GLOBAL	Force	X Proj	RelDist	0.0000	1.0000	10.00	10.00
5	WIND10X	GLOBAL	Force	X Proj	RelDist	0.0000	1.0000	10.00	10.00
6	WIND10X	GLOBAL	Force	X Proj	RelDist	0.0000	1.0000	10.00	10.00
3	WIND10X	GLOBAL	Force	X Proj	RelDist	0.0000	1.0000	10.00	10.00
4	WIND10X	GLOBAL	Force	X Proj	RelDist	0.0000	1.0000	10.00	10.00

Table: Preferences - Steel Design - AISC360-05

THDesign	FrameType	PatLLF	SRatioLimit	MaxIter	SDC	SeisCode	SeisLoad	ImpFactor
Envelopes	OMF	0.750000	0.950000	1	D	Yes	Yes	1.000000

Provision	AMethod	SOMethod	SRMethod	NLCoeff	OmegaB	OmegaC	OmegaTY	OmegaTF
ASD	Direct Analysis	General 2nd Order	Tau-b Variable	0.002000	1.670000	1.670000	1.670000	2.000000

OmegaV	OmegaVRolledI	OmegaVT	PlugWeld	HSSWelding	HSSReduceT	CheckDefl	DLRat
1.670000	1.500000	1.670000	Yes	ERW	Yes	No	120.000000

SDLAndLLRat	LLRat	TotalRat	NetRat
120.000000	360.000000	240.000000	240.000000

Table: Steel Design 1 - Summary Data - AISC360-05

Frame	DesignSect	DesignType	Status	Ratio	RatioType	Combo	ErrMsg
2	HSS10X.250	Column	No Messages	0.927333	PMM	DL+WDONW	No Messages
1	HSS10X.312	Column	Overstressed	0.950677	PMM	DL+WDONW	No Messages
5	HSS7.500X.250	Column	Overstressed	0.962732	PMM	DL+WDONW	No Messages
6	HSS10X.250	Column	No Messages	0.890216	PMM	0.6DL+WUP	No Messages
3	HSS14X.250	Column	No Messages	0.920456	PMM	DL+WDONW	No Messages
4	HSS14X.312	Column	Overstressed	0.988042	PMM	DL+WDONW	No Messages

Table: Joint Reactions

Joint	OutputCase	CaseType	F1	F2	F3	M1	M2	M3
			Kip	Kip	Kip	Kip-in	Kip-in	Kip-in
1	DL+LL	Combination	-1.784	-2.243	2.243	349.966	-278.359	1.890E-12
1	DL+WDONW	Combination	-2.632	-3.227	3.124	503.461	-410.566	2.704E-12
1	DL+W10X	Combination	-0.459	-0.604	0.535	94.179	-61.427	5.282E-13
1	DL+0.75(W10X+LL)	Combination	-1.619	-2.045	1.842	319.033	-245.004	1.735E-12
1	0.6DL+WUP	Combination	-2.628	-3.147	0.037	490.962	-409.997	2.623E-12
1	DL+W10-X	Combination	-0.066	-0.604	0.535	94.178	-10.247	6.028E-13
1	DL+0.75(LL+W10-X)	Combination	-1.324	-2.045	1.842	319.032	-206.620	1.791E-12
2	DL+LL	Combination	-2.062	1.875	0.920	-225.058	-247.474	-2.249E-12
2	DL+WDONW	Combination	-3.233	2.829	1.318	-339.479	-387.999	-3.400E-12
2	DL+W10X	Combination	-0.489	0.562	0.202	-67.452	-52.647	-6.640E-13
2	DL+0.75(W10X+LL)	Combination	-1.838	1.752	0.713	-210.187	-216.079	-2.094E-12
2	0.6DL+WUP	Combination	-2.782	2.482	-1.799	-297.851	-333.858	-2.980E-12
2	DL+W10-X	Combination	-0.105	0.562	0.202	-67.460	-12.580	-6.451E-13
2	DL+0.75(LL+W10-X)	Combination	-1.550	1.752	0.713	-210.193	-186.029	-2.079E-12
3	DL+LL	Combination	-0.276	-4.891	2.625	639.333	-116.297	3.069E-13
3	DL+WDONW	Combination	-0.180	-7.400	3.805	961.484	-145.842	4.170E-13
3	DL+W10X	Combination	-0.526	-1.273	0.525	166.981	-71.181	1.148E-13
3	DL+0.75(W10X+LL)	Combination	-0.590	-4.440	2.091	580.771	-136.128	3.039E-13
3	0.6DL+WUP	Combination	-0.594	-6.771	-2.232	890.974	-191.588	4.439E-13
3	DL+W10-X	Combination	0.167	-1.273	0.525	167.004	12.888	2.316E-13
3	DL+0.75(LL+W10-X)	Combination	-0.070	-4.440	2.091	580.788	-73.076	3.915E-13
4	DL+LL	Combination	0.852	6.488	3.304	-877.264	231.389	-2.098E-12
4	DL+WDONW	Combination	1.123	9.745	4.716	-1308.943	324.646	-3.172E-12
4	DL+W10X	Combination	-0.404	1.551	0.702	-209.591	-30.599	-3.500E-13
4	DL+0.75(W10X+LL)	Combination	0.313	5.782	2.648	-781.808	142.980	-1.759E-12
4	0.6DL+WUP	Combination	1.452	9.004	-1.955	-1227.558	359.181	-2.930E-12
4	DL+W10-X	Combination	0.356	1.547	0.703	-209.115	66.632	-6.670E-13
4	DL+0.75(LL+W10-X)	Combination	0.883	5.779	2.649	-781.451	215.903	-1.997E-12
5	DL+LL	Combination	1.226	-1.205	0.325	130.116	132.420	3.558E-13
5	DL+WDONW	Combination	1.943	-1.950	0.414	210.550	209.866	5.501E-13
5	DL+W10X	Combination	-0.079	-0.246	0.099	26.602	-3.638	-1.051E-13
5	DL+0.75(W10X+LL)	Combination	0.817	-1.042	0.242	112.488	91.906	1.769E-13
5	0.6DL+WUP	Combination	1.675	-1.583	-1.527	171.000	180.930	5.075E-13
5	DL+W10-X	Combination	0.208	-0.245	0.099	26.506	22.436	4.619E-14
5	DL+0.75(LL+W10-X)	Combination	1.032	-1.041	0.242	112.416	111.461	2.903E-13
6	DL+LL	Combination	2.045	-0.025	2.127	4.131	343.487	-2.436E-13
6	DL+WDONW	Combination	2.903	-0.044	2.948	7.349	487.782	-3.500E-13

Joint	OutputCase	CaseType	F1	F2	F3	M1	M2	M3
			Kip	Kip	Kip	Kip-in	Kip-in	Kip-in
6	DL+W10X	Combination	0.151	9.914E-03	0.522	-1.666	37.152	-2.063E-14
6	DL+0.75(W10X+LL)	Combination	1.563	-7.049E-03	1.767	1.184	271.389	-1.869E-13
6	0.6DL+WUP	Combination	2.953	0.062	0.459	-10.339	496.097	-3.077E-13
6	DL+W10-X	Combination	0.514	0.013	0.520	-2.190	86.383	-5.253E-14
6	DL+0.75(LL+W10-X)	Combination	1.835	-4.708E-03	1.766	0.791	308.313	-2.108E-13

HW Engineering
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Project Title: Sails at McDowell Mtn Community Church
Engineer: SHL
Project Descr:

Pole Footing Embedded in Soil

File = C:\Users\SHL\Desktop\3HONGY~1\2012\12331(~1\cals\123310-2 EC6
ENERCALC, INC. 1983-2012, Build:6.12.12.7, Ver:6.12.12.7

Lic. # : KW-06008887 — Licensee : HW Engineering

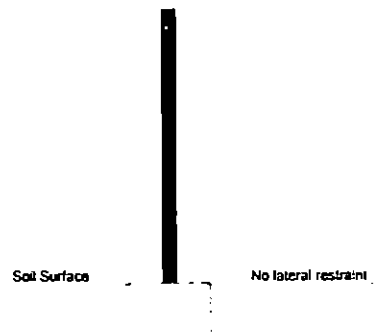
Description : footing design for HSS10x0.25 post

Code References

Calculations per
Load Combinations Used : ASCE 7-05

General Information

Pole Footing Shape	Circular
Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	500.0 pcf
Max Passive	psf



Controlling Values

Governing Load Combination : +D+W+H

Lateral Load	4.320 k
Moment	43.027 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	1,418.89 psf
Allowable	1,419.11 psf
Minimum Required Depth	6.50 ft
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.4244 ksf

Applied Loads

	Lateral Concentrated Load	Lateral Distributed Load	Vertical Load
D : Dead Load	0.220 k	k/ft	0.50 k
Lr : Roof Live	2.60 k	k/ft	1.70 k
L : Live	k	k/ft	k
S : Snow	k	k/ft	k
W : Wind	4.10 k	k/ft	2.50 k
E : Earthquake	k	k/ft	k
H : Lateral Earth	k	k/ft	k
Load distance above ground surface	9.960 ft	TOP of Load above ground surface ft	
		BOTTOM of Load above ground surface ft	

Load Combination Results

Load Combination	Forces @ Ground Surface Loads - (k)	Moments - (ft-k)	Required Depth - (ft)	Pressure at 1/3 Depth Actual - (psf)	Allow - (psf)	Soil Increase Factor
+D+Lr+H	2.820	28.087	6.13	1,010.8	1,011.5	1.000
+D+W+H	4.320	43.027	6.50	1,418.9	1,419.1	1.330
+0.60D+W+H	4.232	42.151	6.38	1,407.7	1,408.2	1.330

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Project Title: Sails at McDowell Mtn Community Church
Engineer: SHL
Project Descr:

Pole Footing Embedded in Soil

File = C:\Users\SHL\Desktop\3HONGY~1\2012\12331\~1\cals\123310-2.EC6
ENERCALC, INC. 1983-2012, Build:6.12.12.7, Ver:6.12.12.7

Lic. # : KW-06008887 — Licensee : HW Engineering

Description : footing design for HSS10x0.312 post

Code References

Calculations per
Load Combinations Used : ASCE 7-05

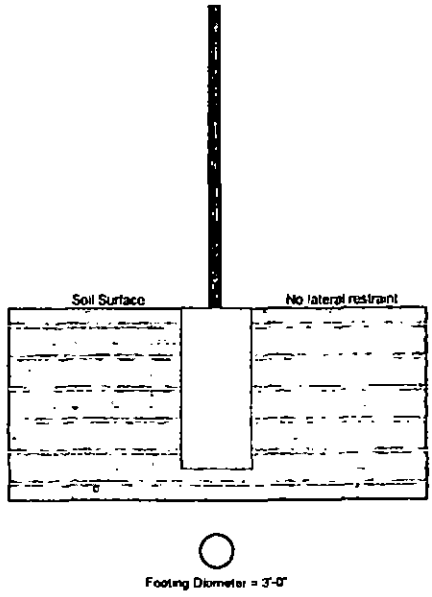
General Information

Pole Footing Shape	Circular
Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	500.0 pcf
Max Passive	psf

Controlling Values

Governing Load Combination : +D+W+H

Lateral Load	4.220 k
Moment	54.143 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	1,494.37 psf
Allowable	1,498.39 psf
Minimum Required Depth	**6.875 ft**
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.5234 ksf



Applied Loads

	Lateral Concentrated Load	Lateral Distributed Load	Vertical Load
D : Dead Load	0.220 k	k/ft	0.50 k
Lr : Roof Live	2.650 k	k/ft	1.760 k
L : Live	k	k/ft	k
S : Snow	k	k/ft	k
W : Wind	4.0 k	k/ft	3.20 k
E : Earthquake	k	k/ft	k
H : Lateral Earth	k	k/ft	k
Load distance above ground surface	12.830 ft	TOP of Load above ground surface ft	
		BOTTOM of Load above ground surface ft	

Load Combination Results

Load Combination	Forces @ Ground Surface Loads - (k)	Moments - (ft-k)	Required Depth - (ft)	Pressure at 1/3 Depth Actual - (psf)	Allow - (psf)	Soil Increase Factor
+D+Lr+H	2.870	36.822	6.63	1,081.7	1,085.5	1.000
+D+W+H	4.220	54.143	6.88	1,494.4	1,498.4	1.330
+0.60D+W+H	4.132	53.014	6.75	1,485.0	1,485.2	1.330

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Project Title: Sails at McDowell Mtn Community Church
Engineer: SHL
Project Descr:
Project #12331

Pole Footing Embedded in Soil

File = C:\Users\SHL\Desktop\3HONGY~1\2012\12331(~1\cals\123310~2.EC6
ENERCALC, INC. 1983-2012, Build:6.12.12.7, Ver:6.12.12.7

Lic. # : KW-06008887 — Licensee : HW Engineering

Description : footing design for HSS14x0.25 post

Code References

Calculations per
Load Combinations Used : ASCE 7-05

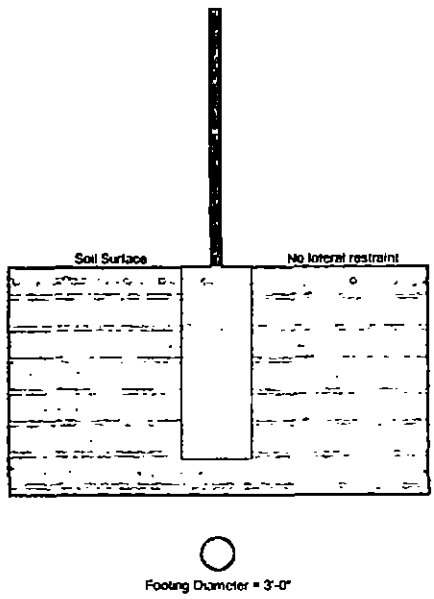
General Information

Pole Footing Shape	Circular
Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	500.0 pcf
Max Passive	psf

Controlling Values

Governing Load Combination : +D+W+H

Lateral Load	7.50 k
Moment	81.0 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	1,785.51 psf
Allowable	1,786.87 psf
Minimum Required Depth	**8.125 ft**
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.5447 ksf



Applied Loads

	Lateral Concentrated Load	Lateral Distributed Load	Vertical Load
D : Dead Load	0.40 k	k/ft	0.550 k
Lr : Roof Live	4.50 k	k/ft	2.10 k
L : Live	k	k/ft	k
S : Snow	k	k/ft	k
W : Wind	7.10 k	k/ft	3.30 k
E : Earthquake	k	k/ft	k
H : Lateral Earth	k	k/ft	k
Load distance above ground surface	10.80 ft	TOP of Load above ground surface ft	
		BOTTOM of Load above ground surface ft	

Load Combination Results

Load Combination	Forces @ Ground Surface Loads - (k)	Moments - (ft-k)	Required Depth - (ft)	Pressure at 1/3 Depth Actual - (psf)	Allow - (psf)	Soil Increase Factor
+D+Lr+H	4.900	52.920	7.75	1,270.0	1,274.0	1.000
+D+W+H	7.500	81.000	8.13	1,785.5	1,786.9	1.330
+0.60D+W+H	7.340	79.272	8.00	1,769.8	1,772.7	1.330

HW.Engineering
10530 Hope Mills Drive
Las Vegas, NV 89135
Phone:702-202-0061
Cell:702-506-6589
hongyu@hwengineeringUSA.com

Project Title: Sails at McDowell Mtn Community Church
Engineer: SHL
Project Descr:
Project #12331

Pole Footing Embedded in Soil

File = C:\Users\SHL\Desktop\3HONGY~1\2012\12331\~1\cals\123310~2.EC6
ENERCALC, INC. 1983-2012, Build:6.12.12.7, Ver:6.12.12.7

Lic. # : KW-06008887 — Licensee : HW Engineering

Description : footing design for HSS14x0.312 post

Code References

Calculations per
Load Combinations Used : ASCE 7-05

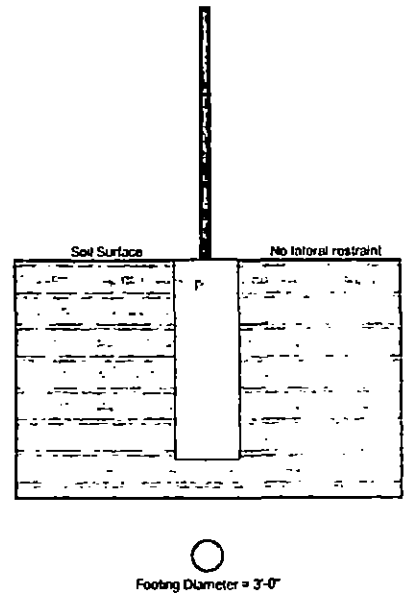
General Information

Pole Footing Shape	Circular
Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	500.0 pcf
Max Passive	psf

Controlling Values

Governing Load Combination : +D+W+H

Lateral Load	9.80 k
Moment	112.70 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	2,007.67 psf
Allowable	2,010.42 psf
Minimum Required Depth	**9.125 ft**
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.6649 ksf



Applied Loads

	Lateral Concentrated Load	Lateral Distributed Load	Vertical Load
D : Dead Load	0.50 k	k/ft	0.70 k
Lr : Roof Live	6.0 k	k/ft	2.60 k
L : Live	k	k/ft	k
S : Snow	k	k/ft	k
W : Wind	9.30 k	k/ft	4.0 k
E : Earthquake	k	k/ft	k
H : Lateral Earth	k	k/ft	k
Load distance above ground surface	11.50 ft	TOP of Load above ground surface ft	
		BOTTOM of Load above ground surface ft	

Load Combination Results

	Forces @ Ground Surface		Required	Pressure at 1/3 Depth		Soil Increase
Load Combination	Loads - (k)	Moments - (ft-k)	Depth - (ft)	Actual - (psf)	Allow - (psf)	Factor
+D+Lr+H	6.500	74.750	8.75	1,436.9	1,440.8	1.000
+D+W+H	9.800	112.700	9.13	2,007.7	2,010.4	1.330
+0.60D+W+H	9.600	110.400	9.00	1,991.5	1,994.6	1.330

HW Engineering
10530 Hope Mills Drive
Las Vegas, NV 89135
Phone:702-202-0061
Cell:702-506-6589
hongyu@hwengineeringUSA.com

Project Title: Sails at McDowell Mtn Community Church
Engineer: SHL
Project Descr:

Pole Footing Embedded in Soil

File = C:\Users\SHL\Desktop\3HONGY~1\2012\12331(~1\cals\123310~2.EC6
ENERCALC, INC. 1983-2012, Build:6.12.12.7, Ver:6.12.12.7
Lic. # : KW-06008887 Licensee : HW Engineering

Description : footing design for HSS7.5x0.25 post

Code References

Calculations per
Load Combinations Used : ASCE 7-05

General Information

Pole Footing Shape	Circular
Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	500.0 pcf
Max Passive	psf

Controlling Values

Governing Load Combination : +D+W+H

Lateral Load	2.730 k
Moment	24.843 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	1,165.96 psf
Allowable	1,167.34 psf
Minimum Required Depth	5.375 ft
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.06366 ksi

Applied Loads

	Lateral Concentrated Load	Lateral Distributed Load	Vertical Load
D : Dead Load	0.130 k	k/ft	0.150 k
Lr : Roof Live	1.60 k	k/ft	0.20 k
L : Live	k	k/ft	k
S : Snow	k	k/ft	k
W : Wind	2.60 k	k/ft	0.30 k
E : Earthquake	k	k/ft	k
H : Lateral Earth	k	k/ft	k
Load distance above ground surface	9.10 ft	TOP of Load above ground surface ft	
		BOTTOM of Load above ground surface ft	

Load Combination Results

Load Combination	Forces @ Ground Surface Loads - (k)	Moments - (ft-k)	Required Depth - (ft)	Pressure at 1/3 Depth Actual - (psf)	Allow - (psf)	Soil Increase Factor
+D+Lr+H	1.730	15.743	5.00	822.1	823.1	1.000
+D+W+H	2.730	24.843	5.38	1,166.0	1,167.3	1.330
+0.60D+W+H	2.678	24.370	5.25	1,156.4	1,159.6	1.330

Cable and Connection Check

Cables check

$T_{max} := 4.1\,kip$ Cable maximum tension from analysis $\Omega := 2.2$

3/8" dia. cable minimum breaking strength 12000 lbf or better

$T_u := 12000lbf$ $T_a := \frac{T_u}{\Omega}$ $T_a = 5.455kip$

$Check := if(T_{max} < T_a, "OK!", "N/G!")$ $Check = "OK!"$

Tab plates check

tension from cable

$T_{max} := 6kip$ maximum tension from analysis

plate information $F_y := 36ksi$ $F_u := 58ksi$ A36 plate

$w := 4.5in$ $t := \frac{5}{8}in$ $d_{hole} := 0.5in$ $d := \frac{3}{8}in$ $LC := 1.5in$ $a := LC - \frac{d_{hole}}{2}$ $a = 1.25in$

$b := \frac{w}{2} - \frac{d_{hole}}{2}$ $b = 2in$ $b_{eff} := min(2t + 0.63in, b)$ $b_{eff} = 1.88in$

check tensile rupture on the net effective area

$P_n := 2t\,b_{eff}F_u$ $P_n = 136.3kip$ $\Omega_t := 2.0$

$T_a := \frac{P_n}{\Omega_t}$ $T_a = 68.15kip$

$check\_T := if(T_a \geq T_{max}, "Tension\ is\ Ok", "NG")$ $check\_T = "Tension\ is\ Ok"$

check shear rupture

$A_{sf} := 2t\left(a + \frac{d}{2}\right)$ $A_{sf} = 1.797in^2$

$V_n := 0.6F_u A_{sf}$ $V_n = 62.531kip$ $\Omega_{sf} := 2.0$

$V_a := \frac{V_n}{\Omega_{sf}}$ $V_a = 31.266kip$

$check\_V := if(V_a \geq T_{max}, "Shear\ rupture\ is\ Ok", "NG")$ $check\_V = "Shear\ rupture\ is\ Ok"$

check bearing

$A_{pb} := t\,d$ $A_{pb} = 0.234in^2$

$R_n := 1.8F_y A_{pb}$ $R_n = 15.188kip$ $\Omega_t := 2.0$

$P_a := \frac{R_n}{\Omega_t}$ $P_a = 7.594kip$

$check\_bearing := if(P_a \geq T_{max}, "Bearing\ is\ Ok", "NG")$ $check\_bearing = "Bearing\ is\ Ok"$

check tensile yielding

$A_g := wt$ $A_g = 2.813in^2$

$P_n := F_y A_g$ $P_n = 101.25\ kip$ $\Omega_y := 1.67$

$T_y := \frac{P_n}{\Omega_y}$ $T_y = 60.629$ kip

check_yielding := if($T_y \geq T_{max}$, "Tensile yielding is Ok", "NG")

check_yielding = "Tensile yielding is Ok"

Tab plate is sufficient.

Tab plates to column welding check

$T_{max} := 6$ kip maximum tension from analysis

3/16" fillet welding, two sides, 6" welding length @ each side for tab plate to column

welding information $t_w := \frac{3}{16}$ in $D := \frac{t_w}{\frac{1}{16}\text{ in}}$ $D = 3$ $L_w := 12$ in

allowable welding strength

$F_{weld} := 0.928 \frac{kip}{in} D L_w$ $F_{weld} = 33.408$ kip

check_welding := if($F_{weld} \geq T_{max}$, "Welding is OK", "NG")

check_welding = "Welding is OK"

Footing uplift check

$T_{max} := 2.3$ kip			Maximum design uplift forces
$b := 36$in			Size of footing
$D := 5.5$ft			Min. footing depth
$area := \frac{\pi b^2}{4}$	$area = 7.069$ ft^2		Footing section area
$Vol := area\ D$	$Vol = 38.877$ ft^3		Concrete volume
$\gamma := 145$pcf	$W_{con} := Vol\ \gamma$	$W_{con} = 5.64$ kip	Concrete weight

$ratio := \frac{W_{con}}{T_{max}}$ $ratio = 2.451$

check_uplift := if(ratio > 1.5, "Uplift is sufficient!", "NG")

check_uplift = "Uplift is sufficient!"

COMMERCIAL TESTING COMPANY

1215 South Hamilton Street • Post Office Box 985 • Dalton, GA 30722
Telephone (706) 278–3935 • Facsimile (706) 278–3936

Standard Method of Test for
Surface Burning Characteristics of Building Materials

ASTM E 84–06

Commercial 95

Report Number 06–10314

Test Number 3829–3112
October 16, 2006

Gale Pacific USA, Inc.
Lake Mary, Florida

Commercial Testing Company is accredited for the ASTM E 84 test by the United States Department of Commerce, National Institute of Standards and Technology (NIST), through the National Voluntary Laboratory Accreditation Program (NVLAP) for conformance with criteria set forth in NIST Handbook 150:2001, and all requirements of ISO/IEC 17025:1999.

Commercial Testing Company

Dewane Jackson

(Authorized Signature)

TESTED TO BE SURE®
Since 1974

INTRODUCTION

This report is a presentation of results of a surface flammability test on a material submitted by Gale Pacific USA, Inc., Lake Mary, Florida.

The test was conducted in accordance with the ASTM International fire test response standard E 84–06, *Surface Burning Characteristics of Building Materials*, sometimes referred to as the Steiner tunnel test. This test is applicable to exposed surfaces such as walls and ceilings. The test is conducted with the specimen in the ceiling position with the surface to be evaluated exposed face down to the ignition source. The ASTM E 84 test method is technically identical to NFPA No. 255 and UL No. 723.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire–hazard or fire–risk assessment of materials, products, or assemblies under actual fire conditions.

PURPOSE

The purpose of the test is to provide only the comparative measurements of surface flame spread and smoke development of materials with that of select grade red oak flooring and fiber–reinforced cement board, Grade II, under specific fire exposure conditions. The test exposes a nominal 24-foot long by 20-inch wide test specimen to a controlled air flow and flaming fire adjusted to spread the flame along the entire length of a red oak specimen in 5.50 minutes. During the 10-minute test duration, flamespread over the specimen surface and density of the resulting smoke are measured and recorded. Test results are calculated relative to the red oak flooring, which has an arbitrary rating of 100, and fiber–reinforced cement board Grade II, which has a rating of 0.

The test results are expressed as Flame Spread Index and Smoke Developed Index. The Flame Spread Index is defined in ASTM E 176 as "a number or classification indicating a comparative measure derived from observations made during the progress of the boundary of a zone of flame under defined test conditions." The Smoke Developed Index, a term specific to ASTM E 84, is defined as "a number or classification indicating a comparative measure derived from smoke obscuration data collected during the test for surface burning characteristics." There is not necessarily a relationship between the two measurements.

The method does not provide for measurement of heat transmission through the surface tested, the effect of aggravated flame spread behavior of an assembly resulting from the proximity of combustible walls and ceilings, or classifying a material as noncombustible solely by means of a Flame Spread Index.

The zero reference and other parameters critical to furnace operation are verified on the day of the test by conducting a 10–minute test using 1/4–inch fiber–reinforced cement board. Periodic tests using NOFMA certified 23/32–inch select grade red oak flooring provide data for the 100 reference.

TEST SAMPLE

The test sample, selected by the client, was identified as **Commercial 95**, a knitted polyethylene shade cloth with a total weight of 10.8 ounces per square yard. The material was conditioned to equilibrium in an atmosphere with the temperature maintained at 71 ± 2°F and the relative humidity at 50 ± 5 percent. For testing, two lengths of the fabric, each measuring 2 feet wide by 12 feet in length, were free laid over a 2–inch hexagonal wire mesh supported by 1/4–inch diameter steel rods spanning the ledges of the tunnel furnace at 24–inch intervals. This method of auxiliary sample support is described in Appendix X1 of the E 84 standard, Guide to Mounting Methods, Sections X1.1.2.2 and X1.1.2.3.

TEST RESULTS

The test results, calculated on the basis of observed flame propagation and the integrated area under the recorded smoke density curve, are presented below. The Flame Spread Index obtained in E 84 is rounded to the nearest number divisible by five. Smoke Developed Indices are rounded to the nearest number divisible by five unless the Index is greater than 200. In that case, the Smoke Developed Index is rounded to the nearest 50 points. The flame spread and smoke development data are presented graphically on Page 4 of this report.

Test Specimen	Flame Spread Index	Smoke Developed Index
Fiber-Reinforced Cement Board Grade II	0	0
Red Oak Flooring	100	100
Commercial 95	**25**	**60**

OBSERVATIONS

Specimen ignition over the burners occurred at 0.08 minute. Surface flame spread was observed to a maximum distance of 5.01 feet beyond the zero point at 1.18 minutes. The maximum temperature recorded during the test was 497°F.

CLASSIFICATION

The Flame Spread Index and Smoke Developed Index values obtained by ASTM E 84 tests are frequently used by code officials and regulatory agencies in the acceptance of interior finish materials for various applications. The most widely accepted classification system is described in the National Fire Protection Association publication NFPA 101 *Life Safety Code*, where:

Class A	0 – 25 Flame Spread Index	0 – 450 Smoke Developed Index
Class B	26 – 75 Flame Spread Index	0 – 450 Smoke Developed Index
Class C	76 – 200 Flame Spread Index	0 – 450 Smoke Developed Index

Class A, B, and C correspond to Type I, II, and III respectively in other codes such as SBCCI, BOCA, and ICBO. They do not preclude a material being otherwise classified by the authority of jurisdiction.

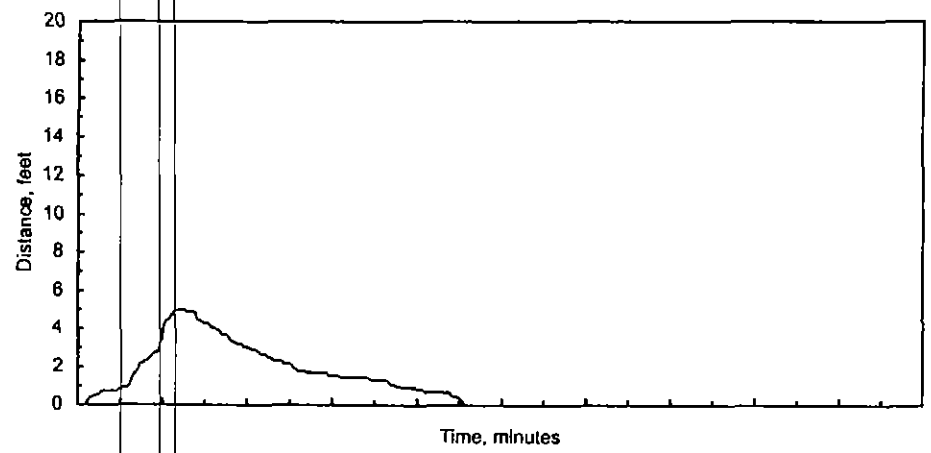
ASTM E 84 TEST DATA

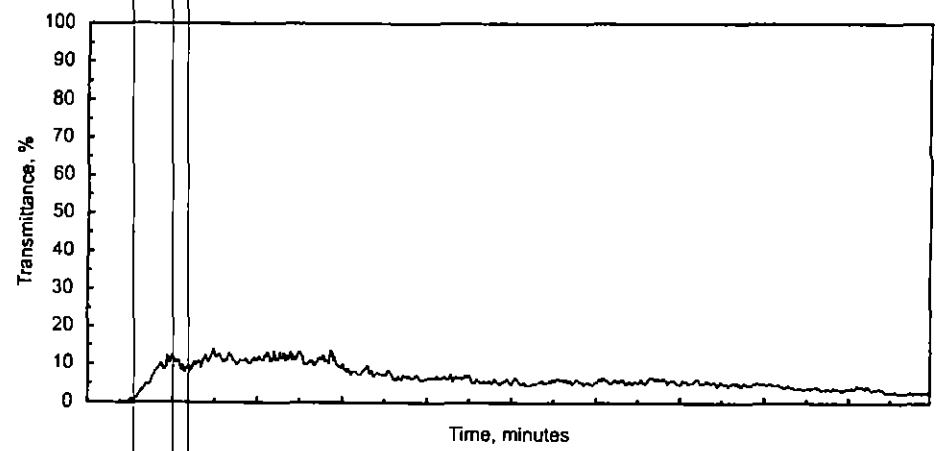
Client: Gale Pacific USA, Inc.
Test Number: 3829-3112
Material Tested: Commercial 95
Date: October 16, 2006

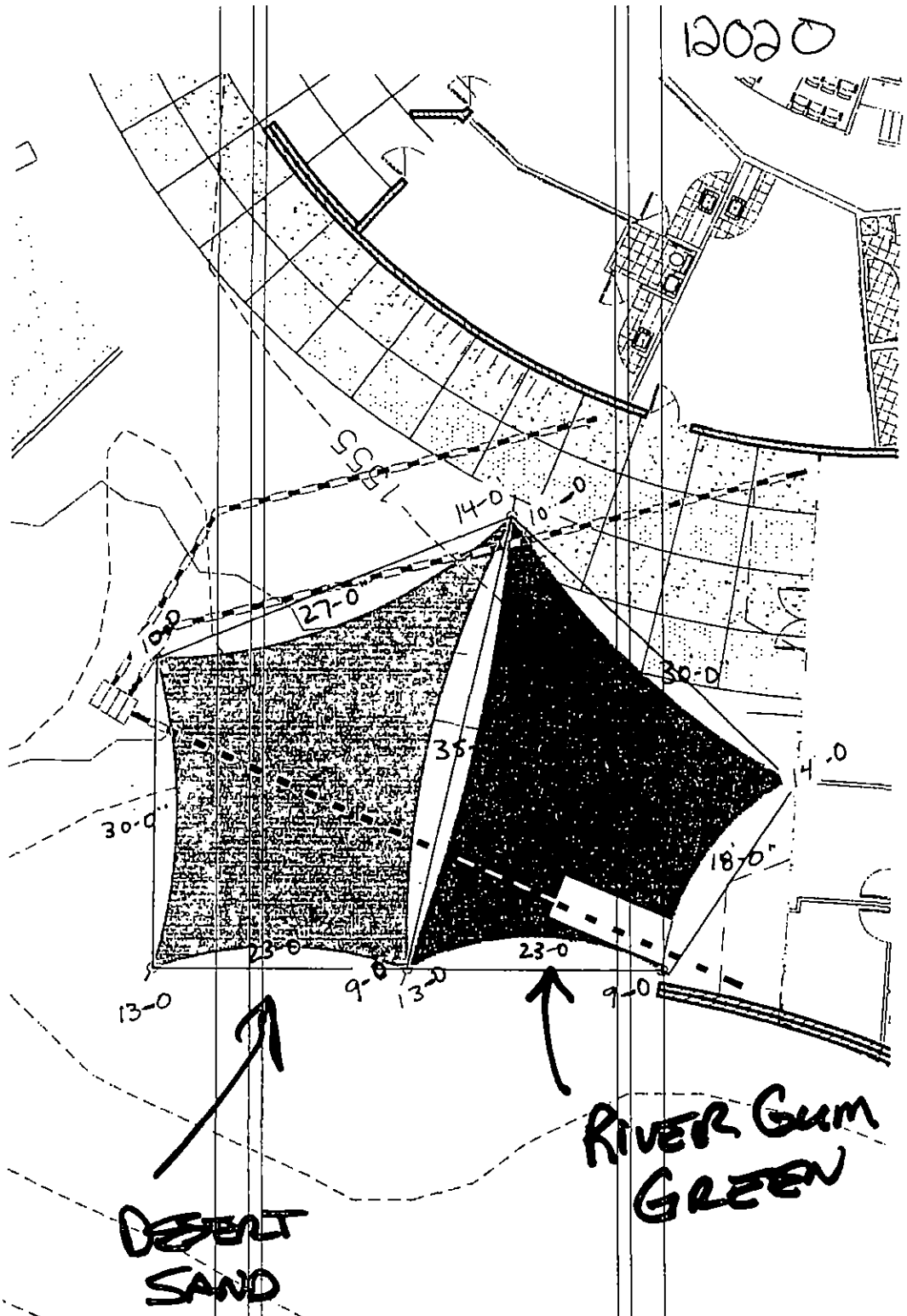
Test Results:

Time to Ignition = 00.08 minutes
Maximum Flamespread Distance = 05.01 feet
Time to Maximum Spread = 01.18 minutes

Flame Spread Index = 25
Smoke Developed Index = 60







SHADE SAILS
McDOWELL MNT. COMM CHURCH
COLORS & LAYOUT

McDowell Mountain Community Church
10700 N 124th St., Scottsdale, AZ 85259
mcdowellmountainchurch.com | 480.314.2400

February 7, 2013

To Whom It May Concern:

We, McDowell Mountain Community Church, authorize Arizona Awning to install 2 shade sails on the north side of our property as per plans permitted by the City of Scottsdale.
Please contact us if you should have any questions or concerns.
Thank you.

Sincerely,

Lori Hustead

Lori Hustead
MMCC Ministry Assitant

City of Scottsdale Cash Transmittal

92376

92376
17 00539148
02/20/13 PLN-1STOP
DSIMMONS HPDOB58004
2/20/2013 3:09 PM
$108.00

Received From :
ARIZONA AWNINGS & WINDOW SHADES
1409 S 21ST DR
PHOENIX, AZ 85009
602-252-3430

Bill To :
ARIZONA AWNINGS & WINDOW SHADES
1409 S 21ST DR
PHOENIX, AZ 85009
602-252-3430

Reference #	117-PA-2013			**Issued Date**	2/20/2013
Address	10700 N 124TH ST			**Paid Date**	
Subdivision				**Payment Type**	CHECK
Marketing Name		**Lot Number**	1	**Cost Center**	
MCR		**County**	No	**Metes/Bounds**	No
APN	217-29-032	**Gross Lot Area**	0	**Water Zone**	
Owner Information		**NAOS Lot Area**	0	**Water Type**	
MCDOWELL MOUNTAIN COMMUNITY CHURCH		**Net Lot Area**		**Sewer Type**	
10700 N 124TH ST		**Number of Units**	1	**Meter Size**	
SCOTTSDALE, AZ 85259		**Density**		**QS**	29-57

Code	Description	Additional	Qty	Amount	Account Number
3180	PRE-APPLICATION / SA		1	$87.00	100-21300-44221
3199	RECORDS PACKET FOR PREAPPS		1	$21.00	100-21300-44221

SIGNED BY CLAUDE HEPWORTH ON 2/20/2013

Total Amount **$108.00**

(When a credit card is used as payment I agree to pay the above total amount according to the Card Issuer Agreement.)

TO HAVE WATER METER SET - CALL 480-312-5650 AND REFER TO TRANSMITTAL # 92376

PROJECT INFORMATION

PARKING REQUIREMENTS

PHASE I

REQUIRED:

PROVIDED FOR PHASE

PHASE I

REQUIRED

PROVIDED:

PHASE I (BUILT OUT)

REQUIRED

PROVIDED:

PHASE I LOADING SPACES PROVIDED:

PHASE I BICYCLE PARKING REQUIRED

SITE ACCESSIBILITY

SECTION REFERENCE	REQUIREMENT / SOLUTION
IBC 1008.2.1 / 1008.2.2.1 & TABLE 1009.2.2.1 & ADA 5.3.1 / 4.5.1 / 11.4.1	ACCESSIBLE ROUTE OF TRAVEL FROM SITE PLAN SHEET A1.1 FOR NOTES
ADA 4.4.3 & 4.7.1 & 4.8	CURB RAMP SLOPE
ADA 4.2.3 & 4.6	HANDICAP PARKING SPACE & VAN SPACE REFER TO ARCHITECTURAL SITE DETAILS SHEET A1.2
ADA 4.8.4	PARKING SIGNAGE REFER TO ARCHITECTURAL SITE DETAILS SHEET A1.2
ADA 4.1.7 & ADAAG 4.29.2	DETECTABLE WARNING AT ACCESS ROUTES THAT ABUT VEHICULAR ROADS REFER TO ARCHITECTURAL SITE DETAILS SHEET A1.2

SITE PLAN NOTES:

Site plan notes illegible

PROJECT DIRECTORY

OWNER

PROJECT DATA

APPLICABLE CODES

PROJECT ADDRESS

ZONING:

APN:

SITE AREA:

GROSS WORSHIP CENTER BUILDING AREA:

FLOOR AREA RATIO ALLOWED

FLOOR AREA PROPOSED

FLOOR AREA RATIO PROPOSED

OCCUPANCY TYPE

CONSTRUCTION TYPE

SITE YARD REQUIREMENTS

OPEN SPACE CALCULATIONS

PROVIDED OPEN SPACE

LEGAL DESCRIPTION

KEYED NOTES

1 ENLARGED PLAN

R1-43 ESL (EAST of 503-PA-03)

R1-43 ESL

R1-10 ESL (HD)

R1-43 ESL

R1-43 ESL

R1-43 ESL

R1-43 ESL

R1-43

R1-43 ESL

R1-43 ESL

SAHUARO DR.

124th STREET

SHEA BLVD.

VICINITY MAP

PROJECT SITE

E. SHEA BLVD.

N. HOWARD VON ROAD

KEYED NOTES

ARCHITECTURAL SITE PLAN

SCALE: 1" = 50'-0"

MCDOWELL MOUNTAIN COMMUNITY CHURCH

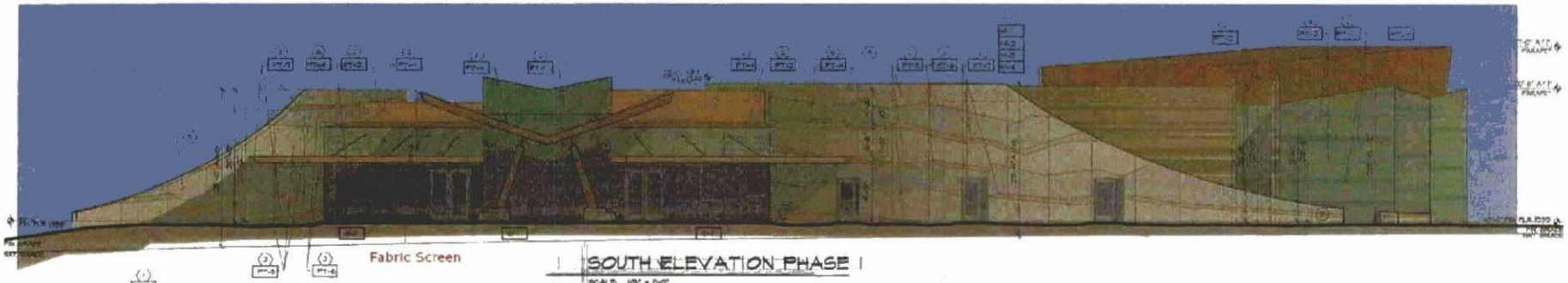
10700 north 124th street
Scottsdale
Arizona 85259

HONGYU WANG, P.E., S.E.
HW ENGINEERING

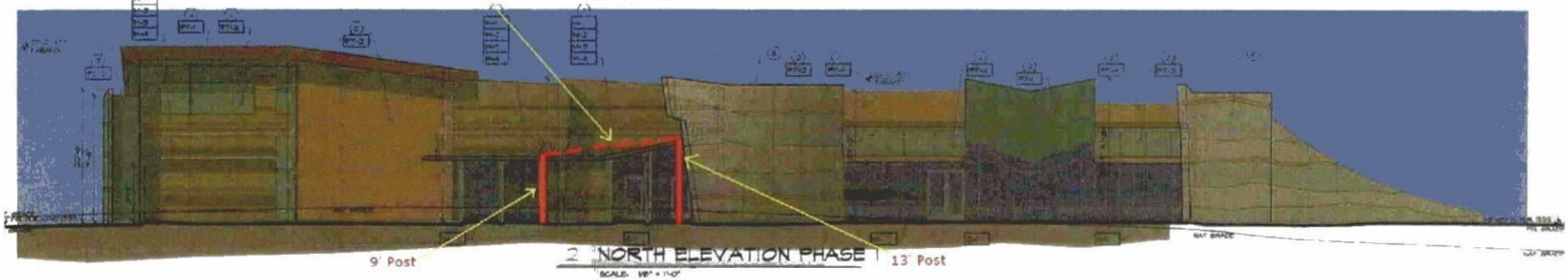
Sails At McDowell Mtn Comm. Church
10700 N. 124TH ST., SCOTTSDALE, AZ 85259
Client: Jim O' Leary IV, Arizona Awnings

Site Plan

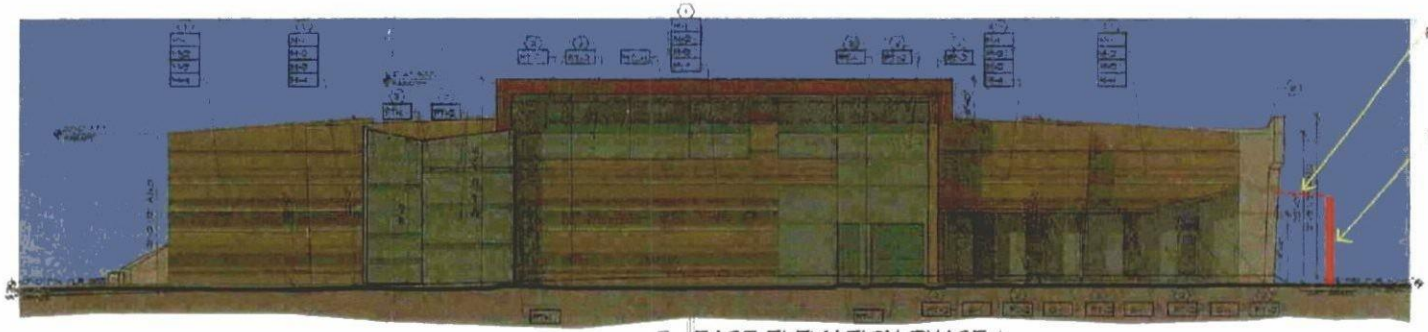
A1-1



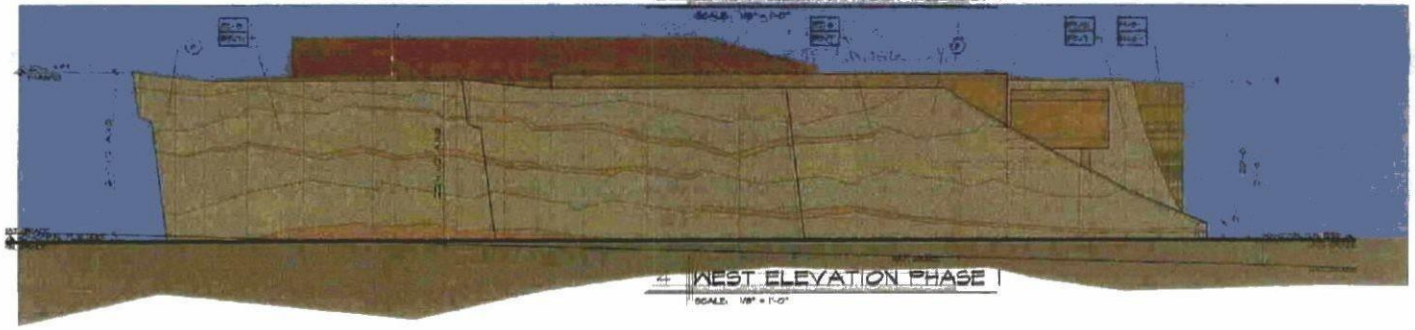
1 SOUTH ELEVATION PHASE I



2 NORTH ELEVATION PHASE I



3 EAST ELEVATION PHASE I



4 WEST ELEVATION PHASE I

KEYED NOTES

1. EXPOSED INTEGRALLY COLORED MASONRY
2. STUCCO FINISH WALL SYSTEM
3. INTEGRALLY COLORED GANTED MASONRY WALL
4. EXTERIOR FINISH OVER MECH SCREEN PARAPET WALL BEYOND
5. CLEAR ANODIZED ALUMINUM STOREFRONT GLAZING SYSTEM
6. METAL CANOPY ENTRY FEATURE
7. MECHANICAL UNIT FULLY SCREENED
8. ADD ALTERNATE FOR CAST IN PLACE INTEGRALLY BANDED CONCRETE @ CURVING WALLS

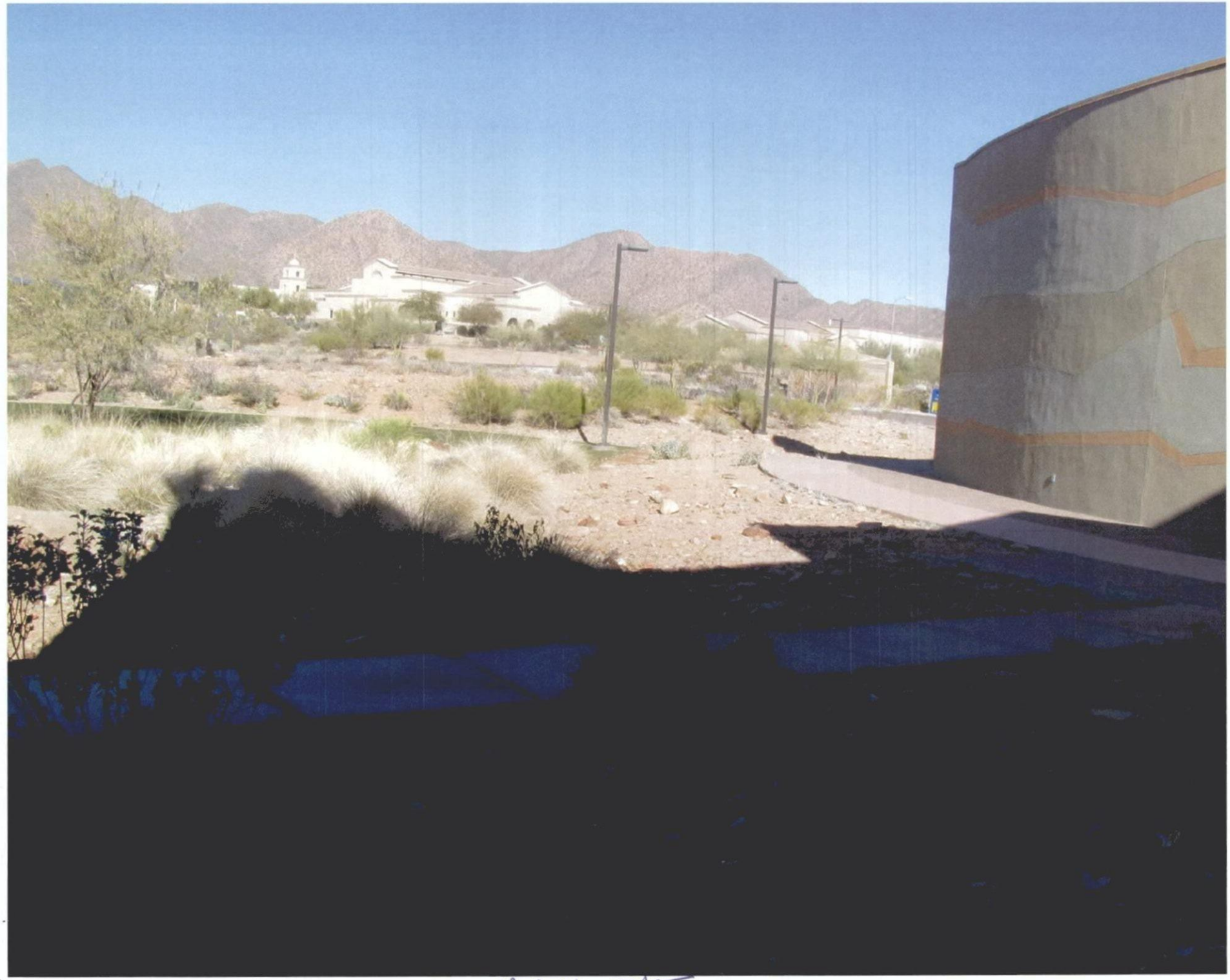
COLOR & MATERIALS

SHADE SAILS ELEVATIONS

SOUTH VIEW

SOUTH WEST

NORTH



NORTH EAST

EAST

EXISTING WALL COLORS