ATTACHMENT A

Application Package

CITY OF Hollywood

DEVELOPMENT SERVICES
PLANNING DIVISION

GENERAL APPLICATION

APPLICATION DATE: 03/08/2025

2600 Hollywood Blvd
Room 315
Hollywood, FL 33022
Tel: (954) 921-3471
Email: Development@Hollywoodfl.org

SUBMISSION REQUIREMENTS:

- One set of signed & sealed plans *(i.e. Architect or Engineer)*
- One electronic **combined** PDF submission *(max. 25mb)*
- Completed Application Checklist
- Application fee

NOTE:

- This application must be **completed in full** and submitted with all documents to be placed on a Board or Committee's agenda.
- The applicant is responsible for obtaining the appropriate checklist for each type of application.
- Applicant(s) or their authorized legal agent must be present at all Board or Committee meetings.

CLICK HERE FOR FORMS, CHECKLISTS, & MEETING DATES

APPLICATION TYPE (CHECK ALL THAT APPLIES):

- ☐ Technical Advisory Committee
- ☐ Art in Public Places Committee
- ☑ Variance
- ☐ Planning and Development Board
- ☐ Historic Preservation Board
- ☐ Special Exception
- ☐ City Commission
- ☐ Administrative Approval

PROPERTY INFORMATION

Location Address: 312 Bougainvilla Terrace, Hollywood, FL 33019

Lot(s): 10 Block(s): 3 Subdivision: Atlantic shores North Beach

Folio Number(s): 5142 2402 0140

Zoning Classification: _____ Land Use Classification: _____

Existing Property Use: Residential Sq Ft/Number of Units: _____

Is the request the result of a violation notice? ☒ Yes ☐ No **If yes**, attach a copy of violation.

Has this property been presented to the City before? If yes, check al that apply and provide File Number(s) and Resolution(s): _____

DEVELOPMENT PROPOSAL

Explanation of Request: _____

Phased Project: Yes ☒ No ☐ Number of Phases: ____

Project	Proposal
Units/rooms (# of units)	# UNITS: ____ #Rooms ____
Proposed Non-Residential Uses	____ S.F.)
Open Space (% and SQ.FT.)	Required %: ____ (Area: ____ S.F.)
Parking (# of spaces)	PARK. SPACES: (# ____)
Height (# of stories)	(# STORIES) ____ (____ FT.)
Gross Floor Area (SQ. FT)	Lot(s) Gross Area (____ FT.)

Name of Current Property Owner: Rafael Mordukhaev

Address of Property Owner: 312 Bougainvilla Terrace, Hollywood, FL 33019

Telephone: 917-774-8000 Email Address: redraffi@gmail.com

Applicant Fred Rezvani Consultant ☐ Representative ☐ Tenant ☐

Address: 4409 Jefferson Street, Hollywood FL 33021 Telephone: 954-200-2721

Email Address: fred.rezvani@yahoo.com

Email Address #2: _____

Date of Purchase: 4/6/2021 Is there an option to purchase the Property? Yes ☐ No ☒

If Yes, Attach Copy of the Contract.

Noticing Agent (FTAC & Board submissions only) : _____

E-mail Address: _____

CITY OF Hollywood
DEVELOPMENT SERVICES
PLANNING DIVISION

GENERAL APPLICATION

CERTIFICATION OF COMPLIANCE WITH APPLICABLE REGULATIONS

The applicant/owner(s) signature certifies that he/she has been made aware of the criteria, regulations and guidelines applicable to the request. This information can be obtained in Room 315 of City Hall or on our website at www.hollywoodfl.org. The owner(s) further certifies that when required by applicable law, including but not limited to the City's Zoning and Land Development Regulations, they will post the site with a sign provided by the Office of Planning and Development Services. The owner(s) will photograph the sign the day of posting and submit photographs to the Office of Planning and Development Services as required by applicable law. Failure to post the sign will result in violation of State and Municipal Notification Requirements and Laws.

(I)(We) certify that (I) (we) understand and will comply with the provisions and regulations of the City's Zoning and Land Development Regulations, Design Guidelines, Design Guidelines for Historic Properties and City's Comprehensive Plan as they apply to this project. (I)(We) further certify that the above statements and drawings made on any paper or plans submitted herewith are true to the best of (my)(our) knowledge. (I)(We) understand that the application and attachments become part of the official public records of the City and are not returnable.

Signature of Current Owner: _____ Date: _____

PRINT NAME: Rafael Mordukhaev Date: _____

Signature of Consultant/Representative: Fred Rezvani Date: 3/8/2025

PRINT NAME: Fred Rezvani Date: _____

Signature of Tenant: N/A Date: _____

PRINT NAME: N/A Date: _____

Current Owner Power of Attorney

I am the current owner of the described real property and that I am aware of the nature and effect the request for _____ to my property, which is hereby made by me or I am hereby authorizing _____ to be my legal representative before the _____ (Board and/or Committee) relative to all matters concerning this application.

Sworn to and subscribed before me
this _____ day of _____

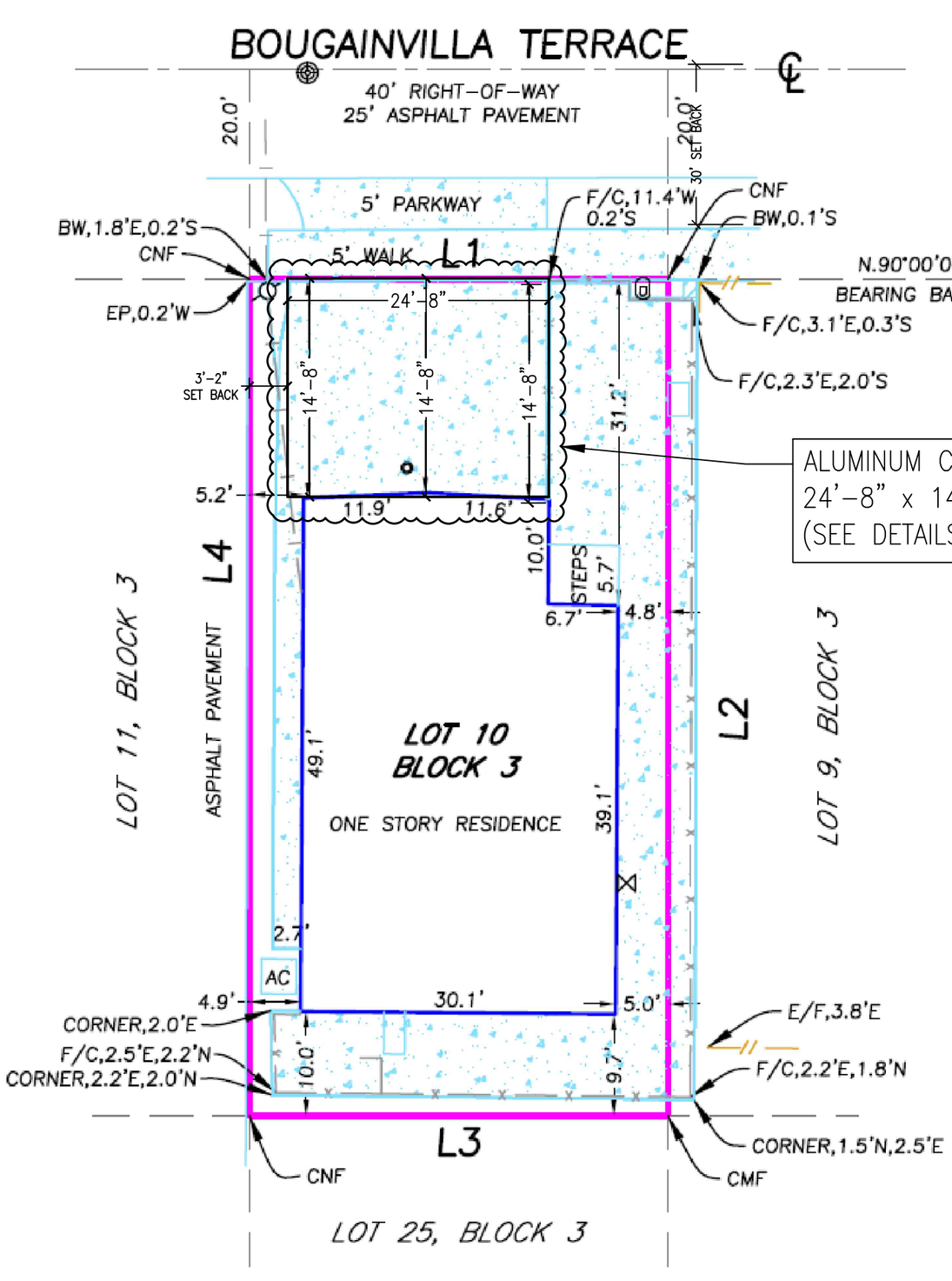
_____
Signature of Current Owner

_____
Notary Public
State of Florida

_____
Print Name

My Commission Expires: _____ (Check One) ☐ Personally known to me; OR ☐ Produced Identification _____

LOCATION PLAN



ALUMINUM NOTES :

- ALL STRUCTURAL ELEMENTS TO BE ALUMINUM 6061-T6.
- ALL WELDED CONNECTIONS TO BE FULLY WELDED $\frac{3}{16}$"-ER7356
- ALL WELDS COVERED WITH CORROSION RESISTANCE COATING.
- ALL STRUCTURES DESIGNED IN ACCORDANCE WITH:
  F.B.C 2023 8TH EDITION
  A.S.C.E 7-22, EXPOSURE "D", V=175MPH
  ALUMINUM DESIGN MANUAL 2020
- NOTIFY ENGINEER OF ANY ERRORS / OMISSIONS FOUND OR IF ANY PART OF THE DRAWINGS IS NOT UNDERSTOOD BEFORE PROCEEDING WITH THE WORK.
- ALUMINUM SURFACES IN CONTACT WITH CONCRETE, MASONRY MATERIALS OR OTHER METALS SHALL BE PROTECTED WITH HEAVY-BODIED BITUMINOUS PAINT.
- CONTRACTOR MUST VERIFY DIMENSIONS ON JOB SITE BEFORE MANUFACTURE.
- SOIL CONDITION AT THE SITE ARE SAND AND ROCK WITH MINIMUM SOIL BEARING CAPACITY 2000PSF

DATE:	02/03/25
DRAWING	WRP
REVISIONS	BY

CONSIGN, LLC
Consulting Engineers
Cert. of Auth. # 31618
14021 SW 143 CT, BAY 1
MIAMI, FL 33186

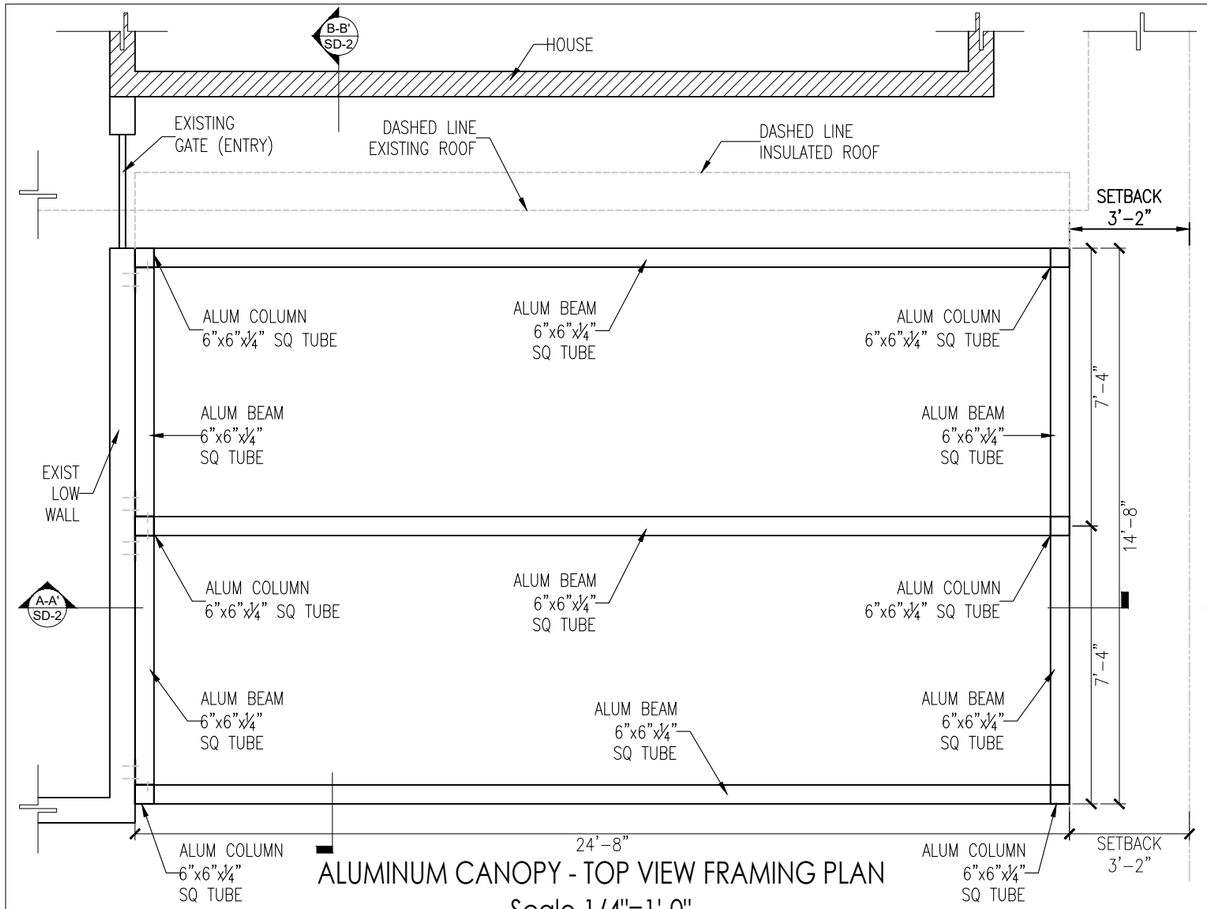
RAFAEL MORDUKHAEV
312 BOUGANVILLA T
HOLLYWOOD, FL. 33019

RAFAEL MORDUKHAEV
PROPERTY LOCATED AT
312 BOUGANVILLA TERRACE
HOLLYWOOD, FL. 33019

SHEET DESCRIPTION
LOCATION PLAN

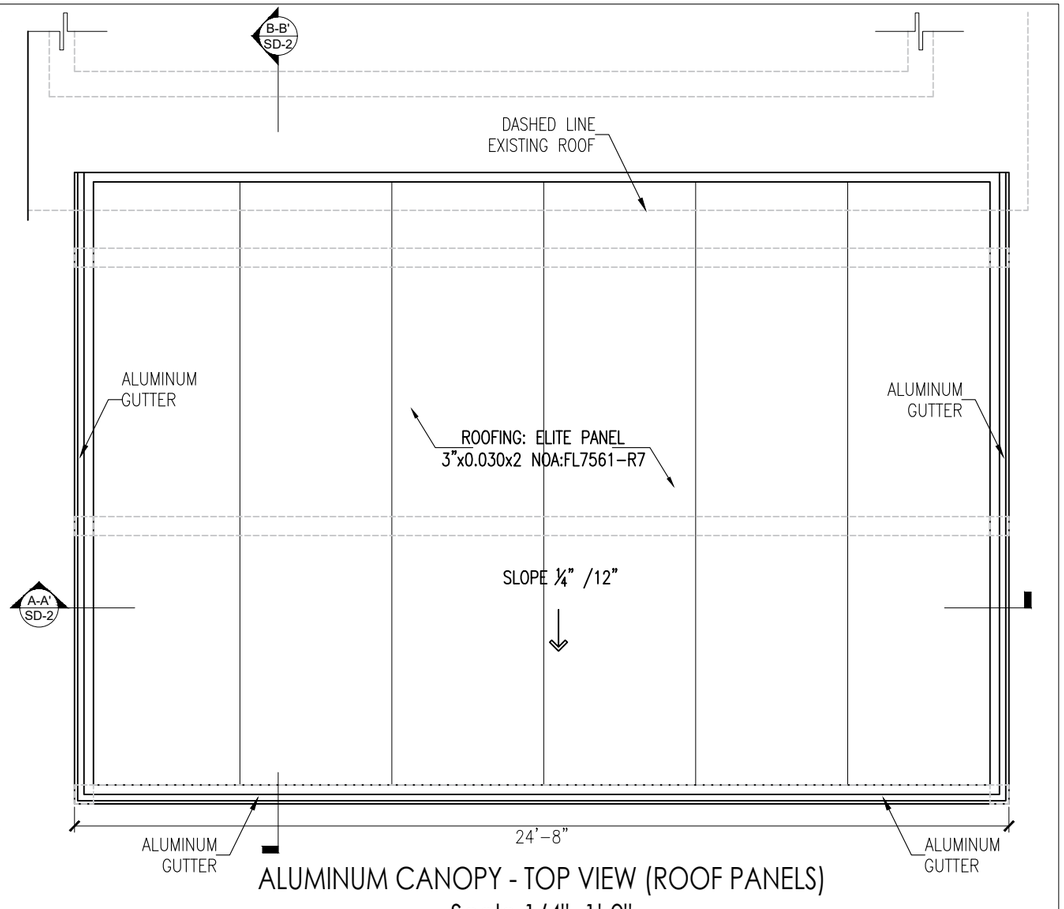
SHEET: 1 OF 4

SD-1



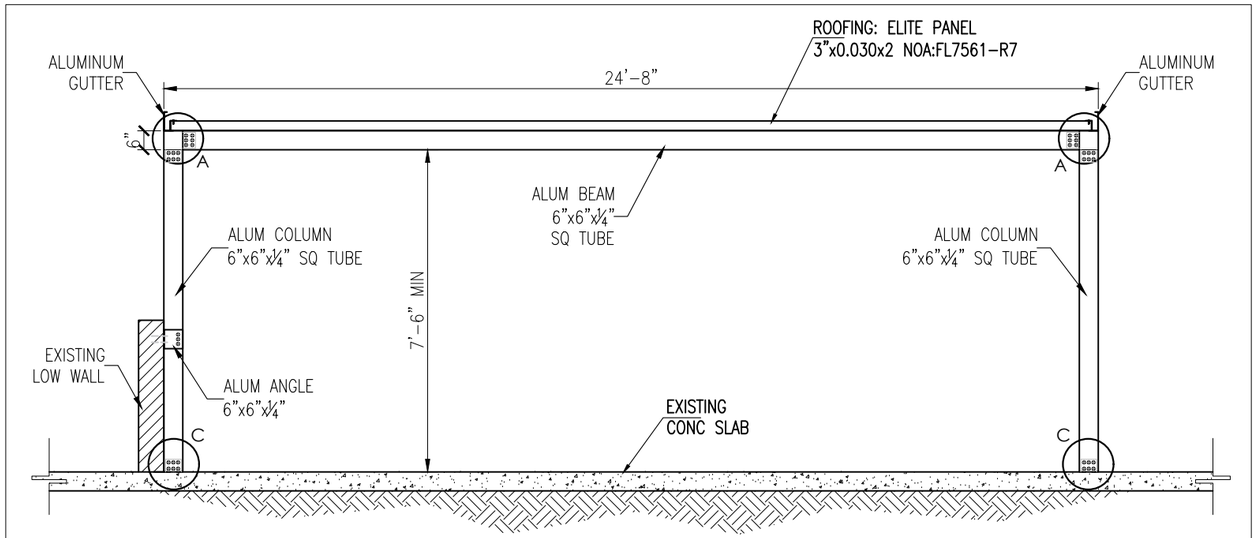
ALUMINUM CANOPY - TOP VIEW FRAMING PLAN

Scale 1/4"=1'-0"



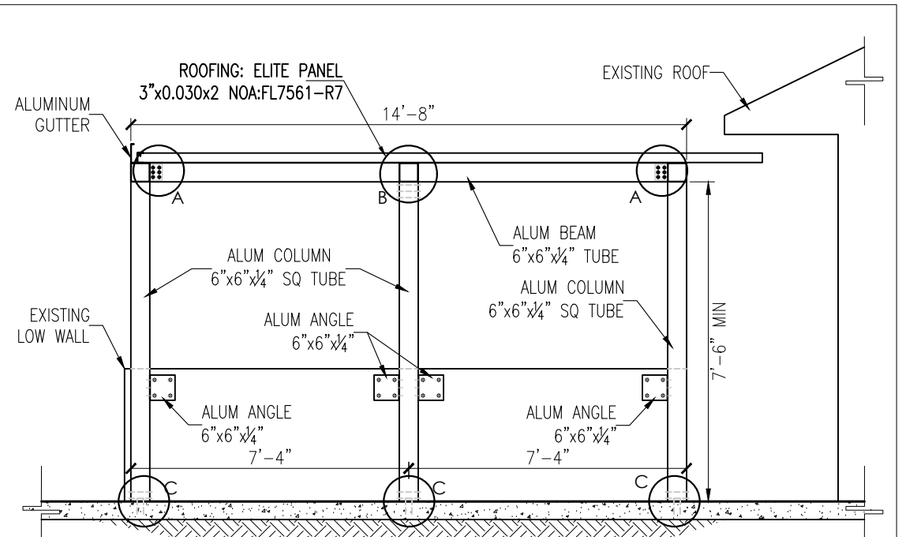
ALUMINUM CANOPY - TOP VIEW (ROOF PANELS)

Scale 1/4"=1'-0"



ALUMINUM CANOPY - SECTION A - A'

Scale 1/4"=1'-0"



SECTION B - B'

Scale 1/4"=1'-0"

DATE: 02/03/25

DRAWING	WRP
REVISIONS	BY

CONSIGN, LLC
Consulting Engineers
Cert. of Auth. # 31618
14021 SW 143 CT, BAY 1
MIAMI, FL 33186

RAFAEL MORDUKHAEV
312 BOUGANVILLA T
HOLLYWOOD, FL. 33019

RAFAEL MORDUKHAEV

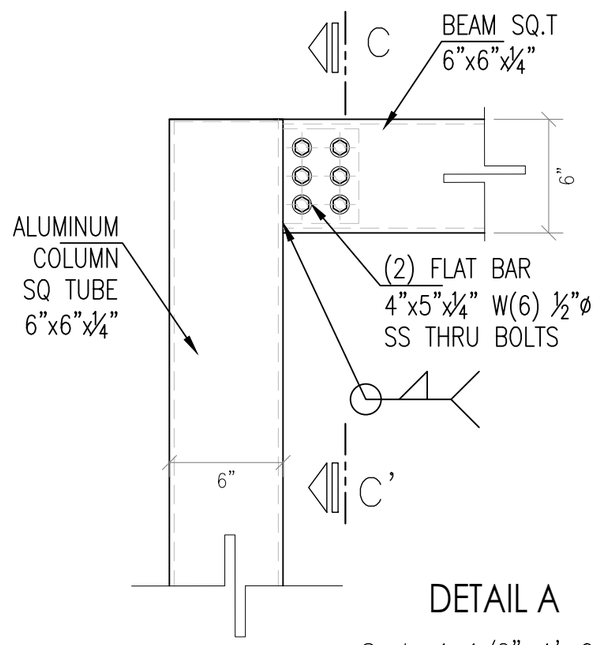
PROPERTY LOCATED AT

312 BOUGANVILLA TERRACE
HOLLYWOOD, FL. 33019

SHEET DESCRIPTION
TOP VIEW, SECTION & NOTES

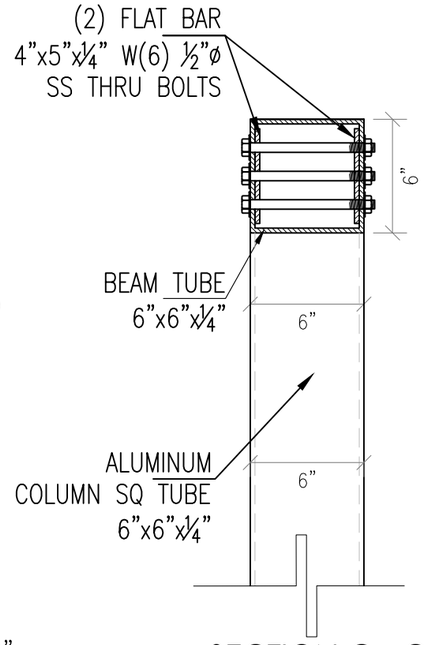
SHEET: 2 OF 4

SD-2

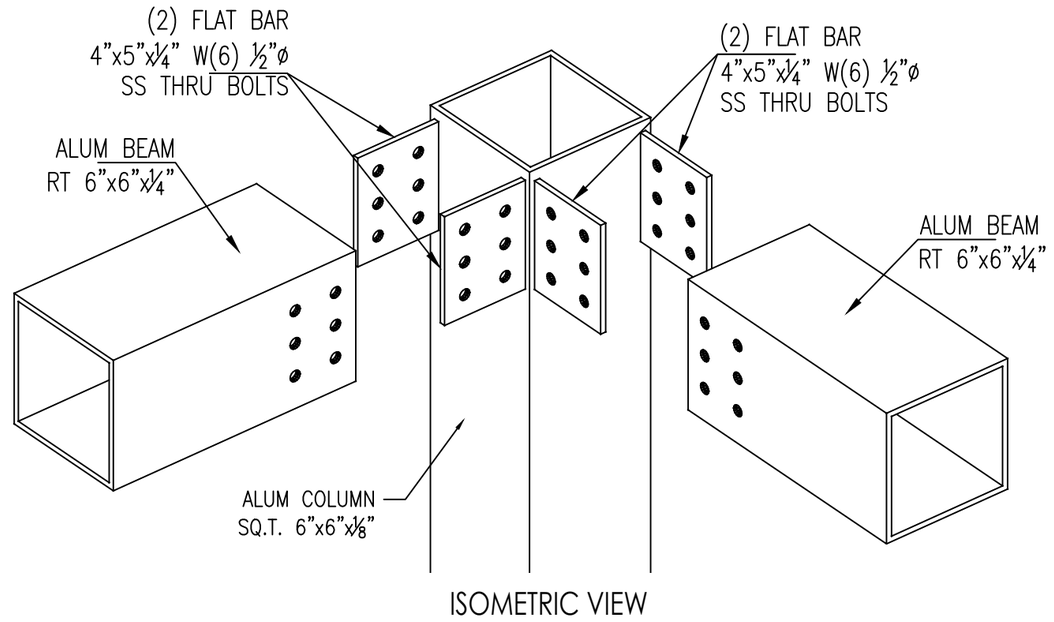


DETAIL A

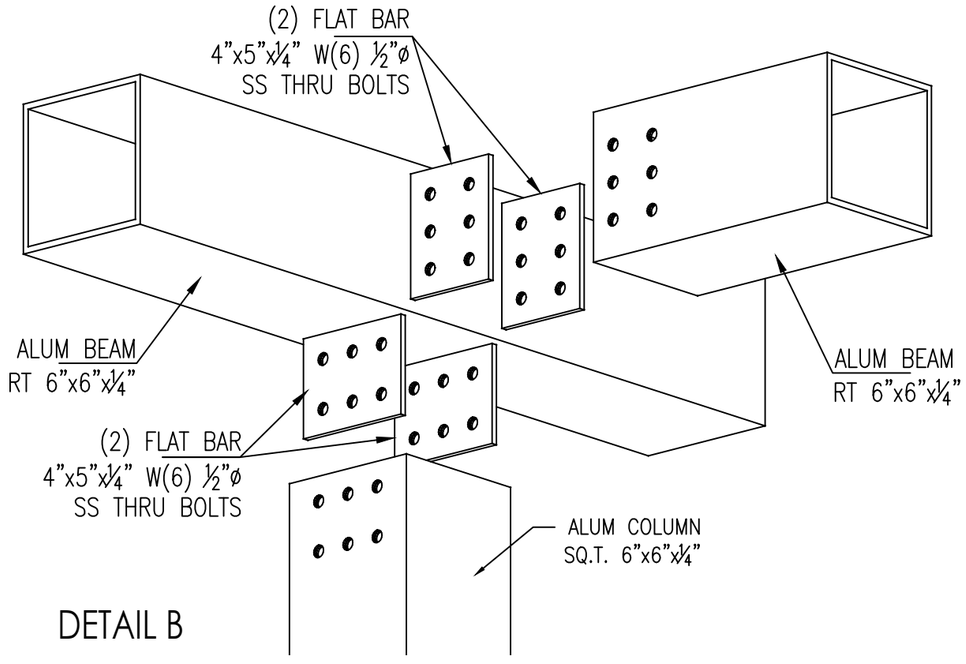
Scale 1 1/2"=1'-0"



SECTION C - C'

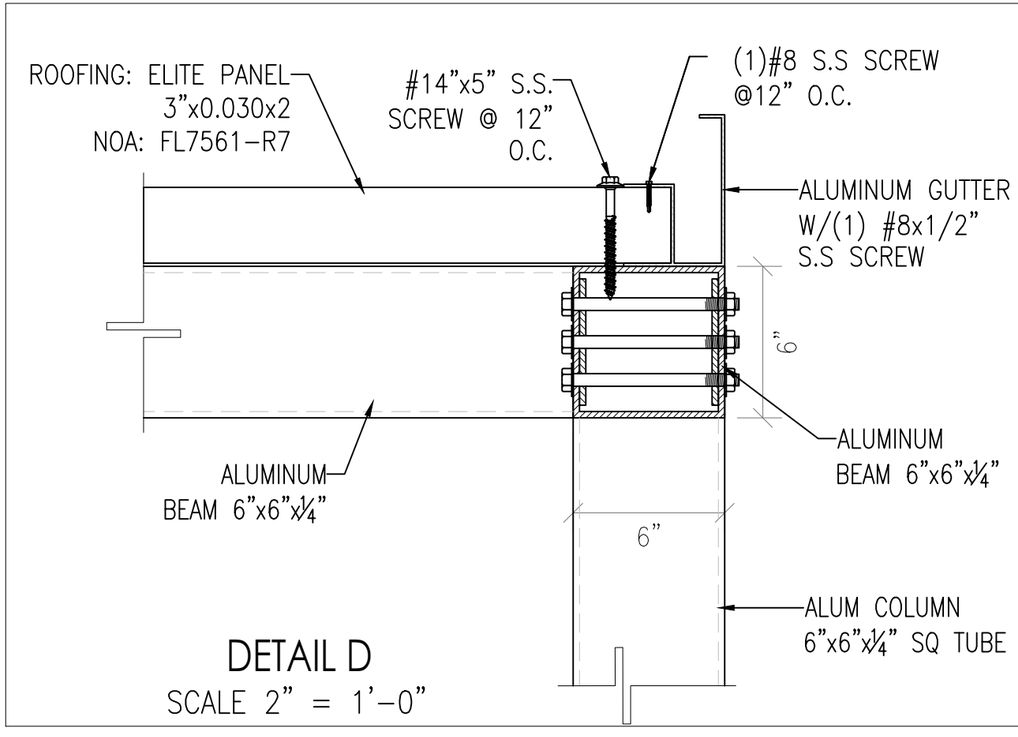


ISOMETRIC VIEW



DETAIL B

ISOMETRIC VIEW



DETAIL D

SCALE 2" = 1'-0"

DATE:	02/03/25
DRAWING	WRP
REVISIONS	BY

CONSIGN, LLC
Consulting Engineers
Cert. of Auth. # 31618
14021 SW 143 CT, BAY 1
MIAMI, FL 33186

RAFAEL MORDUKHAEV
312 BOUGANVILLA T
HOLLYWOOD, FL. 33019

RAFAEL MORDUKHAEV

PROPERTY LOCATED AT

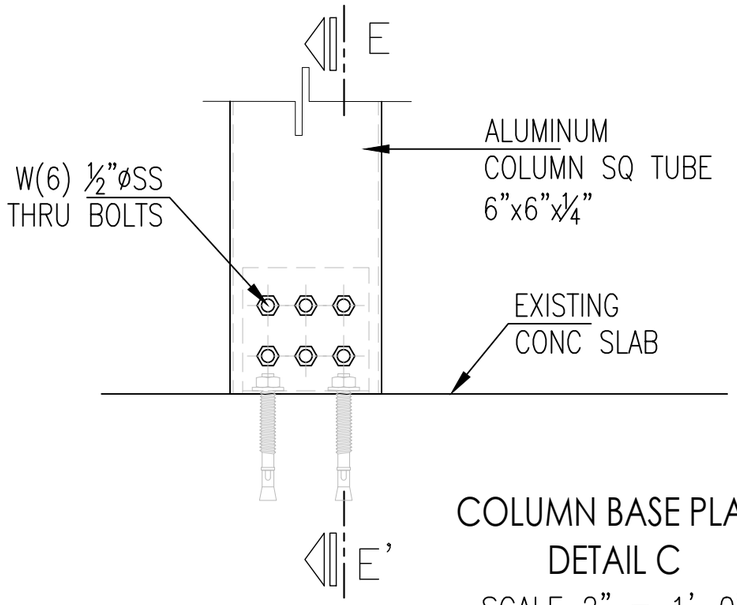
312 BOUGANVILLA TERRACE
HOLLYWOOD, FL. 33019

SHEET DESCRIPTION

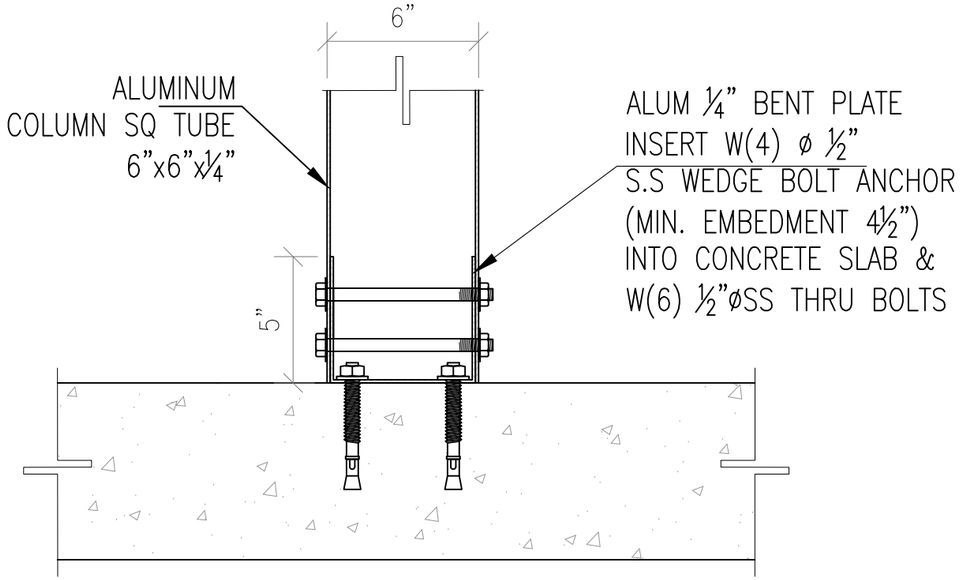
DETAILS

SHEET: 3 OF 4

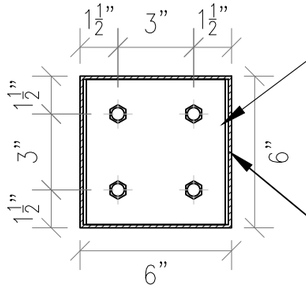
SD-3



COLUMN BASE PLATE
DETAIL C
SCALE 2" = 1'–0"



SECTION E - E'
SCALE 2" = 1'–0"



COLUMN BASE PLATE
TOP VIEW DETAIL
SCALE 2" = 1'–0"

ALUMINUM NOTES :

- ALL STRUCTURAL ELEMENTS TO BE ALUMINUM 6061–T6.
- ALL WELDED CONNECTIONS TO BE FULLY WELDED $\frac{3}{16}$"–ER7356
- ALL WELDS COVERED WITH CORROSION RESISTANCE COATING.
- ALL STRUCTURES DESIGNED IN ACCORDANCE WITH:
  F.B.C 2023 8TH EDITION
  A.S.C.E 7–22, EXPOSURE "D", V=175MPH
  ALUMINUM DESIGN MANUAL 2020
- NOTIFY ENGINEER OF ANY ERRORS / OMISSIONS FOUND OR IF ANY PART OF THE DRAWINGS IS NOT UNDERSTOOD BEFORE PROCEEDING WITH THE WORK.
- ALUMINUM SURFACES IN CONTACT WITH CONCRETE, MASONRY MATERIALS OR OTHER METALS SHALL BE PROTECTED WITH HEAVY–BODIED BITUMINOUS PAINT.
- CONTRACTOR MUST VERIFY DIMENSIONS ON JOB SITE BEFORE MANUFACTURE.
- SOIL CONDITION AT THE SITE ARE SAND AND ROCK WITH MINIMUM SOIL BEARING CAPACITY 2000PSF

DATE: 02/03/25

DRAWING	WRP
REVISIONS	BY

CONSIGN, LLC
Consulting Engineers
Cert. of Auth. # 31618
14021 SW 143 CT, BAY 1
MIAMI, FL 33186

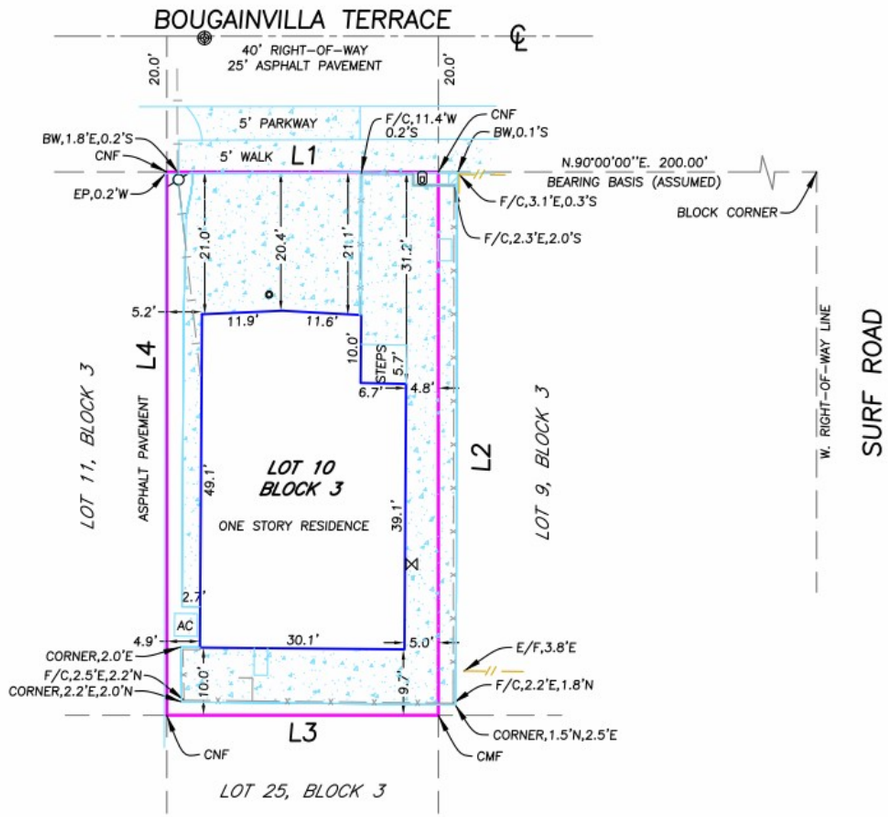
RAFAEL MORDUKHAEV
312 BOUGANVILLA T
HOLLYWOOD, FL. 33019

RAFAEL MORDUKHAEV
PROPERTY LOCATED AT
312 BOUGANVILLA TERRACE
HOLLYWOOD, FL. 33019

SHEET DESCRIPTION
DETAILS

SHEET: 4 OF 4

SD–4



20 0 20 40 60

Scale 1" = 20'

LEGAL DESCRIPTION
LOT 10, IN BLOCK 3, OF ATLANTIC SHORES NORTH BEACH SECTION, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 9, PAGE 36, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA.

CERTIFIED TO:
MORDUKHAEV, RAFAEL & ELENA

PROPERTY ADDRESS
312 BOUGAINVILLA TERRACE
HOLLYWOOD, FL 33019

BOUNDARY SURVEY
INVOICE # 43608
SURVEY DATE 02/10/22

FLOOD ZONE AE8/AE9
MAP DATE 08/18/14
MAP NUMBER 125113 0588H

LINE TABLE

NUMBER	DIRECTION	DISTANCE
L1	N.90°00'00"E.	40.00'
L2	S.00°00'00"E.	80.00'
L3	S.90°00'00"W.	40.00'
L4	N.00°00'00"W.	80.00'

SURVEYOR'S NOTES

1. BASIS OF BEARINGS ASSUMED UNLESS OTHERWISE INDICATED ON SKETCH.
2. LEGAL DESCRIPTION PROVIDED BY CLIENT OR PROPERTY APPRAISER WEBSITE.
3. THE LANDS SHOWN HEREON WERE NOT ABSTRACTED BY THIS OFFICE FOR EASEMENTS, RIGHT-OF-WAYS, OWNERSHIP OR OTHER INSTRUMENTS OF RECORD.
4. UNDERGROUND OR INTERIOR PORTIONS OF FOOTINGS, FOUNDATIONS, WALLS OR OTHER NON-VISIBLE IMPROVEMENTS WERE NOT LOCATED.
5. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 UNLESS OTHERWISE INDICATED ON SKETCH.
6. FLOOR ELEVATION OBTAINED FROM MAIN ENTRY WAY OF STRUCTURE UNLESS OTHERWISE INDICATED ON SKETCH.
7. FENCE TIES ARE TO THE CENTER-LINE OF FENCE. WALL TIES ARE TO THE FACE OF WALL.
8. IN SOME INSTANCES GRAPHIC REPRESENTATIONS HAVE BEEN EXAGGERATED TO MORE CLEARLY ILLUSTRATE THE CONTROL THE LOCATION OF THE IMPROVEMENTS OVER SCALED POSITIONS.
9. THE DIMENSIONS AND DIRECTIONS SHOWN HEREON ARE IN SUBSTANTIAL AGREEMENT WITH RECORD VALUES UNLESS OTHERWISE NOTED.
10. PARTY WALLS ARE CENTERED ON PROPERTY LINE AND ARE 0.7' WIDE UNLESS OTHERWISE NOTED.
11. EXISTING CORNERS FOUND OFFSETS WITNESS PROPERTY CORNERS
12. OBSTRUCTED CORNERS ARE WITNESSED BY IMPROVEMENTS.
13. NO ATTEMPT WAS MADE TO LOCATE WRITTEN OR UNWRITTEN EASEMENTS OR RIGHTS-OF-WAY, OTHER THEN THOSE SHOWN HEREON.

LEGEND

- FP&L BOX
- CATCH BASIN
- CONTROL VALVE
- CLEAN OUT
- GUY ANCHOR
- MANHOLE
- WATER METER
- WELL
- FIRE HYDRANT
- WATER VALVE
- CABLE JUNCTION BOX
- ELECTRIC SERVICE
- POOL EQUIPMENT
- POWER/LIGHT POLE
- SPRINKLER SYSTEM
- BRICK/TILE PAVERS
- CENTERLINE
- CONCRETE/CHAT
- CONCRETE WALL
- 0.00 / +0.00 ELEVATION
- METAL FENCE
- OVERHEAD WIRES
- WOOD DECK/DOCK
- WOOD/PVC FENCE

ABBREVIATIONS

AC	AIR CONDITIONER
AE	ANCHOR EASEMENT
BC	BUILDING CORNER
BM	BENCHMARK
BW	BACK OF WALK
C	CALCULATED
CNF	CORNER NOT FOUND
DE	DRAINAGE EASEMENT
E/F	END/FENCE
EP	EDGE OF PAVEMENT
EW	EDGE OF WATER
F/C	FENCE/CORNER
FF	FINISH FLOOR
F/L	FENCE/LINE
FIP	FOUND IRON PIPE
FIR	FOUND IRON ROD
FN	FOUND NAIL
FN&D	FOUND NAIL & DISC
FN&T	FOUND NAIL & TAB
FP&L	FLORIDA POWER & LIGHT
GAR	GARAGE
GEN	GENERATOR
INSTR	INSTRUMENT
OP	OPEN PORCH
ORB	OFFICIAL RECORD BOOK
M	MEASURED
NTS	NOT TO SCALE
PB	PLAT BOOK
PC	POINT OF CURVATURE
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PG	PAGE
PRC	POINT OF REVERSE CURVE
PRM	PERMANENT REFERENCE MONUMENT
PT	POINT OF TANGENCY
R	RECORD
RAD	RADIAL
RW	RIGHT-OF-WAY
SN&D	SET NAIL & DISC 5495
SP	SCREENED PORCH
SP&C	SET 1/2" PIN & CAP 5495
UE	UTILITY EASEMENT

ATLANTIC COAST SURVEYING INC.

PAUL J STOWELL
PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATION NO. 5241
ATLANTIC COAST SURVEYING, INC.
6129 STIRLING RD SUITE 2
DAVIE, FLORIDA 33314
P: 954.587.2100 E: info@acsiweb.net


FOR
RENT
2BED - 1BATH

CONSIGN, LLC

CONSULTING ENGINEERS

CERTIFICATION OF AUTH. # 31618

14021 SW 143rd Court - Bay 1, Miami, Florida 33186 - Phone -Fax # (305) 253-9442

Cover Sheet
Structural Calculations

PROJECT:

ALUMINUM CANOPY 14'-8"x24'-8"

Work at:

312 BOUGANVILLA TERRACE, HOLLYWOOD, FL 33019

CUSTOMER: **RAFAEL MORDUKHAEV**

DESIGNER: **Adolfo Espino PE**

STATE OF FLORIDA REG. # 98949

CODES AND SPECIFICATIONS:

FLORIDA BUILDING CODE 2023 8TH EDITION

A.S.C.E 7-22

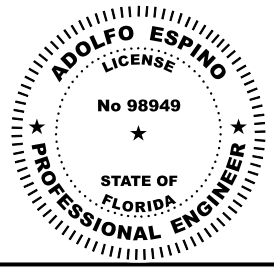
ALUMINUM DESIGN MANUAL 2020

A.I.S.C 16TH EDITION

ACI 318-20

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED

Digitally signed by Adolfo Espino
Date: 2025.02.03 '16:16:13 -05'00



ON THE DATE ADJACENT TO THE SEAL.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFY ON ANY ELECTRONIC COPIES

CONSIGN LLC

14021 SW 143rd COURT - BAY 1, MIAMI, FL 33186

CONSIGN, LLC

CONSULTING ENGINEERS

CERTIFICATION OF AUTH. # 31618

14021 SW 143rd Court - Bay 1, Miami, Florida 33186 - Phone -Fax # (305) 253-9442

ALUMINUM CANOPY 14'-8"x24'-8" - CALCULATIONS

DESIGN CRITERIA & APPLICABLE CODES

F.B.C 2023 8TH EDITION
A.S.C.E. 7-22
ALUMINUM DESIGN MANUAL 2020
A.I.S.C 16TH EDITION
ACI 318-19

1.- WIND LOAD CALCULATIONS - Z < 60 ft

WIND CODE :	ASCE 7-22					
RISK CATEGORY :	II					
WINDSPEED :	V =	175	MPH	- FBC 2023 - Figure 1609.3		
MEAN ROOF HEIGHT :	Z =	8.75	ft	<	60	ft
EXPOSURE CATEGORY :	**"D"**	- FBC 2023 - 3105.4.2.2				
EFFECTIVE AREA, EA =	23.67 ft	X	3.67 ft	=	EA = 87 ft2	
Kzt =	1	- Section 26.8-2 ASCE 7-22				
Kd =	0.85	- Table 26.6-1 ASCE 7-22				
Kz =	1.03	- Table 26.10-1 ASCE 7-22				
qh =	0.00256 * Kz * Kzt Kd * V^2			- Section 30.3-1		
	68.64	psf				
And:						
Average Slope (θ) =	0.12°					
L =	14.7	ft				
h =	8.75	ft				
h / L =	0.60	ft	<	1.0		
And:						
a = Least of :	1.5	ft	10%L			
	3.50	ft	0.4h			
a = No less than	3	ft				
Then a =	**3.0**	**ft**				
Knowing That:						
$4a^2$ =	36.0 ft2	<	EA = 86.8 ft2			
Then:						
C_N =	-1.20	Toward Roof - All zones		- Figure 30.5-1 - Monoslope Free Roofs (Open Buldings)		
	0.50	Away from Roof - All zones				
W1 =	-82.37	psf	- CRITICAL UPLIFTING WIND PRESSURE			
W2 =	34.32	psf	- CRITICAL GRAVITY WIND PRESSURE			

1.1.- CHECKING LOADS COMBINATIONS. - ASCE 7-22

Live Load - L =	20	psf	***- DESIGN LOADS PER ASCE 7-22***
Dead Load - D =	10	psf	***- DESIGN LOADS PER ASCE 7-22***
Wind Load - W1 =	-82.37	psf	***- CRITICAL UPLIFTING WIND PRESSURE***
Wind Load - W2 =	34.32	psf	***- CRITICAL GRAVITY WIND PRESSURE***

1.-	D	4.-	D+0.6W
2.-	D+L	5.-	D+0.75L+0.6W
3.-	D+0.75L	6.-	0.6D+0.6W

1.2.- CRITICAL DESIGN LOADS:

LIVE LOAD, L =	20.0	#/SQF	
DEAD LOAD, D =	10.0	#/SQF	
AWAY WIND LOAD, W1 =	-82.37	#/SQF	
TOWARD WIND LOAD, W2 =	34.32	#/SQF	
CRITICAL GRAVITY COMBINATION (D+0.75L+0.6W2) =	**45.59**	**#/SQF**	**$P_{ASD}1$**
CRITICAL UPLIFT COMBINATION (0.6D+0.6W1) =	**-43.42**	**#/SQF**	**$P_{ASD}2$**

2.- CHECKING CRITICAL MAIN BEAM - SPAN = 23' - 8" - (1) ALUMINUM SQ.T 6"X6"X1/4"

Afferent Width	b =	4.58	ft			
	W = $P_{ASD}1$ x b =	208.96	Lb/ft			
	Critical Single Span, L =	23.67	ft			
M =	$\frac{W}{8}$	x	L^2	=	14630	lbs-ft
	Then		M	=	175.56	Kip-in

CHECKING TO BENDING:

(UnWelded - See reference ADM 2020 - Table 2-19) - Elements in Flexural Compression

With :	λ = b / t =	22.0	< 33.1			
Then Fb(UnWelding elements in flexure) =		31.80	Ksi	- 6061T6 Alloy		
Then Srqr'd =	$\frac{M}{Fb}$	=	5.52	in3		

Then try with : (1) SQ.T 6"x6"x1/4"

Sxx =	5.75	in3	>	Srqr'd =	5.52	in3	**O.K.**
Ixx =	10.58	in4					

CHECKING DEFLECTION:

$$\frac{5}{384} * \frac{W}{E_{Alum}} * \frac{L^4}{Ixx} = 1.09 \text{ in}$$

Then 1.09 in < 1.18 ft (L/240) **O.K.**

THEN USE: (1) SQ.T 6"x6"x1/4"

(Critical Reaction) Rf1a = WxL/2 =	2473	Lbs	**By Critical Gravity Combination at ends**
Rf1b =	2355	Lbs	**By Critical Uplift Combination at ends**

CONSIGN, LLC

CONSULTING ENGINEERS

CERTIFICATION OF AUTH. # 31618

14021 SW 143rd Court - Bay 1, Miami, Florida 33186 - Phone -Fax # (305) 253-9442

3.- CRITICAL COLUMN - LENGHT= 8'-0" - (1) ALUMINUM SQ.T 6"X6"X1/4"

Try Using: (1) ALUMINUM SQ.T 6"X6"X1/4" Tributary area, A = 90.44 ft2

COLUMN TENSION CHECK: $P_{ASD}2$ x A

(CRITICAL UPLIFT) T = 3927 lbs

CHECKING TENSION(CRITICAL)

USING STRUCTURAL ALUMINUM T-6061 ALLOY - Fy=9.1Ksi (FROM ALUMINUM DESIGN MANUAL - TABLE 2-19W)

	Type		Uplift Load		Heigth(FT)			
	1		3927		8.0			
Nominal Size	A(in2)	rxx(in)	L(in)	K(Factor)	KL(in)	KL / r		
(1) ALUMINUM SQ.T 6"X6"X1/4"	5.75	2.35	96	1.0	96	41		
Then:		A rq'd =	3927	/	9100	=	0.43	in^2
		And	0.43	<	5.75	**O.K.**		
		Kl/r =	41	<	240	**O.K.**		

COLUMN COMPRESSION CHECK: $P_{ASD}1$ x A

(CRITICAL GRAVITY LOAD) P = 4124 lbs

CHECKING COMPRESION (CRITICAL)

	Type			Load(lbs) Gravity		Heigth(FT)	
	1			4124		8.0	
Nominal Size	A(in2)	rxx(in)	L(in)	K(Factor)	KL / r	b / t	Fa(ksi) - 2-19W
(1) ALUMINUM SQ.T 6"X6"X1/4"	5.75	2.35	96	1.0	41	22 < 28.2	9.10
Then:	Pa = Fa x A =		52325 lbs	>	4124 lbs	**O.K.**	
	Kl/r =		41	<	120	**O.K.**	

THEN USE: **(1) ALUMINUM SQ.T 6"X6"X1/4"**

4.- CHECKING TYPICAL INSULATED ALUMINUM PANEL - (1) 3"x0.030"x2 SKIN BY ELITE ALUMINUM CORP.

WINDSPEED=	175	MPH	- FBC 2023 - Figure 1609.3		
EXPOSURE CATEGORY=		**"D"**	- FBC 2023 - 3105.4.2.2		
CRITICAL PRESURE=	45.59 psf	<	50 psf	**O.K.**	**SEE DOC FL7561-R7 ATTACHED**
CRITICAL SPAN=	7.08 ft	<	8.97 ft (L/240)	**O.K.**	**SEE DOC FL7561-R7 ATTACHED**

5.- CHECKING INSULATED PANEL TO ALUMINUM PURLIN CONNECTION - DETAILS C & D

Uplift Load=P_{ASD}2x4'-7"x12"= **199** **lbs** **Per Connector**

PULL-OUT ON ALUMINUM PURLING

Try using : (1) 1/4"ΦX5" S.S Screw @ Max 12" O.C

Spacing Between Bolts	>	1	in	100%	**- For Pull-Out**	
Edge Distance	>	0.5	in	100%	**- For Pull-Out**	
PULL-OUT CHECKING Ru =	396	x	1 Screw	x	100%	
	396	lbs	>	199	lbs	**O.K.**

THEN USE: **(1) 1/4"ΦX5" S.S Screw @ Max 12" O.C**

6.- CHECKING BEAMS TO COLUMN CONNECTION - DETAILS A & B

V = Shear = Rf1a = 2473 lbs Per Connection

Try using : (6) 1/2"ϕ S.S Grade 316 Thru Bolt per Connection

CHECKING SHEAR - TWO SIDES IN SHEAR

Yield Strength, fy = 30000 psi

Allowable Strength, fallow = 0.4fy = 12000 psi

Section area, A = 0.16 in^2 - Critical Threaded Zone

Ru = 2 x A x fallow =	3817	x	6 Bolts			
	22902	lbs	>	2473	lbs	**O.K.**

THEN USE: **(6) 1/2"ϕ S.S Grade 316 Thru Bolt per Connection**

7.- CHECKING COLUMN BOTTOM BRACKET CONNECTION - DETAIL C

Crit. Uplift Load = T = 3927 lbs From critical column design

Try using : (6) 1/2"ϕ S.S Grade 316 Thru Bolt per Connection

CHECKING SHEAR - TWO SIDES IN SHEAR

Yield Strength, fy = 30000 psi

Allowable Strength, fallow = 0.4fy = 12000 psi

Section area, A = 0.16 in^2 - Critical Threaded Zone

Ru = 2 x A x fallow =	3817	x	6 Bolts			
	22902	lbs	>	3927	lbs	**O.K.**

THEN USE: **(6) 1/2"ϕ S.S Grade 316 Thru Bolt per Connection**

CONSIGN, LLC

CONSULTING ENGINEERS

CERTIFICATION OF AUTH. # 31618

14021 SW 143rd Court - Bay 1, Miami, Florida 33186 - Phone -Fax # (305) 253-9442

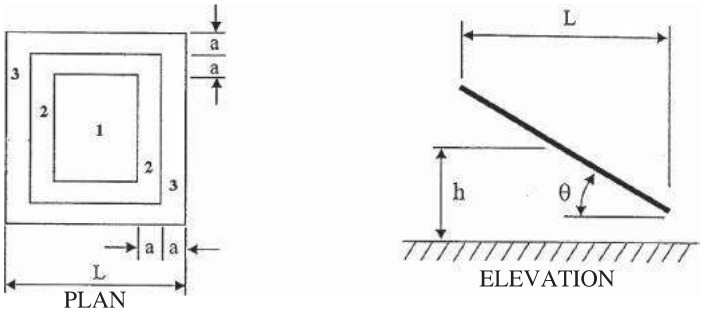
8.- CHECKING ALUMINUM BOTTOM BARCKET TO EXISTNG CONCRETE SLAB CONNECTION - DETAIL C

Crit. Uplift Load = T = 3927 lbs Per Connection

Try using :	(4) 1/2"ϕ S.S Wedge Bolt Anchor per Plate (Min. embed. 4 1/2") Into Existing Concrete Slab						
Spacing Between Bolts =	3	<	6	in	63%	**- For Tension**	
Edge Distance		>	4	in	100%	**- For Tension**	
TENSION CHECK							
	Ru =	1795	x	4 Anchors	x	63%	
		4523	lbs	>	3927	lbs	**O.K.**

THEN USE: **(4) 1/2"ϕ S.S Wedge Bolt Anchor per Plate (Min. embed. 4 1/2") Into Existing Concrete Slab**

Diagrams



Notation

a = 10% of least horizontal dimension or 0.4h, whichever is smaller but not less than 4% of least horizontal dimension or 3 ft (0.9 m).

h = Mean roof height, ft (m).

L = Horizontal dimension of building, measured in along-wind direction, ft (m).

θ = Angle of plane of roof from horizontal, degrees.

Net Pressure Coefficients, C_N

Roof Angle, θ	Effective Wind Area	Clear Wind Flow					
		Zone 3		Zone 2		Zone 1	
0°	$\le a^2$	2.4	−3.3	1.8	−1.7	1.2	−1.1
	$> a^2, \le 4.0a^2$	1.8	−1.7	1.8	−1.7	1.2	−1.1
	$> 4.0a^2$	1.2	−1.1	1.2	−1.1	1.2	−1.1
7.5°	$\le a^2$	3.2	−4.2	2.4	−2.1	1.6	−1.4
	$> a^2, \le 4.0a^2$	2.4	−2.1	2.4	−2.1	1.6	−1.4
	$> 4.0a^2$	1.6	−1.4	1.6	−1.4	1.6	−1.4
15°	$\le a^2$	3.6	−3.8	2.7	−2.9	1.8	−1.9
	$> a^2, \le 4.0a^2$	2.7	−2.9	2.7	−2.9	1.8	−1.9
	$> 4.0a^2$	1.8	−1.9	1.8	−1.9	1.8	−1.9
30°	$\le a^2$	5.2	−5	3.9	−3.8	2.6	−2.5
	$> a^2, \le 4.0a^2$	3.9	−3.8	3.9	−3.8	2.6	−2.5
	$> 4.0a^2$	2.6	−2.5	2.6	−2.5	2.6	−2.5
45°	$\le a^2$	5.2	−4.6	3.9	−3.5	2.6	−2.3
	$> a^2, \le 4.0a^2$	3.9	−3.5	3.9	−3.5	2.6	−2.3
	$> 4.0a^2$	2.6	−2.3	2.6	−2.3	2.6	−2.3
		Obstructed Wind Flow					
		Zone 3		Zone 2		Zone 1	
0°	$\le a^2$	1	−3.6	0.8	−1.8	0.5	−1.2
	$> a^2, \le 4.0a^2$	0.8	−1.8	0.8	−1.8	0.5	−1.2
	$> 4.0a^2$	0.5	−1.2	0.5	−1.2	0.5	−1.2
7.5°	$\le a^2$	1.6	−5.1	1.2	−2.6	0.8	−1.7
	$> a^2, \le 4.0a^2$	1.2	−2.6	1.2	−2.6	0.8	−1.7
	$> 4.0a^2$	0.8	−1.7	0.8	−1.7	0.8	−1.7
15°	$\le a^2$	2.4	−4.2	1.8	−3.2	1.2	−2.1
	$> a^2, \le 4.0a^2$	1.8	−3.2	1.8	−3.2	1.2	−2.1
	$> 4.0a^2$	1.2	−2.1	1.2	−2.1	1.2	−2.1
30°	$\le a^2$	3.2	−4.6	2.4	−3.5	1.6	−2.3
	$> a^2, \le 4.0a^2$	2.4	−3.5	2.4	−3.5	1.6	−2.3
	$> 4.0a^2$	1.6	−2.3	1.6	−2.3	1.6	−2.3
45°	$\le a^2$	4.2	−3.8	3.2	−2.9	2.1	−1.9
	$> a^2, \le 4.0a^2$	3.2	−2.9	3.2	−2.9	2.1	−1.9
	$> 4.0a^2$	2.1	−1.9	2.1	−1.9	2.1	−1.9

Notes

1. C_N denotes net pressures (contributions from top and bottom surfaces).
2. Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
3. For values of θ other than those shown, linear interpolation is permitted.
4. Plus and minus signs signify pressures acting toward and away from the top roof surface, respectively.
5. Components and cladding elements shall be designed for positive and negative pressure coefficients shown.

Figure 30.5-1. Components and cladding ($0.25 \le h/L \le 1.0$): net pressure coefficient, C_N, for open buildings—monoslope free roofs, $\theta \le 45°$.

$$q_z = 0.00256 K_z K_{zt} K_e V^2 (\text{lb/ft}^2);\ V, \text{mi/h} \qquad (26.10\text{-}1)$$

$$q_z = 0.613 K_z K_{zt} K_e V^2 (\text{N/m}^2);\ V, \text{m/s} \qquad (26.10\text{-}1.\text{SI})$$

where

K_z = Velocity pressure exposure coefficient, see Section 26.10.1;
K_{zt} = Topographic factor, see Section 26.8.2;
K_e = Ground elevation factor, see Section 26.9;
V = Basic wind speed, see Section 26.5; and
q_z = Velocity pressure at height z.

The velocity pressure at mean roof height is computed as $q_h = q_z$ evaluated from Equation (26.10-1) using K_z at mean roof height h.

The basic wind speed, V, used in determination of design wind loads on rooftop structures, rooftop equipment, and other building appurtenances shall consider the Risk Category equal to the greater of the following:

1. Risk category for the building on which the equipment or appurtenance is located, or
2. Risk category for any building or other structure to which the equipment or appurtenance provides a necessary service.

26.11 GUST EFFECTS

26.11.1 Gust-Effect Factor The gust-effect factor for a rigid building or other structure is permitted to be taken as 0.85.

26.11.2 Frequency Determination To determine whether a building or other structure is rigid or flexible as defined in Section 26.2, the fundamental natural frequency, n_1, shall be established using the structural properties and deformational characteristics of the resisting elements in a properly substantiated analysis. Low-rise buildings, as defined in Section 26.2, are permitted to be considered rigid.

26.11.2.1 Limitations for Approximate Natural Frequency As an alternative to performing an analysis to determine n_1, the approximate building natural frequency, n_a, shall be permitted to be calculated in accordance with Section 26.11.3 for structural steel, concrete, or masonry buildings meeting the following requirements:

1. The building height is less than or equal to 300 ft (91 m).
2. The building height is less than four times its effective length, L_{eff}.

The effective length, L_{eff}, in the direction under consideration shall be determined from the following equation:

$$L_{\text{eff}} = \frac{\sum_{i=1}^{n} h_i L_i}{\sum_{i=1}^{n} h_i} \qquad (26.11\text{-}1)$$

The summations are over the height of the building, where h_i is the height above grade of level i, and L_i is the building length at level i parallel to the wind direction.

26.11.3 Approximate Natural Frequency The approximate lower bound natural frequency (n_a), in Hz, of concrete or structural steel buildings meeting the conditions of Section 26.11.2.1 is permitted to be determined from one of the following equations.

For structural steel moment-resisting frame buildings,

$$n_a = 22.2/h^{0.8} \qquad (26.11\text{-}2)$$

$$n_a = 8.58/h^{0.8} \qquad (26.11\text{-}2.\text{SI})$$

For concrete moment-resisting frame buildings,

$$n_a = 43.5/h^{0.9} \qquad (26.11\text{-}3)$$

$$n_a = 14.93/h^{0.9} \qquad (26.11\text{-}3.\text{SI})$$

Table 26.10-1. Velocity Pressure Exposure Coefficients, K_h and K_z.

Height above Ground Level, z or h		Exposure		
ft	m	B	C	D
0–15	0–4.6	0.57 (0.70)*	0.85	1.03
20	6.1	0.62 (0.70)*	0.90	1.08
25	7.6	0.66 (0.70)*	0.94	1.12
30	9.1	0.70	0.98	1.16
40	12.2	0.74	1.04	1.22
50	15.2	0.79	1.09	1.27
60	18.3	0.83	1.13	1.31
70	21.3	0.86	1.17	1.34
80	24.4	0.90	1.21	1.38
90	27.4	0.92	1.24	1.40
100	30.5	0.95	1.26	1.43
120	36.6	1.00	1.31	1.48
140	42.7	1.04	1.34	1.52
160	48.8	1.08	1.39	1.55
180	54.9	1.11	1.41	1.58
200	61.0	1.14	1.44	1.61
250	76.2	1.21	1.51	1.68
300	91.4	1.27	1.57	1.73
350	106.7	1.33	1.62	1.78
400	121.9	1.38	1.66	1.82
450	137.2	1.42	1.70	1.86
500	152.4	1.46	1.74	1.89

* Use 0.70 in Chapter 28, Exposure B, when $z < 30$ ft (9.1 m).

Notes:

1. Velocity pressure exposure coefficient K_z may be determined from the following formula:

For $z < 15$ ft	$K_z = 2.41\,(15/z_g)^{2/\alpha}$
For $z < 4.6$ m	$K_z = 2.41\,(4.6/z_g)^{2/\alpha}$
For 15 ft (4.6 m) $\le z \le z_g$	$K_z = 2.41\,(z/z_g)^{2/\alpha}$
For $z_g < z \le$ 3,280 ft (1,000 m)	$K_z = 2.41$

2. α and z_g are tabulated in Table 26.11-1.
3. Linear interpolation for intermediate values of height z is acceptable.
4. Exposure categories are defined in Section 26.7.

Table 2-19
ALLOWABLE STRESSES F/Ω FOR BUILDING-TYPE STRUCTURES (UNWELDED)

Allowable Stresses F/Ω (k/in^2)	Section	F/Ω
Axial Tension		
axial tension stress on net effective area	D.2b	19.5
axial tension stress on gross area	D.2a	21.2
Shear or torsion		
Shear or torsion rupture	G, H.2	11.7
Bearing		
bolts or rivets on holes	J.3.6a, J.4.6	39.0
bolts on slots, pins on holes, flat surfaces	J.3.6b, J.6.5, J.8	25.9
screws in holes	J.5.5.1	25.3

6061 - T6 ASTM B221, B241, B429
6061 - T6510 ASTM B221
6061 - T6511 ASTM B221
6061 - T6 ASTM B247 0.000 to 4.000 in. thick
6061 - T6 ASTM B308 0.062 in. thick and greater
6351 - T5 ASTM B221 0.000 to 1.000 in. thick

F_{ty} = 35 k/in^2 E = 10,100 k/in^2
F_{cy} = 35 k/in^2 k_t = 1
F_{tu} = 38 k/in^2

		Slenderness λ	F/Ω for $\lambda \le \lambda_1$	λ_1	F/Ω for $\lambda_1 < \lambda < \lambda_2$	λ_2	F/Ω for $\lambda \ge \lambda_2$
Axial Compression							
member buckling	E.2	kL/r	21.2	17.8	0.00047 λ^2 - 0.232 λ + 25.2	66	51,352 /λ^2
Flexure							
lateral-torsional buckling	F.4	see F.4.2		-	see F.4	66	60,414 /λ^2
Elements - Uniform Compression							
flat elements supported on one edge in columns whose buckling axis is not an axis of symmetry	B.5.4.1	b/t	21.2	6.7	27.3 - 0.910 λ	12	2,417 /λ^2
flat elements supported on one edge in all other columns and all beams	B.5.4.1	b/t	21.2	6.7	27.3 - 0.910 λ	10.5	186 /λ
flat elements supported on both edges	B.5.4.2	b/t	21.2	20.8	27.3 - 0.291 λ	33	580 /λ
flat elements supported on both edges and with an intermediate stiffener	B.5.4.4	λ_s	21.2	17.8	23.9 - 0.149 λ	66	60,414 /λ^2
round hollow elements	B.5.4.5	$(R_b/t)^{1/2}$	21.2	5.3	26.2 - 0.944 λ	11.9	3,776 /[$\lambda^2(1+\lambda/35)^2$]
flat elements - direct strength method	B.5.4.6	λ_{eg}	21.2	33.3	27.3 - 0.182 λ	52	928 /λ
Elements - Flexural Compression							
flat elements supported on both edges	B.5.5.1	b/t	31.8	33.1	40.5 - 0.262 λ	77	1,563 /λ
flat elements supported on tension edge, compression edge free	B.5.5.2	b/t	31.8	6.1	40.5 - 1.412 λ	19	4,932 /λ^2
flat elements supported on both edges and with a longitudinal stiffener	B.5.5.3	b/t	31.8	74.2	40.5 - 0.117 λ	173	3,502 /λ
round hollow elements	B.5.5.4	$(R_b/t)^{1/2}$	39.3 - 2.70 λ	7.4	26.2 - 0.944 λ	11.9	3,776 /[$\lambda^2(1+\lambda/35)^2$]
flat elements - direct strength method	B.5.5.5	λ_{eg}	31.8	21.5	40.5 - 0.403 λ	50	1,016 /λ
Elements - Shear							
flat elements supported on both edges	G.2	b/t	12.7	35.3	16.5 - 0.107 λ	63	38,665 /λ^2
flat elements supported on one edge	G.3	b/t	12.7	14.7	16.5 - 0.257 λ	26	6,713 /λ^2
pipes and round or oval tubes	G.4	$2.9(R_b/t)^{5/8}(L_v/R_b)^{1/4}$	12.7	62.5	21.5 - 0.140 λ	63	50,264 /λ^2
Torsion							
pipes and round or oval tubes	H.2.1	$2.9(R_b/t)^{5/8}(L_s/R_b)^{1/4}$	12.7	35.3	16.5 - 0.107 λ	63	38,665 /λ^2

Table 2-19W
ALLOWABLE STRESSES F/Ω FOR BUILDING-TYPE STRUCTURES (WELDED)

Allowable Stresses F/Ω (k/in^2)	Section	F/Ω							
Axial Tension									
axial tension stress on net effective area	D.2b	12.3							
axial tension stress on gross area	D.2a	9.1							
Shear or torsion									
Shear or torsion rupture	G, H.2	7.4							
Bearing									
bolts or rivets on holes	J.3.6a, J.4.6	24.6							
bolts on slots, pins on holes, flat surfaces	J.3.6b, J.6.5, J.8	16.4							
screws in holes	J.5.5.1	16.0							

6061 - T6 **ASTM B221, B241, B429**
6061 - T6510 **ASTM B221**
6061 - T6511 **ASTM B221**
6061 - T6 **ASTM B247 0.000 to 4.000 thick**
6061 - T6 **ASTM B308 0.062 thick and greater**
6351 - T5 **ASTM B221 0.000 to 1.000 in. thick**

F_{tyw} = 15 k/in^2 E = 10,100 k/in^2
F_{cyw} = 15 k/in^2 k_t = 1
F_{tuw} = 24 k/in^2

		Slenderness λ	F/Ω for $\lambda \le \lambda_1$	λ_1	F/Ω for $\lambda_1 < \lambda < \lambda_2$	λ_2	F/Ω for $\lambda \ge \lambda_2$
Axial Compression							
member buckling	E.2	kL/r	9.1	21.8	$0.00007\,\lambda^2 - 0.066\,\lambda + 10.5$	133	$51{,}352/\lambda^2$
Flexure							
lateral-torsional buckling	F.4	see F.4.2		-	see F.4	133	$60{,}414/\lambda^2$
Elements - Uniform Compression							
flat elements supported on one edge in columns whose buckling axis is not an axis of symmetry	B.5.4.1	b/t	9.1	9.0	$12.0 - 0.327\,\lambda$	25	$2{,}417/\lambda^2$
flat elements supported on one edge in all other columns and all beams	B.5.4.1	b/t	9.1	9.0	$12.0 - 0.327\,\lambda$	18.4	$111/\lambda$
flat elements supported on both edges	B.5.4.2	b/t	9.1	28.2	$12.0 - 0.105\,\lambda$	58	$346/\lambda$
flat elements supported on both edges and with an intermediate stiffener	B.5.4.4	λ_s	9.1	21.8	$10.2 - 0.051\,\lambda$	133	$60{,}414/\lambda^2$
round hollow elements	B.5.4.5	$(R_b/t)^{1/2}$	9.1	6.8	$11.8 - 0.396\,\lambda$	20	$3{,}776/[\lambda^2(1+\lambda/35)^2]$
flat elements - direct strength method	B.5.4.6	λ_{eg}	9.1	45.1	$12.0 - 0.065\,\lambda$	92	$554/\lambda$
Elements - Flexural Compression							
flat elements supported on both edges	B.5.5.1	b/t	13.6	36.2	$16.0 - 0.065\,\lambda$	123	$982/\lambda$
flat elements supported on tension edge, compression edge free	B.5.5.2	b/t	13.6	6.7	$16.0 - 0.350\,\lambda$	30	$4{,}932/\lambda^2$
flat elements supported on both edges and with a longitudinal stiffener	B.5.5.3	b/t	13.6	81.2	$16.0 - 0.029\,\lambda$	275	$2{,}201/\lambda$
round hollow elements	B.5.5.4	$(R_b/t)^{1/2}$	$17.7 - 0.933\,\lambda$	11.0	$11.8 - 0.396\,\lambda$	20	$3{,}776/[\lambda^2(1+\lambda/35)^2]$
flat elements - direct strength method	B.5.5.5	λ_{eg}	13.6	23.5	$16.0 - 0.100\,\lambda$	80	$638/\lambda$
Elements - Shear							
flat elements supported on both edges	G.2	b/t	5.5	47.5	$7.3 - 0.038\,\lambda$	126	$38{,}665/\lambda^2$
flat elements supported on one edge	G.3	b/t	5.5	19.8	$7.3 - 0.092\,\lambda$	53	$6{,}713/\lambda^2$
pipes and round or oval tubes	G.4	$2.9(R_b/t)^{5/8}(L_v/R_b)^{1/4}$	5.5	80.0	$9.5 - 0.050\,\lambda$	126	$50{,}264/\lambda^2$
Torsion							
pipes and round or oval tubes	H.2.1	$2.9(R_b/t)^{5/8}(L_s/R_b)^{1/4}$	5.5	47.5	$7.3 - 0.038\,\lambda$	126	$38{,}665/\lambda^2$

TABLE 1 – ITW BUILDEX TEKS SELECT™ SCREWS

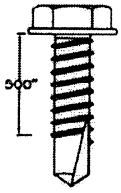
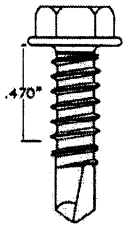
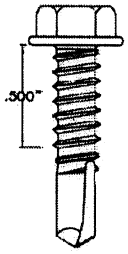
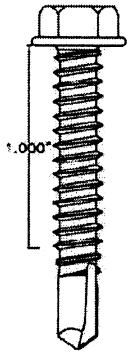
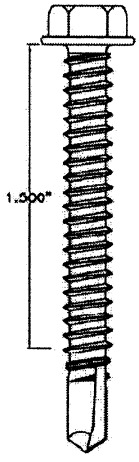
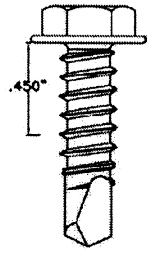
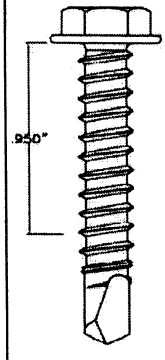
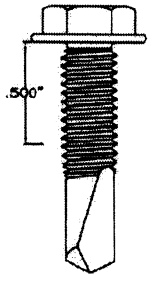
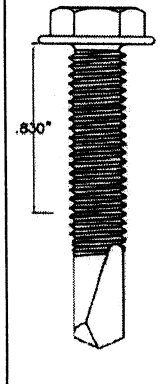
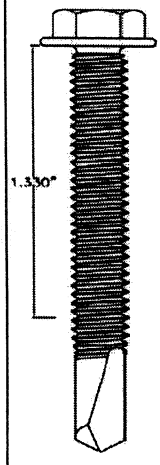
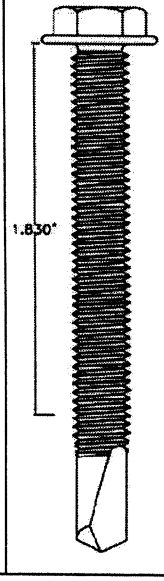
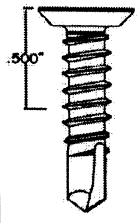
Description	10-16x3/4" HWH Tek/3	12-14x7/8" HWH Tek/3	12-14x1" HWH Tek/3	12-14x1-1/2" HWH Tek/3	12-14x2" HWH Tek/3	1/4-14 X 1" HWH Tek/3
Part No.	1076000	1112000	1080000	1114000	1117000	1119000
Drilling Capacity	0.150"	0.187"	0.187"	0.187"	0.187"	0.210"
Maximum Load Bearing Area Indicated by Arrows						
Description	1/4-14 X 1-1/2" HWH Tek/3	1/4-20x1-1/8" HWH Tek/4	1/4-20x1-1/2" HWH Tek/4	1/4-20x2" HWH Tek/4	1/4-20x2-1/2" HWH Tek/4	#12-14X1" Undercut PFH Tek/3
Part No.	1121000	1124000	1125000	1078000	1126000	1132000
Drilling Capacity	0.210"	0.210-0.312"	0.210-0.312"	0.210-0.312"	0.210-0.312"	0.187"
Maximum Load Bearing Area Indicated by Arrows						

TABLE 2 – ALLOWABLE TENSILE PULL-OUT LOADS (P_{NOT}/Ω), pounds-force[1, 2, 3, 4]

Allowable Pullout Values (P/Ω) on Cold Formed Steel and Aluminum; Ω=3.0														
Screw Designation	Nominal Diameter (in.)	Steel Gauge/Thickness								Aluminum Thickness				
										6063-T52			6063-T6	
		18	16	14	12	1/8"	3/16"	1/4"	5/16"	1/8"	1/4"	3/8"	1/8"	1/4"
#10-16 HWH	0.190	140	182	211	388	404				250			377	
#12-14 HWH	0.216	138	186	230	481	496	809			278	680		434	864
#12-14 UPFH	0.216	140	218	252	473	507	837			274	642		418	812
1/4-14 HWH	0.250	170	224	274	431	582	971			283	732		403	997
1/4-20 HWH	0.250	157	231	282	427	571	1066	1422	1422	281	685	1118	396	949

1. For tension connections, the lower of the allowable pull-out, pullover, and fastener tension strength found in Table 2, 3, and 4, respectively must be used for design.
2. Nominal strengths are based on laboratory tests. Steel is compliance with AISI Manual of Cold-formed Steel Design, 2008 Edition, Part I: Dimension and Properties for Use with the 2007 North American Cold-Formed Steel Specification with minimum tensile strength 58 ksi. Aluminum is compliance with 2010 Aluminum Design Manual, Part I specification for Aluminum Structures; 6063-T52 with minimum tensile strength 22 ksi, or 6063-T6 with minimum tensile strength 30 ksi.
3. To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
4. The base-metal thickness of 18 gauge steel is 0.048"; 16 gauge is 0.060"; 14 gauge is 0.075"; and 12 gauge is 0.105";

TABLE 3 – ALLOWABLE TENSILE PULL-OVER LOADS (P_{NOT}/Ω), pounds-force[1, 2, 3, 4]

Allowable Pullover Values (P/Ω) on Cold Formed Steel and Aluminum; Ω=3.0												
Screw Designation	Nominal Diameter (in.)	Steel Gauge/Thickness						Aluminum Thickness				
								6063-T52			6063-T6	
		18	16	14	12	1/8"	3/16"	1/8"	1/4"	3/8"	1/8"	1/4"
#10-16 HWH	0.190	557	645	718	718	718		578			640	
#12-14 HWH	0.216	619	798	898	1092	1092	1092	586	827		783	885
#12-14 UPFH	0.216	489	624	716	716	716	716	561	818		750	818
1/4-14 HWH	0.250	661	958	1074	1514	1514	1514	722	1091		944	1183
1/4-20 HWH	0.250	667	916	1076	1568	1568	1568	688	1170	1190	922	1243

1. For tension connections, the lower of the allowable pull-out, pullover, and fastener tension strength found in Table 2, 3, and 4, respectively must be used for design.
2. Nominal strengths are based on laboratory tests. Steel is compliance with AISI Manual of Cold-formed Steel Design, 2008 Edition, Part I: Dimension and Properties for Use with the 2007 North American Cold-Formed Steel Specification with minimum tensile strength 58 ksi. Aluminum is compliance with 2010 Aluminum Design Manual, Part I specification for Aluminum Structures; 6063-T52 with minimum tensile strength 22 ksi, or 6063-T6 with minimum tensile strength 30 ksi.
3. To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
4. The base-metal thickness of 18 gauge steel is 0.048"; 16 gauge is 0.060"; 14 gauge is 0.075"; and 12 gauge is 0.105";

TABLE 4 – FASTENER STRENGTH OF SCREWS, pound-force[1, 2, 3, 4]

Fastener	Allowable Fastener Strength Ω=3		Nominal Fastener Strength (Tested)	
	Tensile, P_{ts}/Ω (lb)	Shear, P_{ss}/Ω (lb)	Tensile, P_{ts} (lb)	Shear, P_{ss} (lb)
#10-16 HWH	866	536	2598	1607
#12-14 HWH	1076	697	3227	2091
#12-14 UPFH	1039	645	3118	1935
#14-14 HWH	1455	909	4365	2727
#14-20 HWH	1561	908	4683	2725

1. For tension connections, the lower of the allowable pull-out, pullover, and fastener tension strength found in Table 2, 3, and 4, respectively must be used for design.
2. Nominal strengths are based on laboratory tests;
3. To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
4. The base-metal thickness of 18 gauge steel is 0.048"; 16 gauge is 0.060"; 14 gauge is 0.075"; and 12 gauge is 0.105";

TABLE 5 - ALLOWABLE SHEAR (BEARING) CAPACITY, pounds-force[1, 2, 3, 4]

Allowable Shear Values (S/Ω) on Cold Formed Steel and Aluminum; Ω=3.0												
Screw Designation	Nominal Diameter (in.)	Steel Gauges/(Thickness)							Aluminum Thickness			
									6063-T52		6063-T6	
		18-18	18-14	16-16	14-14	1/8"-3/16"	12-1/4"	3/16"-1/4"	1/8"-1/8"	1/8"-1/4"	1/8"-1/8"	1/8"-1/4"
# 10-16 HWH	0.190	331	583	475					402		454	
# 12-14 HWH	0.216	372	646	520	646				456	728	566	603
# 12-14 UPFH	0.216	375	662	542	636				520	580	639	542
1/4-14 HWH	0.250	376	622	536	785	838			519	806	731	810
1/4-20 HWH	0.250	356	687	520	760	854	860	860	529	819	692	921

1. The lower of the allowable shear (bearing) and the allowable fastener shear strength found in Table 4 and 5, respectively must be used for design.
2. Nominal strengths are based on laboratory tests. Steel is compliance with AISI Manual of Cold-formed Steel Design, 2008 Edition, Part I: Dimension and Properties for Use with the 2007 North American Cold-Formed Steel Specification with minimum tensile strength 58 ksi. Aluminum is compliance with 2010 Aluminum Design Manual, Part I specification for Aluminum Structures; 6063-T52 with minimum tensile strength 22 ksi, or 6063-T6 with minimum tensile strength 30 ksi.
3. To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD Φ factor of 0.5.
4. The base-metal thickness of 18 gauge steel is 0.048"; 16 gauge is 0.060"; 14 gauge is 0.075"; and 12 gauge is 0.105";

TABLE 6 - MINIMUM FASTENER SPACING AND EDGE DISTANCES

Screws Size	Screw Nominal Diameter (inch)	Fastened Material	Minimum Spacing (inch)	Minimum Edge Distance (inch)
No. 10	0.190	Steel	0.570	0.285
		Aluminum	0.760	0.380
No. 12	0.216	Steel	0.648	0.324
		Aluminum	0.864	0.432
1/4"	0.250	Steel	0.750	0.375
		Aluminum	1.000	0.500

Ultimate Load Capacities for 316 Stainless Steel Wedge-Bolt in Normal-Weight Concrete[1,2]

Nominal Anchor Diameter in.	Minimum Embedment Depth, h_{nom} in. (mm)	Minimum Concrete Compressive Strength									
		f'c = 2,500 psi (17.3 MPa)		f'c = 3,000 psi (20.7 MPa)		f'c = 4,000 psi (27.6 MPa)		f'c = 6,000 psi (41.4 MPa)		f'c = 8,000 psi (55.2 MPa)	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4	1-3/4 (44)	890 (4.0)	1,385 (6.2)	975 (4.3)	1,520 (6.8)	1,130 (5.0)	1,755 (7.8)	1,440 (6.4)	2,560 (11.4)	1,440 (6.4)	2,850 (12.7)
	2-1/2 (64)	2,485 (11.1)	1,385 (6.2)	2,720 (12.1)	1,520 (6.8)	3,145 (14.0)	1,755 (7.8)	3,150 (14.0)	2,560 (11.4)	3,150 (14.0)	2,850 (12.7)
3/8	2 (51)	735 (3.3)	1,675 (7.5)	805 (3.6)	1,833 (8.2)	930 (4.1)	2,115 (9.4)	1,180 (5.2)	2,710 (12.1)	1,210 (5.4)	3,295 (14.7)
	2-1/2 (64)	1,515 (6.7)	1,675 (7.5)	1,655 (7.4)	1,833 (8.2)	1,915 (8.5)	2,115 (9.4)	2,130 (9.5)	2,710 (12.1)	2,180 (9.7)	3,295 (14.7)
	3-1/2 (89)	3,525 (15.7)	1,675 (7.5)	3,860 (17.2)	1,833 (8.2)	4,455 (19.8)	2,115 (9.4)	4,570 (20.3)	2,710 (12.1)	4,680 (20.8)	3,295 (14.7)
1/2	2-3/4 (70)	3,000 (13.3)	4,675 (20.8)	3,285 (14.6)	5,120 (22.8)	3,790 (16.9)	5,915 (26.3)	5,975 (26.6)	7,560 (33.6)	6,900 (30.7)	9,205 (40.9)
	3-1/2 (89)	3,830 (17.0)	5,205 (23.2)	4,195 (18.7)	5,700 (25.4)	4,845 (21.6)	6,590 (29.3)	6,800 (30.2)	7,390 (32.9)	7,855 (34.9)	8,995 (40.0)
	4-1/2 (114)	5,680 (25.3)	5,205 (23.2)	6,220 (27.7)	5,700 (25.4)	7,180 (31.9)	6,590 (29.3)	9,760 (43.4)	7,390 (32.9)	11,265 (50.1)	8,995 (40.0)

1. Tabulated load values are for anchors installed in concrete. Concrete compressive strength must be at a minumum at the time of installation.
2. Ultimate load capacities must be reduced by a minimum safety factor of 4.0 or greater to determine allowable working load.

Allowable Load Capacities for 316 Stainless Steel Wedge-Bolt in Normal-Weight Concrete[1,2,3,4]

Nominal Anchor Diameter in.	Minimum Embedment Depth, h_{nom} in. (mm)	Minimum Concrete Compressive Strength									
		f'c = 2,500 psi (17.3 MPa)		f'c = 3,000 psi (20.7 MPa)		f'c = 4,000 psi (27.6 MPa)		f'c = 6,000 psi (41.4 MPa)		f'c = 8,000 psi (55.2 MPa)	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4	1-3/4 (44)	225 (1.0)	345 (1.5)	245 (1.1)	380 (1.7)	285 (1.3)	440 (2.0)	360 (1.6)	640 (2.8)	360 (1.6)	715 (3.2)
	2-1/2 (64)	620 (2.8)	345 (1.5)	680 (3.0)	380 (1.7)	785 (3.5)	440 (2.0)	790 (3.5)	640 (2.8)	790 (3.5)	715 (3.2)
3/8	2 (51)	185 (0.8)	420 (1.9)	200 (0.9)	460 (2.0)	235 (1.0)	530 (2.4)	295 (1.3)	680 (3.0)	305 (1.4)	825 (3.7)
	2-1/2 (64)	380 (1.7)	420 (1.9)	415 (1.8)	460 (2.0)	480 (2.1)	530 (2.4)	535 (2.4)	680 (3.0)	545 (2.4)	825 (3.7)
	3-1/2 (89)	880 (3.9)	420 (1.9)	965 (4.3)	460 (2.0)	1,115 (5.0)	530 (2.4)	1,145 (5.1)	680 (3.0)	1,170 (5.2)	825 (3.7)
1/2	2-3/4 (70)	750 (3.3)	1,170 (5.2)	820 (3.6)	1,280 (5.7)	950 (4.2)	1,480 (6.6)	1,495 (6.7)	1,890 (8.4)	1,725 (7.7)	2,300 (10.2)
	3-1/2 (89)	960 (4.3)	1,300 (5.8)	1,050 (4.7)	1,425 (6.3)	1,210 (5.4)	1,650 (7.3)	1,700 (7.6)	1,850 (8.2)	1,965 (8.7)	2,250 (10.0)
	4-1/2 (114)	1,420 (6.3)	1,300 (5.8)	1,555 (6.9)	1,425 (6.3)	1,795 (8.0)	1,650 (7.3)	2,440 (10.9)	1,850 (8.2)	2,815 (12.5)	2,250 (10.0)

1. Tabulated load values are for anchors installed in concrete. Concrete compressive strength must be at a minimum at the time of installation.
2. Allowable load capacities are calculated using an applied safety factor of 4.0.
3. Allowable load capacities must be multiplied by reduction factors when anchor spacing or edge distances are less than critical distances.
4. Linear interpolation may be used to determine allowable loads for intermediate embedments and compressive strengths.

DESIGN CRITERIA (ALLOWABLE STRESS DESIGN)

Combined Loading

For anchors loaded in both shear and tension, the combination of loads should be proportioned as follows:

$$\left(\frac{Nu}{Nn}\right) + \left(\frac{Vu}{Vn}\right) \leq 1$$

Where: N_u = Applied Service Tension Load
N_n = Allowable Tension Load
V_u = Applied Service Shear Load
V_n = Allowable Shear Load

LOAD ADJUSTMENT FACTORS FOR SPACING AND EDGE DISTANCES[1]

Anchor Installed in Normal-Weight Concrete

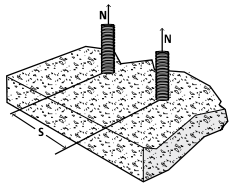
Anchor Dimension	Load Type	Critical Distance (Full Anchor Capacity)	Critical Load Factor	Minimum Distance (Reduced Capacity)	Minimum Load Factor
Spacing (s)	Tension	s_{cr} = 12d	F_{NS} = 1.0	s_{min} = 4d	F_{NS} = 0.50
	Shear	s_{cr} = 12d	F_{VS} = 1.0	s_{min} = 4d	F_{VS} = 0.75
Edge Distance (c)	Tension	c_{cr} = 8d	F_{NC} = 1.0	c_{min} = 3d	F_{NC} = 0.70
	Shear	c_{cr} = 12d	F_{VC} = 1.0	c_{min} = 3d	F_{VC} = 0.15

1. Allowable load values found in the performance data tables are multiplied by reduction factors when anchor spacing or edge distances are less than critical distances. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. When an anchor is affected by both reduced spacing and edge distance, the spacing and edge reduction factors must be combined (multiplied). Multiple reduction factors for anchor spacing and edge distance may be required depending on the anchor group configuration.

LOAD ADJUSTMENT FACTORS FOR NORMAL-WEIGHT CONCRETE

Spacing, Tension (F_{NS})

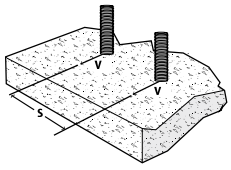
Dia. (in.)		1/4	3/8	1/2
s_{cr} (in.)		3	4-1/2	6
s_{min} (in.)		1	1-1/2	2
Spacing, s (inches)	1	0.50	-	-
	1-1/2	0.63	0.50	-
	2	0.75	0.58	0.50
	2-1/2	0.88	0.67	0.56
	3	1.00	0.75	0.63
	4-1/2	-	1.00	0.81
	6	-	-	1.00



Notes: For anchors loaded in tension, the critical spacing (s_{cr}) is equal to 12 anchor diameters (12d) at which the anchor achieves 100% of load.
Minimum spacing (s_{min}) is equal to 4 anchor diameters (4d) at which the anchor achieves 50% of load.

Spacing, Shear (F_{VS})

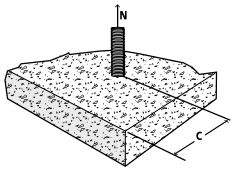
Dia. (in.)		1/4	3/8	1/2
s_{cr} (in.)		3	4-1/2	6
s_{min} (in.)		1	1-1/2	2
Spacing, s (inches)	1	0.75	-	-
	1-1/2	0.81	0.75	-
	2	0.88	0.79	0.75
	2-1/2	0.91	0.83	0.78
	3	1.00	0.88	0.81
	4-1/2	-	1.00	0.91
	6	-	-	1.00



Notes: For anchors loaded in shear, the critical spacing (s_{cr}) is equal to 12 anchor diameters (12d) at which the anchor achieves 100% of load.
Minimum spacing (s_{min}) is equal to 4 anchor diameters (4d) at which the anchor achieves 75% of load.

Edge Distance, Tension (F_{NC})

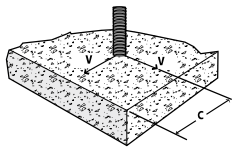
Dia. (in.)		1/4	3/8	1/2
c_{cr} (in.)		2	3	4
c_{min} (in.)		3/4	1-1/8	1-1/2
Edge Distance, c (in.)	3/4	0.70	-	-
	1-1/8	0.79	0.70	-
	1-1/2	0.88	0.76	0.70
	1-7/8	0.97	0.82	0.75
	2	1.00	0.84	0.76
	2-1/4	-	0.88	0.79
	3	-	1.00	0.88
	4	-	-	1.00



Notes: For anchors loaded in tension, the critical edge distance (c_{cr}) is equal to 8 anchor diameters (8d) at which the anchor achieves 100% of load.
Minimum edge distance (c_{min}) is equal to 3 anchor diameters (3d) at which the anchor achieves 70% of load.

Edge Distance, Shear (F_{VC})

Dia. (in.)		1/4	3/8	1/2
c_{cr} (in.)		3	4-1/2	6
c_{min} (in.)		3/4	1-1/8	1-1/2
Edge Distance, c (in.)	3/4	0.15	-	-
	1-1/8	0.29	0.15	-
	1-1/2	0.43	0.24	0.15
	1-7/8	0.58	0.34	0.22
	2-1/4	0.72	0.43	0.29
	3	1.00	0.62	0.43
	4-1/2	-	1.00	0.72
	6	-	-	1.00



Notes: For anchors loaded in shear, the critical edge distance (c_{cr}) is equal to 12 anchor diameters (12d) at which the anchor achieves 100% of load.
Minimum edge distance (c_{min}) is equal to 3 anchor diameters (3d) at which the anchor achieves 15% of load

Product Approval
USER: Public User

FL #	FL7561-R7
Application Type	Revision
Code Version	2023
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	Elite Aluminum Corporation
Address/Phone/Email	4650 Lyons Technology Parkway Coconut Creek, FL 33073 (954) 949-3200 bpeacock@elitealuminum.com
Authorized Signature	Bruce Peacock bpeacock@elitealuminum.com
Technical Representative	Bruce Peacock
Address/Phone/Email	4650 Lyons Technology Parkway Coconut Creek, FL 33073 (954) 949-3200 bpeacock@elitealuminum.com
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Products Introduced as a Result of New Technolog
Compliance Method	Evaluation Report from a Florida Registered Archit Professional Engineer ☐ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Do Kim, P.E.
Florida License	PE-49497
Quality Assurance Entity	QAI Laboratories
Quality Assurance Contract Expiration Date	12/31/2026
Validated By	James L. Buckner, P.E. @ CBUCK Engineering ☑ Validation Checklist - Hardcopy Received
Certificate of Independence	FL7561_R7_COI_certificate of independence.pdf
Referenced Standard and Year (of Standard)	

Equivalence of Product Standards
Certified By

Sections from the Code 1708.2

Product Approval Method Method 2 Option B

Date Submitted 08/16/2023
Date Validated 08/21/2023
Date Pending FBC Approval 08/25/2023
Date Approved 10/17/2023

Summary of Products

FL #	Model, Number or Name	Description
7561.1	Aluminum/Aluminum Composite Panels	3"/4"/6"x0.024"x1lb EPS Composite Pa EPS Composite Panel, 3"/4"/6"x0.024"x 3"/4"/6"x0.030"x2lb EPS Composite Pa
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** No **Design Pressure:** +80/-80 **Other:** In HVHZ, not to be used in structures considered living areas per FBC Section 1616 unless impact protection is provided. See installation drawing for nominal allowable design pressures and spans.		**Installation Instructions** FL7561_R7_II_2023 FBC-Elite Aluminu Verified By: Do Kim, P.E. PE 49497 Created by Independent Third Party: Y **Evaluation Reports** FL7561_R7_AE_FL 7561 Evaluation Re Created by Independent Third Party: Y

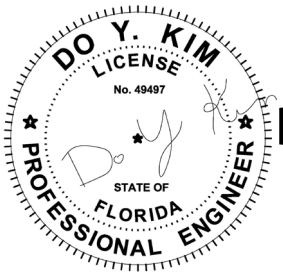
Back Next

Do Kim & Associates, LLC
Consulting Structural Engineers

Florida Board of Engineers Certificate of Authorization No. 26887

Certificate of Independence

Do Kim and Associates, LLC and Do Kim, P.E. do not have nor will acquire financial interest in the company manufacturing or distributing the product or in any other entity involved in the approval process of the product named in the accompanying Florida Product Approval.



Do Y Kim

Digitally signed by Do Y Kim
Date: 2023.08.01 12:09:24 -04'00'

Do Kim, P.E.
FL #49497

P.O. Box 10039
Tampa, FL 33679

813.857.9955
DoKimEngineering@gmail.com

ELITE PANEL SPAN TABLES:

1. Net allowable loads are permitted to be multiplied by 1.67 to derive ultimate loads (psf).

ELITE ALUMINUM PANELS ARE LABELED WITH A FL7561 LABEL TO ENSURE BUILDING INSPECTOR THAT THE INSULATED PANELS INSTALLED ARE APPROVED FOR USE IN THE STATE OF FLORIDA.

3" x 0.024 x 1 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	16.17	15.76	15.03	14.10
20	13.44	13.44	12.22	10.35
30	10.78	10.78	9.41	6.60
40	9.22	9.22	6.60	2.85
50	8.17	8.17	3.79	-
60	7.40	6.39	0.98	-
70	6.81	4.51	-	-
80	6.33	2.64	-	-

3" x 0.032 x 1 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	17.50	17.50	16.91	15.96
20	16.64	15.96	14.06	12.16
30	15.17	14.06	11.21	8.36
40	13.69	12.16	8.36	4.56
50	12.22	10.26	5.51	0.76
60	10.75	8.36	2.66	-
70	9.27	6.46	-	-
80	7.80	4.56	-	-

3" x 0.024 x 2 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	19.33	18.95	18.31	17.66
20	18.11	17.66	16.36	15.06
30	16.80	16.36	14.41	12.46
40	15.49	15.06	12.46	9.86
50	14.18	13.76	10.51	7.26
60	12.87	12.46	8.57	4.67
70	11.57	11.16	6.62	2.07
80	10.26	9.86	4.67	-

3" x 0.030 x 2 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	20.11	20.03	19.42	18.81
20	19.02	18.81	17.58	16.35
30	17.93	17.58	15.73	13.89
40	16.83	16.35	13.89	11.43
50	15.74	15.12	12.05	8.97
60	14.64	13.89	10.21	6.52
70	13.55	12.66	8.36	4.06
80	12.46	11.43	6.52	1.60

4" x 0.024 x 1 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	19.00	19.00	17.17	16.53
20	15.01	15.01	15.01	13.95
30	12.50	12.50	12.50	11.38
40	10.97	10.97	10.97	8.80
50	9.92	9.92	9.44	6.22
60	9.13	9.13	7.51	3.64
70	8.52	8.52	5.58	1.07
80	8.02	8.02	3.64	-

4" x 0.032 x 1 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	20.50	20.50	20.11	19.24
20	19.61	19.24	17.49	15.74
30	18.17	17.49	14.87	12.24
40	16.72	15.74	12.24	8.74
50	15.28	13.99	9.62	5.25
60	13.84	12.24	7.00	1.75
70	12.40	10.49	4.38	-
80	10.95	8.74	1.75	-

4" x 0.024 x 2 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	21.97	21.97	21.52	20.97
20	20.77	20.77	19.86	18.76
30	19.57	19.57	18.21	16.55
40	18.36	18.36	16.55	14.34
50	17.16	17.16	14.89	12.13
60	15.96	15.96	13.24	9.93
70	14.75	14.75	11.58	7.72
80	13.55	13.55	9.93	5.51

4" x 0.030 x 2 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	24.17	24.17	24.17	24.17
20	23.64	23.64	23.41	23.11
30	22.57	22.57	21.90	21.01
40	21.51	21.51	20.39	18.91
50	20.45	20.45	18.88	16.80
60	19.39	19.39	17.37	14.70
70	18.33	18.33	15.86	12.59
80	17.26	17.26	14.35	10.49

6" x 0.024 x 1 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	23.00	21.24	21.47	20.85
20	18.06	18.06	18.06	18.06
30	15.13	15.13	15.13	15.13
40	13.34	13.34	13.34	13.34
50	12.10	12.10	12.10	10.91
60	11.17	11.17	11.17	8.43
70	10.44	10.44	10.30	5.95
80	9.85	9.85	8.43	3.47

6" x 0.032 x 1 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	24.00	24.00	24.00	23.42
20	23.34	23.21	21.82	20.22
30	22.10	21.63	19.42	17.02
40	20.86	20.05	17.02	13.82
50	19.62	18.47	14.62	10.62
60	18.38	16.89	12.22	7.42
70	17.14	15.30	9.82	4.22
80	15.91	13.72	7.42	1.02

6" x 0.024 x 2 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

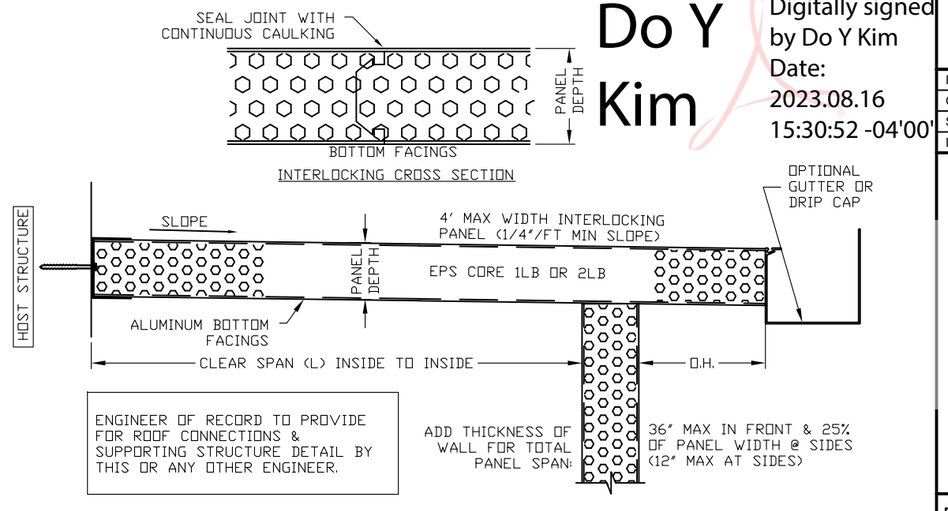
NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	23.93	23.93	23.88	23.60
20	23.20	23.20	23.03	22.46
30	22.47	22.47	22.18	21.33
40	21.75	21.75	21.33	20.20
50	21.02	21.02	20.49	19.07
60	20.29	20.29	19.64	17.94
70	19.57	19.57	18.79	16.81
80	18.84	18.84	17.94	15.68

6" x 0.030 x 2 - LB EPS PANELS (ALLOWABLE CLEAR SPAN CHARTS)

NET ALLOWABLE LOAD (PSF)[1]	MAX. ALLOWABLE SPAN (FT)			
	L/80	L/120	L/180	L/240
10	24.00	24.00	24.00	23.84
20	23.65	23.65	23.34	22.84
30	22.94	22.94	22.59	21.85
40	22.23	22.23	21.85	20.85
50	21.53	21.53	21.10	19.86
60	20.82	20.82	20.36	18.87
70	20.11	20.11	19.61	17.87
80	19.40	19.40	18.87	16.88

GENERAL NOTES

1. Composite panels shall be constructed using type 3003-H154 aluminum facings, 1 or 2 PCF ASTM C-578 Kingspan Insulation LLC or Imperial Foam & Insulation MFG. CO. brand EPS adhered to aluminum facings with Ashland Chemical 2020D ISO grip. Fabrication to be by Elite panel products only in accordance with approved fabrication methods.
2. Elite roof panels maintain a UL 1715 (int) class 'B' (ext) rating and are NER-501 approved.
3. This specification has been designed and shall be fabricated in accordance with the requirements of the Florida Building Code 8th Edition (FBC), composite panels comply with Chapter 7 Section 720, Chapter 8 Section 803, Class A interior finish, and Chapter 26 Section 2603. All local building code amendments shall be adhered to as required.
4. The designer shall determine by accepted engineering practice the allowable loads for site specific load conditions (including load combinations) using the data from the allowable load tables and spans in this approval.
5. Deflection limits and allowable spans have been listed to meet FBC including the HVHZ. In HVHZ, this product shall be used in structures "not to be considered living areas" per Section 1616 unless impact resistance in accordance to the HVHZ requirements are met.
6. Safety factor of 2.0 has been used to develop allowable loads and spans from testing in accordance to the Guidelines for Aluminum Structures Part 1 and conforms to the FBC Chapter 16 and 20.
7. Testing has been conducted in accordance to ASTM E72: Strength Test of Panels for Building Construction.
8. Reference test reports: HETI-05-1988, HETI-06-2104, HETI-06-2066, HETI-06-2105, HETI-06-2067, HETI-05-1002, HETI-06-2107, HETI-05-1987, HETI-06-2069, HETI-06-2070, HETI-06-2071, HETI-05-1994, HETI-05-1991, HETI-06-2072, HETI-06-2073, HETI-06-2074, HETI-05-1996, HETI-05-1989, HETI-05-1993, HETI-05-1985, HETI-05-1995, HETI-05-1990, HETI-05-1997, HETI-05-2037, HETI-05-2029, HETI-05-2039, HETI-05-2030, HETI-05-2041, HETI-05-2048, HETI-05-2036, HETI-05-2031, HETI-05-2038, HETI-05-2065, HETI-05-2040, HETI-05-2042.
9. Linear interpolation shall be allowed for figures within the tables shown.
10. Panels with fan beams shall be considered equivalent to similar panels without fan beams. Design professionals may include the strength of the fan beam to exceed shown figures as part of site-specific engineering.



EPS ROOF PANEL/ SPAN DESCRIPTION

Do Y Kim

Digitally signed by Do Y Kim
Date: 2023.08.16 15:30:52 -04'00'

DO KIM & ASSOCIATES, LLC
CONSULTING STRUCTURAL ENGINEERS
PO BOX 10039
Tampa, FL 33679
Tel: (813) 857-9955

Rev./Date	Description
0 8/12 2017	ISSUED FOR FBC 6th Edition PRODUCT APPROVAL
1 8/8 2020	ISSUED FOR FBC 7th Edition PRODUCT APPROVAL
2 6/15 2022	ADDED LABELING STATEMENT
3 8/15 2023	ISSUED FOR FBC 8th Edition PRODUCT APPROVAL

Elite Aluminum Corporation
4650 Lyons Technology Parkway
Coconut Creek, FL 33073

EPS FOAM CORE COMPOSITE PANELS
ALUMINUM/ALUMINUM SKIN
FLORIDA STATEWIDE PRODUCT APPROVAL

DRAWN BY:	DYK
CHECKED BY:	DYK
SCALE:	AS SHOWN
DATE:	2/19/12

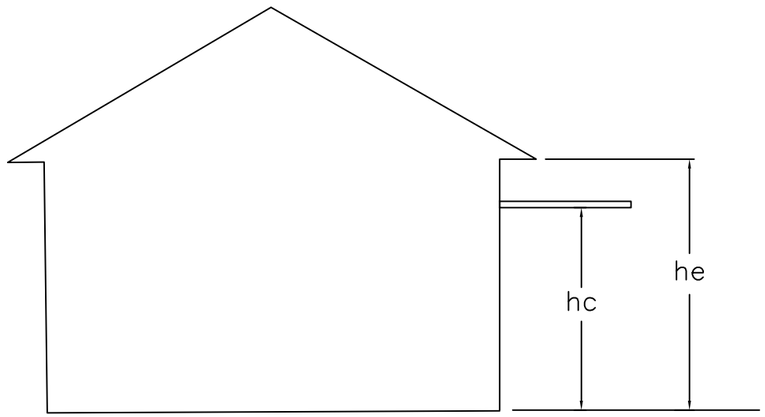
DO YEON KIM, P.E.
STATE OF FLORIDA
No. 49497
FLA. REG. NUMBER 49497
DO KIM & ASSOCIATES, LLC
CA# 26887
PO BOX 10039
Tampa, FL 33679

This item has been digitally signed and sealed by Do Y. Kim on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Drawing No. - FL-1001

ELITE ALUMINUM PANELS ARE LABELED WITH A FL7561 LABEL TO ENSURE BUILDING INSPECTOR THAT THE INSULATED PANELS INSTALLED ARE APPROVED FOR USE IN THE STATE OF FLORIDA.

8th Edition FBC Basic Design Wind Speed and Allowable Design Wind Pressure for Attached Covers (canopies) on Buildings.



Attached Covers (canopies) on Buildings

1. Per 8th Edition FBC Chapter 16 for Components and Cladding Loads, ASCE/SEI 7-22 Chapter 30 for Components and Cladding for Attach Canopies on Buildings. Effective area for wind load calculations based on 10 sq. feet (absolute value of controlling design wind pressure is shown on span tables).
2. Use the wind load design pressures in the tables below for OPEN and ATTACHED covers (canopies) on buildings as a guide to determine allowable wind load design pressures. Use the design pressure selected to determine the allowable spans for the various panel types listed on Sheet 1.
2. The tables below ONLY applies to open and attached covers (canopies) on buildings per ASCE/SEI 7-22 Section 30.9 ATTACHED CANOPIES ON BUILDINGS and shall not be used for any other types of structures such as Enclosed, Freestanding Open, Partially Open, or Partially enclosed Buildings.
3. Roof covers attached to fascia are deemed $0.9 \leq hc/he \leq 1$.
4. Roof covers attached to the host structure underneath the fascia and overhang at deemed $0.5 \leq hc/he < 0.9$.

ASCE 7-22 Allowable Design Pressures			
ATTACHED TO FASCIA CANOPIES (Open Wind Flow), 0.9≤hc/he≤1			
Wind Speed	Exposure B	Exposure C	Exposure D
110	10.7	15.98	19.36
120	12.8	19.02	23.04
130	15.0	22.32	27.04
140	17.4	25.88	31.37
150	19.9	29.71	36.01
160	22.7	33.81	40.97

ASCE 7-22 Allowable Design Pressures			
ATTACHED TO WALL CANOPIES (Open Wind Flow), 0.5<hc/he<0.9			
Wind Speed	Exposure B	Exposure C	Exposure D
110	6.9	10.27	12.45
120	8.2	12.23	14.81
130	9.6	14.35	17.39
140	11.2	16.64	20.16
150	12.8	19.10	23.15
160	14.6	21.73	26.34

Notes:

1. The allowable design pressures listed in the tables are the absolute value of the controlling design pressure (± dp).

DO KIM
& ASSOCIATES, LLC
CONSULTING STRUCTURAL ENGINEERS
PO BOX 10039
Tampa, FL 33679
Tel: (813) 857-9955

Rev./Date		Description
0	8/12 2017	ISSUED FOR FBC 6th Edition PRODUCT APPROVAL
1	8/8 2020	ISSUED FOR FBC 7th Edition PRODUCT APPROVAL
2	6/15 2022	ADDED LABELING STATEMENT
3	8/15 2023	ISSUED FOR FBC 8th Edition PRODUCT APPROVAL

Elite Aluminum Corporation
4650 Lyons Technology Parkway
Coconut Creek, FL 33073

EPS FOAM CORE COMPOSITE PANELS
ALUMINUM/ALUMINUM SKIN
FLORIDA STATEWIDE PRODUCT APPROVAL

DRAWN BY:	DYK
CHECKED BY:	DYK
SCALE:	AS SHOWN
DATE:	2/19/12

This item has been digitally signed and sealed by Do Y. Kim on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Drawing No. - FL-1001

Do Kim & Associates, LLC
Consulting Structural Engineers

Florida Board of Engineers Certificate of Authorization No. 26887

Product Evaluation Report

Date: August 15, 2023

Report No.: FL# 7561-R7

Product Category: Roofing

Product sub-category: Products Introduced as a Result of New Technology

Product Name: EPS Foam Core w/ Aluminum Skin Composite Panels

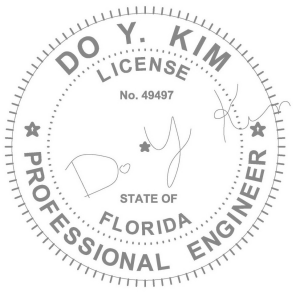
Manufacturer: Elite Aluminum Corporation
4650 Lyons Technology Parkway
Coconut Creek, FL 33073
Phone: 800-421-0682

Scope:

This product evaluation report issued by Do Kim and Associates, LLC and Do Kim, P.E. for Elite Aluminum Corporation is based on Florida Department of Business and Professional Regulation Rule 61G20-3.005 (2) Method 2 (b) of the State of Florida Product Approval. Re-evaluation of this product shall be required following pertinent Florida Building Code modifications or updates.

Do Kim and Associates, LLC and Do Kim, P.E. do not have nor will acquire financial interest in the company manufacturing or distributing the product or in any other entity involved in the approval process of the product named herein.

This product has been evaluated for use in locations adhering to the Florida Building Code, 8th Edition (2023 FBC) and where pressure and deflection requirements, as determined by Chapter 16 of the Florida Building Code, do not exceed the design pressures as shown on the approval.



This item has been digitally signed and sealed by Do Y. Kim on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Do Y Kim
Digitally signed by Do Y Kim
Date: 2023.08.20 19:01:43 -04'00'

Do Kim, P.E.
FL #49497

Supporting Documents

1. Code Compliance
    a. The product assembly described herein has demonstrated compliance with the Florida Building Code 8th Edition (FBC), Section 1708.2.
2. Drawings:
    a. Drawing No. FL-1001 titled "EPS Foam Core Composite Panels", Sheets 1 and 2 prepared by Do Kim and Associates, LLC., signed and sealed by Do Kim, P.E.
3. Testing
    a. Testing per ASTM E72 as performed by Hurricane Engineering & Testing, Inc. (HETI), and reported in test report numbers HETI-05-1988, HETI-06-2104, HETI-06-2066, HETI-06-2105, HETI-06-2067, HETI-05-1002, HETI-06-2107, HETI-05-1987, HETI-06-2069, HETI-06-2070, HETI-06-2071, HETI-05-1994, HETI-05-1991, HETI-06-2072, HETI-06-2073, HETI-06-2074, HETI-05-1996, HETI-05-1989, HETI-05-1993, HETI-05-1985, HETI-05-1995, HETI-05-1990, HETI-05-1997, HETI-05-2037, HETI-05-2029, HETI-05-2039, HETI-05-2030, HETI-05-2041, HETI-05-2048, HETI-05-2036, HETI-05-2031, HETI-05-2038, HETI-05-2065, HETI-05-2040, HETI-05-2042.
4. Calculations
    a. Panel performance engineering analysis for tested loading conditions have been prepared based on comparative and/or rational analysis, prepared, and submitted by Do Kim, P.E.
5. Other
    a. Quality Assurance Agreement verified with Quality Auditing-Institute, LTD. (QAI Laboratories, LTD.) (FBC Organization #QUA7628).

P.O. Box 10039
Tampa, FL 33679

813.857-9955
dk@dokimengineering.net

Limitations and Condition of Use

1. Code Compliance
    a. The product assembly described herein has demonstrated compliance with the Florida Building Code 8th Edition (FBC), Section 1708.2.
2. Large and small missile impact resistance has NOT been tested to or evaluated for in this approval. In HVHZ, this product shall be used in structures "not to be considered living areas" per Section 1616 unless impact resistance in accordance to the HVHZ requirements are met.
3. Each product listed above shall be installed in strict compliance with its respective Product Evaluation Document and site-specific engineering along with all components noted herein.
4. Use of each product shall be in strict accordance with its Product Approval Evaluation and Limitations of Use.
6. Composite panels shall be constructed using type 3003-H154 or 3105-H154 aluminum facings, 2 PCF ASTM C-578 Kingspan Insulation LLC brand EPS foam insulation (NOA No. 22-0627.04) or Imperial Foam & Insulation MFG. CO. adhered to aluminum facings with Ashland Chemical 2020D ISO grip. Fabrication to be by Elite panel products only in accordance with approved fabrication methods.
7. Elite roof panels maintain a UL 1715 (int) class 'B' (ext) rating and are NER-501 approved.
8. This specification has been designed and shall be fabricated in accordance with the requirements of the FBC, composite panels comply with Chapter 7 Section 720, Chapter 8 Section 803, Class A interior finish, and Chapter 26 Section 2603. All local building code amendments shall be adhered to as required.
9. The designer shall determine by accepted engineering practice the allowable loads for site specific load conditions (including load combinations) using the data from the allowable load tables and spans in this approval.
10. Deflection limits and allowable spans have been listed to meet FBC including the HVHZ (L/80 for spans $\leq$ 12'-0" and L/180 for spans > 12'-0").
11. All supporting host structures shall be designed to resist all superimposed loads.
12. All components which are permanently installed shall be protected against corrosion, contamination, and other such damage.
13. Size and Span Limitations:
    a. Composite panels shall be limited to those specific panels listed in the DWG. FL-1001.
    b. Panel spans shall not exceed those listed in the tables of DWG. FL-1001.
14. **ELITE ALUMINUM PANELS ARE LABELED WITH A FL7561 LABEL TO ENSURE BUILDING INSPECTOR THAT THE INSULATED PANELS INSTALLED ARE APPROVED FOR USE IN THE STATE OF FLORIDA.**

P.O. Box 10039
Tampa, FL 33679

813.857-9955
dk@dokimengineering.net