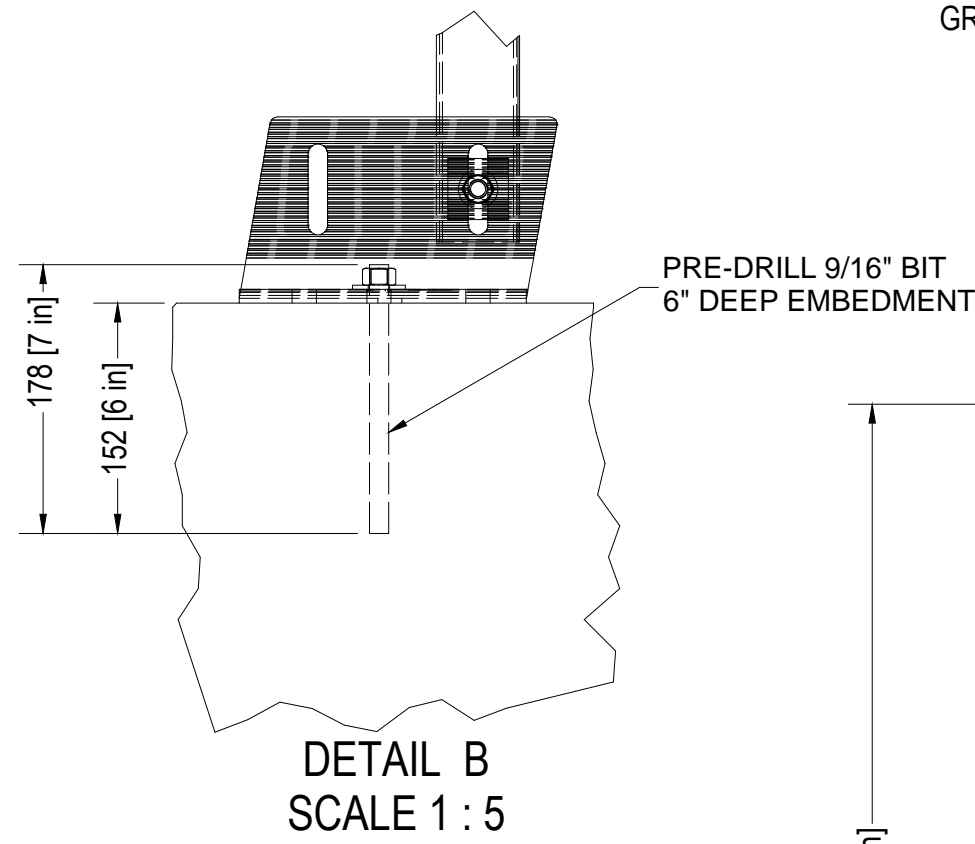
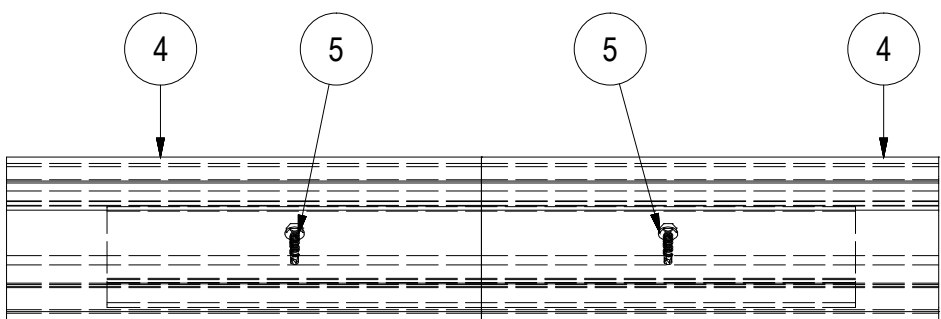


DETAIL A
SCALE 1 : 5



DETAIL B
SCALE 1 : 5



SPLICE DETAIL
SCALE 1 : 5

PARTS LIST				
ITEM	PART NUMBER	DESCRIPTION		
1	146002-320	Standard, PvMax3, 72 Cell, 20°, Triangle		
2	146002-325	Standard, PvMax3, 72 Cell, 25°, Triangle		
3	146002-330	Standard, PvMax3, 72 Cell, 30°, Triangle		
4	124303-001	Rail, S1.5, Custom		
5	129303-000	Splice, S1.5, Kit		

NO.	DRAWN:	CHECKED:	REVIEWED:	APPROVED:	REVISIONS:
0	BushBr 9/27/2014				New Drawing
1	BushBr 3/12/2015				Notes, embedments New Tables, and Sheets
2	BushBr 11/5/2015				Change Ballast Size, Max Dead Load, Add 2015
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4	VasqHu 08/01/2016				Updated Load Tables
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Client:
Schletter Inc
2201 North Forbes Boulevard
Tucson, AZ 85745



1001 COMMERCE CENTER DR., SHELBY, NC 28150
TEL: (704) 595 - 4200 | Fax: (704) 595 - 4210

EMAIL: MAIL@SCHLETTER.US
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Standard PvMax, 72 Cell, 20° - 30°
Racking Structure
Dimensions and Specifications

ISSUED BY: SCHLETTER INC.
PROPRIETARY AND CONFIDENTIAL

Project Site:
Schletter Inc
1001 Commerce Center Dr
Shelby, NC 28150

Drawing Number:

v.01

JOB NUMBER: v
SHEET: 1 of 4

SCALE:
SEE DRAWING VIEWS

DESIGN CRITERIA:
FOR STRUCTURAL DESIGN INFORMATION AND APPLICABLE BUILDING CODES,
REFERENCE ACCOMPANYING LETTER OF ACCEPTANCE AND CALCULATIONS.

LOADS:
MODULE DEAD LOAD = MAX 3.0 PSF, MIN 1.75 PSF
SNOW LOAD = SEE TABLE FOR SPECIFIC SNOW LOAD (Is = 1.00, Ct= 1.20, Ce = 0.90, Cs = SEE TABLE)

WIND DESIGN:
DESIGN BASED UPON WIND TUNNEL TEST REPORT # RC 1127/0611_1e
BASIC WIND SPEED = SEE TABLE FOR SPECIFIC WIND SPEED
EXPOSURE: C
RISK CATEGORY = II (ASCE 7-10)
lw = 1.0 (ASCE 7-05)

SEISMIC LOADS:
SEISMIC DESIGN CATEGORY: E
SOIL SITE CLASS = D
Sds = 1.67 SD1 = 1.0
Ie = 1.0 SS = 2.5
S1 = 1.0 R = 1.25

INSTALLATION TOLERANCES:
ARRAY TILT ANGULAR TOLERANCE ±1.0°
LATERAL SUPPORT PLACEMENT IS ±2.5"
SUPPORT HEIGHT VARIATION TOLERANCE IS ±0.5"
TOTAL LATERAL DEVIATION OF SUPPORTS WITHIN AN ARRAY IS ±2.5"

GENERAL:
1. THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERE TO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS). THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL SCAFFOLDING, BRACING AND SHORING.
2. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

ALUMINUM:
1. ALL ALUMINUM SHALL CONFORM WITH THE LATEST ALUMINUM DESIGN HANDBOOK.
2. ALL ALUMINUM SECTIONS SHALL BE:
a. SEMI-HOLLOW AND HOLLOW SHALL BE 6105-T5, 6005A-T6, OR 6005-T5
b. SOLIDS SHALL BE 6063-T6

STEEL:
1. ALL BOLTS AND WASHERS SHALL BE 304 STAINLESS STEEL CLASS 2 (A2-70).
2. ALL NUTS SHALL BE 316 STAINLESS STEEL CLASS 2 (A4-70).

TORQUE:
TORX BOLT FOR RAPID 2+ MODULE CLAMPS IS 14 N-M (10.5 FT-LBS)
M6 AND 1/4" BOLT TORQUE IS 6 N-M (4.5 FT-LBS)
M8 AND 5/16" BOLT TORQUE IS 14 N-M (10.5 FT-LBS)
M10 AND 3/8" BOLT TORQUE IS 30 N-M (23 FT-LBS)
M12 AND 1/2" BOLT TORQUE IS 50 N-M (37 FT-LBS)
M16 AND 5/8" BOLT TORQUE IS 121 N-M (89 FT-LBS)
M20 AND 3/4" BOLT TORQUE IS 244 N-M (180 FT-LBS)

MODULE SIZE:
RACKING SYSTEM DESIGNED FOR MODULE SIZE: MINIMUM = 1900 X 970
VERTICAL MODULE GAP: 23 mm MAXIMUM = 2000 X 1050
HORIZONTAL MODULE GAP: 5 mm

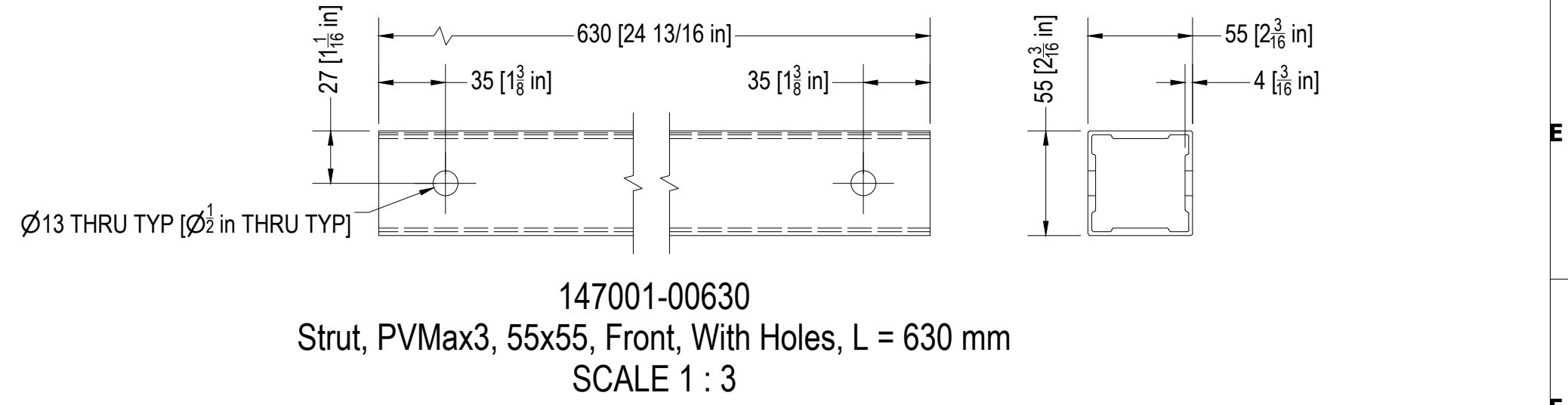
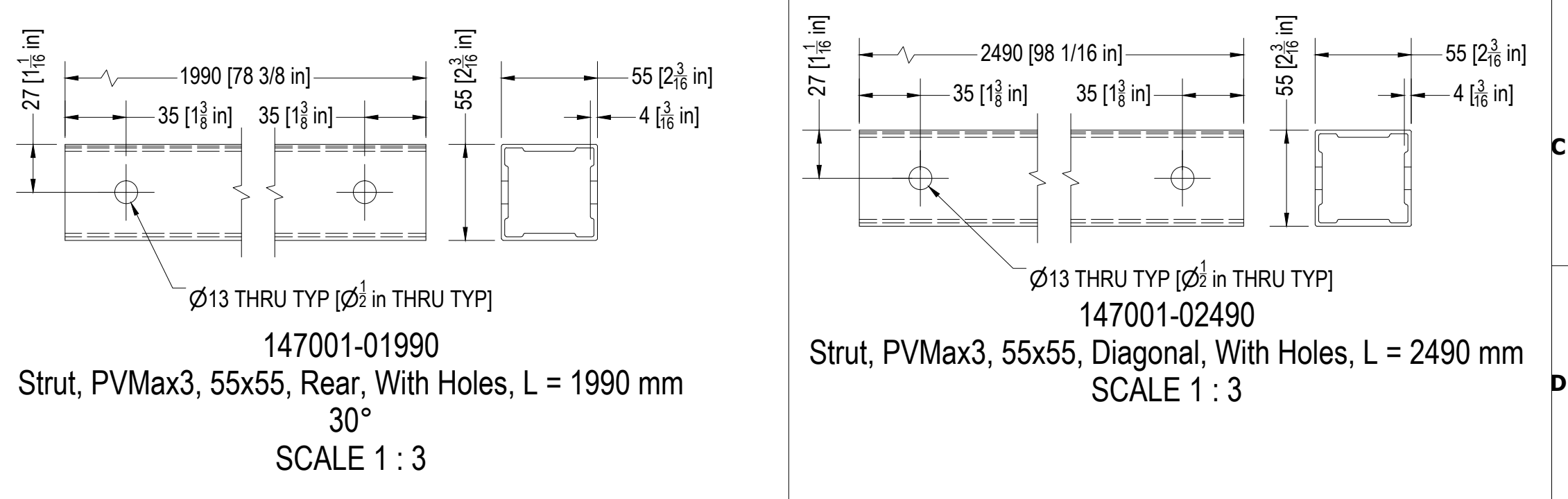
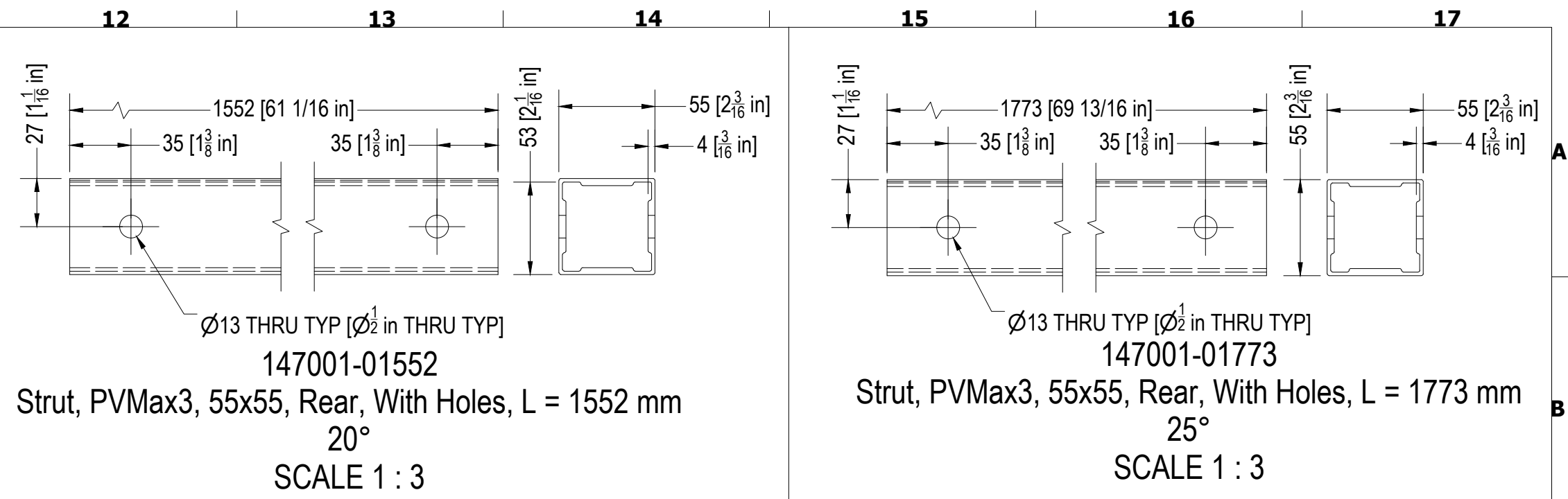
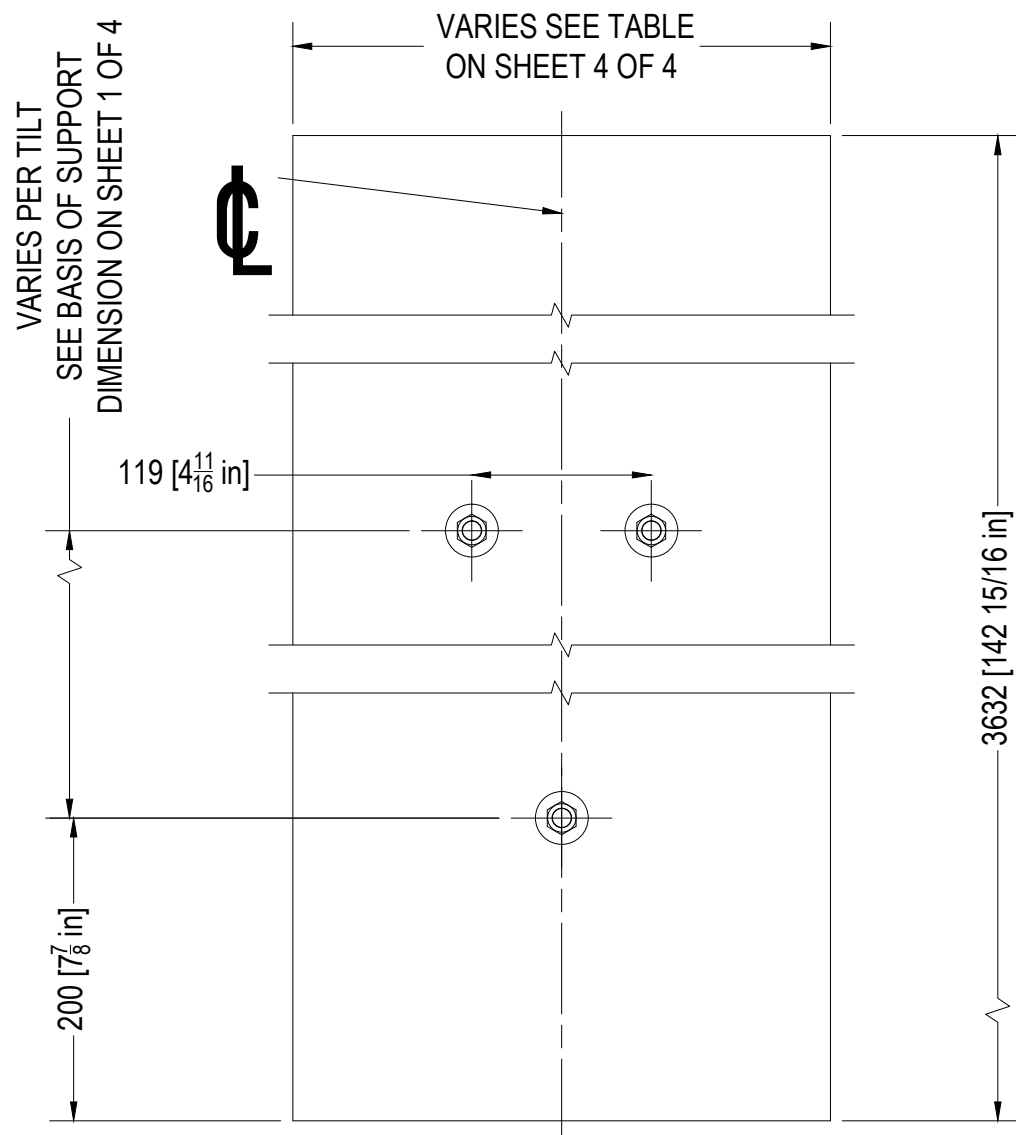
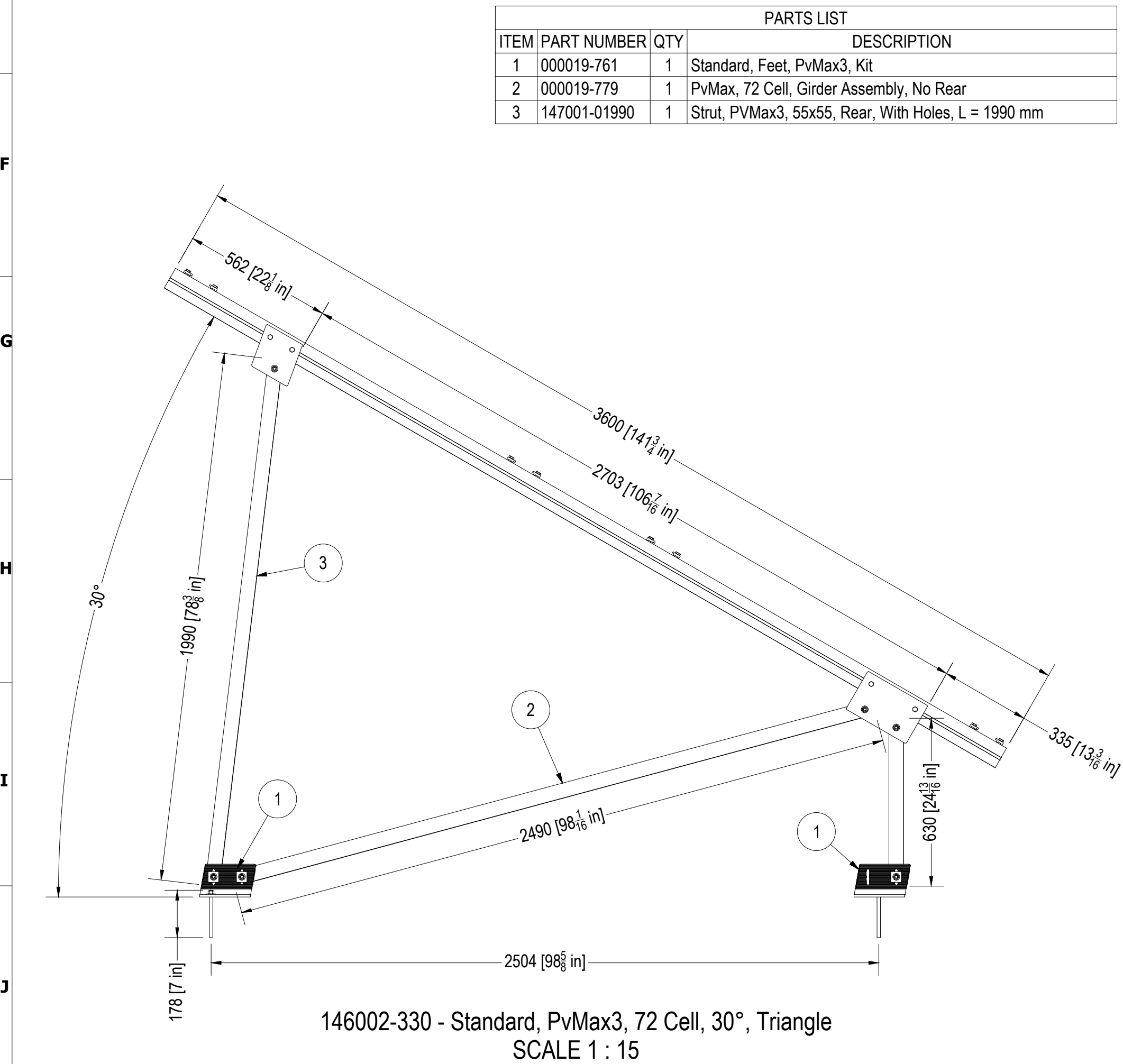
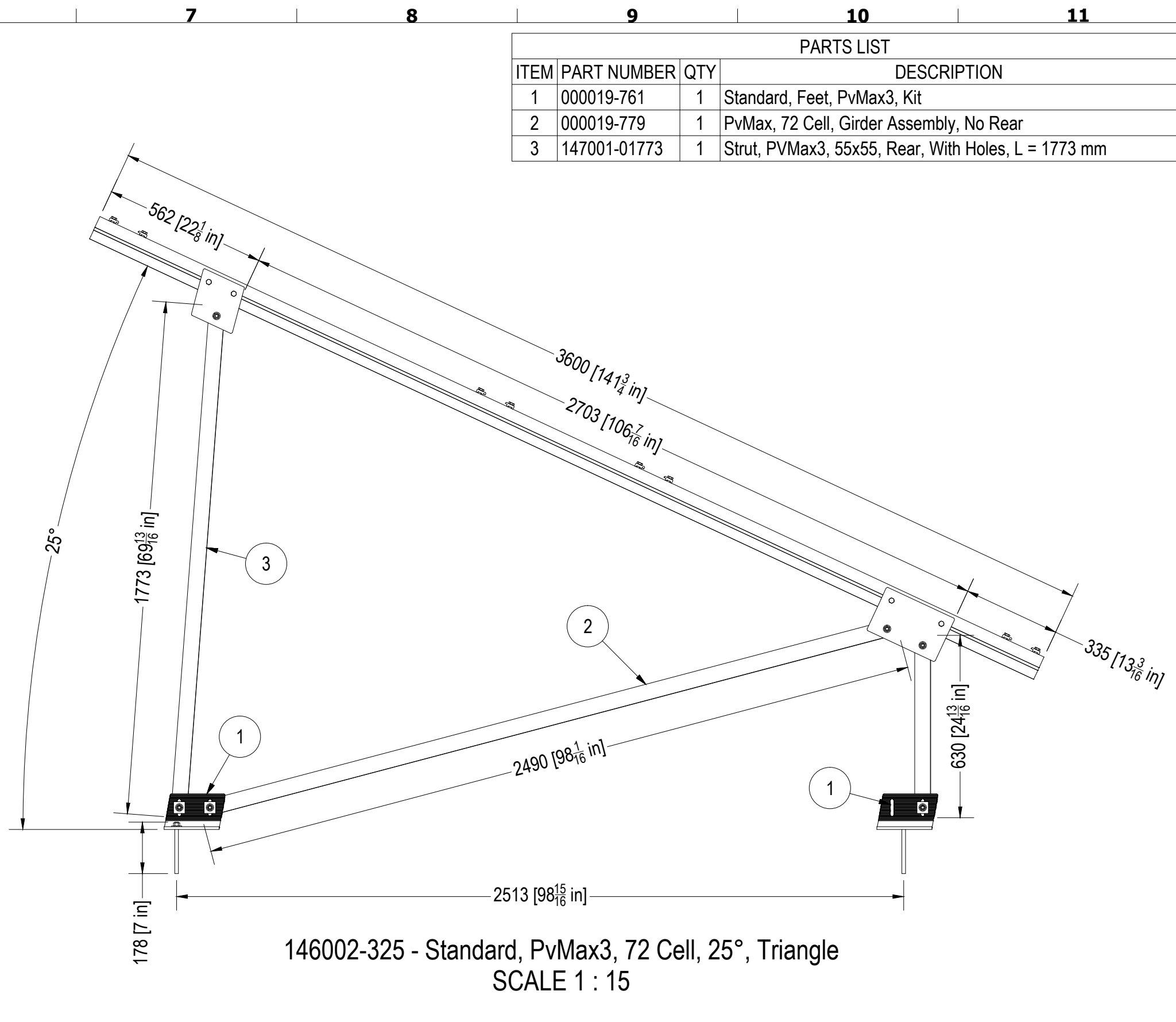
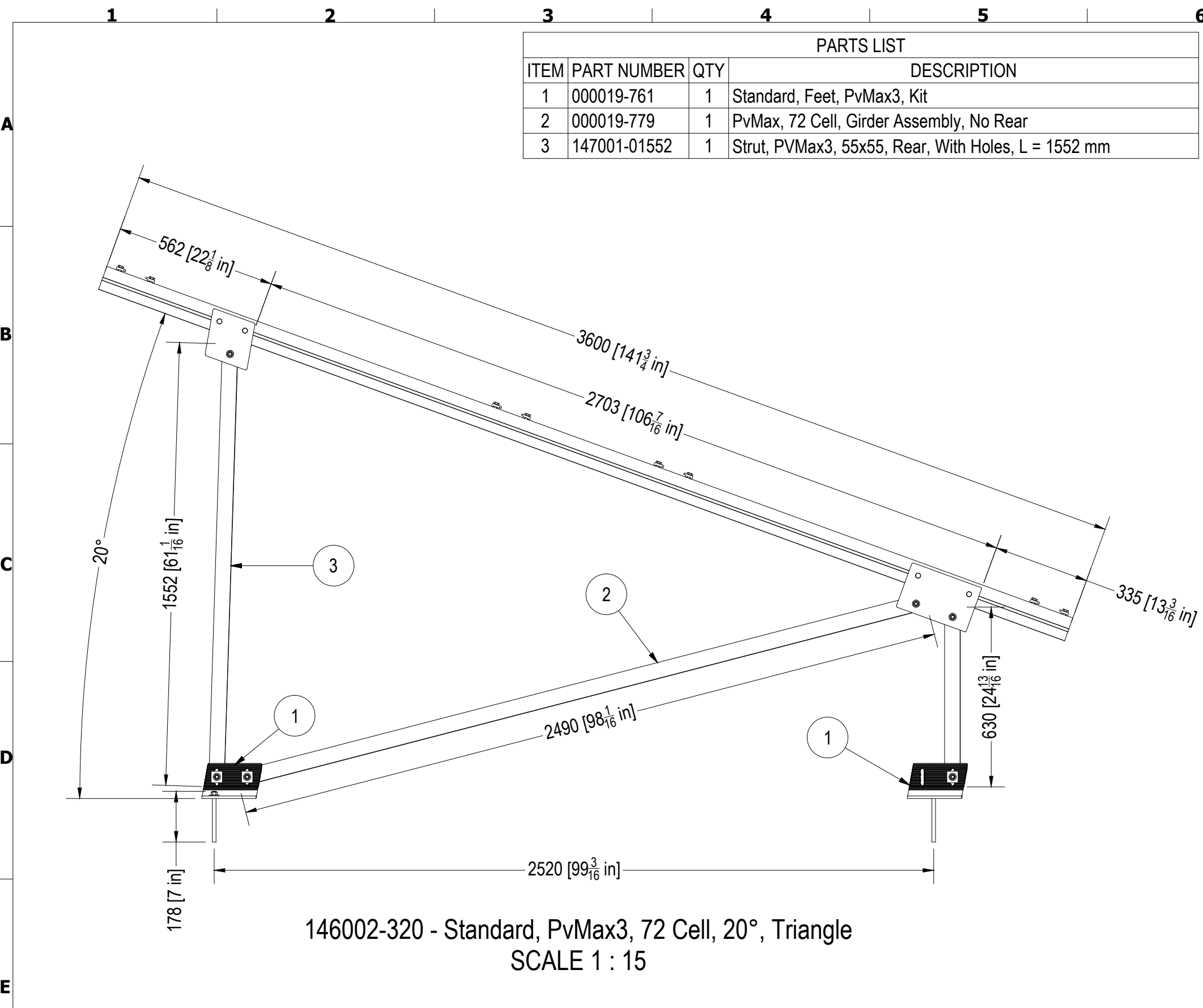
NOTE:
1. MODULES MUST BE CENTERED ON ARRAY
2. ARRAY LENGTH NOT TO EXCEED 150 FT
3. RECOMMENDED SPEED FOR INSTALLATION OF SELF-DRILLING 1/4" DIAMETER SCREWS IS 1200-1800 RPMs.

FOUNDATIONS:
1. NO SOILS REPORT PROVIDED. FOUNDATION DESIGN IS BASED ON MINIMUM IBC SOIL BEARING VALUE = 1500 PSF PER IBC TABLE 1804.2 (2003, 2006), & 1806.2 (2009, 2012, 2015). BALLAST BLOCKS SHALL BE BUILT ON UNDISTURBED SOIL OR COMPACTED FILL MATERIAL NOT LESS THAN 12" IN DEPTH.
2. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR ANY GEOTECHNICAL ASPECTS OF THIS PROJECT. IT IS RECOMMENDED THAT THE OWNER RETAIN A REGISTERED GEOTECHNICAL ENGINEER TO CONDUCT A GEOTECHNICAL INVESTIGATION AND PREPARE A REPORT WITH RECOMMENDATIONS FOR FOUNDATION AND EARTHWORK PROCEDURES.

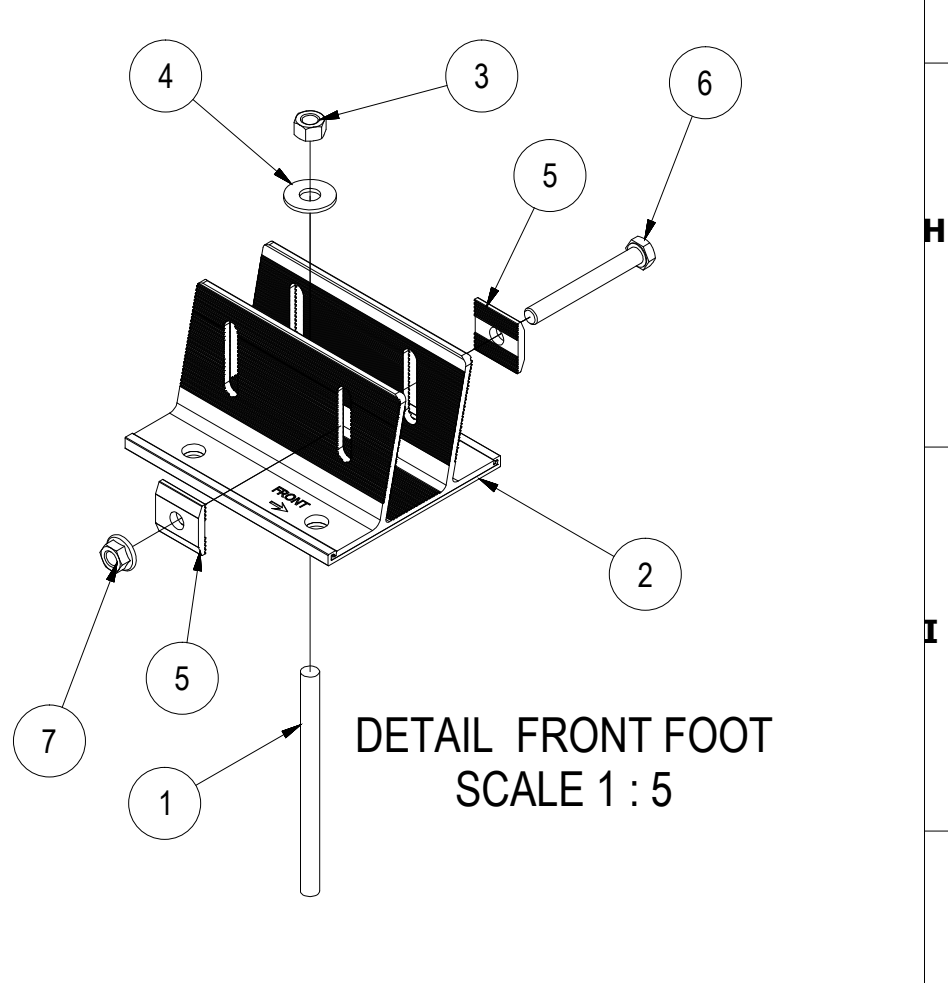
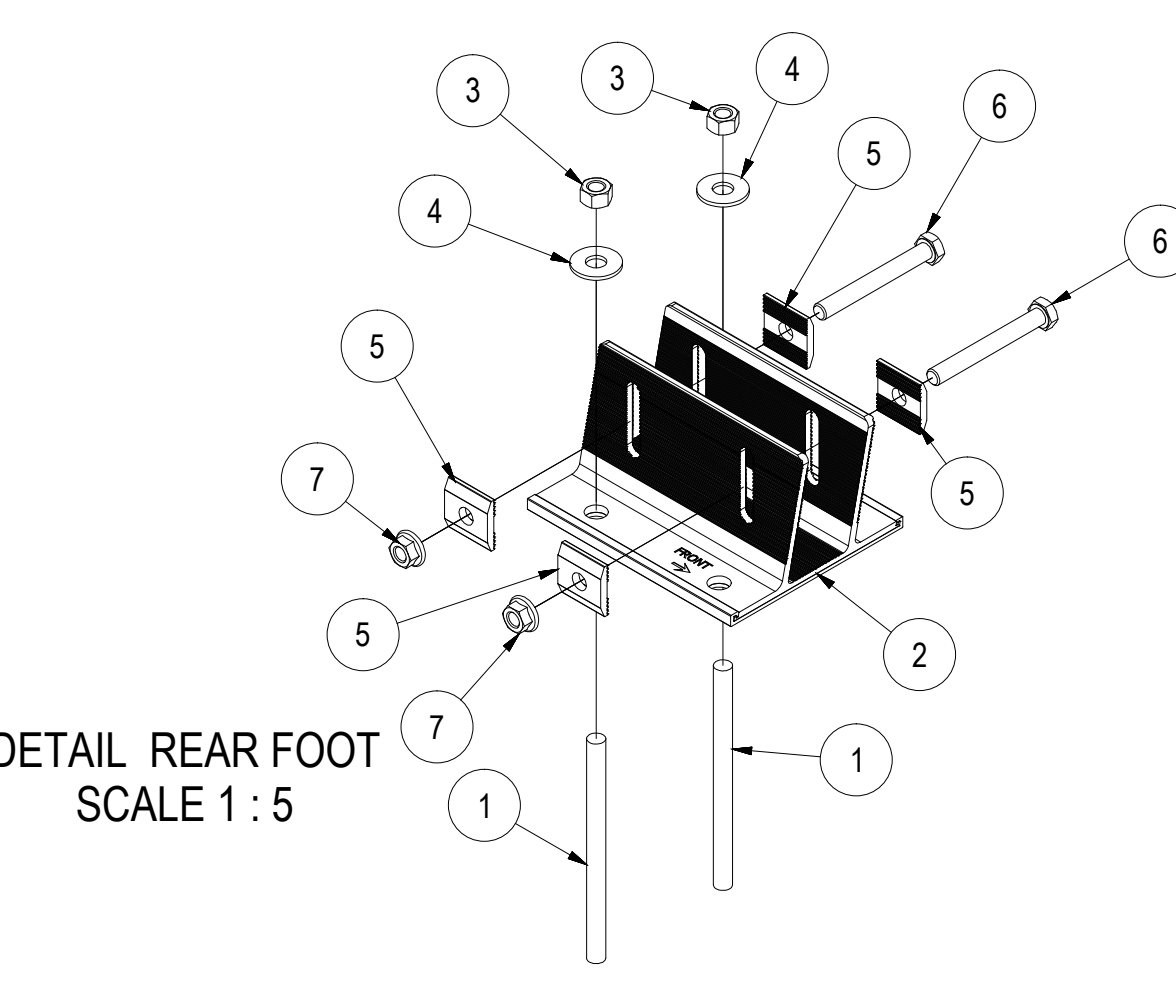
CONCRETE:
1. ALL CONCRETE WORK SHALL CONFORM WITH THE REQUIREMENTS OF ACI 301 AND ACI 318. CEMENT PER ASTM C150, TYPE II. AGGREGATE PER ASTM C33. CONCRETE SHALL BE READY MIXED IN ACCORDANCE WITH ASTM C94 AND SHALL BE DESIGNED FOR A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:
FOUNDATIONS 3,000 PSI*
*DESIGNED FOR 2,500 PSI
2. FIBER REINFORCEMENT USED IN CONCRETE SHALL BE BASF MASTERFIBER MAC 100 OR EQUIVALENT. THE AMOUNT TO BE MIXED IN CONCRETE IS 3LB/CU.YD

REINFORCING:
1. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (Fy=60ksi) DEFORMED BARS. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY.
2. ACCURATELY PLACE OR SUPPORT ALL REINFORCING TO HAVE A CLEAR CONCRETE COVERAGE OF 3"

POST-INSTALLED ANCHORS:
1. ADHESIVE BOLTS OR DOWELS SHALL BE A THREADED ROD OR REINFORCING STEEL INSTALLED WITH THE FOLLOWING APPROVED PRODUCT SATISFYING CRACKED CONCRETE REQUIREMENTS IN ACCORDANCE WITH ACI 318, APPENDIX D.
SIMPSON "AT-XP" IAPMO UES ER - 263
2. THE CONTRACTOR MAY NOT USE SUBSTITUTES FOR ADHESIVE ANCHORS WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
3. FOR MINIMUM EMBEDMENT LENGTH SEE DETAILS. INSTALL ALL BOLTS AS OUTLINED IN MANUFACTURER'S SPECIFICATIONS, UTILIZING PROPER SIZE AND TYPE OF DRILL, CLEANING HOLE, PLACING OF ADHESIVE, INSERTING AND TIGHTENING BOLT.
4. PERIODIC INSPECTION OF POST-INSTALLED ANCHORS IS REQUIRED



PARTS LIST			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	119024-00178	3	Threaded Rod, 1/2in-13 UNC, 304 SS, Grade B8, L=178mm
2	147003-020	2	Base, PvMax3, Univ, 5 Holes, 2 Slots, Pre-Assembly
3	943919-122	3	Nut, 1/2" - 13 UNC, ASME-B18.2.2, 316 SS
4	943929-030	3	Washer, Flat, 1/2", ASME - B18.21.1 A-W, 304 SS
5	147005-000	6	Claw, Base, PvMax3
6	943612-100	3	Screw, Hex Head, M12x100mm, DIN 931, 304 SS
7	943912-012	3	Nut, Flange, Serrated, M12, DIN 6923, 316 SS



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2	BushBr 11/5/2015				Change Ballast Size, Max Dead Load, Add 2015
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4	VasqHu 08/01/2016				Updated Load Tables
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SCHLETTER

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Standard PvMax, 72 Cell, 20° - 30°
Racking Structure
Details and Parts List

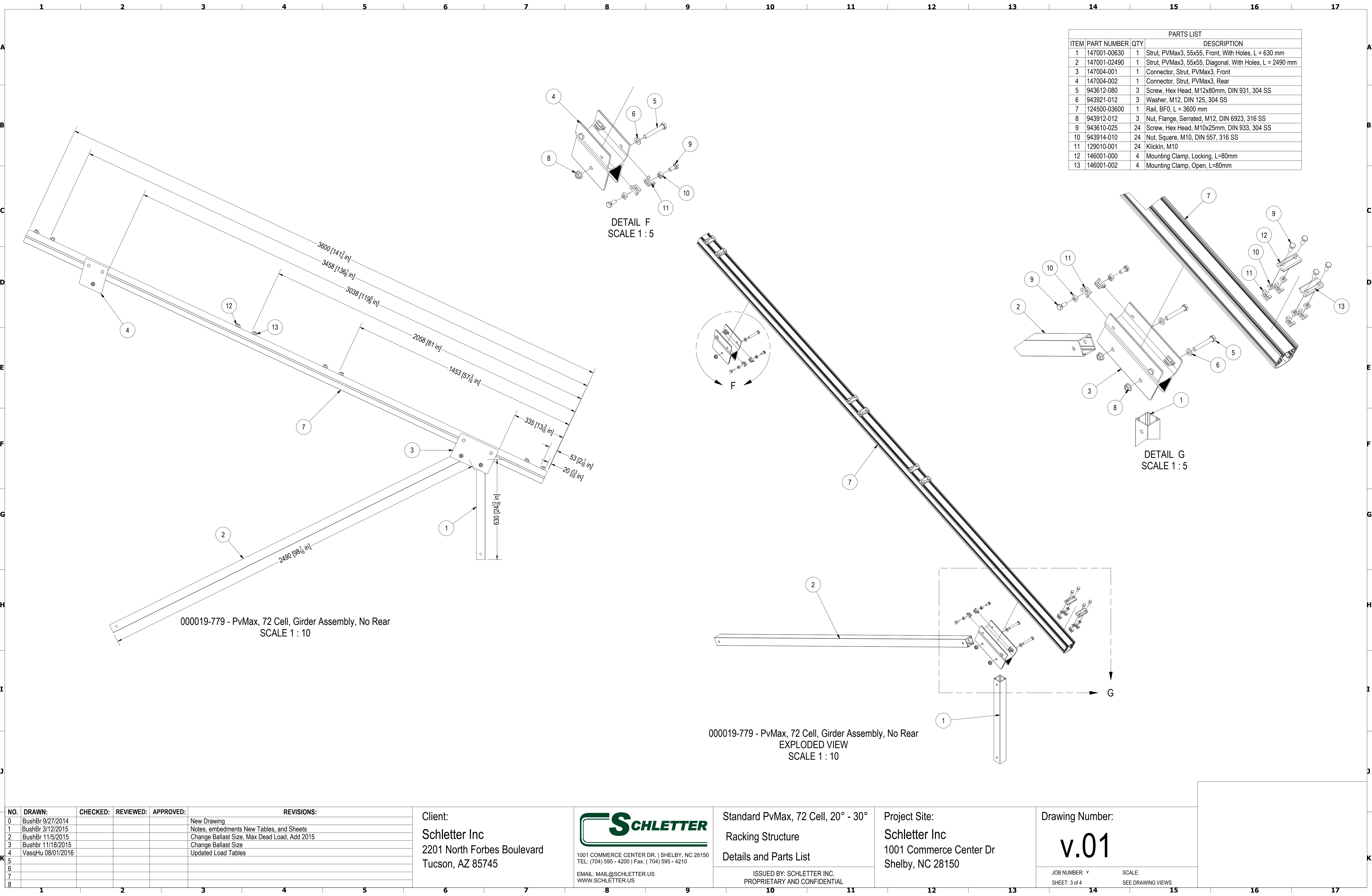
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PROPRIETARY AND CONFIDENTIAL

Project Site:
Schletter Inc
1001 Commerce Center Dr
Shelby, NC 28150

Drawing Number:
v.01

JOB NUMBER: v
SHEET: 2 of 4

SCALE:
SEE DRAWING VIEWS



PARTS LIST			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	147001-00630	1	Strut, PVMax3, 55x55, Front, With Holes, L = 630 mm
2	147001-02490	1	Strut, PVMax3, 55x55, Diagonal, With Holes, L = 2490 mm
3	147004-001	1	Connector, Strut, PVMax3, Front
4	147004-002	1	Connector, Strut, PVMax3, Rear
5	943612-080	3	Screw, Hex Head, M12x80mm, DIN 931, 304 SS
6	943921-012	3	Washer, M12, DIN 125, 304 SS
7	124500-03600	1	Rail, BF0, L = 3600 mm
8	943912-012	3	Nut, Flange, Serrated, M12, DIN 6923, 316 SS
9	943610-025	24	Screw, Hex Head, M10x25mm, DIN 933, 304 SS
10	943914-010	24	Nut, Square, M10, DIN 557, 316 SS
11	129010-001	24	Klicklin, M10
12	146001-000	4	Mounting Clamp, Locking, L=80mm
13	146001-002	4	Mounting Clamp, Open, L=80mm

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Standard PvMax, 72 Cell, 20° - 30°
Racking Structure
Details and Parts List

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PROPRIETARY AND CONFIDENTIAL

Project Site:
Schletter Inc
1001 Commerce Center Dr
Shelby, NC 28150

Drawing Number:

v.01

JOB NUMBER: v
SHEET: 3 of 4

SCALE:
SEE DRAWING VIEWS

Slope Factor By Tilt	
Tilt	Cs
15°	1.00
20°	0.91
25°	0.82
30°	0.73
35°	0.64

ASCE 7-05													
TILT	MAX WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	FRONT CONNECTION			REAR CONNECTION			BALLAST WIDTH	# OF REBAR	
					TENSION	COMPRESSION	SHEAR	TENSION	COMPRESSION	SHEAR			
20°	85 MPH	0 PSF	0.00 PSF	12.50 FT	0.94 KIP	3.24 KIP	0.00 KIP	5.56 KIP	3.99 KIP	2.53 KIP	29 IN	(2) #5	
		10 PSF	6.87 PSF	12.50 FT	0.94 KIP	3.64 KIP	0.01 KIP	5.56 KIP	4.43 KIP	2.53 KIP	29 IN	(2) #5	
		20 PSF	13.75 PSF	11.00 FT	0.82 KIP	3.92 KIP	0.02 KIP	4.87 KIP	4.46 KIP	2.22 KIP	26 IN	(2) #5	
		30 PSF	20.62 PSF	9.25 FT	0.68 KIP	4.23 KIP	0.02 KIP	4.07 KIP	4.74 KIP	1.85 KIP	22 IN	(1) #5	
		40 PSF	27.49 PSF	8.00 FT	0.58 KIP	4.46 KIP	0.02 KIP	3.49 KIP	4.94 KIP	1.58 KIP	19 IN	(1) #5	
		50 PSF	34.36 PSF	7.00 FT	0.50 KIP	4.59 KIP	0.01 KIP	3.02 KIP	5.03 KIP	1.37 KIP	16 IN	(1) #5	
	90 MPH	60 PSF	41.42 PSF	6.25 FT	0.44 KIP	4.70 KIP	0.01 KIP	2.66 KIP	5.10 KIP	1.21 KIP	14 IN	(1) #5	
		0 PSF	0.00 PSF	11.75 FT	1.02 KIP	3.35 KIP	0.00 KIP	5.88 KIP	4.13 KIP	2.66 KIP	31 IN	(2) #5	
		10 PSF	6.87 PSF	11.75 FT	1.02 KIP	3.73 KIP	0.01 KIP	5.88 KIP	4.54 KIP	2.66 KIP	31 IN	(2) #5	
		20 PSF	13.75 PSF	11.00 FT	0.95 KIP	4.06 KIP	0.02 KIP	5.49 KIP	4.64 KIP	2.49 KIP	29 IN	(2) #5	
		30 PSF	20.62 PSF	9.00 FT	0.76 KIP	4.23 KIP	0.02 KIP	4.46 KIP	4.75 KIP	2.02 KIP	24 IN	(2) #5	
		40 PSF	27.49 PSF	7.75 FT	0.65 KIP	4.42 KIP	0.01 KIP	3.80 KIP	4.90 KIP	1.72 KIP	20 IN	(1) #5	
	100 MPH	50 PSF	34.36 PSF	6.75 FT	0.56 KIP	4.51 KIP	0.01 KIP	3.27 KIP	4.94 KIP	1.48 KIP	18 IN	(1) #5	
		60 PSF	41.42 PSF	6.25 FT	0.51 KIP	4.78 KIP	0.01 KIP	3.01 KIP	5.20 KIP	1.35 KIP	16 IN	(1) #5	
		0 PSF	0.00 PSF	10.50 FT	1.17 KIP	3.59 KIP	0.00 KIP	6.52 KIP	4.43 KIP	2.93 KIP	34 IN	(2) #5	
		10 PSF	6.87 PSF	10.00 FT	1.11 KIP	3.73 KIP	0.01 KIP	6.20 KIP	4.55 KIP	2.79 KIP	33 IN	(2) #5	
		20 PSF	13.75 PSF	9.50 FT	1.05 KIP	3.84 KIP	0.01 KIP	5.87 KIP	4.64 KIP	2.64 KIP	31 IN	(2) #5	
		30 PSF	20.62 PSF	8.50 FT	0.93 KIP	4.23 KIP	0.01 KIP	5.22 KIP	4.77 KIP	2.35 KIP	28 IN	(2) #5	
	110 MPH	40 PSF	27.49 PSF	7.50 FT	0.81 KIP	4.48 KIP	0.01 KIP	4.57 KIP	4.99 KIP	2.05 KIP	24 IN	(2) #5	
		50 PSF	34.36 PSF	6.50 FT	0.69 KIP	4.51 KIP	0.01 KIP	3.91 KIP	4.96 KIP	1.75 KIP	21 IN	(1) #5	
		60 PSF	41.42 PSF	6.00 FT	0.64 KIP	4.74 KIP	0.01 KIP	3.58 KIP	5.17 KIP	1.60 KIP	19 IN	(1) #5	
		0 PSF	0.00 PSF	9.00 FT	1.24 KIP	3.62 KIP	0.00 KIP	6.76 KIP	4.47 KIP	3.02 KIP	36 IN	(3) #5	
		10 PSF	6.87 PSF	8.75 FT	1.20 KIP	3.80 KIP	0.01 KIP	6.56 KIP	4.64 KIP	2.93 KIP	35 IN	(2) #5	
		20 PSF	13.75 PSF	8.25 FT	1.13 KIP	3.84 KIP	0.01 KIP	6.16 KIP	4.64 KIP	2.75 KIP	33 IN	(2) #5	
	120 MPH	30 PSF	20.62 PSF	8.00 FT	1.09 KIP	4.22 KIP	0.01 KIP	5.97 KIP	4.78 KIP	2.66 KIP	32 IN	(2) #5	
		40 PSF	27.49 PSF	7.00 FT	0.94 KIP	4.38 KIP	0.01 KIP	5.17 KIP	4.90 KIP	2.30 KIP	27 IN	(2) #5	
		50 PSF	34.36 PSF	6.25 FT	0.83 KIP	4.52 KIP	0.01 KIP	4.56 KIP	4.98 KIP	2.03 KIP	24 IN	(2) #5	
		60 PSF	41.42 PSF	5.75 FT	0.76 KIP	4.71 KIP	0.01 KIP	4.15 KIP	5.14 KIP	1.84 KIP	22 IN	(1) #5	
		0 PSF	0.00 PSF	7.75 FT	1.29 KIP	3.63 KIP	0.00 KIP	6.90 KIP	4.47 KIP	3.06 KIP	37 IN	(3) #5	
		10 PSF	6.87 PSF	7.75 FT	1.29 KIP	3.87 KIP	0.00 KIP	6.90 KIP	4.73 KIP	3.06 KIP	37 IN	(3) #5	
	130 MPH	20 PSF	13.75 PSF	7.50 FT	1.24 KIP	3.98 KIP	0.01 KIP	6.66 KIP	4.82 KIP	2.96 KIP	35 IN	(2) #5	
		30 PSF	20.62 PSF	7.25 FT	1.20 KIP	4.07 KIP	0.01 KIP	6.42 KIP	4.89 KIP	2.85 KIP	34 IN	(2) #5	
		40 PSF	27.49 PSF	6.75 FT	1.11 KIP	4.44 KIP	0.01 KIP	5.94 KIP	4.99 KIP	2.63 KIP	32 IN	(2) #5	
		50 PSF	34.36 PSF	6.00 FT	0.97 KIP	4.52 KIP	0.01 KIP	5.21 KIP	5.01 KIP	2.30 KIP	28 IN	(2) #5	
		60 PSF	41.42 PSF	5.50 FT	0.88 KIP	4.67 KIP	0.01 KIP	4.73 KIP	5.11 KIP	2.08 KIP	25 IN	(2) #5	
		0 PSF	0.00 PSF	6.50 FT	1.27 KIP	3.49 KIP	0.00 KIP	6.71 KIP	4.28 KIP	2.96 KIP	36 IN	(3) #5	
20°	110 MPH	10 PSF	6.87 PSF	6.50 FT	1.27 KIP	3.69 KIP	0.00 KIP	6.71 KIP	4.49 KIP	2.96 KIP	36 IN	(3) #5	
		20 PSF	13.75 PSF	6.50 FT	1.27 KIP	3.89 KIP	0.01 KIP	6.71 KIP	4.71 KIP	2.96 KIP	36 IN	(3) #5	
		30 PSF	20.62 PSF	6.50 FT	1.27 KIP	4.10 KIP	0.01 KIP	6.71 KIP	4.93 KIP	2.96 KIP	36 IN	(3) #5	
		40 PSF	27.49 PSF	6.25 FT	1.22 KIP	4.32 KIP	0.01 KIP	6.43 KIP	4.93 KIP	2.83 KIP	34 IN	(2) #5	
		50 PSF	34.36 PSF	5.75 FT	1.11 KIP	4.53 KIP	0.01 KIP	5.86 KIP	5.03 KIP	2.57 KIP	31 IN	(2) #5	
		60 PSF	41.42 PSF	5.25 FT	1.01 KIP	4.63 KIP	0.01 KIP	5.28 KIP	5.07 KIP	2.31 KIP	29 IN	(2) #5	

ASCE 7-10													
TILT	MAX WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	FRONT CONNECTION			REAR CONNECTION			BALLAST WIDTH	# OF REBAR	
					TENSION	COMPRESSION	SHEAR	TENSION	COMPRESSION	SHEAR			
20°	110 MPH	0 PSF	0.00 PSF	12.25 FT	0.97 KIP	3.30 KIP	0.00 KIP	5.71 KIP	4.06 KIP	2.59 KIP	29 IN	(2) #5	
		10 PSF	6.87 PSF	12.00 FT	0.95 KIP	3.62 KIP	0.01 KIP	5.59 KIP	4.40 KIP	2.54 KIP	28 IN	(2) #5	
		20 PSF	13.75 PSF	11.00 FT	0.87 KIP	3.97 KIP	0.02 KIP	5.11 KIP	4.53 KIP	2.32 KIP	26 IN	(2) #5	
		30 PSF	20.62 PSF	9.25 FT	0.72 KIP	4.28 KIP	0.02 KIP	4.27 KIP	4.80 KIP	1.94 KIP	22 IN	(1) #5	
		40 PSF	27.49 PSF	8.00 FT	0.62 KIP	4.50 KIP	0.02 KIP	3.66 KIP	4.99 KIP	1.66 KIP	19 IN	(1) #5	
		50 PSF	34.36 PSF	7.00 FT	0.53 KIP	4.62 KIP	0.01 KIP	3.17 KIP	5.07 KIP	1.43 KIP	16 IN	(1) #5	
	115 MPH	60 PSF	41.42 PSF	6.25 FT	0.47 KIP	4.73 KIP	0.01 KIP	2.80 KIP	5.14 KIP	1.26 KIP	14 IN	(1) #5	
		0 PSF	0.00 PSF	11.75 FT	1.04 KIP	3.41 KIP	0.00 KIP	6.00 KIP	4.20 KIP	2.72 KIP	30 IN	(2) #5	
		10 PSF	6.87 PSF	11.50 FT	1.02 KIP	3.71 KIP	0.01 KIP	5.87 KIP	4.51 KIP	2.66 KIP	30 IN	(2) #5	
		20 PSF	13.75 PSF	10.75 FT	0.95 KIP	4.00 KIP	0.02 KIP	5.48 KIP	4.58 KIP	2.48 KIP	28 IN	(2) #5	
		30 PSF	20.62 PSF	9.00 FT	0.78 KIP	4.25 KIP	0.02 KIP	4.55 KIP	4.78 KIP	2.06 KIP	23 IN	(1) #5	
		40 PSF	27.49 PSF	7.75 FT	0.67 KIP	4.43 KIP	0.01 KIP	3.88 KIP	4.92 KIP	1.75 KIP	20 IN	(1) #5	
130 MPH	50 PSF	34.36 PSF	6.75 FT	0.57 KIP	4.52 KIP	0.01 KIP	3.34 KIP	4.96 KIP	1.51 KIP	17 IN	(1) #5		
	60 PSF	41.42 PSF	6.25 FT	0.53 KIP	4.80 KIP	0.01 KIP	3.07 KIP	5.22 KIP	1.38 KIP	16 IN	(1) #5		
	0 PSF	0.00 PSF	10.25 FT	1.21 KIP	3.67 KIP	0.00 KIP	6.73 KIP	4.53 KIP	3.02 KIP	34 IN	(2) #5		
	10 PSF	6.87 PSF	9.75 FT	1.15 KIP	3.80 KIP	0.01 KIP	6.39 KIP	4.64 KIP	2.87 KIP	32 IN	(2) #5		
	20 PSF	13.75 PSF	9.25 FT	1.09 KIP	3.89 KIP	0.01 KIP	6.04 KIP	4.71 KIP	2.71 KIP	31 IN	(2) #5		
	30 PSF	20.62 PSF	8.50 FT	0.99 KIP	4.30 KIP	0.01 KIP	5.53 KIP	4.86 KIP	2.48 KIP	28 IN	(2) #5		
140 MPH	40 PSF	27.49 PSF	7.25 FT	0.84 KIP	4.38 KIP	0.01 KIP	4.66 KIP	4.88 KIP	2.09 KIP	24 IN	(2) #5		
	50 PSF	34.36 PSF	6.50 FT	0.74 KIP	4.56 KIP	0.01 KIP	4.14 KIP	5.03 KIP	1.85 KIP	21 IN	(1) #5		
	60 PSF	41.42 PSF	6.00 FT	0.68 KIP	4.79 KIP	0.01 KIP	3.79 KIP	5.23 KIP	1.69 KIP	19 IN	(1) #5		
	0 PSF	0.00 PSF	9.00 FT	1.26 KIP	3.66 KIP	0.00 KIP	6.84 KIP	4.52 KIP	3.06 KIP	35 IN	(2) #5		
	10 PSF	6.87 PSF	8.75 FT	1.22 KIP	3.84 KIP	0.01 KIP	6.64 KIP	4.69 KIP	2.97 KIP	34 IN	(2) #5		
	20 PSF	13.75 PSF	8.25 FT	1.14 KIP	3.87 KIP	0.01 KIP	6.24 KIP	4.89 KIP	2.79 KIP	32 IN	(2) #5		
150 MPH	30 PSF	20.62 PSF	8.00 FT	1.11 KIP	4.24 KIP	0.01 KIP	6.04 KIP	4.81 KIP	2.70 KIP	31 IN	(2) #5		
	40 PSF	27.49 PSF	7.00 FT	0.96 KIP	4.40 KIP	0.01 KIP	5.23 KIP	4.91 KIP	2.33 KIP	27 IN	(2) #5		
	50 PSF	34.36 PSF	6.25 FT	0.85 KIP	4.53 KIP	0.01 KIP	4.62 KIP	5.00 KIP	2.05 KIP	24 IN	(2) #5		
	60 PSF	41.42 PSF	5.75 FT	0.77 KIP	4.72 KIP	0.01 KIP	4.21 KIP	5.16 KIP	1.86 KIP	22 IN	(1) #5		
	0 PSF	0.00 PSF	8.00 FT	1.30 KIP	3.67 KIP	0.00 KIP	6.96 KIP	4.52 KIP	3.10 KIP	35 IN	(2) #5		
	10 PSF	6.87 PSF	8.00 FT	1.30 KIP	3.92 KIP	0.01 KIP	6.96 KIP	4.80 KIP	3.10 KIP	35 IN	(2) #5		
160 MPH	20 PSF	13.75 PSF	7.50 FT	1.21 KIP	3.91 KIP	0.01 KIP	6.50 KIP	4.73 KIP	2.89 KIP	33 IN	(2) #5		
	30 PSF	20.62 PSF	7.25 FT	1.17 KIP	4.02 KIP	0.01 KIP	6.27 KIP	4.81 KIP	2.78 KIP	32 IN	(2) #5		
	40 PSF	27.49 PSF	6.75 FT	1.08 KIP	4.41 KIP	0.01 KIP	5.80 KIP	4.94 KIP	2.57 KIP	30 IN	(2) #5		
	50 PSF	34.36 PSF	6.25 FT	0.99 KIP	4.69 KIP	0.01 KIP	5.33 KIP	5.20 KIP	2.36 KIP	27 IN	(2) #5		
	60 PSF	41.42 PSF	5.50 FT	0.86 KIP	4.64 KIP	0.01 KIP	4.61 KIP	5.07 KIP	2.03 KIP	24 IN	(2) #5		
	0 PSF	0.00 PSF	7.00 FT	1.30 KIP	3.59 KIP	0.00 KIP	6.88 KIP	4.41 KIP	3.05 KIP	35 IN	(2) #5		
20°	160 MPH	10 PSF	6.87 PSF	7.00 FT	1.30 KIP	3.81 KIP	0.00 KIP	6.88 KIP	4.65 KIP	3.05 KIP	35 IN	(2) #5	
		20 PSF	13.75 PSF	7.00 FT	1.30 KIP	4.03 KIP	0.01 KIP	6.88 KIP	4.88 KIP	3.05 KIP	35 IN	(2) #5	
		30 PSF	20.62 PSF	6.75 FT	1.25 KIP	4.09 KIP	0.01 KIP	6.62 KIP	4.92 KIP	2.93 KIP	34 IN	(2) #5	
		40 PSF	27.49 PSF	6.50 FT	1.20 KIP	4.42 KIP	0.01 KIP	6.35 KIP	4.97 KIP	2.80 KIP	32 IN	(2) #5	
		50 PSF	34.36 PSF	6.00 FT	1.10 KIP	4.66 KIP	0.01 KIP	5.81 KIP	5.18 KIP	2.56 KIP	30 IN	(2) #5	
		60 PSF	41.42 PSF	5.50 FT	1.00 KIP	4.80 KIP	0.01 KIP	5.26 KIP	5.26 KIP	2.31 KIP	27 IN	(2) #5	

Slope Factor By Tilt	
Tilt	Cs
15°	1.00
20°	0.91
25°	0.82
30°	0.73
35°	0.64

ASCE 7-05													
TILT	MAX WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	FRONT CONNECTION			REAR CONNECTION			BALLAST WIDTH	# OF REBAR	
					TENSION	COMPRESSION	SHEAR	TENSION	COMPRESSION	SHEAR			
25°	85 MPH	0 PSF	0.00 PSF	12.25 FT	0.47 KIP	2.90 KIP	0.01 KIP	5.82 KIP	4.18 KIP	3.14 KIP	30 IN	(2) #5	
		10 PSF	6.19 PSF	12.25 FT	0.47 KIP	3.24 KIP	0.01 KIP	5.82 KIP	4.54 KIP	3.14 KIP	30 IN	(2) #5	
		20 PSF	12.37 PSF	11.25 FT	0.43 KIP	3.59 KIP	0.02 KIP	5.33 KIP	4.49 KIP	2.88 KIP	28 IN	(2) #5	
		30 PSF	18.56 PSF	9.75 FT	0.37 KIP	3.98 KIP	0.02 KIP	4.60 KIP	4.61 KIP	2.48 KIP	24 IN	(2) #5	
		40 PSF	24.74 PSF	8.75 FT	0.33 KIP	4.35 KIP	0.02 KIP	4.10 KIP	4.93 KIP	2.21 KIP	21 IN	(1) #5	
		50 PSF	30.39 PSF	7.75 FT	0.28 KIP	4.53 KIP	0.02 KIP	3.50 KIP	5.04 KIP	1.94 KIP	19 IN	(1) #5	
	90 MPH	60 PSF	37.11 PSF	7.00 FT	0.25 KIP	4.70 KIP	0.02 KIP	3.23 KIP	5.15 KIP	1.74 KIP	17 IN	(1) #5	
		0 PSF	0.00 PSF	11.50 FT	0.52 KIP	2.99 KIP	0.01 KIP	6.14 KIP	4.33 KIP	3.30 KIP	32 IN	(2) #5	
		10 PSF	6.19 PSF	11.50 FT	0.52 KIP	3.31 KIP	0.01 KIP	6.14 KIP	4.67 KIP	3.30 KIP	32 IN	(2) #5	
		20 PSF	12.37 PSF	11.00 FT	0.50 KIP	3.64 KIP	0.02 KIP	5.87 KIP	4.78 KIP	3.15 KIP	30 IN	(2) #5	
		30 PSF	18.56 PSF	9.75 FT	0.44 KIP	4.09 KIP	0.02 KIP	5.18 KIP	4.79 KIP	2.78 KIP	27 IN	(2) #5	
		40 PSF	24.74 PSF	8.50 FT	0.38 KIP	4.32 KIP	0.02 KIP	4.48 KIP	4.93 KIP	2.41 KIP	23 IN	(1) #5	
	100 MPH	50 PSF	30.39 PSF	7.50 FT	0.33 KIP	4.47 KIP	0.02 KIP	3.92 KIP	5.00 KIP	2.10 KIP	20 IN	(1) #5	
		60 PSF	37.11 PSF	6.75 FT	0.29 KIP	4.60 KIP	0.02 KIP	3.50 KIP	5.06 KIP	1.87 KIP	18 IN	(1) #5	
		0 PSF	0.00 PSF	10.25 FT	0.62 KIP	3.18 KIP	0.00 KIP	6.79 KIP	4.64 KIP	3.63 KIP	35 IN	(2) #5	
		10 PSF	6.19 PSF	10.00 FT	0.61 KIP	3.38 KIP	0.01 KIP	6.62 KIP	4.81 KIP	3.53 KIP	34 IN	(2) #5	
		20 PSF	12.37 PSF	9.50 FT	0.57 KIP	3.47 KIP	0.01 KIP	6.27 KIP	4.84 KIP	3.35 KIP	32 IN	(2) #5	
		30 PSF	18.56 PSF	9.00 FT	0.54 KIP	4.00 KIP	0.02 KIP	5.93 KIP	4.83 KIP	3.16 KIP	31 IN	(2) #5	
	110 MPH	40 PSF	24.74 PSF	8.00 FT	0.48 KIP	4.26 KIP	0.02 KIP	5.23 KIP	4.92 KIP	2.79 KIP	27 IN	(2) #5	
		50 PSF	30.39 PSF	7.25 FT	0.43 KIP	4.49 KIP	0.02 KIP	4.71 KIP	5.09 KIP	2.51 KIP	24 IN	(2) #5	
		60 PSF	37.11 PSF	6.50 FT	0.38 KIP	4.59 KIP	0.02 KIP	4.18 KIP	5.10 KIP	2.22 KIP	22 IN	(1) #5	
		0 PSF	0.00 PSF	8.75 FT	0.67 KIP	3.19 KIP	0.00 KIP	7.00 KIP	4.67 KIP	3.72 KIP	36 IN	(3) #5	
		10 PSF	6.19 PSF	8.75 FT	0.67 KIP	3.43 KIP	0.01 KIP	7.00 KIP	4.92 KIP	3.72 KIP	36 IN	(3) #5	
		20 PSF	12.37 PSF	8.25 FT	0.63 KIP	3.46 KIP	0.01 KIP	6.58 KIP	4.86 KIP	3.49 KIP	34 IN	(2) #5	
	120 MPH	30 PSF	18.56 PSF	8.00 FT	0.61 KIP	3.77 KIP	0.01 KIP	6.37 KIP	4.94 KIP	3.38 KIP	33 IN	(2) #5	
		40 PSF	24.74 PSF	7.75 FT	0.59 KIP	4.34 KIP	0.02 KIP	6.15 KIP	5.08 KIP	3.26 KIP	32 IN	(2) #5	
		50 PSF	30.39 PSF	7.00 FT	0.53 KIP	4.53 KIP	0.02 KIP	5.51 KIP	5.19 KIP	2.92 KIP	29 IN	(2) #5	
		60 PSF	37.11 PSF	6.25 FT	0.47 KIP	4.58 KIP	0.02 KIP	4.87 KIP	5.14 KIP	2.57 KIP	26 IN	(2) #5	
		0 PSF	0.00 PSF	7.50 FT	0.71 KIP	3.17 KIP	0.00 KIP	7.10 KIP	4.65 KIP	3.75 KIP	37 IN	(3) #5	
		10 PSF	6.19 PSF	7.50 FT	0.71 KIP	3.38 KIP	0.01 KIP	7.10 KIP	4.86 KIP	3.75 KIP	37 IN	(3) #5	
	130 MPH	20 PSF	12.37 PSF	7.50 FT	0.71 KIP	3.59 KIP	0.01 KIP	7.10 KIP	5.08 KIP	3.75 KIP	37 IN	(3) #5	
		30 PSF	18.56 PSF	7.25 FT	0.69 KIP	3.67 KIP	0.01 KIP	6.85 KIP	5.10 KIP	3.61 KIP	35 IN	(2) #5	
		40 PSF	24.74 PSF	7.00 FT	0.66 KIP	4.12 KIP	0.01 KIP	6.59 KIP	5.11 KIP	3.48 KIP	34 IN	(2) #5	
		50 PSF	30.39 PSF	6.50 FT	0.61 KIP	4.39 KIP	0.01 KIP	6.08 KIP	5.07 KIP	3.20 KIP	32 IN	(2) #5	
		60 PSF	37.11 PSF	6.00 FT	0.56 KIP	4.56 KIP	0.01 KIP	5.56 KIP	5.17 KIP	2.92 KIP	30 IN	(2) #5	
		0 PSF	0.00 PSF	6.25 FT	0.71 KIP	3.03 KIP	0.00 KIP	6.85 KIP	4.41 KIP	3.60 KIP	36 IN	(3) #5	
25°	110 MPH	10 PSF	6.19 PSF	6.25 FT	0.71 KIP	3.20 KIP	0.00 KIP	6.85 KIP	4.59 KIP	3.60 KIP	36 IN	(3) #5	
		20 PSF	12.37 PSF	6.25 FT	0.71 KIP	3.37 KIP	0.01 KIP	6.85 KIP	4.76 KIP	3.60 KIP	36 IN	(3) #5	
		30 PSF	18.56 PSF	6.25 FT	0.71 KIP	3.54 KIP	0.01 KIP	6.85 KIP	4.94 KIP	3.60 KIP	36 IN	(3) #5	
		40 PSF	24.74 PSF	6.25 FT	0.71 KIP	3.86 KIP	0.01 KIP	6.85 KIP	5.12 KIP	3.60 KIP	36 IN	(3) #5	
		50 PSF	30.39 PSF	6.00 FT	0.68 KIP	4.23 KIP	0.01 KIP	6.55 KIP	5.05 KIP	3.43 KIP	35 IN	(2) #5	
		60 PSF	37.11 PSF	5.75 FT	0.65 KIP	4.55 KIP	0.01 KIP	6.24 KIP	5.20 KIP	3.27 KIP	33 IN	(2) #5	

ASCE 7-10													
TILT	MAX WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	FRONT CONNECTION			REAR CONNECTION			BALLAST WIDTH	# OF REBAR	
					TENSION	COMPRESSION	SHEAR	TENSION	COMPRESSION	SHEAR			
25°	110 MPH	0 PSF	0.00 PSF	12.00 FT	0.49 KIP	2.95 KIP	0.01 KIP	5.98 KIP	4.26 KIP	3.22 KIP	30 IN	(2) #5	
		10 PSF	6.19 PSF	12.00 FT	0.49 KIP	3.28 KIP	0.01 KIP	5.98 KIP	4.61 KIP	3.22 KIP	30 IN	(2) #5	
		20 PSF	12.37 PSF	11.25 FT	0.46 KIP	3.64 KIP	0.02 KIP	5.59 KIP	4.65 KIP	3.01 KIP	28 IN	(2) #5	
		30 PSF	18.56 PSF	9.75 FT	0.39 KIP	4.02 KIP	0.02 KIP	4.82 KIP	4.68 KIP	2.60 KIP	24 IN	(2) #5	
		40 PSF	24.74 PSF	8.75 FT	0.35 KIP	4.38 KIP	0.02 KIP	4.30 KIP	4.99 KIP	2.32 KIP	21 IN	(1) #5	
		50 PSF	30.39 PSF	7.75 FT	0.31 KIP	4.56 KIP	0.02 KIP	3.78 KIP	5.10 KIP	2.03 KIP	19 IN	(1) #5	
	115 MPH	60 PSF	37.11 PSF	7.00 FT	0.27 KIP	4.73 KIP	0.02 KIP	3.39 KIP	5.20 KIP	1.82 KIP	17 IN	(1) #5	
		0 PSF	0.00 PSF	11.50 FT	0.54 KIP	3.04 KIP	0.01 KIP	6.28 KIP	4.41 KIP	3.37 KIP	31 IN	(2) #5	
		10 PSF	6.19 PSF	11.50 FT	0.54 KIP	3.36 KIP	0.01 KIP	6.28 KIP	4.75 KIP	3.37 KIP	31 IN	(2) #5	
		20 PSF	12.37 PSF	10.75 FT	0.50 KIP	3.58 KIP	0.02 KIP	5.85 KIP	4.74 KIP	3.14 KIP	29 IN	(2) #5	
		30 PSF	18.56 PSF	9.75 FT	0.45 KIP	4.11 KIP	0.02 KIP	5.29 KIP	4.82 KIP	2.84 KIP	26 IN	(2) #5	
		40 PSF	24.74 PSF	8.50 FT	0.39 KIP	4.34 KIP	0.02 KIP	4.58 KIP	4.96 KIP	2.46 KIP	23 IN	(1) #5	
130 MPH	50 PSF	30.39 PSF	7.50 FT	0.34 KIP	4.48 KIP	0.02 KIP	4.01 KIP	5.02 KIP	2.15 KIP	20 IN	(1) #5		
	60 PSF	37.11 PSF	6.75 FT	0.30 KIP	4.62 KIP	0.02 KIP	3.57 KIP	5.09 KIP	1.91 KIP	18 IN	(1) #5		
	0 PSF	0.00 PSF	10.00 FT	0.65 KIP	3.25 KIP	0.00 KIP	7.00 KIP	4.75 KIP	3.73 KIP	35 IN	(2) #5		
	10 PSF	6.19 PSF	9.50 FT	0.62 KIP	3.35 KIP	0.01 KIP	6.64 KIP	4.78 KIP	3.54 KIP	33 IN	(2) #5		
	20 PSF	12.37 PSF	9.25 FT	0.60 KIP	3.51 KIP	0.01 KIP	6.45 KIP	4.91 KIP	3.44 KIP	32 IN	(2) #5		
	30 PSF	18.56 PSF	8.75 FT	0.56 KIP	3.95 KIP	0.02 KIP	6.09 KIP	4.89 KIP	3.24 KIP	30 IN	(2) #5		
25°	140 MPH	40 PSF	24.74 PSF	8.00 FT	0.51 KIP	4.32 KIP	0.02 KIP	5.54 KIP	5.01 KIP	2.95 KIP	28 IN	(2) #5	
		50 PSF	30.39 PSF	7.00 FT	0.44 KIP	4.39 KIP	0.02 KIP	4.79 KIP	4.97 KIP	2.55 KIP	24 IN	(2) #5	
		60 PSF	37.11 PSF	6.50 FT	0.41 KIP	4.64 KIP	0.02 KIP	4.42 KIP	5.17 KIP	2.35 KIP	22 IN	(1) #5	
		0 PSF	0.00 PSF	8.75 FT	0.69 KIP	3.22 KIP	0.00 KIP	7.09 KIP	4.72 KIP	3.76 KIP	35 IN	(2) #5	
		10 PSF	6.19 PSF	8.50 FT	0.66 KIP	3.37 KIP	0.01 KIP	6.88 KIP	4.82 KIP	3.65 KIP	34 IN	(2) #5	
		20 PSF	12.37 PSF	8.25 FT	0.64 KIP	3.49 KIP	0.01 KIP	6.66 KIP	4.91 KIP	3.53 KIP	33 IN	(2) #5	
	140 MPH	30 PSF	18.56 PSF	8.00 FT	0.62 KIP	3.79 KIP	0.01 KIP	6.45 KIP	4.98 KIP	3.42 KIP	32 IN	(2) #5	
		40 PSF	24.74 PSF	7.50 FT	0.58 KIP	4.21 KIP	0.02 KIP	6.02 KIP	4.93 KIP	3.19 KIP	30 IN	(2) #5	
		50 PSF	30.39 PSF	6.75 FT	0.52 KIP	4.37 KIP	0.02 KIP	5.37 KIP	5.00 KIP	2.84 KIP	27 IN	(2) #5	
		60 PSF	37.11 PSF	6.25 FT	0.48 KIP	4.59 KIP	0.02 KIP	4.93 KIP	5.15 KIP	2.60 KIP	25 IN	(2) #5	
		0 PSF	0.00 PSF	7.50 FT	0.69 KIP	3.11 KIP	0.00 KIP	6.93 KIP	4.55 KIP	3.66 KIP	34 IN	(2) #5	
		10 PSF	6.19 PSF	7.50 FT	0.69 KIP	3.31 KIP	0.01 KIP	6.93 KIP	4.76 KIP	3.66 KIP	34 IN	(2) #5	
150 MPH	20 PSF	12.37 PSF	7.50 FT	0.69 KIP	3.52 KIP	0.01 KIP	6.93 KIP	4.98 KIP	3.66 KIP	34 IN	(2) #5		
	30 PSF	18.56 PSF	7.25 FT	0.67 KIP	3.60 KIP	0.01 KIP	6.68 KIP	5.00 KIP	3.53 KIP	33 IN	(2) #5		
	40 PSF	24.74 PSF	7.00 FT	0.64 KIP	4.09 KIP	0.01 KIP	6.43 KIP	5.01 KIP	3.40 KIP	32 IN	(2) #5		
	50 PSF	30.39 PSF	6.50 FT	0.59 KIP	4.36 KIP	0.01 KIP	5.93 KIP	5.03 KIP	3.13 KIP	30 IN	(2) #5		
	60 PSF	37.11 PSF	6.00 FT	0.54 KIP	4.54 KIP	0.01 KIP	5.43 KIP	5.13 KIP	2.85 KIP	28 IN	(2) #5		
	0 PSF	0.00 PSF	6.75 FT	0.72 KIP	3.12 KIP	0.00 KIP	7.06 KIP	4.57 KIP	3.71 KIP	35 IN	(2) #5		
160 MPH	10 PSF	6.19 PSF	6.75 FT	0.72 KIP	3.31 KIP	0.00 KIP	7.06 KIP	4.76 KIP	3.71 KIP	35 IN	(2) #5		
	20 PSF	12.37 PSF	6.75 FT	0.72 KIP	3.50 KIP	0.01 KIP	7.06 KIP	4.95 KIP	3.71 KIP	35 IN	(2) #5		
	30 PSF	18.56 PSF	6.75 FT	0.72 KIP	3.68 KIP	0.01 KIP	7.06 KIP	5.14 KIP	3.71 KIP	35 IN	(2) #5		
	40 PSF	24.74 PSF	6.50 FT	0.70 KIP	3.95 KIP	0.01 KIP	6.77 KIP	5.11 KIP	3.56 KIP	34 IN	(2) #5		
	50 PSF	30.39 PSF	6.25 FT	0.67 KIP	4.34 KIP	0.01 KIP	6.48 KIP	5.07 KIP	3.40 KIP	33 IN	(2) #5		
	60 PSF	37.11 PSF	5.75 FT	0.61 KIP	4.48 KIP	0.01 KIP	5.90 KIP	5.10 KIP	3.09 KIP	30 IN	(2) #5		

Slope Factor By Tilt	
Tilt	Cs
15°	1.00
20°	0.91
25°	0.82
30°	0.73
35°	0.64

ASCE 7-05													
TILT	MAX WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	FRONT CONNECTION			REAR CONNECTION			BALLAST WIDTH	# OF REBAR	
					TENSION	COMPRESSION	SHEAR	TENSION	COMPRESSION	SHEAR			
30°	85 MPH	0 PSF	0.00 PSF	12.00 FT	0.09 KIP	2.64 KIP	0.01 KIP	6.17 KIP	4.42 KIP	3.87 KIP	31 IN	(2) #5	
		10 PSF	5.50 PSF	12.00 FT	0.09 KIP	2.92 KIP	0.02 KIP	6.17 KIP	4.71 KIP	3.87 KIP	31 IN	(2) #5	
		20 PSF	11.00 PSF	11.50 FT	0.09 KIP	3.28 KIP	0.02 KIP	5.91 KIP	4.79 KIP	3.70 KIP	30 IN	(2) #5	
		30 PSF	16.49 PSF	10.00 FT	0.07 KIP	3.62 KIP	0.02 KIP	5.11 KIP	4.39 KIP	3.20 KIP	26 IN	(2) #5	
		40 PSF	21.99 PSF	9.25 FT	0.07 KIP	4.06 KIP	0.03 KIP	4.71 KIP	4.73 KIP	2.95 KIP	24 IN	(2) #5	
		50 PSF	27.49 PSF	8.50 FT	0.06 KIP	4.38 KIP	0.03 KIP	4.31 KIP	4.97 KIP	2.70 KIP	22 IN	(1) #5	
	90 MPH	60 PSF	32.99 PSF	7.75 FT	0.05 KIP	4.58 KIP	0.03 KIP	3.90 KIP	5.08 KIP	2.44 KIP	20 IN	(1) #5	
		0 PSF	0.00 PSF	11.25 FT	0.13 KIP	2.71 KIP	0.01 KIP	6.50 KIP	4.58 KIP	4.06 KIP	33 IN	(2) #5	
		10 PSF	5.50 PSF	11.25 FT	0.13 KIP	2.98 KIP	0.01 KIP	6.50 KIP	4.85 KIP	4.06 KIP	33 IN	(2) #5	
		20 PSF	11.00 PSF	10.75 FT	0.12 KIP	3.18 KIP	0.02 KIP	6.20 KIP	4.89 KIP	3.88 KIP	31 IN	(2) #5	
		30 PSF	16.49 PSF	10.00 FT	0.11 KIP	3.73 KIP	0.02 KIP	5.75 KIP	4.78 KIP	3.60 KIP	29 IN	(2) #5	
		40 PSF	21.99 PSF	9.00 FT	0.10 KIP	4.04 KIP	0.02 KIP	5.15 KIP	4.76 KIP	3.22 KIP	26 IN	(2) #5	
	100 MPH	50 PSF	27.49 PSF	8.25 FT	0.09 KIP	4.34 KIP	0.03 KIP	4.70 KIP	4.97 KIP	2.93 KIP	24 IN	(2) #5	
		60 PSF	32.99 PSF	7.50 FT	0.08 KIP	4.51 KIP	0.02 KIP	4.24 KIP	5.05 KIP	2.65 KIP	22 IN	(1) #5	
		0 PSF	0.00 PSF	9.75 FT	0.18 KIP	2.79 KIP	0.00 KIP	6.97 KIP	4.77 KIP	4.33 KIP	35 IN	(2) #5	
		10 PSF	5.50 PSF	9.50 FT	0.18 KIP	2.95 KIP	0.01 KIP	6.78 KIP	4.87 KIP	4.21 KIP	34 IN	(2) #5	
		20 PSF	11.00 PSF	9.25 FT	0.17 KIP	3.09 KIP	0.01 KIP	6.59 KIP	4.96 KIP	4.10 KIP	33 IN	(2) #5	
		30 PSF	16.49 PSF	8.75 FT	0.16 KIP	3.46 KIP	0.02 KIP	6.22 KIP	4.89 KIP	3.86 KIP	32 IN	(2) #5	
	110 MPH	40 PSF	21.99 PSF	8.50 FT	0.16 KIP	4.01 KIP	0.02 KIP	6.03 KIP	4.94 KIP	3.74 KIP	31 IN	(2) #5	
		50 PSF	27.49 PSF	7.75 FT	0.14 KIP	4.25 KIP	0.02 KIP	5.47 KIP	4.97 KIP	3.39 KIP	28 IN	(2) #5	
		60 PSF	32.99 PSF	7.25 FT	0.13 KIP	4.53 KIP	0.02 KIP	5.09 KIP	5.16 KIP	3.15 KIP	26 IN	(2) #5	
		0 PSF	0.00 PSF	8.00 FT	0.21 KIP	2.69 KIP	0.00 KIP	6.88 KIP	4.61 KIP	4.25 KIP	35 IN	(2) #5	
		10 PSF	5.50 PSF	8.00 FT	0.21 KIP	2.88 KIP	0.01 KIP	6.88 KIP	4.80 KIP	4.25 KIP	35 IN	(2) #5	
		20 PSF	11.00 PSF	8.00 FT	0.21 KIP	3.07 KIP	0.01 KIP	6.88 KIP	4.99 KIP	4.25 KIP	35 IN	(2) #5	
	120 MPH	30 PSF	16.49 PSF	7.75 FT	0.21 KIP	3.26 KIP	0.01 KIP	6.65 KIP	5.00 KIP	4.11 KIP	34 IN	(2) #5	
		40 PSF	21.99 PSF	7.50 FT	0.20 KIP	3.73 KIP	0.02 KIP	6.42 KIP	5.01 KIP	3.96 KIP	33 IN	(2) #5	
		50 PSF	27.49 PSF	7.50 FT	0.20 KIP	4.30 KIP	0.02 KIP	6.42 KIP	5.18 KIP	3.96 KIP	33 IN	(2) #5	
		60 PSF	32.99 PSF	6.75 FT	0.18 KIP	4.38 KIP	0.02 KIP	5.72 KIP	5.08 KIP	3.53 KIP	30 IN	(2) #5	
		0 PSF	0.00 PSF	6.75 FT	0.24 KIP	2.63 KIP	0.00 KIP	6.84 KIP	4.51 KIP	4.20 KIP	36 IN	(3) #5	
		10 PSF	5.50 PSF	6.75 FT	0.24 KIP	2.79 KIP	0.00 KIP	6.84 KIP	4.66 KIP	4.20 KIP	36 IN	(3) #5	
	130 MPH	20 PSF	11.00 PSF	6.75 FT	0.24 KIP	2.95 KIP	0.01 KIP	6.84 KIP	4.82 KIP	4.20 KIP	36 IN	(3) #5	
		30 PSF	16.49 PSF	6.75 FT	0.24 KIP	3.11 KIP	0.01 KIP	6.84 KIP	4.98 KIP	4.20 KIP	36 IN	(3) #5	
		40 PSF	21.99 PSF	6.75 FT	0.24 KIP	3.53 KIP	0.01 KIP	6.84 KIP	5.13 KIP	4.20 KIP	36 IN	(3) #5	
		50 PSF	27.49 PSF	6.50 FT	0.23 KIP	3.90 KIP	0.01 KIP	6.56 KIP	5.07 KIP	4.03 KIP	35 IN	(2) #5	
		60 PSF	32.99 PSF	6.50 FT	0.23 KIP	4.39 KIP	0.02 KIP	6.56 KIP	5.22 KIP	4.03 KIP	35 IN	(2) #5	
		0 PSF	0.00 PSF	6.00 FT	0.28 KIP	2.68 KIP	0.00 KIP	7.06 KIP	4.59 KIP	4.32 KIP	38 IN	(3) #5	
30°	85 MPH	10 PSF	5.50 PSF	6.00 FT	0.28 KIP	2.82 KIP	0.00 KIP	7.06 KIP	4.73 KIP	4.32 KIP	38 IN	(3) #5	
		20 PSF	11.00 PSF	6.00 FT	0.28 KIP	2.97 KIP	0.01 KIP	7.06 KIP	4.86 KIP	4.32 KIP	38 IN	(3) #5	
		30 PSF	16.49 PSF	6.00 FT	0.28 KIP	3.11 KIP	0.01 KIP	7.06 KIP	5.00 KIP	4.32 KIP	38 IN	(3) #5	
		40 PSF	21.99 PSF	6.00 FT	0.28 KIP	3.31 KIP	0.01 KIP	7.06 KIP	5.14 KIP	4.32 KIP	38 IN	(3) #5	
		50 PSF	27.49 PSF	6.00 FT	0.28 KIP	3.77 KIP	0.01 KIP	7.06 KIP	5.28 KIP	4.32 KIP	38 IN	(3) #5	
		60 PSF	32.99 PSF	5.75 FT	0.27 KIP	4.04 KIP	0.01 KIP	6.73 KIP	5.16 KIP	4.11 KIP	36 IN	(3) #5	

ASCE 7-10													
TILT	MAX WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	FRONT CONNECTION			REAR CONNECTION			BALLAST WIDTH	# OF REBAR	
					TENSION	COMPRESSION	SHEAR	TENSION	COMPRESSION	SHEAR			
30°	110 MPH	0 PSF	0.00 PSF	11.75 FT	0.11 KIP	2.68 KIP	0.01 KIP	6.33 KIP	4.51 KIP	3.97 KIP	31 IN	(2) #5	
		10 PSF	5.50 PSF	11.75 FT	0.11 KIP	2.96 KIP	0.01 KIP	6.33 KIP	4.79 KIP	3.97 KIP	31 IN	(2) #5	
		20 PSF	11.00 PSF	11.25 FT	0.10 KIP	3.26 KIP	0.02 KIP	6.06 KIP	4.85 KIP	3.79 KIP	29 IN	(2) #5	
		30 PSF	16.49 PSF	10.00 FT	0.09 KIP	3.66 KIP	0.02 KIP	5.36 KIP	4.54 KIP	3.35 KIP	26 IN	(2) #5	
		40 PSF	21.99 PSF	9.00 FT	0.08 KIP	3.99 KIP	0.02 KIP	4.80 KIP	4.66 KIP	3.00 KIP	23 IN	(1) #5	
		50 PSF	27.49 PSF	8.50 FT	0.07 KIP	4.41 KIP	0.03 KIP	4.52 KIP	5.03 KIP	2.83 KIP	22 IN	(1) #5	
	115 MPH	60 PSF	32.99 PSF	7.75 FT	0.06 KIP	4.62 KIP	0.03 KIP	4.09 KIP	5.14 KIP	2.56 KIP	20 IN	(1) #5	
		0 PSF	0.00 PSF	11.25 FT	0.13 KIP	2.75 KIP	0.01 KIP	6.64 KIP	4.66 KIP	4.15 KIP	32 IN	(2) #5	
		10 PSF	5.50 PSF	11.00 FT	0.13 KIP	2.96 KIP	0.01 KIP	6.49 KIP	4.82 KIP	4.05 KIP	31 IN	(2) #5	
		20 PSF	11.00 PSF	10.50 FT	0.12 KIP	3.13 KIP	0.02 KIP	6.18 KIP	4.85 KIP	3.86 KIP	30 IN	(2) #5	
		30 PSF	16.49 PSF	10.00 FT	0.12 KIP	3.75 KIP	0.02 KIP	5.88 KIP	4.85 KIP	3.67 KIP	29 IN	(2) #5	
		40 PSF	21.99 PSF	9.00 FT	0.10 KIP	4.06 KIP	0.02 KIP	5.26 KIP	4.80 KIP	3.28 KIP	26 IN	(2) #5	
130 MPH	50 PSF	27.49 PSF	8.25 FT	0.09 KIP	4.35 KIP	0.03 KIP	4.80 KIP	5.00 KIP	2.99 KIP	24 IN	(2) #5		
	60 PSF	32.99 PSF	7.50 FT	0.08 KIP	4.53 KIP	0.02 KIP	4.33 KIP	5.07 KIP	2.70 KIP	22 IN	(1) #5		
	0 PSF	0.00 PSF	9.25 FT	0.19 KIP	2.77 KIP	0.00 KIP	6.98 KIP	4.75 KIP	4.33 KIP	34 IN	(2) #5		
	10 PSF	5.50 PSF	9.25 FT	0.19 KIP	3.00 KIP	0.01 KIP	6.98 KIP	4.97 KIP	4.33 KIP	34 IN	(2) #5		
	20 PSF	11.00 PSF	8.75 FT	0.18 KIP	3.04 KIP	0.01 KIP	6.58 KIP	4.89 KIP	4.08 KIP	32 IN	(2) #5		
	30 PSF	16.49 PSF	8.50 FT	0.17 KIP	3.42 KIP	0.02 KIP	6.38 KIP	4.95 KIP	3.96 KIP	31 IN	(2) #5		
30°	140 MPH	40 PSF	21.99 PSF	8.25 FT	0.17 KIP	3.95 KIP	0.02 KIP	6.18 KIP	4.99 KIP	3.83 KIP	30 IN	(2) #5	
		50 PSF	27.49 PSF	7.75 FT	0.16 KIP	4.30 KIP	0.02 KIP	5.78 KIP	5.06 KIP	3.58 KIP	29 IN	(2) #5	
		60 PSF	32.99 PSF	7.00 FT	0.14 KIP	4.41 KIP	0.02 KIP	5.18 KIP	5.05 KIP	3.20 KIP	26 IN	(2) #5	
		0 PSF	0.00 PSF	8.00 FT	0.22 KIP	2.72 KIP	0.00 KIP	6.97 KIP	4.66 KIP	4.30 KIP	34 IN	(2) #5	
		10 PSF	5.50 PSF	8.00 FT	0.22 KIP	2.91 KIP	0.01 KIP	6.97 KIP	4.85 KIP	4.30 KIP	34 IN	(2) #5	
		20 PSF	11.00 PSF	8.00 FT	0.22 KIP	3.10 KIP	0.01 KIP	6.97 KIP	5.04 KIP	4.30 KIP	34 IN	(2) #5	
	150 MPH	30 PSF	16.49 PSF	7.75 FT	0.21 KIP	3.27 KIP	0.01 KIP	6.73 KIP	5.06 KIP	4.16 KIP	33 IN	(2) #5	
		40 PSF	21.99 PSF	7.50 FT	0.20 KIP	3.74 KIP	0.02 KIP	6.50 KIP	5.06 KIP	4.01 KIP	32 IN	(2) #5	
		50 PSF	27.49 PSF	7.25 FT	0.20 KIP	4.17 KIP	0.02 KIP	6.27 KIP	5.04 KIP	3.87 KIP	31 IN	(2) #5	
		60 PSF	32.99 PSF	6.75 FT	0.18 KIP	4.39 KIP	0.02 KIP	5.80 KIP	5.10 KIP	3.57 KIP	29 IN	(2) #5	
		0 PSF	0.00 PSF	7.00 FT	0.24 KIP	2.67 KIP	0.00 KIP	6.95 KIP	4.59 KIP	4.27 KIP	35 IN	(2) #5	
		10 PSF	5.50 PSF	7.00 FT	0.24 KIP	2.84 KIP	0.00 KIP	6.95 KIP	4.75 KIP	4.27 KIP	35 IN	(2) #5	
160 MPH	20 PSF	11.00 PSF	7.00 FT	0.24 KIP	3.01 KIP	0.01 KIP	6.95 KIP	4.91 KIP	4.27 KIP	35 IN	(2) #5		
	30 PSF	16.49 PSF	7.00 FT	0.24 KIP	3.17 KIP	0.01 KIP	6.95 KIP	5.08 KIP	4.27 KIP	35 IN	(2) #5		
	40 PSF	21.99 PSF	7.00 FT	0.24 KIP	3.64 KIP	0.01 KIP	6.95 KIP	5.24 KIP	4.27 KIP	35 IN	(2) #5		
	50 PSF	27.49 PSF	6.75 FT	0.23 KIP	4.02 KIP	0.02 KIP	6.68 KIP	5.19 KIP	4.10 KIP	34 IN	(2) #5		
	60 PSF	32.99 PSF	6.50 FT	0.23 KIP	4.36 KIP	0.02 KIP	6.40 KIP	5.14 KIP	3.93 KIP	32 IN	(2) #5		
	0 PSF	0.00 PSF	6.25 FT	0.27 KIP	2.66 KIP	0.00 KIP	6.99 KIP	4.56 KIP	4.28 KIP	36 IN	(3) #5		
160 MPH	10 PSF	5.50 PSF	6.25 FT	0.27 KIP	2.81 KIP	0.00 KIP	6.99 KIP	4.71 KIP	4.28 KIP	36 IN	(3) #5		
	20 PSF	11.00 PSF	6.25 FT	0.27 KIP	2.96 KIP	0.01 KIP	6.99 KIP	4.85 KIP	4.28 KIP	36 IN	(3) #5		
	30 PSF	16.49 PSF	6.25 FT	0.27 KIP	3.11 KIP	0.01 KIP	6.99 KIP	5.00 KIP	4.28 KIP	36 IN	(3) #5		
	40 PSF	21.99 PSF	6.25 FT	0.27 KIP	3.39 KIP	0.01 KIP	6.99 KIP	5.14 KIP	4.28 KIP	36 IN	(3) #5		
	50 PSF	27.49 PSF	6.25 FT	0.27 KIP	3.86 KIP	0.01 KIP	6.99 KIP	5.28 KIP	4.28 KIP	36 IN	(3) #5		
	60 PSF	32.99 PSF	6.00 FT	0.26 KIP	4.16 KIP	0.01 KIP	6.68 KIP	5.18 KIP	4.09 KIP	34 IN	(2) #5		