STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
APPLICATION OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A WIRELESS TELECOMMUNICATIONS FACILITY AT 5151 PARK AVENUE, FAIRFIELD, CONNECTICUT	:	DOCKET NO. 495A
	:	DECEMBER 13, 2022

SUPPLEMENTAL RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO CONNECTICUT SITING COUNCIL D&M PLAN INTERROGATORIES

On November 14, 2022, the Connecticut Siting Council ("Council") issued D&M Plan Interrogatories to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to Docket No. 495A. Below are Cellco's Supplemental Responses Question Nos. 13 and 14.

Question No. 13

The Connecticut State Building Code was updated effective October 1, 2022. Has the facility been designed to the updated code? If not, what changes are necessary to the design of the facility to comply with the updated Code?

Response

A new Structural Analysis ("SA") confirming that the proposed structure will comply with the recently adopted International Building Code effective October 1, 2021, as modified by the 2022 Connecticut Supplement, is in process and will be submitted to the Council as soon as it is available. Cellco respectfully requests an extension of time to submit the revised SA.

<u>Supplemental Response</u>

Attached is a modified set of tower drawings and design calculations for the proposed tower structure developed in accordance with the recently adopted International Building Code effective October 1, 2021 and 2022 Connecticut State Building Code.

<u>Question No. 14</u>

Provide a rigorous cumulative far-field radio frequency analysis for the facility that accounts for Cellco's and AT&T's equipment on the tower, a 6-foot tall person at ground level and the actual antenna patterns for the facility with a cumulative % MPE at or below 100%.

<u>Response</u>

A copy of Cellco's radio frequency analysis in included in <u>Attachment 6</u>. The modified AT&T's radio frequency analysis has been requested and will be provided as soon as it is available. Cellco respectfully requests an extension of time to finalize this response.

<u>Supplemental Response</u>

A copy of AT&T's radio frequency analysis is attached.

<u>CERTIFICATE OF SERVICE</u>

I hereby certify that on the 13th day of December 2022, a copy of the foregoing was sent, via electronic mail, to:

Lucia Chiocchio, Esq.
Kristen Motel, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601
lchiocchio@cuddyfeder.com
kmotel@cuddyfeder.com

Kenneth C. Baldwin

SUMMARY OF SPECIAL INSPECTIONS

NO.	DESCRIPTION OF TYPE OF INSPECTION REQUIRED, LOCATION, REMARKS, ETC	REFERENCED STANDARD	CONTINUOUS / PERIODIC
1).	STEEL CONSTRUCTION		
1.1	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:		
	A). IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360 SECTION A3.3 & APPLICABLE ASTM MATERIAL STANDARDS	PERIODIC
1.2	INSPECTION OF HIGH-STRENGTH BOLTING:		
	A). SNUG-TIGHT JOINTS	AISC 360 SECTION M2.5	PERIODIC
1.3	MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:		
	A). FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	AISC 360 SECTION M5.5	PERIODIC
1.4	MATERIAL VERIFICATION OF WELD FILLER MATERIALS		
	A). IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENT	PERIODIC
1.5	INSPECTION OF WELDING:		
	A). SINGLE-PASS FILLET WELDS ≤5/16"	AWS D1.1	PERIODIC
	B). ALL WELDED CONNECTIONS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN WELDING SOCIETY A.W.S. D1.1.	AWS D1.1	PERIODIC
	C). WELD ELECTRODES SHALL CONFORM TO E70 ELECTRODES OR WIRE.	E-70XX	PERIODIC
	D). CONTINUOUS INSPECTION OF SHOP WELDING IS NOT REQUIRED. VISUAL INSPECTION SHALL BE PERFORMED BEFORE AND AFTER GALVANIZING.	VISUAL INSPECTION PER EOR	PERIODIC
	E). IF A WELD IS IN QUESTION PER THE VISUAL INSPECTION THEN IT SHALL BE TESTED USING AN APPROPRIATE TEST, EX. DIE PENETRATION, OR MAGNETIC PARTICLE, U.T. ETC.	INSPECT AND REPORT	PERIODIC
1.6	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:		
	A). DETAILS SUCH AS BRACING AND STIFFENING.	INSPECT AND REPORT	PERIODIC
	B). MEMBER LOCATIONS.	INSPECT AND REPORT	PERIODIC
	C). APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	INSPECT AND REPORT	PERIODIC
2).	FOUNDATION CONSTRUCTION:		
	A). GEOTECHNICAL ENGINEER OF RECORD MAY SERVE AS THE SPECIAL INSPECTOR FOR THE FOUNDATION CONSTRUCTION.	--	PER 2018 IBC
	B). SHALL VERIFY THE DIAMETER, DEPTH AND QUALITY OF EXCAVATION PRIOR TO THE CONCRETE PLACEMENT.	INSPECT AND REPORT	PERIODIC
	C). SHALL VERIFY THE ON SITE SOILS ARE AS DETERMINED IN THE SOILS REPORT.	INSPECT AND REPORT	PERIODIC
3).	CAST IN PLACE CONCRETE (FOUNDATION):		
	A). REINFORCING CAGE SHALL BE INSPECTED TO ENSURE THAT THE PROPER GEOMETRY, SIZE, LENGTH, QUAINTLY AND GRADE MATERIAL ARE USED.	60 KSI (40 KSI TIES)	INSPECT AND REPORT
	B). ALL CONCRETE SHALL BE AS SPECIFIED BY ACI-318, LATEST EDITION TO ENSURE THE COMPRESSIVE STRENGTH IS ATTAINED AS DESCRIBED IN THE FOUNDATION NOTES.	4000 PSI AT 28 DAYS	INSPECT AND REPORT
	C). CONTINUOUS INSPECTION IS REQUIRED DURING THE CONCRETE PLACEMENT.	--	CONTINUOUS
4).	ANCHOR BOLTS INSTALLED IN CONCRETE:		
	A). PLACEMENT SHALL BE ORIENTED ON PROPER BOLT CIRCLE AS SHOWN ON THE STRUCTURAL PLANS, WITH TOP AND BOTTOM TEMPLATES INSTALLED.	INSPECT AND REPORT	PERIODIC
	B). SHALL BE PLUMB.	INSPECT AND REPORT	PERIODIC
	C). SHALL HAVE A MINIMUM EMBEDMENT (PER PLAN) INTO FOUNDATION	INSPECT AND REPORT	PERIODIC
	D). SHALL BE TIGHTENED TO SNUG TIGHT CONDITION PER AISC STEEL MANUAL OF STEEL CONSTRUCTION.	INSPECT AND REPORT	PERIODIC

FIBERGLASS REINFORCED PLASTIC (FRP) SHAPES:

1. ALL FRP SHAPES AND PLATE SHALL CONFORM TO STRONGWELL EXTREN 500/525 SERIES.
2. APPLY RESIN ADHESIVE TO ALL FRP MATING SURFACES PRIOR TO BOLTING.
3. STRONGWELL FIBREBOLTS AND NUTS OR EQUAL.
4. ALL CUT EDGES AND HOLES SHALL BE SEALED WITH A RESIN COMPATIBLE WITH THE RESIN MATRIX USED IN THE STRUCTURAL SHAPE.
5. THE FABRICATOR AND CONTRACTOR SHALL EXERCISE PRECAUTIONS NECESSARY TO PROTECT THE FIBERGLASS PULTRUDED STRUCTURAL SHAPES FROM ABUSE TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING, AND INSTALLATION.
6. STRUCTURAL SHAPES SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THE DESIGN DRAWINGS.
7. FIBERBOLTS BOLTS AND NUTS SHALL BE TIGHTENED TO AND LOCKED WITH EPOXY AS FOLLOWS:

$\frac{1}{2}$" DIAMETER NUTS	8 FT-LBS TORQUE	$\frac{5}{8}$" DIAMETER NUTS	16 FT-LBS TORQUE
$\frac{3}{4}$" DIAMETER NUTS	24 FT-LBS TORQUE		

FIBERGLASS PANEL NOTES:

FABRICATE PANELS TO FIT PER DIMENSIONS SHOWN IN PLAN.
PANELS TO BE MINIMUM 3/8" THICKNESS.

1. PANELS ARE TO BE FABRICATED IN A CONTIGUOUS LAYUP PER PLANS USING RF TRANSPARENT MATERIALS.
2. ARCHITECT SHALL SPECIFY ANY REQUIRED FINISHES OR TREATMENTS TO ACHIEVE DESIRED APPEARANCE.
3. FABRICATOR SHALL USE A GLASS-RESIN RATIO OF 35% ± 3%: REINFORCEMENT BY WEIGHT.
4. EACH SKIN SHALL BE FABRICATED WITH GENERAL PURPOSE RESIN OR POLYESTER VINYL RESIN WHERE REQUIRED FOR FIRE TREATMENT, CHOPPED STRAND MAT.
5 CORNER FLANGES MAY BE FASTENED WITH $\frac{3}{4}$"Ø NON-METALLIC THREADED ROD AND NUTS: STRONGWELL FIBREBOLT STUDS AND NUTS OR EQUIVALENT. A TORQUE WRENCH MUST BE USED TO TIGHTEN FASTENERS TO A MAXIMUM 16 FT-LBS.
6. FRP PANELS AND SHAPES SHALL BE COATED WITH A FLAT GEL-COAT FINISH TO PROVIDE ULTRAVIOLET PROTECTION.
7. ALL CUT AND DRILLED EDGES SHALL BE COATED WITH RESIN.
8. FABRICATOR AND INSTALLER SHALL TEST FIT ALL PANELS PRIOR TO FINAL ASSEMBLY/INSTALLATION TO ASSURE SQUARENESS AND CORNER FITS.

verizon✓

PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

5151 PARK AVENUE, FAIRFIELD , CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

SHEET INDEX

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY DIMENSIONS, CONDITIONS, AND ELEVATIONS BEFORE STARTING WORK. SEE SPECIAL CONSTRUCTION NOTES THIS PAGE. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
2. THE TYPICAL NOTES AND DETAILS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY DETAILED ELSEWHERE. WHERE NO DETAIL IS SHOWN, THE CONSTRUCTION SHALL BE AS SHOWN FOR OTHER SIMILAR WORK AND AS REQUIRED BY THE BUILDING CODE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH LOCAL CONSTRUCTION SAFETY ORDERS. APPROVAL OF SHOP DRAWINGS BY THE ARCHITECT OR STRUCTURAL ENGINEER SHALL NOT BE CONSTRUED AS ACCEPTING THIS RESPONSIBILITY.
4. ALL STRUCTURAL FRAMING MEMBERS SHALL BE ADEQUATELY SHORED AND BRACED DURING ERECTION AND UNTIL FULL LATERAL AND VERTICAL SUPPORT IS PROVIDED BY ADJOINING MEMBERS.

CONSTRUCTION NOTES:

1. IF EXISTING CONDITIONS ARE NOT AS INDICATED ON DRAWINGS, THE CONTRACTOR SHALL CONTACT THE STRUCTURAL ENGINEER (GLEN HUNT) AT ISE INCORPORATED; FOR IN FIELD ADJUSTMENT(S), PRIOR TO PROCEEDING WITH ANY CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY AND/OR FIELD LOCATE ALL ITEMS LABELED AS FIELD VERIFY OR FIELD LOCATE.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL CODE CHECKS BASED ON THE AISC, 15TH EDITION PER THE ASCE 7 STANDARD.
2. VERIFY ALL STEEL MATERIAL GRADES WITH STRUCTURAL DESIGN REPORT.
3. WIDE FLANGE BEAMS (W BEAM): A992 (50 KSI).
4. ALL STEEL PIPE TO BE PER ASTM A53 GR B (35 KSI), U.N.O.
5. ALL STEEL ROUND TUBES (HSS) TO BE PER ASTM A500 GR. B (42 KSI), U.N.O.
6. ALL OTHER STRUCTURAL STEEL SHAPES & PLATES SHALL BE PER ASTM A36 (36 KSI), U.N.O.
7. ALL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL BE ASTM A325, U.N.O.
8. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED TO "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
9. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1.
10. ALL STEEL SURFACES SHALL BE GALVANIZED IN ACCORDANCE WITH THE ASTM A123 AND ASTM A153 STANDARDS, U.N.O.

CODE COMPLIANCE:

2022 Connecticut State Building Code, 2021IBC, ASCE 7-16, TIA-222-H (1)
122 MPH Ultimate Wind Speed
Exposure C, TOPO Category 1, Structure Class II
Ground Elevation 315' AMSL

SNOW: 30 PSF

SOILS: Terracon Consultants Inc,
Geotechnical Engineering Report, #J1225042 Dated 08/10/2022

SEISMIC DESIGN CLASS: B

SOIL SITE CLASS: D

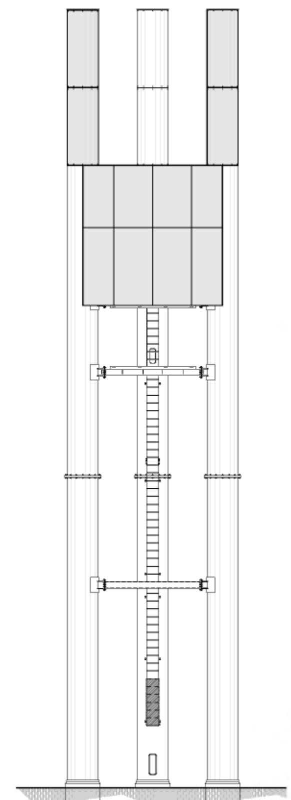
S_s=0.211, S_l = 0.065, S_{DS} = 0.169, S_{D1} = 0.074, C_S = 0.056

CONNECTIONS

PROCEDURE FOR MAKING STRUCTURAL EPOXY JOINTS

ADHESIVE: WELD-ON 45 OR 3M 540
PER MANUFACTURE SPECIFICATIONS & RECOMMENDATIONS.

SURFACE PREPARATION
1) SAND MATING SURFACES WITH 80 GRIT SANDPAPER UNTIL THE SURFACE GLOSS HAS BEEN
REMOVED. THE SURFACING VEIL MUST BE GROUND OFF TO EXPOSE THE GLASS
REINFORCEMENT. SAND BLASTING EQUIPMENT CAN ALSO BE USED.
2) REMOVE ALL DUST WITH A CLEAN CLOTH; AIR BLASTING EQUIPMENT MAY ALSO BE USED.
AVOID RECONTAMINATION OF THE SURFACE FROM HANDLING. MIXING OF EPOXY MIX EQUAL
VOLUME PORTIONS OF THE BASE AND HARDENER IN A SMALL WAX COATED PAPER CUP WITH
A CLEAN STICK UNTIL A UNIFORM GRAY COLOR IS ATTAINED AND ALL MARBLED APPEARANCE IS
GONE.
NOTE:
OTHER ADHESIVE SYSTEMS COMPATIBLE WITH FIBERGLASS CAN BE UTILIZED AND THE
MANUFACTURER'S MIXING INSTRUCTIONS FOR THESE SYSTEMS SHOULD BE FOLLOWED.
APPLICATION AND CURE
1) APPLY THE MIXED EPOXY UNIFORMLY TO ALL SURFACES TO BE JOINED. A THIN APPLICATION IS
OFTEN MORE BENEFICIAL THAN A THICK APPLICATION.
2) AVOID INTRODUCING MOISTURE INTO THE JOINT.
3) JOIN THE SURFACES TO BE BONDED. THE POT LIFE AT 77°F FOR A 3 OZ. MIXTURE OF EQUAL
VOLUMES OF BASE AND HARDENER IS 2.5 HOURS.
4) SECURE THE JOINT WITH CLAMPS (OR RIVETS OR BOLTS) AND ALLOW 24 HOURS FOR A FULL CURE.
THE ASSEMBLY CAN OFTEN BE HANDLED WITH REASONABLE CARE IN LESS THAN 8 HOURS.
THE STRUCTURE SHOULD NOT BE REQUIRED TO SUPPORT ITS DESIGN LOAD UNTIL AT LEAST 48 HOURS
(AT 70°F) AFTER BONDING. LOWER TEMPERATURES REQUIRE A LONGER CURE.
5) AFTER SECURING THE JOINT, WIPE AWAY EXCESS EPOXY.



Alan Signature — Digitally signed by Alan Signature Date: 2022.12.12 10:13:27 -07'00'

verizon✓

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com

LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50039
Phoenix, Arizona 85076
PHONE: 602-403-8614
www.ise-inc.biz

ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT
GENERAL NOTES
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

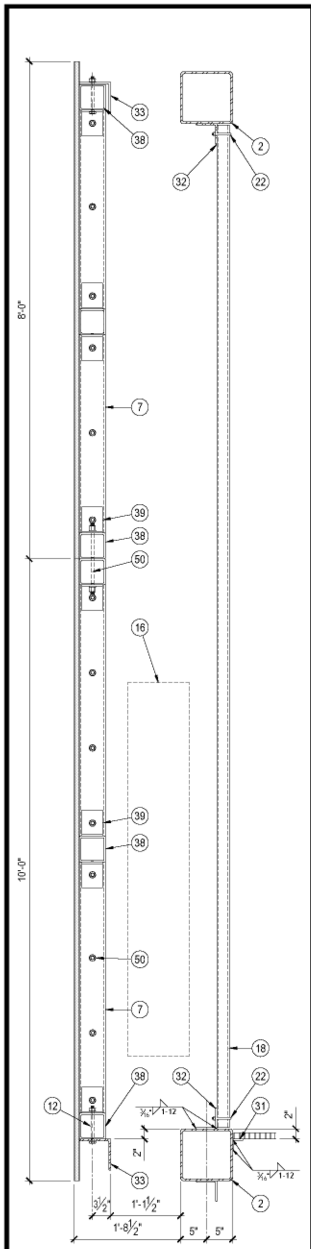
STATE OF CONNECTICUT ★ ALAN E. MONEY ★ No. PEN 0031439 LICENSED PROFESSIONAL ENGINEER
DEC 12, 2022

PROGRESS LOG

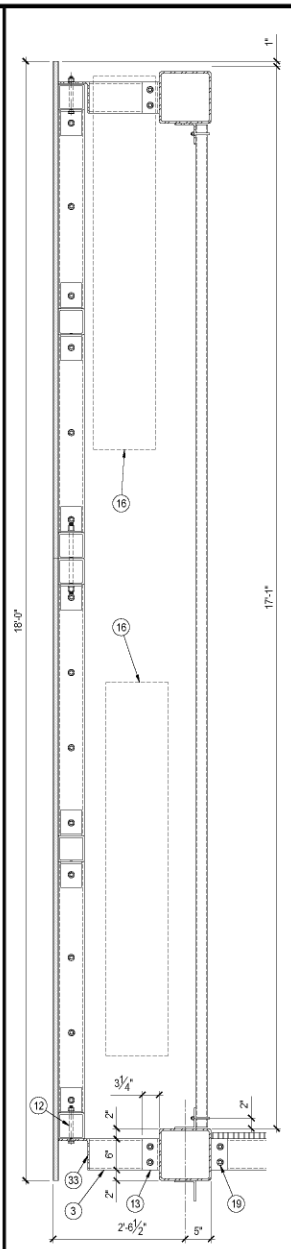
1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
GSN	1

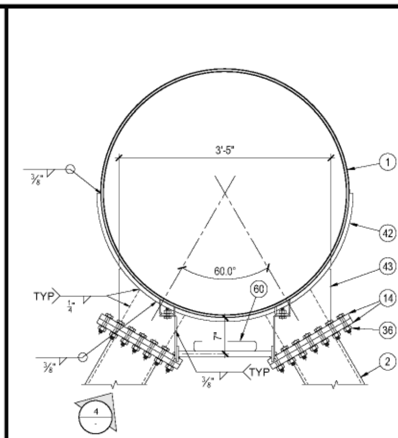
DRAWING DATE
December 12, 2022



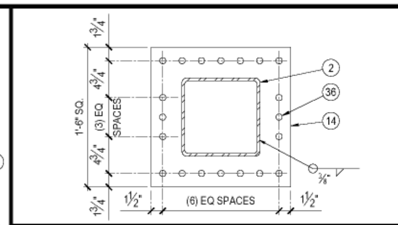
3 TOWER WALL SECTION



2 TOWER WALL SECTION

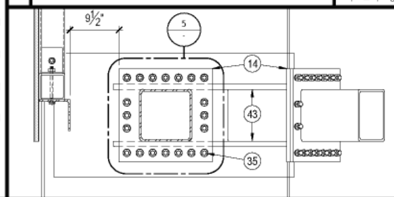


6 TOWER SECTION



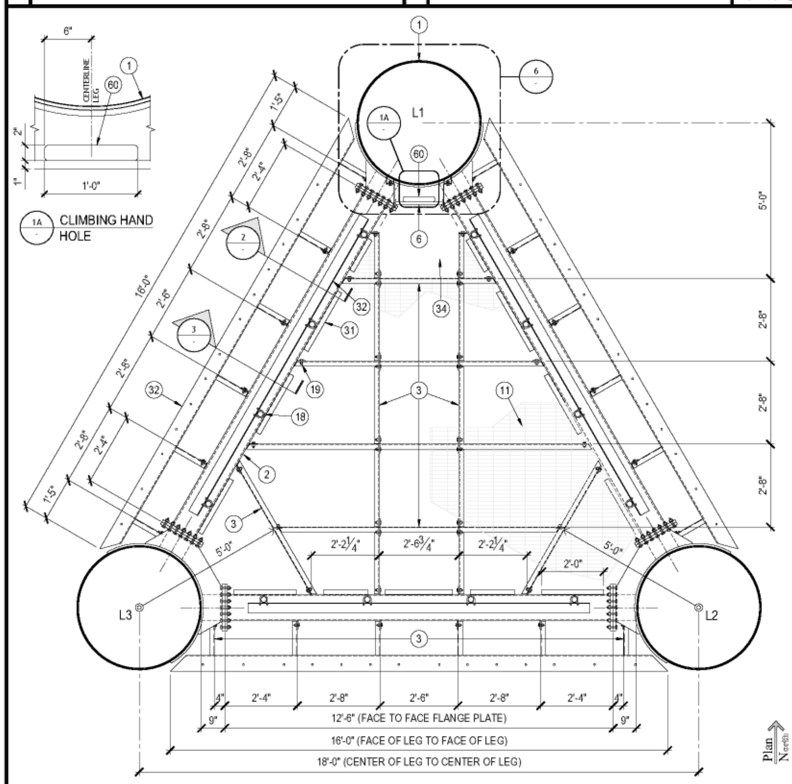
5 HSS MATING/FLANGE PLATE

SCALE: 1" = 1'-0"



4 HSS BEAM TO LEG CONNECTION

SCALE: 1" = 1'-0"



1 62' AFG PLATFORM FRAMING

SCALE: 3/16" = 1'-0"

KEY NOTES

46	CONTINUOUS TONGUE EDGE
47	3" GROVE TAB @ 12" O.C.
48	1 1/16" HOLES, FIELD DRILL
49	1/4" FRP SKIN
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL
51	1 1/16" HOLES
52	HSS 2x2x3/16"
53	3/8" GRADE B BOLTS
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0
56	LEG MATING PLATE, SEE SCHEDULE
57	BOLT PER SCHEDULE - SHEET S4.0
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0
60	CLIMBING HAND HOLE AT LEG L1
61	3/8" x 3" PLATE
62	1/4"x 3" BENT PLATE
63	1"Ø A36 ROD w/ NON SKID FINISH
64	1/4" HOLE, FIELD DRILL
65	7/16"Ø HOLE
66	BULKHEAD RADIUS PLATE
67	BOLKHEAD ARM ASSEMBLY
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR
69	(3) #3 TIES IN TOP 3"
70	BASE PLATE, SEE SCHEDULE SHEET S4.0
71	ANCHOR BOLT TEMPLATE SCHEDULE
72	NOT USED
73	(2) #5 TOP AND BOTTOM
74	#4 TIES @ 12" O.C.
75	#4 TIES @ 6" O.C.
76	#4 TIES @ 3" O.C.
77	(5) #4 TIES @ 1 3/4" O.C. MAX
78	(16) #8 VERTICAL
79	(2) #5 8"(x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM
80	CONCRETE PIER F'c - 4000 PSI
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT
82	CONDUIT BY OTHERS
83	#4 @ 12" O.C. EACH WAY
84	#4 TOP AND BOTTOM
85	6" CONCRETE SLAB
86	4" ABC FILL
87	LADDER STAND-OFF
88	LADDER STAND-OFF MOUNT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL
90	50"Ø x 3/8" FRP CAP PLATE
91	

MARK	DESCRIPTION
1	48"Ø x 1/2" LEG
2	HSS 10x10x 3/8" A500 GR B
3	C6x11.5
4	1" LEG CAP PLATE
5	FLANGED JOINT
6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
8	48"Ø x 1/4" FRP CANISTER
9	6 5/8"Ø SCHED 40 MAST
10	3/8" PLATE GUSSETS
11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
13	3/8"Ø A36 TAB
14	1" A572-50 FLANGE PLATE
15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
16	ANTENNA BY OTHERS
17	RRU BY OTHERS
18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
20	CONCRETE GRADE BEAM F'C - 4000 PSI
21	3/8" A36 PLATE
22	3/8"Ø U-BOLT BOLT
23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
25	NOT USED
26	11/16" Ø HOLE
27	1" HONEYCOMB FRP PANEL
28	MAST FLANGE PLATE, SEE SCHEDULE.
29	VALMONT FRP 5"x 5/16" TUBE FRAMING
30	FRP SHEATHING/PANEL SEAM
31	∠2x2x3/16"
32	∠4x4x1/4"
33	∠6x6x3/8"
34	PLATFORM ACCESS
35	3/4"Ø A325 BOLT
36	13/16" Ø HOLE
37	FIELD DRILL TO MATCH FRAMING
38	VALMONT FRP 5X5X5/16" TUBE
39	VALMONT FRP ∠5X5X5/16"
40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
41	FLANGED LEG SPLICE, SEE SCHEDULE
42	3/4" PLATE LEG WALL REINFORCEMENT
43	1" A500 GRADE B GUSSET PLATE
44	3/16" A36 PLATE FLANLGE
45	LEG CAP PLATE, SEE SCHEDULE

verizon✓

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com

LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50839
Phoenix, Arizona 85076

ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

62' AFG PLATFORM FRAMING PLAN & DETAILS

5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE N41° 13' 08.19" LONGITUDE W73° 14' 41.12"

STATE OF CONNECTICUT, ALAN E. MINEY, No. PEN 0031128, LICENSED PROFESSIONAL ENGINEER

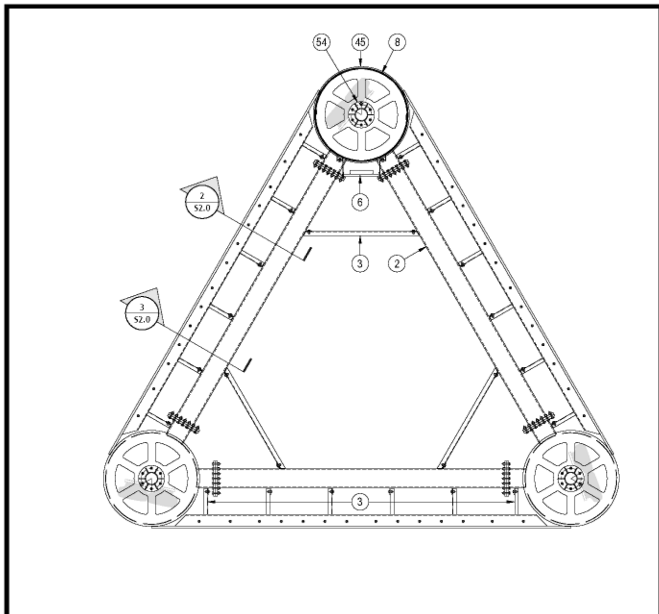
PROGRESS LOG

1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

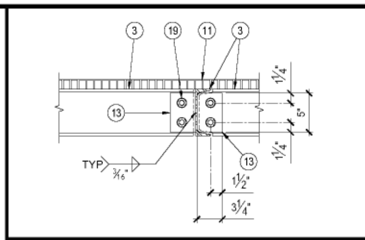
SHEET NUMBER: S2.0

PROGRESS: 1

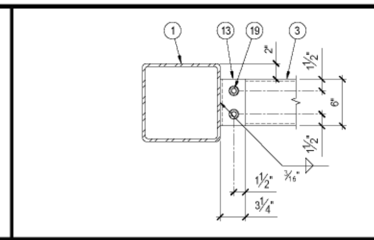
DRAWING DATE: December 12, 2022



3 80' AFG FRAMING

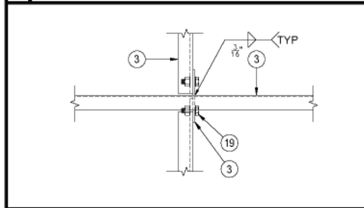


7 CHANNEL INTERSECTION - SECTION VIEW

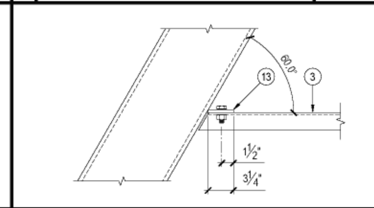


6 CHANNEL TO HSS SECTION

SCALE: 1½" = 1'–0"

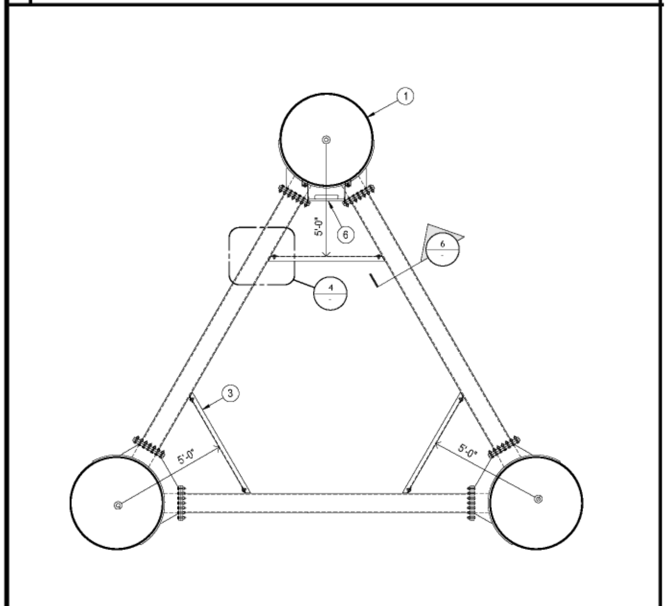


5 CHANNEL INTERSECTION - PLAN VIEW

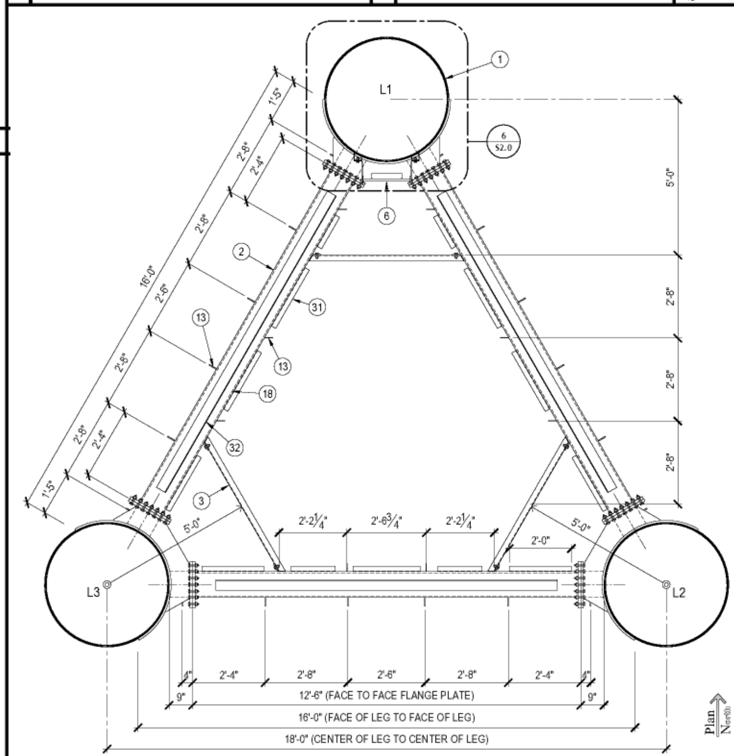


4 CHANNEL TO HSS BEAM - PLAN VIEW

SCALE: 1½" = 1'–0"



2 26'-6" AFG FRAMING



1 53' AFG FRAMING

SCALE: 3/16" = 1'–0"

KEY NOTES

46	CONTINUOUS TONGUE EDGE
47	3" GROVE TAB @ 12" O.C.
48	1 1/16" HOLES, FIELD DRILL
49	1/4" FRP SKIN
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL
51	1 1/16" HOLES
52	HSS 2x2x3/16"
53	3/8" GRADE B BOLTS
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0
56	LEG MATING PLATE, SEE SCHEDULE
57	BOLT PER SCHEDULE - SHEET S4.0
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0
60	CLIMBING HAND HOLE AT LEG L1
61	3/8" x 3" PLATE
62	1/4"x 3" BENT PLATE
63	1"Ø A36 ROD w/ NON SKID FINISH
64	1/4" HOLE, FIELD DRILL
65	7/16"Ø HOLE
66	BULKHEAD RADIUS PLATE
67	BOLKHEAD ARM ASSEMBLY
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR
69	(3) #3 TIES IN TOP 3"
70	BASE PLATE, SEE SCHEDULE SHEET S4.0
71	ANCHOR BOLT TEMPLATE SCHEDULE
72	NOT USED
73	(2) #5 TOP AND BOTTOM
74	#4 TIES @ 12" O.C.
75	#4 TIES @ 6" O.C.
76	#4 TIES @ 3" O.C.
77	(5) #4 TIES @ 1 3/4" O.C. MAX
78	(16) #8 VERTICAL
79	(2) #5 8"⌈ x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM
80	CONCRETE PIER F'c - 4000 PSI
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT
82	CONDUIT BY OTHERS
83	#4 @ 12" O.C. EACH WAY
84	#4 TOP AND BOTTOM
85	6" CONCRETE SLAB
86	4" ABC FILL
87	LADDER STAND-OFF
88	LADDER STAND-OFF MOUNT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL
90	50"Ø x 3/8" FRP CAP PLATE
91	

MARK	DESCRIPTION
1	48"Ø x 1/2" LEG
2	HSS 10x10x 3/8" A500 GR B
3	C6x11.5
4	1" LEG CAP PLATE
5	FLANGED JOINT
6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
8	48"Ø x 1/4" FRP CANISTER
9	6 5/8"Ø SCHED 40 MAST
10	3/8" PLATE GUSSETS
11	MCNICHOLS 'GW 125' 1 1/4"X 3/16" BAR GRATE
12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
13	3/8"Ø A36 TAB
14	1" A572-50 FLANGE PLATE
15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
16	ANTENNA BY OTHERS
17	RRU BY OTHERS
18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
20	CONCRETE GRADE BEAM F'C - 4000 PSI
21	3/8" A36 PLATE
22	3/8"Ø U-BOLT BOLT
23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
25	NOT USED
26	1 1/16" Ø HOLE
27	1" HONEYCOMB FRP PANEL
28	MAST FLANGE PLATE, SEE SCHEDULE.
29	VALMONT FRP 5"x 5/16" TUBE FRAMING
30	FRP SHEATHING/PANEL SEAM
31	∠2x2x3/16"
32	∠4x4x1/4"
33	∠6x6x3/8"
34	PLATFORM ACCESS
35	3/4"Ø A325 BOLT
36	13/16" Ø HOLE
37	FIELD DRILL TO MATCH FRAMING
38	VALMONT FRP 5X5X 5/16" TUBE
39	VALMONT FRP ∠5X5X 5/16"
40	DOUBLE VALMONT FRP ∠5X5X 5/16" STRONG BACK
41	FLANGED LEG SPLICE, SEE SCHEDULE
42	3/4" PLATE LEG WALL REINFORCEMENT
43	1" A500 GRADE B GUSSET PLATE
44	3/16" A36 PLATE FLANLGE
45	LEG CAP PLATE, SEE SCHEDULE

verizon✓

LARSON

A valmont COMPANY

1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com

LARSON JOB #: 553278

ISE Incorporated
Structural Engineers

P.O. BOX 50039
Phoenix, Arizona 85076
PHONE: 602-438-6414
www.ise-inc.biz

ISE JOB #: 18054

PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

26'-6" AFG, 53' AFG & 80' AFG FFRAMING PLANS

5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

STATE OF CONNECTICUT
ALAN E. MONEY
No. PEN 0031133
LICENSED
PROFESSIONAL ENGINEER

PROGRESS LOG

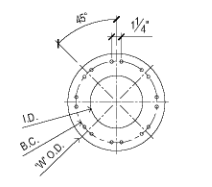
1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S3.0	1

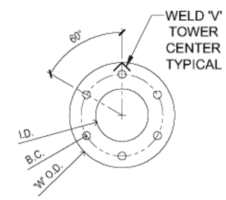
DRAWING DATE
December 12, 2022

BASE/FLANGE/MATING/TEMPLATE PLATES

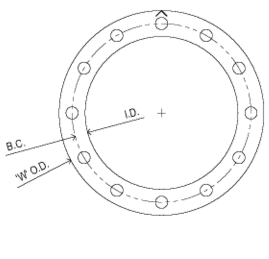
LOCATION	(t) THICKNESS	PLATE GRADE	BOLT HOLE	(#) BOLT Ø (GRADE)	W/OD (A36 PL)	B.C.	I.D.
(LEG) BASE PLATE	3"	A572-60 GR 60	2 5/8" Ø	(12) 2 1/4" Ø x 84" A615-75 (75 KSI)	50" Ø	34.5" Ø	24" Ø
A.B. TEMPLATE (12) BOLT LEG (BOTTOM)	1/2"	A572-50 GR 50	2 3/8" Ø	(12) 2 1/4" Ø x 84" A615-75 (75 KSI)	39.5" Ø	34.5" Ø	29.5" Ø
LEG FLANGE AND MATING PLATES	2"	A572-50 GR 50	1 1/16"	(32) 1" Ø (A325)	56" Ø	52"	48 1/8"
LEG CAP PLATE	2 1/2"	A572-50 GR 50	9/16" Ø	(6) 1/2" Ø (A325)	49.5" Ø	10.5" Ø	6 3/4" Ø
MAST BASE PLATE	1"	A572-50 GR 50	11/16"Ø	(6) 5/8" Ø (A325)	13.5" Ø	10.5" Ø	6 3/4" Ø
MAST FLANGE PLATE	3/8"	A572-50 GR 50	7/16" Ø	(16) 3/8" Ø (GRADE B)	12.5" Ø	10.5" Ø	6 3/4" Ø



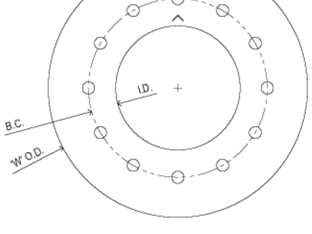
(16) HOLE ROUND MAST FLANGE PLATE



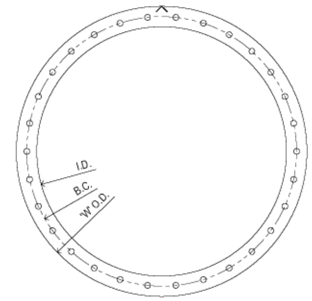
(6) HOLE ROUND MAST BASE PLATE



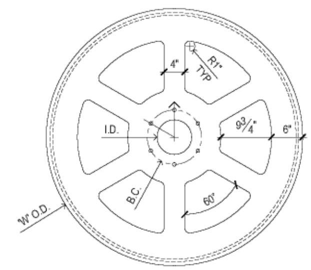
(12) HOLE ANCHOR BOLT TEMPLATE



(12) HOLE ROUND BASE PLATE

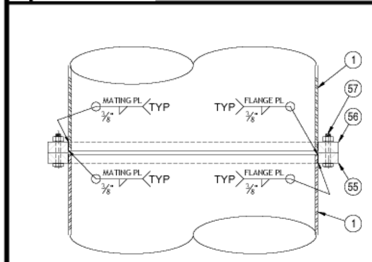


(30) HOLE ROUND FLANGE\MATING PLATE

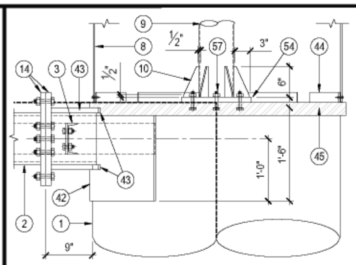


(6) HOLE LEG CAP PLATE w/ CUT OUTS

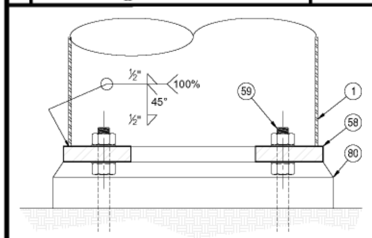
1 BASE PLATE & TEMPLATE SCHEDULE



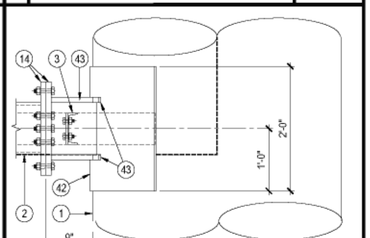
6 LEG SPLICE (43) SCALE: 1" = 1'-0"



4 HSS BEAM AT 80' AFG SCALE: 1" = 1'-0"

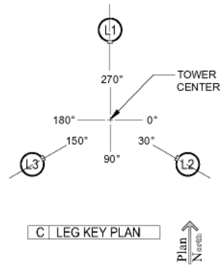


5 LEG - BASE PLATE CONNECTION (58) SCALE: 1" = 1'-0"

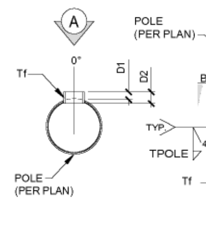


3 HSS BEAM AT 62' AFG SCALE: 1" = 1'-0"

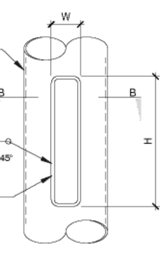
LEG	ELEV AFG	QTY	W (IN)	H (IN)	ORIENTATION (PLAN NORTH)	D1 (IN)	D2 (IN)	TF (IN)
L1	65'-0" 55'-6" 3'-0"	1 1 1	8 8 8	22 22 22	0° 0° 0°	1 1/2 1 1/2 1 1/2	2 1/4 2 1/4 2 1/4	3/8 3/8 3/8
L2	65'-0" 55'-6" 3'-0"	1 1 1	8 8 8	22 22 22	120° 120° 120°	1 1/2 1 1/2 1 1/2	2 1/4 2 1/4 2 1/4	3/8 3/8 3/8
L3	65'-0" 55'-6" 3'-0"	1 1 1	10 10 10	30 30 30	240° 240° 240°	2 1/2 2 1/2 2 1/2	4 1/2 4 1/2 4 1/2	3/4 3/4 3/4



C LEG KEY PLAN



B SECTION 'B-B'



A ELEVATION

Tf = THICKNESS OF FLANGE
ATP = ABOVE TOP OF PLATE

2 COAX HAND HOLE SCHEDULE

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	11/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x1/4"
79	(2) #5 8"⌈ x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x3/8"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	3/4" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x 3/8" FRP CAP PLATE	44	3/16" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

verizon

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50039
Phoenix, Arizona 85076
ISE JOB #: 18054

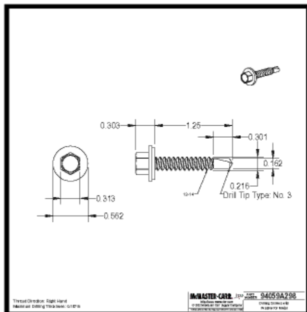
PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT
PLATE AND HAND HOLE SCHEDULES
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE N41° 13' 08.19" LONGITUDE W73° 14' 41.12"

PROGRESS LOG

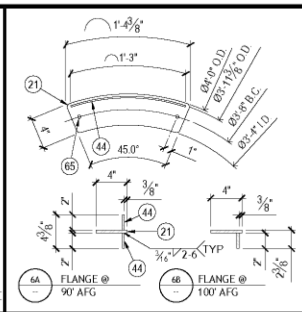
1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S4.0	1

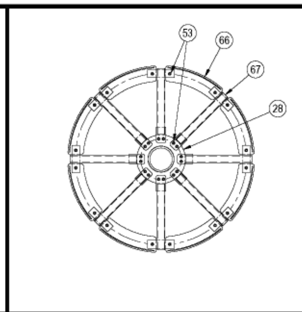
DRAWING DATE
December 12, 2022



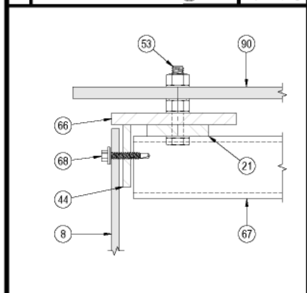
10 SELF DRILLING SCREW (68) SCALE: 1" = 1'-0"



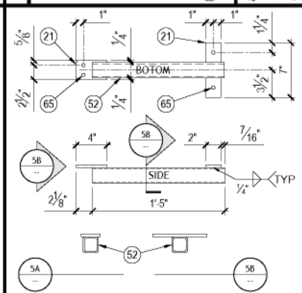
6 BULKHEAD RADIUS PLATE (66) SCALE: 1½" = 1'-0"



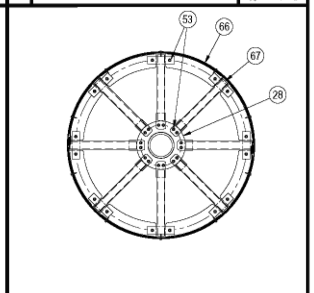
5 BULKHEAD ASSEMBLY SCALE: ¾" = 1'-0"



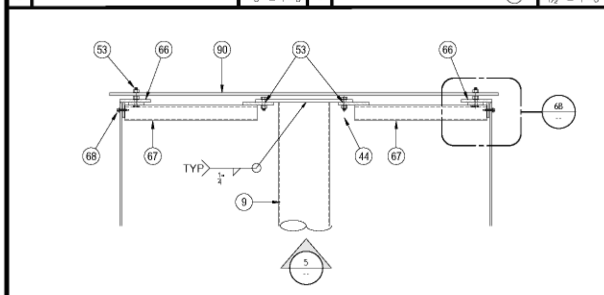
9 FRP CAP PLATE ATTACHMENT SCALE: 6" = 1'-0"



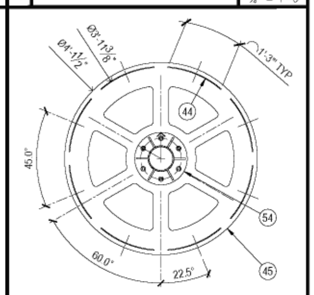
5 BULKHEAD ARM ASSEMBLY (67) SCALE: 1½" = 1'-0"



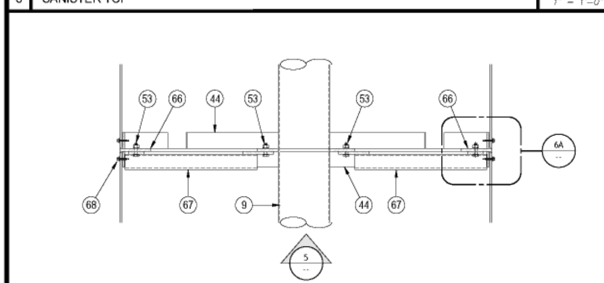
4 ENCLOSED BULKHEAD ASSEMBLY SCALE: ¾" = 1'-0"



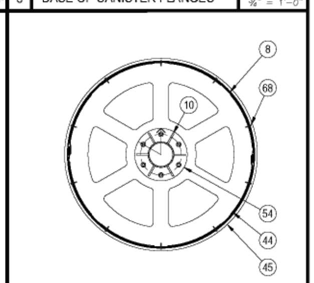
8 CANISTER TOP SCALE: 1" = 1'-0"



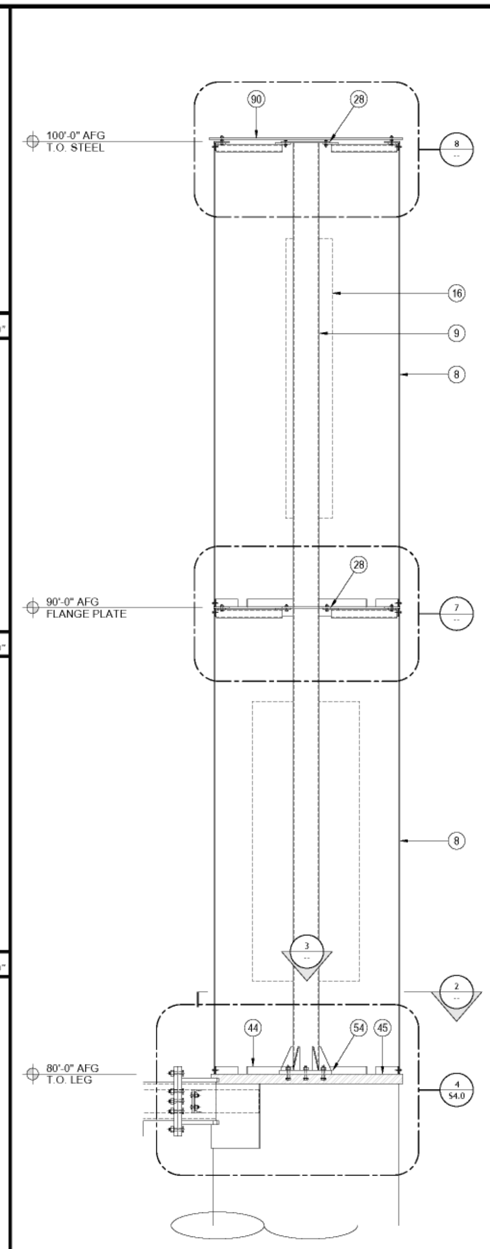
3 BASE OF CANISTER FLANGES SCALE: ¾" = 1'-0"



7 CANISTER MIDDLE FLANGE SCALE: 1" = 1'-0"



2 CANISTER BASE - LEG CAP PLATE SCALE: ¾" = 1'-0"



1 TYPICAL 80' AFG - 100' AFG CANISTER SCALE: ¾" = 1'-0"

KEY NOTES

MARK	DESCRIPTION	MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE	MARK	DESCRIPTION
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 1 1/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 1 1/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	1 1/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x1/4"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x3/8"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	3/4" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x 3/8" FRP CAP PLATE	44	3/16" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

verizon

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50039
Phoenix, Arizona 85076
PHONE: 602-400-6414
www.ise-inc.biz
ISE JOB #: 18054

PLATTSVILLE RELO CT

100 TALL 3 LEG MONUMENT

CANISTER FRAMING

5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

STATE OF CONNECTICUT · ALAN E. MONEY · No. PEN 0031133 · LICENSED PROFESSIONAL ENGINEER

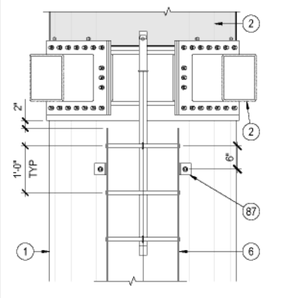
PROGRESS LOG

1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

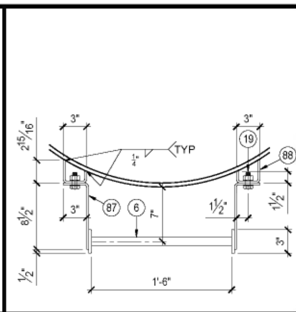
SHEET NUMBER	PROGRESS
S5.0	1

DRAWING DATE
December 12, 2022

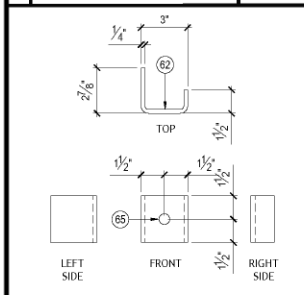
13 NOT USED — SCALE: 1" = 1'-0"



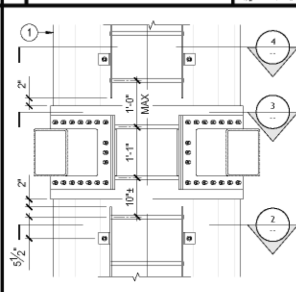
9 TOP OF LADDER — SCALE: 1½" = 1'-0"



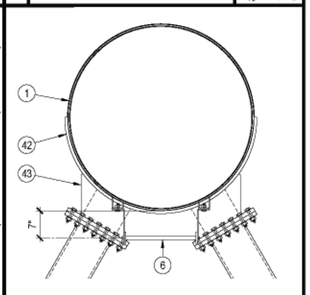
5 LADDER ATTACHEMENT — SCALE: 1½" = 1'-0"



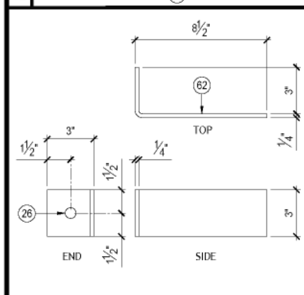
12 LADDER LEG MOUNT (88)



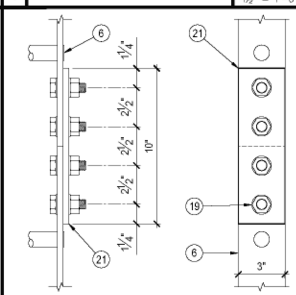
8 LADDER AT HSS BEAMS — SCALE: 1½" = 1'-0"



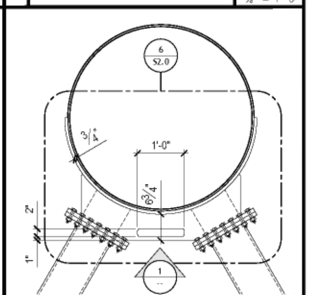
4 CLIMBING LADDER AT GUSSET — SCALE: ¾" = 1'-0"



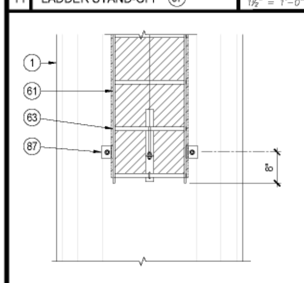
11 LADDER STAND-OFF (87) — SCALE: 1½" = 1'-0"



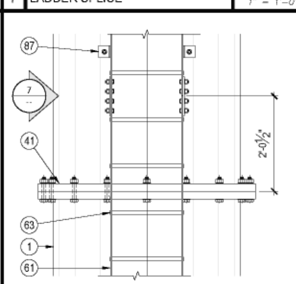
7 LADDER SPLICE — SCALE: 1" = 1'-0"



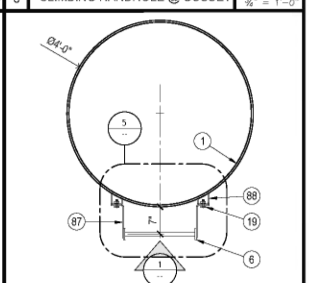
3 CLIMBING HANDHOLE @ GUSSET — SCALE: ¾" = 1'-0"



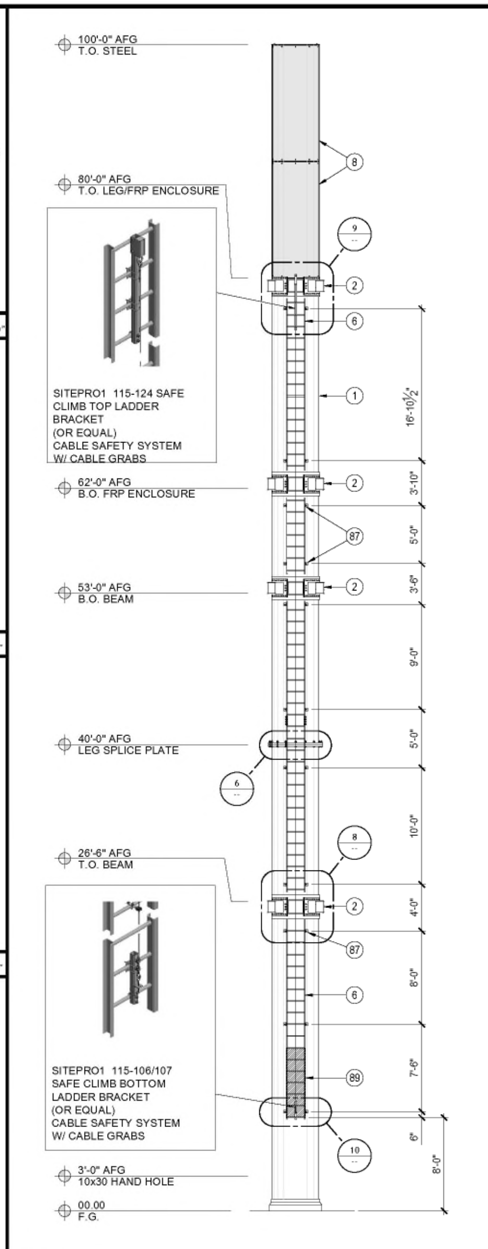
10 BOTTOM OF LADDER



6 LADDER SPLICE AT LEG SPLICE — SCALE: 1" = 1'-0"



2 TYPICAL LADDER STAND — SCALE: ¾" = 1'-0"



1 LADDER — SCALE: ¾" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
(46)	CONTINUOUS TONGUE EDGE	MARK	DESCRIPTION
(47)	3" GROVE TAB @ 12" O.C.	(1)	48"Ø x ½" LEG
(48)	1⅟16" HOLES, FIELD DRILL	(2)	HSS 10x10x ⅜" A500 GR B
(49)	¼" FRP SKIN	(3)	C6x11.5
(50)	⅝"Ø STRONGWELL FIBREBOLT OR EQUAL	(4)	1" LEG CAP PLATE
(51)	1⅟16" HOLES	(5)	FLANGED JOINT
(52)	HSS 2x2x3⁄16"	(6)	⅜" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
(53)	⅜" GRADE B BOLTS	(7)	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
(54)	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	(8)	48"Ø x ¼" FRP CANISTER
(55)	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	(9)	6 ⅝"Ø SCHED 40 MAST
(56)	LEG MATING PLATE, SEE SCHEDULE	(10)	⅜" PLATE GUSSETS
(57)	BOLT PER SCHEDULE - SHEET S4.0	(11)	MCNICHOLS 'GW 125' 1¼"X3⁄16" BAR GRATE
(58)	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	(12)	⅝"Ø A307 BOLT IN 1⅟16" Ø HOLE
(59)	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	(13)	⅜"Ø A36 TAB
(60)	CLIMBING HAND HOLE AT LEG L1	(14)	1" A572-50 FLANGE PLATE
(61)	⅜" x 3" PLATE	(15)	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
(62)	¼"x 3" BENT PLATE	(16)	ANTENNA BY OTHERS
(63)	1"Ø A36 ROD w/ NON SKID FINISH	(17)	RRU BY OTHERS
(64)	¼" HOLE, FIELD DRILL	(18)	Ø2.375" O.D. SCH 40 ANTENNA PIPE
(65)	7⁄16"Ø HOLE	(19)	⅝"Ø A325 BOLT IN 1⅟16" Ø HOLE
(66)	BULKHEAD RADIUS PLATE	(20)	CONCRETE GRADE BEAM F'C - 4000 PSI
(67)	BOLKHEAD ARM ASSEMBLY	(21)	⅜" A36 PLATE
(68)	¼" Ø x 1 ¼" SELF DRILLING SCREW BY McMASTER-CARR	(22)	⅜"Ø U-BOLT BOLT
(69)	(3) #3 TIES IN TOP 3"	(23)	⅜"Ø GRADE B BOLT IN 7⁄16" Ø HOLE
(70)	BASE PLATE, SEE SCHEDULE SHEET S4.0	(24)	½"Ø A325 BOLT IN 9⁄16" Ø HOLE
(71)	ANCHOR BOLT TEMPLATE SCHEDULE	(25)	NOT USED
(72)	NOT USED	(26)	1⅟16" Ø HOLE
(73)	(2) #5 TOP AND BOTTOM	(27)	1" HONEYCOMB FRP PANEL
(74)	#4 TIES @ 12" O.C.	(28)	MAST FLANGE PLATE, SEE SCHEDULE.
(75)	#4 TIES @ 6" O.C.	(29)	VALMONT FRP 5"x 5⁄16" TUBE FRAMING
(76)	#4 TIES @ 3" O.C.	(30)	FRP SHEATHING/PANEL SEAM
(77)	(5) #4 TIES @ 1 ¾" O.C. MAX	(31)	∠2x2x3⁄16"
(78)	(16) #8 VERTICAL	(32)	∠4x4x¼"
(79)	(2) #5 8"⌈ x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	(33)	∠6x6x⅜"
(80)	CONCRETE PIER F'c - 4000 PSI	(34)	PLATFORM ACCESS
(81)	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	(35)	¾"Ø A325 BOLT
(82)	CONDUIT BY OTHERS	(36)	13⁄16" Ø HOLE
(83)	#4 @ 12" O.C. EACH WAY	(37)	FIELD DRILL TO MATCH FRAMING
(84)	#4 TOP AND BOTTOM	(38)	VALMONT FRP 5X5X5⁄16" TUBE
(85)	6" CONCRETE SLAB	(39)	VALMONT FRP ∠5X5X5⁄16"
(86)	4" ABC FILL	(40)	DOUBLE VALMONT FRP ∠5X5X5⁄16" STRONG BACK
(87)	LADDER STAND-OFF	(41)	FLANGED LEG SPLICE, SEE SCHEDULE
(88)	LADDER STAND-OFF MOUNT	(42)	¾" PLATE LEG WALL REINFORCEMENT
(89)	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	(43)	1" A500 GRADE B GUSSET PLATE
(90)	50"Ø x ⅜" FRP CAP PLATE	(44)	3⁄16" A36 PLATE FLANLGE
(91)		(45)	LEG CAP PLATE, SEE SCHEDULE

verizon
LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50039
Phoenix, Arizona 85076
ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

LADDER DETAILS

5151 PARK AVENUE, FAIRFIELD , CT 06825
LATITUDE: N41° 13' 08.19"   LONGITUDE: W73° 14' 41.12"

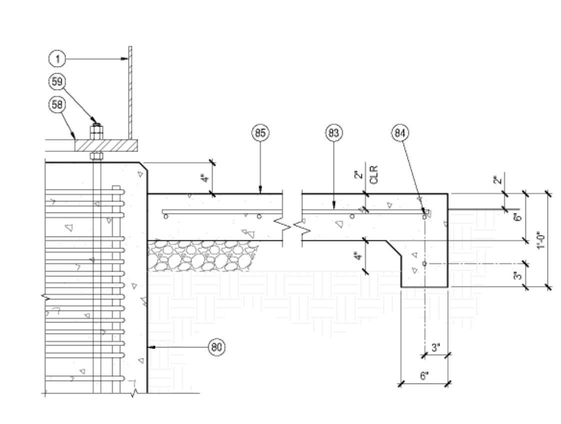
STATE OF CONNECTICUT · ALAN E. MONEY · LICENSED PROFESSIONAL ENGINEER

PROGRESS LOG

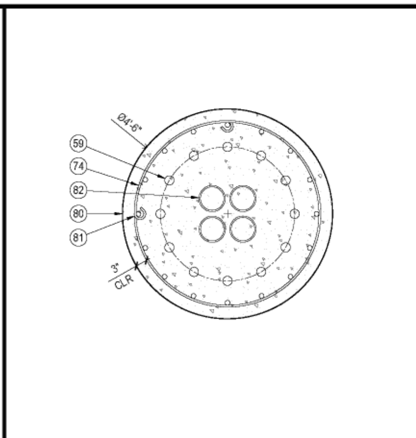
1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER: S6.0 — PROGRESS: 1

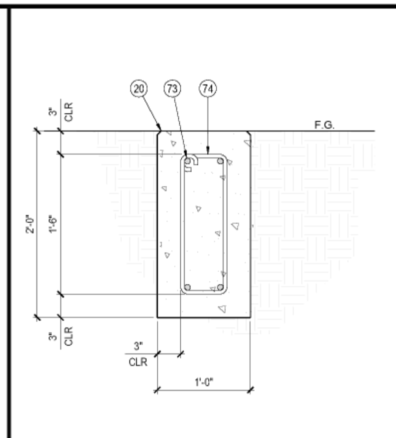
DRAWING DATE: December 12, 2022



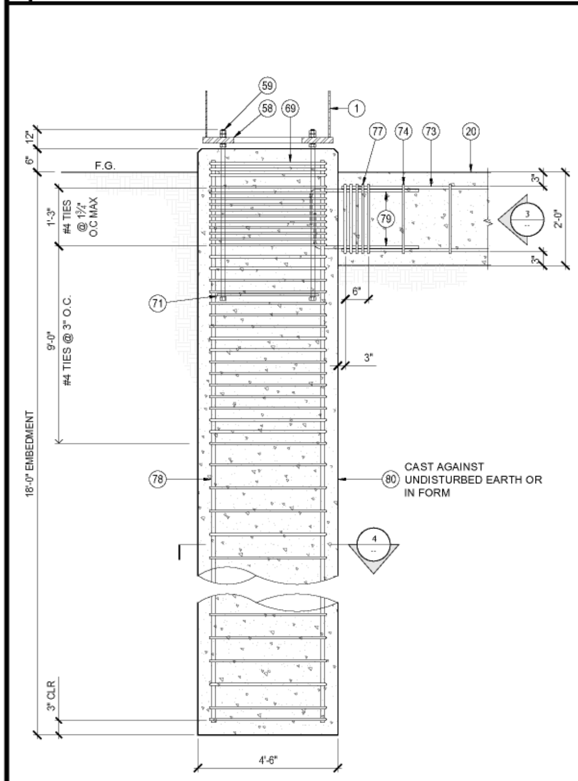
5 ENTRY SLAB



4 PIER PLAN

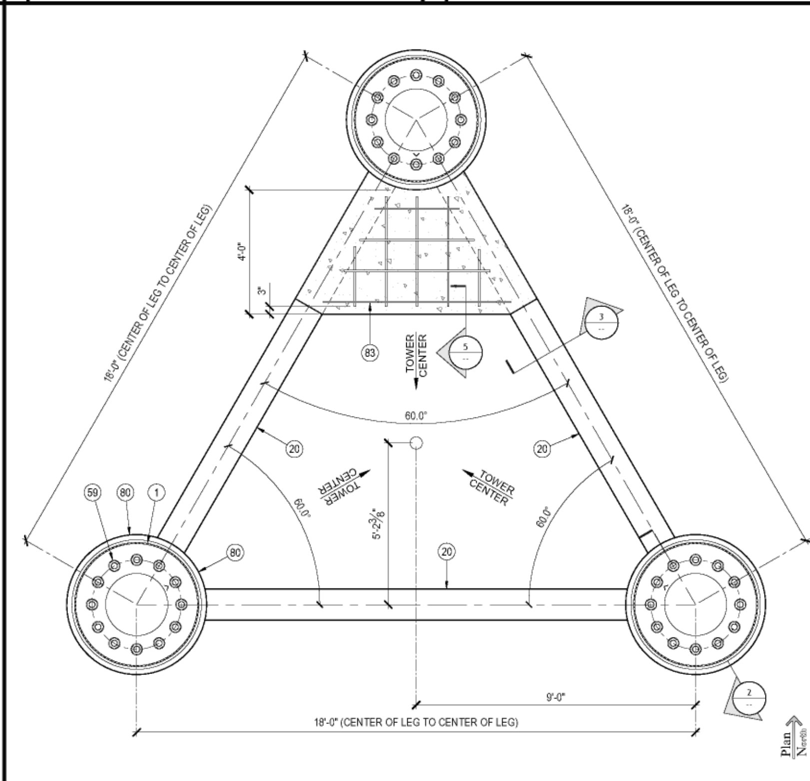


3 GRADE BEAM SECTION



2 PIER SECTION

SCALE: N.T.S.



1 62' AFG PLATFORM FRAMING

SCALE: 3/16" = 1'-0"

KEY NOTES

MARK	DESCRIPTION	MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE	1	48"Ø x ½" LEG
47	3" GROVE TAB @ 12" O.C.	2	HSS 10x10x ⅜" A500 GR B
48	1¹⁄₁₆" HOLES, FIELD DRILL	3	C6x11.5
49	¼" FRP SKIN	4	1" LEG CAP PLATE
50	⅝"Ø STRONGWELL FIBREBOLT OR EQUAL	5	FLANGED JOINT
51	1⅛" HOLES	6	⅜" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
52	HSS 2x2x³⁄₁₆"	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
53	⅜" GRADE B BOLTS	8	48"Ø x ⅜" FRP CANISTER
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	9	6 ⅝"Ø SCHED 40 MAST
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	10	⅜" PLATE GUSSETS
56	LEG MATING PLATE, SEE SCHEDULE	11	MCNICHOLS 'GW 125' 1½"X³⁄₁₆" BAR GRATE
57	BOLT PER SCHEDULE - SHEET S4.0	12	⅝"Ø A307 BOLT IN ¹¹⁄₁₆" Ø HOLE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	13	⅜"Ø A36 TAB
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	14	1" A572-50 FLANGE PLATE
60	CLIMBING HAND HOLE AT LEG L1	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
61	⅜" x 3" PLATE	16	ANTENNA BY OTHERS
62	½"x 3" BENT PLATE	17	RRU BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
64	½" HOLE, FIELD DRILL	19	⅝"Ø A325 BOLT IN ¹¹⁄₁₆" Ø HOLE
65	⁷⁄₁₆"Ø HOLE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
66	BULKHEAD RADIUS PLATE	21	⅜" A36 PLATE
67	BOLKHEAD ARM ASSEMBLY	22	⅜"Ø U-BOLT BOLT
68	¼" Ø x 1 ½" SELF DRILLING SCREW BY McMASTER-CARR	23	⅜"Ø GRADE B BOLT IN ⁷⁄₁₆" Ø HOLE
69	(3) #3 TIES IN TOP 3"	24	½"Ø A325 BOLT IN ⁹⁄₁₆" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	25	NOT USED
71	ANCHOR BOLT TEMPLATE SCHEDULE	26	1⅛" Ø HOLE
72	NOT USED	27	1" HONEYCOMB FRP PANEL
73	(2) #5 TOP AND BOTTOM	28	MAST FLANGE PLATE, SEE SCHEDULE.
74	#4 TIES @ 12" O.C.	29	VALMONT FRP 5"x ⅜" TUBE FRAMING
75	#4 TIES @ 6" O.C.	30	FRP SHEATHING/PANEL SEAM
76	#4 TIES @ 3" O.C.	31	∠2x2x³⁄₁₆"
77	(5) #4 TIES @ 1 ½" O.C. MAX	32	∠4x4x¼"
78	(16) #8 VERTICAL	33	∠6x6x⅜"
79	(2) #5 8"(x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	34	PLATFORM ACCESS
80	CONCRETE PIER F'c - 4000 PSI	35	¾"Ø A325 BOLT
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	36	¹³⁄₁₆" Ø HOLE
82	CONDUIT BY OTHERS	37	FIELD DRILL TO MATCH FRAMING
83	#4 @ 12" O.C. EACH WAY	38	VALMONT FRP 5X5X⅜" TUBE
84	#4 TOP AND BOTTOM	39	VALMONT FRP ∠5X5X⅜"
85	6" CONCRETE SLAB	40	DOUBLE VALMONT FRP ∠5X5X⅜" STRONG BACK
86	4" ABC FILL	41	FLANGED LEG SPLICE, SEE SCHEDULE
87	LADDER STAND-OFF	42	¾" PLATE LEG WALL REINFORCEMENT
88	LADDER STAND-OFF MOUNT	43	1" A500 GRADE B GUSSET PLATE
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	44	³⁄₁₆" A36 PLATE FLANLGE
90	50"Ø x ⅜" FRP CAP PLATE	45	LEG CAP PLATE, SEE SCHEDULE
91			

verizon

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50839
Phoenix, Arizona 85076
PHONE: 602 438 6414
www.iseinc.biz
ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

FOUNDATION PLAN

5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE N41° 13' 08.19" LONGITUDE W73° 14' 41.12"

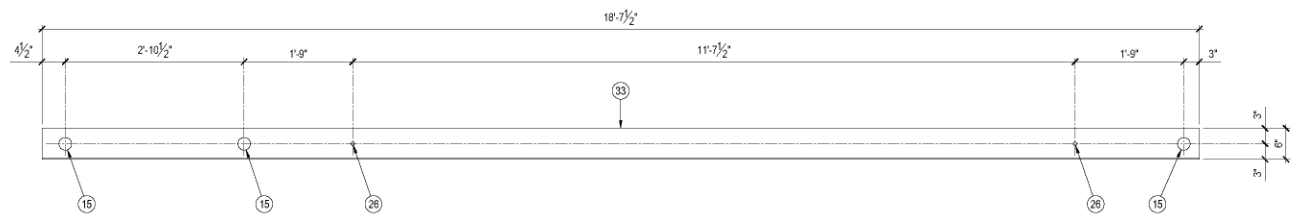
STATE OF CONNECTICUT
ALAN E. MONEY
No. PEN 0031129
LICENSED
PROFESSIONAL ENGINEER

PROGRESS LOG

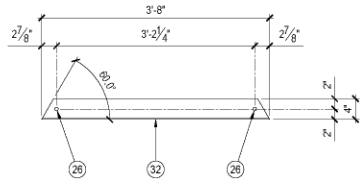
1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S7.0	1

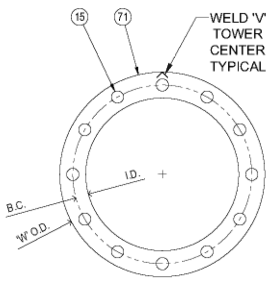
DRAWING DATE
December 12, 2022



4 ABT-3 (33)

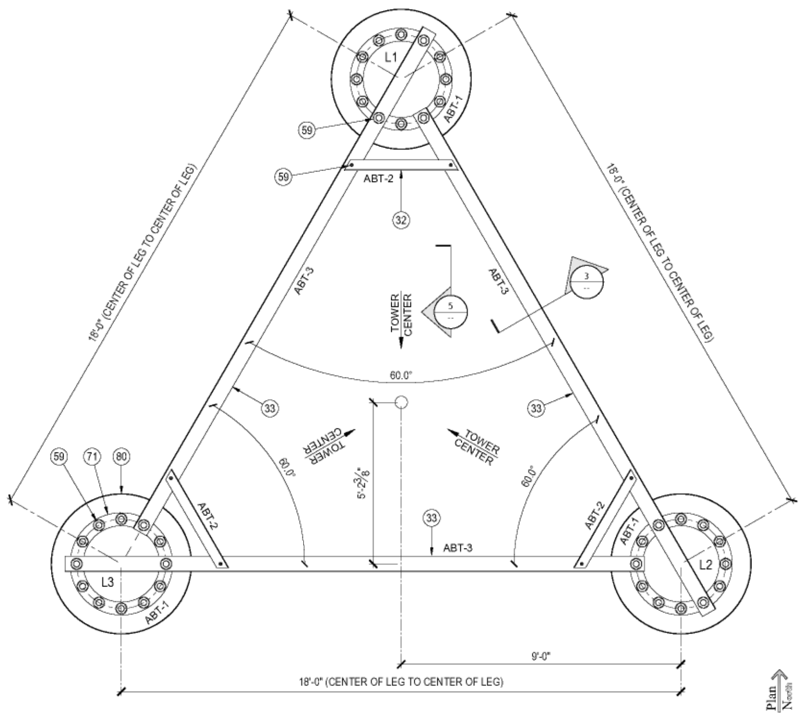


4 ABT-2 (32)



4 ABT-1

SCALE: 1" = 1'-0"



1 ANCHOR BOLT/FOUNATION TEMPLATE

SCALE: 1/2" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 1 1/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 1 1/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	1 1/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x1/4"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x3/8"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	3/4" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x 3/8" FRP CAP PLATE	44	3/16" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

verizon

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50039
Phoenix, Arizona 85076
ISE JOB #: 18054

PLATTSVILLE RELO CT
100 TALL 3 LEG MONUMENT
FOUNDATION TEMPLATE
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE N41° 13' 08.19" LONGITUDE W73° 14' 41.12"

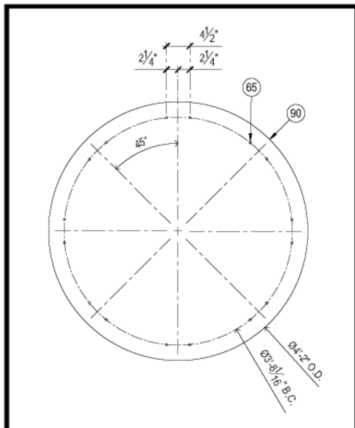
STATE OF CONNECTICUT · ALAN E. MOONEY · LICENSED PROFESSIONAL ENGINEER

PROGRESS LOG

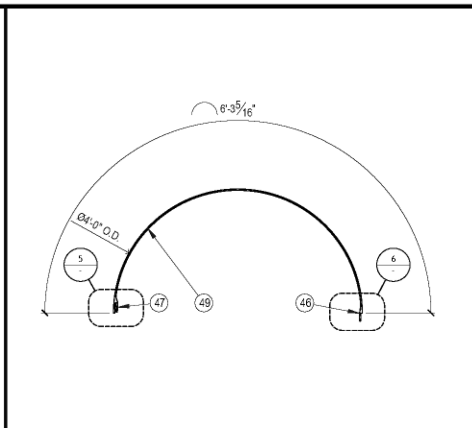
1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S8.0	1

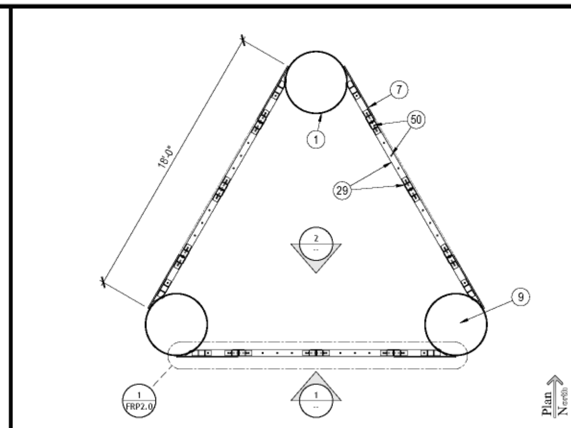
DRAWING DATE
December 12, 2022



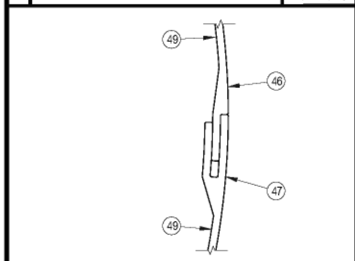
9 CANISTER COVER PLATE — SCALE: 1" = 1'-0"



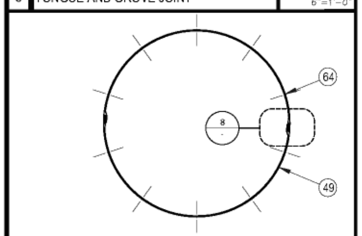
4 PANEL SECTION — SCALE: 1" = 1'-0"



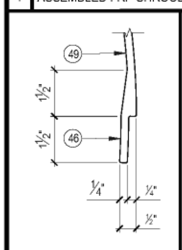
2 FRP ENCLOSURE SECTION — SCALE: 1/2" = 1'-0"



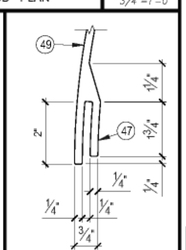
8 TONGUE AND GROVE JOINT — SCALE: 6"=1'-0"



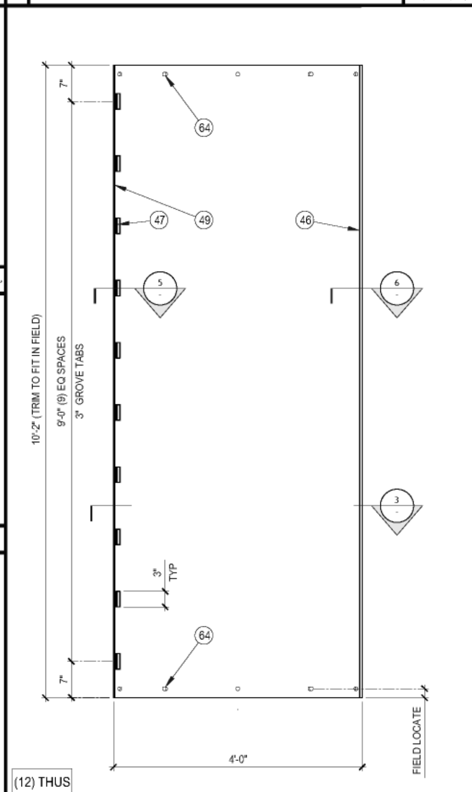
7 ASSEMBLED FRP SHROUD - PLAN — SCALE: 3/4"=1'-0"



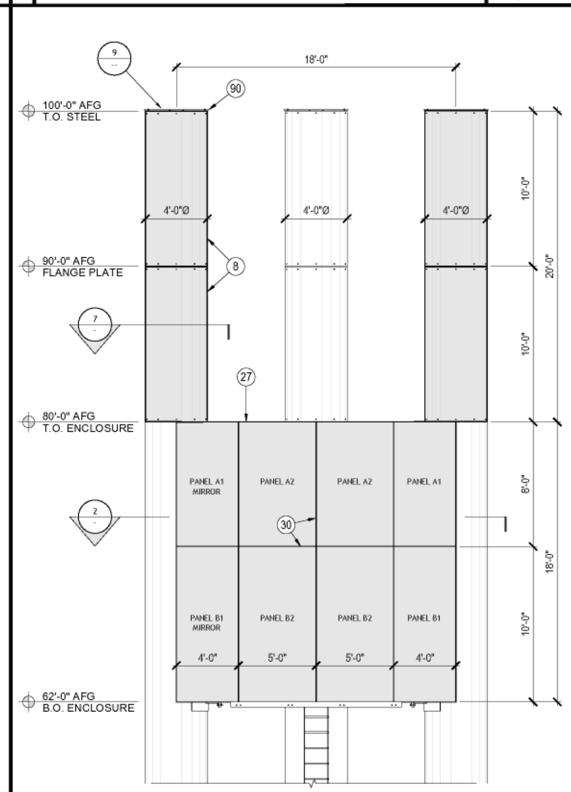
6 TONGUE TAB



5 GROVE TAB — SCALE: 6"=1'-0"



3 ENCLOSURE PANEL INTERIOR ELEVATION — SCALE: 1/2"=1'-0"



1 TYPICAL ENCLOSURE ELEVATION — SCALE: 1/4" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE	MARK	DESCRIPTION
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	11/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x1/4"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x3/8"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	3/4" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x 3/8" FRP CAP PLATE	44	3/16" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

verizon

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

FRP ENCLOSURE DETAILS
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE N41° 13' 08.19" LONGITUDE W73° 14' 41.12"

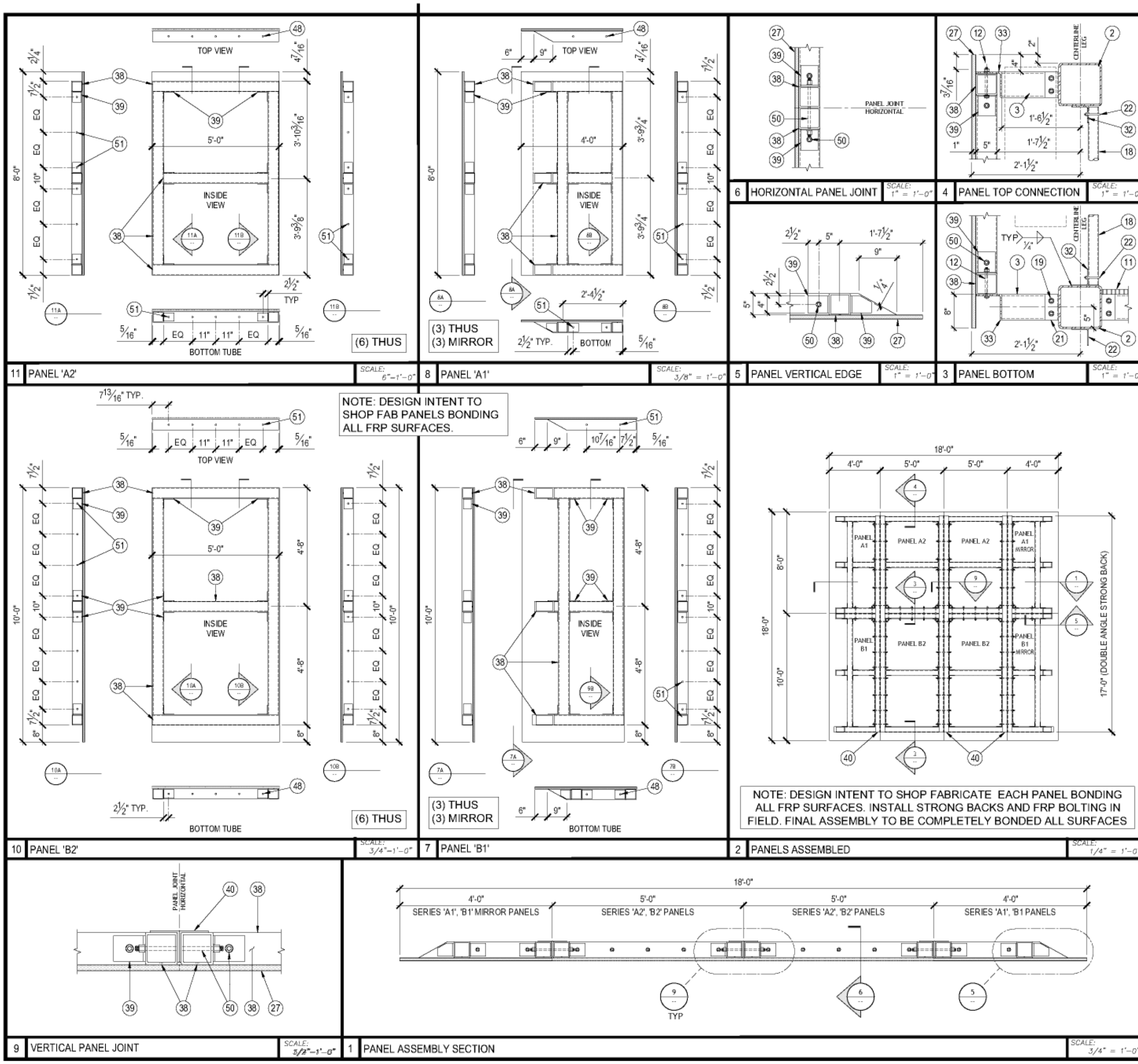
STATE OF CONNECTICUT — ALAN E. MONEY — No. PEN 0031128 — LICENSED PROFESSIONAL ENGINEER

PROGRESS LOG

1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER: FRP1.0
PROGRESS: 1

DRAWING DATE: December 12, 2022



KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE	1	48"Ø x $\frac{1}{2}$" LEG
47	3" GROVE TAB @ 12" O.C.	2	HSS 10x10x $\frac{3}{8}$" A500 GR B
48	$1\frac{1}{16}$" HOLES, FIELD DRILL	3	C6x11.5
49	$\frac{1}{4}$" FRP SKIN	4	1" LEG CAP PLATE
50	$\frac{5}{8}$"Ø STRONGWELL FIBREBOLT OR EQUAL	5	FLANGED JOINT
51	$1\frac{1}{16}$" HOLES	6	$\frac{3}{8}$" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
52	HSS 2x2x$\frac{3}{16}$"	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
53	$\frac{3}{8}$" GRADE B BOLTS	8	48"Ø x $\frac{1}{4}$" FRP CANISTER
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	9	6 $\frac{5}{8}$"Ø SCHED 40 MAST
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	10	$\frac{3}{8}$" PLATE GUSSETS
56	LEG MATING PLATE, SEE SCHEDULE	11	MCNICHOLS 'GW 125' $1\frac{1}{4}$"X$\frac{3}{16}$" BAR GRATE
57	BOLT PER SCHEDULE - SHEET S4.0	12	$\frac{5}{8}$"Ø A307 BOLT IN $1\frac{1}{16}$" Ø HOLE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	13	$\frac{3}{8}$"Ø A36 TAB
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	14	1" A572-50 FLANGE PLATE
60	CLIMBING HAND HOLE AT LEG L1	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
61	$\frac{3}{8}$" x 3" PLATE	16	ANTENNA BY OTHERS
62	$\frac{1}{4}$"x 3" BENT PLATE	17	RRU BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
64	$\frac{1}{4}$" HOLE, FIELD DRILL	19	$\frac{5}{8}$"Ø A325 BOLT IN $1\frac{1}{16}$" Ø HOLE
65	$\frac{7}{16}$"Ø HOLE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
66	BULKHEAD RADIUS PLATE	21	$\frac{3}{8}$" A36 PLATE
67	BOLKHEAD ARM ASSEMBLY	22	$\frac{3}{8}$"Ø U-BOLT BOLT
68	$\frac{1}{4}$" Ø x 1 $\frac{1}{4}$" SELF DRILLING SCREW BY McMASTER-CARR	23	$\frac{3}{8}$"Ø GRADE B BOLT IN $\frac{7}{16}$" Ø HOLE
69	(3) #3 TIES IN TOP 3"	24	$\frac{1}{2}$"Ø A325 BOLT IN $\frac{9}{16}$" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	25	NOT USED
71	ANCHOR BOLT TEMPLATE SCHEDULE	26	$1\frac{1}{16}$" Ø HOLE
72	NOT USED	27	1" HONEYCOMB FRP PANEL
73	(2) #5 TOP AND BOTTOM	28	MAST FLANGE PLATE, SEE SCHEDULE.
74	#4 TIES @ 12" O.C.	29	VALMONT FRP 5"x $\frac{5}{16}$" TUBE FRAMING
75	#4 TIES @ 6" O.C.	30	FRP SHEATHING/PANEL SEAM
76	#4 TIES @ 3" O.C.	31	∠2x2x$\frac{3}{16}$"
77	(5) #4 TIES @ 1 $\frac{3}{4}$" O.C. MAX	32	∠4x4x$\frac{1}{4}$"
78	(16) #8 VERTICAL	33	∠6x6x$\frac{3}{8}$"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	34	PLATFORM ACCESS
80	CONCRETE PIER F'c - 4000 PSI	35	$\frac{3}{4}$"Ø A325 BOLT
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	36	$\frac{13}{16}$" Ø HOLE
82	CONDUIT BY OTHERS	37	FIELD DRILL TO MATCH FRAMING
83	#4 @ 12" O.C. EACH WAY	38	VALMONT FRP 5X5X$\frac{5}{16}$" TUBE
84	#4 TOP AND BOTTOM	39	VALMONT FRP ∠5X5X$\frac{5}{16}$"
85	6" CONCRETE SLAB	40	DOUBLE VALMONT FRP ∠5X5X$\frac{5}{16}$" STRONG BACK
86	4" ABC FILL	41	FLANGED LEG SPLICE, SEE SCHEDULE
87	LADDER STAND-OFF	42	$\frac{3}{4}$" PLATE LEG WALL REINFORCEMENT
88	LADDER STAND-OFF MOUNT	43	1" A500 GRADE B GUSSET PLATE
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	44	$\frac{3}{16}$" A36 PLATE FLANLGE
90	50"Ø x $\frac{3}{8}$" FRP CAP PLATE	45	LEG CAP PLATE, SEE SCHEDULE
91			

verizon

LARSON
A valmont COMPANY
1501 South Euclid Avenue Tucson, AZ 85713
(520) 294-3900
www.larsoncamo.com
LARSON JOB #: 553278

ISE Incorporated
Structural Engineers
P.O. BOX 50039
Phoenix, Arizona 85076
PHONE: 602-438-4414
www.iseinc.biz
ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

FRP PANEL DETAILS
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

STATE OF CONNECTICUT · ALAN E. MONEY · No. PEN 0031439 · LICENSED · PROFESSIONAL ENGINEER
DEC 12, 2022

PROGRESS LOG

1	12/12/22	CODE UPDATE	CK
0	10/19/22	ISSUED TO CLIENT	CK
A	09/18/22	ISSUED FOR REVIEW	CK

SHEET NUMBER: FRP2.0
PROGRESS: 1

DRAWING DATE: December 12, 2022

ISE, Incorporated
Structural Engineers
Telecommunications & Industrial Design

Design & Calculations
100' 3-Legged Tower

DATE: December 12, 2022

PROJECT: Verizon Plattsville Relo CT (553278)

CUSTOMER: Larson Valmont
1501 South Euclid Avenue
Tucson, AZ 85713

LOCATION: 5151 Park Avenue
Fairfield, CT 06825
Latitude: 41° 13' 08.19"
Longitude: 73° 14' 41.12"

ISE JOB NO. 18054

LARSON JOB NO. 553278

Alan Signature

STATE OF CONNECTICUT ALAN E. MONEY No. PEN 0031439 LICENSED PROFESSIONAL ENGINEER

Digitally signed by Alan Signature
Date: 2022.12.12 18:19:24 -07'00'

Dec 12, 2022

DESIGN CRITERIA:

CODE: 2022 Connecticut State Building Code, 2021 IBC, ASCE 7-16, TIA-222-H

WIND: 122 MPH Ultimate Wind Speed
Exposure C, Topographic Category 1, Risk Category II

SNOW: 30 psf

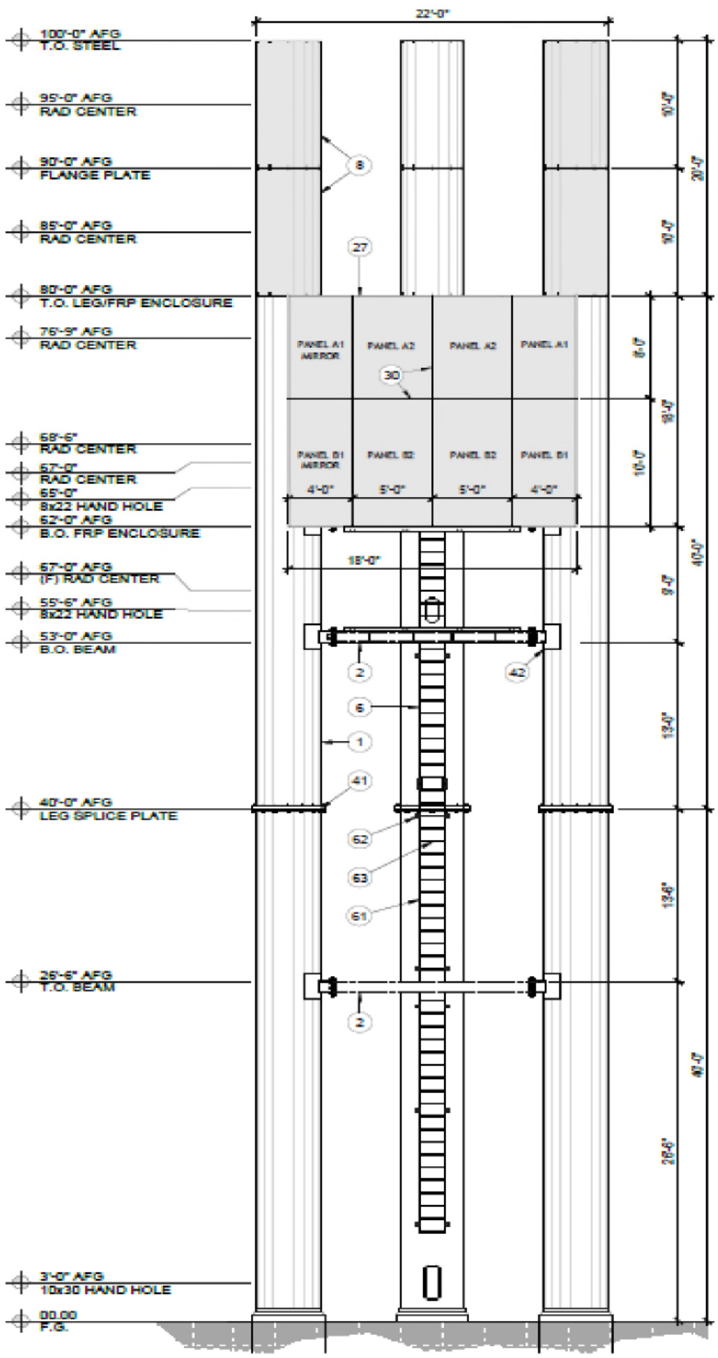
SOILS: Terracon Consultants Inc,
Geotechnical Engineering Report, #J1225042 dated 08/10/2022

SEISMIC: Seismic Design Category >> B
Soil Site Class >> C
$S_S = 0.211$, $S_1 = 0.065$, $S_{DS} = 0.169$, $S_{D1} = 0.074$
Per ASCE 7, Ch 13.3: $I = 1.0$, $a_p = 1.0$, $R_p = 3$
$C_s = 0.056$

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 12/12/22

PROJECT DESCRIPTION

Verizon proposes to install 100' tall, 3-Legged tower for antennas and equipment installation at the site located in Fairfield, CT. Antennas will be installed within 48" Dia. Canister at a rad center of 95'-0'' AFG & 85'-0'' AFG and behind RF transparent FRP screen panels at a rad center of 76'-9'', 68'-6'', 67'-0'' AFG. Sketches of the proposed tower are as shown below:



ISE, Incorporated
Structural Engineers *Telecommunications & Industrial Design*

PO Box 50039 • Phoenix, Arizona • 85076 • Office: (602) 403-8614 • Fax: (623) 321-1283 • www.ISE-INC.biz

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 12/12/22

LOADING

WIND LOAD

Criteria: Exposure C, Topographic Category 1, Risk Category II

Wind Load for Elevation 62' AFG to 80' AFG

ASCE 7-10, CHAPTER 29, Sec 29.5

DESIGN WIND LOADS - OTHER STRUCTURES

Structure	Solid Signs			
Shape?	Case A		B (ft)	18
z (ft)	80		s (ft)	18
V (mph)	122		h (ft)	80

q_z (psf)	**43.71**	$0.00256K_zK_{zt}K_dV^2$	Eqn 29.-1
K_z	**1.208**	$2.01*(z/z_g)^{2/\alpha}$	Sec 29.3.1
K_{zt}	1		Sec 26.8.2
K_d	0.95		Sec 26.6

G	0.85
C_f	**1.80**

F/A_f (psf)	**66.88**	q_zGC_f	Eqn 29.5-1
$(F/A_f)_{ASD}$ (psf)	**40.13**	$0.6*(F/A_f)$	

Tributary Width at 80' = 9'
Line Load at 80' = 66.88 psf x 9' = 601.92 plf

Tributary Width at 62' = 9'
Line Load at 62' = 66.88 psf x 9' = 601.92 plf

Line Load at 62' = 601.92 plf + 285.21 plf (Calc shown below)
= 887.13 plf

ISE, Incorporated
Structural Engineers   ***Telecommunications & Industrial Design***

PO Box 50039 • Phoenix, Arizona • 85076 • Office: (602) 403-8614 • Fax: (623) 321-1283 • www.ISE-INC.biz

Project: Verizon Plattsville Relo   ISE #: 18054   By: PB   Date: 12/12/22

Wind Load for elevation 52' AFG to 62' AFG (Future Concealment Panels)

ASCE 7-10, CHAPTER 29, Sec 29.5
DESIGN WIND LOADS - OTHER STRUCTURES

Structure	Solid Signs			
Shape?	Case A		B (ft)	10
z (ft)	62		s (ft)	10
V (mph)	122		h (ft)	62

q_z (psf)	**41.43**	$0.00256K_zK_{zt}K_dV^2$	Eqn 29.-1
K_z	**1.144**	$2.01*(z/z_g)^{2/\alpha}$	Sec 29.3.1
K_{zt}	1		Sec 26.8.2
K_d	0.95		Sec 26.6

G	0.85
C_f	**1.80**

F/A_f (psf)	**63.38**	q_zGC_f	Eqn 29.5-1
$(F/A_f)_{ASD}$ (psf)	**38.03**	$0.6*(F/A_f)$	

Tributary Width at 62' = 4.5'
Line Load at 62' = 63.38 psf x 4.5' = 285.21 plf

Tributary Width at 52' = 4.5'
Line Load at 52' = 63.38 psf x 4.5' = 285.21 plf

ISE, Incorporated
Structural Engineers ***Telecommunications & Industrial Design***

PO Box 50039 • Phoenix, Arizona • 85076 • Office: (602) 403-8614 • Fax: (623) 321-1283 • www.ISE-INC.biz

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 12/12/22

Wind Loading for exposed legs

V (mph)	122
K_{zt}	1
K_d	0.95
G	0.85
C_f	**0.51**

Wind Load Calculation			**Cf**	**Wind Load**
			0.6	**On Leg**
H (ft)	**K_z**	**q_z (psf)**	**$q_zG_hC_f$ (psf)**	**[plf]**
16.4	0.86	31.31	15.97	63.87
20	0.90	32.65	16.65	66.60
30	0.98	35.56	18.13	72.53
40	1.04	37.78	19.27	77.06
50	1.09	39.59	20.19	80.77
60	1.14	41.14	20.98	83.93
70	1.17	42.50	21.67	86.70
80	1.21	43.71	22.29	89.17
90	1.24	44.81	22.85	91.41
100	1.27	45.81	23.36	93.46

DEAD LOAD

Platform loads

FRP Panels = 3 psf
Bar Grate = 10 psf
Misc equipment = 15 psf

LIVE LOAD

Platform Live Load = 40 psf

SNOW LOAD

Ground Snow Load, I_g = 30 psf

SEISMIC CHECK

Per Risa Results, Dead Only load case

LC	Node Label	X [lb]	Y [lb]	Z [lb]
1	N37	24.342	29018.548	-13.95
1	N38	-23.153	29093.839	-14.028
1	N41	-1.189	29041.719	27.979
1	Totals:	0	87154.106	0
1	COG (ft):	X: 9.009	Y: 47.365	Z: -5.194

Seismic Shear = C_sW = 0.056 x 87.15k = 4.88k

Per Risa Results, Wind only load case

LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
4	N37	-464.415	-24120.931	18002.51	830.76	-28.872	4.023
4	N38	464.415	-24120.931	18002.51	830.76	28.872	-4.023
4	N41	0	48241.862	18616.363	837.724	0	0
4	Totals:	0	0	54621.383			

Wind Shear = 54.62k > 4.88 k → Wind Governs Design

FRP PANEL DESIGN & CALCULATIONS

FRP LAYUP

FRP PROPERTIES

Modulus of Elasticity E	2600000	psi	FS Bearing	4
Modulus of Shear G	450000	psi	FS Shear	3
Ultimate Flexural Stress F_b	30000	psi	FS Tension	3
Ultimate Tension/Compression Stress F_T, F_C	10,700	psi	FS Connections	4
Ultimate Bearing Stress F_p	30000	psi	FS Bending	2.5

FRP PANEL DESIGN

Concealment panels are sheathed with Carbon core 1" thick honeycomb core with fiberglass skins on each side.

The panels have been tested to 100 psf load on a 6' simply supported span longitudinal edges free with no failure.

For this application the panels are supported at 6' longitudinally.

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB :	Verizon Plattsville Relo
CLIENT :	Larson
ISE JOB NO:	18054
DATE :	8/19/2022
BY :	PB

FRP VERTICAL POST ANALYSIS

LOADING

Tributary Width, wt	6	ft
Wind Pressure	40.13	psf
Span, L	18	ft
Linear Wind Load	**240.78**	plf
Mn	**9751.59**	lb-ft

SECTIONAL PROPERTIES - STRONGWELL EXTERN

Section	4x1/4 Tube	
E	**2600000**	psi
b	**4**	in
t	**0.25**	in
A	**3.74**	in^2
I_x	**8.82**	in^4
S_x	**4.41**	in^3

APPLIED STRESSES

Applied Bending Stress	**2211.24**	psi	M/S

ALLOWABLE STRESSES

Per Strongwell Design Manual,

Allowable Bending Stress	**6157.6**	psi	$[E/16(b/t)^{0.85}]/2.5$	**OK**
Allowable Shear Stress	**1500**	psi	4500/3	**OK**

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB : Verizon Plattsville Relo
CLIENT : Larson
ISE JOB NO: 18054
DATE : 8/19/2022
BY : PB

FRP HORIZONTAL BEAM ANALYSIS

LOADING

Tributary Width, wt	9	ft
Wind Pressure	40.13	psf
Span, L	18	ft
Linear Wind Load	**361.17**	plf
Mn	**14627.39**	lb-ft

SECTIONAL PROPERTIES - STRONGWELL EXTERN

Section	4x1/4 Tube	
E	**2600000**	psi
b	**4**	in
t	**0.25**	in
A	**3.74**	in^2
I_x	**8.82**	in^4
S_x	**4.41**	in^3

APPLIED STRESSES

Applied Bending Stress	**3316.87**	psi	M/S

ALLOWABLE STRESSES

Per Strongwell Design Manual,

Allowable Bending Stress	**6157.6**	psi	$[E/16(b/t)^{0.85}]/2.5$	**OK**
Allowable Shear Stress	**1500**	psi	4500/3	**OK**

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB :	VZW plattsville Relo
CLIENT :	Larson
ISE JOB NO:	18054
DATE :	8/19/2022
BY :	PB

FRP PANEL TO PANEL CONNECTION

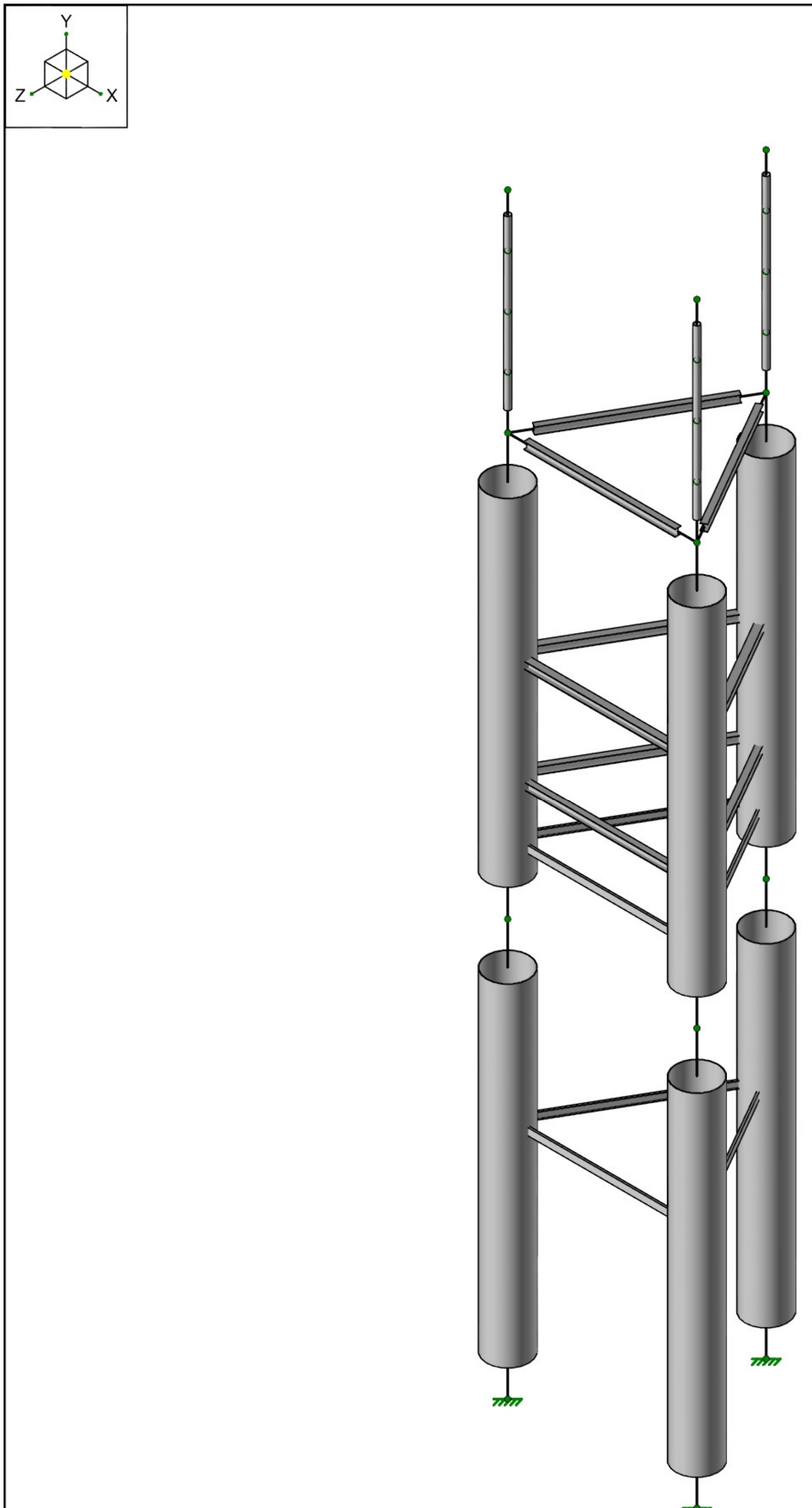
LOADING

Tributary Width, wt		9	ft
Wind Pressure		40.13	psf
Span, L		18	ft
Linear Wind Load		**361.17**	plf
Wind Load		**6501.06**	lb

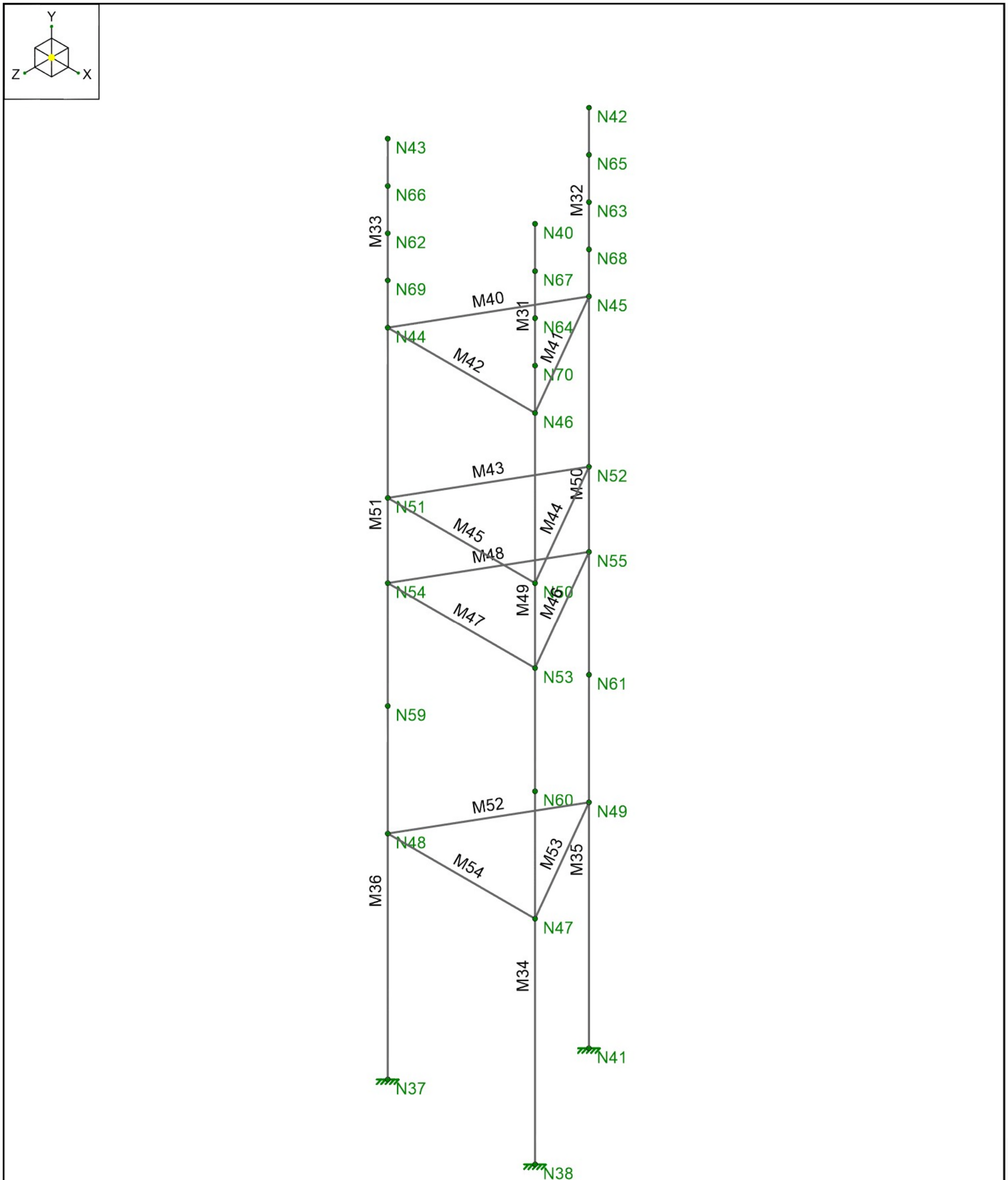
CONNECTION

***Per Strongwell Design Manual*

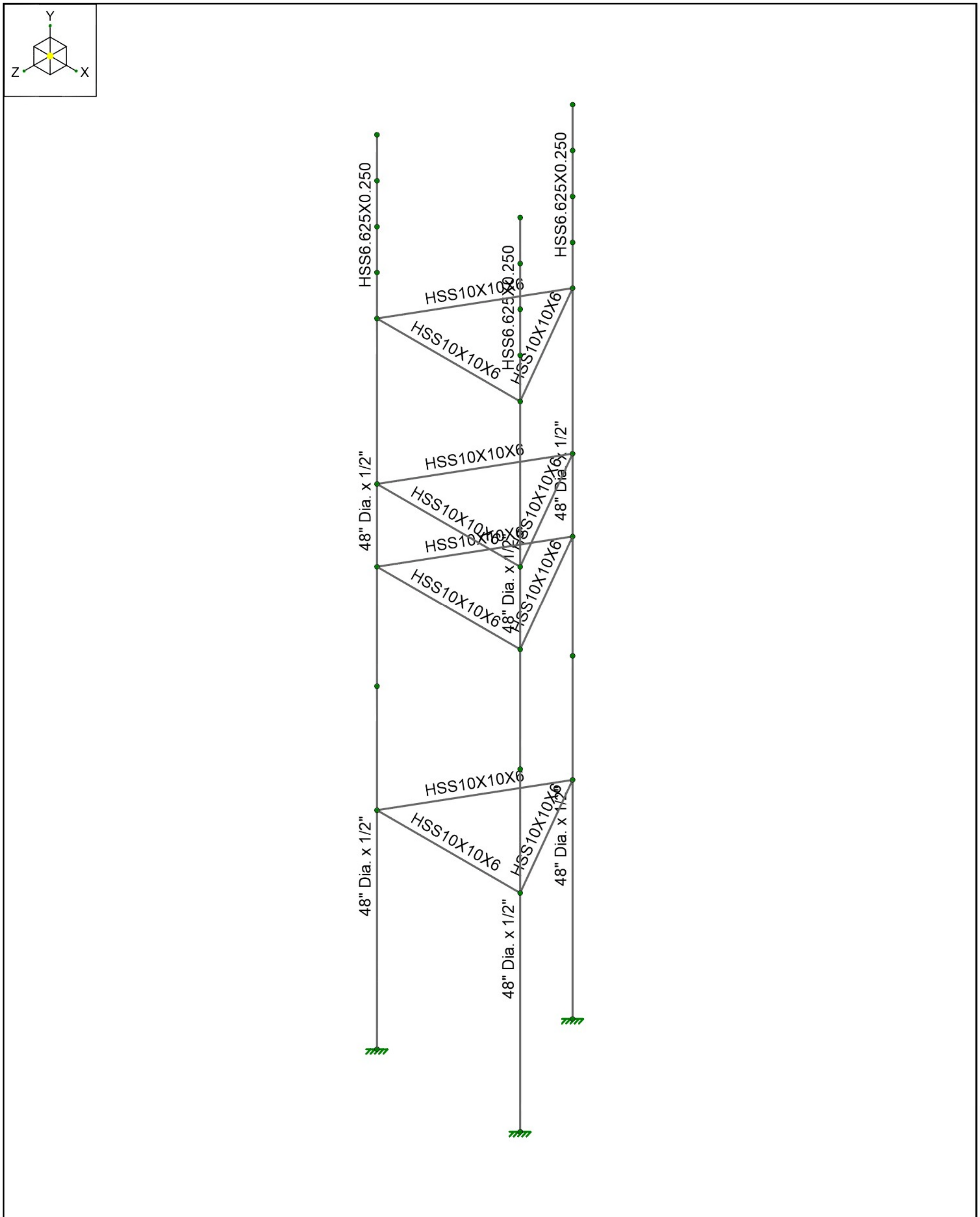
Bolt Type		FibreBolts			
Bolt Diameter	d_b	1/2	in		
Number of Bolts	n	15			
Bolt Shear	V	**433.404**	lb		
Ultimate Shear Capacity	V_u	**2400**	lb		
Available Shear Capacity	V_a	**600**	lb	FOS = 4	**OK**
Ultimate Tensile Capacity	T_u	**2000**	lb		
Available Tensile Capacity	T_a	**500**	lb	FOS = 4	**OK**



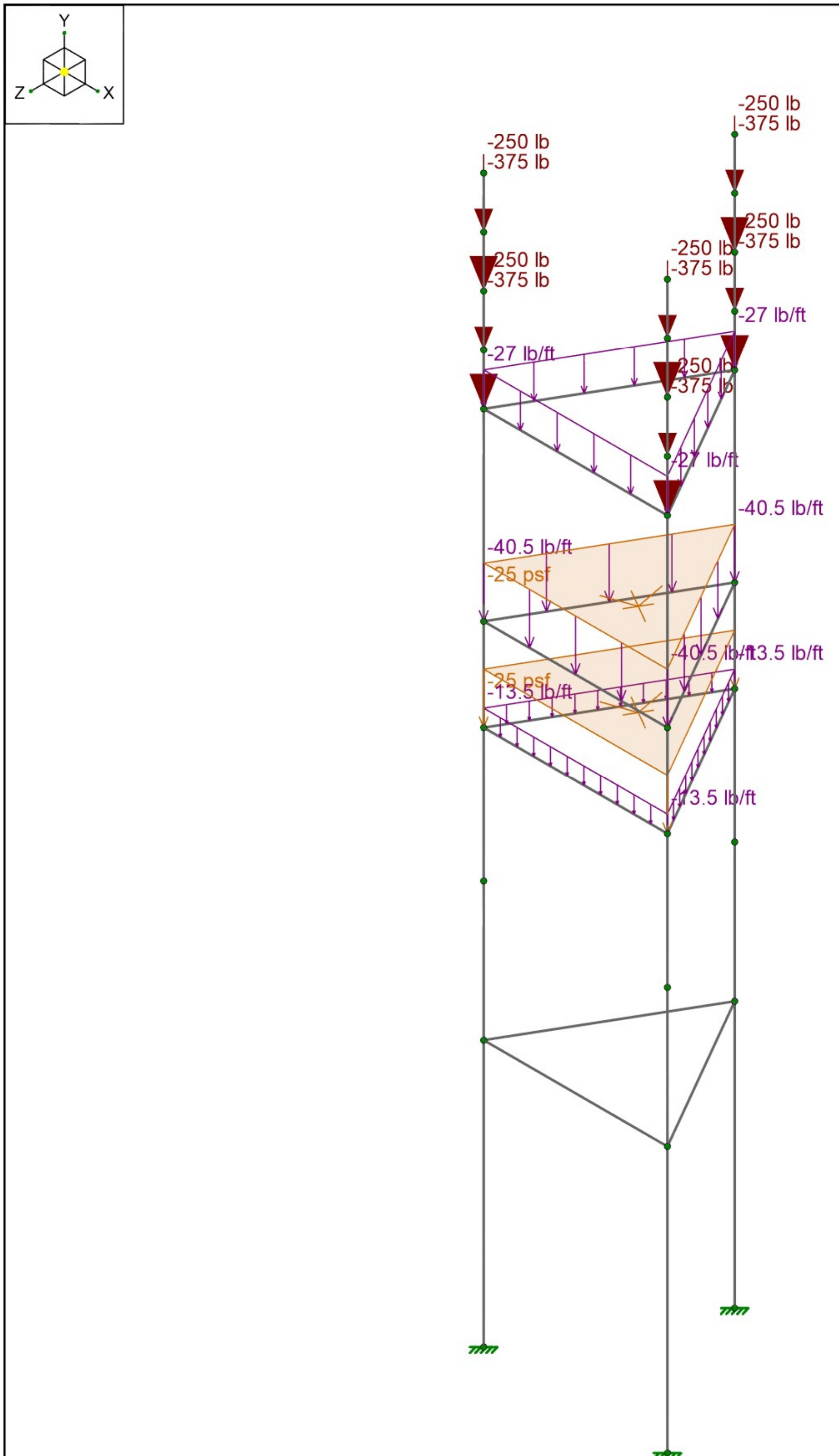
ISE	VZW Plattsville Relo (553278)	SK-1
PB		Aug 18, 2022
ISE Job No. 18054		18054 Tower Model.r3d



ISE	VZW Plattsville Relo (553278)	SK-2
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d

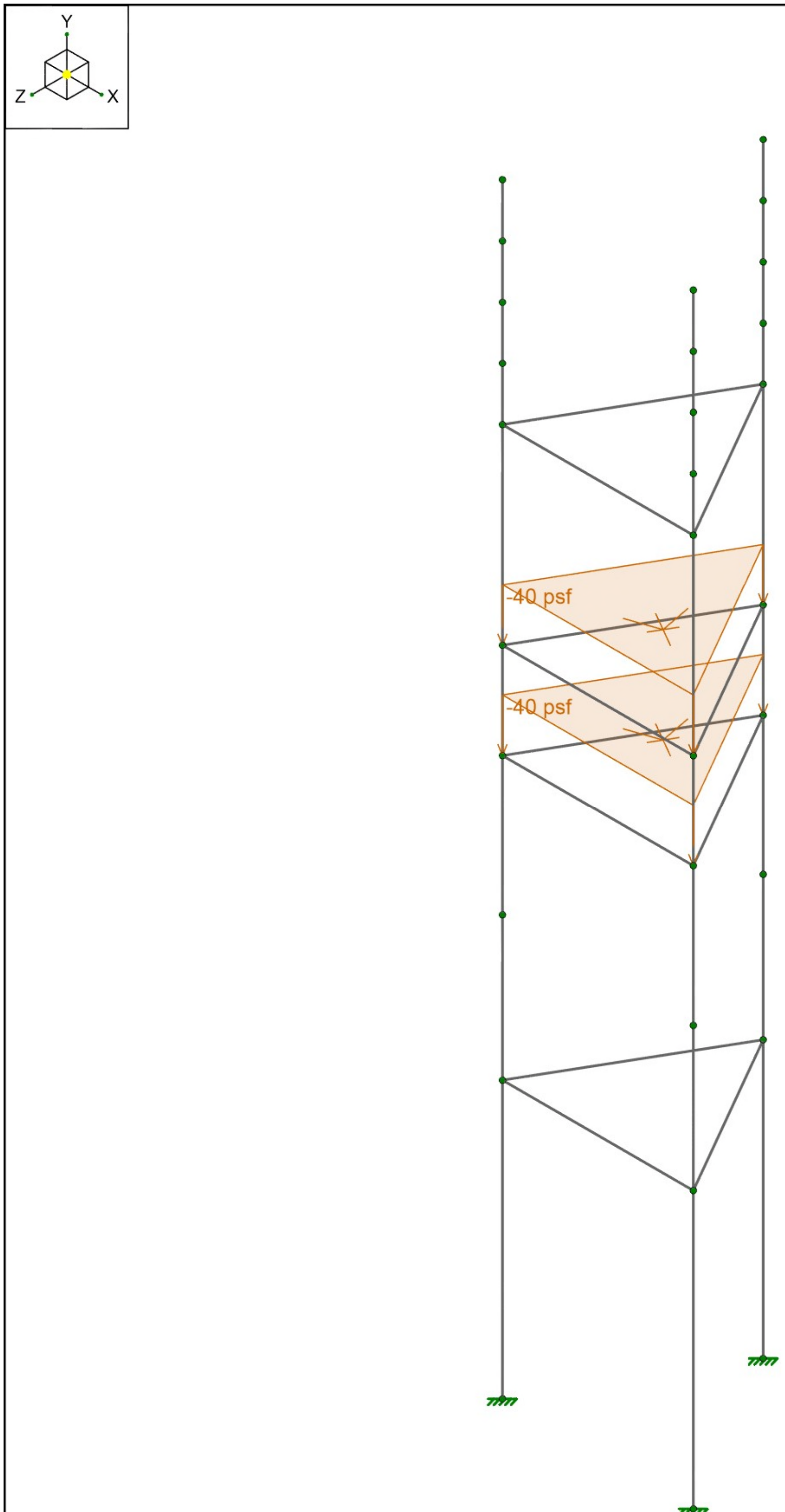


ISE	VZW Plattsville Relo (553278)	SK-3
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



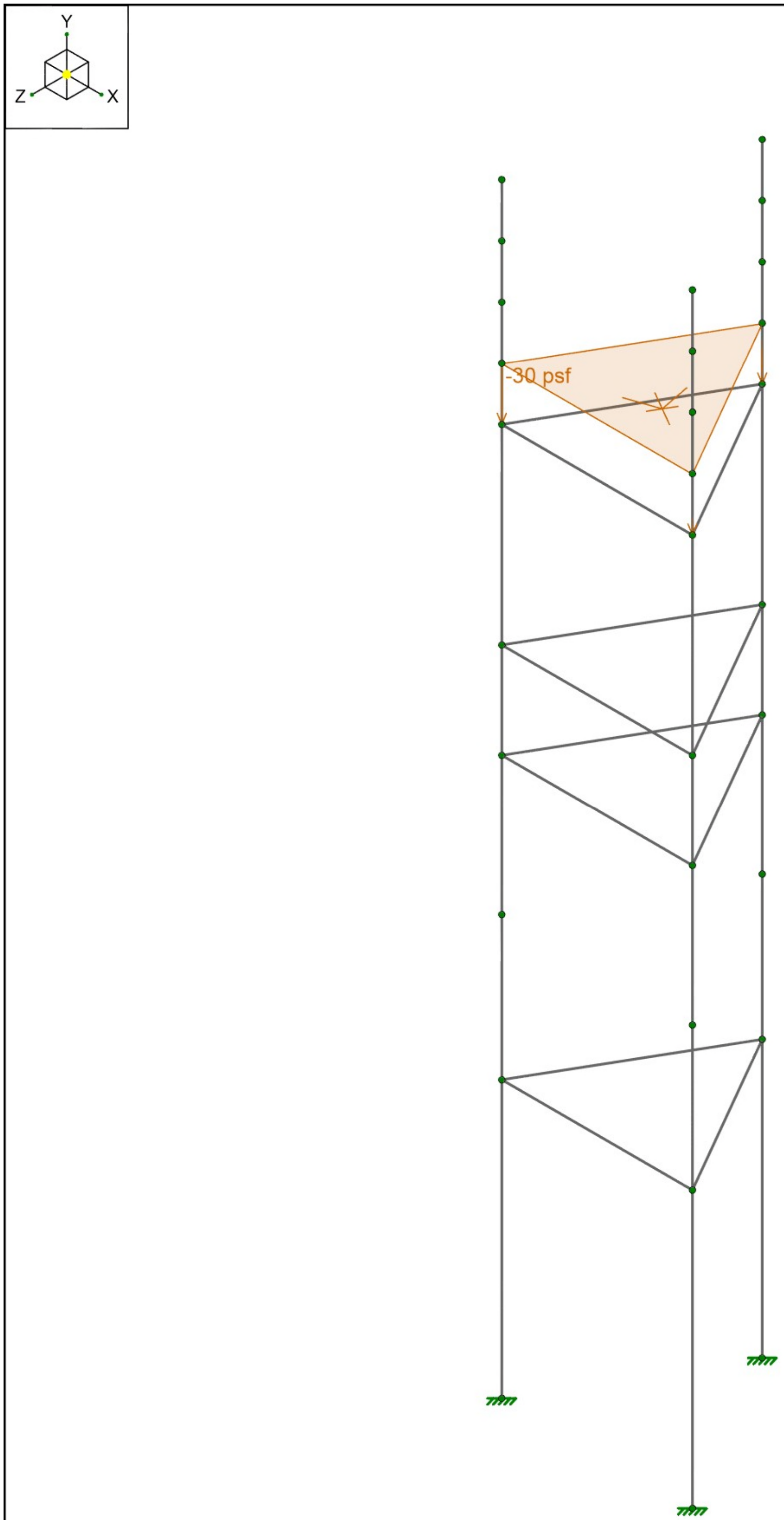
Loads: BLC 1, Dead Load

ISE	VZW Plattsville Relo (553278)	SK-4
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



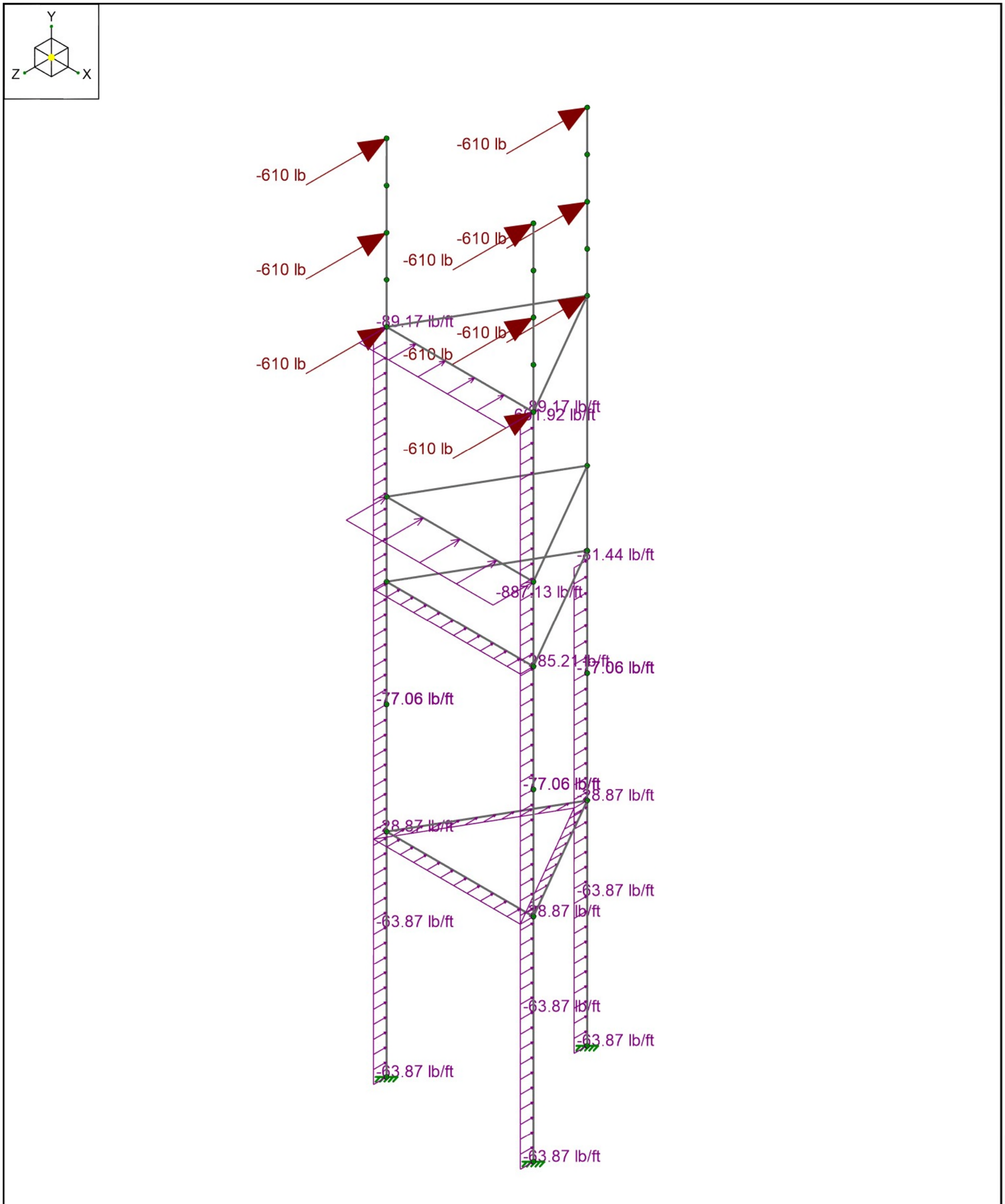
Loads: BLC 2, Live Load

ISE	VZW Plattsville Relo (553278)	SK-5
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



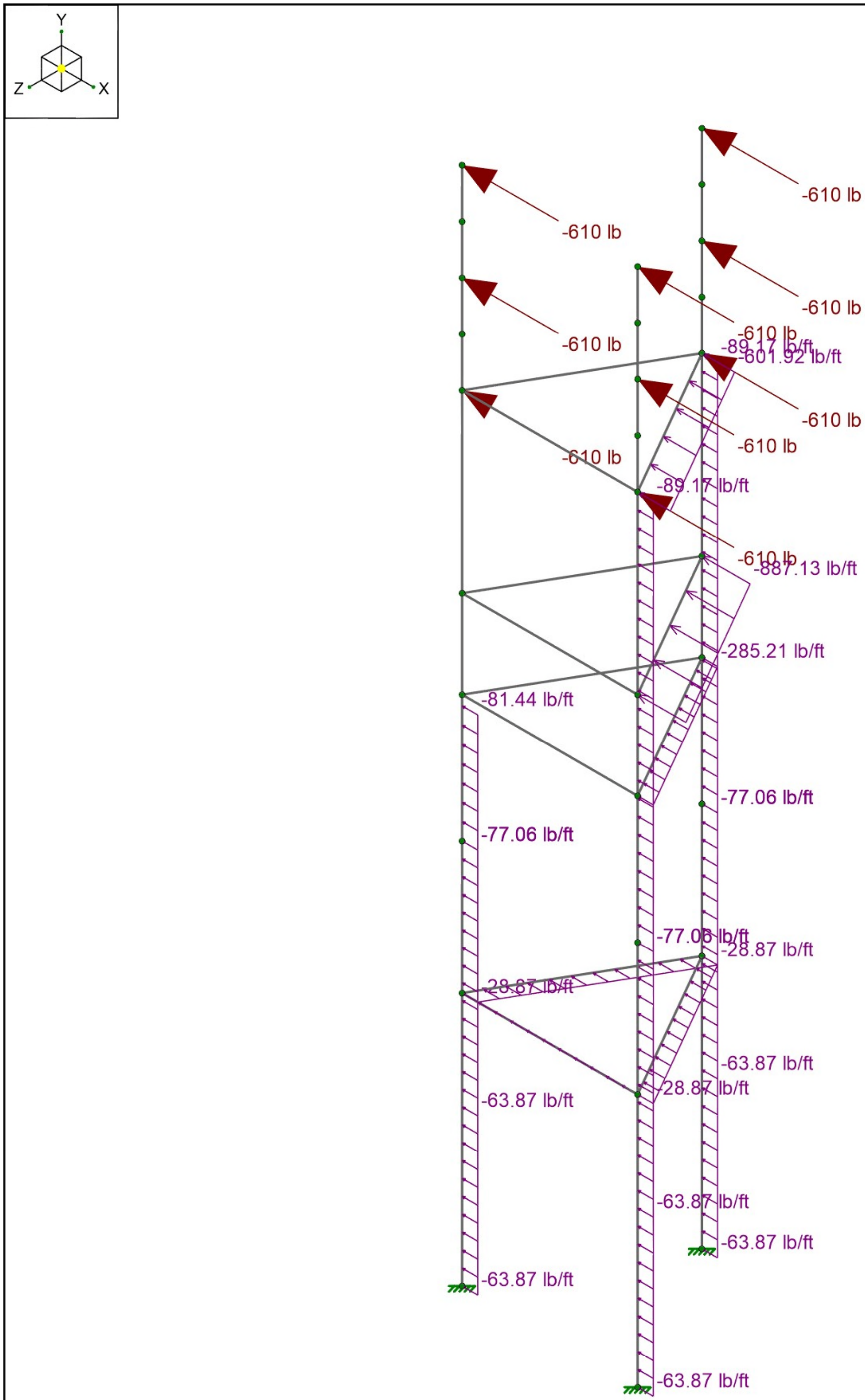
Loads: BLC 3, Snow Load

ISE	VZW Plattsville Relo (553278)	SK-7
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



Loads: BLC 4, Front Wind Load

ISE	VZW Plattsville Relo (553278)	SK-8
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



Loads: BLC 5, Side Wind Load

ISE	VZW Plattsville Relo (553278)	SK-9
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N37	0	0.5	0	
2	N38	18	0.5	0	
3	N41	9	0.5	-15.5885	
4	N40	18	100	0	
5	N42	9	100	-15.5885	
6	N43	0	100	0	
7	N44	0	80	0	
8	N45	9	80	-15.5885	
9	N46	18	80	0	
10	N47	18	26.5	0	
11	N48	0	26.5	0	
12	N49	9	26.5	-15.5885	
13	N50	18	62	0	
14	N51	0	62	0	
15	N52	9	62	-15.5885	
16	N53	18	53	0	
17	N54	0	53	0	
18	N55	9	53	-15.5885	
19	N59	0	40	0	
20	N60	18	40	0	
21	N61	9	40	-15.5885	
22	N62	0	90	0	
23	N63	9	90	-15.5885	
24	N64	18	90	0	
25	N65	9	95	-15.5885	
26	N66	0	95	0	
27	N67	18	95	0	
28	N68	9	85	-15.5885	
29	N69	0	85	0	
30	N70	18	85	0	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N37	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N38	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N41	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	490	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	490	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	490	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	490	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Tower Legs	48" Dia. x 1/2"	Column	HSS Pipe	A572 Gr.50	Typical	74.613	21045.48	21045.48	42090.96
2	Platform	HSS10X10X6	Beam	Tube	A500 Gr.B Rect	Typical	13.2	202	202	320

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
3	Mast Pipe	HSS6.625X0.250	Column	HSS Pipe	A500 Gr.B RND	Typical	4.68	23.9	23.9	47.9

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M31	N46	N40	Mast Pipe	Column	HSS Pipe	A500 Gr.B RND	Typical
2	M32	N45	N42	Mast Pipe	Column	HSS Pipe	A500 Gr.B RND	Typical
3	M33	N44	N43	Mast Pipe	Column	HSS Pipe	A500 Gr.B RND	Typical
4	M34	N38	N60	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
5	M35	N41	N61	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
6	M36	N37	N59	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
7	M40	N44	N45	Platform	Beam	Tube	A500 Gr.B Rect	Typical
8	M41	N45	N46	Platform	Beam	Tube	A500 Gr.B Rect	Typical
9	M42	N46	N44	Platform	Beam	Tube	A500 Gr.B Rect	Typical
10	M43	N51	N52	Platform	Beam	Tube	A500 Gr.B Rect	Typical
11	M44	N52	N50	Platform	Beam	Tube	A500 Gr.B Rect	Typical
12	M45	N50	N51	Platform	Beam	Tube	A500 Gr.B Rect	Typical
13	M46	N55	N53	Platform	Beam	Tube	A500 Gr.B Rect	Typical
14	M49	N60	N46	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
15	M47	N53	N54	Platform	Beam	Tube	A500 Gr.B Rect	Typical
16	M50	N61	N45	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
17	M48	N54	N55	Platform	Beam	Tube	A500 Gr.B Rect	Typical
18	M51	N59	N44	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
19	M52	N48	N49	Platform	Beam	Tube	A500 Gr.B Rect	Typical
20	M53	N49	N47	Platform	Beam	Tube	A500 Gr.B Rect	Typical
21	M54	N47	N48	Platform	Beam	Tube	A500 Gr.B Rect	Typical

Node Loads and Enforced Displacements (BLC 1 : Dead Load)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/ft, lb*s²*ft)]
1	N62	L	Y	-375
2	N64	L	Y	-375
3	N63	L	Y	-375
4	N45	L	Y	-375
5	N46	L	Y	-375
6	N44	L	Y	-375
7	N66	L	Y	-250
8	N65	L	Y	-250
9	N67	L	Y	-250
10	N68	L	Y	-250
11	N70	L	Y	-250
12	N69	L	Y	-250

Node Loads and Enforced Displacements (BLC 4 : Front Wind Load)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/ft, lb*s²*ft)]
1	N43	L	Z	-610
2	N40	L	Z	-610
3	N42	L	Z	-610
4	N63	L	Z	-610
5	N46	L	Z	-610
6	N45	L	Z	-610
7	N44	L	Z	-610
8	N62	L	Z	-610
9	N64	L	Z	-610

Node Loads and Enforced Displacements (BLC 5 : Side Wind Load)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/ft, lb*s²*ft)]
1	N42	L	X	-610
2	N40	L	X	-610
3	N43	L	X	-610
4	N64	L	X	-610
5	N63	L	X	-610
6	N62	L	X	-610
7	N44	L	X	-610
8	N45	L	X	-610
9	N46	L	X	-610

Member Distributed Loads (BLC 1 : Dead Load)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M42	Y	-27	-27	0	%100
2	M41	Y	-27	-27	0	%100
3	M40	Y	-27	-27	0	%100
4	M46	Y	-13.5	-13.5	0	%100
5	M47	Y	-13.5	-13.5	0	%100
6	M48	Y	-13.5	-13.5	0	%100
7	M45	Y	-40.5	-40.5	0	%100
8	M44	Y	-40.5	-40.5	0	%100
9	M43	Y	-40.5	-40.5	0	%100

Member Distributed Loads (BLC 4 : Front Wind Load)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M36	Z	-63.87	-63.87	0	15.9
2	M34	Z	-63.87	-63.87	0	15.9
3	M35	Z	-63.87	-63.87	0	15.9
4	M36	Z	-63.87	-77.06	15.9	39.5
5	M35	Z	-63.87	-77.06	15.9	39.5
6	M34	Z	-63.87	-77.06	15.9	39.5
7	M51	Z	-77.06	-89.17	0	%100
8	M49	Z	-77.06	-89.17	0	%100
9	M50	Z	-77.06	-81.44	0	12
10	M42	Z	-601.92	-601.92	0	%100
11	M47	Z	-285.21	-285.21	0	%100
12	M54	Z	-28.87	-28.87	0	%100
13	M52	Z	-28.87	-28.87	0	%100
14	M53	Z	-28.87	-28.87	0	%100
15	M45	Z	-887.13	-887.13	0	%100

Member Distributed Loads (BLC 5 : Side Wind Load)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M51	X	-77.06	-81.44	0	12
2	M49	X	-77.06	-89.17	0	%100
3	M50	X	-77.06	-89.17	0	%100
4	M34	X	-63.87	-63.87	0	15.9
5	M35	X	-63.87	-63.87	0	15.9
6	M36	X	-63.87	-63.87	0	15.9
7	M36	X	-63.87	-77.06	15.9	%100
8	M34	X	-63.87	-77.06	15.9	%100
9	M35	X	-63.87	-77.06	15.9	%100

Member Distributed Loads (BLC 5 : Side Wind Load) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
10	M41	X	-601.92	-601.92	0	%100
11	M46	X	-285.21	-285.21	0	%100
12	M52	X	-28.87	-28.87	0	%100
13	M54	X	-28.87	-28.87	0	%100
14	M53	X	-28.87	-28.87	0	%100
15	M44	X	-887.13	-887.13	0	%100

Member Distributed Loads (BLC 6 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M46	Y	-38.111	-70.229	2	4
2	M46	Y	-70.229	-88.044	4	6
3	M46	Y	-88.044	-109.42	6	8
4	M46	Y	-109.42	-112.614	8	10
5	M46	Y	-112.614	-94.135	10	12
6	M46	Y	-94.135	-62.658	12	14
7	M46	Y	-62.658	-31.532	14	16
8	M46	Y	-31.532	-16.653	16	18
9	M47	Y	-1.26	-25.362	0	2
10	M47	Y	-25.362	-56.015	2	4
11	M47	Y	-56.015	-83.503	4	6
12	M47	Y	-83.503	-113.299	6	8
13	M47	Y	-113.299	-119.016	8	10
14	M47	Y	-119.016	-95.415	10	12
15	M47	Y	-95.415	-69.779	12	14
16	M47	Y	-69.779	-35.825	14	16
17	M47	Y	-35.825	-1.26	16	18
18	M48	Y	-0.913	-23.798	0	2
19	M48	Y	-23.798	-54.616	2	4
20	M48	Y	-54.616	-75.894	4	6
21	M48	Y	-75.894	-99.315	6	8
22	M48	Y	-99.315	-112.798	8	10
23	M48	Y	-112.798	-90.591	10	12
24	M48	Y	-90.591	-56.535	12	14
25	M48	Y	-56.535	-24.075	14	16
26	M48	Y	-24.075	-0.913	16	18
27	M43	Y	-0.913	-23.798	0	2
28	M43	Y	-23.798	-54.616	2	4
29	M43	Y	-54.616	-75.894	4	6
30	M43	Y	-75.894	-99.315	6	8
31	M43	Y	-99.315	-112.798	8	10
32	M43	Y	-112.798	-90.591	10	12
33	M43	Y	-90.591	-56.535	12	14
34	M43	Y	-56.535	-24.075	14	16
35	M43	Y	-24.075	-0.913	16	18
36	M44	Y	-1.25	-38.111	0	2
37	M44	Y	-38.111	-70.229	2	4
38	M44	Y	-70.229	-88.044	4	6
39	M44	Y	-88.044	-109.42	6	8
40	M44	Y	-109.42	-112.614	8	10
41	M44	Y	-112.614	-94.135	10	12
42	M44	Y	-94.135	-62.658	12	14
43	M44	Y	-62.658	-31.532	14	16
44	M44	Y	-31.532	-16.653	16	18
45	M45	Y	-1.26	-25.362	0	2
46	M45	Y	-25.362	-56.015	2	4

Member Distributed Loads (BLC 6 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
47	M45	Y	-56.015	-83.503	4	6
48	M45	Y	-83.503	-113.299	6	8
49	M45	Y	-113.299	-119.016	8	10
50	M45	Y	-119.016	-95.415	10	12
51	M45	Y	-95.415	-69.779	12	14
52	M45	Y	-69.779	-35.825	14	16
53	M45	Y	-35.825	-1.26	16	18
54	M46	Y	-1.25	-38.111	0	2

Member Distributed Loads (BLC 7 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M47	Y	-57.32	-2.015	16	18
2	M48	Y	-1.46	-38.077	0	2
3	M48	Y	-38.077	-87.385	2	4
4	M48	Y	-87.385	-121.43	4	6
5	M48	Y	-121.43	-158.904	6	8
6	M48	Y	-158.904	-180.477	8	10
7	M48	Y	-180.477	-144.946	10	12
8	M48	Y	-144.946	-90.455	12	14
9	M48	Y	-90.455	-38.52	14	16
10	M48	Y	-38.52	-1.46	16	18
11	M43	Y	-1.46	-38.077	0	2
12	M43	Y	-38.077	-87.385	2	4
13	M43	Y	-87.385	-121.43	4	6
14	M43	Y	-121.43	-158.904	6	8
15	M43	Y	-158.904	-180.477	8	10
16	M43	Y	-180.477	-144.946	10	12
17	M43	Y	-144.946	-90.455	12	14
18	M43	Y	-90.455	-38.52	14	16
19	M43	Y	-38.52	-1.46	16	18
20	M44	Y	-2	-60.978	0	2
21	M44	Y	-60.978	-112.367	2	4
22	M44	Y	-112.367	-140.871	4	6
23	M44	Y	-140.871	-175.071	6	8
24	M44	Y	-175.071	-180.183	8	10
25	M44	Y	-180.183	-150.616	10	12
26	M44	Y	-150.616	-100.252	12	14
27	M44	Y	-100.252	-50.452	14	16
28	M44	Y	-50.452	-26.645	16	18
29	M45	Y	-2.015	-40.58	0	2
30	M45	Y	-40.58	-89.624	2	4
31	M45	Y	-89.624	-133.606	4	6
32	M45	Y	-133.606	-181.278	6	8
33	M45	Y	-181.278	-190.425	8	10
34	M45	Y	-190.425	-152.664	10	12
35	M45	Y	-152.664	-111.646	12	14
36	M45	Y	-111.646	-57.32	14	16
37	M45	Y	-57.32	-2.015	16	18
38	M46	Y	-2	-60.978	0	2
39	M46	Y	-60.978	-112.367	2	4
40	M46	Y	-112.367	-140.871	4	6
41	M46	Y	-140.871	-175.071	6	8
42	M46	Y	-175.071	-180.183	8	10
43	M46	Y	-180.183	-150.616	10	12
44	M46	Y	-150.616	-100.252	12	14

Member Distributed Loads (BLC 7 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	M46	Y	-100.252	-50.452	14	16
46	M46	Y	-50.452	-26.645	16	18
47	M47	Y	-2.015	-40.58	0	2
48	M47	Y	-40.58	-89.624	2	4
49	M47	Y	-89.624	-133.606	4	6
50	M47	Y	-133.606	-181.278	6	8
51	M47	Y	-181.278	-190.425	8	10
52	M47	Y	-190.425	-152.664	10	12
53	M47	Y	-152.664	-111.646	12	14
54	M47	Y	-111.646	-57.32	14	16

Member Distributed Loads (BLC 8 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M40	Y	-1.095	-28.558	0	2
2	M40	Y	-28.558	-65.539	2	4
3	M40	Y	-65.539	-91.073	4	6
4	M40	Y	-91.073	-119.178	6	8
5	M40	Y	-119.178	-135.358	8	10
6	M40	Y	-135.358	-108.71	10	12
7	M40	Y	-108.71	-67.842	12	14
8	M40	Y	-67.842	-28.89	14	16
9	M40	Y	-28.89	-1.095	16	18
10	M41	Y	-1.5	-45.733	0	2
11	M41	Y	-45.733	-84.275	2	4
12	M41	Y	-84.275	-105.653	4	6
13	M41	Y	-105.653	-131.304	6	8
14	M41	Y	-131.304	-135.137	8	10
15	M41	Y	-135.137	-112.962	10	12
16	M41	Y	-112.962	-75.189	12	14
17	M41	Y	-75.189	-37.839	14	16
18	M41	Y	-37.839	-19.984	16	18
19	M42	Y	-1.512	-30.435	0	2
20	M42	Y	-30.435	-67.218	2	4
21	M42	Y	-67.218	-100.204	4	6
22	M42	Y	-100.204	-135.958	6	8
23	M42	Y	-135.958	-142.819	8	10
24	M42	Y	-142.819	-114.498	10	12
25	M42	Y	-114.498	-83.735	12	14
26	M42	Y	-83.735	-42.99	14	16
27	M42	Y	-42.99	-1.512	16	18

Member Area Loads (BLC 1 : Dead Load)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [psf]
1	N51	N52	N50	Y	Two Way	-25
2	N54	N55	N53	Y	Two Way	-25

Member Area Loads (BLC 2 : Live Load)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [psf]
1	N51	N52	N50	Y	Two Way	-40
2	N54	N55	N53	Y	Two Way	-40

Member Area Loads (BLC 3 : Snow Load)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [psf]
1	N44	N45	N46	Y	Two Way	-30

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Distributed	Area(Member)
1	Dead Load	DL	-1	12	9	2
2	Live Load	LL				2
3	Snow Load	SL				1
4	Front Wind Load	WLZ		9	15	
5	Side Wind Load	WLX		9	15	
6	BLC 1 Transient Area Loads	None			54	
7	BLC 2 Transient Area Loads	None			54	
8	BLC 3 Transient Area Loads	None			27	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Dead Only	Yes	Y	1	1								
2	Live Load Only	Yes	Y	2	1								
3	Snow Load Only	Yes	Y	3	1								
4	Wind Only (0 Deg)	Yes	Y	4	1								
5	Wind Only (90 Deg)	Yes	Y	5	1								
6	1.4 DL	Yes	Y	1	1.4								
7	1.2 DL + 1.6 LL + 0.5 SL	Yes	Y	1	1.2	2	1.6	3	0.5				
8	1.2 DL + 1 LL + 1.6 SL	Yes	Y	1	1.2	2	1	3	1.6				
9	1.2 DL + 1.6 SL + 0.5 WL (0 Deg)	Yes	Y	1	1.2	3	1.6	4	0.5				
10	1.2 DL + 1.6 SL + 0.5 WL (45 Deg)	Yes	Y	1	1.2	3	1.6	4	0.354	5	0.354		
11	1.2 DL + 1.6 SL + 0.5 WL (90 Deg)	Yes	Y	1	1.2	3	1.6	5	0.5				
12	1.2 DL + 1 LL + 0.5 SL + 1 WL (0 Deg)	Yes	Y	1	1.2	4	1	2	1	3	0.5		
13	1.2 DL + 1 LL + 0.5 SL + 1 WL (45 Deg)	Yes	Y	1	1.2	4	0.707	5	0.707	2	1	3	0.5
14	1.2 DL + 1 LL + 0.5 SL + 1 WL (90 Deg)	Yes	Y	1	1.2	5	1	2	1	3	0.5		
15	0.9 DL + 1 WL (0 Deg)	Yes	Y	1	0.9	4	1						
16	0.9 DL + 1 WL (45 Deg)	Yes	Y	1	0.9	4	0.707	5	0.707				
17	0.9 DL + 1 WL (90 Deg)	Yes	Y	1	0.9	5	1						
18	D+LL+SL+WL(45Deg)	Yes	Y	1	1	2	1	3	1	4	0.707	5	0.707
19	D+LL+SL+WL(90 Deg)	Yes	Y	1	1	2	1	3	1	5	1		

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N37	max	18106.384	17	81365.521	14	18002.51	4	837.07	12	-0.003	3	4.119	12
2		min	-468.272	12	-24120.931	4	-969.542	17	-27.458	17	-39.151	13	-828.437	14
3	N38	max	18297.732	19	41721.752	7	18002.51	4	837.043	12	28.872	4	0.354	6
4		min	-32.409	6	-41776.407	5	-19.638	6	-0.223	6	-50.58	14	-828.218	14
5	N41	max	18252.357	5	87954.317	12	18642.918	15	844.165	12	0	4	0.209	7
6		min	-4.582	7	-7.009	5	-35.499	2	-0.305	19	-0.573	14	-861.484	14
7	Totals:	max	54621.449	19	124647.327	7	54621.383	4						
8		min	0	4	0	5	0	5						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N37	max	0	12	0	4	0	17	0	17	0	13	0	14
2		min	0	17	0	14	0	4	0	12	0	3	0	12
3	N38	max	0	6	0	5	0	6	0	6	0	14	0	14
4		min	0	19	0	7	0	4	0	12	0	4	0	6
5	N41	max	0	7	0	5	0	2	0	19	0	14	0	14
6		min	0	5	0	12	0	15	0	12	0	4	0	7
7	N40	max	0.013	12	0.017	5	0.001	2	1.898e-6	2	1.062e-3	14	4.686e-2	14
8		min	-13.123	14	-0.016	7	-13.229	12	-4.7e-2	12	-6.042e-4	4	-4.578e-5	4
9	N42	max	0.002	7	0	5	0.006	11	2.019e-5	11	1.565e-5	14	4.719e-2	14
10		min	-13.415	14	-0.034	12	-13.205	12	-4.692e-2	12	0	4	-2.411e-6	8
11	N43	max	0.006	8	0.01	4	0.146	14	9.726e-5	14	8.129e-4	13	4.686e-2	14
12		min	-13.121	14	-0.031	14	-13.228	12	-4.7e-2	12	1.038e-7	3	-1.679e-5	8
13	N44	max	0.002	7	0.01	4	0.122	19	9.62e-5	5	8.129e-4	13	6.482e-3	14
14		min	-4.765	14	-0.03	14	-4.839	12	-6.615e-3	12	1.038e-7	3	-1.641e-5	8
15	N45	max	0.001	7	0	5	0.002	19	1.973e-5	11	1.565e-5	14	6.803e-3	14
16		min	-4.98	14	-0.032	12	-4.835	12	-6.536e-3	12	0	4	-2.356e-6	8
17	N46	max	0.003	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	6.48e-3	14
18		min	-4.767	14	-0.014	7	-4.839	12	-6.616e-3	12	-6.042e-4	4	-4.578e-5	4
19	N47	max	0	7	0.008	5	0	7	1.683e-6	7	4.034e-4	14	4.584e-3	14
20		min	-0.818	14	-0.007	7	-0.831	12	-4.676e-3	12	-2.302e-4	4	-1.708e-5	12
21	N48	max	0	12	0.004	4	0.024	14	1.145e-4	19	3.122e-4	13	4.585e-3	14
22		min	-0.818	14	-0.014	14	-0.831	12	-4.677e-3	12	2.509e-8	3	-1.422e-6	6
23	N49	max	0	7	0	5	0	19	1.814e-6	11	4.57e-6	14	4.833e-3	14
24		min	-0.857	14	-0.015	12	-0.832	12	-4.65e-3	12	0	4	-1.146e-6	7
25	N50	max	0.001	12	0.015	5	0.001	8	9.982e-7	3	9.47e-4	14	6.485e-3	14
26		min	-3.352	14	-0.013	7	-3.404	12	-6.593e-3	12	-5.513e-4	4	-1.896e-5	4
27	N51	max	0.001	7	0.009	4	0.091	19	1.381e-4	5	7.267e-4	13	6.456e-3	14
28		min	-3.349	14	-0.027	14	-3.404	12	-6.592e-3	12	7.376e-8	3	-1.543e-5	7
29	N52	max	0.001	7	0	5	0.001	14	1.595e-5	7	5.627e-7	7	6.776e-3	14
30		min	-3.507	14	-0.03	12	-3.401	12	-6.535e-3	12	-9.123e-6	5	-2.499e-6	7
31	N53	max	0.001	7	0.014	5	0.001	7	4.327e-7	3	8.251e-4	14	6.362e-3	14
32		min	-2.652	14	-0.012	7	-2.694	12	-6.479e-3	12	-4.753e-4	4	-2.362e-5	4
33	N54	max	0.001	12	0.008	4	0.075	14	1.42e-4	5	6.334e-4	13	6.329e-3	14
34		min	-2.652	14	-0.025	14	-2.694	12	-6.477e-3	12	5.932e-8	3	-1.639e-5	7
35	N55	max	0.001	7	0	5	0.001	19	1.721e-5	7	1.823e-6	14	6.672e-3	14
36		min	-2.777	14	-0.027	12	-2.694	12	-6.41e-3	12	0	4	-2.432e-6	7
37	N59	max	0.001	4	0.006	4	0.049	14	1.716e-4	14	4.759e-4	13	5.883e-3	14
38		min	-1.684	14	-0.02	14	-1.709	12	-5.966e-3	12	4.253e-8	3	-7.576e-6	4
39	N60	max	0.001	7	0.011	5	0.001	7	2.866e-6	7	6.182e-4	14	5.882e-3	14
40		min	-1.683	14	-0.01	7	-1.709	12	-5.966e-3	12	-3.551e-4	4	-5.001e-6	7
41	N61	max	0	7	0	5	0	5	5.221e-7	5	3.171e-6	14	6.146e-3	14
42		min	-1.763	14	-0.021	12	-1.711	12	-5.981e-3	12	0	4	-1.665e-6	7
43	N62	max	0.004	8	0.01	4	0.134	14	9.707e-5	14	8.129e-4	13	3.885e-2	14
44		min	-7.815	14	-0.031	14	-7.905	12	-3.899e-2	12	1.038e-7	3	-1.676e-5	8
45	N63	max	0.002	7	0	5	0.003	8	2.015e-5	11	1.565e-5	14	3.918e-2	14
46		min	-8.069	14	-0.034	12	-7.891	12	-3.891e-2	12	0	4	-2.406e-6	8
47	N64	max	0.008	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	3.885e-2	14
48		min	-7.817	14	-0.015	7	-7.906	12	-3.899e-2	12	-6.042e-4	4	-4.578e-5	4
49	N65	max	0.002	7	0	5	0.005	11	2.019e-5	11	1.565e-5	14	4.52e-2	14
50		min	-10.622	14	-0.034	12	-10.428	12	-4.493e-2	12	0	4	-2.411e-6	8
51	N66	max	0.005	8	0.01	4	0.14	14	9.725e-5	14	8.129e-4	13	4.487e-2	14
52		min	-10.348	14	-0.031	14	-10.447	12	-4.501e-2	12	1.038e-7	3	-1.679e-5	8
53	N67	max	0.011	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	4.487e-2	14
54		min	-10.35	14	-0.016	7	-10.447	12	-4.501e-2	12	-6.042e-4	4	-4.578e-5	4
55	N68	max	0.002	7	0	5	0.003	19	2.002e-5	11	1.565e-5	14	2.705e-2	14

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
56		min	-6.039	14	-0.033	12	-5.877	12	-2.678e-2	12	0	4	-2.391e-6	8
57	N69	max	0.003	8	0.01	4	0.128	14	9.644e-5	14	8.129e-4	13	2.672e-2	14
58		min	-5.804	14	-0.031	14	-5.886	12	-2.686e-2	12	1.038e-7	3	-1.665e-5	8
59	N70	max	0.005	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	2.672e-2	14
60		min	-5.806	14	-0.015	7	-5.887	12	-2.686e-2	12	-6.042e-4	4	-4.578e-5	4

Envelope Member End Reactions

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M31	I	max	1704.57	6	0.062	12	1244.599	12	0	19	0	5	0.001	12
2			min	0	2	-1244.414	14	0	2	0	1	-18.7	12	-18.699	14
3		J	max	0	19	0.002	12	612.381	12	0	19	0	19	0	19
4			min	0	1	-612.375	14	0	2	0	1	0	1	0	1
5	M32	I	max	1704.57	6	0.003	8	1244.487	12	0	19	0	11	0	8
6			min	0	2	-1244.872	14	-0.028	11	0	1	-18.699	12	-18.703	14
7		J	max	0	19	0	8	612.377	12	0	19	0	19	0	19
8			min	0	1	-612.392	14	-0.001	11	0	1	0	1	0	1
9	M33	I	max	1704.57	6	0.023	8	1244.598	12	0	19	0.001	14	0	8
10			min	0	2	-1244.415	14	-0.135	14	0	1	-18.7	12	-18.699	14
11		J	max	0	19	0.001	8	612.381	12	0	19	0	19	0	19
12			min	0	1	-612.375	14	-0.005	14	0	1	0	1	0	1
13	M34	I	max	41721.752	7	32.422	6	18030.732	12	28.872	4	0.223	6	0.354	6
14			min	-41776.407	5	-18277.366	14	-19.646	6	-50.58	14	-837.043	12	-828.218	14
15		J	max	28641.158	7	360.096	7	14389.795	15	30.151	4	0.049	3	1.308	4
16			min	-33695.891	5	-15288.838	5	-212.114	7	-51.883	14	-224.705	12	-221.361	14
17	M35	I	max	87954.317	12	4.606	7	18841.776	12	0	4	0.305	19	0.209	7
18			min	-7.009	5	-18338.293	14	-35.5	2	-0.573	14	-844.165	12	-861.484	14
19		J	max	65465.875	12	0.685	3	16763.553	12	0.406	5	2.382	7	0.166	7
20			min	-5.315	5	-14522.508	14	-9.247	3	-0.033	7	-219.178	15	-229.458	14
21	M36	I	max	81365.521	14	468.286	12	18031.387	12	-0.003	3	27.458	17	4.119	12
22			min	-24120.931	4	-18288.216	14	-974.436	17	-39.151	13	-837.07	12	-828.437	14
23		J	max	60136.559	14	1050.287	4	14394.534	15	-0.004	3	3.248	5	2.195	7
24			min	-19455.211	4	-15812.273	14	-1741.46	14	-39.518	13	-224.522	12	-217.358	17
25	M40	I	max	6121.482	18	5202.107	19	1020.311	14	0.442	19	4.478	4	39.276	19
26			min	88.996	2	-6513.718	4	-376.209	4	-0.103	15	-8.226	14	-58.691	4
27		J	max	6121.482	18	3858.971	5	1020.311	14	0.442	19	10.14	14	62.746	12
28			min	88.996	2	-7716.546	12	-376.209	4	-0.103	15	-2.293	4	-34.868	5
29	M41	I	max	4448.791	12	8805.315	18	377.458	12	0.457	14	5.895	5	71.242	18
30			min	-1055.524	5	-1.085	2	-3992.882	5	0	3	-2.305	12	-0.001	2
31		J	max	4448.791	12	6762.763	16	5392.563	14	0.457	14	18.492	14	6.694	8
32			min	-6472.804	5	-1996.854	8	0.261	3	0	3	0.002	3	-64.48	16
33	M42	I	max	3471.806	19	1916.433	8	368.458	19	0.264	19	14.067	4	6.654	9
34			min	-4319.207	4	-7424.422	5	-5417.28	4	0	4	-2.381	19	-66.799	5
35		J	max	3471.806	19	1.141	2	5418.53	12	0.264	19	14.078	12	72.121	19
36			min	-4319.207	4	-8913.19	19	0.318	3	0	4	0.003	3	-0.002	2
37	M43	I	max	3657.459	13	6345.834	14	722.622	14	0.465	14	4.02	4	43.539	14
38			min	-180.53	3	-6524.989	4	-335.903	4	-0.051	4	-5.629	14	-58.771	4
39		J	max	3657.459	13	3873.927	5	722.622	14	0.465	14	7.378	14	67.791	12
40			min	-180.53	3	-9081.623	12	-335.903	4	-0.051	4	-2.026	4	-34.929	5
41	M44	I	max	4642.189	13	10102.678	13	336.201	12	0.451	19	15.18	5	75.894	13
42			min	-193.957	3	-0.449	3	-6488.11	5	0	1	-2.029	12	0.001	3
43		J	max	3508.917	12	6524.989	4	7341.87	14	0.451	19	22.863	14	11.235	7
44			min	-5076.099	5	-3274.38	7	0.03	3	0	1	0	3	-62.401	16
45	M45	I	max	4309.302	14	3116.493	7	140.776	14	0.377	14	21.959	4	11.026	7
46			min	-1226.559	4	-7428.986	5	-7984.17	4	0	4	-0.415	14	-66.878	5
47		J	max	4309.302	14	0.49	3	7984.591	12	0.377	14	21.963	12	76.674	14

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
48			min	-1226.559	4	-10207.352	14	-0.027	3	0	4	0	3	0	3
49	M46	I	max	2836.991	5	9692.249	13	277.66	4	0.478	14	2.492	5	73.95	13
50			min	-979.375	7	-0.38	3	-1924.271	5	0	1	-1.64	4	-0.002	3
51		J	max	270.101	5	6415.6	4	2522.145	14	0.478	14	7.942	13	10.354	7
52			min	-979.375	7	-2982.574	7	-0.055	3	0	1	0	3	-61.986	16
53	M49	I	max	28641.158	7	359.885	7	14369.291	15	30.151	4	0.049	3	1.308	4
54			min	-33695.891	5	-15259.762	5	-211.984	7	-51.883	14	-224.705	12	-221.361	14
55		J	max	5824.348	8	1000.927	8	4173.388	16	9.588	4	43.075	16	65.37	5
56			min	-11277.113	5	-6709.1	5	-582.042	8	-20.873	14	-5.794	8	-9.937	8
57	M47	I	max	2207.308	16	2824.603	7	65.704	14	0.387	14	5.983	12	10.144	7
58			min	-975.997	7	-7297.325	5	-2567.015	12	0	4	0	1	-65.697	5
59		J	max	2207.308	16	0.381	3	2566.89	4	0.387	14	5.982	4	74.597	14
60			min	-975.997	7	-9782.971	14	-0.218	8	0	4	-0.002	8	-0.002	3
61	M50	I	max	65465.875	12	0.685	3	16796.722	12	0.406	5	2.382	7	0.166	7
62			min	-5.315	5	-14521.928	14	-9.247	3	-0.033	7	-219.178	15	-229.458	14
63		J	max	17384.014	12	0	4	10023.591	12	0	4	89.966	12	17.379	19
64			min	-7.032	5	-1962.97	19	-41.232	5	-4.267	14	-0.052	5	-0.002	2
65	M48	I	max	120.902	4	5995.617	14	546.638	14	0.495	14	3.358	4	42.12	14
66			min	-2289.043	14	-6415.6	4	-277.66	4	-0.062	15	-4.163	14	-57.797	4
67		J	max	120.902	4	3816.062	5	546.638	14	0.495	14	5.676	14	65.909	12
68			min	-2289.043	14	-8679.539	12	-277.66	4	-0.062	15	-1.64	4	-34.422	5
69	M51	I	max	60136.559	14	1050.373	4	14373.971	15	-0.004	3	3.248	5	2.195	7
70			min	-19455.211	4	-15840.75	14	-1741.489	14	-39.518	13	-224.522	12	-217.358	17
71		J	max	15708.721	19	2671.017	4	3597.27	4	-0.005	3	32.579	4	72.745	19
72			min	-6514.241	4	-8503.467	19	-2948.876	19	-15.614	18	-34.498	19	-29.091	4
73	M52	I	max	6.509	3	3327.32	14	347.015	5	0.374	14	1.228	12	26.769	14
74			min	-1169.085	13	-4665.747	4	-3.629	12	-0.037	12	-1.4	5	-42.02	4
75		J	max	6.509	3	2782.071	5	-0.06	3	0.374	14	0.796	5	43.89	12
76			min	-1080.591	14	-5227.511	12	-263.459	12	-0.037	12	-1.175	12	-25.087	5
77	M53	I	max	954.233	5	5830.429	13	263.176	4	0.374	14	0.003	7	49.36	13
78			min	-424.004	12	-0.575	2	-216.98	19	0	3	-1.173	4	-0.002	3
79		J	max	694.403	5	4901.946	16	233.45	5	0.374	14	1.226	4	1.827	6
80			min	-874.044	12	-609.195	6	-0.353	7	0	3	-0.003	7	-46.453	16
81	M54	I	max	924.617	4	609.115	6	-0.058	3	0.31	17	1.329	19	1.826	6
82			min	-482.781	14	-5300.167	5	-260.724	18	0	7	-0.053	4	-47.702	5
83		J	max	924.617	4	0.487	2	259.83	4	0.31	17	-0.001	3	49.676	14
84			min	-255.08	7	-5867.256	14	-109.095	19	0	7	-0.634	19	-0.002	3

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M31	HSS6.625X0.250	0.632	0	12	0.024	10		12	88488.105	176904	29.988	29.988	2.598	H1-1b
2	M32	HSS6.625X0.250	0.632	0	14	0.024	10		14	88488.105	176904	29.988	29.988	1.978	H1-1b
3	M33	HSS6.625X0.250	0.632	0	12	0.024	10		12	88488.105	176904	29.988	29.988	2.598	H1-1b
4	M34	48" Dia. x 1/2"	0.231	0	16	0.031	0		14	2.83897e+6	3.35758e+6	3705.566	3705.566	1.469	H1-1b
5	M35	48" Dia. x 1/2"	0.243	0	12	0.019	0		12	2.83897e+6	3.35758e+6	3705.566	3705.566	1.434	H1-1b
6	M36	48" Dia. x 1/2"	0.238	0	14	0.027	0		13	2.83897e+6	3.35758e+6	3705.566	3705.566	1.464	H1-1b
7	M40	HSS10X10X6	0.404	18	12	0.05	18	y	12	445149.418	546480	162.84	162.84	2.291	H1-1b
8	M41	HSS10X10X6	0.497	18	16	0.06	0	y	18	445149.418	546480	162.84	162.84	2.286	H1-1b
9	M42	HSS10X10X6	0.473	18	19	0.059	18	y	19	445149.793	546480	162.84	162.84	2.296	H1-1b
10	M43	HSS10X10X6	0.433	18	12	0.059	18	y	12	445149.418	546480	162.84	162.84	2.312	H1-1b
11	M44	HSS10X10X6	0.528	0	13	0.068	0	y	13	445149.418	546480	162.84	162.84	2.312	H1-1b
12	M45	HSS10X10X6	0.489	18	14	0.069	18	y	14	445149.793	546480	162.84	162.84	2.314	H1-1b
13	M46	HSS10X10X6	0.459	0	13	0.065	0	y	13	445149.418	546480	162.84	162.84	2.308	H1-1b
14	M49	48" Dia. x 1/2"	0.064	0	5	0.028	0		5	2.83476e+6	3.35758e+6	3705.566	3705.566	3	H1-1b
15	M47	HSS10X10X6	0.467	18	14	0.066	18	y	14	445149.793	546480	162.84	162.84	2.31	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
16	M50	48" Dia. x 1/2"	0.071	0	12	0.017	0		12	2.83476e+6	3.35758e+6	3705.566	3705.566	1.553	H1-1b
17	M48	HSS10X10X6	0.415	18	12	0.056	18	y	12	445149.418	546480	162.84	162.84	2.307	H1-1b
18	M51	48" Dia. x 1/2"	0.069	0	14	0.024	0		13	2.83476e+6	3.35758e+6	3705.566	3705.566	3	H1-1b
19	M52	HSS10X10X6	0.277	18	12	0.034	18	y	12	445149.418	546480	162.84	162.84	2.286	H1-1b
20	M53	HSS10X10X6	0.309	0	13	0.04	0	y	13	445149.418	546480	162.84	162.84	2.287	H1-1b
21	M54	HSS10X10X6	0.309	18	14	0.04	18	y	14	445149.793	546480	162.84	162.84	2.286	H1-1b

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB : VZW Platsville Relo
CLIENT : Larson
ISE JOB NO: 18054
DATE : 12-09-2022
BY : PB

HSS 10"x10"x3/8" To Leg Connection

LOADING

Axial		6.47	k
Shear		11.00	k
Moment		76.70	k-ft

PROPERTIES

	F_y	F_u
Plate	36	58
Beam	46	58
Bolt	-	120

ELEMENT PROPERTIES

Plate thickness	t	1	in
Flange Width	d	17	in

BRACING DETAILS
HSS10"X10"X3/8" - A500 GR. B

BOLT DETAILS

Bolt Type		A325	
Bolt Diameter	d_b	0.75	in
Bolt Area	A_b	0.442	in^2
# Bolts	N	20	
Edge Distance		2	in

HSS LEG
48" O.D. X 1/2" A500 GR. B

Bolts
(20) 3/4"Dia. A325 Bolts

WELD AT HSS Tube

Weld Size	0.375	in			
Allowable Weld Force	21.508	K/in	[(0.707)Twf+Twg](0.48)Fyw		
Weld Force	2.593	K/in	OK	12.1%	

Use 3/8" Weld

BOLT CAPACITY

Bolt Shear	V_u	11.77	k	OK	65.8%	AISC Table 7-1
Bolt Shear Capacity	V_a	17.90	k			

AVAILABLE STEEL BEARING/TEAROUT - PLATE

For Edge Distance (2")	78.30	k	OK	15.0%	AISC Table 7-5
For Bolt Spacing (3")	62.00	k	OK	19.0%	AISC Table 7-4
Bolt Tension	11.77	k			
Bolt Tension Capacity	29.80	k	OK	39.5%	AISC Table 7-2

PLATE

Plate Bending	Mpb=	131.44	k-in	(M/14")*Arm
Bend Line	L=	18.00	in	
Required Plate Thickness	Tpl =	0.81	in	$Tpl = [4M/\phi F_y L]^{1/2}$

Use 1"x 18"x 18" Square A572-50 Plate

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB : VZW Platsville Relo
CLIENT : Larson
ISE JOB NO: 18054
DATE : 12-09-2022
BY : PB

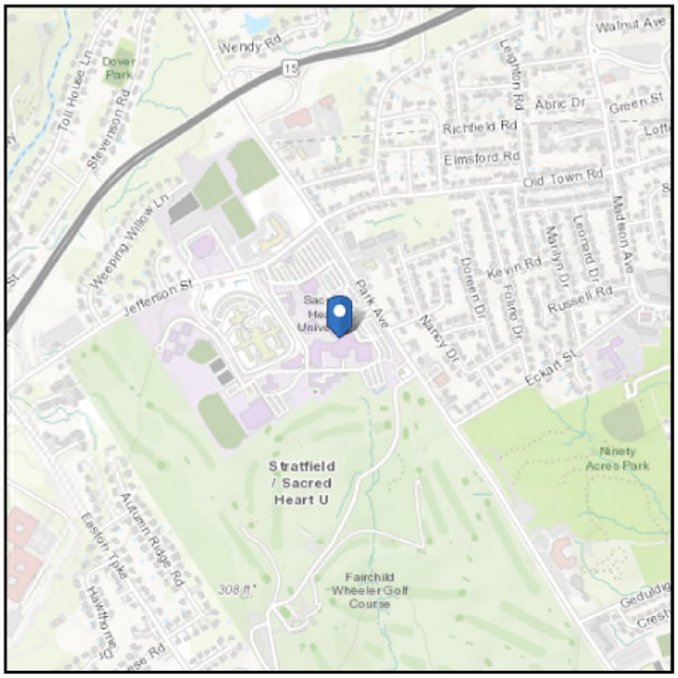
				Sum A_x	Sum A_y	Sum A_z	Sum P_x	Sum P_y	Sum P_z	Bolt Loads and Stresses				
				20	20	20	-6.5	0.0	11.0			LOAD		STRESS
Bolt #:	**X**	**Y**	**Z**	**A_x**	**A_y**	**A_z**	**P_x**	**P_y**	**P_z**	**Theta**	**Pz'**	**KIPS**		**KSI**
1	**1.00**	**7.00**	**2.00**	**1.00**	**1.00**	**1.00**	2.945	0.000	0.550	**9**	**1**	**2.994**	**T**	0.75
2	**1.00**	**7.00**	**4.00**	**1.00**	**1.00**	**1.00**	6.213	0.000	0.550	**27**	**0**	**6.232**	**T**	1.57
3	**1.00**	**7.00**	**-2.00**	**1.00**	**1.00**	**1.00**	-3.592	0.000	0.550	**45**	**0**	**3.613**	**C**	0.91
4	**1.00**	**7.00**	**-4.00**	**1.00**	**1.00**	**1.00**	-6.860	0.000	0.550	**63**	**0**	**6.864**	**C**	1.73
5	**1.00**	**2.00**	**7.00**	**1.00**	**1.00**	**1.00**	11.115	0.000	0.550	**81**	**0**	**11.115**	**T**	2.80
6	**1.00**	**4.00**	**7.00**	**1.00**	**1.00**	**1.00**	11.115	0.000	0.550	**99**	**0**	**11.115**	**T**	2.80
7	**1.00**	**-2.00**	**7.00**	**1.00**	**1.00**	**1.00**	11.115	0.000	0.550	**117**	**0**	**11.118**	**T**	2.80
8	**1.00**	**-4.00**	**7.00**	**1.00**	**1.00**	**1.00**	11.115	0.000	0.550	**135**	**0**	**11.122**	**T**	2.80
9	**1.00**	**-7.00**	**2.00**	**1.00**	**1.00**	**1.00**	2.945	0.000	0.550	**153**	**0**	**2.985**	**T**	0.75
10	**1.00**	**-7.00**	**4.00**	**1.00**	**1.00**	**1.00**	6.213	0.000	0.550	**171**	**-1**	**6.236**	**T**	1.57
11	**1.00**	**-7.00**	**-2.00**	**1.00**	**1.00**	**1.00**	-3.592	0.000	0.550	**189**	**-1**	**3.632**	**C**	0.91
12	**1.00**	**-7.00**	**-4.00**	**1.00**	**1.00**	**1.00**	-6.860	0.000	0.550	**207**	**0**	**6.877**	**C**	1.73
13	**1.00**	**-2.00**	**-7.00**	**1.00**	**1.00**	**1.00**	-11.762	0.000	0.550	**225**	**0**	**11.768**	**C**	2.96
14	**1.00**	**-4.00**	**-7.00**	**1.00**	**1.00**	**1.00**	-11.762	0.000	0.550	**243**	**0**	**11.764**	**C**	2.96
15	**1.00**	**2.00**	**-7.00**	**1.00**	**1.00**	**1.00**	-11.762	0.000	0.550	**261**	**0**	**11.762**	**C**	2.96
16	**1.00**	**4.00**	**-7.00**	**1.00**	**1.00**	**1.00**	-11.762	0.000	0.550	**279**	**0**	**11.762**	**C**	2.96
17	**1.00**	**7.00**	**0.00**	**1.00**	**1.00**	**1.00**	-0.324	0.000	0.550	**297**	**0**	**0.409**	**C**	0.10
18	**1.00**	**0.00**	**7.00**	**1.00**	**1.00**	**1.00**	11.115	0.000	0.550	**315**	**0**	**11.122**	**T**	2.80
19	**1.00**	**-7.00**	**0.00**	**1.00**	**1.00**	**1.00**	-0.324	0.000	0.550	**333**	**0**	**0.587**	**C**	0.15
20	**1.00**	**0.00**	**-7.00**	**1.00**	**1.00**	**1.00**	-11.762	0.000	0.550	**351**	**1**	**11.774**	**C**	2.96

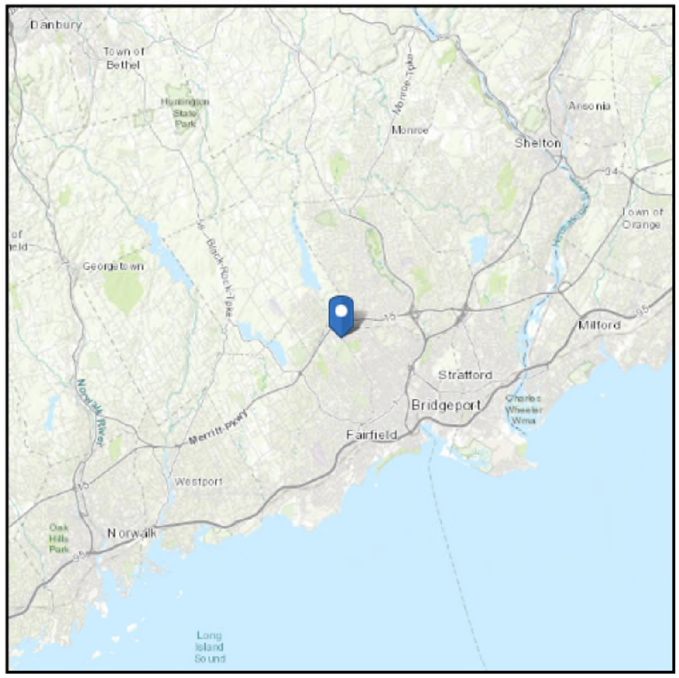
ASCE 7 Hazards Report

Address:
5151 Park Ave
Fairfield, Connecticut
06825

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: C - Very Dense Soil and Soft Rock

Elevation: 270.11 ft (NAVD 88)
Latitude: 41.221522
Longitude: -73.241725





Wind

Results:

Wind Speed	122 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Tue Aug 16 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

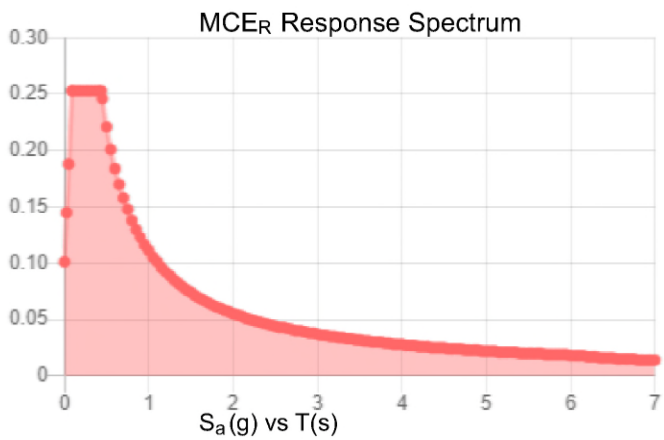
Seismic

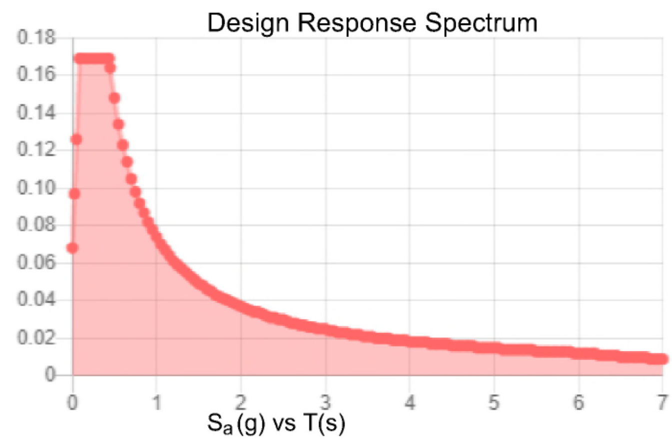
Site Soil Class: C - Very Dense Soil and Soft Rock

Results:

S_S :	0.211	S_{DS} :	0.169
S_1 :	0.065	S_{D1} :	0.074
F_a :	1.2	T_L :	6
F_v :	1.7	PGA :	0.115
S_{MS} :	0.253	PGA_M :	0.138
S_{M1} :	0.111	F_{PGA} :	1.2
		I_e :	1

Seismic Design Category B





Data Accessed: **Tue Aug 16 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Monopole Flange Plate Connection

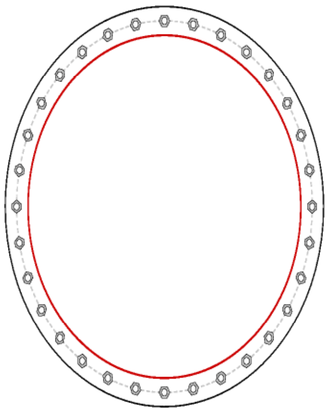
Elevation = 40 ft.

BU #	
Site Name	
Order #	

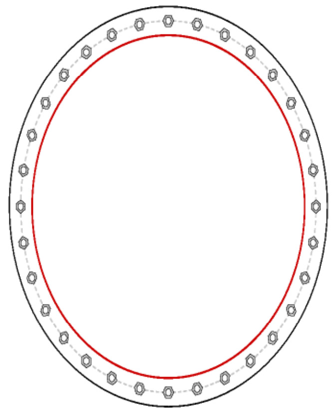
TIA-222 Revision	H

Applied Loads	
Moment (kip-ft)	1852.78
Axial Force (kips)	65.47
Shear Force (kips)	16.76

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(32) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 52" BC

Top Plate Data

56" OD x 2" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Plate Data

56" OD x 2" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	51.39	
Allowable (kips)	54.53	
Stress Rating:	**94.2%**	Pass

Top Plate Capacity

Max Stress (ksi):	15.04	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**33.4%**	Pass
Tension Side Stress Rating:	**25.1%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	15.04	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**33.4%**	Pass
Tension Side Stress Rating:	**25.1%**	Pass

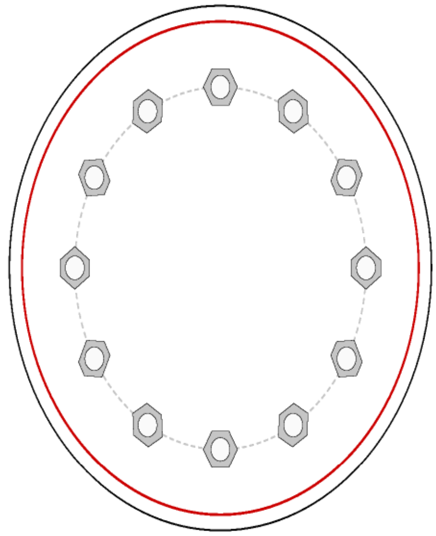
Analysis Date: 9/25/2022

Monopole Base Plate Connection

Site Info	
BU #	
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
I_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	1852.78
Axial Force (kips)	87.96
Shear Force (kips)	18.91



Connection Properties

Anchor Rod Data

(12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 34.5" BC

Base Plate Data

50" ID x 3" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 221.77	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.58	ϕVn = 73.13	**91.0%**
Mu = n/a	ϕMn = n/a	Pass

Base Plate Summary

Max Stress (ksi):	50.07	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**92.7%**	Pass

Analysis Date: 9/25/2022

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 12, 2022
Designed by: PB

Pole to Base Weld Connection

Flange Ring Assembly

Dp =	48.000	inch	
Factored Moment: Mu =	861.484	Kip-Ft	Factored Moment
Factored Base Shear: V =	18.907	Kips	Factored Shear
Groove Weld Thickness: Twg =	0.375	inch	Groove Thickness
Filet Weld Thickness: Twf =	0.375	linch	Filet Weld Thickness
Weld Material Yield: Fyw =	70.000	ksi	
Allowable Weld Force: Fallow =	21.508	kip/inch	Fallow = [(.707)Twf + Twg] (.48)Fyw
Weld Force: Fw =	4.285	kip/inch	Fw = (3/4)Sqrt [{Mu/p(Dp^2/4)}^2 + {V/pDp}^2]
Base Weld Stress Ratio =	19.921	%	

DESIGN:

APPLY GROOVE WELD AND APPLY 0.375" FILET CAP WELD TO POLE AT TOP OF PLATE

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 25, 2022
Designed by: PB

Anchor Bolt Development (ACI 318)

Anchor bolts are mechanically anchored with nuts and load plates at bottom of bolts.
Failure cones emanate at 35 degrees from top of nut.
The failure cones from the 4 bolts overlap and exit the sides of the caisson.
Concrete is assumed to crack and carry no load so,
vertical reinforcing steel must be developed to transfer bolt loads.
Calculations presented below determine the required length of anchor bolt embedment
and reinforcing development necessary to transfer the design loads.

Minimum Development Length per ACI 318 12.2.2, Eq 12-1.

$l_d = d_b[f_y/\sqrt{(f_c)}](3/40)(\varphi_t \varphi_e \lambda/2.5)$:

where; fy = 60,000psi, f'c = 4000 psi, and φtφeλ = 1.0,

$l_d = 28.46\ d_b$ For # 8 Bars l_d = 28.46 in.

Anchor Bolts are 2.25" dia. by 84" Long with 72" Embedment on 34.5" Bolt Circle

Reinforcing Cage Diameter = 48 in.

Minimum Required AB Depth

cover = 3.00 in.
bottom grip = 3.00 in.
½(Cage-BC) = 6.75 in.

$l_{min} = l_d$ + cover + bottom grip + ½(Cage-BC)/tan55 = 39.19 in.

Bolt Embedment Provided = 72.00 in.

Anchor bolts are restrained by fully developed reinforcement satisfying the requirements of 318 Appendix D.

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 25, 2022
Designed by: PB

Foundation Design -

	M (kip-ft)	V (kips)	A (kips)
Unfactored Base Reactions	860.753	18.907	76.213
Factored Base Reactions	861.484	18.907	87.955

Design per Geotechnical Investigation Report:

Terracon Geotechnical Engineering Report #J1225042 dated 08/10/2022

Use 54" diameter x 18'-0" deep pier w/ 6" above grade projection

Reinforcing: Use (16) - #8 Vertical

Per LPile Analysis Results:

Ultimate factored Pier Moment Capacity w/ φ = 0.65 is 1021.083 Ft-Kip

Maximum Pier Moment Load Case 3 (1.2D + 1.0 W)

M = 925.098 Ft-Kip

Pier Head Deflection for Load Case 1 (Unfactored Wind Force) = 0.583"

Plots of deflection, Bending Moment and Shear follow the LPile results printout.

The following Load Cases are plotted:

Load Case 1 - Unfactored Design Wind Force Base Reactions (122 mph)

Load Case 2 - Factored Design Wind Force Base Reactions (122 mph) 1.2D + 1.0 W

ISE, Incorporated
Structural Engineers ***Telecommunications & Industrial Design***

PO Box 50039 • Phoenix, Arizona • 85076 • Office: (602) 403-8614 • Fax: (623) 321-1283 • www.ISE-INC.biz

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 12/12/22

ANCHORAGE

Factored Leg reactions from RISA-3D results,

Max Downward = 87.955 k
Max Shear = 18.907 k
Max Moment = 861.484 k-ft

Use 1/2 Moment Capacity of 48” x ½” Pole
Moment = 1852.78 k-ft

Use (12) 2.25”∅ x 84”ASTM A615-75 Bolts on 34.5”∅ Bolt Circle with 60”Embedment
3 x 50”∅ A572 Gr 60 Base Plate

Calculations attached to report

FOUNDATION

Unfactored Leg reactions from RISA-3D results,

Max Downward = 76.213 k
Max Shear = 18.907 k
Max Moment = 860.753 k-ft

Use 54”∅ Pier x 18’ deep pier w/ 6” above grade projection per leg
w/ (16) #8 vertical reinforcement bars.

Per Terracon Geotechnical Engineering Report #J1225042 dated 08/10/2022-

Allowable End Bearing Pressure = 20 KSF
Axial Load = 76.213 K
Face Area = 15.90 sq. ft
Bearing Pressure = 4.80 KSF < 20 KSF OK

Lpile was used for lateral analysis. Calculations attached to report.

```
===============================================================================

                  LPile for Windows, Version 2019-11.009

              Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method
                        © 1985-2019 by Ensoft, Inc.
                            All Rights Reserved

===============================================================================

This copy of LPile is being used by:

Lantec Engineers
Chennai, India

Serial Number of Security Device: 562486253

This copy of LPile is licensed for exclusive use by:

Lantec Engineers Private Limited

Use of this program by any entity other than Lantec Engineers Private Limited
is a violation of the software license agreement.

-------------------------------------------------------------------------------
                          Files Used for Analysis
-------------------------------------------------------------------------------

Path to file locations:
\Users\Prash\Desktop\ISE Working\18054 VZW Plattsville Relo (553278)\New
Work\Design Report\Calcs\LPile\

Name of input data file:
18054 Lpile.lp11d

Name of output report file:
18054 Lpile.lp11o

Name of plot output file:
18054 Lpile.lp11p

Name of runtime message file:
18054 Lpile.lp11r


-------------------------------------------------------------------------------
                         Date and Time of Analysis
-------------------------------------------------------------------------------
```

Date: September 12, 2022 Time: 8:33:45

Problem Title

Project Name: Verizon Plattsville Relo

Job Number: ISE #18054

Client: Larson Valmont

Engineer: PB

Description: 100' SST

Program Options and Settings

Computational Options:
- Conventional Analysis

Engineering Units Used for Data Input and Computations:
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Input of moment resistance at the pile tip not selected
- Input of side resistance moment along pile not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                          =            1
Total length of pile                                     =       18.000 ft
Depth of ground surface below top of pile                =       0.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	54.0000
2	18.000	54.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is a round drilled shaft, bored pile, or CIDH pile
   Length of section                                     =    18.000000 ft
```

```
   Shaft Diameter                                         =    54.000000 in
   Shear capacity of section                              =       0.0000 lbs



--------------------------------------------------------------------------------
                       Ground Slope and Pile Batter Angles
--------------------------------------------------------------------------------

Ground Slope Angle                                        =        0.000 degrees
                                                          =        0.000 radians

Pile Batter Angle                                         =        0.000 degrees
                                                          =        0.000 radians


--------------------------------------------------------------------------------
                       Soil and Rock Layering Information
--------------------------------------------------------------------------------

The soil profile is modelled using 5 layers

Layer 1 is modelled using an elastic subgrade modulus

   Distance from top of pile to top of layer              =       0.0000 ft
   Distance from top of pile to bottom of layer           =     2.250000 ft
   Effective unit weight at top of layer                  =   120.000000 pcf
   Effective unit weight at bottom of layer               =   120.000000 pcf
   Elastic subgrade at top of layer                       =       0.0000 pci
   Elastic subgrade at bottom of layer                    =       0.0000 pci


Layer 2 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer              =     2.250000 ft
   Distance from top of pile to bottom of layer           =     3.500000 ft
   Effective unit weight at top of layer                  =   120.000000 pcf
   Effective unit weight at bottom of layer               =   120.000000 pcf
   Friction angle at top of layer                         =    32.000000 deg.
   Friction angle at bottom of layer                      =    32.000000 deg.
   Subgrade k at top of layer                             =       0.0000 pci
   Subgrade k at bottom of layer                          =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 3 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer              =     3.500000 ft
   Distance from top of pile to bottom of layer           =    15.000000 ft
```

```
   Effective unit weight at top of layer                  =   120.000000 pcf
   Effective unit weight at bottom of layer               =   120.000000 pcf
   Friction angle at top of layer                         =    34.000000 deg.
   Friction angle at bottom of layer                      =    34.000000 deg.
   Subgrade k at top of layer                             =       0.0000 pci
   Subgrade k at bottom of layer                          =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer              =    15.000000 ft
   Distance from top of pile to bottom of layer           =    16.000000 ft
   Effective unit weight at top of layer                  =    57.600000 pcf
   Effective unit weight at bottom of layer               =    57.600000 pcf
   Friction angle at top of layer                         =    34.000000 deg.
   Friction angle at bottom of layer                      =    34.000000 deg.
   Subgrade k at top of layer                             =       0.0000 pci
   Subgrade k at bottom of layer                          =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 5 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer              =    16.000000 ft
   Distance from top of pile to bottom of layer           =    18.000000 ft
   Effective unit weight at top of layer                  =    82.600000 pcf
   Effective unit weight at bottom of layer               =    82.600000 pcf
   Friction angle at top of layer                         =    38.000000 deg.
   Friction angle at bottom of layer                      =    38.000000 deg.
   Subgrade k at top of layer                             =       0.0000 pci
   Subgrade k at bottom of layer                          =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

 (Depth of the lowest soil layer extends 0.000 ft below the pile tip)



--------------------------------------------------------------------------------
                        Summary of Input Soil Properties
--------------------------------------------------------------------------------

Layer         Soil Type          Layer      Effective    Angle of
Elastic
 Num.           Name             Depth       Unit Wt.    Friction        kpy
Subgrade
          (p-y Curve Type)        ft           pcf          deg.         pci
Mod. pci
-----   ------------------   ----------   ----------   ----------   ----------
```

```
----------
  1          Elastic              0.00     120.0000      --           --
    0.00
             Subgrade           2.2500     120.0000      --           --
    0.00
  2           Sand              2.2500     120.0000     32.0000     default
  --
          (Reese, et al.)       3.5000     120.0000     32.0000     default
  --
  3           Sand              3.5000     120.0000     34.0000     default
  --
          (Reese, et al.)      15.0000     120.0000     34.0000     default
  --
  4           Sand             15.0000      57.6000     34.0000     default
  --
          (Reese, et al.)      16.0000      57.6000     34.0000     default
  --
  5           Sand             16.0000      82.6000     38.0000     default
  --
          (Reese, et al.)      18.0000      82.6000     38.0000     default
  --


--------------------------------------------------------------------------------
                               Static Loading Type
--------------------------------------------------------------------------------

Static loading criteria were used when computing p-y curves for all analyses.



--------------------------------------------------------------------------------
                Pile-head Loading and Pile-head Fixity Conditions
--------------------------------------------------------------------------------

Number of loads specified = 2

Load    Load         Condition              Condition           Axial Thrust
Compute Top y     Run Analysis
 No.    Type            1                       2                Force, lbs
vs. Pile Length
-----   ----   --------------------   ----------------------   ----------------
---------------    ------------
   1     1     V =       18907. lbs   M =    10329036. in-lbs           76213.
     No               Yes
   2     1     V =       18907. lbs   M =    10337808. in-lbs           87955.
     No               Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
```

y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

---

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	18.000000 ft
Shaft Diameter	=	54.000000 in
Concrete Cover Thickness (to edge of long. rebar)	=	3.000000 in
Number of Reinforcing Bars	=	16 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	2290. sq. in.
Total Area of Reinforcing Steel	=	12.640000 sq. in.
Area Ratio of Steel Reinforcement	=	0.55 percent
Edge-to-Edge Bar Spacing	=	8.169245 in
Maximum Concrete Aggregate Size	=	1.000000 in
Ratio of Bar Spacing to Aggregate Size	=	8.17
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As	=	8502.176 kips
Tensile Load for Cracking of Concrete	=	-989.558 kips
Nominal Axial Tensile Capacity	=	-758.400 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches

1	1.000000	0.790000	23.500000	0.00000
2	1.000000	0.790000	21.711169	8.993061
3	1.000000	0.790000	16.617009	16.617009
4	1.000000	0.790000	8.993061	21.711169
5	1.000000	0.790000	0.00000	23.500000
6	1.000000	0.790000	-8.993061	21.711169
7	1.000000	0.790000	-16.617009	16.617009
8	1.000000	0.790000	-21.711169	8.993061
9	1.000000	0.790000	-23.500000	0.00000
10	1.000000	0.790000	-21.711169	-8.993061
11	1.000000	0.790000	-16.617009	-16.617009
12	1.000000	0.790000	-8.993061	-21.711169
13	1.000000	0.790000	0.00000	-23.500000
14	1.000000	0.790000	8.993061	-21.711169
15	1.000000	0.790000	16.617009	-16.617009
16	1.000000	0.790000	21.711169	-8.993061

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 8.169 inches
between bars 11 and 12.

Ratio of bar spacing to maximum aggregate size = 8.17

Concrete Properties:

Compressive Strength of Concrete	=	4000. psi
Modulus of Elasticity of Concrete	=	3604997. psi
Modulus of Rupture of Concrete	=	-474.341649 psi
Compression Strain at Peak Stress	=	0.001886
Tensile Strain at Fracture of Concrete	=	-0.0001154
Maximum Coarse Aggregate Size	=	1.000000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	76.213
2	87.955

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.

Y = stress in reinforcing steel has reached yield stress.
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 76.213 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
0.0002694	18678.	69336825.	8.2897826	0.0022331	-0.0123132	3.9996802	-60.0000000	CY
0.0002744	18687.	68108117.	8.2532976	0.0022645	-0.0125518	3.9975478	-60.0000000	CY
0.0003044	18740.	61568086.	8.0674676	0.0024555	-0.0139807	3.9999595	-60.0000000	CY
0.0003344	18785.	56180616.	7.9264644	0.0026504	-0.0154058	3.9973675	-60.0000000	CY
0.0003644	18825.	51663890.	7.8152318	0.0028477	-0.0168286	3.9835974	-60.0000000	CY

Axial Thrust Force = 87.955 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
0.0002544	18886.	74246185.	8.4748661	0.0021558	-0.0115805	3.9938632	-60.0000000	CY
0.0002594	18898.	72860442.	8.4371959	0.0021884	-0.0118179	3.9974066	-60.0000000	CY
0.0002644	18910.	71526186.	8.4013689	0.0022211	-0.0120551			

```
    3.9994526   -60.0000000 CY
    0.0002694        18921.     70239825.     8.3669279     0.0022538    -0.0122924
    3.9987728   -60.0000000 CY
    0.0002744        18930.     68992988.     8.3296896     0.0022855    -0.0125308
    3.9909763   -60.0000000 CY
    0.0003044        18981.     62360753.     8.1385492     0.0024772    -0.0139591
    3.9950992   -60.0000000 CY
    0.0003344        19025.     56898634.     7.9929403     0.0026726    -0.0153836
    3.9992305   -60.0000000 CY
```

Summary of Results for Nominal Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	76.213	18850.371	0.00300000
2	87.955	19085.954	0.00300000

Note that the values of moment capacity in the table above are not
factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether
the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.75).

The above values should be multiplied by the appropriate strength reduction
factor to compute ultimate moment capacity according to ACI 318,
or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding
bending stiffnesses computed for common resistance factor values used for
reinforced concrete sections.

Axial Load No.	Resist. Factor	Nominal Ax. Thrust kips	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
1	0.65	76.213000	18850.	49.538450	12253.	256274037.
2	0.65	87.955000	19086.	57.170750	12406.	260181178.

1	0.75	76.213000	18850.	57.159750	14138.
248599206.					
2	0.75	87.955000	19086.	65.966250	14314.
252284362.					
1	0.90	76.213000	18850.	68.591700	16965.
164333294.					
2	0.90	87.955000	19086.	79.159500	17177.
167016487.					

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.00	0.00	N.A.	No	0.00	0.00
2	2.2500	2.2500	No	No	0.00	20029.
3	3.5000	2.6088	Yes	No	20029.	643653.
4	15.0000	14.1084	Yes	No	663681.	92470.
5	16.0000	13.1950	Yes	No	756152.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 18907.0 lbs
Applied moment at pile head = 10329036.0 in-lbs
Axial thrust load on pile head = 76213.0 lbs

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.58344754 inches
Computed slope at pile head      =    -0.00688828 radians
Maximum bending moment           =      11088990. inch-lbs
Maximum shear force              =       -103867. lbs
Depth of maximum bending moment  =     4.14000000 feet below pile head
Depth of maximum shear force     =    12.06000000 feet below pile head
Number of iterations             =             79
Number of zero deflection points =              1
```

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

```
Shear force at pile head                              =      18907.0 lbs
Applied moment at pile head                           =   10337808.0 in-lbs
Axial thrust load on pile head                        =      87955.0 lbs
```

Output Summary for Load Case No. 2:

```
Pile-head deflection             =     0.57930461 inches
Computed slope at pile head      =    -0.00680512 radians
Maximum bending moment           =      11101175. inch-lbs
Maximum shear force              =       -104107. lbs
Depth of maximum bending moment  =     4.14000000 feet below pile head
Depth of maximum shear force     =    12.06000000 feet below pile head
Number of iterations             =             72
Number of zero deflection points =              1
```

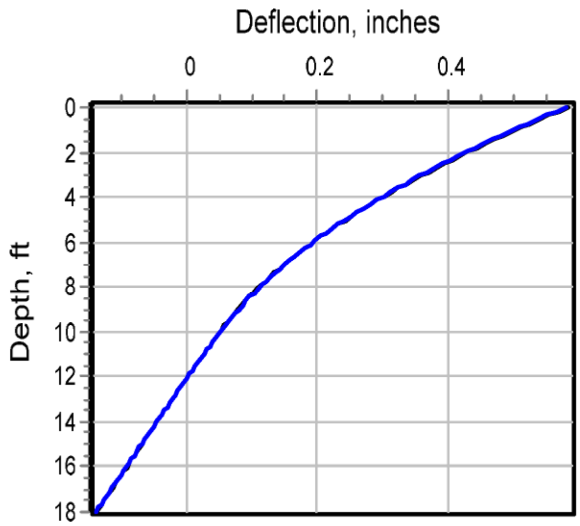
Summary of Pile-head Responses for Conventional Analyses

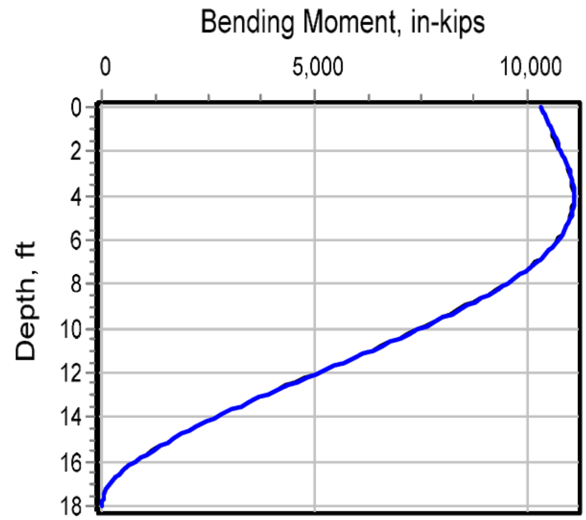
Definitions of Pile-head Loading Conditions:

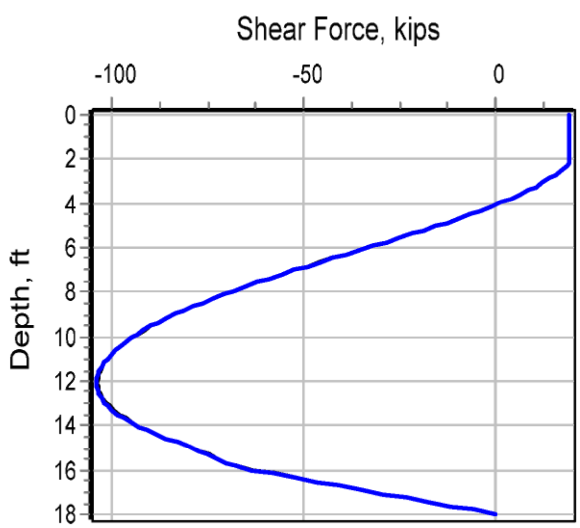
Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

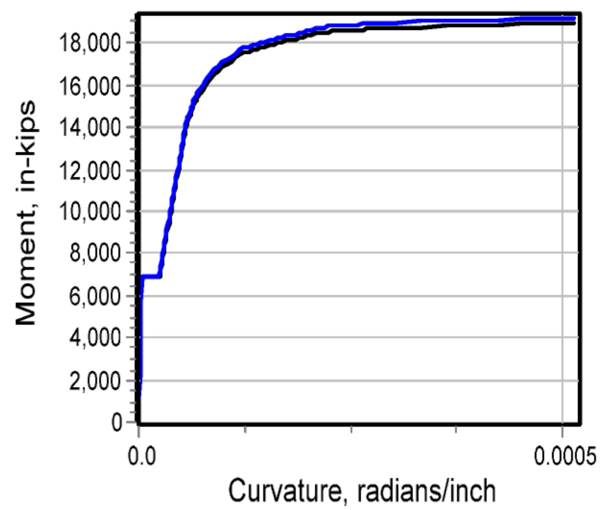
```
Load Load                Load                 Axial    Pile-head  Pile-head  Max
Shear Max Moment
Case Type   Pile-head    Type     Pile-head   Loading  Deflection  Rotation    in
```

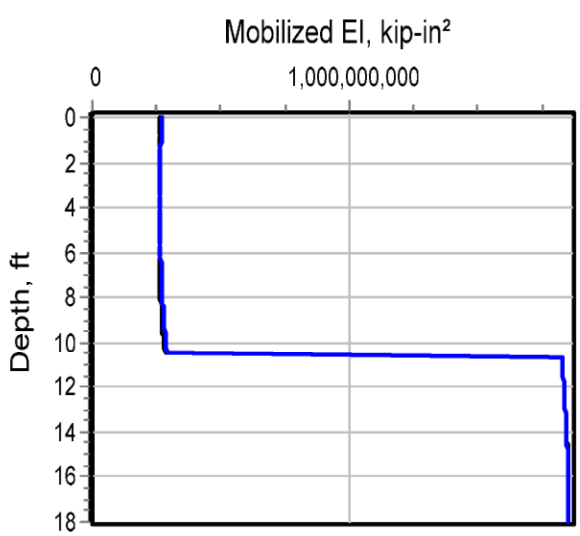
```
Pile    in Pile
 No.  1      Load 1       2        Load 2       lbs      inches     radians
lbs      in-lbs
---- ----- ---------- ---------- ---------- ---------- ---------- ----------
---------- ----------
  1  V, lb     18907.  M, in-lb    1.03E+07     76213.     0.5834   -0.00689
-103867.   1.11E+07
  2  V, lb     18907.  M, in-lb    1.03E+07     87955.     0.5793   -0.00681
-104107.   1.11E+07


Maximum pile-head deflection = 0.5834475380 inches
Maximum pile-head rotation   = -0.0068882849 radians = -0.394670 deg.

The analysis ended normally.
```

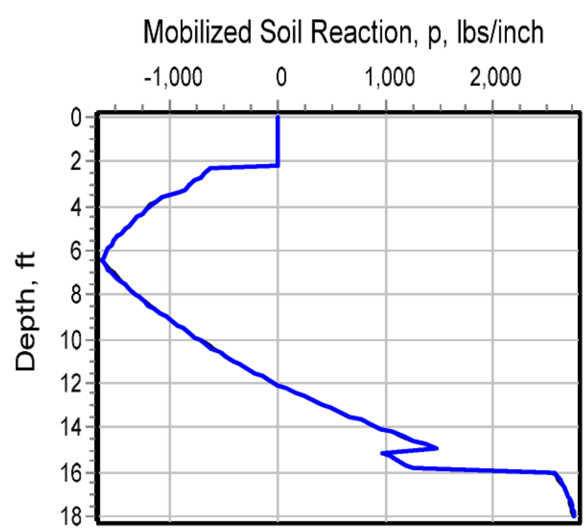

Deflection, inches
0
0.2
0.4
Depth, ft
0
2
4
6
8
10
12
14
16
18


Bending Moment, in-kips
0
5,000
10,000
Depth, ft
0
2
4
6
8
10
12
14
16
18


Shear Force, kips
-100
-50
0
Depth, ft
0
2
4
6
8
10
12
14
16
18


Moment, in-kips
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
0.0
0.0005
Curvature, radians/inch


Mobilized EI, kip-in²
0
1,000,000,000
Depth, ft
0
2
4
6
8
10
12
14
16
18


Mobilized Soil Reaction, p, lbs/inch
-1,000
0
1,000
2,000
Depth, ft
0
2
4
6
8
10
12
14
16
18

Monopole Flange Plate Connection

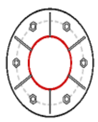
Elevation = 80 ft.

BU #	
Site Name	
Order #	

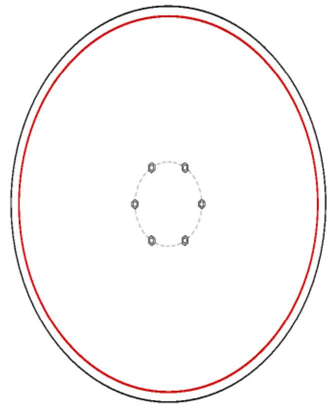
TIA-222 Revision	H

Applied Loads	
Moment (kip-ft)	18.70
Axial Force (kips)	1.70
Shear Force (kips)	1.25

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(6) 5/8" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 10.5" BC

Top Plate Data

13.5" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

(6) 6"H x 3"W x 0.25"T, Notch: 0.5"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.25" fillet
vert. weld: 0.25" fillet

Top Pole Data

6.625" x 0.25" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	13.95	
Allowable (kips)	20.34	
Stress Rating:	**68.6%**	Pass

Top Plate Capacity

Max Stress (ksi):	9.98	(Roark's Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**22.2%**	Pass
Tension Side Stress Rating:	**N/A**	

Top Stiffener Capacity

Horizontal Weld:	**37.8%**	Pass
Vertical Weld:	**20.2%**	Pass
Plate Flexure+Shear:	**27.9%**	Pass
Plate Tension+Shear:	**57.3%**	Pass
Plate Compression:	**68.9%**	Pass

Top Pole Capacity

Punching Shear:	**11.2%**	Pass

Analysis Date: 9/25/2022

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 25, 2022
Designed by: PB

TOP PLATE AND BOLTS DESIGN AT 80' AFG
FOR WIND FORCES

Geometry

Plate Shape =	Round	
Plate Diameter =	49.5 in	
Pole Diameter, Dp =	6.625 in	
Bolt Circle Diameter: BC =	10.5 in	
Number of Bolts: J =	6	
Bolt Group Moment of Inertia: I_{bg} =	82.6875 in²	$I_{bg} = (1/8)(J*BC^2)$
Bolt Diameter: D_b =	0.625 in	
Gross Bolt Area: A_g =	0.307 in²	$A_g = \pi D_b^2/4$
Net Bolt Area: A_n =	0.226 in²	$A_n = (\pi/4)(d-0.9743)/n)^2$

Materials

Bolt Steel Yield Strength: F_y =	81 ksi	A325
Bolt Steel Ultimate Strength: F_u =	120 ksi	A325
Plate Steel Yield Strength: F_y =	50 ksi	A572 GR50

Loading

	Structure Base Reactions		
	M (kip-ft)	V (kip)	A (kip)
Factored:	18.700	1.250	1.700

Analysis

BOLTS **OK**

Bolt Tension: P_{ut} =	13.964 k	$(M*BC/2) / I_{bg} - A/J$		
Bolt Compression: P_{uc} =	14.531 k	$(M*BC/2) / I_{bg} + A/J$		
Bolt Shear: V_u =	0.208 k	V / N		
Available Shear Strength, Φrn =	12.400 k	AISC Table 7-1	**10.10%**	**OK**
Available Tensile Strength, Φrn =	20.700 k	AISC Table 7-2	**70.20%**	**OK**

PLATE **OK**

Plate Bending: Mpb =	217.96 k-in	(T/C) x Mom Arm	
Bend Line, L =	4.000 in		
Required Plate Thickness: Tpl =	2.201 in	$Tpl = [4M/\varnothing F_y L]^{1/2}$	
Thickness Provided =	2.500 in		**OK**
Plate Stress Ratio =	**0.775**	**≤ 1.0**	

Design Summary

(6) 0.63" Diameter A325 Bolts on 10.5" BC Diameter
2.5" X 49.5" Round A572 GR50 Top Cap Plate With Coax Holes

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

CT1440

5151 Park Avenue, Fairfield, CT

November 29, 2022

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed New Cingular Wireless (AT&T) wireless communications facility located 5151 Park Avenue in Fairfield, CT. The coordinates of the proposed tower are 41° 13' 08.19"N, 73° 14' 41.12"W.

AT&T is proposing to install ground-based equipment cabinets and antennas mounted at 76 feet AGL on the proposed tower. This report uses the planned antenna configuration for AT&T[1] to derive the resulting % MPE (Maximum Permissible Exposure), once the proposed installation has been completed.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to AT&T's preliminary Radio Frequency Design Sheet dated 02/08/2022.

3. RF Exposure Calculation Methods

The calculated ground-level power density results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{\text{EIRP}}{\pi \times R^2}\right) \text{ X Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 1.6

These calculations assume that the transmitters are operating at full power and 100 percent capacity and that all radio channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not consider actual terrain elevations which could attenuate the signal. As a result, the calculated power density and corresponding % MPE levels reported below are much higher than the actual signal levels will be from the final installation.

4. Antenna Inventory

Table 1 below outlines AT&T's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachment C.

Operator	Sector	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha	739	160	14.0	4019.02	DMP65R-BU6D	74	0	5.93	76
		2100	240	18.1	15495.70		68			
		850	160	14.6	4614.45		63			
		2300	160	18.0	10095.32	TPA65R-BU6D	60	0	5.93	76
		763	160	14.5	4509.41		73			
		1900	160	18.4	11069.3		66			
		3500	86.75	25.65	31989	AIR 6419	11	0	2.5	76
		3500	86.75	25.65	31989	AIR 6449	11	0	2.5	76
	Beta	739	160	14.0	4019.02	DMP65R-BU6D	74	0	5.93	76
		2100	240	18.1	15495.70		68			
		850	160	14.6	4614.45		63			
		2300	160	18.0	10095.32	TPA65R-BU6D	60	0	5.93	76
		763	160	14.5	4509.41		73			
		1900	160	18.4	11069.3		66			
		3500	86.75	25.65	31989	AIR 6419	11	0	2.5	76
		3500	86.75	25.65	31989	AIR 6449	11	0	2.5	76
	Gamma	739	160	14.0	4019.02	DMP65R-BU6D	74	0	5.93	76
		2100	240	18.1	15495.70		68			
		850	160	14.6	4614.45		63			
		2300	160	18.0	10095.32	TPA65R-BU6D	60	0	5.93	76
		763	160	14.5	4509.41		73			
		1900	160	18.4	11069.3		66			
		3500	86.75	25.65	31989	AIR 6419	11	0	2.5	76
		3500	86.75	25.65	31989	AIR 6449	11	0	2.5	76

Table 1: Proposed Antenna Inventory[2]

[2] Transmit power assumes 0 dB of cable loss.

5. Calculated % MPE Results

The calculated % MPE results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

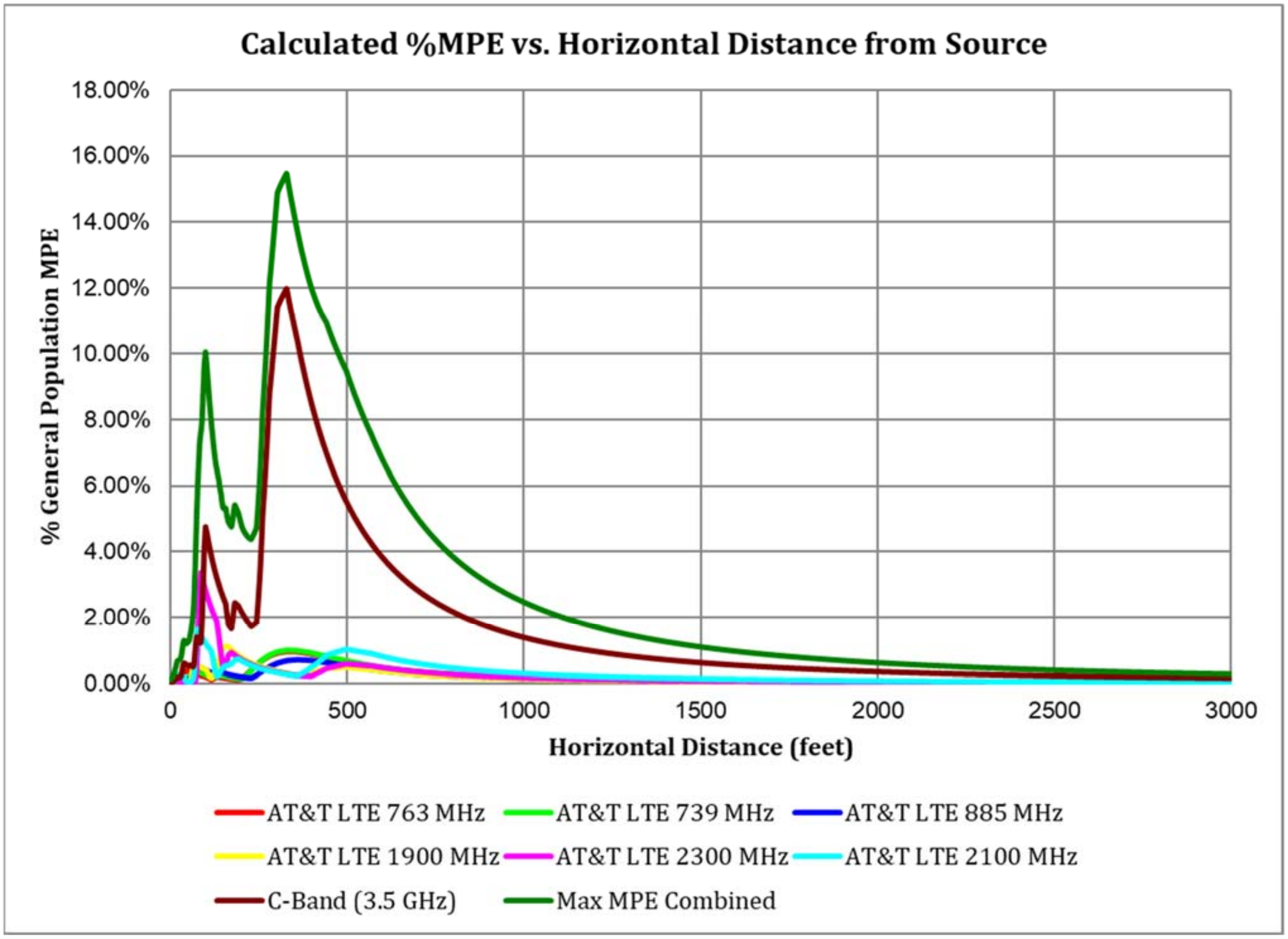


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (**15.48%** of the General Population limit) is calculated to occur at a horizontal distance of 329 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 900 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. As stated in Section 3, all calculations assume that the antennas are operating at full power and 100 percent capacity, and that all antenna channels are transmitting simultaneously. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the calculated % MPE levels are significantly higher than the actual signal levels will be from the final installation. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
AT&T LTE 1900 MHz	1	160.0	76.0	329	0.003094	1.000	0.31%
AT&T LTE 2100 MHz	1	240.0	76.0	329	0.002733	1.000	0.27%
AT&T LTE 2300 MHz	1	160.0	76.0	329	0.002874	1.000	0.29%
AT&T LTE 739 MHz	1	160.0	76.0	329	0.004892	0.493	0.99%
AT&T LTE 763 MHz	1	160.0	76.0	329	0.004869	0.509	0.96%
AT&T LTE 885 MHz	1	160.0	76.0	329	0.004001	0.590	0.68%
C-Band (3.5 GHz)	2	86.8	76.0	329	0.119852	1.000	11.99%
						Total	**15.48%**

Table 2: Maximum Percent of General Population Exposure Values

6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE at 6' above ground level and in consideration of AT&T's proposed antenna installation is calculated to be **15.48% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 329 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in FCC OET Bulletin 65 Edition 97-01, IEEE Std. C95.1, IEEE Std. C95.3, and IEEE Std. C95.7.

Report Prepared By: ______________________________ November 29, 2022

Date

RF Engineer
C Squared Systems, LLC

Reviewed/Approved By: ______________________________ November 29, 2022

Date

Senior RF Engineer
C Squared Systems, LLC

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Humhyan Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

IEEE C95.7-2005 (R2014), IEEE Recommended Practice for Radio Frequency Safety Programs, 3 kHz to 300 GHz. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[3]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	$(900/f^2)$*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[4]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	$(180/f^2)$*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

[3] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[4] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

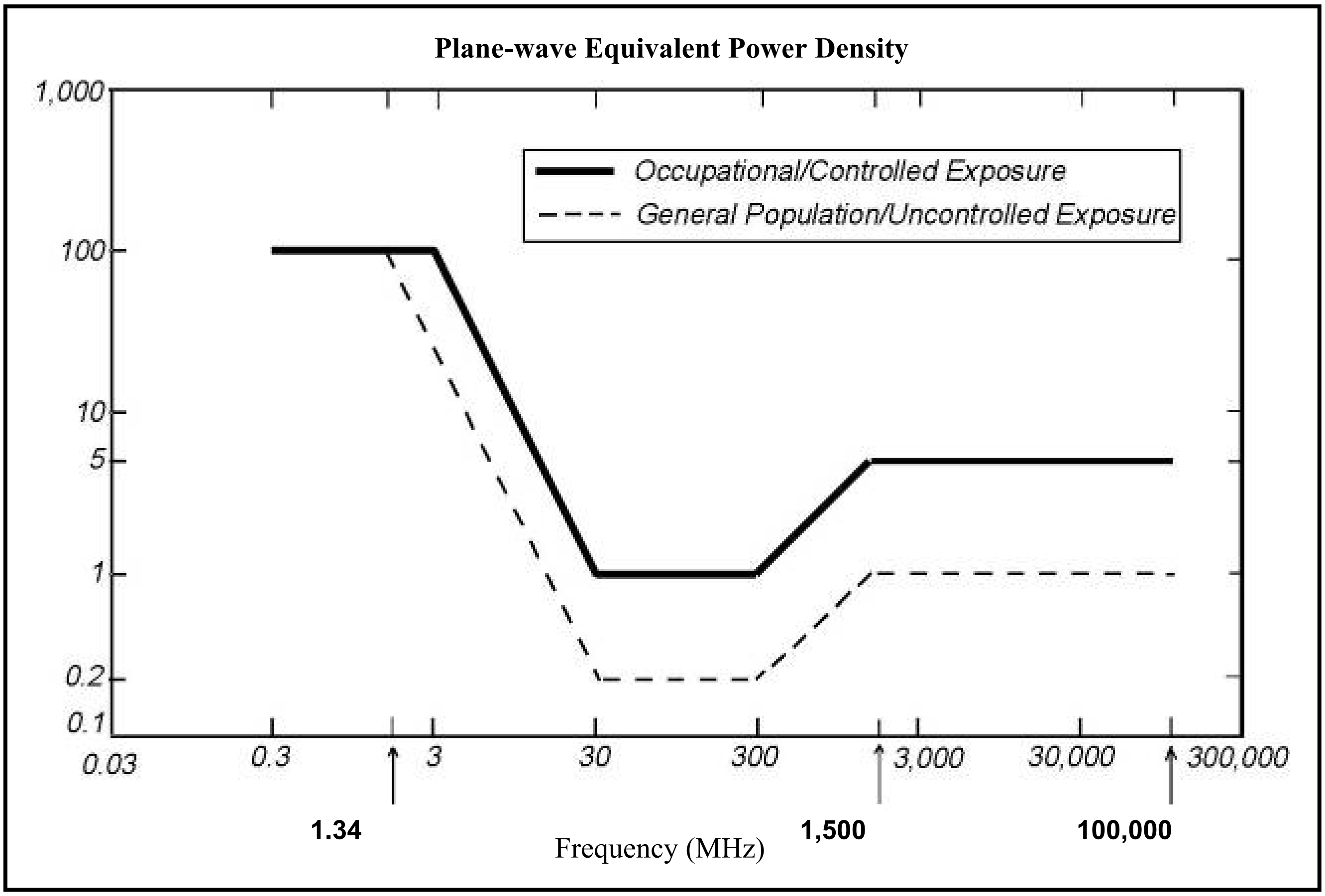
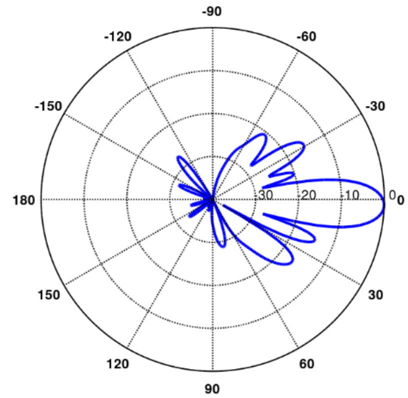
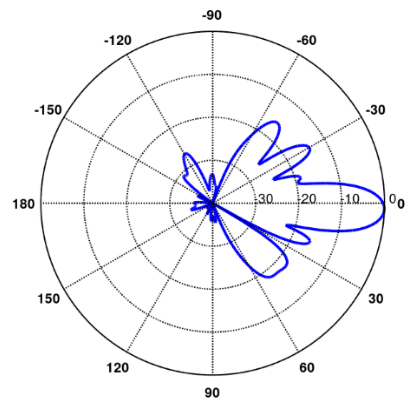
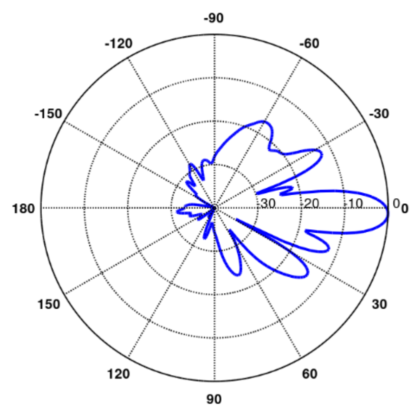


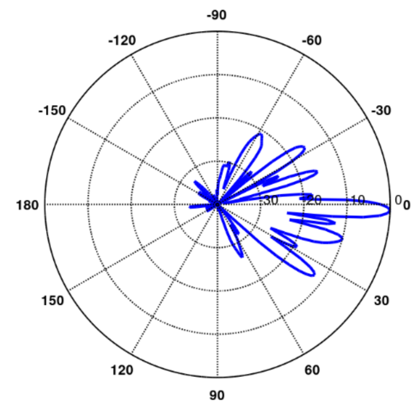
Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Model Data Sheets and Electrical Patterns

739 MHz Manufacturer: CCI Model #: DMP65R-BU6D Frequency Band: 698-798 MHz Gain: 14.0 dBi Vertical Beamwidth: 13.0° Horizontal Beamwidth: 74° Polarization: Dual Linear 45° Dimensions (L x W x D): 71.2" x 20.7" x 7.7"	
763 MHz Manufacturer: CCI Model #: TPA65R-BU6D Frequency Band: 698-806 MHz Gain: 14.5 dBi Vertical Beamwidth: 12.8° Horizontal Beamwidth: 73° Polarization: Dual Linear 45° Dimensions (L x W x D): 71.2" x 20.7" x 7.7"	
850 MHz Manufacturer: CCI Model #: DMP65R-BU6D Frequency Band: 824-896 MHz Gain: 14.6 dBi Vertical Beamwidth: 11.1° Horizontal Beamwidth: 63° Polarization: Dual Linear 45° Dimensions (L x W x D): 71.2" x 20.7" x 7.7"	

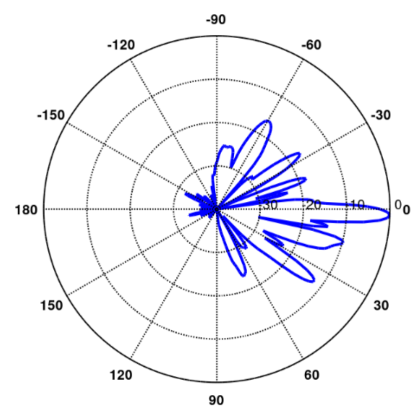
1900 MHz

Manufacturer:	CCI
Model #:	TPA65R-BU6D
Frequency Band:	1920-2180 MHz
Gain:	18.4 dBi
Vertical Beamwidth:	4.8°
Horizontal Beamwidth:	66°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	71.2” x 20.7” x 7.7”



2100 MHz

Manufacturer:	CCI
Model #:	DMP65R-BU6D
Frequency Band:	1920-2180 MHz
Gain:	18.1 dBi
Vertical Beamwidth:	4.8°
Horizontal Beamwidth:	68°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	71.2” x 20.7” x 7.7”



2300 MHz

Manufacturer:	CCI
Model #:	TPA65R-BU6D
Frequency Band:	2300-2400 MHz
Gain:	18.0 dBi
Vertical Beamwidth:	4.0°
Horizontal Beamwidth:	60°
Polarization:	Dual Linear 45°
Dimensions (L x W x D):	71.2” x 20.7” x 7.7”