NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Victoria Masse
420 Main Street #2, Sturbridge, MA 01566
860-306-2326
victoria@northeastsitesolutions.com

May 13, 2021

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Exempt Modification Application
401 Chapel Hill Road, Oakdale CT 06370
Latitude: 41.468797
Longitude: -72.203344
T-Mobile Site#: CTNL814C_Anchor_L600_L1900

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 180-foot level of the existing 301.4-foot tower, located at 401 Chapel Hill Road, Oakdale CT 06370. The property and tower are owned by Subcarrier Communications. T-Mobile now intends to replace six (6) of its existing antenna with three (3) new 2500 MHz antenna 5G and (3) new 1900/2100 MHz antenna. T-Mobile also intends to add three (3) new 600/700/1900 MHz 5G capable antenna. The new antenna will be installed at the 180-foot lever of the tower.
Please note this filing includes proposed tower modifications. The proposed structure reinforcements are from the 25ft level to the 75ft level of the tower as shown by Communication Structures Engineering.

T-Mobile Planned Modifications:
Remove:
(3) RRUS11 B12

Remove and Replace:
(3) APX16DWV-16DWV Antenna (Remove) - (3) AIR 32 B66A B2A 1900/2100 MHz Antenna (Replace)
(3) LNX-6515DS-A1M (Remove) - - (3) AIR 6449 B41 - 2500 MHz Antenna 5G (Replace)
(3) RRUS11 B2 (Remove) – (3) RADIO 4449 B71 + B85 (Replace)
(3) RRUS11 B4 (Remove) – (3) RRUS 4415 B25 (Replace)

Install New:
25ft level to 75ft level tower bracing
(3) APXVAALL24_43 - 600/700/1900 MHz 5G Capable Antenna
(4) Hybrid lines

Existing to Remain:
(2) Hybrid lines

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Ground:
(1) BBU B160
(1) 6160 Radio Cabinet

This facility was approved by the Town of Montville PZC. The PZ approval file is no longer available – See attached letter from the City Zoning Director

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Ronald K McDaniel, Elected Official and Marcia A. Vlaun, Town Planner for the Town of Montville, as well as the property owner and the tower owner (Subcarrier Communications).

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site. ·

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 2, Sturbridge MA 01566
Email: victoria@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments
cc: Mayor Ronald K McDaniel- as elected official
310 Norwich-New London Tpke.
Uncasville, CT 06382

Marcia A. Vlaun, Town Planner
310 Norwich-New London Tpke.
Uncasville, CT 06382

Subcarrier Communications - as tower owner and property owner
139 White Oak Lane
Old Bridge, NJ 08857

Exhibit A

Sheldon F

From: Liz Burdick
Sent: Wednesday, October 11, 2017 2:59 PM
To: Denise Sabo
Cc: Sheldon Freincle; Deborah Chase; Victoria Masse; Colleen Bezanson
Subject: RE: 401 Chapel Hill Road, Montville CT 06370 -T-Mobile EM Application (CTNL814C-MWAAV)
Attachments: 401 Chapel Hill Rd - Zoning File.pdf

10/11/2017

Dear Denise:

Please be advised that there are no original approvals for this site in either our regular or archived tower sites files. I have attached a copy of a zoning permit issued on 2006 for installation of antennas on "existing tower" that was in the file. Please contact me with any questions. Thank you.

Sincerely,
Liz Burdick

Liz Burdick, Zoning & Wetlands Officer
Town of Montville
310 Norwich New London Turnpike
Uncasville, CT 06382
Telephone: (860) 848-6753
Email: eburdick@montville-ct.org

From: Denise Sabo [mailto:denise@northeastsitesolutions.com]
Sent: Wednesday, October 11, 2017 2:45 PM
To: Liz Burdick <eburdick@montville-ct.org>
Cc: Sheldon Freincle <sheldon@northeastsitesolutions.com>; Deborah Chase <deborah@northeastsitesolutions.com>; Victoria Masse <victoria@northeastsitesolutions.com>
Subject: 401 Chapel Hill Road, Montville CT 06370 -T-Mobile EM Application (CTNL814C-MWAAV)

Good Afternoon, Liz

As discussed, T-Mobile is seeking a copy of the original zoning approval for the tower located at **401 Chapel Hill Road, Montville**. This copy is required by the state for a Ct Siting Council application we are trying to get submitted.
If you have any questions or this is not available please let me know, I can use a letter or email reply stating the file is not available.
Thank you again for your help.

Kind Regards,

Denise Sabo

860-209-4690
denise@northeastsitesolutions.com

401 Chapel Hill

ZONING PERMIT

IT IS THE OWNERS/AGENTS RESPONSIBILITY TO FURNISH THE FOLLOWING INFORMATION:

PROPERTY LOCATION 401 CHAPEL HILL ROAD, OAKDALE, CT 06370 MAP 036 LOT 200

PROPERTY OWNER SUBCARRIER COMMUNICATIONS INC. PHONE# 732-607-2828

CONTRACTOR GENERAL DYNAMICS PHONE# 860-350-0203

CONTACT ADDRESS 6 GLENVIEW DRIVE, SHERMAN CT 06784-2310

ZONE_____ LOT AREA_____ STRUCTURE AREA_____ HEIGHT_____

NATURE OF REQUEST/PROPOSED USE INSTALLATION OF ANTENNAS ON EXISTING TOWER AND EQUIPMENT SHELTER, GENERATOR AND PROPANE TANK

PROVIDE TWO COPIES OF PLANS DRAWN TO A SCALE OF AT LEAST 1" = 40' SHOWING: DIMENSIONS OF THE LOT, THE SIZE, AREA, AND LOCATION OF EXISTING, PROPOSED, PRINCIPAL AND ACCESSORY STRUCTURES, DRIVEWAYS, SANITARY FACILITIES AND WATER SUPPLY, PARKING FACILITIES, AND ADJACENT STREETS; DISTANCES OF PROPOSED STRUCTURES FROM PROPERTY LINES AND WETLANDS. A PLAN PREPARED BY A CONNECTICUT REGISTERED LAND SURVEYOR MAY BE REQUIRED. THE PROPOSED USE SPECIFIED ABOVE SHALL NOT BE AUTHORIZED UNTIL AN ACTUAL CERTIFICATE OF COMPLIANCE IS ISSUED BY THE COMMISSION OR ITS APPOINTED AGENTS.

Office use only

	YES	N/A
SITE PLAN	☐	☐
WETLANDS PERMIT	☐	☐
HAS A VARIANCE EVER BEEN GRANTED FOR THIS PROPERTY	☐	☐
HAS BOND BEEN FILED	☐	☐

FEE $ ~~550.00~~ N/A CASH/CHECK # _____

ZONING PERMIT NUMBER _____ OR ☒ N/A EXPIRATION DATE 6/20/07

THE OWNER/AGENT IS RESPONSIBLE FOR AND AGREES TO:

1. FURNISH ALL NECESSARY INFORMATION AND DOCUMENTATION TO PROCESS APPLICATION.
2. ADHERE TO ALL THE APPLICABLE REQUIREMENTS OF THE ZONING REGULATIONS.
3. NOTIFY THE COMMISSION OR ITS APPOINTED AGENT OF ANY ALTERATION IN THE PLANS.
4. **CONTACT THE ZONING OFFICER (848-8549 x-379) AT LEAST 24 HOURS BEFORE CONSTRUCTION BEGINS AND UPON COMPLETION OF PROJECT TO ALLOW ZONING OFFICER TO INSPECT LOCATION.**
5. AN E&S BOND MAY BE REQUIRED PRIOR TO COMPLIANCE SIGN OFF AND HELD UNTIL ONE YEAR FROM THIS DATE

I HEREBY CERTIFY THAT THE INFORMATION PROVIDED IS TRUE AND CORRECT AND FURTHER ATTEST THAT THE PROPOSED WORK IS AUTHORIZED BY THE OWNER IN FEE AND THAT I AM AUTHORIZED TO MAKE APPLICATION FOR A PERMIT FOR SUCH DESCRIBED WORK.

OWNER/AGENTS SIGNATURE Sam Simons SAM J. SIMONS, AGENT. DATE: 6-20-2006

Thomas E. Standley DATE 6/20/06

COMMISSION AGENT

Waived by Commission 2/28/06

T E Standley DATE

CERTIFICATE OF COMPLIANCE (C0C)

THIS SIGNED PERMIT AUTHORIZES THE APPLICANT TO PROCEED TO THE BUILDING DEPARTMENT FOR ANY REQUIRED PERMITS
THE SIGNED CERTIFICATE OF COMPLIANCE IS NEEDED PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED BY THE BUILDING INSPECTOR

REV05/24/2005

Simons Land Consulting LLC

6 Glenview Drive
Sherman, CT 06784-2310
Office (860) 350-0203
Mobile (203) 482-5156
Fax (860) 355-8767
sam@simonsland.com

June 20, 2006

Vernon D. Vesey II
Building Department
Town of Montville
301 Norwich New London Turnpike
Uncasville, CT 06382

Thomas E. Sanders
Planning Department
Town of Montville
301 Norwich New London Turnpike
Uncasville, CT 06382
(Letter & 1 copy of each referenced item)

Re: United States Coast Guard
Building Permit Application
401 Chapel Hill Road, Village of Oakdale (Montville), CT 06370

Town of Montville:

On behalf of United State of America, acting by and through the United States Coast Guard ("U.S. Coast Guard"), I am hereby submitting to the Town of Montville, Connecticut, the U.S. Coast Guard's plans to install antennas on an existing Tower pursuant to the Homeland Security Act and as part of a Congressionally-mandated upgrade to the U.S. Coast Guard's communications system to protect America's borders and to ensure safety of life and property at sea and in America's major bodies of waters. By way of summary, the U.S. Coast Guard's installation will also require, for reasons of safety and security, the construction of a fenced compound (the "U.S.C.G. Compound") including a generator, a fuel tank, and shelter to accommodate the U.S. Coast Guard's ground equipment. The proposed installation is shown in the plans submitted with this letter.

This is a Federal project under 40 U.S.C. § 3312(f)-(g) which entitles the U.S. Coast Guard exemptions from local zoning and permitting requirements as set forth in Item Nos. 1 and 2 below.

I am submitting the following documents for a Building Permit:

1. **U.S. Coast Guard letter** dated March 14, 2006 to Town of Montville regarding the U.S. Coast Guard's exemption from Town of Montville's requirements as a Federal Agency.
2. **U.S. Coast Guard's legal memorandum** dated February 15, 2006 regarding the U.S. Coast Guard's exemption from local and state regulation (the "U.S.C.G. Memorandum")

3. **Fees** – The U.S. Coast Guard is submitting no application fees as the U.S. Coast Guard is exempt from local and state governmental filing fees as set forth in last paragraph on page 1 of U.S. Coast Guard letter (Exhibit 1) and Paragraph 10 (page 4) of the U.S.C.G. Memorandum (Exhibit 2).
4. **Construction Drawings** (2 copies) dated May 9, 2006, by C&S Engineers which have been sealed by a Licensed Professional Engineer.
5. **Structural Analysis Report** (2 copies) on the Existing 300-ft Self Supporting Lattice Steel Tower reflecting the proposed U.S. Coast Guard's installation.
6. **Project Backgrounder** which provides a general description of the U.S. Coast Guard's Rescue 21 Project.
7. **Town of Montville Filing Documents**
    a. **Construction Document Submission Requirements**
    b. **Construction Permit Approval**
    c. **Zoning Permit**
    d. **Application for Commercial Building Permit**
    e. **Application for Commercial Trades Permit**

As set forth in the U.S. Coast Guard's letter dated March 14, 2006 (attached hereto as Exhibit #1) and legal memorandum, dated February 15, 2006, attached hereto as Exhibit #2 (the "U.S.C.G. Memorandum"), the U.S. Coast Guard is not required to obtain a permit from the Town to co-locate on the Tower. Nevertheless, federal law requires the U.S. Coast Guard to inform the Town of its plans and to consider comments from Town officials.

The Tower is an existing, 300-foot telecommunications tower, owned by SubCarrier Communications, and located at 401 Chapel Hill Road, Village of Oakdale (Montville), CT 06370. SubCarrier Communications has entered into lease agreement with the U.S. Coast Guard pursuant to which such entity is entitled to install certain telecommunications facilities at specified heights on the Tower, and to place certain associated equipment on the Site.

The Project essentially consists of installing antennas on the existing Tower. The U.S. Coast Guard will place their associated antenna operating equipment within the existing Leased Area (the "Existing Leased Area") located adjacent to the Tower at the Site (As more fully shown on the C&S Engineers Construction Drawings, dated May 9, 2006 – Item No. 4 above).

As detailed in the U.S.C.G Memorandum, under 40 U.S.C. § 3312, U.S. Coast Guard contractors must comply "with the latest edition of nationally recognized codes, including electrical codes, fire and life safety codes, and plumbing codes." See U.S.C.G. Memorandum at 2. Moreover, federal contractors must give "due consideration" to substantive provisions of local zoning ordinances and similar laws, as well as to the recommendations of State and local officials. See id. at 2-3.

On the other hand, the U.S.C.G. Memorandum makes very clear that "[s]tate and local zoning and other similar laws . . . do not apply to Federal construction or alteration projects where the United States will own the constructed or altered improvement [and that] there is no need for the Coast Guard contractor to obtain a permit." See id. at 1. According to the U.S. Coast Guard, the Town has the right to review, to comment on, and to inspect – but not, ultimately, to prevent or impose restrictions on – the U.S. Coast Guard's installation and construction at the Site.

If requested, the U.S. Coast Guard will respond to questions or comments from the Town or residents of the community regarding the installation of the U.S.C.G. Facility, the construction of the U.S.C.G. Compound, or any other aspect of the U.S. Coast Guard's plans at the Site.

Each aspect of the Coast Guard's plans is included for purposes of security and/or safety. For instance, the generator and fuel tank are components of the U.S. Coast Guard emergency back-up system. In the event of an emergency during which commercial electrical power is lost, the generator, fueled by the propane, will automatically power-up so as to maintain uninterrupted operations and communications.

The Connecticut Siting Council (CSC) has confirmed with us that there are no filing or approval requirements with that state agency as this tower is not subject to CSC jurisdiction (Michael Perrone, Siting Analyst, Connecticut Siting Council, 10 Franklin Square, New Britain, CT 06051 (860) 827-2935).

I believe that the enclosed materials meet requirements for this Building Permit Application; however, if you have any questions, or require any further information, please do not hesitate to contact me. Thank you for your kind consideration of this Building Permit Application.

Very truly yours,

Sam Simons
Site Acquisition Consultant for General Dynamics
Contractor for the United States Coast Guard

Enclosures

Cc: Raymond Occhalini, Fire Marshall (with 1 copy of each enclosure)


TAX MAP
36
TOWN OF
MONTVILLE
CONNECTICUT
PROPERTY LINE
OLD PROPERTY LINE
DISPUTED AREA
RIGHT-OF-WAY
PROPOSED ROAD
PRIVATE ROAD
WATER LINE
MATCH LINE
RAILROAD R/W
CITY/TOWN LIMIT
EASEMENT
PARCEL NUMBER
AREA
DIMENSION
SUBDIVISION LOT NO.
PART OF PARCEL
COORDINATE
FOR ASSESSMENT PURPOSES ONLY
NOT TO BE USED FOR CONVEYANCES
ADJACENT SHEETS
43
44
45
35
36
37
27
28
29
SCALE
SCALE: 1 inch = 200 Feet
COMPLETION DATE: 4-1-04
DATE OF REVISION:
JAMES W. SEWALL COMPANY
36
92
93
89
6-30
5.27 AC
CONSERVATION EASEMENT
6-31
6
42.82 AC
5
57.15 AC
3
13.59 AC
3-1
2.10 AC
4
67.71 AC
4-1
20.21 AC
1.94 AC

Exhibit B

Property Card: **401 CHAPEL HILL RD**

Town of Montville, CT

Parcel Information

Parcel ID:	036-002-000	**Map:**	036
Vision ID:	2136	**Lot:**	002-000
Owner:	SUBCARRIER COMMUNICATIONS INC	**Use Description:**	Radio/TV Tr
Co-Owner:		**Zone:**	R20
Mailing Address:	139 WHITE OAK LN OLD BRIDGE, NJ 08857	**Land Area in Acres:**	1.94

Sale History		Assessed Value	
Book/Page:	456/669	**Land:**	$78,800
Sale Date:	1/12/2005	**Buildings:**	$170,470
Sale Price:	$55,000	**Extra Bldg Features:**	$0
		Outbuildings:	$3,560
		Total Buildings:	$174,030
		Total:	$252,830

Building Details: Building # 1

Model:	Industrial	**Int Wall Desc 1:**	Minimum
Living Area:	3480	**Int Wall Desc 2:**	
Appr. Year Built:	1960	**Ext Wall Desc 1:**	Concrete
Style:	Telephone Bldg	**Ext Wall Desc 2:**	
Stories:	1	**Roof Cover:**	Rolled Compos
Occupancy:	1.00	**Roof Structure:**	Flat
No. Total Rooms:		**Heat Type:**	Forced Air
No. Bedrooms:		**Heat Fuel:**	Gas
No. Baths:		**A/C Type:**	Heat Pump
No. Half Baths:			

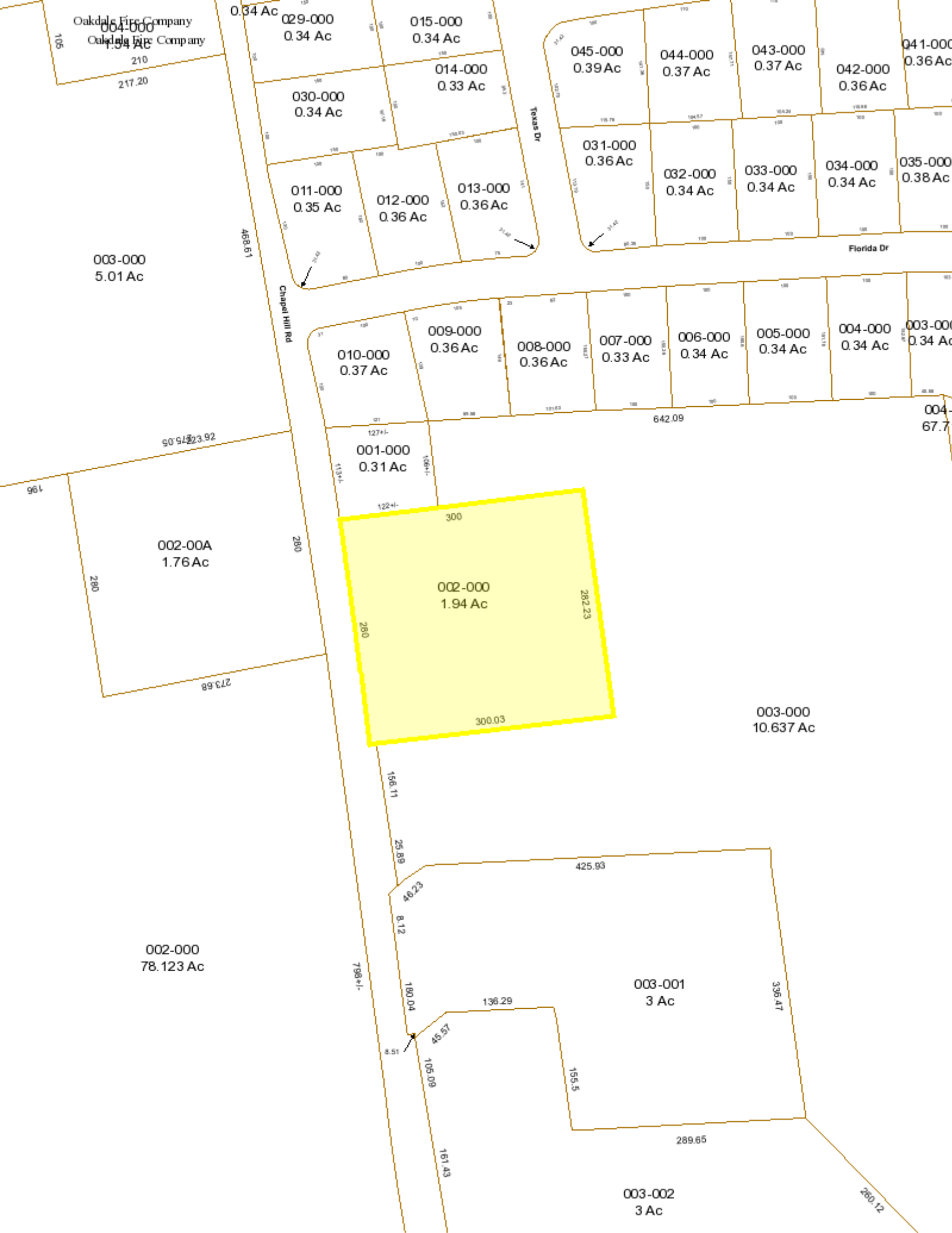

Oakdale Fire Company
004-000
1.94 Ac
Oakdale Fire Company
105
210
217.20
0.34 Ac
029-000
0.34 Ac
015-000
0.34 Ac
014-000
0.33 Ac
030-000
0.34 Ac
011-000
0.35 Ac
012-000
0.36 Ac
013-000
0.36 Ac
Texas Dr
045-000
0.39 Ac
044-000
0.37 Ac
043-000
0.37 Ac
042-000
0.36 Ac
041-000
0.36 Ac
031-000
0.36 Ac
032-000
0.34 Ac
033-000
0.34 Ac
034-000
0.34 Ac
035-000
0.38 Ac
Florida Dr
003-000
5.01 Ac
468.61
Chapel Hill Rd
010-000
0.37 Ac
009-000
0.36 Ac
008-000
0.36 Ac
007-000
0.33 Ac
006-000
0.34 Ac
005-000
0.34 Ac
004-000
0.34 Ac
642.09
001-000
0.31 Ac
127+/-
113+/-
106+/-
122+/-
300
002-00A
1.76 Ac
280
280
275.05
223.92
196
273.68
002-000
1.94 Ac
282.23
280
300.03
003-000
10.637 Ac
156.11
25.89
425.93
46.23
8.12
002-000
78.123 Ac
798+/-
180.04
136.29
45.57
8.51
105.09
003-001
3 Ac
336.47
155.5
289.65
161.43
003-002
3 Ac
260.12

Exhibit C

T-Mobile
NORTHEAST, LLC.

PROJECT: ANCHOR-L600-L1900

SITE I.D. NUMBER:

CTNL814C

SITE NAME:

OAKDALE SUBCARRIER COMMUNICATIONS

SITE ADDRESS:

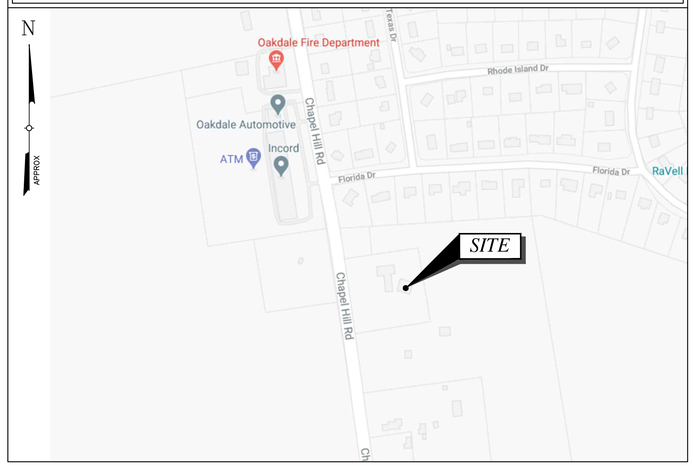
401 CHAPEL HILL RD
OAKDALE, CT 06370

PROJECT INDEX

SITE NUMBER:	CTNL814C
SITE NAME:	OAKDALE SUBCARRIER COMMUNICATIONS
SITE ADDRESS:	401 CHAPEL HILL RD OAKDALE, CT 06370
PROPERTY OWNER:	SUBCARRIER COMMUNICATIONS 139 WHITE OAK LN OLD BRIDGE, NJ 08857
APPLICANT:	T-MOBILE NORTHEAST LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
STRUCTURE TYPE:	SELF-SUPPORTING TOWER
LATTITUDE (NAD83):	N 41.468797"
LONGITUDE (NAD83):	W 72.203344"
GRADE ELEVATION:	610' AMSL (PER GOOGLE EARTH)
MUNICIPALITY:	OAKDALE
PARCEL #:	036-002-000

PROJECT CLIENT:	NORTHEAST SITE SOLUTIONS, LLC
CONTACT:	SHELDON FREINCLE
PHONE:	(201) 776-8521
ENGINEER/ STRUCTURAL ENG:	TECTONIC ENGINEERING & SURVEYING CONSULTANTS, PC.
CONTACT:	EDWARD IAMICELI
PHONE:	(845) 567-6656x2811

VICINITY MAP (NTS)



SHEET INDEX

SHEET NO	DESCRIPTION	REVISION	DATE
T-1	TITLE SHEET	1	05/07/21
A-1	SITE PLAN	1	05/07/21
A-2	EQUIPMENT & TOWER ELEVATION	1	05/07/21
A-3	EXIST/DEMO & NEW EQUIPMENT AREA PLANS	1	05/07/21
A-4	EXIST/NEW T-MOBILE ANTENNA PLANS & ANTENNA SCHEDULE	1	05/07/21
A-5	DETAILS, ANTENNA SCHEMATIC & SPECIFICATIONS	1	05/07/21
A-6	NOTES	1	05/07/21
S-1	ANTENNA MOUNT REINFORCEMENT PLAN, SECTION & SPECS	1	05/07/21
E-1	ELECTRICAL NOTES & ONE-LINE DIAGRAM	1	05/07/21
G-1	GROUNDING DETAILS & NOTES	1	05/07/21

CODE COMPLIANCE

CODE INFORMATION

- STATE OF CONNECTICUT BUILDING CODE, LATEST EDITION
- ANSI/TIA-222-G
- NATIONAL ELECTRIC CODE, LATEST EDITION

DESIGN NOTE

DESIGN BASED ON RFDS DATED 10/15/2020, VERSION 4.

RAN TEMPLATE: 67D5A997DB MUAC
A&L TEMPLATE: 67D5997DB_2xAIR+1OP

STRUCTURAL NOTE

MOUNT ANALYSIS

REFER TO THE MOUNT ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 5, 2020.

MOUNT MODIFICATION ANALYSIS

REFER TO THE MOUNT MODIFICATION ANALYSIS BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 20, 2020.

TOWER MODIFICATION ANALYSIS

REFER TO THE STRUCTURAL ANALYSIS REPORT BY COMMUNICATION STRUCTURES ENGINEERING, INC. DATED MARCH 15, 2021.

811 Know what's below. Call before you dig.

STATE OF CONNECTICUT
EDWARD N. IAMICELI
PEN.0028473
LICENSED PROFESSIONAL ENGINEER

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
70 Pleasant Hill Road
P.O. Box 37
Mountainville, NY 10953
Phone: (845) 534-5959
(800) 829-6531
www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656

T-Mobile
NORTHEAST, LLC.

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CTNL814C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	04/26/2021	ISSUED FOR CONSTRUCTION	BWY
1	05/07/2021	PER COMMENTS	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

OAKDALE SUBCARRIER COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

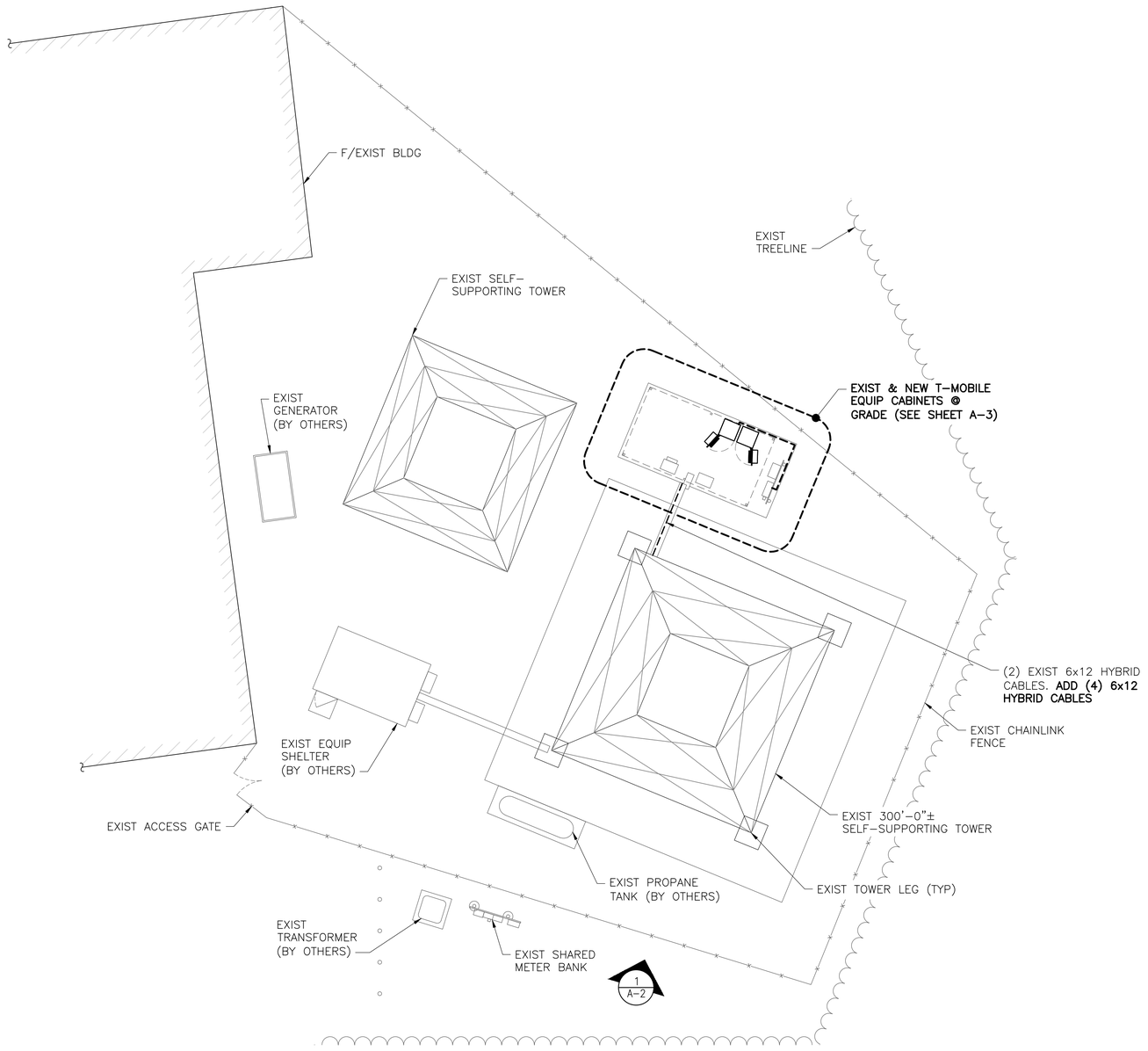
TITLE SHEET

SHEET NUMBER

T-1

N

APPROX



1
A-1
SITE PLAN

SCALE: 1/8" = 1'-0"

STATE OF CONNECTICUT
EDWARD N. IAMICELI
PEN.0028473
LICENSED
PROFESSIONAL ENGINEER

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
70 Pleasant Hill Road
P.O. Box 37
Mountainville, NY 10953
Phone: (845) 534-5959
(800) 829-6531
www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656

T-Mobile
NORTHEAST, LLC.

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CTNL814C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	04/26/2021	ISSUED FOR CONSTRUCTION	BWY
1	05/07/2021	PER COMMENTS	BWY

ISSUED BY | DATE

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

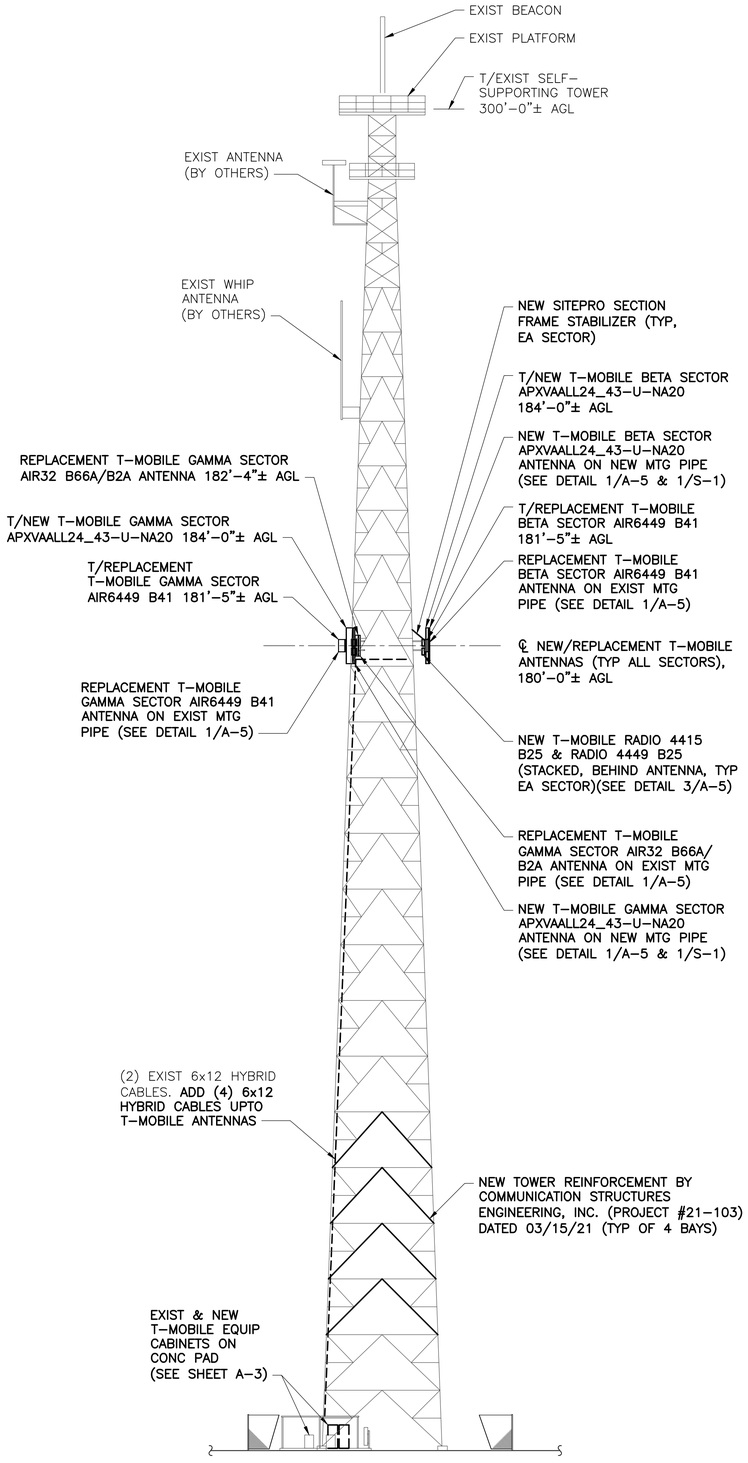
OAKDALE SUBCARRIER
COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

SITE PLAN

SHEET NUMBER

A-1



NOTE: NOT ALL SITE FEATURES SHOWN FOR CLARITY.

1 / A-2 EQUIPMENT & TOWER ELEVATION

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

STRUCTURAL NOTE

MOUNT ANALYSIS

REFER TO THE MOUNT ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 5, 2020.

MOUNT MODIFICATION ANALYSIS

REFER TO THE MOUNT MODIFICATION ANALYSIS BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 20, 2020.

TOWER MODIFICATION ANALYSIS

REFER TO THE STRUCTURAL ANALYSIS REPORT BY COMMUNICATION STRUCTURES ENGINEERING, INC. DATED MARCH 15, 2021.

STATE OF CONNECTICUT
EDWARD N. LAMIGELI
PEN.0028473
LICENSED
PROFESSIONAL ENGINEER

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Project Contact Info
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T-Mobile NORTHEAST, LLC.

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CTNL814C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	04/26/2021	ISSUED FOR CONSTRUCTION	BWY
1	05/07/2021	PER COMMENTS	BWY

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

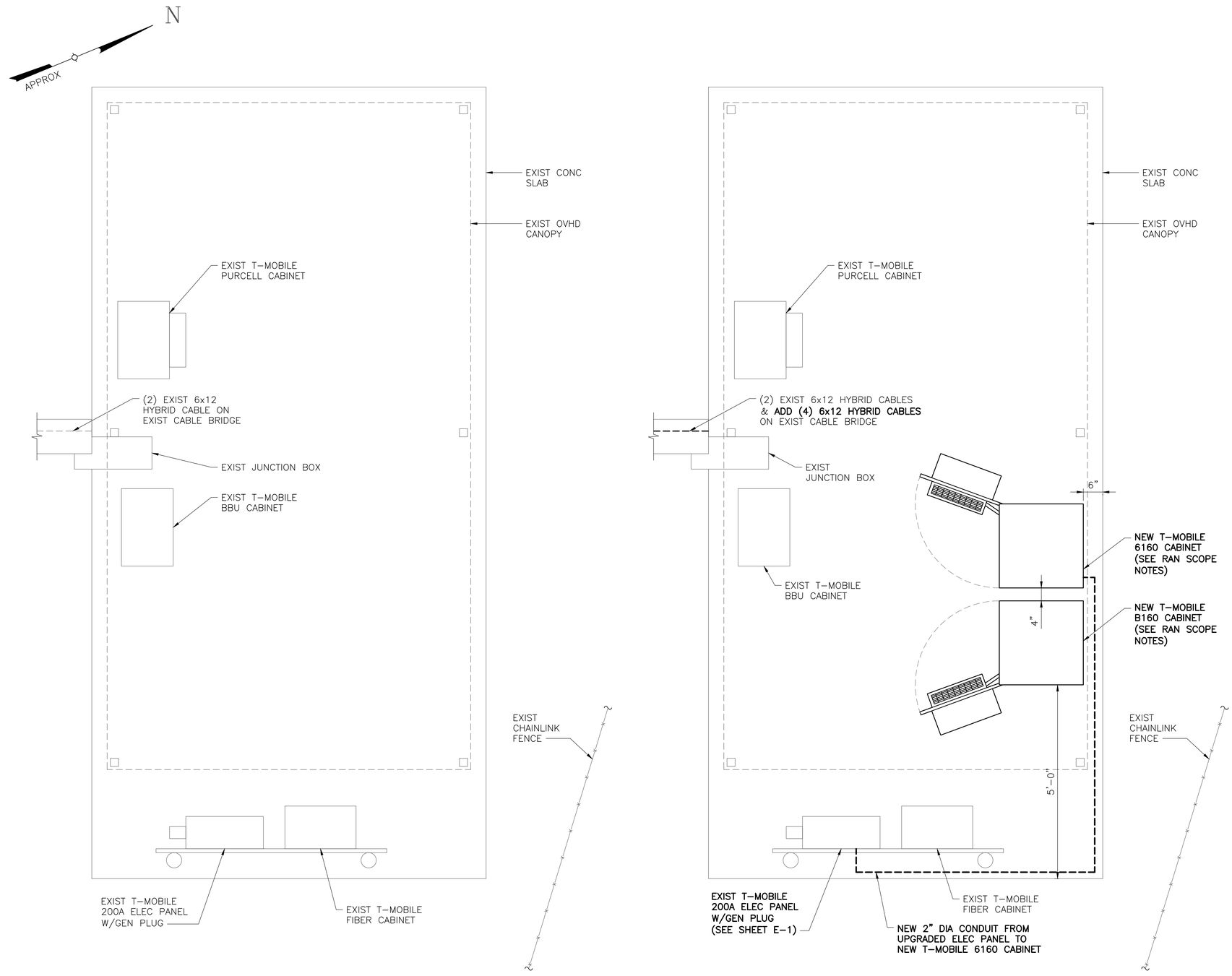
OAKDALE SUBCARRIER COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

EQUIPMENT & TOWER ELEVATION

SHEET NUMBER

A-2



1 A-3 EXISTING/DEMO EQUIPMENT AREA PLAN

SCALE: 3/4" = 1'-0"

2 A-3 NEW EQUIPMENT AREA PLAN

SCALE: 3/4" = 1'-0"

RAN SCOPE NOTES

1. ADD (1) BB6630 FOR L600, L700, AND N600 (MMBB-MIXED MODE BASEBAND).
2. ADD (1) ENCLOSURE 6160.
3. ADD (1) BATTERY CABINET B160.
4. ADD (1) IXRE ROUTER TO NEW ENCLOSURE 6160.
5. ADD (1) BB6630 FOR L2500 TO NEW ENCLOSURE 6160.
6. ADD (1) BB6648 FOR N2500 TO NEW ENCLOSURE 6160.
7. ADD (1) PSU4813 VOLTAGE BOOSTER TO NEW ENCLOSURE 6160.
8. EXISTING: (2) 6X12 HCS.
9. ADD (4) 6X12 HCS.
10. THERE WILL BE (2) 6X12 HCS PER SECTOR AS FOLLOWS: (1) TERMINATING AT THE EXISTING BASE STATION CABINET; (1) TERMINATING AT THE ENCLOSURE 6160 (CONNECT DC FOR AIR6449 B41 TO THE PSU4813 VOLTAGE BOOSTER).

STRUCTURAL NOTE

MOUNT ANALYSIS

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CTNL814C
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OAKDALE, CT 06370

SHEET TITLE

EXIST/DEMO
EQUIPMENT
AREA PLANS

SHEET NUMBER

A-3

N

APPROX

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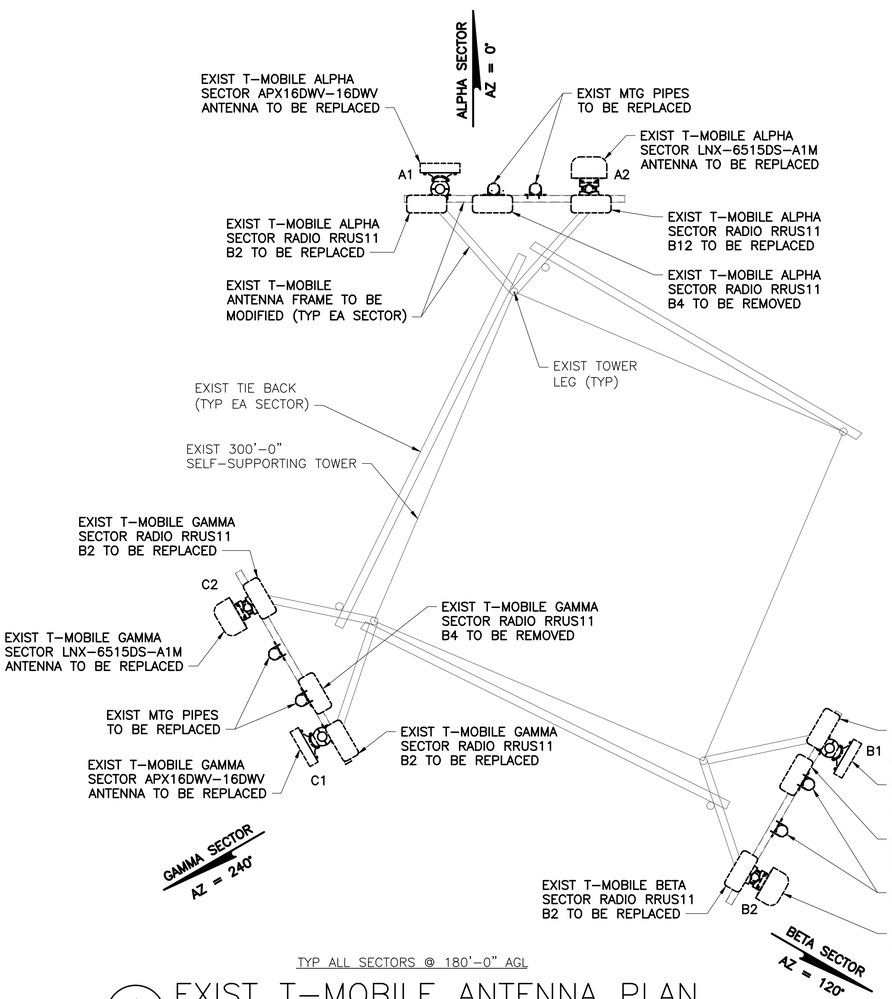
TOWER MODIFICATION ANALYSIS

REFER TO THE STRUCTURAL ANALYSIS REPORT BY COMMUNICATION STRUCTURES ENGINEERING, INC. DATED MARCH 15, 2021.

ANTENNA CABLE SCHEDULE

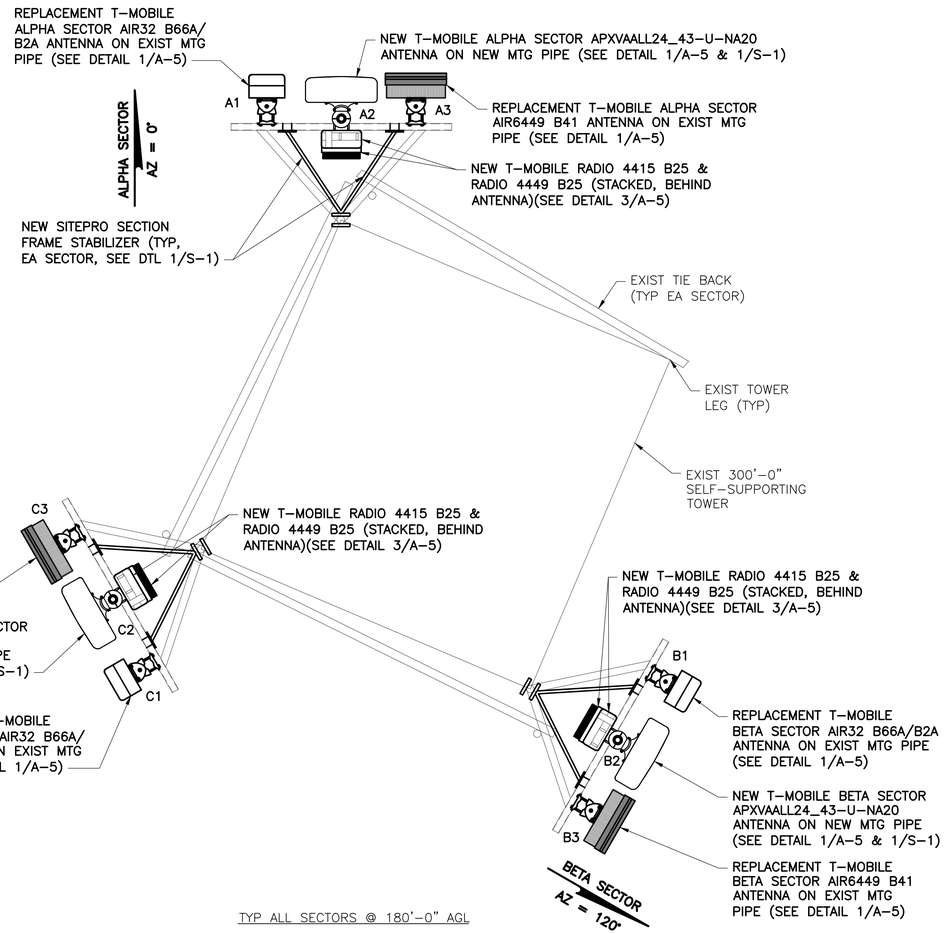
SECTOR MARK	ANTENNA MODEL	AZIMUTH	ELEC DOWNTILT	MECH DOWNTILT	ANTENNA CENTERLINE	SECTOR	STATUS	TMA/RRU	CABLE	JUMPER TYPE	CABLE LENGTH
A-1 LTE	ERICSSON AIR32 B66A/B2A	0°	0°	0°	180'-0"±	LEFT ALPHA	REPLACED	0/0	EXIST 6x12 HYBRID CABLE	FIBER	225'-0"
										FIBER	225'-0"
A-2 LTE/UMTS	RFS APXVAALL24_43-U-NA20	0°	0°	0°	180'-0"±	CENTER ALPHA	NEW	0/2	NEW SHARED 6x12 HYBRID CABLE	1/2" COAX	225'-0"
										1/2" COAX	225'-0"
A-3 LTE	ERICSSON AIR6449 B41	0°	0°	0°	180'-0"±	RIGHT ALPHA	REPLACED	0/0	NEW SHARED 6x12 HYBRID CABLE	FIBER	225'-0"
										FIBER	225'-0"
B-1 LTE	ERICSSON AIR32 B66A/B2A	120°	0°	0°	180'-0"±	LEFT BETA	REPLACED	0/0	EXIST 6x12 HYBRID CABLE	FIBER	225'-0"
										FIBER	225'-0"
B-2 LTE/UMTS	RFS APXVAALL24_43-U-NA20	120°	0°	0°	180'-0"±	CENTER BETA	NEW	0/2	NEW SHARED 6x12 HYBRID CABLE	1/2" COAX	225'-0"
										1/2" COAX	225'-0"
B-3 LTE	ERICSSON AIR6449 B41	120°	0°	0°	180'-0"±	RIGHT BETA	REPLACED	0/0	NEW SHARED 6x12 HYBRID CABLE	FIBER	225'-0"
										FIBER	225'-0"
C-1 LTE	ERICSSON AIR32 B66A/B2A	240°	0°	0°	180'-0"±	LEFT GAMMA	REPLACED	0/0	EXIST 6x12 HYBRID CABLE	FIBER	225'-0"
										FIBER	225'-0"
C-2 LTE/UMTS	RFS APXVAALL24_43-U-NA20	240°	0°	0°	180'-0"±	CENTER GAMMA	NEW	0/2	NEW SHARED 6x12 HYBRID CABLE	1/2" COAX	225'-0"
										1/2" COAX	225'-0"
C-3 LTE	ERICSSON AIR6449 B41	240°	0°	0°	180'-0"±	RIGHT GAMMA	REPLACED	0/0	NEW SHARED 6x12 HYBRID CABLE	FIBER	225'-0"
										FIBER	225'-0"



TYP ALL SECTORS @ 180'-0" AGL

1 / A-4 EXIST T-MOBILE ANTENNA PLAN

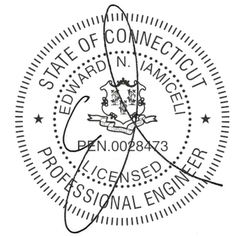
SCALE: 1/2" = 1'-0"



TYP ALL SECTORS @ 180'-0" AGL

2 / A-4 NEW T-MOBILE ANTENNA PLAN

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



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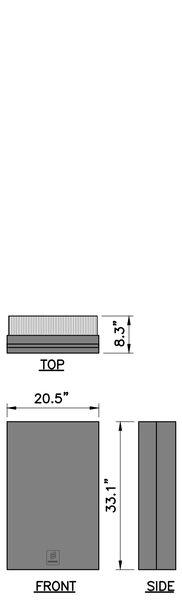
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

EXIST/NEW T-MOBILE ANTENNA PLANS & ANTENNA SCHEDULE

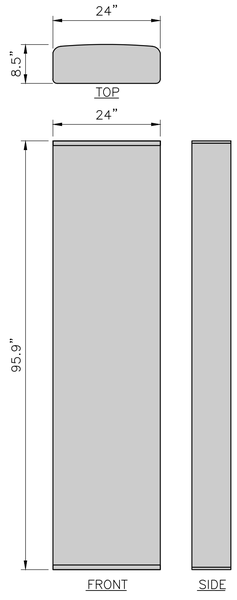
SHEET NUMBER

A-4



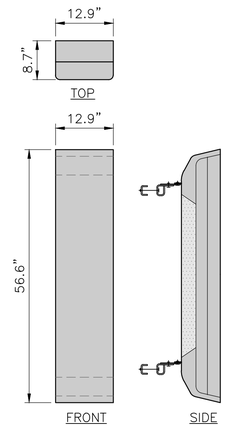
AIR6449 B41
WEIGHT: 103 LBS

NEW/REPLACEMENT



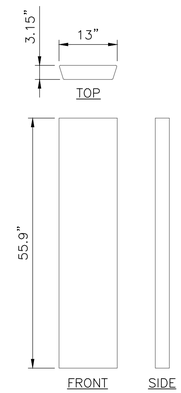
RFS: APXVAALL24_43-U-NA20
WEIGHT: 122.8 LBS

NEW



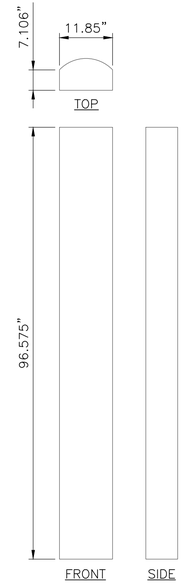
AIR32 DUAL BAND (DB) B66Aa/B2a
WEIGHT: 132.2 LBS

NEW/REPLACEMENT



RFS: APX16DWV-16DWV-S-E-A20
WEIGHT: 40.7 LBS

EXIST/REPLACED

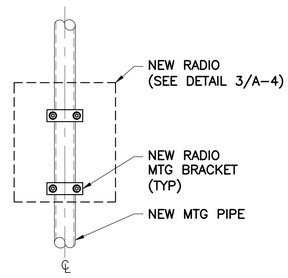


ANDREW: LNX-6515DS-A1M
WEIGHT: 43.651 LBS

EXIST/REPLACED

1 A-5 ANTENNA DETAILS

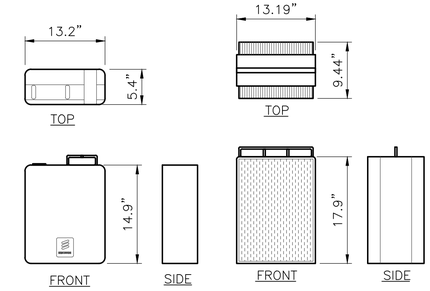
SCALE: NTS



NOTE: MTG OF RADIO TO MTG PIPE, INCLUDING MTG BRACKET ASSEMBLY SHALL BE PER MANUFACTURER DIRECTION.

2 A-5 RADIO MTG DETAIL

SCALE: 1" = 1'-0"

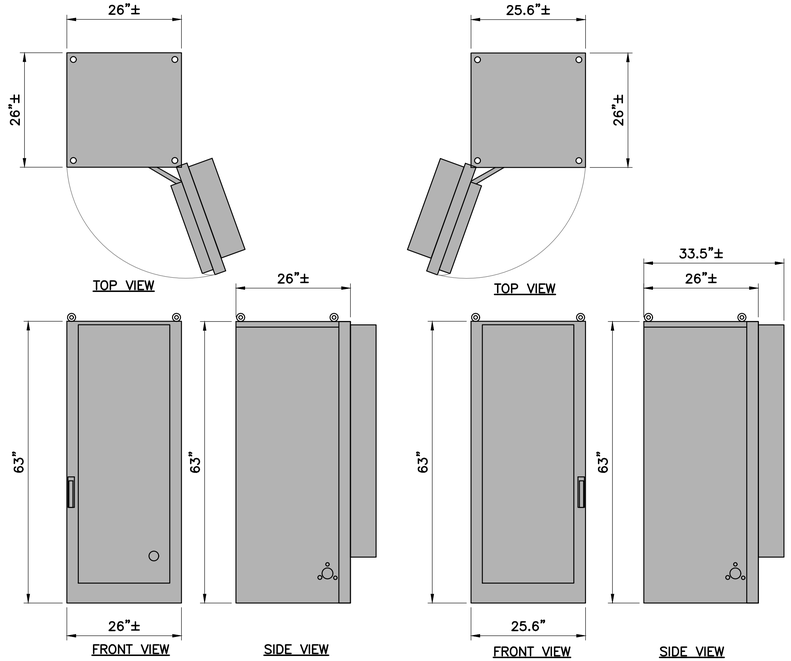


WEIGHT 46.3 LBS
RRUS-4415 B25

WEIGHT 71.0 LBS
RRUS-4449 B71+B85

3 A-5 RADIO DETAILS

SCALE: 1" = 1'-0"



WEIGHT: 1883 LBS (W/3 BATTERY STRINGS)

ERICSSON ENCLOSURE B160

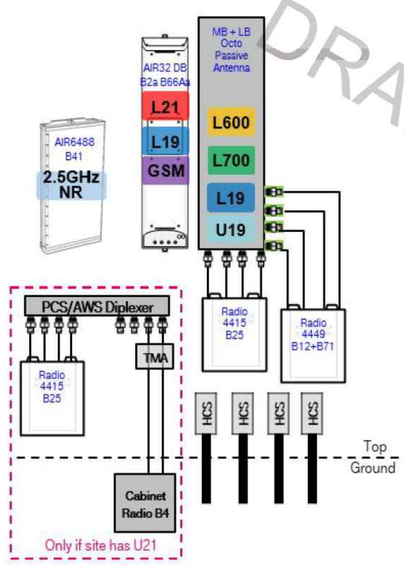
WEIGHT: 605 LB (FULLY LOADED)

ERICSSON ENCLOSURE 6160 AC

B160 & 6160 CABINETS

4 A-5 EQUIPMENT CABINET SPECIFICATIONS

SCALE: NTS



TYP ALL SECTORS

5 A-5 ANTENNA SCHEMATIC

SCALE: NTS

STRUCTURAL NOTE

MOUNT ANALYSIS

REFER TO THE MOUNT ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 5, 2020.

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SHEET TITLE

DETAILS, ANTENNA SCHEMATIC & SPECIFICATIONS

SHEET NUMBER

A-5

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CONNECTICUT BUILDING CODE, LATEST VERSION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE AUTHORIZED REPRESENTATIVE OR THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
6. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE "NOTICE TO PROCEED," CONTRACTOR WILL CONTACT THE CONSTRUCTION MANAGER OF RECORD A MINIMUM OF 48 HOURS PRIOR TO WORK START.
8. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
9. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
10. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
12. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
14. CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE TO PROTECT THE OWNER.
15. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
16. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, AND PIPING. REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
17. REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
18. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
19. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
20. PROVIDE 48 HOURS WRITTEN NOTICE TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
21. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS AND OTHER DOCUMENTATION SHALL BE TURNED OVER TO AT COMPLETION OF CONSTRUCTION.
22. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF ACCEPTANCE BY. ANY WORK, MATERIALS OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE CORRECTED IMMEDIATELY UPON WRITTEN NOTIFICATION AT NO ADDITIONAL COST TO T–MOBILE.

STRUCTURAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
2. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.
3. STRUCTURAL STEEL BEAMS SHALL CONFORM TO ASTM A992 (Fy=50ksi). STRUCTURAL STEEL PLATES AND ANGLES SHALL CONFORM TO ASTM A36.
4. ROUND AND SQUARE HOLLOW STRUCTURAL SECTIONS (HSS) CONFORM TO ASTM A500 "COLD–FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE C.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD–FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 "PIPE, STEEL, BLACK AND HOT–DIPPED, ZINC–COATED WELDED AND SEAMLESS", TYPE E OR S, GRADE B.
6. CONNECTIONS: WELD OR BOLT CONNECTIONS, AS INDICATED:
   A) CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL CONFORM TO THE REQUIREMENTS OF THE CITED AISC SPECIFICATION.
   B) STRUCTURAL BOLTS SHALL CONFORM TO THE LATEST ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS".
   C) WHERE THE REACTION VALUES OF BEAMS, BRACING, STRUTS, ETC., ARE NOT SHOWN ON THE DRAWINGS THE CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE END REACTION DERIVED FROM THE TABLES AND FORMULA OF UNIFORM LOAD CONSTANTS IN PART 2, NINTH EDITION, OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE GIVEN MEMBER SIZE, SPAN AND YIELD STRENGTH.
   D) MINIMUM 3/16" FILLET E70–XX WELD SHALL APPLY UNLESS NOTED.
   E) MINIMUM 1/2" DIA. A325 BOLTS SHALL APPLY UNLESS NOTED.
   F) MINIMUM SIZE OF CLIP ANGLES SHALL BE L3x3x3/8" UNLESS NOTED.
   G) ALL GUSSET PLATES SHALL BE 3/8" THICK UNLESS NOTED.
   H) ALL HOLES FOR BOLTS SHALL BE 1/16 INCH LARGER THAN THE BOLT DIAMETER WITH AN EDGE DISTANCE OF AT LEAST 1 1/2 TIMES THE BOLT DIAMETER AND A SPACING OF AT LEAST 3 TIMES THE BOLT DIAMETER. ALL BOLTS SHALL BE PROVIDED WITH PALNUTS OR LOCK NUTS.
7. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS", LATEST EDITION. BOLTS SHALL BE 3/4 INCH DIA. UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES".
9. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
10. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
11. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
12. ALL STEEL SUPPORTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED SNUG TIGHT.
13. SLEEVE ANCHORS SHALL CONFORM TO FEDERAL SPECIFICATION FF–S–325, GROUP II, TYPE 3, CLASS 3, AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE (3) INCHES.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF–S–325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE FOUR (4) INCHES.
15. EPOXY ANCHORING SYSTEM SHALL BE THE HILTI HY–270 FOR MASONRY CONSTRUCTION WITH HOLLOW BRICK OR BLOCK & THE HILTI HIT HY200 INJECTION ADHESIVE ANCHOR FOR GROUT FILLED CONCRETE MASONRY UNITS AND CONCRETE. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2"ø STAINLESS STEEL ANCHOR ROD W/NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE FOR THE HY–270 ONLY & AN EPOXY ADHESIVE (6" MIN EMBEDMENT). THE INSTALLATION PROCEDURE SHALL BE AS FOLLOWS
   A. DRILL THE HOLE USING MANUFACTURER RECOMMENDED DRILL BIT UP TO SPECIFIED DEPTH. HAMMERING IS NOT PERMITTED.
   B. CLEAN THE HOLE USING NYLON BRUSH AND/OR COMPRESSED AIR. THE HOLE SHOULD BE CLEAR OF ANY LOOSE MATERIAL. IF WET, THE MASONRY SHOULD BE ALLOWED TO DRY FULLY BEFORE ANCHOR INSTALLATION.
   C. INSERT SPECIFIED SCREEN TUBE INTO THE HOLE.
   D. FILL THE SCREEN TUBE COMPLETELY WITH ADHESIVE, BEGINNING AT THE BOTTOM END.
   E. INSERT ANCHOR ROD OR INTERNALLY THREADED INSERT INTO THE ADHESIVE–FILLED SCREEN TUBE, TWISTING SLIGHTLY.
   F. LOAD FASTENER ONLY AFTER MANUFACTURER SPECIFIED CURE TIME HAS ELAPSED.
16. GRATING SHALL BE GALVANIZED WELDED STEEL BAR GRATING TYPE W/BA WITH 1–1/4" BEARING BARS AT 1–3/16" OC. FASTEN TO SUPPORTING MEMBERS WITH SADDLE–TYPE CLIPS AT 2'–0" O.C. AND BAND ALL EXPOSED EDGES.
17. SUBMIT DRAWINGS OF ALL STRUCTURAL AND MISCELLANEOUS STEEL TO THE ENGINEER FOR APPROVAL AND INCORPORATE ALL COMMENTS PRIOR TO FABRICATION.
18. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.
19. ALL WORK SHALL BE INSPECTED BY THE ENGINEER DURING AND AT THE COMPLETION OF CONSTRUCTION.
20. CONTRACTOR TO REMOVE MASTIC ON THE EXISTING WALL/PARAPET AT EVERY STEEL SUPPORT ATTACHMENT AND REPOINT MASONRY AS REQUIRED. A BED OF SILICONE SHALL BE APPLIED BEHIND AND ALL AROUND THE STEEL SUPPORT ATTACHMENT TO MAKE IT WEATHERPROOF.
21. HAMMER DRILLS ARE NOT TO BE USED WHEN DRILLING HOLES FOR SLEEVE OR EXPANSION BOLTS INSTALLED IN MASONRY BLOCKS/BRICKS.
22. ALL HOLES TO BE ADDED IN THE FIELD SHALL BE PUNCHED OR DRILLED. NO HOLE BURNING SHALL BE ALLOWED.
23. NOTES ARE NOT PROJECT SPECIFIC.

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
4. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
5. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
6. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES.
7. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEER.
8. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
9. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
10. CARE SHALL BE TAKEN TO RETAIN NATURAL GROWTH AND PREVENT DAMAGE TO TREES WITHIN AND OUTSIDE THE LIMITS OF CONSTRUCTION AND SPECIFIED WORK AREAS CAUSED BY EQUIPMENT AND MATERIALS. ANY DAMAGE TO THIS NATURAL GROWTH SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR.
11. ALL AREAS DISTURBED BY THE CONTRACTOR WITHOUT AUTHORIZATION SHALL BE RESTORED BY THE CONTRACTOR.
12. IN THE EVENT THE CONTRACTOR DAMAGES AN EXISTING UTILITY SERVICE CAUSING AN INTERRUPTION IN SAID SERVICE, HE SHALL IMMEDIATELY COMMENCE WORK TO RESTORE SERVICE AND MAY NOT CEASE HIS WORK OPERATION UNTIL SERVICE IS RESTORED.

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Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CTNL814C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
2	04/26/2021	ISSUED FOR CONSTRUCTION	BWY
1	05/07/2021	PER COMMENTS	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

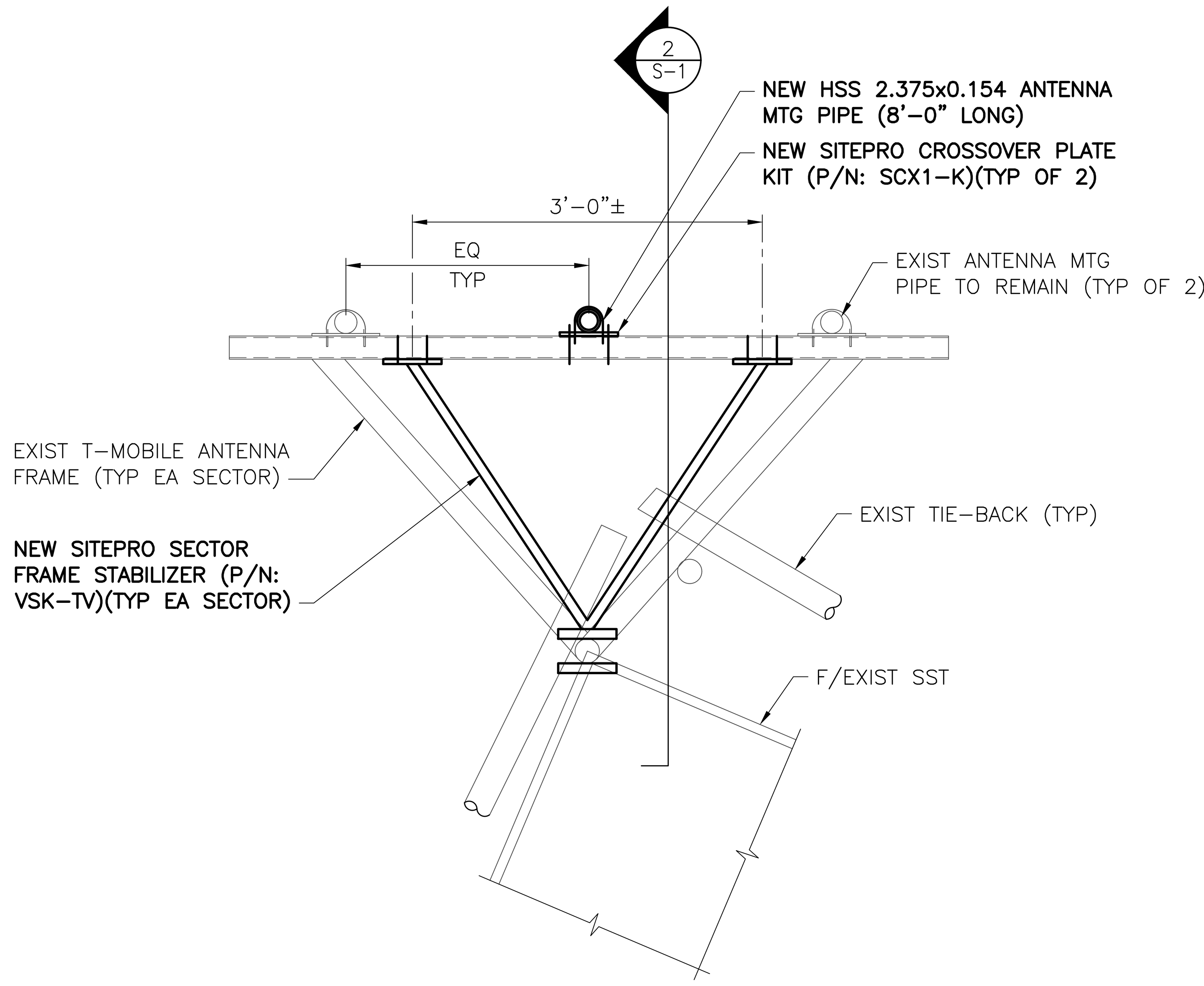
OAKDALE SUBCARRIER
COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

NOTES

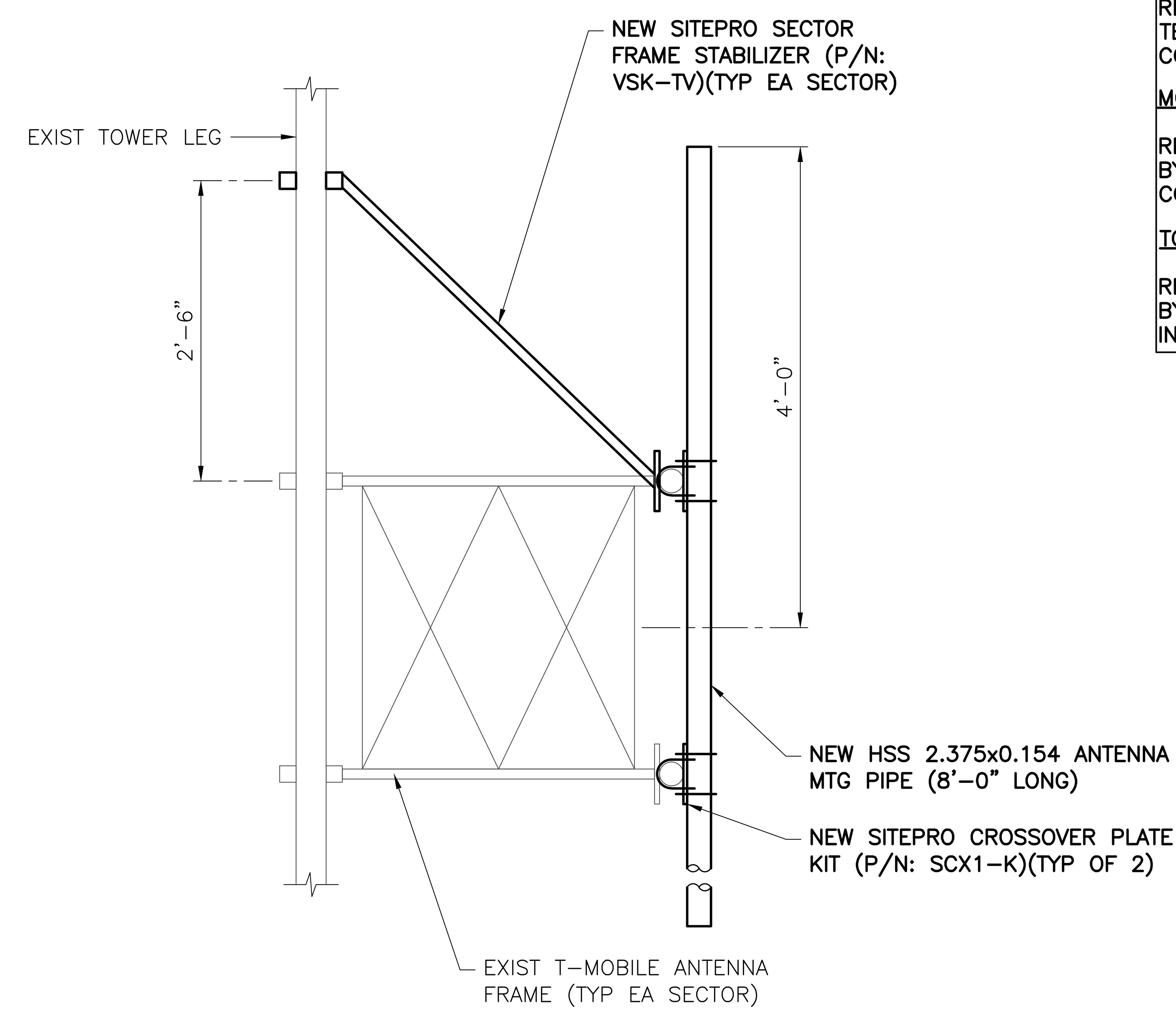
SHEET NUMBER

A–6



1 S-1 TYP ANTENNA FRAME REINFORCEMENT PLAN

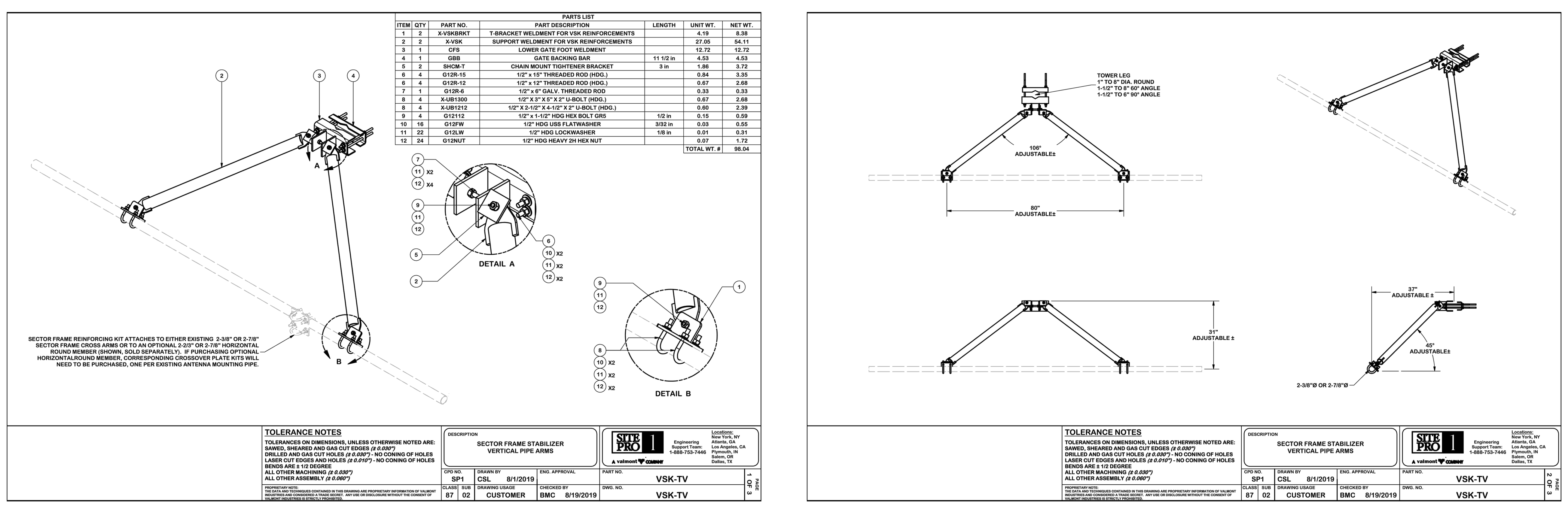
SCALE: 1" = 1'-0"



NOTES:
1. CONTRACTOR SHALL ATTACH SITEPRO SECTOR FRAME STABILIZER TO EXISTING T-MOBILE ANTENNA FRAME AND EXISTING TOWER LEG PER MANUFACTURER RECOMMENDATIONS.
2. EXISTING T-MOBILE ANTENNA MOUNTING PIPES AND TIE BACKS NOT SHOWN FOR CLARITY.

2 S-1 TYP ANTENNA FRAME REINFORCEMENT SECTION

SCALE: 1" = 1'-0"



3 S-1 SITEPRO VSK-TV SPECIFICATIONS

SCALE: NTS

STRUCTURAL NOTE

MOUNT ANALYSIS

REFER TO THE MOUNT ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 5, 2020.

MOUNT MODIFICATION ANALYSIS

REFER TO THE MOUNT MODIFICATION ANALYSIS BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED NOVEMBER 20, 2020.

TOWER MODIFICATION ANALYSIS

REFER TO THE STRUCTURAL ANALYSIS REPORT BY COMMUNICATION STRUCTURES ENGINEERING, INC. DATED MARCH 15, 2021.

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SITE INFORMATION

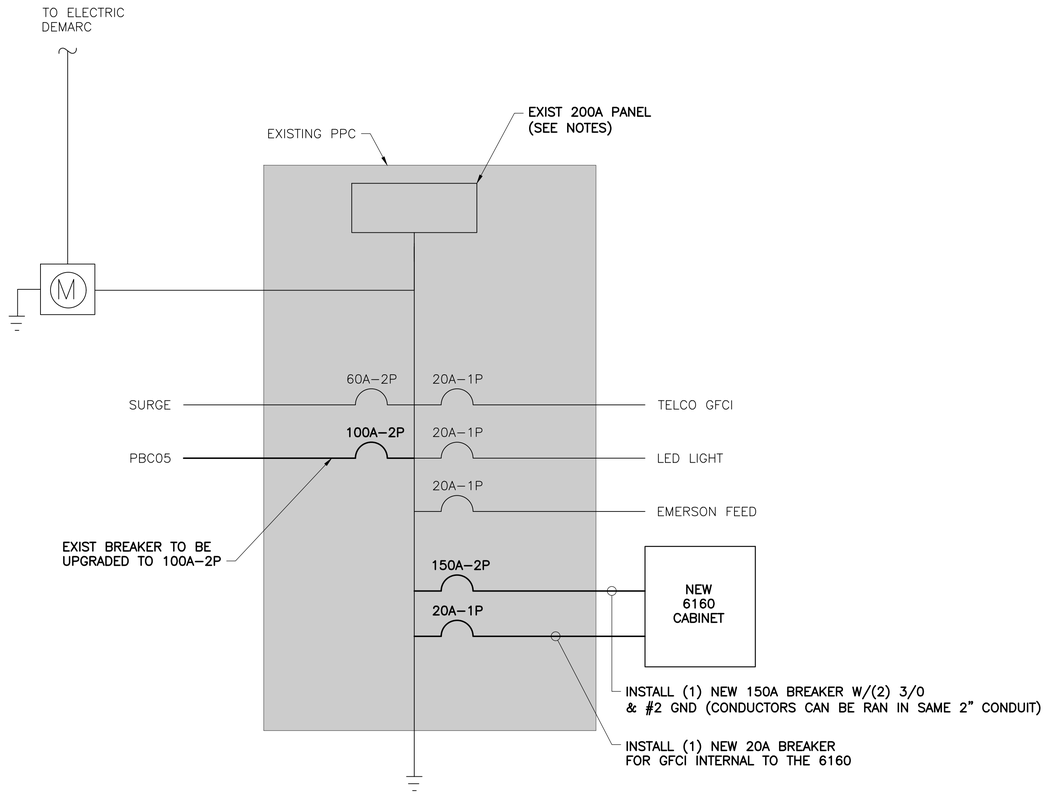
OAKDALE SUBCARRIER COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

ANTENNA MOUNT REINFORCEMENT PLAN, SECTION & SPECS

SHEET NUMBER

S-1



NOTES:
1. THE ABOVE DIAGRAM IS GENERIC AND ANY ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH NEC STANDARDS.
2. ELECTRICAL CONSULT SHALL BE PERFORMED TO CONSTRUCTION TO CONFIRM THE POWER REQUIREMENTS AND FEASIBILITY.

1 / E–1 ONE–LINE DIAGRAM

SCALE: NTS

GENERAL ELECTRICAL NOTES

1. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES (U.L.) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
4. CONTRACTOR TO COORDINATE WITH SITE OWNER FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
5. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
7. METER SOCKETS AMPERES, VOLTAGE AND NUMBER OF PHASES SHALL BE NOTED AND SHALL BE MANUFACTURED BY SQUARE "D" COMPANY, SANGAMO OR APPROVED EQUAL. METER SOCKET SHALL BE APPROVED BY UTILITY COMPANY PRIOR TO INSTALLATION.
8. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM WITH TYPE THHN INSULATION UNLESS SPECIFICALLY NOTED OTHERWISE.
9. ALL CONDUCTORS SHALL BE COPPER.
10. USE T–TAP CONNECTIONS ON ALL MULTI–CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
11. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULLBOX, J–BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.)
12. CONDUIT:
    A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR.
    B. INTERMEDIATE METAL CONDUIT SHALL BE U.L. LABEL, FITTINGS SHALL BE THREADED ALUMINUM OR STEEL AND SHALL BE USED FOR ALL EXTERIOR RUNS. THREADLESS COUPLINGS AND CONNECTORS SHALL NOT BE USED.
    C. ELECTRICAL METALLIC TUBING (EMT) SHALL HAVE U.L. LABEL, FITTINGS SHALL BE NO SET SCREW OR CRIMP TYPE FITTINGS SHALL BE USED. GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    D. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
    E. CONDUIT SHALL BE SIZED PER THE NEC AND AS SHOWN.
    F. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLING.
    G. ALL CONDUIT ONLY (C.O.) RUNS SHALL HAVE A PULL WIRE OR ROPE.
13. COVERPLATES SHALL BE BRUSHED STAINLESS STEEL FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS, AND SHALL HAVE ENGRAVED LETTERING WHERE INDICATED WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD–8 LIFT COVERPLATES.
14. REFER TO MANUFACTURERS MANUAL FOR RECOMMENDED FUSE AND WIRE SIZES.
15. ALL FINAL CONNECTIONS TO THE EQUIPMENT ARE TO BE OF FLEXIBLE WEATHERPROOF CONDUIT TO MEET APPLICABLE CODES.
16. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
17. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2, UNLESS OTHERWISE NOTED.
18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE CONSTRUCTION MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
19. PROVIDE CONSTRUCTION MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GAINING APPROVALS AND PAYING ALL FEES ASSESSED BY UTILITY COMPANY FOR ELECTRICAL SERVICE.

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SITE INFORMATION

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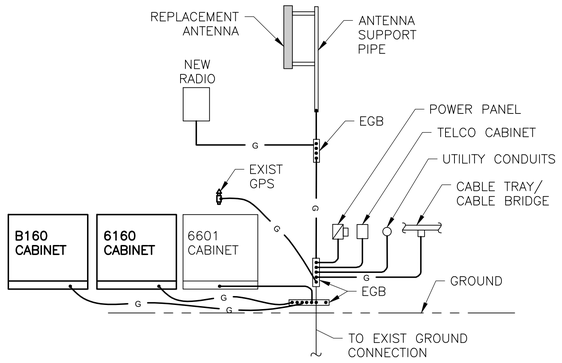
COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

ELECTRICAL NOTES &
ONE–LINE DIAGRAM

SHEET NUMBER

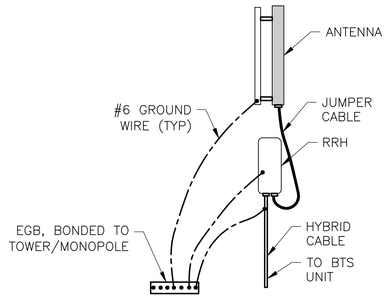
E–1



NOTE: CONTRACTOR SHALL CONFIRM ALL EQUIPMENT IS GROUNDED. IF NOT, CONTRACTOR SHALL GROUND EQUIPMENT AS SHOWN AND AS REQUIRED.

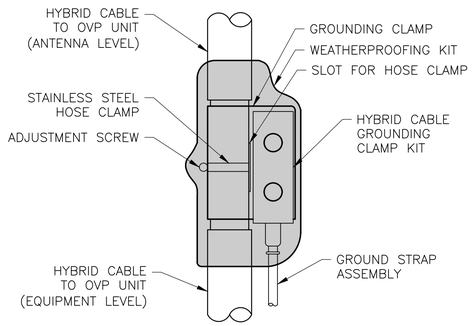
1 / G-1 GROUNDING RISER DIAGRAM

SCALE: NTS



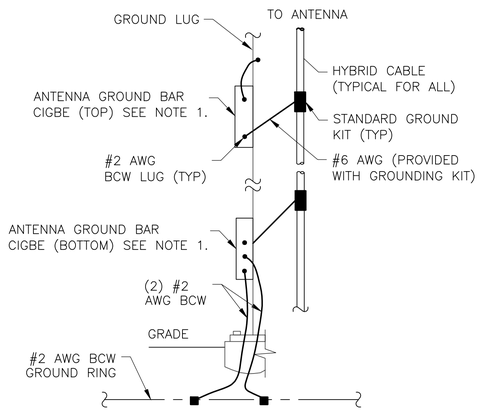
2 / G-1 HYBRID CABLE CONNECTIOND DETAIL

SCALE: NTS



3 / G-1 HYBRID CABLE GROUNDING DETAIL

SCALE: NTS

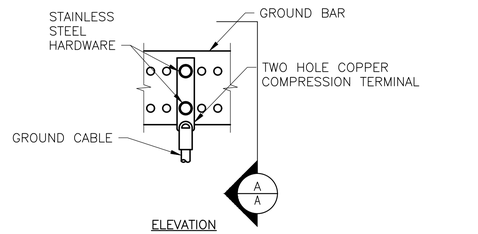


NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS UNIT IF REQUIRED.

4 / G-1 ANTENNA CABLE GROUNDING

SCALE: NTS



NOTES:

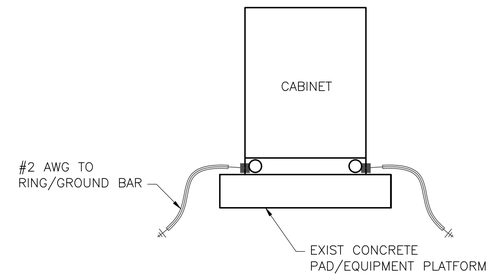
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.
4. ALL GROUND LUGS MUST NE HEAT SHRUNK AT WIRE/LUG CONNECTION.

5 / G-1 GROUND BAR CONNECTION DETAIL

SCALE: NTS

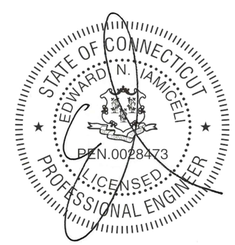
GROUNDING NOTES

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL GROUNDING WORK SHALL BE IN ACCORDANCE WITH T-MOBILE STANDARD PRACTICE.
3. ALL BUS CONNECTORS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
4. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
5. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
6. ALL COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
7. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8-INCH NOMINAL RADIUS.
8. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
10. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD-WELDED IF POSSIBLE.
11. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
12. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
13. ALL EXPOSED #2 WIRE MUST BE TINN NOT BTW.
14. TECTONIC TAKES NO RESPONSIBILITY OR LIABILITY FOR THE GROUNDING SYSTEM AS SHOWN ON THIS SITE. THIS IS A STANDARD GROUNDING SYSTEM.



6 / G-1 CABINET GROUNDING DETAIL

SCALE: NTS



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P.O. Box 37
Mountainville, NY 10953
Phone: (845) 534-5959
(800) 829-6531
www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656

T-Mobile
NORTHEAST, LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CTNL814C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	04/26/2021	ISSUED FOR CONSTRUCTION	BWY
1	05/07/2021	PER COMMENTS	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

OAKDALE SUBCARRIER
COMMUNICATIONS
CTNL814C
401 CHAPEL HILL RD
OAKDALE, CT 06370

SHEET TITLE

GROUNDING DETAILS & NOTES

SHEET NUMBER

G-1

Exhibit D

Communication Structures Engineering, Inc.

Ms Marwa El-Gamal (marwa@subcarrier.com)
Subcarrier Communications
139 White Oak Lane; Old Bridge, NJ 08857

March 15, 2021

Re: Structural Review of the Existing 300-ft Self Supporting Lattice Steel Tower
SubCarrier Communications Site: Oakdale CT (Montville), Site I.D. #4048
Location: 401 Chapel Hill Road, Village of Oakdale, CT 06370; New London County, CT

Dear Marwa,

Communication Structures Engineering, Inc. (CSEI) has completed a structural review of the existing 300-ft Self Supported Tower located at this Subcarrier Communications Inc. site known as Oakdale, CT, Site I.D.#4048. In accordance with your request, we performed a structural analysis of this tower to check its capability to support the existing tower & equipment loads as well as the loads from the proposed T-Mobile equipment additions. This analysis report is based on the assumption that this steel tower will have been strengthened in accordance with the attached drawings. All work specified on the following drawings must be correctly completed for this analysis report to be valid: *Oakdale CT #4048 Tower Strengthening, Drawings S1-21103 & S2-21103 (dated 3-15-21),* CSEI Project #21103. The applicable strengthening installation drawings are attached for reference at the end of this report.

EXISTING TOWER INFORMATION & HISTORY

The 300-ft self-supported tower at this site was built in 1969 by Flint Steel Corp. for AT&T Long Lines Eastern Region. This tower, was built to provide an AT&T Microwave Radio Path to Greenhill R.I. It is a four-sided, lattice braced steel structure with a top grated antenna platform that measures 10'-0" X 23'-3", and a tower base plan dimension of 26'-4" X 26'-4". This tower was originally designed to support two large Western Electric KS15676 Horn Reflector Antennas on the top platform. It is supported on a concrete spread footing foundation that was designed in 1968 by Rose Chulkoff & Rose Engineering (RCR of NYC). The tower foundation was strengthened in 2006. Both of the original AT&T KS15676 Horn Antennas were removed from the top antenna platform in 2006.

CSEI utilized the following documents from our archives to conduct our structural review of this tower: 1.) The 1968 AT&T Tower Design Drawings; 2.)The 1969 Flint Steel Tower Shop & Erection Drawings; 3.) The 1968 RCR Tower Foundation Design Drawings & Calculations; and 4.) The 1966 Geotechnical Report & Soil Borings. The new proposed T-Mobile equipment loading was acquired from the information stated on T-Mobile's Co-location Application submitted 10/15/20 to Subcarrier Communications. A site visit or condition survey of this tower was not a part of CSEI's scope of work for this tower. We have assumed that the tower has been maintained in good physical condition.

DESIGN CRITERIA

The specific loading criteria that we utilized were those prescribed by 2018 Connecticut State Building Code (Adopted 10/1/18). In accordance with the this code the wind speed that we utilized for the analysis of this structure was the "Ultimate 3 second Gust Wind Speed" of 135-mph applicable to this location in New London County, CT. This wind speed was converted to a nominal 3-second gust wind speed of 105 mph per section 1609.3.1 of the IBC 2015 Building Code. The tower was analyzed as a Class II Structure. Based on our review of the topography & local features, we have considered this location to be a Topographic Category '1' and Exposure Category 'B' site. See the next page titled, "Design Criteria", for a listing of the customer mounted equipment used for our analysis.

STRUCTURAL ANALYSIS PROCEDURE

The referenced design criteria combined with wind tunnel test data from tests conducted on AT&T tower framing and tower platforms, were utilized to determine the applicable loads for this structure. A frame analysis was then performed utilizing the stated wind loads and a computer model of the tower framing modeled on Power Line Systems Inc. "*PLS Tower*" Program. The load carrying frame members of this structure were reviewed to check their compliance with *ANSI/TIA-222-G-2* which is the Reference Standard accepted by IBC 2015 and the 2018 Connecticut State Building Code.

RESULTS OF STRUCTURAL ANALYSIS

Existing Steel Tower : Our analysis has determined that after all of the required tower modifications, as summarized in the first paragraph above, are properly completed, this steel tower was found to have **Sufficient Capacity** to support the existing & proposed loads listed on the attached Design Criteria in conformance with the referenced building code.

Existing Tower Foundation: The existing tower foundation was found to be adequate to support the existing and proposed tower & equipment loads. No strengthening of the tower foundation will be necessary.

TOWER STRESS RATING WITH THE ADDED T-MOBILE EQUIPMENT

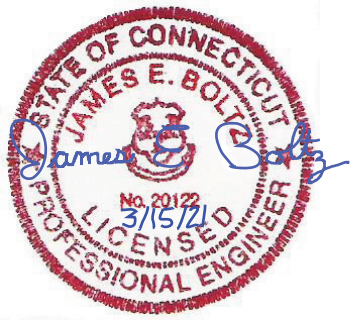
Maximum Tower Stress Level: 93% (Pass) / Maximum Foundation Stress = 90% (Pass)

CSEI would be happy to respond to any questions regarding this analysis & report.

Sincerely,

James E. Boltz

James E. Boltz, P.E. (CT P.E. #20122)



Attachments: 1.) Design Criteria 300-ft tower at Oakdale CT
2.) Structural Calculations: 300-ft tower at Oakdale CT
3.) Oakdale CT #4048,Tower Steel Strengthening Dwgs #S1-21103 & #S2-21103

March 15, 2021

DESIGN CRITERIA

SubCarrier Communications Site: Oakdale Site #4048

T-Mobile Site: CTNL814C / Oakdale Subcarrier Communications

Location: 401 Chapel Hill Road, Village of Oakdale, CT 06370
Latitude N 41° 28' 07"/ Longitude W 72° 12' 12"
New London County, CT

DESIGN STANDARDS

2018 Connecticut State Building Code
2015 International Building Code & ANSI/TIA/EIA-222-G-2,

135 mph (Ultimate 3-Second Gust) Wind Speed converted to (Nominal 3-Second Gust) of 105 mph
Structure Class II; Exposure 'B' Topographic Category 1

In addition to the loads from the existing tower framing and platforms the loads from the following antennas and their associated transmission lines were considered in the analysis.

ANTENNA CONFIGURATION (Used for Structural Analysis)

(Note: A.T.B.P. = Above Tower Base Plate)

Existing Customer Antennas - *To Remain on Tower*

- **Calvary Chapel** One (1) SWR-FM1 Low Power FM Antenna (ERP 250W) mounted on antenna platform at 300-ft A.T.B.P. with one (1) run of 0.5-inch dia. coaxial cable from the antenna down to grade.
- **Tactical Communications** Two (2) RFS Model # DB-408 UHF omni antennas mounted at 100-ft A.T.B.P with total of two (2) runs of 0.875-inch dia. coax cable from the antennas down to grade.

Existing United States Coast Guard Antennas - *To Remain on Tower*

1.) One (1) ADD090S Direction Finder Antenna mounted at 280-ft above tower base plate with two associated runs of 0.875 inch diameter coaxial cable and one run of AWG24 control cable.
2.) One (1) SRL235-2 VHF antenna mounted at 255-ft A.T.B.P. with one run of 0.875-inch dia. coax cable.
3.) One (1) SRL335-2 UHF antenna mounted at 255-ft A.T.B.P. with one run of 0.875-inch dia. coax cable.
4.) One (1) SRL235-2 VHF antenna mounted at 220-ft A.T.B.P with two runs of 0.875-inch dia. coax cable.

(All SRL antennas to be mounted on 6-ft side-arms)

NOTE: To reduce tower loading, the wind loads due to cable ladder for the above cables not included in our analysis. The proposed USCG vertical cables were to be installed using leg-mounted brackets instead of a cable ladder.

New T-Mobile Equipment Configuration at 180-ft A.T.B.P.

(Note: Some of this equipment is existing)

All T-Mobile Equipment at 180-ft to be mounted on (3) Sector Frames - Site-Pro VFA6-RRU or an equivalent.

Three (3) panel antennas Ericsson AIR32 DRD901146-1_B66A_B2A (56.6" x 12.9" x 8.7")
Three (3) panel antennas Ericsson APXVAALL24_43-U-NA20 (96.6" x 24" x 8.7")
Three (3) panel antennas Ericsson AIR 6449 B41 (33.1 x 20.5 x 8.3)
Three (3) radios Ericsson RRU 4449 B71+B85 Radio 4449 B12+B71 (13.2 x 15 x 9.25)
Three (3) radios Ericsson RRU 4415 B25 (14.9" x 13.2" x 5.4")

Six (6) hybrid cables Huber + Suhner HYBRIFLEX 6x12 (size 1-1/4" = 1.54" o.d.) from grade to 180-ft.
These cables will be supported on a 30"+/- wide cable ladder (w/(2) L1.5"x 1.5" rails) from grade to 180-ft AGL

Customer Antenna & Cable Mounts and Their Connections to Tower

The loads stated above include the applicable overall tower dead and wind loads from the listed customer antennas and transmission lines that were provided to CSEI. CSEI's structural analysis applies these loads at the tower truss panel points (joints where tower braces connect) that are closest to the customer equipment location. CSEI's structural analysis of this overall tower structure does not include tower stresses that could occur from improper customer equipment attachments that may locally stress individual tower braces. The attachment of the individual customer's equipment is not a part of CSEI's scope of work. CSEI assumes that these attachments, in accordance with good engineering practice, will be designed and installed to properly connect close to the tower panel points in such a manner as to not introduce significant local stresses to the existing tower bracing members. Improperly connected customer equipment can significantly stress individual tower members and consequently reduce the overall load capacity of the entire tower structure.

The design & installation of all customers' antenna & cable mounts and their proper connections to this tower are the responsibility of the individual customers and their engineers, suppliers & contractors.

COMMUNICATION STRUCTURES ENGINEERING, INC.
5579-B Chamblee Dunwoody Rd. /Suite 517
Dunwoody, GA 30338 (770) 951-8080

STRUCTURAL CALCULATIONS

SubCarrier Communications: Oakdale Site #4048
Existing 300-ft Self Supporting Tower
Village of Oakdale, CT

Issue Date: March 15, 2021

TABLE OF CONTENTS

Pages

DESIGN CRITERIA

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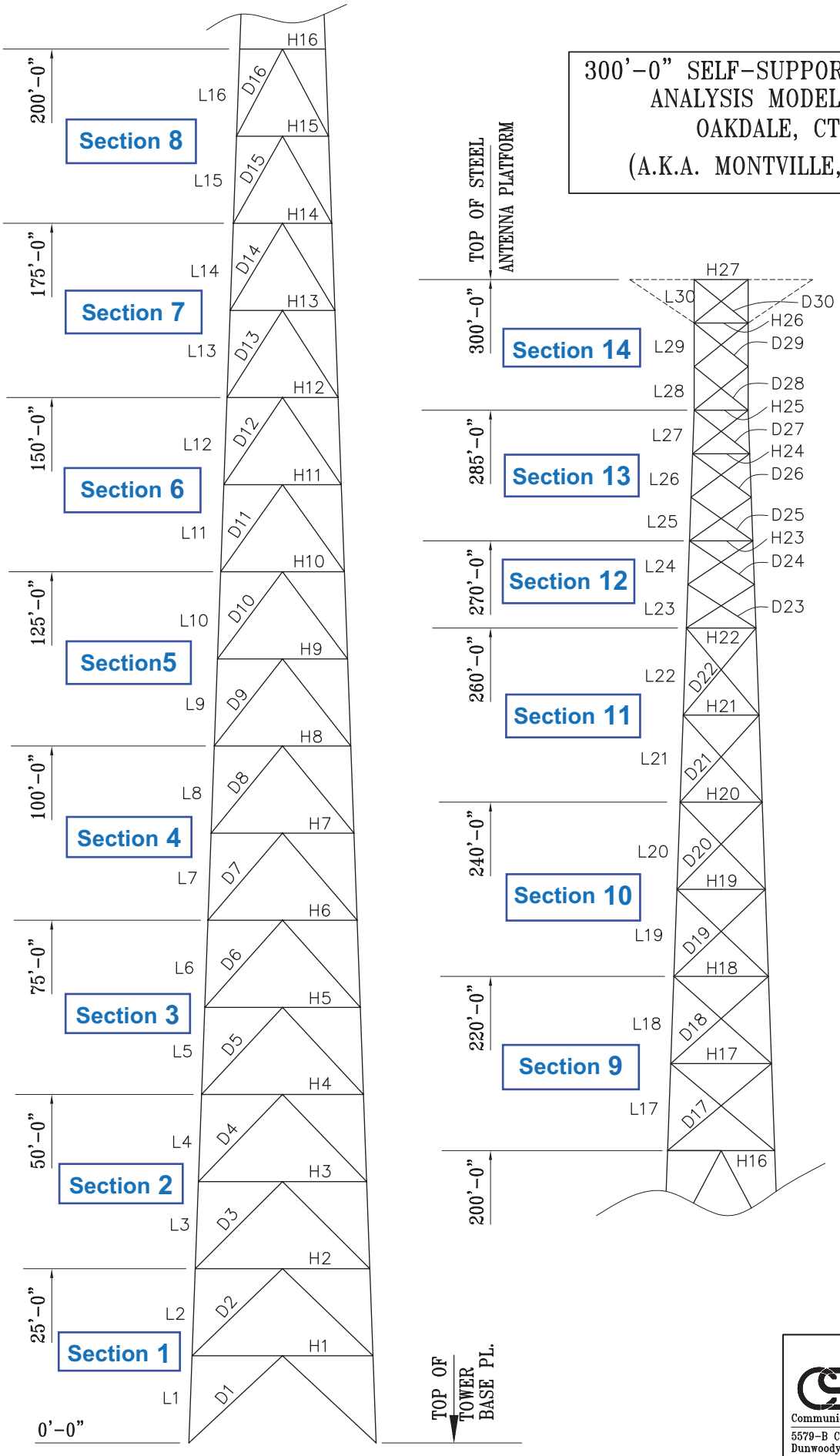
300'-0" SELF-SUPPORTED TOWER ANALYSIS MODEL FOR OAKDALE, CT (A.K.A. MONTVILLE, CT)



Communication Structures Engineering, Inc.
5579-B Chamblee Dunwoody Rd. / Suite 517
Dunwoody, Georgia 30338
(770) 951-8080

ANALYSIS RESULTS SUMMARY

Tower Component Stresses vs. Capacity

Section No. *(see Analysis Model for section locations)*	Elevation (ft)	Percent Capacity Used		
		Leg	Diagonal	Horizontal
1	0'-0" to 25'-0"	72.6%	78.5%	86.0%
2	25-0" to 50'-0"'	75.6%	73.4%	77.1%
3	50'-0" to 75'-0"	67.6%	67.8%	64.4%
4	75"-0" to 100'-0"	80.9%	93.5%	52.7%
5	100'-0" to 125'-0"	78.0%	84.7%	40.9%
6	125-0" to 150'-0"	74.6%	77.8%	32.0%
7	150'-0" to 175'-0"	70.3%	71.4%	24.9%
8	175"-0" to 200'-0"	70.5%	61.0%	17.4%
9	200'-0" to 220'-0"	59.3%	65.5%	45.2%
10	220-0" to 240'-0"	52.7%	52.9%	33.4%
11	240'-0" to 260'-0"	39.7%	43.5%	22.5%
12	260-0" to 270'-0"	38.2%	27.2%	10.0%
13	270'-0" to 285'-0"	26.4%	25.1%	10.0%
14	285'-0" to 300'-0"	17.2%	14.8%	10.0%

TOWER FOUNDATION

Foundation Loads (with Load factor) from Current Analysis = **492.3 kips uplift / 570.0 kips downward**

Foundation Capacity (per calculations) = **585.3 kips uplift / 1000+ kips downward**

Actual Loads / Foundation Capacity

Uplift 493K/545K = 90% capacity
Downward 570K/1000K = 57% capacity

Foundation is adequate for the proposed loading

Results above indicate:

- **The tower foundation is sufficient to support the proposed loading.**
- **The tower steel is sufficient to support the proposed loading.**

```
*****************************************************************************
*                                                                           *
* TOWER - Analysis and Design -  Copyright Power Line Systems, Inc. 1986-2019 *
*                                                                           *
*****************************************************************************
```

Project Name : Oakdale Site #4048
Project Notes: Existing 300 Feet Self Supported Tower
Project File : C:\CSEI\Analysis\ANALYSIS\2021\Oakdale CT 01232021\oakdale ct 01232021.tow
Licensed to : Communication Structures Engineering Inc.
Successfully performed nonlinear analysis
The model has 0 warnings.

ANSI/TIA 222-G-2 Load Options:
Structure Class 2
Exposure Category B Urban or suburban area must surround structure for at least 6000.00 (ft)
Topographic Category 1 (Kzt always 1.0)
Spectral Response SDS 0.000
Spectral Response SD1 0.000

EIA Rev. G-2 Load Cases:

Load Case Description	Dead Load Factor	Wind Load Factor	Strength Factor	Load Case Type	Basic Wind Speed (mph)	Wind Dir. (Deg)	Mean Wind Start Elevation (ft)	Mean Wind Stop Elevation (ft)	Ice Thick. (in)	Ice Density (lbs/ft^3)	Temperature (deg F)	Point Loads	Joint Displ.
WIND 0 COMB 1	1.2000	1.6000	1.0000	Regular	105.000	0	0.00	0.00	0.0000	0.0000	60.0		
WIND 45 COMB 1	1.2000	1.6000	1.0000	Regular	105.000	45	0.00	0.00	0.0000	0.0000	60.0		
WIND 0 COMB 2	0.9000	1.6000	1.0000	Regular	105.000	0	0.00	0.00	0.0000	0.0000	60.0		
WIND 45 COMB 2	0.9000	1.6000	1.0000	Regular	105.000	45	0.00	0.00	0.0000	0.0000	60.0		
WIND 0 ICE COMB 3	1.2000	1.0000	1.0000	Regular	50.000	0	0.00	0.00	0.7500	56.0000	10.0		
WIND 45 ICE COMB 3	1.2000	1.0000	1.0000	Regular	50.000	45	0.00	0.00	0.7500	56.0000	10.0		

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Af Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
1	300.000	285.000	16	52	6.00	6.00	90.00	1.0000	1.0000	2.940
2	285.000	260.000	24	75	6.00	7.72	171.50	1.0000	1.0000	1.610
3	260.000	240.000	12	34	7.72	9.18	168.98	1.1400	1.0000	1.380
4	240.000	220.000	12	34	9.18	10.64	198.14	1.1500	1.0000	1.360
5	220.000	200.000	16	41	10.64	12.09	227.30	1.1600	1.0000	1.300
6	200.000	175.000	24	50	12.09	13.92	325.12	1.2000	1.0000	1.280
7	175.000	150.000	24	50	13.92	15.74	370.70	1.1600	1.0000	1.190
8	150.000	125.000	24	50	15.74	17.56	416.27	1.1600	1.0000	1.310
9	125.000	100.000	24	50	17.56	19.39	461.85	1.1500	1.0000	1.360
10	100.000	75.000	24	50	19.39	21.21	507.43	1.1500	1.0000	1.320
11	75.000	50.000	24	50	21.21	23.03	553.00	1.1800	1.0000	1.170
12	50.000	25.000	24	50	23.03	24.85	598.58	1.1800	1.0000	1.340
13	25.000	0.000	20	37	24.85	26.68	644.15	1.1800	1.0000	1.330

Equipment Library:

Equipment Property Label	Stock Number	Weight (lbs)	Wind Area (ft^2)	Ice Area (ft^2)	Shape or EIA Antenna Type	Drag Coef.	Diameter (ft)	Height (ft)
ANTENNA PLATFORM		990.0	22.00	0.00		1.00	0.00	0.00
ACCESS PLATFORM		533.0	13.00	0.00		1.00	0.00	0.00
LIGHT PLATFORM 1		150.0	4.00	0.00		1.00	0.00	0.00
LIGHT PLATFORM 2		200.0	5.00	0.00		1.00	0.00	0.00
USCG ADD090S ANT		100.0	10.00	0.00		1.00	0.00	0.00
USGS SRL235-2 ANT		75.0	5.00	0.00		1.00	0.00	0.00
USGS SRL335-2 ANT		75.0	5.00	0.00		1.00	0.00	0.00
OMNI ANT		10.0	2.00	0.00		1.00	0.00	0.00
T-MOBILE INSTALL 8 JTS		200.0	15.35	0.00		1.00	0.00	0.00

Equipment Connectivity:

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
AP-1	63P	ANTENNA PLATFORM	0.00
AP-2	63X	ANTENNA PLATFORM	0.00
AP-3	63XY	ANTENNA PLATFORM	0.00
AP-4	63Y	ANTENNA PLATFORM	0.00
ACP-1	60P	ACCESS PLATFORM	0.00
ACP-2	60X	ACCESS PLATFORM	0.00
ACP-3	60XY	ACCESS PLATFORM	0.00
ACP-4	60Y	ACCESS PLATFORM	0.00
LP1-1	51P	LIGHT PLATFORM 1	0.00
LP1-2	51X	LIGHT PLATFORM 1	0.00
LP1-3	51XY	LIGHT PLATFORM 1	0.00
LP1-4	51Y	LIGHT PLATFORM 1	0.00
LP2-1	20P	LIGHT PLATFORM 2	0.00
LP2-2	20X	LIGHT PLATFORM 2	0.00
LP2-3	20XY	LIGHT PLATFORM 2	0.00
LP2-4	20Y	LIGHT PLATFORM 2	0.00
USCG-1	59P	USCG ADD090S ANT	0.00
USCG-2	59X	USCG ADD090S ANT	0.00
USCG-3	59XY	USCG ADD090S ANT	0.00
USCG-4	59Y	USCG ADD090S ANT	0.00
USCG-5	55P	USGS SRL235-2 ANT	0.00
USCG-6	55X	USGS SRL235-2 ANT	0.00
USCG-7	55XY	USGS SRL235-2 ANT	0.00
USCG-8	55Y	USGS SRL235-2 ANT	0.00
USCG-9	54P	USGS SRL335-2 ANT	0.00
USCG-10	54X	USGS SRL335-2 ANT	0.00
USCG-11	54XY	USGS SRL335-2 ANT	0.00
USCG-12	54Y	USGS SRL335-2 ANT	0.00
USCG-13	51P	USGS SRL235-2 ANT	0.00
USCG-14	51X	USGS SRL235-2 ANT	0.00
USCG-15	51XY	USGS SRL235-2 ANT	0.00
USCG-16	51Y	USGS SRL235-2 ANT	0.00
OMNI-1	63P	OMNI ANT	0.00
OMNI-2	63X	OMNI ANT	0.00

OMNI-3	63XY		OMNI ANT	0.00
OMNI-4	63Y		OMNI ANT	0.00
OMNI-5	23P		OMNI ANT	0.00
OMNI-6	23X		OMNI ANT	0.00
OMNI-7	23XY		OMNI ANT	0.00
OMNI-8	23Y		OMNI ANT	0.00
OMNI-9	23P		OMNI ANT	0.00
OMNI-10	23X		OMNI ANT	0.00
OMNI-11	23XY		OMNI ANT	0.00
OMNI-12	23Y		OMNI ANT	0.00
TM-1	44P	T-MOBILE INSTALL 8 JTS		0.00
TM-2	44X	T-MOBILE INSTALL 8 JTS		0.00
TM-3	44XY	T-MOBILE INSTALL 8 JTS		0.00
TM-4	44Y	T-MOBILE INSTALL 8 JTS		0.00
TM-5	41P	T-MOBILE INSTALL 8 JTS		0.00
TM-6	41X	T-MOBILE INSTALL 8 JTS		0.00
TM-7	41XY	T-MOBILE INSTALL 8 JTS		0.00
TM-8	41Y	T-MOBILE INSTALL 8 JTS		0.00

Linear Appurtenances:

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lbs/ft)	In Face Zone	Include in Wind Load
CLIMBING LADDER	0	300	1	Flat	6	20	10	Yes	Yes
USCG COAX 1	3	280	2	Round	1.09	0	0.33	Yes	Yes
USCG COAX 2	3	255	2	Round	1.09	0	0.33	Yes	Yes
USCG COAX 3	3	220	2	Round	1.09	0	0.33	Yes	Yes
OMNI-1	3	300	1	Round	0.63	0	0.15	Yes	Yes
OMNI-2	3	100	2	Round	1.09	0	0.33	Yes	Yes
T-MOBILE LADDER	3	180	1	Flat	3.5	0	5	Yes	Yes
T-MOBILE COAX	3	180	6	Round	1.54	0	1	Yes	Yes

Equipment Load Case Information for "WIND 0 COMB 1":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Axial Load FAM (lbs)	Antenna Side Load FSM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	1188.00
AP-2	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	1188.00
AP-3	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	1188.00
AP-4	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	1188.00
ACP-1	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	639.60
ACP-2	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	639.60
ACP-3	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	639.60
ACP-4	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	639.60
LP1-1	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	180.00
LP1-2	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	180.00
LP1-3	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	180.00
LP1-4	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	180.00
LP2-1	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	240.00
LP2-2	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	240.00
LP2-3	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	240.00
LP2-4	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	240.00
USCG-1	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	120.00
USCG-2	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	120.00
USCG-3	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	120.00
USCG-4	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	120.00
USCG-5	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	90.00
USCG-6	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	90.00
USCG-7	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	90.00
USCG-8	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	90.00
USCG-9	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	90.00
USCG-10	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	90.00
USCG-11	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	90.00
USCG-12	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	90.00
USCG-13	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	90.00
USCG-14	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	90.00
USCG-15	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	90.00
USCG-16	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	90.00
OMNI-1	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	12.00
OMNI-2	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	12.00
OMNI-3	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	12.00
OMNI-4	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	12.00
OMNI-5	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-6	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-7	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-8	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-9	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-10	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-11	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
OMNI-12	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	12.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	240.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	240.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	240.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	240.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	240.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	240.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	240.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	240.00

EIA Section Load Case Information for "WIND 0 COMB 1":

Note: qzGh (adjusted wind pressure) includes: Velocity Pressure Coefficient (Kz), Topographic Factor (Kzt), Gust Effect Factor (Gh), Wind Direction Probability Factor (Kd), Wind Importance Factor (Table 2-3), Wind Load Factor (from Loads/EIA Loads)
Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Gnd. (ft)	qzGh (psf)	Ice Thick. (in)	Face AF (ft^2)	Face AR (ft^2)	Face RR*AR (ft^2)	Face AG (ft^2)	Face e	Face DF	Face DR	Face RR	Face CF	Face AE (ft^2)	Face WF (lbs)	NotF AAF (ft^2)	NotF CAF	NotF AAR (ft^2)	NotF CAR	NotF AAR*CAR (ft^2)	NotF WA (lbs)	Total Wind (lbs)	Total Weight (lbs)
1	300.00	285.00	292.50	43.79	0.00	28.51	0.00	0.00	90.0	0.32	1.00	1.00	0.52	2.53	28.5	3162	7.50	2.00	0.47	0.63	0.57	682	3843	7389
2	285.00	260.00	272.50	42.91	0.00	42.90	0.00	0.00	171.5	0.25	1.00	1.00	0.52	2.77	42.9	5108	12.50	2.00	2.97	0.64	3.56	1226	6334	7022
3	260.00	240.00	250.00	41.87	0.00	41.95	0.00	0.00	169.0	0.25	1.00	1.00	0.49	2.78	41.9	4886	10.00	2.00	4.45	0.65	5.33	1061	5947	5566
4	240.00	220.00	230.00	40.88	0.00	44.15	0.00	0.00	198.1	0.22	1.00	1.00	0.48	2.88	44.1	5205	10.00	2.00	4.99	0.65	5.99	1062	6268	6031
5	220.00	200.00	210.00	39.83	0.00	46.47	0.00	0.00	227.3	0.20	1.00	1.00	0.47	2.96	46.5	5481	10.00	2.00	7.17	0.66	8.60	1139	6620	6993
6	200.00	175.00	187.50	38.56	0.00	50.98	0.00	0.00	325.1	0.16	1.00	1.00	0.45	3.17	51.0	6238	13.96	2.00	11.27	0.67	13.53	1598	7837	10516
7	175.00	150.00	162.50	37.02	0.00	60.28	0.00	0.00	370.7	0.16	1.00	1.00	0.43	3.15	60.3	7021	19.79	2.00	20.51	0.69	24.62	2377	9398	11253
8	150.00	125.00	137.50	35.29	0.00	61.64	0.00	0.00	416.3	0.15	1.00	1.00	0.42	3.21	61.6	6992	16.87	2.00	20.51	0.70	24.61	2060	9052	13676
9	125.00	100.00	112.50	33.33	0.00	62.49	0.00	0.00	461.9	0.14	1.00	1.00	0.41	3.27	62.5	6820	16.88	2.00	20.51	0.72	24.62	1945	8766	15573
10	100.00	75.00	87.50	31.02	0.00	63.90	0.00	0.00	507.4	0.13	1.00	1.00	0.41	3.32	63.9	6582	16.88	2.00	23.24	0.75	27.89	1912	8494	16506
11	75.00	50.00	62.50	28.18	0.00	67.05	0.00	0.00	553.0	0.12	1.00	1.00	0.40	3.34	67.1	6317	16.88	2.00	23.24	0.79	27.89	1737	8053	17981
12	50.00	25.00	37.50	24.35	0.00	68.56	0.00	0.00	598.6	0.11	1.00	1.00	0.42	3.38	68.6	5637	16.88	2.00	23.24	0.85	27.89	1501	7138	20924
13	25.00	0.00	12.50	22.83	0.00	68.37	0.00	0.00	644.2	0.11	1.00	1.00	0.43	3.42	68.4	5335	16.35	2.00	20.45	0.87	24.54	1307	6642	21352

Equipment Load Case Information for "WIND 45 COMB 1":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Axial Load FAM (lbs)	Antenna Side Load FSM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	1188.00
AP-2	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	1188.00
AP-3	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	1188.00
AP-4	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	1188.00
ACP-1	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	639.60
ACP-2	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	639.60
ACP-3	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	639.60
ACP-4	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	639.60
LP1-1	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	180.00
LP1-2	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	180.00
LP1-3	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	180.00
LP1-4	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	180.00
LP2-1	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	240.00
LP2-2	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	240.00
LP2-3	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	240.00
LP2-4	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	240.00
USCG-1	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	120.00
USCG-2	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	120.00
USCG-3	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	120.00
USCG-4	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	120.00
USCG-5	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	90.00
USCG-6	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	90.00
USCG-7	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	90.00
USCG-8	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	90.00
USCG-9	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	90.00
USCG-10	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	90.00
USCG-11	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	90.00
USCG-12	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	90.00
USCG-13	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	90.00
USCG-14	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	90.00
USCG-15	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	90.00
USCG-16	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	90.00
OMNI-1	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	12.00
OMNI-2	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	12.00
OMNI-3	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	12.00
OMNI-4	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	12.00
OMNI-5	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-6	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-7	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-8	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-9	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-10	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-11	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
OMNI-12	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	12.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	240.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	240.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	240.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	240.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	240.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	240.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	240.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	240.00

EIA Section Load Case Information for "WIND 45 COMB 1":

Note: qzGh (adjusted wind pressure) includes: Velocity Pressure Coefficient (Kz), Topographic Factor (Kzt), Gust Effect Factor (Gh),
Wind Direction Probability Factor (Kd), Wind Importance Factor (Table 2-3), Wind Load Factor (from Loads/EIA Loads)
Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Gnd. (ft)	qzGh (psf)	Ice Thick. (in)	Face AF (ft^2)	Face AR (ft^2)	Face RR*AR (ft^2)	Face AG (ft^2)	Face e	Face DF	Face DR	Face RR	Face CF	Face AE (ft^2)	Face WF (lbs)	NotF AAF (ft^2)	NotF CAF	NotF AAR (ft^2)	NotF CAR	NotF AAR*CAR (ft^2)	NotF WA (lbs)	Total Wind (lbs)	Total Weight (lbs)
1	300.00	285.00	292.50	43.79	0.00	28.51	0.00	0.00	90.0	0.32	1.20	1.20	0.52	2.53	34.2	3794	7.50	2.00	0.47	0.63	0.57	682	4476	7389
2	285.00	260.00	272.50	42.91	0.00	42.90	0.00	0.00	171.5	0.25	1.19	1.19	0.52	2.77	51.0	6066	12.50	2.00	2.97	0.64	3.56	1226	7292	7022
3	260.00	240.00	250.00	41.87	0.00	41.95	0.00	0.00	169.0	0.25	1.19	1.19	0.49	2.78	49.8	5796	10.00	2.00	4.45	0.65	5.33	1061	6856	5566
4	240.00	220.00	230.00	40.88	0.00	44.15	0.00	0.00	198.1	0.22	1.17	1.17	0.48	2.88	51.5	6075	10.00	2.00	4.99	0.65	5.99	1062	7138	6031
5	220.00	200.00	210.00	39.83	0.00	46.47	0.00	0.00	227.3	0.20	1.15	1.15	0.47	2.96	53.6	6321	10.00	2.00	7.17	0.66	8.60	1139	7461	6993
6	200.00	175.00	187.50	38.56	0.00	50.98	0.00	0.00	325.1	0.16	1.12	1.12	0.45	3.17	57.0	6972	13.96	2.00	11.27	0.67	13.53	1598	8570	10516
7	175.00	150.00	162.50	37.02	0.00	60.28	0.00	0.00	370.7	0.16	1.12	1.12	0.43	3.15	67.6	7877	19.79	2.00	20.51	0.69	24.62	2377	10254	11253
8	150.00	125.00	137.50	35.29	0.00	61.64	0.00	0.00	416.3	0.15	1.11	1.11	0.42	3.21	68.5	7768	16.87	2.00	20.51	0.70	24.61	2060	9828	13676
9	125.00	100.00	112.50	33.33	0.00	62.49	0.00	0.00	461.9	0.14	1.10	1.10	0.41	3.27	68.8	7513	16.88	2.00	20.51	0.72	24.62	1945	9458	15573
10	100.00	75.00	87.50	31.02	0.00	63.90	0.00	0.00	507.4	0.13	1.09	1.09	0.41	3.32	69.9	7203	16.88	2.00	23.24	0.75	27.89	1912	9115	16506
11	75.00	50.00	62.50	28.18	0.00	67.05	0.00	0.00	553.0	0.12	1.09	1.09	0.40	3.34	73.2	6891	16.88	2.00	23.24	0.79	27.89	1737	8628	17981
12	50.00	25.00	37.50	24.35	0.00	68.56	0.00	0.00	598.6	0.11	1.09	1.09	0.42	3.38	74.5	6121	16.88	2.00	23.24	0.85	27.89	1501	7622	20924
13	25.00	0.00	12.50	22.83	0.00	68.37	0.00	0.00	644.2	0.11	1.08	1.08	0.43	3.42	73.8	5760	16.35	2.00	20.45	0.87	24.54	1307	7067	21352

Equipment Load Case Information for "WIND 0 COMB 2":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Axial Load FAM (lbs)	Antenna Side Load FSM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	891.00
AP-2	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	891.00
AP-3	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	891.00
AP-4	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	0.00							970.36	0.00	891.00
ACP-1	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	479.70
ACP-2	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	479.70
ACP-3	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	479.70
ACP-4	ACCESS PLATFORM	285.00	43.47	0.00	13.00	0.00							565.06	0.00	479.70
LP1-1	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	135.00
LP1-2	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	135.00
LP1-3	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	135.00
LP1-4	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	0.00							161.47	0.00	135.00
LP2-1	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	180.00
LP2-2	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	180.00
LP2-3	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	180.00
LP2-4	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	0.00							155.09	0.00	180.00
USCG-1	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	90.00
USCG-2	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	90.00
USCG-3	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	90.00
USCG-4	USCG ADD090S ANT	280.00	43.25	0.00	10.00	0.00							432.47	0.00	90.00
USCG-5	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	67.50
USCG-6	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	67.50
USCG-7	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	67.50
USCG-8	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	0.00							211.70	0.00	67.50
USCG-9	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	67.50
USCG-10	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	67.50
USCG-11	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	67.50
USCG-12	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	0.00							209.34	0.00	67.50
USCG-13	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	67.50
USCG-14	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	67.50
USCG-15	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	67.50
USCG-16	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	0.00							201.84	0.00	67.50
OMNI-1	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	9.00
OMNI-2	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	9.00
OMNI-3	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	9.00
OMNI-4	OMNI ANT	300.00	44.11	0.00	2.00	0.00							88.21	0.00	9.00
OMNI-5	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-6	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-7	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-8	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-9	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-10	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-11	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
OMNI-12	OMNI ANT	100.00	32.22	0.00	2.00	0.00							64.45	0.00	9.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	180.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	180.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	180.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	0.00							591.97	0.00	180.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	180.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	180.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	180.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	0.00							580.42	0.00	180.00

EIA Section Load Case Information for "WIND 0 COMB 2":

Note: qzGh (adjusted wind pressure) includes: Velocity Pressure Coefficient (Kz), Topographic Factor (Kzt), Gust Effect Factor (Gh), Wind Direction Probability Factor (Kd), Wind Importance Factor (Table 2-3), Wind Load Factor (from Loads/EIA Loads)
Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Gnd. (ft)	qzGh (psf)	Ice Thick. (in)	Face AF (ft^2)	Face AR (ft^2)	Face RR*AR (ft^2)	Face AG (ft^2)	Face e	Face DF	Face DR	Face RR	Face CF	Face AE (ft^2)	Face WF (lbs)	NotF AAF (ft^2)	NotF CAF	NotF AAR (ft^2)	NotF CAR	NotF AAR*CAR (ft^2)	NotF WA (lbs)	Total Wind (lbs)	Total Weight (lbs)
1	300.00	285.00	292.50	43.79	0.00	28.51	0.00	0.00	90.0	0.32	1.00	1.00	0.52	2.53	28.5	3162	7.50	2.00	0.47	0.63	0.57	682	3843	5541
2	285.00	260.00	272.50	42.91	0.00	42.90	0.00	0.00	171.5	0.25	1.00	1.00	0.52	2.77	42.9	5108	12.50	2.00	2.97	0.64	3.56	1226	6334	5266
3	260.00	240.00	250.00	41.87	0.00	41.95	0.00	0.00	169.0	0.25	1.00	1.00	0.49	2.78	41.9	4886	10.00	2.00	4.45	0.65	5.33	1061	5947	4175
4	240.00	220.00	230.00	40.88	0.00	44.15	0.00	0.00	198.1	0.22	1.00	1.00	0.48	2.88	44.1	5205	10.00	2.00	4.99	0.65	5.99	1062	6268	4524
5	220.00	200.00	210.00	39.83	0.00	46.47	0.00	0.00	227.3	0.20	1.00	1.00	0.47	2.96	46.5	5481	10.00	2.00	7.17	0.66	8.60	1139	6620	5245
6	200.00	175.00	187.50	38.56	0.00	50.98	0.00	0.00	325.1	0.16	1.00	1.00	0.45	3.17	51.0	6238	13.96	2.00	11.27	0.67	13.53	1598	7837	7887
7	175.00	150.00	162.50	37.02	0.00	60.28	0.00	0.00	370.7	0.16	1.00	1.00	0.43	3.15	60.3	7021	19.79	2.00	20.51	0.69	24.62	2377	9398	8440
8	150.00	125.00	137.50	35.29	0.00	61.64	0.00	0.00	416.3	0.15	1.00	1.00	0.42	3.21	61.6	6992	16.87	2.00	20.51	0.70	24.61	2060	9052	10257
9	125.00	100.00	112.50	33.33	0.00	62.49	0.00	0.00	461.9	0.14	1.00	1.00	0.41	3.27	62.5	6820	16.88	2.00	20.51	0.72	24.62	1945	8766	11680
10	100.00	75.00	87.50	31.02	0.00	63.90	0.00	0.00	507.4	0.13	1.00	1.00	0.41	3.32	63.9	6582	16.88	2.00	23.24	0.75	27.89	1912	8494	12379
11	75.00	50.00	62.50	28.18	0.00	67.05	0.00	0.00	553.0	0.12	1.00	1.00	0.40	3.34	67.1	6317	16.88	2.00	23.24	0.79	27.89	1737	8053	13486
12	50.00	25.00	37.50	24.35	0.00	68.56	0.00	0.00	598.6	0.11	1.00	1.00	0.42	3.38	68.6	5637	16.88	2.00	23.24	0.85	27.89	1501	7138	15693
13	25.00	0.00	12.50	22.83	0.00	68.37	0.00	0.00	644.2	0.11	1.00	1.00	0.43	3.42	68.4	5335	16.35	2.00	20.45	0.87	24.54	1307	6642	16014

Equipment Load Case Information for "WIND 45 COMB 2":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Axial Load FAM (lbs)	Antenna Side Load FSM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	891.00
AP-2	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	891.00
AP-3	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	891.00
AP-4	ANTENNA PLATFORM	300.00	44.11	0.00	22.00	315.00							686.15	686.15	891.00
ACP-1	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	479.70
ACP-2	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	479.70
ACP-3	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	479.70
ACP-4	ACCESS PLATFORM	285.00	43.47	0.00	13.00	315.00							399.55	399.55	479.70
LP1-1	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	135.00
LP1-2	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	135.00
LP1-3	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	135.00
LP1-4	LIGHT PLATFORM 1	220.00	40.37	0.00	4.00	315.00							114.18	114.18	135.00
LP2-1	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	180.00
LP2-2	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	180.00
LP2-3	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	180.00
LP2-4	LIGHT PLATFORM 2	87.50	31.02	0.00	5.00	315.00							109.67	109.67	180.00
USCG-1	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	90.00
USCG-2	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	90.00
USCG-3	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	90.00
USCG-4	USCG ADD090S ANT	280.00	43.25	0.00	10.00	315.00							305.80	305.80	90.00
USCG-5	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	67.50
USCG-6	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	67.50
USCG-7	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	67.50
USCG-8	USGS SRL235-2 ANT	260.00	42.34	0.00	5.00	315.00							149.70	149.70	67.50
USCG-9	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	67.50
USCG-10	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	67.50
USCG-11	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	67.50
USCG-12	USGS SRL335-2 ANT	250.00	41.87	0.00	5.00	315.00							148.03	148.03	67.50
USCG-13	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	67.50
USCG-14	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	67.50
USCG-15	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	67.50
USCG-16	USGS SRL235-2 ANT	220.00	40.37	0.00	5.00	315.00							142.72	142.72	67.50
OMNI-1	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	9.00
OMNI-2	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	9.00
OMNI-3	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	9.00
OMNI-4	OMNI ANT	300.00	44.11	0.00	2.00	315.00							62.38	62.38	9.00
OMNI-5	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-6	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-7	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-8	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-9	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-10	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-11	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
OMNI-12	OMNI ANT	100.00	32.22	0.00	2.00	315.00							45.57	45.57	9.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	180.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	180.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	180.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	38.56	0.00	15.35	315.00							418.59	418.59	180.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	180.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	180.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	180.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	37.81	0.00	15.35	315.00							410.42	410.42	180.00

EIA Section Load Case Information for "WIND 45 COMB 2":

Note: qzGh (adjusted wind pressure) includes: Velocity Pressure Coefficient (Kz), Topographic Factor (Kzt), Gust Effect Factor (Gh), Wind Direction Probability Factor (Kd), Wind Importance Factor (Table 2-3), Wind Load Factor (from Loads/EIA Loads)
Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Gnd. (ft)	qzGh (psf)	Ice Thick. (in)	Face AF (ft^2)	Face AR (ft^2)	Face RR*AR (ft^2)	Face AG (ft^2)	Face e	Face DF	Face DR	Face RR	Face CF	Face AE (ft^2)	Face WF (lbs)	NotF AAF (ft^2)	NotF CAF	NotF AAR (ft^2)	NotF CAR	NotF AAR*CAR (ft^2)	NotF WA (lbs)	Total Wind (lbs)	Total Weight (lbs)
1	300.00	285.00	292.50	43.79	0.00	28.51	0.00	0.00	90.0	0.32	1.20	1.20	0.52	2.53	34.2	3794	7.50	2.00	0.47	0.63	0.57	682	4476	5541
2	285.00	260.00	272.50	42.91	0.00	42.90	0.00	0.00	171.5	0.25	1.19	1.19	0.52	2.77	51.0	6066	12.50	2.00	2.97	0.64	3.56	1226	7292	5266
3	260.00	240.00	250.00	41.87	0.00	41.95	0.00	0.00	169.0	0.25	1.19	1.19	0.49	2.78	49.8	5796	10.00	2.00	4.45	0.65	5.33	1061	6856	4175
4	240.00	220.00	230.00	40.88	0.00	44.15	0.00	0.00	198.1	0.22	1.17	1.17	0.48	2.88	51.5	6075	10.00	2.00	4.99	0.65	5.99	1062	7138	4524
5	220.00	200.00	210.00	39.83	0.00	46.47	0.00	0.00	227.3	0.20	1.15	1.15	0.47	2.96	53.6	6321	10.00	2.00	7.17	0.66	8.60	1139	7461	5245
6	200.00	175.00	187.50	38.56	0.00	50.98	0.00	0.00	325.1	0.16	1.12	1.12	0.45	3.17	57.0	6972	13.96	2.00	11.27	0.67	13.53	1598	8570	7887
7	175.00	150.00	162.50	37.02	0.00	60.28	0.00	0.00	370.7	0.16	1.12	1.12	0.43	3.15	67.6	7877	19.79	2.00	20.51	0.69	24.62	2377	10254	8440
8	150.00	125.00	137.50	35.29	0.00	61.64	0.00	0.00	416.3	0.15	1.11	1.11	0.42	3.21	68.5	7768	16.87	2.00	20.51	0.70	24.61	2060	9828	10257
9	125.00	100.00	112.50	33.33	0.00	62.49	0.00	0.00	461.9	0.14	1.10	1.10	0.41	3.27	68.8	7513	16.88	2.00	20.51	0.72	24.62	1945	9458	11680
10	100.00	75.00	87.50	31.02	0.00	63.90	0.00	0.00	507.4	0.13	1.09	1.09	0.41	3.32	69.9	7203	16.88	2.00	23.24	0.75	27.89	1912	9115	12379
11	75.00	50.00	62.50	28.18	0.00	67.05	0.00	0.00	553.0	0.12	1.09	1.09	0.40	3.34	73.2	6891	16.88	2.00	23.24	0.79	27.89	1737	8628	13486
12	50.00	25.00	37.50	24.35	0.00	68.56	0.00	0.00	598.6	0.11	1.09	1.09	0.42	3.38	74.5	6121	16.88	2.00	23.24	0.85	27.89	1501	7622	15693
13	25.00	0.00	12.50	22.83	0.00	68.37	0.00	0.00	644.2	0.11	1.08	1.08	0.43	3.42	73.8	5760	16.35	2.00	20.45	0.87	24.54	1307	7067	16014

Equipment Load Case Information for "WIND 0 ICE COMB 3":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Axial Load FAM (lbs)	Antenna Side Load FSM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00							137.52	0.00	1188.00
AP-2	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00							137.52	0.00	1188.00
AP-3	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00							137.52	0.00	1188.00
AP-4	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00							137.52	0.00	1188.00
ACP-1	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00							80.08	0.00	639.60
ACP-2	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00							80.08	0.00	639.60
ACP-3	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00							80.08	0.00	639.60
ACP-4	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00							80.08	0.00	639.60
LP1-1	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00							22.88	0.00	180.00
LP1-2	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00							22.88	0.00	180.00
LP1-3	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00							22.88	0.00	180.00
LP1-4	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00							22.88	0.00	180.00
LP2-1	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00							21.98	0.00	240.00
LP2-2	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00							21.98	0.00	240.00
LP2-3	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00							21.98	0.00	240.00
LP2-4	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00							21.98	0.00	240.00
USCG-1	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00							61.29	0.00	120.00
USCG-2	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00							61.29	0.00	120.00
USCG-3	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00							61.29	0.00	120.00
USCG-4	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00							61.29	0.00	120.00
USCG-5	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00							30.00	0.00	90.00
USCG-6	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00							30.00	0.00	90.00
USCG-7	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00							30.00	0.00	90.00
USCG-8	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00							30.00	0.00	90.00
USCG-9	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00							29.67	0.00	90.00
USCG-10	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00							29.67	0.00	90.00
USCG-11	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00							29.67	0.00	90.00
USCG-12	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00							29.67	0.00	90.00
USCG-13	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00							28.60	0.00	90.00
USCG-14	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00							28.60	0.00	90.00
USCG-15	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00							28.60	0.00	90.00
USCG-16	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00							28.60	0.00	90.00
OMNI-1	OMNI ANT	300.00	6.25	1.87	2.00	0.00							12.50	0.00	12.00
OMNI-2	OMNI ANT	300.00	6.25	1.87	2.00	0.00							12.50	0.00	12.00
OMNI-3	OMNI ANT	300.00	6.25	1.87	2.00	0.00							12.50	0.00	12.00
OMNI-4	OMNI ANT	300.00	6.25	1.87	2.00	0.00							12.50	0.00	12.00
OMNI-5	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-6	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-7	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-8	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-9	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-10	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-11	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
OMNI-12	OMNI ANT	100.00	4.57	1.68	2.00	0.00							9.13	0.00	12.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00							83.90	0.00	240.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00							83.90	0.00	240.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00							83.90	0.00	240.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00							83.90	0.00	240.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00							82.26	0.00	240.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00							82.26	0.00	240.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00							82.26	0.00	240.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00							82.26	0.00	240.00

EIA Section Load Case Information for "WIND 0 ICE COMB 3":

Note: qzGh (adjusted wind pressure) includes: Velocity Pressure Coefficient (Kz), Topographic Factor (Kzt), Gust Effect Factor (Gh), Wind Direction Probability Factor (Kd), Wind Importance Factor (Table 2-3), Wind Load Factor (from Loads/EIA Loads)
Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Gnd. (ft)	qzGh (psf)	Ice Thick. (in)	Face AF (ft^2)	Face AR (ft^2)	Face RR*AR (ft^2)	Face AG (ft^2)	Face e	Face DF	Face DR	Face RR	Face CF	Face AE (ft^2)	Face WF (lbs)	NotF AAF (ft^2)	NotF CAF	NotF AAR (ft^2)	NotF CAR	NotF AAR*CAR (ft^2)	NotF WA (lbs)	Total Wind (lbs)	Total Weight (lbs)
1	300.00	285.00	292.50	6.21	1.87	28.51	29.50	22.80	90.0	0.64	1.00	1.00	0.77	1.86	51.3	592	2.67	2.00	3.60	1.20	4.31	60	652	12776
2	285.00	260.00	272.50	6.08	1.85	42.90	48.13	33.79	171.5	0.53	1.00	1.00	0.70	2.00	76.7	931	5.86	2.00	15.36	1.20	18.43	183	1114	15420
3	260.00	240.00	250.00	5.93	1.84	41.95	33.70	22.18	169.0	0.45	1.00	1.00	0.66	2.16	64.1	822	5.52	2.00	22.69	1.20	27.23	227	1049	12424
4	240.00	220.00	230.00	5.79	1.82	44.15	35.50	22.61	198.1	0.40	1.00	1.00	0.64	2.27	66.8	880	5.98	2.00	26.76	1.20	32.11	255	1135	13287
5	220.00	200.00	210.00	5.65	1.80	46.47	37.33	23.26	227.3	0.37	1.00	1.00	0.62	2.37	69.7	932	6.00	2.00	36.05	1.20	43.26	312	1244	14888
6	200.00	175.00	187.50	5.47	1.78	50.98	39.80	23.59	325.1	0.28	1.00	1.00	0.59	2.66	74.6	1086	8.37	2.00	53.21	1.20	63.85	441	1526	18994
7	175.00	150.00	162.50	5.25	1.76	60.28	40.84	24.13	370.7	0.27	1.00	1.00	0.59	2.69	84.4	1191	11.88	2.00	86.48	1.20	103.78	669	1860	21485
8	150.00	125.00	137.50	5.00	1.73	61.64	41.78	24.43	416.3	0.25	1.00	1.00	0.58	2.78	86.1	1197	11.87	2.00	85.39	1.20	102.47	631	1829	24057
9	125.00	100.00	112.50	4.72	1.70	62.49	42.58	24.69	461.9	0.23	1.00	1.00	0.58	2.86	87.2	1180	11.88	2.00	84.10	1.20	100.92	589	1769	26050
10	100.00	75.00	87.50	4.40	1.65	63.90	43.15	24.88	507.4	0.21	1.00	1.00	0.58	2.93	88.8	1145	11.88	2.00	93.52	1.20	112.22	598	1743	27278
11	75.00	50.00	62.50	3.99	1.60	67.05	43.34	24.89	553.0	0.20	1.00	1.00	0.57	2.98	91.9	1095	11.87	2.00	91.19	1.20	109.43	532	1627	28631
12	50.00	25.00	37.50	3.45	1.52	68.56	42.73	24.45	598.6	0.19	1.00	1.00	0.57	3.04	93.0	976	11.88	2.00	87.81	1.20	105.37	446	1422	31206
13	25.00	0.00	12.50	3.23	1.36	68.37	33.65	19.13	644.2	0.16	1.00	1.00	0.57	3.17	87.5	896	11.35	2.00	71.77	1.20	86.12	352	1248	29031

Equipment Load Case Information for "WIND 45 ICE COMB 3":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Axial Load FAM (lbs)	Antenna Side Load FSM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	315.00							97.24	97.24	1188.00
AP-2	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	315.00							97.24	97.24	1188.00
AP-3	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	315.00							97.24	97.24	1188.00
AP-4	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	315.00							97.24	97.24	1188.00
ACP-1	ACCESS PLATFORM	285.00	6.16	1.86	13.00	315.00							56.63	56.63	639.60
ACP-2	ACCESS PLATFORM	285.00	6.16	1.86	13.00	315.00							56.63	56.63	639.60
ACP-3	ACCESS PLATFORM	285.00	6.16	1.86	13.00	315.00							56.63	56.63	639.60
ACP-4	ACCESS PLATFORM	285.00	6.16	1.86	13.00	315.00							56.63	56.63	639.60
LP1-1	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	315.00							16.18	16.18	180.00
LP1-2	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	315.00							16.18	16.18	180.00
LP1-3	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	315.00							16.18	16.18	180.00
LP1-4	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	315.00							16.18	16.18	180.00
LP2-1	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	315.00							15.54	15.54	240.00
LP2-2	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	315.00							15.54	15.54	240.00
LP2-3	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	315.00							15.54	15.54	240.00
LP2-4	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	315.00							15.54	15.54	240.00
USCG-1	USCG ADD090S ANT	280.00	6.13	1.86	10.00	315.00							43.34	43.34	120.00
USCG-2	USCG ADD090S ANT	280.00	6.13	1.86	10.00	315.00							43.34	43.34	120.00
USCG-3	USCG ADD090S ANT	280.00	6.13	1.86	10.00	315.00							43.34	43.34	120.00
USCG-4	USCG ADD090S ANT	280.00	6.13	1.86	10.00	315.00							43.34	43.34	120.00
USCG-5	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	315.00							21.22	21.22	90.00
USCG-6	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	315.00							21.22	21.22	90.00
USCG-7	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	315.00							21.22	21.22	90.00
USCG-8	USGS SRL235-2 ANT	260.00	6.00	1.84	5.00	315.00							21.22	21.22	90.00
USCG-9	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	315.00							20.98	20.98	90.00
USCG-10	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	315.00							20.98	20.98	90.00
USCG-11	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	315.00							20.98	20.98	90.00
USCG-12	USGS SRL335-2 ANT	250.00	5.93	1.84	5.00	315.00							20.98	20.98	90.00
USCG-13	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	315.00							20.23	20.23	90.00
USCG-14	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	315.00							20.23	20.23	90.00
USCG-15	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	315.00							20.23	20.23	90.00
USCG-16	USGS SRL235-2 ANT	220.00	5.72	1.81	5.00	315.00							20.23	20.23	90.00
OMNI-1	OMNI ANT	300.00	6.25	1.87	2.00	315.00							8.84	8.84	12.00
OMNI-2	OMNI ANT	300.00	6.25	1.87	2.00	315.00							8.84	8.84	12.00
OMNI-3	OMNI ANT	300.00	6.25	1.87	2.00	315.00							8.84	8.84	12.00
OMNI-4	OMNI ANT	300.00	6.25	1.87	2.00	315.00							8.84	8.84	12.00
OMNI-5	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-6	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-7	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-8	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-9	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-10	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-11	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
OMNI-12	OMNI ANT	100.00	4.57	1.68	2.00	315.00							6.46	6.46	12.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	315.00							59.32	59.32	240.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	315.00							59.32	59.32	240.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	315.00							59.32	59.32	240.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	315.00							59.32	59.32	240.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	315.00							58.17	58.17	240.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	315.00							58.17	58.17	240.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	315.00							58.17	58.17	240.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	315.00							58.17	58.17	240.00

EIA Section Load Case Information for "WIND 45 ICE COMB 3":

Note: qzGh (adjusted wind pressure) includes: Velocity Pressure Coefficient (Kz), Topographic Factor (Kzt), Gust Effect Factor (Gh),
Wind Direction Probability Factor (Kd), Wind Importance Factor (Table 2-3), Wind Load Factor (from Loads/EIA Loads)
Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Gnd. (ft)	qzGh (psf)	Ice Thick. (in)	Face AF (ft^2)	Face AR (ft^2)	Face RR*AR (ft^2)	Face AG (ft^2)	Face e	Face DF	Face DR	Face RR	Face CF	Face AE (ft^2)	Face WF (lbs)	NotF AAF (ft^2)	NotF CAF	NotF AAR (ft^2)	NotF CAR	NotF AAR*CAR (ft^2)	NotF WA (lbs)	Total Wind (lbs)	Total Weight (lbs)
1	300.00	285.00	292.50	6.21	1.87	28.51	29.50	22.80	90.0	0.64	1.20	1.20	0.77	1.86	61.6	710	2.67	2.00	3.60	1.20	4.31	60	770	12776
2	285.00	260.00	272.50	6.08	1.85	42.90	48.13	33.79	171.5	0.53	1.20	1.20	0.70	2.00	92.0	1117	5.86	2.00	15.36	1.20	18.43	183	1300	15420
3	260.00	240.00	250.00	5.93	1.84	41.95	33.70	22.18	169.0	0.45	1.20	1.20	0.66	2.16	77.0	986	5.52	2.00	22.69	1.20	27.23	227	1214	12424
4	240.00	220.00	230.00	5.79	1.82	44.15	35.50	22.61	198.1	0.40	1.20	1.20	0.64	2.27	80.1	1056	5.98	2.00	26.76	1.20	32.11	255	1311	13287
5	220.00	200.00	210.00	5.65	1.80	46.47	37.33	23.26	227.3	0.37	1.20	1.20	0.62	2.37	83.7	1119	6.00	2.00	36.05	1.20	43.26	312	1431	14888
6	200.00	175.00	187.50	5.47	1.78	50.98	39.80	23.59	325.1	0.28	1.20	1.20	0.59	2.66	89.5	1303	8.37	2.00	53.21	1.20	63.85	441	1744	18994
7	175.00	150.00	162.50	5.25	1.76	60.28	40.84	24.13	370.7	0.27	1.20	1.20	0.59	2.69	101.3	1429	11.88	2.00	86.48	1.20	103.78	669	2098	21485
8	150.00	125.00	137.50	5.00	1.73	61.64	41.78	24.43	416.3	0.25	1.19	1.19	0.58	2.78	102.1	1420	11.87	2.00	85.39	1.20	102.47	631	2052	24057
9	125.00	100.00	112.50	4.72	1.70	62.49	42.58	24.69	461.9	0.23	1.17	1.17	0.58	2.86	102.1	1381	11.88	2.00	84.10	1.20	100.92	589	1970	26050
10	100.00	75.00	87.50	4.40	1.65	63.90	43.15	24.88	507.4	0.21	1.16	1.16	0.58	2.93	102.8	1326	11.88	2.00	93.52	1.20	112.22	598	1924	27278
11	75.00	50.00	62.50	3.99	1.60	67.05	43.34	24.89	553.0	0.20	1.15	1.15	0.57	2.98	105.7	1259	11.87	2.00	91.19	1.20	109.43	532	1790	28631
12	50.00	25.00	37.50	3.45	1.52	68.56	42.73	24.45	598.6	0.19	1.14	1.14	0.57	3.04	106.0	1112	11.88	2.00	87.81	1.20	105.37	446	1558	31206
13	25.00	0.00	12.50	3.23	1.36	68.37	33.65	19.13	644.2	0.16	1.12	1.12	0.57	3.17	97.9	1003	11.35	2.00	71.77	1.20	86.12	352	1355	29031

*** Analysis Results:

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Vert. Moment (ft-k)	Bending Moment (ft-k)	Found. Usage %
WIND 0 COMB 1	1P	-29.73	-14.46	384.37	33.06	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 1	1X	-29.73	14.46	384.37	33.06	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 1	1XY	-26.06	-10.28	-297.67	28.02	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 1	1Y	-26.06	10.28	-297.67	28.02	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 1	1P	-32.67	-32.67	568.94	46.20	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 1	1X	-13.97	-9.72	43.31	17.02	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 1	1XY	-29.16	-29.16	-482.17	41.24	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 1	1Y	-9.72	-13.97	43.31	17.02	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 2	1P	-29.21	-13.92	373.08	32.36	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 2	1X	-29.21	13.92	373.08	32.36	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 2	1XY	-26.58	-10.79	-308.06	28.69	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 COMB 2	1Y	-26.58	10.79	-308.06	28.69	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 2	1P	-32.14	-32.14	557.41	45.45	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 2	1X	-13.46	-10.26	32.47	16.92	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 2	1XY	-29.67	-29.67	-492.31	41.96	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 COMB 2	1Y	-10.26	-13.46	32.47	16.92	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 ICE COMB 3	1P	-8.49	-5.56	132.97	10.15	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 ICE COMB 3	1X	-8.49	5.56	132.97	10.15	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 ICE COMB 3	1XY	-1.84	1.10	11.10	2.14	-0.00	-0.00	-0.00	0.00	0.00
WIND 0 ICE COMB 3	1Y	-1.84	-1.10	11.10	2.14	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 ICE COMB 3	1P	-9.14	-9.14	168.12	12.92	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 ICE COMB 3	1X	-5.63	1.04	72.03	5.73	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 ICE COMB 3	1XY	-2.50	-2.50	-24.05	3.53	-0.00	-0.00	-0.00	0.00	0.00
WIND 45 ICE COMB 3	1Y	1.04	-5.63	72.03	5.73	-0.00	-0.00	-0.00	0.00	0.00

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Capacity (kips)	Comp. Conn. Shear Capacity (kips)	Comp. Conn. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.
L1	LEG	BUS	8X8X1 1/8+2L6X4X1/2	36.0	72.53	72.53	g1X	-545.004	WIND 45 CO	751.379	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L2	LEG	BUS	8X8X1 1/8+2L6X4X1/2	36.0	69.05	69.05	g26X	-518.852	WIND 45 CO	751.379	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L3	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	75.54	75.54	g51X	-493.055	WIND 45 CO	652.725	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L4	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	71.50	71.50	g76X	-466.675	WIND 45 CO	652.726	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L5	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	67.51	67.51	g101X	-440.659	WIND 45 CO	652.725	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L6	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	63.42	63.42	g126X	-413.985	WIND 45 CO	652.725	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L7	LEG	SAE	8X8X1.125	36.0	80.82	80.82	g151X	-387.766	WIND 45 CO	479.793	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L8	LEG	SAE	8X8X1.125	36.0	75.19	75.19	g176X	-360.744	WIND 45 CO	479.794	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L9	LEG	SAE	8X8X1	36.0	77.83	77.83	g201X	-334.796	WIND 45 CO	430.179	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L10	LEG	SAE	8X8X1	36.0	71.61	71.61	g226X	-308.072	WIND 45 CO	430.179	0.000	0.000	0.500	0.500	0.500	48.14	12.517	1	0
L11	LEG	SAE	8X8X0.875	36.0	74.24	74.24	g251X	-282.104	WIND 45 CO	380.007	0.000	0.000	0.500	0.500	0.500	47.83	12.517	1	0
L12	LEG	SAE	8X8X0.875	36.0	67.20	67.20	g276X	-255.381	WIND 45 CO	380.006	0.000	0.000	0.500	0.500	0.500	47.83	12.517	1	0
L13	LEG	SAE	8X8X0.75	36.0	69.79	69.79	g301X	-229.684	WIND 45 CO	329.092	0.000	0.000	0.500	0.500	0.500	47.53	12.517	1	0
L14	LEG	SAE	8X8X0.75	36.0	61.72	61.72	g326X	-203.104	WIND 45 CO	329.092	0.000	0.000	0.500	0.500	0.500	47.53	12.517	1	0
L15	LEG	SAE	6X6X0.875	36.0	70.39	70.39	g351X	-178.646	WIND 45 CO	253.782	0.000	0.000	0.500	0.500	0.500	64.19	12.517	1	0
L16	LEG	SAE	6X6X0.875	36.0	60.93	60.93	g376X	-154.628	WIND 45 CO	253.781	0.000	0.000	0.500	0.500	0.500	64.19	12.517	1	0
L17	LEG	SAE	6X6X0.75	36.0	59.28	59.28	g401X	-141.097	WIND 45 CO	238.013	0.000	0.000	0.500	0.500	0.500	51.35	10.013	1	0
L18	LEG	SAE	6X6X0.75	36.0	52.44	52.44	g417X	-124.826	WIND 45 CO	238.013	0.000	0.000	0.500	0.500	0.500	51.35	10.013	1	0
L19	LEG	SAE	6X6X0.625	36.0	52.67	52.67	g435X	-105.857	WIND 45 CO	200.976	0.000	0.000	0.500	0.500	0.500	50.92	10.013	1	0
L20	LEG	SAE	6X6X0.625	36.0	44.43	44.43	g451X	-89.295	WIND 45 CO	200.977	0.000	0.000	0.500	0.500	0.500	50.91	10.013	1	0
L21	LEG	SAE	6X6X0.5625	36.0	39.56	39.56	g469X	-71.905	WIND 45 CO	181.755	0.000	0.000	0.500	0.500	0.500	50.92	10.013	1	0
L22	LEG	SAE	6X6X0.5625	36.0	30.66	30.66	g485X	-55.729	WIND 45 CO	181.755	0.000	0.000	0.500	0.500	0.500	50.91	10.013	1	0
L23	LEG	SAE	5X5X0.5	36.0	38.17	38.17	g503X	-48.260	WIND 45 CO	126.424	0.000	0.000	1.000	1.000	1.000	61.12	5.007	1	0
L24	LEG	SAE	5X5X0.5	36.0	32.20	32.20	g515X	-40.710	WIND 45 CO	126.425	0.000	0.000	1.000	1.000	1.000	61.12	5.007	1	0
L25	LEG	SAE	5X5X0.5	36.0	26.38	26.38	g532X	-33.358	WIND 45 CO	126.437	0.000	0.000	1.000	1.000	1.000	61.10	5.005	1	0
L26	LEG	SAE	5X5X0.5	36.0	20.67	20.67	g544X	-26.136	WIND 45 CO	126.437	0.000	0.000	1.000	1.000	1.000	61.10	5.005	1	0
L27	LEG	SAE	5X5X0.5	36.0	14.08	14.08	g560X	-17.801	WIND 45 CO	126.437	0.000	0.000	1.000	1.000	1.000	61.10	5.005	1	0
L28	LEG	SAE	4X4X0.375	36.0	17.16	17.16	g578X	-11.717	WIND 45 CO	68.290	0.000	0.000	1.000	1.000	1.000	76.14	5.000	1	0
L29	LEG	SAE	4X4X0.375	36.0	10.93	10.93	g579X	-7.464	WIND 45 CO	68.290	0.000	0.000	1.000	1.000	1.000	76.14	5.000	1	0
L30	LEG	SAE	4X4X0.375	36.0	4.22	4.22	g582X	-2.882	WIND 45 CO	68.290	0.000	0.000	1.000	1.000	1.000	76.14	5.000	1	0
D1	DIA	DAS	3X2.5X0.25	36.0	78.06	78.06	g5P	-22.391	WIND 0 COM	28.686	0.000	0.000	0.500	1.000	0.500	151.33	18.286	5	0
D2	DIA	DAS	3X2.5X0.25	36.0	78.30	78.30	g30P	-23.125	WIND 0 COM	29.534	0.000	0.000	0.500	1.000	0.500	148.60	17.956	5	0
D3	DIA	DAE	2.5X2.5X0.375	36.0	72.46	72.46	g55P	-21.749	WIND 0 COM	29.976	0.000	0.000	0.500	1.000	0.500	180.80	17.632	5	0
D4	DIA	DAE	2.5X2.5X0.375	36.0	73.36	73.36	g80P	-22.670	WIND 0 COM	30.894	0.000	0.000	0.500	1.000	0.500	177.59	17.314	5	0
D5	DIA	DAE	2.5X2.5X0.375	36.0	67.11	67.11	g105P	-21.446	WIND 0 COM	31.782	0.000	0.000	0.500	1.000	0.500	174.45	17.002	5	0
D6	DIA	DAE	2.5X2.5X0.375	36.0	67.76	67.76	g131X	-22.240	WIND 0 COM	32.764	0.000	0.000	0.500	1.000	0.500	171.37	16.697	5	0
D7	DIA	DAE	2.5X2.5X0.25	36.0	93.41	93.41	g155X	-21.011	WIND 0 COM	22.494	0.000	0.000	0.500	1.000	0.500	165.36	16.398	5	0
D8	DIA	DAE	2.5X2.5X0.25	36.0	93.10	93.10	g180X	-21.561	WIND 0 COM	23.160	0.000	0.000	0.500	1.000	0.500	162.42	16.107	5	0
D9	DIA	DAE	2.5X2.5X0.25	36.0	84.10	84.10	g205X	-20.044	WIND 0 COM	23.834	0.000	0.000	0.500	1.000	0.500	159.57	15.824	5	0
D10	DIA	DAE	2.5X2.5X0.25	36.0	84.70	84.70	g230X	-20.769	WIND 0 COM	24.520	0.000	0.000	0.500	1.000	0.500	156.80	15.549	5	0
D11	DIA	DAE	2.5X2.5X0.25	36.0	77.23	77.23	g255X	-19.471	WIND 0 COM	25.212	0.000	0.000	0.500	1.000	0.500	154.11	15.283	5	0
D12	DIA	DAE	2.5X2.5X0.25	36.0	77.74	77.74	g280X	-20.141	WIND 0 COM	25.908	0.000	0.000	0.500	1.000	0.500	151.52	15.026	5	0
D13	DIA	DAE	2.5X2.5X0.25	36.0	70.53	70.53	g305X	-18.765	WIND 0 COM	26.606	0.000	0.000	0.500	1.000	0.500	149.02	14.778	5	0
D14	DIA	DAE	2.5X2.5X0.25	36.0	71.31	71.31	g330X	-19.470	WIND 0 COM	27.303	0.000	0.000	0.500	1.000	0.500	146.63	14.540	5	0
D15	DIA	DAE	2.5X2.5X0.25	36.0	61.00	61.00	g355P	-17.078	WIND 0 COM	27.996	0.000	0.000	0.500	1.000	0.500	144.34	14.313	5	0

D16	DIA	DAE	2.5X2.5X0.25	36.0	58.01	58.01	g380P	-16.636	WIND 0 COM	28.677	0.000	0.000	0.500	1.000	0.500	142.16	14.098	5	0
D17	DIA	SAE	3X3X0.25	36.0	65.35	65.35	g405P	-9.749	WIND 45 CO	14.918	0.000	0.000	0.500	0.500	0.500	156.26	15.418	5	0
D18	DIA	SAE	3X3X0.25	36.0	56.78	56.78	g418X	-8.977	WIND 45 CO	15.810	0.000	0.000	0.500	0.500	0.500	150.71	14.871	5	0
D19	DIA	SAE	3X3X0.25	36.0	52.69	52.69	g439P	-8.827	WIND 45 CO	16.754	0.000	0.000	0.500	0.500	0.500	145.33	14.340	5	0
D20	DIA	SAE	3X3X0.25	36.0	48.59	48.59	g452X	-8.625	WIND 45 CO	17.749	0.000	0.000	0.500	0.500	0.500	140.14	13.827	5	0
D21	DIA	SAE	3X3X0.25	36.0	43.44	43.44	g473P	-8.146	WIND 45 CO	18.753	0.000	0.000	0.500	0.500	0.500	135.14	13.334	5	0
D22	DIA	SAE	3X3X0.25	36.0	40.14	40.14	g489P	-7.911	WIND 45 CO	19.707	0.000	0.000	0.500	0.500	0.500	130.38	12.864	5	0
D23	DIA	SAU	2.5X2X0.25	36.0	27.12	27.12	g507X	-4.029	WIND 0 COM	14.860	0.000	0.000	0.500	0.500	0.500	128.02	9.047	5	0
D24	DIA	SAU	2.5X2X0.25	36.0	25.88	25.88	g519X	-4.013	WIND 0 COM	15.508	0.000	0.000	0.500	0.500	0.500	123.75	8.745	5	0
D25	DIA	SAU	2.5X2X0.25	36.0	25.03	25.03	g536P	-4.035	WIND 0 COM	16.118	0.000	0.000	0.500	0.500	0.500	119.75	8.462	3	0
D26	DIA	SAU	2.5X2X0.25	36.0	23.84	23.84	g548P	-3.933	WIND 0 COM	16.499	0.000	0.000	0.500	0.500	0.500	116.01	8.198	3	0
D27	DIA	SAU	2.5X2X0.25	36.0	21.17	21.17	g564P	-3.573	WIND 0 COM	16.876	0.000	0.000	0.500	0.500	0.500	112.35	7.939	3	0
D28	DIA	SAU	2.5X2X0.25	36.0	14.05	14.05	g590X	-2.397	WIND 0 COM	17.065	0.000	0.000	0.500	0.500	0.500	110.52	7.810	3	0
D29	DIA	SAU	2.5X2X0.25	36.0	11.73	11.73	g598X	-2.002	WIND 0 COM	17.065	0.000	0.000	0.500	0.500	0.500	110.52	7.810	3	0
D30	DIA	SAU	2.5X2X0.25	36.0	11.11	11.11	g606X	-1.896	WIND 0 COM	17.065	0.000	0.000	0.500	0.500	0.500	110.52	7.810	3	0
H1	HOR	DAL	3X2.5X0.25	36.0	58.73	58.73	g13Y	-14.856	WIND 0 COM	25.296	0.000	0.000	1.000	1.000	1.000	163.59	12.883	5	0
H2	HOR	DAE	2.5X2.5X0.25	36.0	85.77	85.77	g38Y	-14.826	WIND 0 COM	17.286	0.000	0.000	1.000	1.000	1.000	193.92	12.427	5	0
H3	HOR	DAE	2.5X2.5X0.25	36.0	77.10	77.10	g63Y	-14.185	WIND 0 COM	18.400	0.000	0.000	1.000	1.000	1.000	186.80	11.971	5	0
H4	HOR	DAE	2.5X2.5X0.25	36.0	72.17	72.17	g88Y	-14.162	WIND 0 COM	19.622	0.000	0.000	1.000	1.000	1.000	179.70	11.516	5	0
H5	HOR	DAE	2.5X2.5X0.25	36.0	64.41	64.41	g113XY	-13.510	WIND 0 COM	20.973	0.000	0.000	1.000	1.000	1.000	172.59	11.060	5	0
H6	HOR	DAE	2.5X2.5X0.25	36.0	59.27	59.27	g138XY	-13.317	WIND 0 COM	22.469	0.000	0.000	1.000	1.000	1.000	165.47	10.604	5	0
H7	HOR	DAE	2.5X2.5X0.25	36.0	52.60	52.60	g163XY	-12.694	WIND 0 COM	24.132	0.000	0.000	1.000	1.000	1.000	158.36	10.148	5	0
H8	HOR	DAE	2.5X2.5X0.25	36.0	47.23	47.23	g188XY	-12.270	WIND 0 COM	25.981	0.000	0.000	1.000	1.000	1.000	151.26	9.693	5	0
H9	HOR	DAE	2.5X2.5X0.25	36.0	40.86	40.86	g213XY	-11.463	WIND 0 COM	28.056	0.000	0.000	1.000	1.000	1.000	144.14	9.237	5	0
H10	HOR	DAE	2.5X2.5X0.25	36.0	36.59	36.59	g238XY	-11.118	WIND 0 COM	30.382	0.000	0.000	1.000	1.000	1.000	137.02	8.781	5	0
H11	HOR	DAE	2.5X2.5X0.25	36.0	32.00	32.00	g263XY	-10.471	WIND 0 COM	32.723	0.000	0.000	1.000	1.000	1.000	129.92	8.326	5	0
H12	HOR	DAE	2.5X2.5X0.25	36.0	28.56	28.56	g288XY	-10.036	WIND 0 COM	35.141	0.000	0.000	1.000	1.100	1.000	122.81	7.870	5	0
H13	HOR	DAE	2.5X2.5X0.25	36.0	24.54	24.54	g313XY	-9.354	WIND 0 COM	38.115	0.000	0.000	1.000	1.100	1.000	115.69	7.414	1	0
H14	HOR	DAE	2.5X2.5X0.25	36.0	21.55	21.55	g338Y	-8.932	WIND 0 COM	41.456	0.000	0.000	1.000	1.100	1.000	108.58	6.958	1	0
H15	HOR	DAE	2.5X2.5X0.25	36.0	17.32	17.32	g363Y	-7.767	WIND 0 COM	44.842	0.000	0.000	1.000	1.000	1.000	101.48	6.503	1	0
H16	HOR	DAE	2.5X2.5X0.25	36.0	15.20	15.20	g384Y	-7.335	WIND 45 CO	48.255	0.000	0.000	1.000	1.000	1.000	94.36	6.047	1	0
H17	HOR	SAE	2.5X2.5X0.25	36.0	45.18	45.18	g409Y	-4.531	WIND 0 COM	10.029	0.000	0.000	0.500	1.000	0.500	177.33	11.364	5	0
H18	HOR	SAE	2.5X2.5X0.25	36.0	25.92	25.92	g425Y	-4.238	WIND 0 COM	16.354	0.000	0.000	0.500	0.700	0.500	129.97	10.636	5	0
H19	HOR	SAE	2.5X2.5X0.25	36.0	33.37	33.37	g443Y	-4.186	WIND 0 COM	12.545	0.000	0.000	0.500	1.000	0.500	154.58	9.906	5	0
H20	HOR	SAE	2.5X2.5X0.25	36.0	20.37	20.37	g459Y	-4.050	WIND 0 COM	19.884	0.000	0.000	0.500	0.600	0.500	112.15	9.178	1	0
H21	HOR	SAE	2.5X2.5X0.25	36.0	22.42	22.42	g477Y	-3.597	WIND 0 COM	16.044	0.000	0.000	0.500	1.000	0.500	131.83	8.448	5	0
H22	HOR	SAE	2.5X2.5X0.25	36.0	7.66	7.66	g493Y	-1.811	WIND 0 COM	23.645	0.000	0.000	0.500	0.800	0.500	96.37	7.720	1	0
H23	HOR	SAE	2.5X2.5X0.25	36.0	0.00	0.00		0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0	0
H24	HOR	SAU	2.5X2X0.25	36.0	2.64	2.64	g552Y	-0.259	WIND 0 COM	9.793	0.000	0.000	1.000	1.000	1.000	179.15	6.330	6	0
H25	HOR	CHN	C7 X 9.8	36.0	0.53	0.49	g568Y	-0.355	WIND 0 COM	72.251	0.000	0.000	1.000	1.000	1.000	69.23	6.000	1	0
H26	HOR	SAE	2.5X2.5X0.25	36.0	0.33	0.00	g615X	0.000		14.453	0.000	0.000	1.000	1.000	1.000	146.64	6.000	6	0
H27	HOR	CHN	C8 x 11.5	36.0	0.45	0.06	g616Y	-0.034	WIND 0 COM	54.456	0.000	0.000	1.000	1.000	1.000	115.20	6.000	1	0
R1	RUD	SAE	3X3X0.25	36.0	2.05	2.05	g42Y	-0.629	WIND 45 CO	30.730	0.000	0.000	0.250	0.250	0.250	89.06	17.574	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tens. Conn. Shear Capacity (kips)	Tens. Conn. Bearing Capacity (kips)	Tens. Conn. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)
L1	LEG	BUS	8X8X1 1/8+2L6X4X1/2	36.0	72.53	55.59	g1Y	471.920	WIND 45 CO	848.879	0.000	0.000	0.000	12.517	0	0.000	0
L2	LEG	BUS	8X8X1 1/8+2L6X4X1/2	36.0	69.05	53.13	g26Y	451.047	WIND 45 CO	848.879	0.000	0.000	0.000	12.517	0	0.000	0
L3	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	75.54	58.34	g51Y	430.237	WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000	0
L4	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	71.50	55.37	g76Y	408.305	WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000	0
L5	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	67.51	52.41	g101Y	386.503	WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000	0
L6	LEG	BUS	8X8X1 1/8+2L6X4X5/16	36.0	63.42	49.32	g126Y	363.719	WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000	0
L7	LEG	SAE	8X8X1.125	36.0	80.82	62.95	g151Y	341.244	WIND 45 CO	542.051	0.000	0.000	0.000	12.517	0	0.000	0
L8	LEG	SAE	8X8X1.125	36.0	75.19	58.71	g176Y	318.249	WIND 45 CO	542.051	0.000	0.000	0.000	12.517	0	0.000	0
L9	LEG	SAE	8X8X1	36.0	77.83	60.88	g201Y	295.861	WIND 45 CO	485.999	0.000	0.000	0.000	12.517	0	0.000	0
L10	LEG	SAE	8X8X1	36.0	71.61	56.06	g226Y	272.468	WIND 45 CO	485.999	0.000	0.000	0.000	12.517	0	0.000	0
L11	LEG	SAE	8X8X0.875	36.0	74.24	58.25	g251Y	249.669	WIND 45 CO	428.651	0.000	0.000	0.000	12.517	0	0.000	0
L12	LEG	SAE	8X8X0.875	36.0	67.20	52.68	g276Y	225.816	WIND 45 CO	428.651	0.000	0.000	0.000	12.517	0	0.000	0
L13	LEG	SAE	8X8X0.75	36.0	69.79	54.71	g301Y	202.792	WIND 45 CO	370.655	0.000	0.000	0.000	12.517	0	0.000	0
L14	LEG	SAE	8X8X0.75	36.0	61.72	48.21	g326Y	178.678	WIND 45 CO	370.655	0.000	0.000	0.000	12.517	0	0.000	0
L15	LEG	SAE	6X6X0.875	36.0	70.39	49.81	g351Y	157.015	WIND 45 CO	315.252	0.000	0.000	0.000	12.517	0	0.000	0
L16	LEG	SAE	6X6X0.875	36.0	60.93	43.06	g376Y	135.744	WIND 45 CO	315.252	0.000	0.000	0.000	12.517	0	0.000	0
L17	LEG	SAE	6X6X0.75	36.0	59.28	45.59	g401Y	124.678	WIND 45 CO	273.456	0.000	0.000	0.000	10.013	0	0.000	0
L18	LEG	SAE	6X6X0.75	36.0	52.44	39.93	g417Y	109.177	WIND 45 CO	273.456	0.000	0.000	0.000	10.013	0	0.000	0
L19	LEG	SAE	6X6X0.625	36.0	52.67	40.17	g435Y	92.543	WIND 45 CO	230.364	0.000	0.000	0.000	10.013	0	0.000	0
L20	LEG	SAE	6X6X0.625	36.0	44.43	33.41	g451Y	76.962	WIND 45 CO	230.364	0.000	0.000	0.000	10.013	0	0.000	0
L21	LEG	SAE	6X6X0.5625	36.0	39.56	29.48	g469Y	61.415	WIND 45 CO	208.332	0.000	0.000	0.000	10.013	0	0.000	0
L22	LEG	SAE	6X6X0.5625	36.0	30.66	22.28	g485Y	46.412	WIND 45 CO	208.332	0.000	0.000	0.000	10.013	0	0.000	0
L23	LEG	SAE	5X5X0.5	36.0	38.17	25.32	g503Y	38.966	WIND 45 CO	153.900	0.000	0.000	0.000	5.007	0	0.000	0
L24	LEG	SAE	5X5X0.5	36.0	32.20	20.80	g515Y	32.011	WIND 45 CO	153.900	0.000	0.000	0.000	5.007	0	0.000	0
L25	LEG	SAE	5X5X0.5	36.0	26.38	16.36	g532Y	25.181	WIND 45 CO	153.900	0.000	0.000	0.000	5.005	0	0.000	0
L26	LEG	SAE	5X5X0.5	36.0	20.67	11.97	g544Y	18.418	WIND 45 CO	153.900	0.000	0.000	0.000	5.005	0	0.000	0
L27	LEG	SAE	5X5X0.5	36.0	14.08	7.42	g560Y	11.423	WIND 45 CO	153.900	0.000	0.000	0.000	5.005	0	0.000	0
L28	LEG	SAE	4X4X0.375	36.0	17.16	7.87	g578Y	7.290	WIND 45 CO	92.664	0.000	0.000	0.000	5.000	0	0.000	0
L29	LEG	SAE	4X4X0.375	36.0	10.93	3.98	g579Y	3.687	WIND 45 CO	92.664	0.000	0.000	0.000	5.000	0	0.000	0
L30	LEG	SAE	4X4X0.375	36.0	4.22	0.43	g582Y	0.402	WIND 45 CO	92.664	0.000	0.000	0.000	5.000	0	0.000	0
D1	DIA	DAS	3X2.5X0.25	36.0	78.06	24.68	g5Y	21.030	WIND 0 COM	85.212	0.000	0.000	0.000	18.286	0	0.000	0
D2	DIA	DAS	3X2.5X0.25	36.0	78.30	24.28	g30Y	20.692	WIND 0 COM	85.212	0.000	0.000	0.000	17.956	0	0.000	0
D3	DIA	DAE	2.5X2.5X0.375	36.0	72.46	23.33	g55Y	20.671	WIND 0 COM	115.322	0.000	0.000	0.000	17.632	0	0.000	0
D4	DIA	DAE	2.5X2.5X0.375	36.0	73.36	23.22	g80Y	20.703	WIND 0 COM	115.322	0.000	0.000	0.000	17.314	0	0.000	0
D5	DIA	DAE	2.5X2.5X0.375	36.0	67.11	23.65	g105Y	20.548	WIND 0 COM	115.322	0.000	0.000	0.000	17.002	0	0.000	0
D6	DIA	DAE	2.5X2.5X0.375	36.0	67.76	23.67	g131XY	20.555	WIND 0 COM	115.322	0.000	0.000	0.000	16.697	0	0.000	0
D7	DIA	DAE	2.5X2.5X0.25	36.0	93.41	26.21	g155XY	20.207	WIND 0 COM	77.112	0.000	0.000	0.000	16.398	0	0.000	0
D8	DIA	DAE	2.5X2.5X0.25	36.0	93.10	25.99	g180XY	20.040	WIND 0 COM	77.112	0.000	0.000	0.000	16.107	0	0.000	0
D9	DIA	DAE	2.5X2.5X0.25	36.0	84.10	25.04	g205XY	19.307	WIND 0 COM	77.112	0.000	0.000	0.000	15.824	0	0.000	0
D10	DIA	DAE	2.5X2.5X0.25	36.0	84.70	25.19	g230XY	19.424	WIND 0 COM	77.112	0.000	0.000	0.000	15.549	0	0.000	0
D11	DIA	DAE	2.5X2.5X0.25	36.0	77.23	24.43	g255XY	18.838	WIND 0 COM	77.112	0.000	0.000	0.000	15.283	0	0.000	0
D12	DIA	DAE	2.5X2.5X0.25	36.0	77.74	24.67	g280XY	19.027	WIND 0 COM	77.112	0.000	0.000	0.000	15.026	0	0.000	0
D13	DIA	DAE	2.5X2.5X0.25	36.0	70.53	23.67	g305XY	18.253	WIND 0 COM	77.112	0.000	0.000	0.000	14.778	0	0.000	0
D14	DIA	DAE	2.5X2.5X0.25	36.0	71.31	24.02	g330XY	18.521	WIND 0 COM	77.112	0.000	0.000	0.000	14.540	0	0.000	0
D15	DIA	DAE	2.5X2.5X0.25	36.0	61.00	21.54	g355Y	16.609	WIND 0 COM	77.112	0.000	0.000	0.000	14.313	0	0.000	0
D16	DIA	DAE	2.5X2.5X0.25	36.0	58.01	20.42	g380Y	15.746	WIND 0 COM	77.112	0.000	0.000	0.000	14.098	0	0.000	0
D17	DIA	SAE	3X3X0.25	36.0	65.35	19.33	g405XY	9.021	WIND 45 CO	46.656	0.000	0.000	0.000	15.418	0	0.000	0
D18	DIA	SAE	3X3X0.25	36.0	56.78	17.66	g418Y	8.238	WIND 45 CO	46.656	0.000	0.000	0.000	14.871	0	0.000	0
D19	DIA	SAE	3X3X0.25	36.0	52.69	17.23	g439XY	8.041	WIND 45 CO	46.656	0.000	0.000	0.000	14.340	0	0.000	0
D20	DIA	SAE	3X3X0.25	36.0	48.59	16.64	g452Y	7.763	WIND 45 CO	46.656	0.000	0.000	0.000	13.827	0	0.000	0
D21	DIA	SAE	3X3X0.25	36.0	43.44	15.61	g473XY	7.282	WIND 45 CO	46.656	0.000	0.000	0.000	13.334	0	0.000	0
D22	DIA	SAE	3X3X0.25	36.0	40.14	14.87	g489XY	6.935	WIND 45 CO	46.656	0.000	0.000	0.000	12.864	0	0.000	0
D23	DIA	SAU	2.5X2X0.25	36.0	27.12	11.78	g507XY	4.046	WIND 0 COM	34.344	0.000	0.000	0.000	9.047	0	0.000	0
D24	DIA	SAU	2.5X2X0.25	36.0	25.88	11.51	g519XY	3.953	WIND 0 COM	34.344	0.000	0.000	0.000	8.745	0	0.000	0
D25	DIA	SAU	2.5X2X0.25	36.0	25.03	11.61	g536Y	3.987	WIND 0 COM	34.344	0.000	0.000	0.000	8.462	0	0.000	0

D26	DIA	SAU	2.5X2X0.25	36.0	23.84	11.52	g548Y	3.956	WIND	0	COM	34.344	0.000	0.000	0.000	8.198	0	0.000	0
D27	DIA	SAU	2.5X2X0.25	36.0	21.17	9.04	g564Y	3.103	WIND	0	COM	34.344	0.000	0.000	0.000	7.939	0	0.000	0
D28	DIA	SAU	2.5X2X0.25	36.0	14.05	6.76	g590XY	2.322	WIND	0	COM	34.344	0.000	0.000	0.000	7.810	0	0.000	0
D29	DIA	SAU	2.5X2X0.25	36.0	11.73	6.05	g598XY	2.076	WIND	0	COM	34.344	0.000	0.000	0.000	7.810	0	0.000	0
D30	DIA	SAU	2.5X2X0.25	36.0	11.11	4.60	g606XY	1.579	WIND	0	COM	34.344	0.000	0.000	0.000	7.810	0	0.000	0
H1	HOR	DAL	3X2.5X0.25	36.0	58.73	19.06	g13P	16.238	WIND	0	COM	85.212	0.000	0.000	0.000	12.883	0	0.000	0
H2	HOR	DAE	2.5X2.5X0.25	36.0	85.77	19.69	g38P	15.187	WIND	0	COM	77.112	0.000	0.000	0.000	12.427	0	0.000	0
H3	HOR	DAE	2.5X2.5X0.25	36.0	77.10	19.69	g63P	15.185	WIND	0	COM	77.112	0.000	0.000	0.000	11.971	0	0.000	0
H4	HOR	DAE	2.5X2.5X0.25	36.0	72.17	18.71	g88P	14.431	WIND	0	COM	77.112	0.000	0.000	0.000	11.516	0	0.000	0
H5	HOR	DAE	2.5X2.5X0.25	36.0	64.41	18.57	g113X	14.319	WIND	0	COM	77.112	0.000	0.000	0.000	11.060	0	0.000	0
H6	HOR	DAE	2.5X2.5X0.25	36.0	59.27	17.56	g138X	13.543	WIND	0	COM	77.112	0.000	0.000	0.000	10.604	0	0.000	0
H7	HOR	DAE	2.5X2.5X0.25	36.0	52.60	17.24	g163X	13.296	WIND	0	COM	77.112	0.000	0.000	0.000	10.148	0	0.000	0
H8	HOR	DAE	2.5X2.5X0.25	36.0	47.23	16.09	g188X	12.406	WIND	0	COM	77.112	0.000	0.000	0.000	9.693	0	0.000	0
H9	HOR	DAE	2.5X2.5X0.25	36.0	40.86	15.49	g213X	11.944	WIND	0	COM	77.112	0.000	0.000	0.000	9.237	0	0.000	0
H10	HOR	DAE	2.5X2.5X0.25	36.0	36.59	14.51	g238X	11.187	WIND	0	COM	77.112	0.000	0.000	0.000	8.781	0	0.000	0
H11	HOR	DAE	2.5X2.5X0.25	36.0	32.00	14.02	g263X	10.807	WIND	0	COM	77.112	0.000	0.000	0.000	8.326	0	0.000	0
H12	HOR	DAE	2.5X2.5X0.25	36.0	28.56	13.04	g288X	10.058	WIND	0	COM	77.112	0.000	0.000	0.000	7.870	0	0.000	0
H13	HOR	DAE	2.5X2.5X0.25	36.0	24.54	12.44	g313X	9.593	WIND	0	COM	77.112	0.000	0.000	0.000	7.414	0	0.000	0
H14	HOR	DAE	2.5X2.5X0.25	36.0	21.55	11.60	g338P	8.942	WIND	0	COM	77.112	0.000	0.000	0.000	6.958	0	0.000	0
H15	HOR	DAE	2.5X2.5X0.25	36.0	17.32	10.33	g363P	7.966	WIND	0	COM	77.112	0.000	0.000	0.000	6.503	0	0.000	0
H16	HOR	DAE	2.5X2.5X0.25	36.0	15.20	9.94	g384X	7.661	WIND	45	CO	77.112	0.000	0.000	0.000	6.047	0	0.000	0
H17	HOR	SAE	2.5X2.5X0.25	36.0	45.18	14.45	g409P	5.571	WIND	0	COM	38.556	0.000	0.000	0.000	11.364	0	0.000	0
H18	HOR	SAE	2.5X2.5X0.25	36.0	25.92	12.41	g425P	4.784	WIND	0	COM	38.556	0.000	0.000	0.000	10.636	0	0.000	0
H19	HOR	SAE	2.5X2.5X0.25	36.0	33.37	13.70	g443P	5.283	WIND	0	COM	38.556	0.000	0.000	0.000	9.906	0	0.000	0
H20	HOR	SAE	2.5X2.5X0.25	36.0	20.37	12.03	g459P	4.639	WIND	0	COM	38.556	0.000	0.000	0.000	9.178	0	0.000	0
H21	HOR	SAE	2.5X2.5X0.25	36.0	22.42	12.25	g477P	4.724	WIND	0	COM	38.556	0.000	0.000	0.000	8.448	0	0.000	0
H22	HOR	SAE	2.5X2.5X0.25	36.0	7.66	5.17	g493P	1.994	WIND	0	COM	38.556	0.000	0.000	0.000	7.720	0	0.000	0
H23	HOR	SAE	2.5X2.5X0.25	36.0	0.00	0.00		0.000				0.000	0.000	0.000	0.000	0.000	0	0.000	0
H24	HOR	SAU	2.5X2X0.25	36.0	2.64	1.62	g552P	0.558	WIND	0	COM	34.344	0.000	0.000	0.000	6.330	0	0.000	0
H25	HOR	CHN	C7 X 9.8	36.0	0.53	0.53	g568P	0.493	WIND	0	COM	92.988	0.000	0.000	0.000	6.000	0	0.000	0
H26	HOR	SAE	2.5X2.5X0.25	36.0	0.33	0.33	g614Y	0.126	WIND	0	COM	38.556	0.000	0.000	0.000	6.000	0	0.000	0
H27	HOR	CHN	C8 x 11.5	36.0	0.45	0.45	g499X	0.489	WIND	45	IC	109.512	0.000	0.000	0.000	10.918	0	0.000	0
R1	RUD	SAE	3X3X0.25	36.0	2.05	1.93	g292X	0.901	WIND	45	CO	46.656	0.000	0.000	0.000	11.130	0	0.000	0

*** End of Report

Foundation Loads from Analysis Run

MAXIMUM DOWNWARD LOAD = 569.0 K
MAXIMUM UPWARD LOAD = 493.0 K

ANCHOR BOLT CHECK
23.86 in^2 x .75 x .75 x 58 KSI = 778 K > 493.0 K O.K.

REBAR CHECK (Piers)
20.0 in^2 x (.85) 40 = 680 K > 493.0 K O.K.

UPLIFT CHECK

Concrete

18.6 x 27.0 x 3.00 x .15 = 140.9 K .....224.7 K

20.0^2 x 1.42 x .15 = 85.2 K .....85.2 K

$[4.5^2 + (4.5' \times 9.0') + 9.0^2]$ 4.5/3= 212.6 ft^3

212.6 ft^3 x .15 = 31.9 K ..... 31.9 K

341.8 K

Wt of SOIL

$[(31.62 \times 23.12) + (27' \times 18.5)]$ 4.0/2= 2461 ft^3

(2461 ft^3 - 212.6 ft^3) x .11 = 247.3 K

Soil Shear

91 ft x 3.0-ft x .25 KSF = 68.3 K

TOTAL UPLIFT CHECK

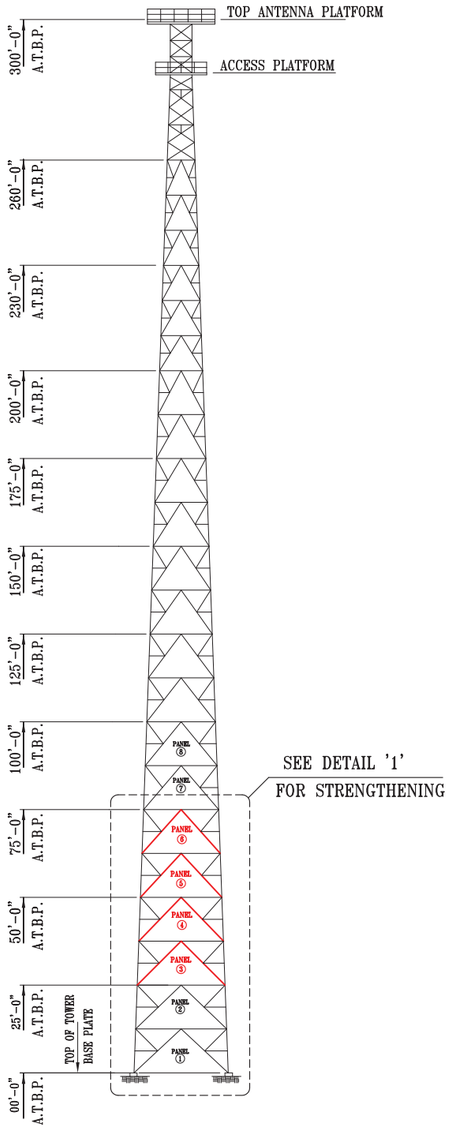
(68.3 K + 247.3) (.75) + 341.8 (.9) = 544.3 K > 493.0 K O.K.

DOWNWARD LOAD CHECK

566 + 341.8 K + 247.3 K = 1157 K

1157 / (27' x 18.5) = 2.28 KSF < 6.0 KSF Allowable O.K.

EXISTING AND PROPOSED ANTENNAS & TRANSMISSION LINES ARE NOT SHOWN ON THIS DRAWING.



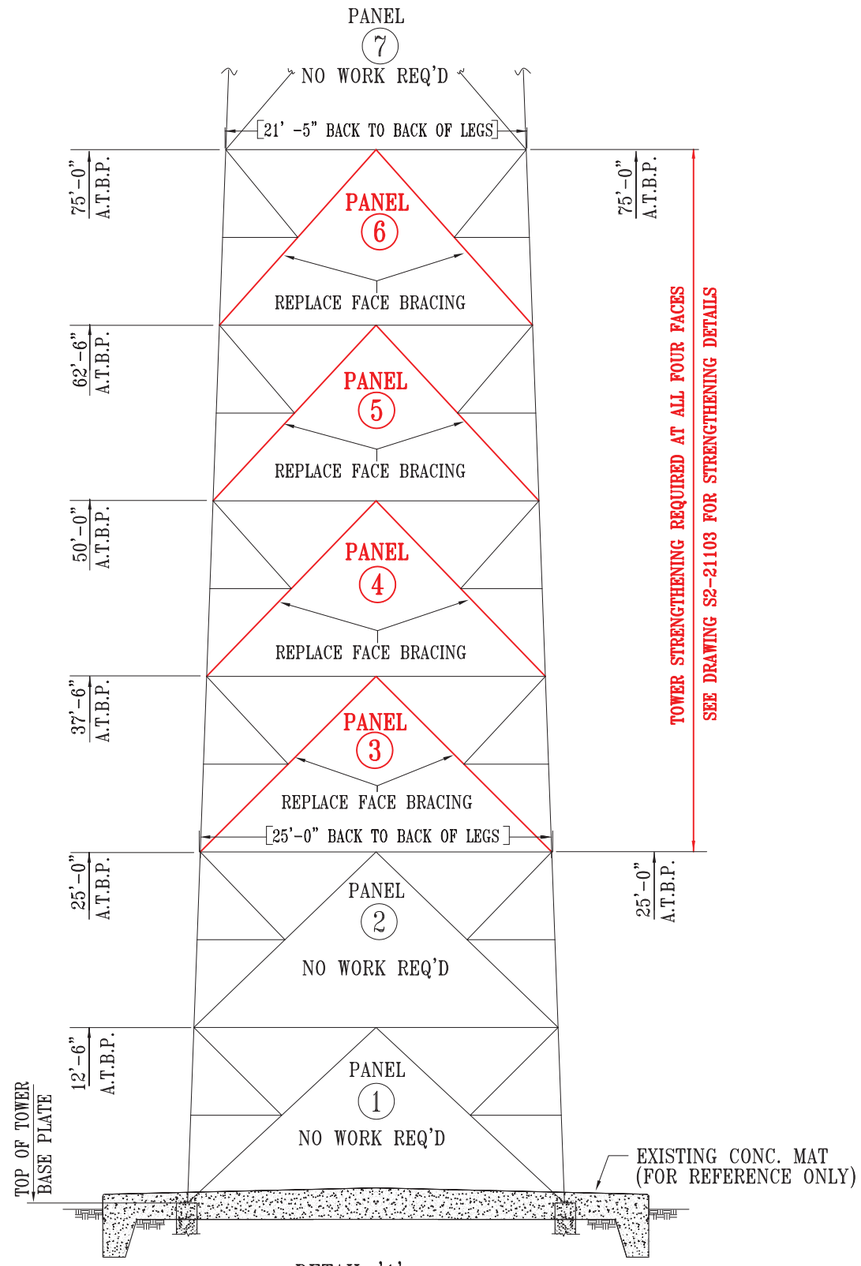
OAKDALE CT

TOWER ELEVATION – (ALL 4 FACES ALIKE)

EXISTING 300-FT TYPE "K" TOWER

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

A.T.B.P. = ABOVE TOWER BASE PLATE



DETAIL '1'

PARTIAL ELEVATION

EXISTING 300-FT TYPE "K" TOWER

SCALE: 1/4" = 1'-0"

GENERAL REQUIREMENTS

THIS DRAWING SPECFIES THE NECESSARY TOWER STRENGTHENING REQUIRED TO SUPPORT THE PROPOSED NEW ANTENNAS AND COAXIAL CABLES ON THIS TOWER IN COMPLIANCE WITH CURRENT BLDG. CODE REQUIREMENTS.

SEVERAL CUSTOMERS HAVE ACTIVE ANTENNAS AND TRANSMISSION LINES ON THIS TOWER. THE ERECTION CONTRACTOR SHALL EXERCISE DO DILIGENCE WHILE WORKING ADJACENT TO ALL EXISTING ANTENNAS & TRANSMISSION LINES.

GENERAL STEEL FABRICATION NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE "AISC STEEL CONSTRUCTION MANUAL 14TH EDITION WHICH INCLUDES THE "2010 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND "THE 2010 AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS".
2. U.N.O. ON DRAWINGS INDICATES "UNLESS NOTED OTHERWISE."
3. U.N.O. ALL STRUCTURAL STEEL SHALL CONFORM WITH ASTM A-36.
4. ALL NEW MATERIAL, INCLUDING FASTENERS, SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A-123 & A-153.
5. SHOP BOLTED ASSEMBLIES SHALL BE ASSEMBLED AFTER GALVANIZING.
6. SHOP OR FIELD WELDING IS NOT PERMITTED FOR THIS PROJECT

GENERAL ERECTION WORK NOTES

1. FIELD WORK WILL BE DONE NEAR EXISTING WAVEGUIDES AND OPERATING EQUIPMENT. ALL WORK MUST BE DONE IN SUCH A MANNER TO CAUSE NO DAMAGE TO EQUIPMENT OR INTERRUPTION OF SERVICE. ALL NEW HOLES IN EXISTING MEMBERS SHALL BE DRILLED. FIELD CUTS SHALL NOT BE BURNED. FIELD WELDING WILL NOT BE PERMITTED.
2. FIELD HOLES & CUTS SHALL BE GIVEN TWO COATS OF ZINC DUST -ZINC OXIDE PAINT (90% OR MORE OF POWDERED ZINC) WHICH CONFORMS TO FEDERAL SPECIFICATION DOD-P-21035. PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. UNLESS NOTED, FIELD DRILLING OF HOLES OR FIELD CUTTING OF NEW MATERIAL WILL NOT BE PERMITTED WITHOUT THE PERMISSION OF OWNER'S REPRESENTATIVE. ANY ERROR IN SHOP WORK WHICH PREVENTS THE PROPER ASSEMBLY, AND FITTING OF PARTS SHALL BE CORRECTED AS DIRECTED BY OWNER'S REPRESENTATIVE. THE USE OF A GAS CUTTING TORCH IN THE FIELD WILL NOT BE PERMITTED.
4. THE SELECTION OF CONSTRUCTION MEANS AND METHODS AS WELL AS SAFETY IN ON OR ABOUT THE WORK SITE ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR(S) PERFORMING THE WORK. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

TOWER STRENGTHENING DRAWING LIST

DWG. NO.	TITLE
S1-21103	OAKDALE, CT SUBCARRIER SITE #4048 TOWER STRENGTHENING
S2-21103	OAKDALE, CT SUBCARRIER SITE #4048 TOWER STRENGTHENING DETAILS

STATE OF CONNECTICUT JAMES E. BOLTZ No. 20122 3/15/21 LICENSED PROFESSIONAL ENGINEER

THIS DRAWING HAS BEEN PREPARED FOR A 30"x 42" FORMAT. DO NOT SCALE THIS DOCUMENT IF PLOTTED IN ANY OTHER FORMAT.

1	ISSUED WITH PASSING ANALYSIS	3/15/21

Communication Structures Engineering, Inc.
5579-B Chamblee Dunwoody Road/Suite 517/
Dunwoody, Georgia 30338
(770) 951-8080

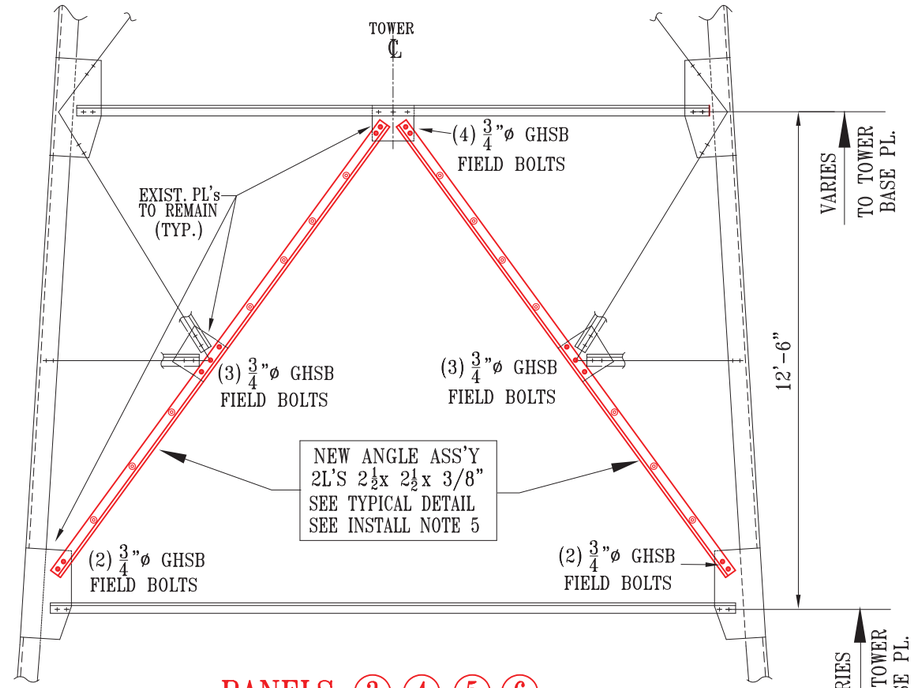
Designed by: J. E. BOLTZ
Drawn by: A. K. PADMAN
Checked by: J. E. BOLTZ

OAKDALE, CT
SUBCARRIER COMMUNICATIONS SITE #4048
401 CHAPEL HILL ROAD, OAKDALE, CT

TOWER STRENGTHENING FOR T-MOBILE ANTENNA ADDITIONS

Date: MARCH 2021
Project No: 21-103
Scale: AS NOTED
Drawing No: S1-21103

TYPICAL FIELD INSTALLATION OF TOWER STRENGTHENING



PANELS ③ ④ ⑤ ⑥

TYPICAL PANEL STRENGTHENING

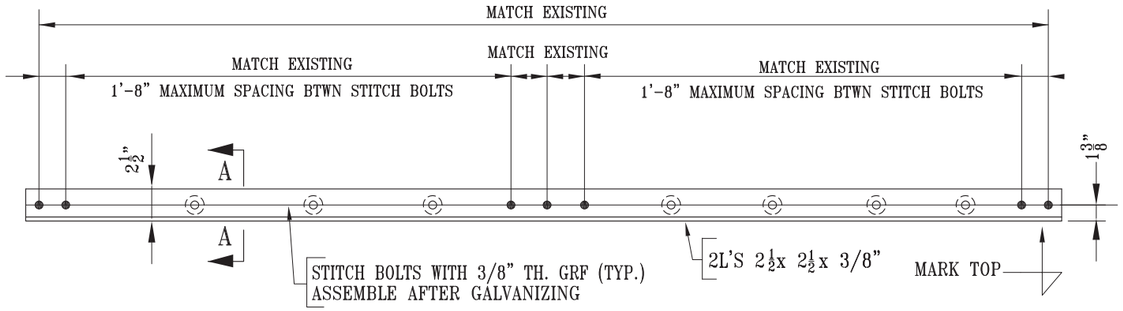
ALL (4) FACES AS SHOWN

NOT TO SCALE

FIELD NOTES FOR INSTALLATION OF TOWER STRENGTHENING

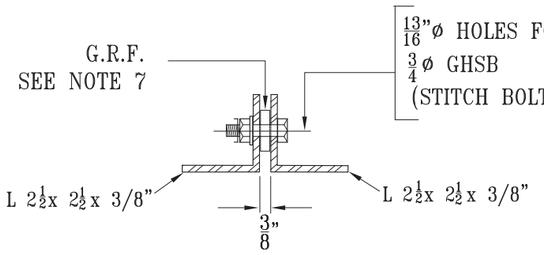
1. SEE OVERALL TOWER ELEVATION DWG. S1-21103 FOR SPECIFIC LOCATION OF THIS REQUIRED TOWER STRENGTHENING AND FOR ADDITIONAL ERECTION INFORMATION.
2. ALL NEW BOLTS TO BE 3/4" DIA. GALV. A325 (GHSB) W/HEX NUTS, WASHERS AND PALNUTS.
3. FIELD DRILLED HOLES (IF NEEDED) TO BE 13/16" DIA. HOLES FOR 3/4" GHSB'S. FIELD GALVANIZE (ZINC PAINT) ALL FIELD DRILLED HOLES PER GENERAL NOTES.
4. ALL NEW FIELD BOLTS TO BE 3/4"ø GALV. A325 (GHSB) W/HEX NUTS, WASHERS & PALNUTS. HEX NUTS, WASHERS AND PALNUTS.
5. REPLACE EXISTING ANGLE ASSEMBLYS ONE AT A TIME WITH NEW ASSEMBLYS SHOWN. NO BRACES SHOULD BE LEFT OUT OVERNIGHT. REPLACE ALL BOLTS ATTACHING NEW ANGLE ASS'YS TO EXIST. GUSSET PLATES WITH 3/4" G.H.S.B. (GALV. A325) BOLTS.

TYPICAL SHOP OR FIELD FABRICATION OF TOWER STRENGTHENING



TYPICAL REPLACEMENT BRACING

NOT TO SCALE



SECTION A-A

SHOP NOTES

1. EDGE DISTANCE = 1 1/4" UNLESS NOTED OTHERWISE.
2. HOLES = 13/16" DIA. UNLESS NOTED OTHERWISE.
3. GHSB = GALVANIZED A325 HIGH STRENGTH BOLT WITH HEAVY HEX NUT , HARDENED WASHER AND PALNUT.
4. MATERIAL = ASTM A36 UNLESS NOTED OTHERWISE.
5. FINISH = HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.
6. SHOP OR FIELD WELDING IS NOT PERMITTED FOR THIS PROJECT.
7. GRF = GALV. RING FILL. RING FILLS TO BE HOT DIP GALVANIZED 1-1/2" O.D. X 3/8" THICK PL WITH HOLE SIZE 1/16" LARGER THAN BOLT SIZE INDICATED. (ALTERNATELY FILLS MAY BE A PL 2 x 2 x 3/8")

STEEL FABRICATION AND GALVANIZING

A TOTAL OF (32) NEW DOUBLE ANGLE TOWER BRACES ARE NEEDED. THESE NEW BRACES CAN EITHER BE SHOP PRE-FABRICATED AND GALVANIZED, OR IF PERMITTED BY THE OWNER, FIELD MEASURED AND FIELD FABRICATED ON-SITE FROM NEW HOT DIP GALVANIZED PLAIN STOCK. IF FIELD FABRICATED, ALL FIELD HOLES & CUTS MUST BE PROPERLY COLD-GALVANIZED ON SITE PER THE GENERAL FABRICATION NOTES.

CSEI HAS THE ORIGINAL TOWER FABRICATION DRAWINGS FOR THIS TOWER IN OUR ARCHIVES. IF DESIRED CSEI CAN PROVIDE A QUOTATION FOR ANY OF THE FOLLOWING ITEMS TO ASSIST THE CONTRACTOR.

- NEW PRE-FABRICATED BRACING REPLACEMENT MEMBERS THAT ARE FABRICATED, GALVANIZED AND ASSEMBLED TO FIT THIS TOWER.
- NEW SHOP DRAWINGS & MATERIAL SCHEDULES FOR NEW BRACING REPLACEMENTS THAT CAN THEN BE FABRICATED AND SUPPLIED BY THE CONTRACTOR.
- COPIES OF THE ORIGINAL TOWER SHOP DRAWINGS TO BE USED BY THE CONTRACTOR TO PRODUCE THEIR OWN SHOP DRAWINGS & PRE-FABRICATED REPLACEMENT BRACES.

⚠	ISSUED WITH PASSING ANALYSIS	03/15/21

Communication Structures Engineering, Inc.
5579-B Chamblee Dunwoody Rd.; Suite 517
Dunwoody, Georgia 30080
(770) 951-8060

Designed by: J. E. BOLTZ
Drawn by: A. K. PADMAN
Checked by: J. E. BOLTZ

OAKDALE, CT
SUBCARRIER COMMUNICATIONS SITE #4048
401 CHAPEL HILL ROAD, OAKDALE, CT
TOWER STRENGTHENING DETAILS
T-MOBILE ANTENNA ADDITIONS

Date: MARCH 2021
Project No: 21-103
Drawing No: S2-21103

Exhibit E

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Date: **November 20, 2020**

Mount Modification Analysis Report

Tower Owner:	Subcarrier Communication Inc.
Carrier:	T-Mobile
Site ID:	CTNL814C
Site Name:	CTNL814C
Site Data:	401 Chapel Hill Rd, Oakdale, New London County, CT 06370 Latitude *41° 28' 07.67"*, Longitude *-72° 12' 12.04"* 6 ft Sector Frame Mount
Tectonic Project Number:	10473.CTNL814C

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this **"Mount Modification Analysis Report"** to determine the structural integrity of the above mentioned mount.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Sector Frame: **Sufficient Capacity – 77%**

***The structure has sufficient capacity once the changes, described in the Results / Conclusions section of this report, are completed.**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second gust wind speed of 105 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Structure Class II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with this analysis for the determined available structural capacity to be effective.

We at Tectonic appreciate the opportunity of providing our continuing professional services to you and T-Mobile. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: John-Fritz Julien / Ian Marinaccio

Respectfully submitted by:
Tectonic Engineering & Surveying Consultants P.C.

Edward N. Iamiceli, P.E.
Managing Director - Structural

Project Contact Info

1279 Route 300 | Newburgh, NY 12550
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tectonicengineering.com
Equal Opportunity Employer

TABLE OF CONTENTS

1) INTRODUCTION

The existing sector frame mount cannot accommodate the T-Mobile load configurations, therefore we are proposing to add a sector frame stabilizer kit and to relocate the existing stiffarm to an appropriate location as detailed in the report below.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-G
Structure Class: II
Wind Speed: 105 mph
Exposure Category: B
Topographic Factor: 1.0
Ice Thickness: 0.75 in
Wind Speed with Ice: 50 mph
Service Wind Speed: 60 mph

Table 1 - Proposed Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Proposed Mount Type	Note
180.0	T-Mobile	3	ericsson	AIR 6449 B41	(3) VFA-6-RRU w/ VSK-TV	1
		3	rfs	APXVAALL24_43-U-NA20		
		3	ericsson	AIR 32 B66A B2A		
		3	ericsson	RADIO 4449 B71 + B85		
		3	ericsson	RRUS 4415 B25		

Note:
1) Proposed equipment to be installed on the existing sector frame mount.

Table 2 - Existing Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Existing Mount Type	Note
180.0	T-Mobile	3	rfs	APX16DWV-16DWV-S-E-A20	(3) VFA-6-RRU	1
		3	andrew	LNX-6515DS-A1M		
		3	ericsson	RRUS11 B2		
		3	ericsson	RRUS11 B4		
		3	ericsson	RRUS11 B12		

Note:
1) Existing equipment to be removed, not considered in analysis

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Dated
ASSEMBLY DRAWINGS (VFA-6-RRU)	SitePro1	02/26/15
CONSTRUCTION DRAWINGS	All-Points Technology	11/02/16
STABILIZER KIT DRAWINGS	SitePro1	08/01/19
RFDS	T-Mobile	10/14/20
FIELD NOTES	Tectonic	10/22/20
MOUNT ANALYSIS REPORT	Tectonic	11/20/20

3.1) Analysis Method

A tool internally developed, using Microsoft Excel, was used to calculate wind loading on all appurtenances and mount members. This information was then used in conjunction with another program, RISA-3D, which is a commercially available analysis software package, used to check the supporting building framing and calculate member stresses for various loading cases. The selected output from the analysis is included in Appendices B and C.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Tables 1 and 2.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Tectonic should be notified to determine the effect on the structural integrity of the mount.

4) ANALYSIS RESULTS

Table 4 - Mount Component Stresses vs. Capacity (Sector Mount)

Notes	Component	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	180.0	52	Pass
	Sector Horizontal		22	Pass
	Mount Pipe		70	Pass
	Sector Brace		77	Pass
	Stabilizer kit		6	Pass
	Stiffarm Pipe		13	Pass

Structure Rating (max from all components) =	77%

Note:
1) See additional documentation in "Appendix C - Analysis Output" for calculations supporting the % capacity consumed.

4.1) Results / Conclusions

The existing sector frame mount will have sufficient capacity to carry the proposed T-Mobile load configurations once the following proposed modifications have been satisfied as detailed in the report below:

1) Add a sector frame stabilizer kit (Sitepro1 P/N: VSK-TV) to each mount.
2) Relocate the existing stiffarm pipe to the face of the existing sector frame mount. The stiffarm may be replaced with a longer pipe as required (Sitepro1 P/N: STK-U).

This structural modification analysis only includes evaluation of the antenna sector mounts and not the self-support tower. The self-support tower is to be analyzed under a separate structural analysis by others.

Contractor shall field verify existing conditions and recommendations as noted on the construction drawings and notify the design engineer of any discrepancies prior to construction. Any further changes to the antenna and/or appurtenance configuration should be reviewed with respect to their effect on structural loads prior to implementation.

APPENDIX A

SOFTWARE INPUT CALCULATIONS

Tectonic	Job No.	10473.CTNL814C - Rev 1		
	Sheet No.	1	of	3
	Calculated By	JJ	Date :	11/20/2020
	Checked By	IM	Date :	11/20/2020

WIND AND ICE LOADS PER TIA-222-G

W.O.	10473.CTNL814C - Rev 1
Project Name	CTNL814C
Location	401 Chapel Hill Rd, Oakdale, CT 06370
County	New London

Tower Type	SST	Self-Supporting (lattice)
Structure Class	2	Substantial hazard
Exposure Category	B	Suburban/wooded/obstructed
Topo Category	1	Flat or rolling terrain
Height of crest	0	ft

Basic Wind Speed (3-sec gust):		
Without ice	105	mph*
With ice	50	mph
Service	60	mph
Ice thickness	0.75	in

Importance Factor	
Wind only	1.00
Wind with ice	1.00
Ice thickness	1.00
Supporting Data:	
K_e	0.90
K_t	N/A
f	N/A
z_g	1200
α	7
$K_{z,min}$	0.7
K_d	0.95
G_h	1.00

Height	z (ft)**	180
	Kh	N/A
	Kzt	1.00
	Kz	1.17
	Kiz	1.18
Wind Pressure, qz (psf)	No Ice	31.34
	With Ice	7.11
	Service	10.23
(tiz)	Ice Thk	1.78
Appurtenances (qzGh)	No Ice	31.34
	With Ice	7.11
	Service	10.23

*Ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second wind gust speed of 105 mph per Section 1609.3 and Appendix N, as required for use in the TIA-222-G Standard.

Job No.	10473.CTNL814C - Rev 1		
Sheet No.	2	of	3
Calculated By	JJ	Date :	11/20/20
Checked By	IM	Date :	11/20/20

Appurtenance Information

Effective Projected Area for Appurtenance $(EPA)_A=Max((EPA)_N,(EPA)_T)$

$(EPA)_T=\sum(C_aA_A)_T$ | | $(EPA)_N=\sum(C_aA_A)_N$

Reduction Factor = 1

Wind Only Load Combinations

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(Aa)_T$ (ft^2)	Wind ward Side Face (CaAa)T (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Antenna Weight (lb)	Total Weight (lb)
AIR 6449 B41	P	3	180	2.76	20.50	8.30	Flat	1.27	1.20	1.91	7.25	4.71	16.96	177	76	103.0	309.0
RRUS 4415 B25	P	3	180	1.24	13.20	5.40	Flat	1.21	1.20	0.56	2.03	1.37	4.92	51	21	46.3	138.9
RADIO 4449 B71 + B85	P	3	180	1.25	13.19	10.51	Flat	1.20	1.20	1.09	3.93	1.37	4.93	52	41	75.0	224.9
APXVAALL24_43-U-NA20	P	3	180	7.99	24.00	8.50	Flat	1.54	1.27	5.66	26.20	15.98	60.73	634	274	149.9	449.7
AIR-32 B2A/B66A	P	3	180	4.72	12.90	8.70	Flat	1.38	1.28	3.42	14.14	5.07	19.53	204	148	132.2	396.6
										$\sum(CaA_A)_T$	53.54	$\sum(CaA_A)_N$	107.07				1519

Note: Appurtenances listed above are to be installed along three (3) sector mounts.

Wind with Ice Load Combinations **Ice Thk=** 1.78 in

Antenna Configuration	(E), (R) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(A_a)_T$ (ft^2)	Windward Side Face (CaAa)T (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward Face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Ice Area for Weight (ft^2)	Ice Weight Alone (lbs)
AIR 6449 B41	P	3.00	180.00	3.05	24.05	11.85	Cylindrical	1.23	1.20	3.02	11.10	6.12	22.04	52	26	13.2	109.8
RRUS 4415 B25	P	3.00	180.00	1.54	16.75	8.95	Cylindrical	1.20	1.20	1.15	4.13	2.15	7.73	18	10	3.8	31.9
RADIO 4449 B71 + B85	P	3.00	180.00	1.54	16.74	14.06	Cylindrical	1.20	1.20	1.81	6.51	2.15	7.75	18	15	4.9	40.8
APXVAALL24_43-U-NA20	P	3.00	180.00	8.29	27.55	12.05	Cylindrical	1.44	1.25	8.33	36.01	19.03	71.33	169	85	43.3	359.0
AIR-32 B2A/B66A	P	3.00	180.00	5.01	16.45	12.25	Cylindrical	1.31	1.25	5.12	20.07	6.87	25.80	61	48	17.0	140.8
										$\sum(CaA_A)_T$	77.82	$\sum(CaA_A)_N$	134.65				682

Job No.	10473.CTNL814C - Rev 1				
Sheet No.	3	of	3		
Calculated By	JJ	Date :	11/20/20		
Checked By	IM	Date :	11/20/20		

Modified Sector Mount

Mount Center Line=	180 ft

Member sizes and lengths are based on the assembly drawing by SitePro1 VFA-6-RRU

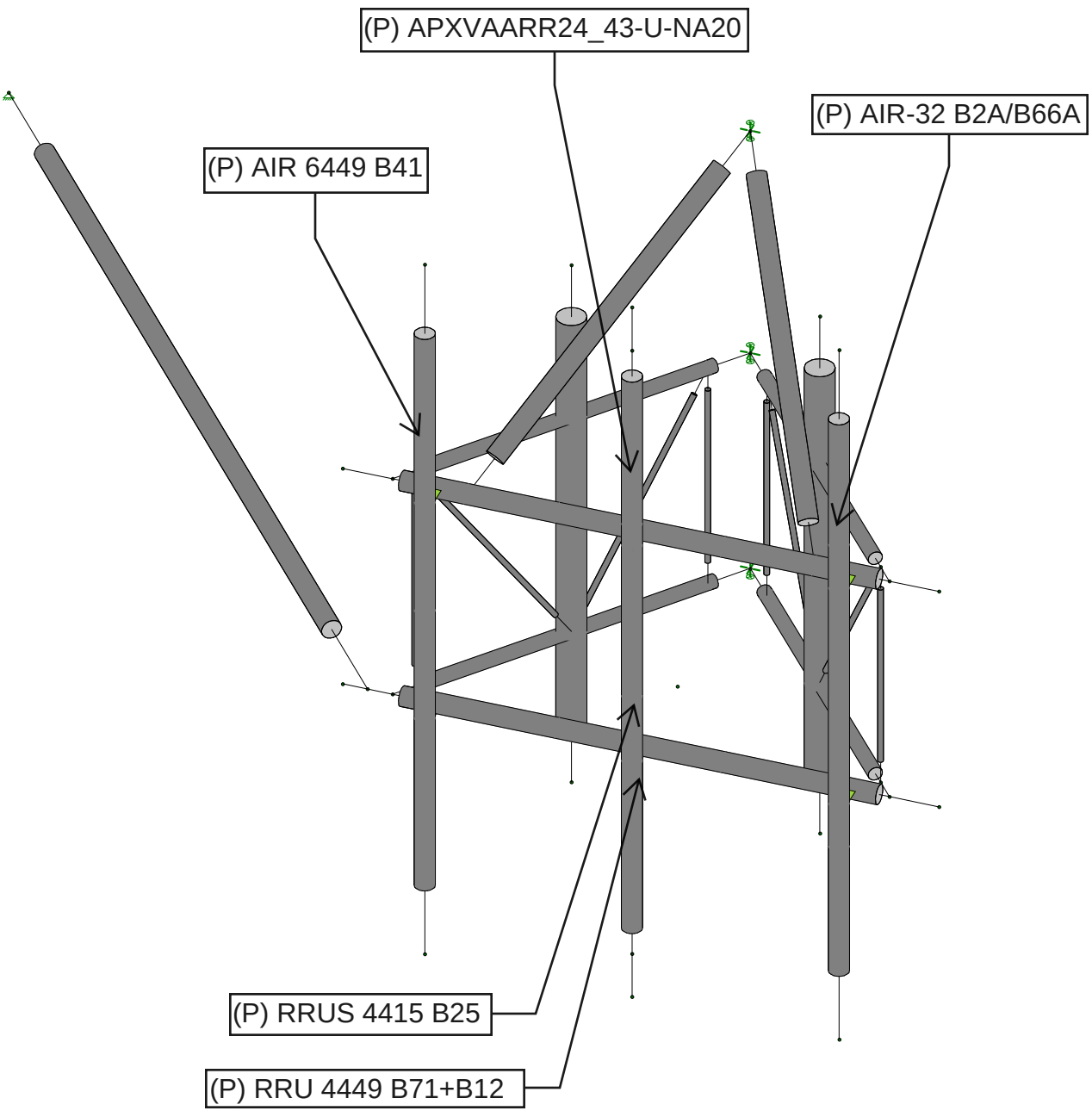
Reduction Factor = 1

Mount Part	Quantity	Length (ft)	Projected Width (in)	Depth (in)	Flat or Cylindrical?	Drag Factor	Projected Area (ft^2)	Wind Force (lbs/ft)	Ice Weight Area (ft^2)	Ice Weight (lbs/ft)	Projected Area with Ice (ft^2)	Wind Force Ice (lbs/ft)	Service Wind Force (lbs/ft)
Face Horizontal_2.0" STD Pipe	2	10.50	2.38	2.38	Cylindrical	1.2	5.00	7.5	13.08	5.2	12.46	4.2	2.4
Sector Horizontal_1.25" STD Pipe	4	3.50	1.66	1.66	Cylindrical	1.2	2.32	5.2	6.08	3.6	7.30	3.7	1.7
Sector Vertical_5/8" SR	4	2.50	0.63	0.63	Cylindrical	1.2	0.63	2.0	1.64	1.4	4.18	3.0	0.6
Sector Diagonal_5/8" SR	4	2.50	0.63	0.63	Cylindrical	1.2	0.63	2.0	1.64	1.4	4.18	3.0	0.6
Mount Pipe_2.0" STD	4	8.00	2.38	2.38	Cylindrical	1.2	7.60	7.4	19.89	5.2	18.97	4.2	2.4
Vertical Pipe_HSS3.5x1/8	2	6.00	3.50	3.50	Cylindrical	1.2	4.20	11.0	10.99	7.6	8.47	5.0	3.6
(P) Sector Frame Stabilizer Kits	1	4.00	2.38	2.38	Cylindrical	1.2	0.95	7.5	2.49	5.2	2.37	4.2	2.4
Stiffarm_2.0" STD Pipe	1	10.50	2.38	2.38	Cylindrical	1.2	2.49	7.4	6.53	5.2	6.23	4.2	2.4

* Proposed

APPENDIX B

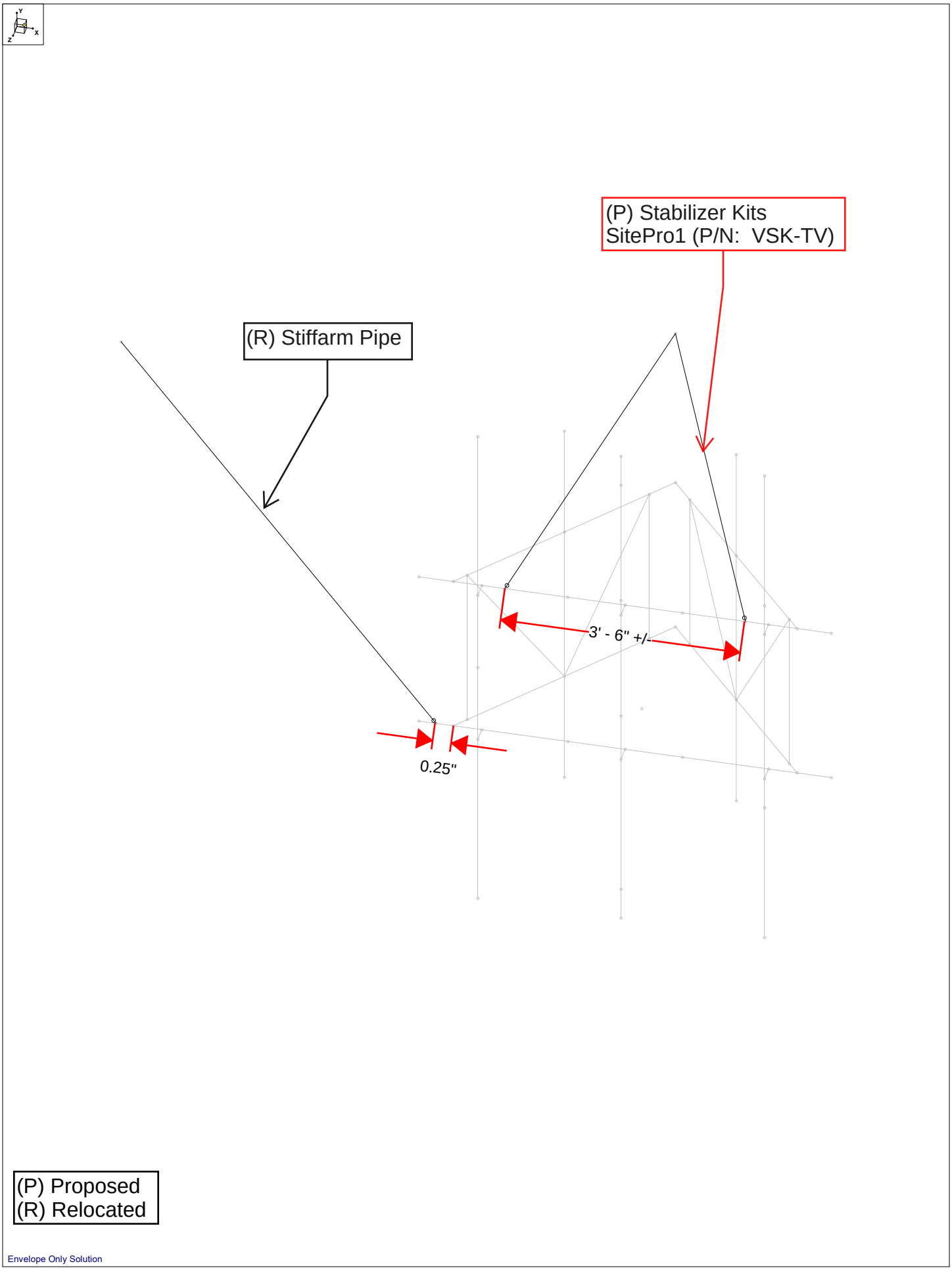
WIRE FRAME AND RENDERED MODELS



NOTES:
1)EXISTING AND PROPOSED ANTENNAS AND MOUNTING PIPES HAVE BEEN VERTICALLY CENTERED ALONG THE EXISTING MOUNT (NO OFFSET).
2) LISTED APPURTENANCES ABOVE ARE TYPICAL FOR ALL SECTORS.
3) RADIOS ARE LOCATED BEHIND THE ANTENNAS.

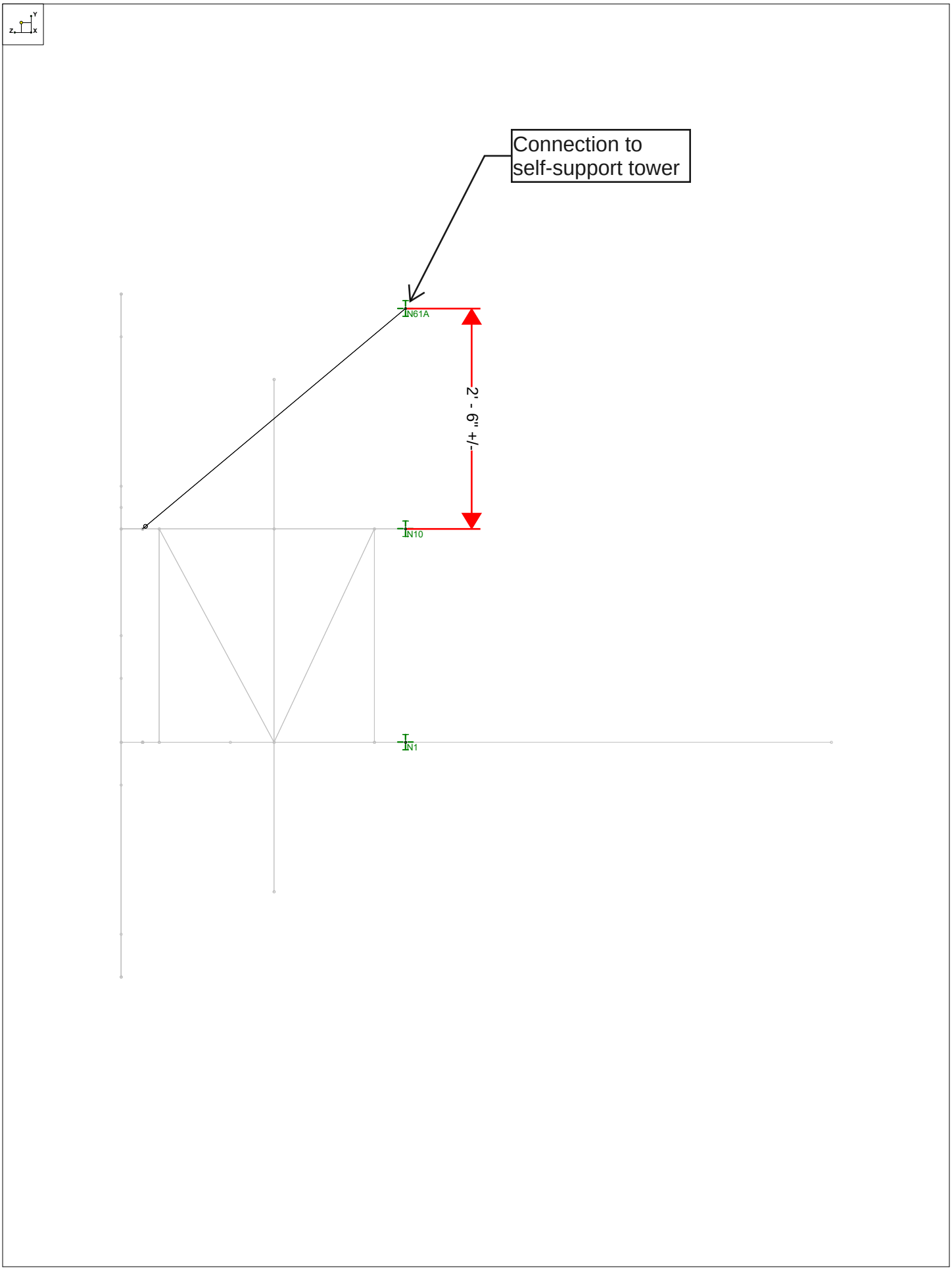
(P) PROPOSED

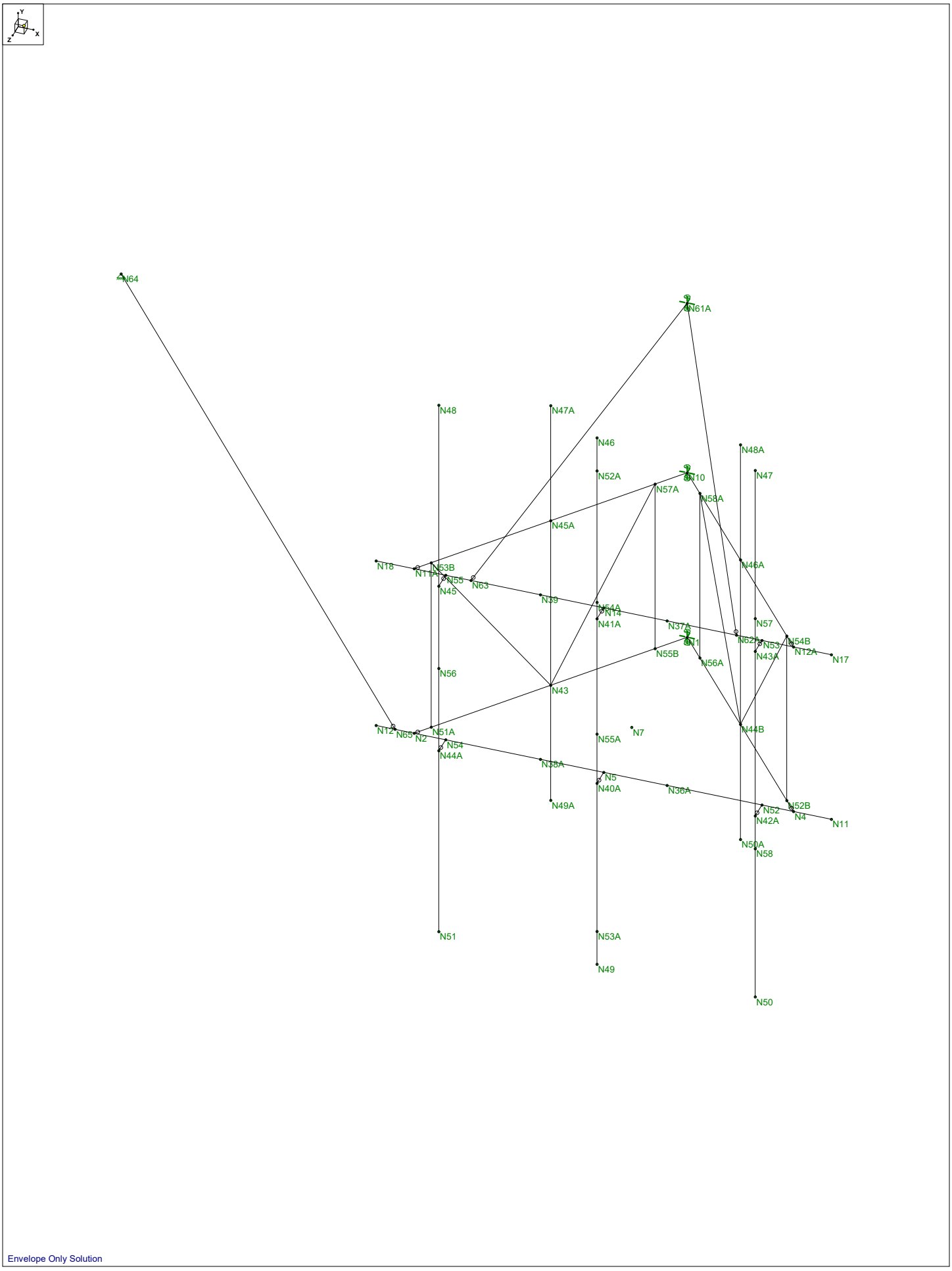
Envelope Only Solution



(P) Proposed
(R) Relocated

Envelope Only Solution


Connection to
self-support tower
N61A
2' - 6" +/-
N10
N1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X
Z
N64
N61A
N48
N47A
N46
N48A
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N47
N57A
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N46A
N18
N53B
N55
N63
N45
N39
N54A
N14
N41A
N37A
N57
N62A
N53
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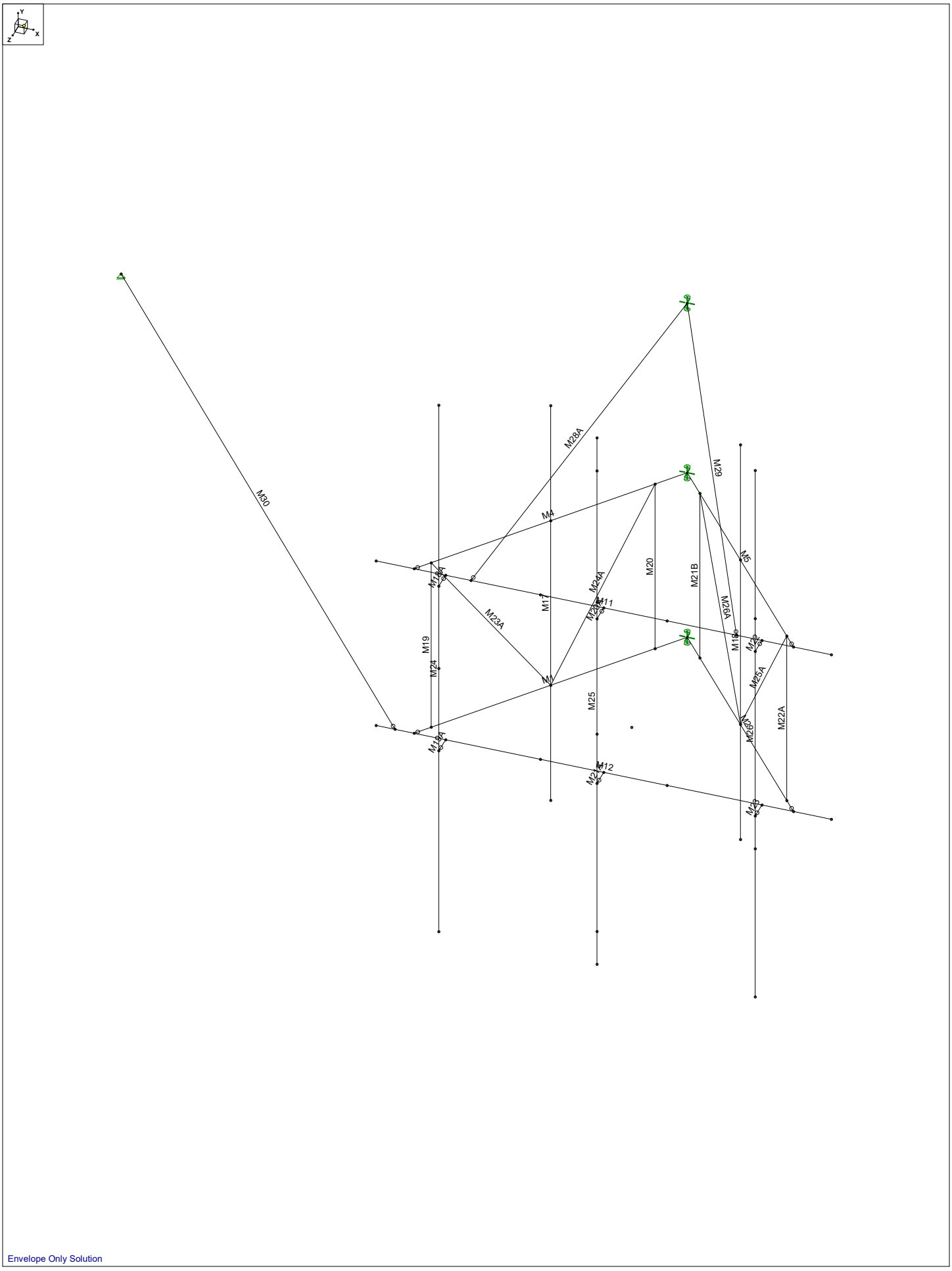
N53A
N49
N50
Envelope Only Solution



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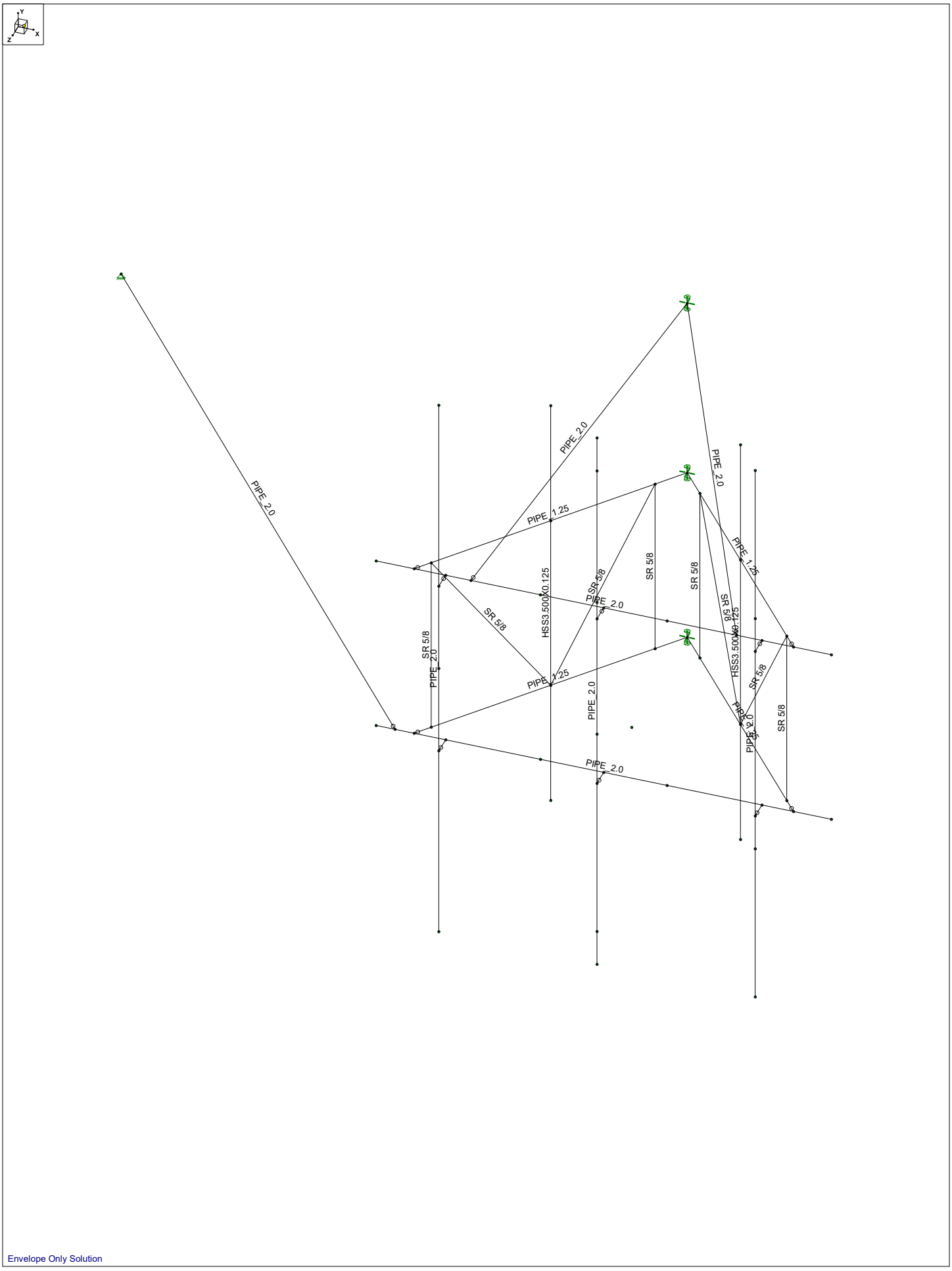

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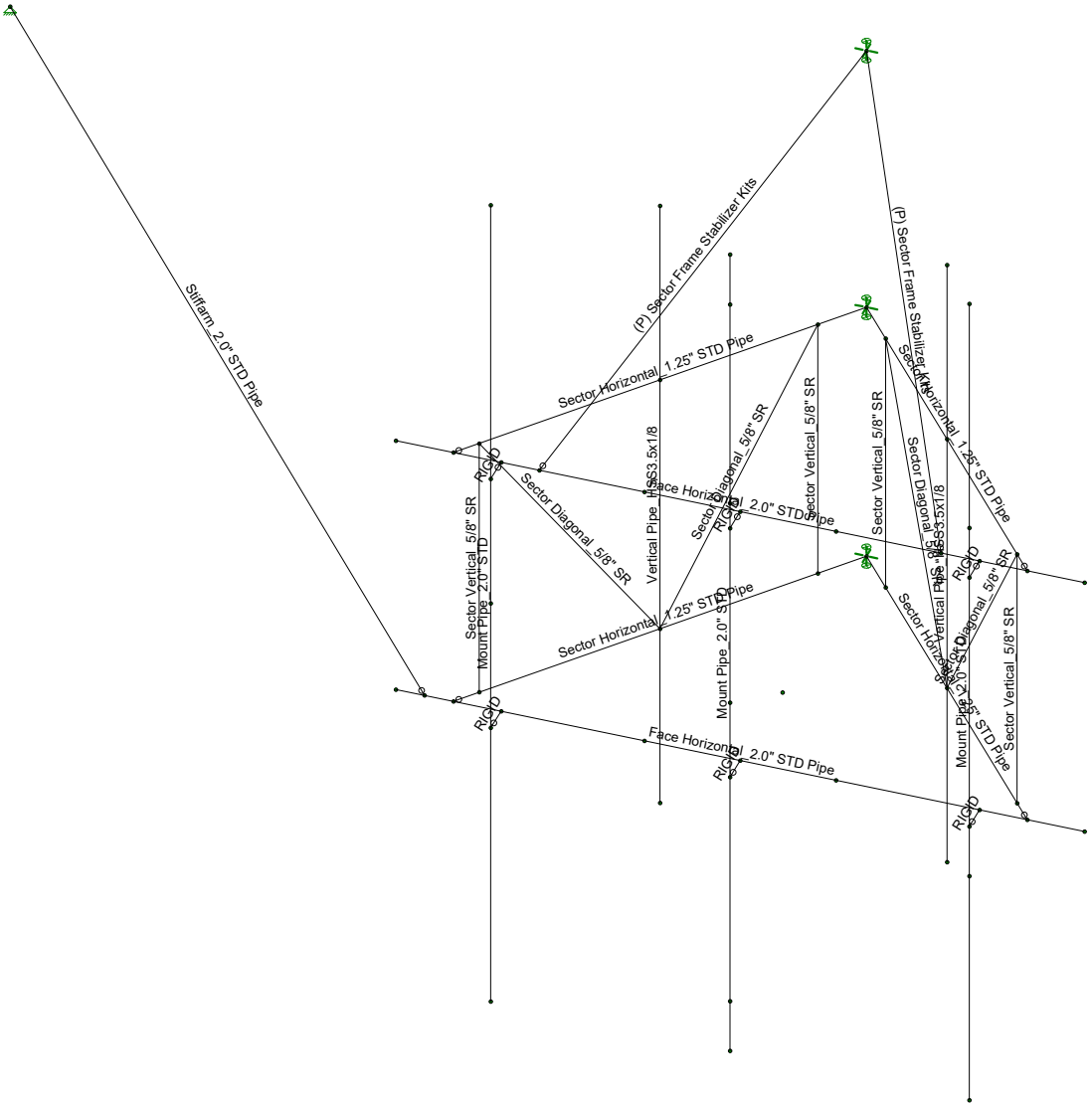

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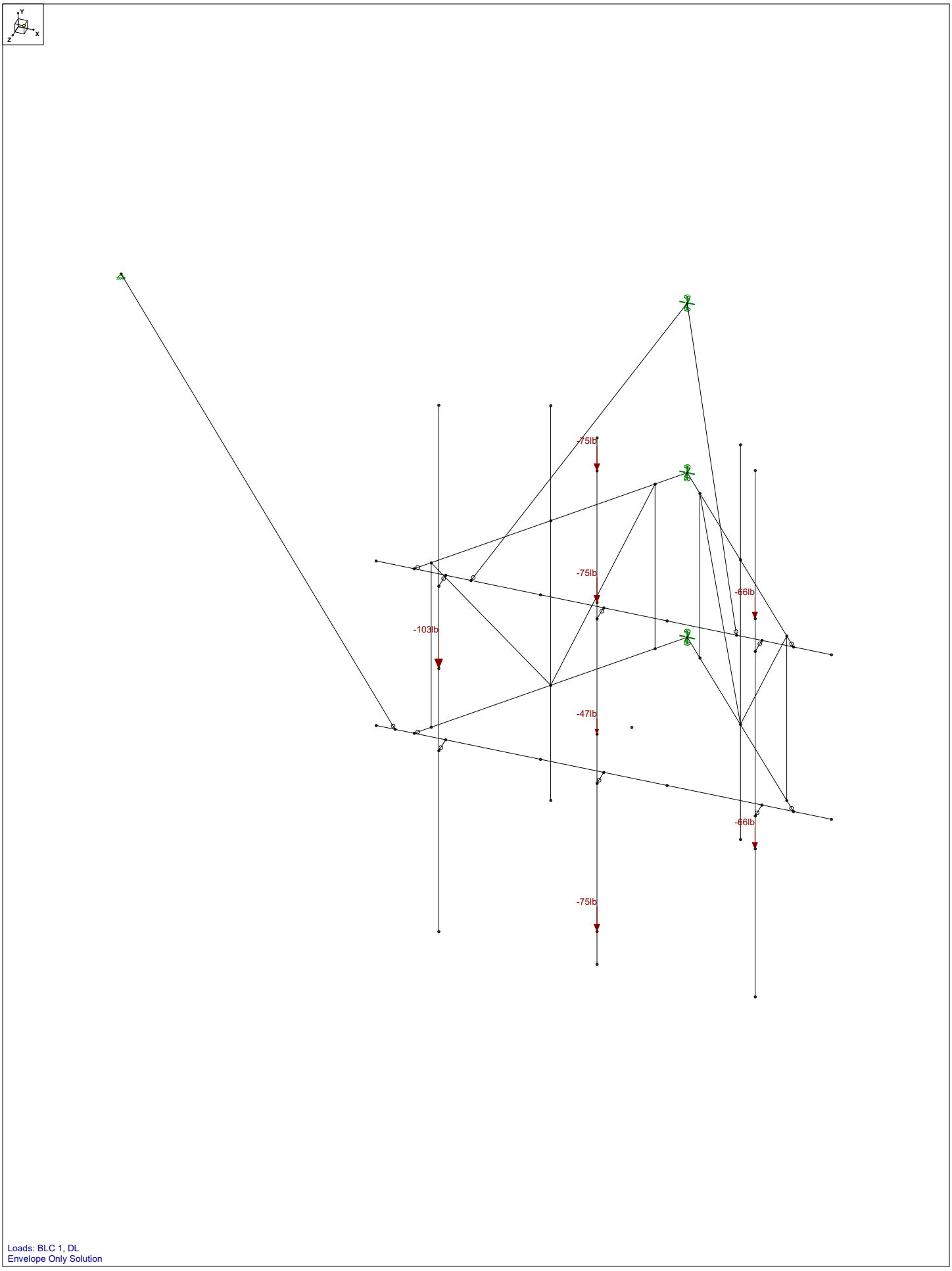
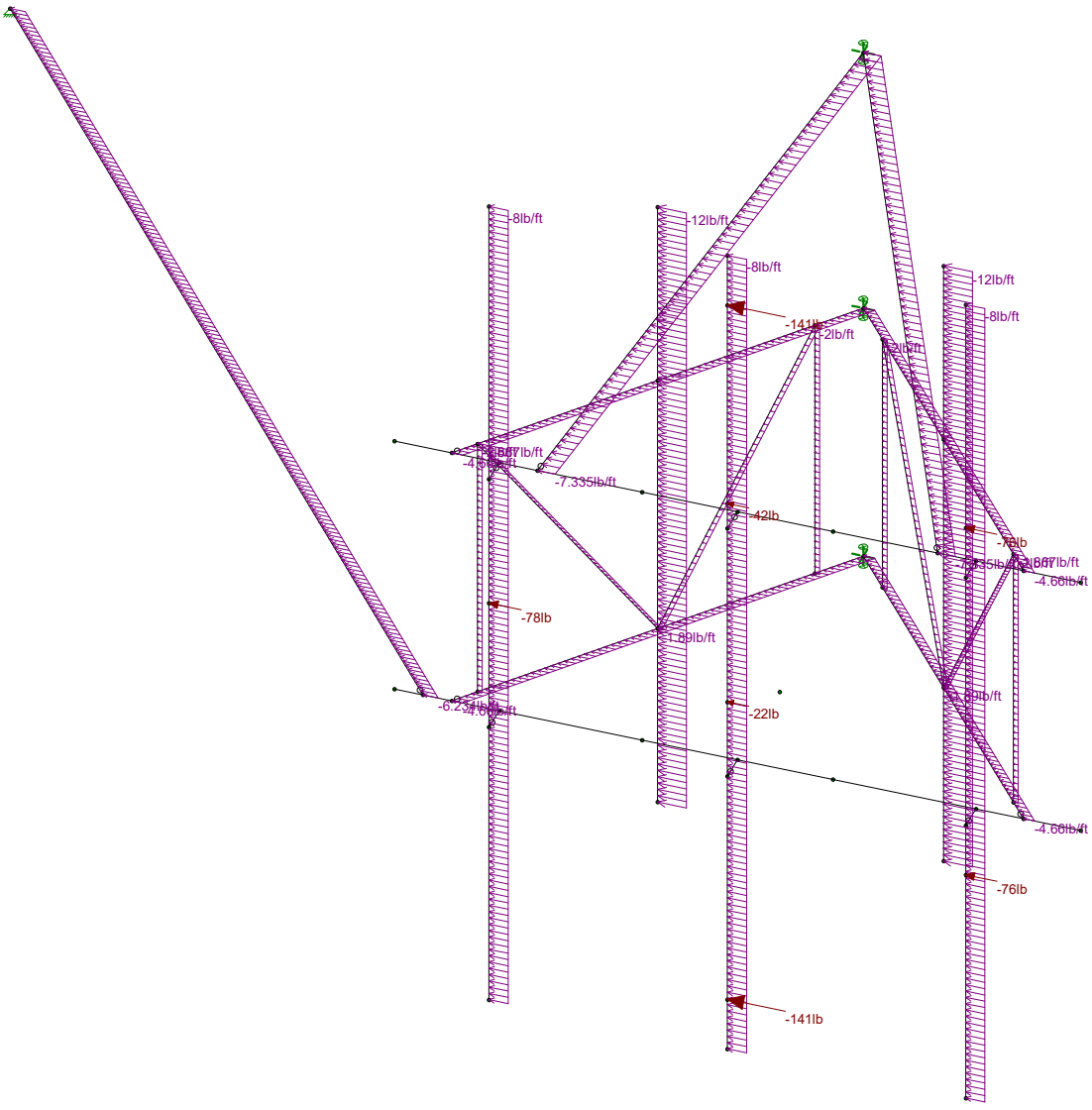
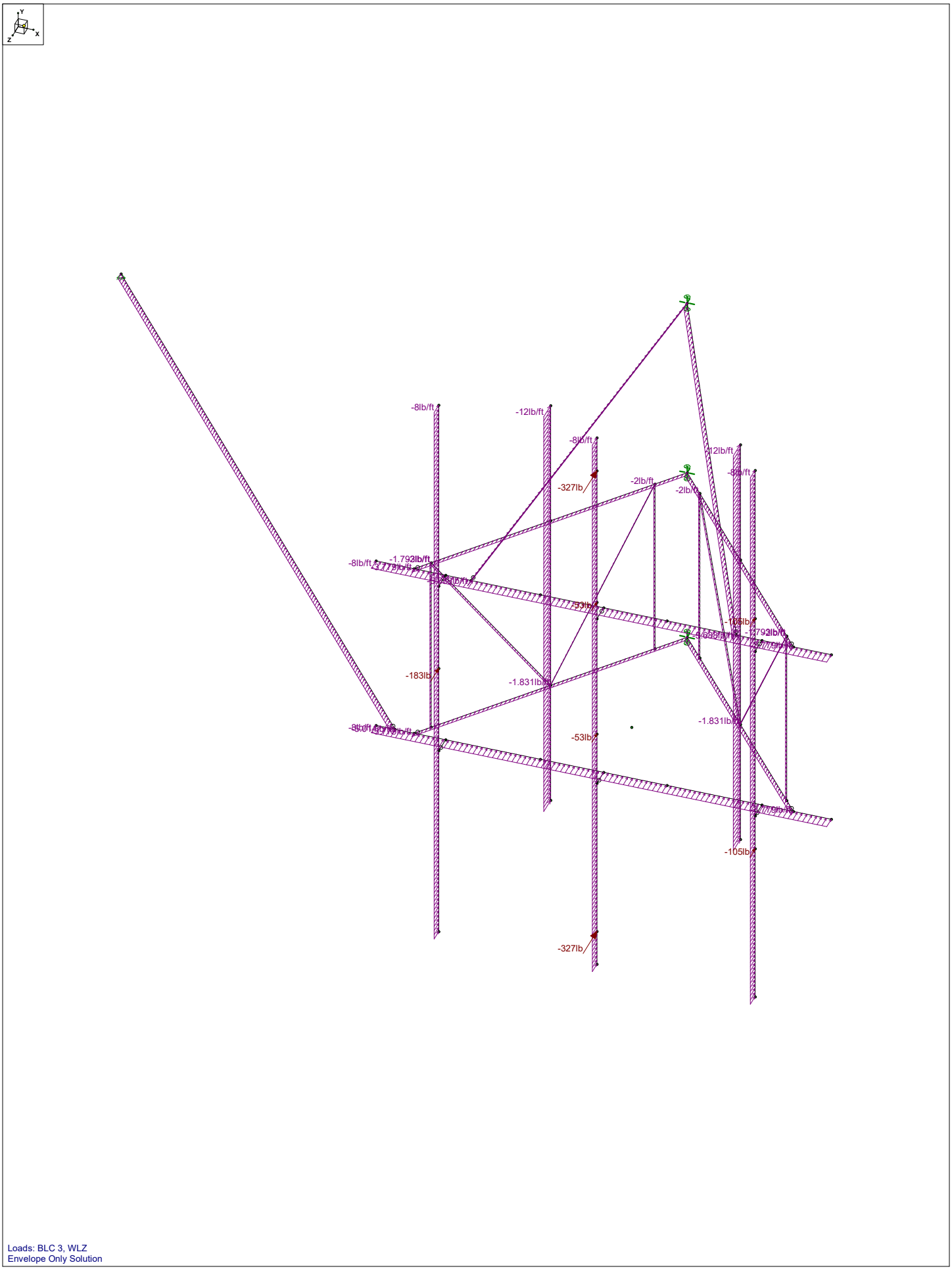


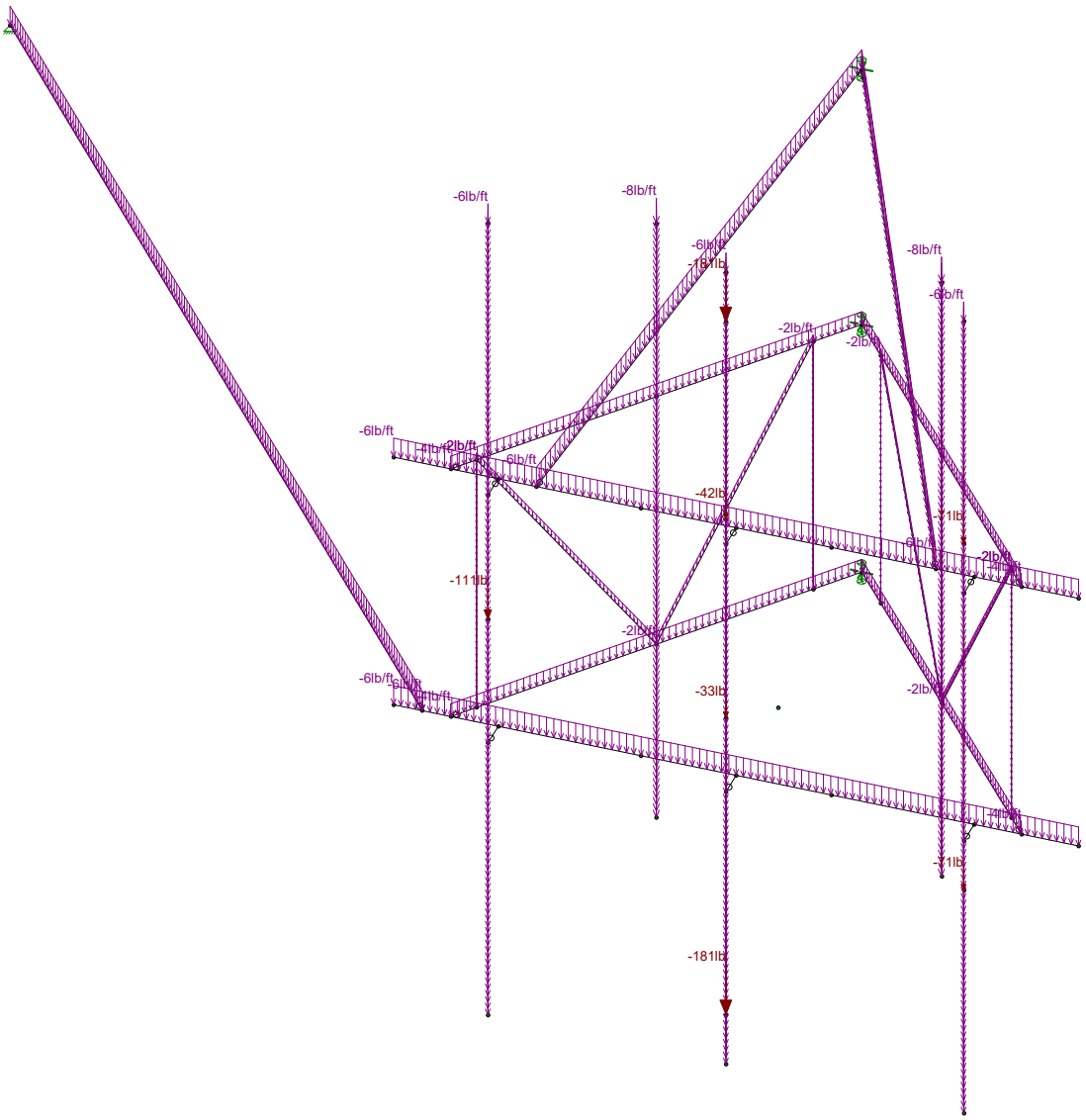
Loads: BLC 1, DL
Envelope Only Solution



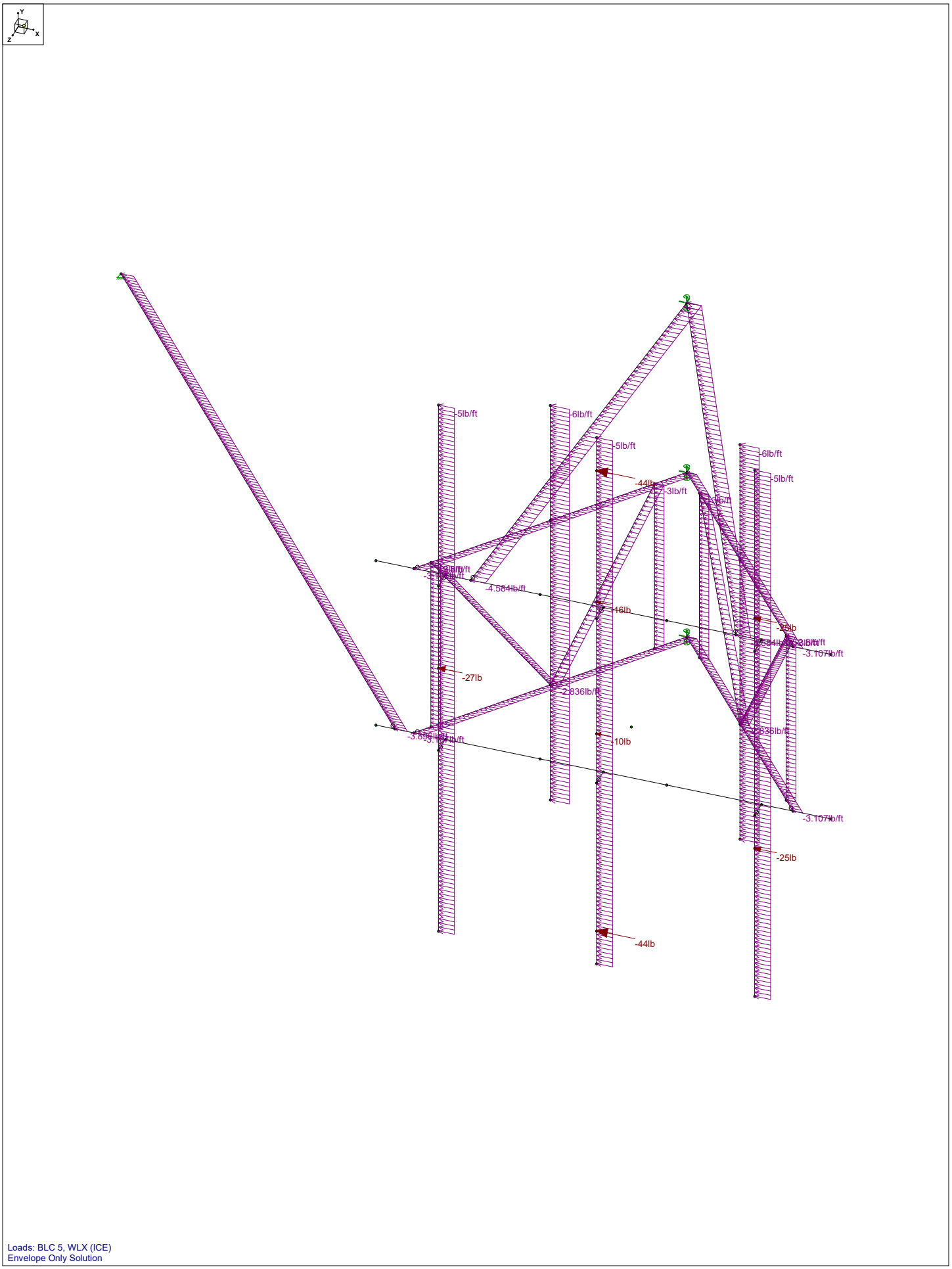
Loads: BLC 2, WLX
Envelope Only Solution



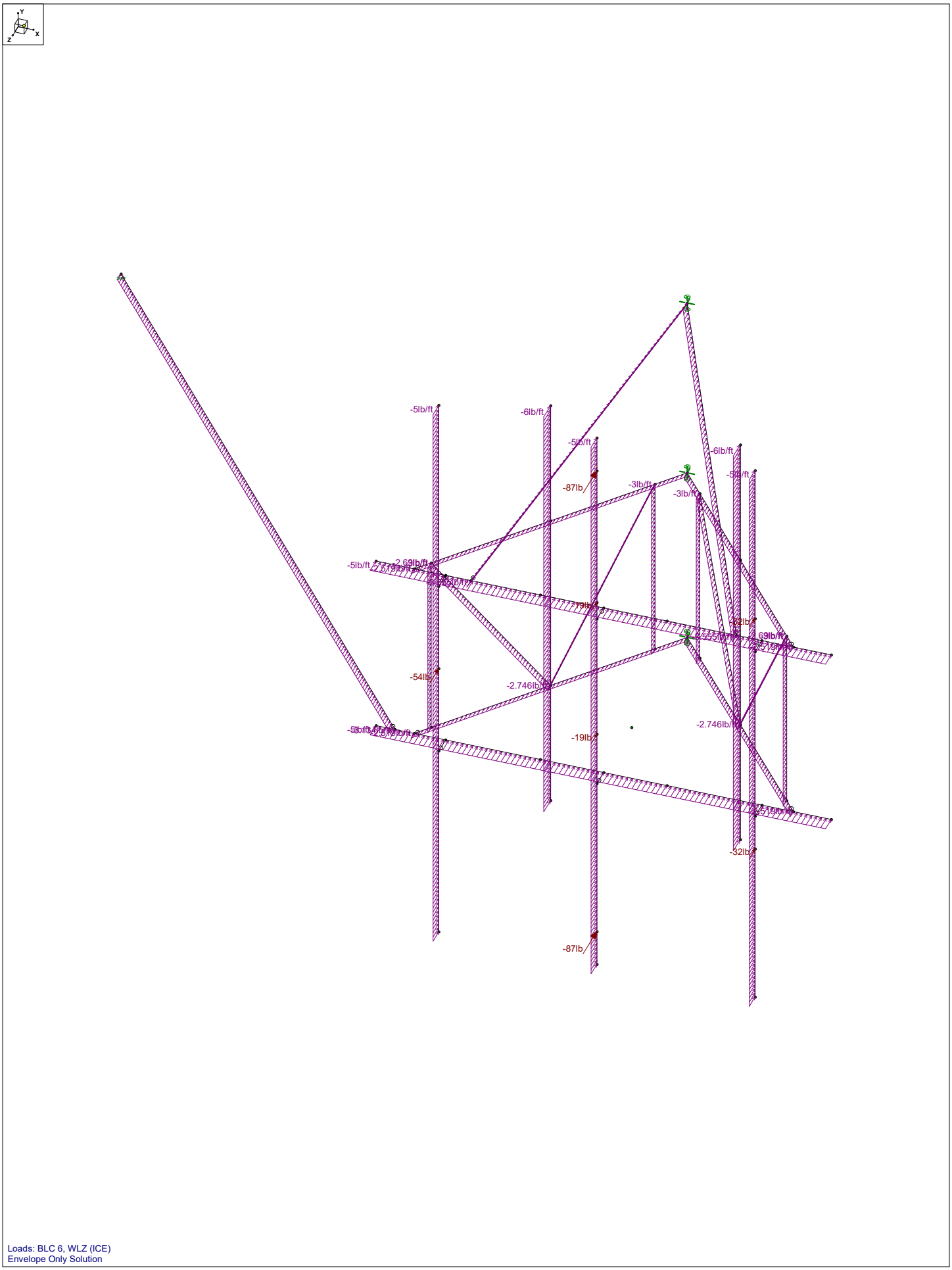
Loads: BLC 3, WLZ
Envelope Only Solution



Loads: BLC 4, DL (ICE)
Envelope Only Solution



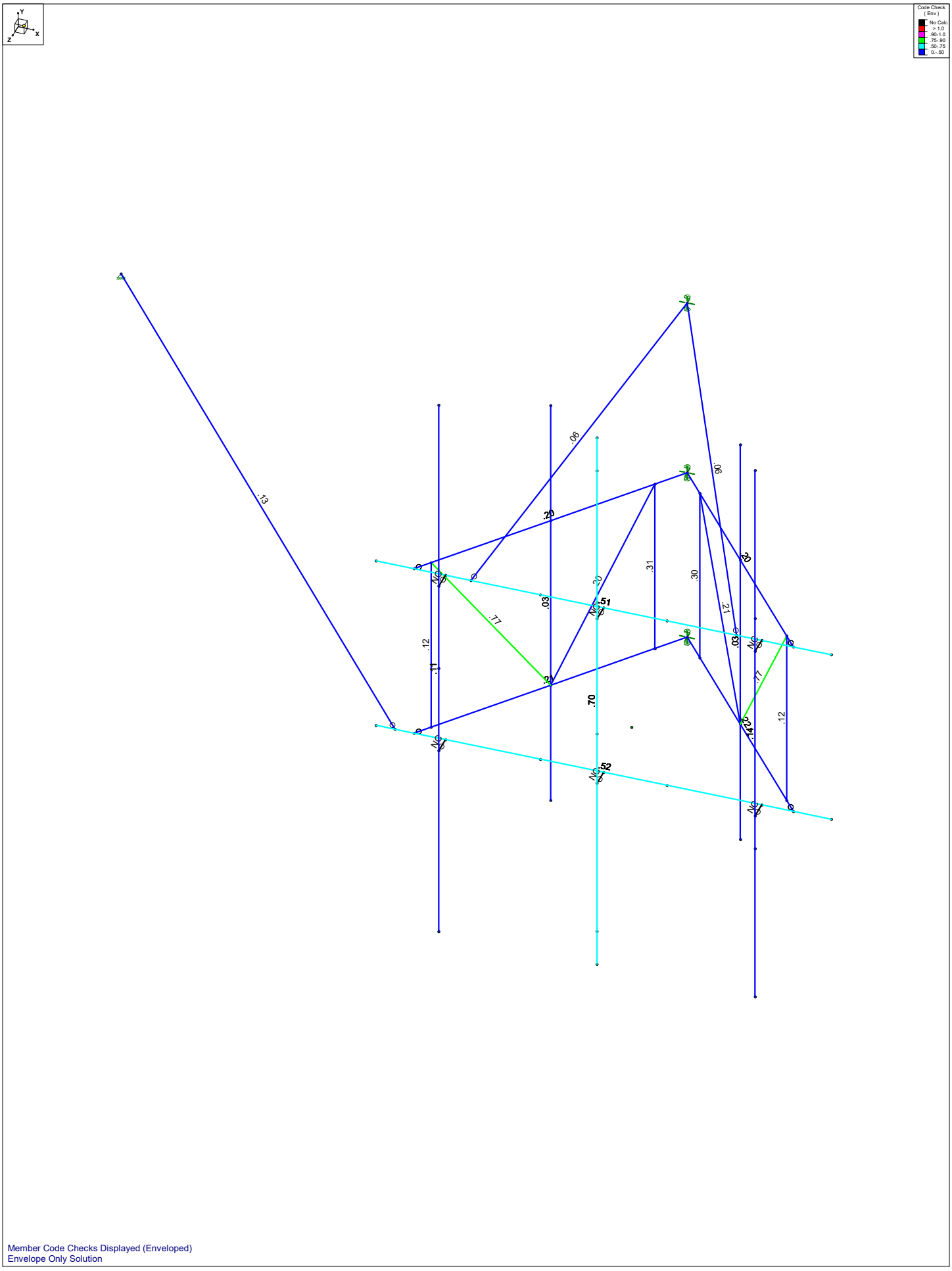
Loads: BLC 5, WLX (ICE)
Envelope Only Solution



Loads: BLC 6, WLZ (ICE)
Envelope Only Solution

APPENDIX C

SOFTWARE ANALYSIS OUTPUT


Code Check
(Env)
No Calc
> 1.0
.90-1.0
.75-.90
.50-.75
0-.50
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Sector Horizontal_1.25" STD ...	PIPE_1.25	None	None	A53 Gr.B	Typical	.625	.184	.184	.368
2	Face Horizontal_2.0" STD Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Sector Vertical_5/8" SR	SR 5/8	None	None	A36 Gr.36	Typical	.307	.007	.007	.015
4	Sector Diagonal_5/8" SR	SR 5/8	None	None	A36 Gr.36	Typical	.307	.007	.007	.015
5	Vertical Pipe_HSS3.5x1/8	HSS3.500...	None	None	A500 Gr.B RND	Typical	1.23	1.77	1.77	3.53
6	Mount Pipe_2.0" STD	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Stiffarm_2.0" STD Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	(P) Sector Frame Stabilizer Kits	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D+1.6(WLX+WLZ) - 0 Deg	Yes	Y		1	1.2	2	1.6																
3	1.2D+1.6(WLX+WLZ) - 30 Deg	Yes	Y		1	1.2	2	1.3...	3	.8														
4	1.2D+1.6(WLX+WLZ) - 60 Deg	Yes	Y		1	1.2	2	.8	3	1.3...														
5	1.2D+1.6(WLX+WLZ) - 90 Deg	Yes	Y		1	1.2	2		3	1.6														
6	1.2D+1.6(WLX+WLZ) - 120 Deg	Yes	Y		1	1.2	2	-.8	3	1.3...														
7	1.2D+1.6(WLX+WLZ) - 150 Deg	Yes	Y		1	1.2	2	-1....	3	.8														
8	1.2D+1.6(WLX+WLZ) - 180 Deg	Yes	Y		1	1.2	2	-1.6	3															
9	1.2D+1.6(WLX+WLZ) - 210 Deg	Yes	Y		1	1.2	2	-1....	3	-.8														
10	1.2D+1.6(WLX+WLZ) - 240 Deg	Yes	Y		1	1.2	2	-.8	3	-1....														
11	1.2D+1.6(WLX+WLZ) - 270 Deg	Yes	Y		1	1.2	2		3	-1.6														
12	1.2D+1.6(WLX+WLZ) - 300 Deg	Yes	Y		1	1.2	2	.8	3	-1....														
13	1.2D+1.6(WLX+WLZ) - 330 Deg	Yes	Y		1	1.2	2	1.3...	3	-.8														
14	**Wind Load with Ice**																							
15	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	1	6													
16	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.87	6	.5												
17	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.5	6	.87												
18	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5		6	1												
19	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.5	6	.87												
20	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.87	6	.5												
21	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-1	6													
22	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.87	6	-.5												
23	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.5	6	-.87												
24	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5		6	-1												
25	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.5	6	-.87												
26	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.87	6	-.5												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	402.516	2	632.355	18	3112.984	6	0	26	98.964	2	0	26
2		min	-400.558	8	-125.54	11	-1818.368	12	0	1	-100.306	8	0	1
3	N10	max	386.268	2	754.608	18	330.82	11	0	26	197.397	2	0	26
4		min	-378.48	8	-131.743	11	-620.339	5	0	1	-195.053	8	0	1
5	N61A	max	306.442	2	1223.58	11	477.323	5	0	26	175.635	2	0	26
6		min	-314.157	8	-364.546	5	-1474.576	11	0	1	-172.249	8	0	1
7	N64	max	756.476	2	53.779	21	876.509	2	0	26	0	26	0	26
8		min	-758.508	8	22.451	3	-878.642	8	0	1	0	1	0	1
9	Totals:	max	1851.702	2	2213.102	24	2861.503	5						
10		min	-1851.703	8	988.951	5	-2861.503	11						

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

	Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M23A	SR 5/8	.771	0	4	.013	0		5	1269.101	9940.19	103.542	103.542	2...	H1-1a
2	M25A	SR 5/8	.769	0	6	.009	3.043		4	1269.101	9940.19	103.542	103.542	2...	H1-1a
3	M25	PIPE_2.0	.696	2.75	11	.067	2.75		5	14916.0...	32130	1871.625	1871.625	2...	H1-1b
4	M12	PIPE_2.0	.516	3	5	.104	.5		2	20866.7...	32130	1871.625	1871.625	1	H1-1b
5	M11	PIPE_2.0	.510	3	4	.077	5.5		6	20866.7...	32130	1871.625	1871.625	1	H1-1b
6	M20	SR 5/8	.306	2.5	18	.009	2.5		6	1880.092	9940.19	103.542	103.542	2...	H1-1a
7	M21B	SR 5/8	.304	2.5	18	.007	2.5		4	1880.092	9940.19	103.542	103.542	2...	H1-1a
8	M2	PIPE_1.25	.218	3.514	6	.137	.248		5	16665.4...	19687.5	800.625	800.625	2...	H1-1b
9	M26A	SR 5/8	.214	0	12	.006	0		18	1374.929	9940.19	103.542	103.542	1.9	H1-1a
10	M1	PIPE_1.25	.214	3.514	5	.160	.248		5	16665.4...	19687.5	800.625	800.625	2...	H1-1b
11	M24A	SR 5/8	.197	0	10	.007	0		18	1374.929	9940.19	103.542	103.542	1...	H1-1b*
12	M4	PIPE_1.25	.196	3.514	4	.118	3.969		18	16665.4...	19687.5	800.625	800.625	2...	H1-1b
13	M5	PIPE_1.25	.196	3.514	6	.124	.248		5	16665.4...	19687.5	800.625	800.625	1...	H1-1b
14	M26	PIPE_2.0	.142	2.75	12	.021	2.75		5	14916.0...	32130	1871.625	1871.625	2...	H1-1b
15	M30	PIPE_2.0	.127	5.18	13	.006	0		26	9163.983	32130	1871.625	1871.625	1...	H1-1b
16	M19	SR 5/8	.124	2.5	4	.021	2.5		2	1880.092	9940.19	103.542	103.542	1...	H1-1b
17	M22A	SR 5/8	.120	2.5	6	.020	2.5		7	1880.092	9940.19	103.542	103.542	1...	H1-1b
18	M24	PIPE_2.0	.107	5.25	7	.021	2.75		11	14916.0...	32130	1871.625	1871.625	3...	H1-1b
19	M29	PIPE_2.0	.058	4.385	9	.047	0		4	25515.7...	32130	1871.625	1871.625	1...	H1-1b
20	M28A	PIPE_2.0	.057	4.385	2	.044	0		6	25515.7...	32130	1871.625	1871.625	1...	H1-1b
21	M17	HSS3.500X...	.028	4.25	4	.019	1.75		7	37265.4...	46494	4189.5	4189.5	2...	H1-1b
22	M18	HSS3.500X...	.026	4.25	5	.017	1.75		2	37265.4...	46494	4189.5	4189.5	3...	H1-1b

THE MAXIMUM MEMBER STRESS IS AT 77% OF ITS CAPACITY AND IS ADEQUATE TO SUPPORT THE PROPOSED T-MOBILE UPGRADE.

SERVICE DEFLECTION = 1.22" x [(60MPH)^2/(105MPH)^2] = 0.4" < 1.6"
HENCE, OK.

BASED ON THE CURRENT REACTIONS AND STRESS RATIO'S IN THE FRAME MEMBERS, WE EXPECT THE CONNECTIONS TO BE ADEQUATE TO SUPPORT THE PROPOSED UPGRADE.

CONNECTICUT DESIGN CRITERIA - STATE

Revison:

CT is NOT a Home Rule State; Tab added only for Design Criteria

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS

Municipality	Ground Snow Load	*Wind Design Parameters*							
		MCE Spectral Accelerations (%g)		Ultimate Design Wind Speeds, V_{ult} (mph)			Nominal Design Wind Speeds, V_{asd} (mph)		
		S_s	S_1	Risk Cat.I	Risk Cat.II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV
Andover	30	0.176	0.063	120	130	140	93	101	108
Ansonia	30	0.195	0.064	115	125	135	89	97	105
Ashford	35	0.173	0.063	120	130	140	93	101	108
Avon	35	0.181	0.064	110	120	130	85	93	101
Barkhamsted	40	0.177	0.065	110	120	125	85	93	97
Beacon Falls	30	0.192	0.064	115	125	135	89	97	105
Berlin	30	0.183	0.063	115	125	135	89	97	105
Bethany	30	0.189	0.063	115	125	135	89	97	105
Bethel	30	0.215	0.066	110	120	125	85	93	97
Bethlehem	35	0.190	0.065	110	120	125	85	93	97
Bloomfield	35	0.180	0.064	115	125	130	89	97	101
Bolton	30	0.177	0.063	115	125	135	89	97	105
Bozrah	30	0.170	0.061	120	135	145	93	105	112
Branford	30	0.180	0.061	120	130	140	93	101	108
Bridgeport	30	0.209	0.064	115	125	135	89	97	105
Bridgewater	35	0.201	0.066	110	120	125	85	93	97
Bristol	35	0.185	0.064	110	120	130	85	93	101
Brookfield	35	0.208	0.066	110	120	125	85	93	97
Brooklyn	35	0.171	0.062	120	130	140	93	101	108
Burlington	35	0.182	0.064	110	120	130	85	93	101
Canaan	40	0.173	0.065	105	115	120	81	89	93
Canterbury	35	0.171	0.061	120	130	140	93	101	108
Canton	35	0.180	0.064	110	120	130	85	93	101
Chaplin	35	0.173	0.062	120	130	140	93	101	108
Cheshire	30	0.186	0.063	115	125	135	89	97	105
Chester	30	0.172	0.060	120	130	140	93	101	108
Clinton	30	0.169	0.059	120	135	140	93	105	108
Colchester	30	0.174	0.061	120	130	140	93	101	108
Colebrook	40	0.174	0.065	105	115	125	81	89	97
Columbia	30	0.175	0.062	120	130	140	93	101	108
Cornwall	40	0.180	0.065	105	115	120	81	89	93
Coventry	30	0.176	0.063	120	130	140	93	101	108
Cromwell	30	0.181	0.063	115	125	135	89	97	105
Danbury	30	0.217	0.067	110	120	125	85	93	97
Darien	30	0.242	0.068	110	120	130	85	93	101
Deep River	30	0.170	0.060	120	130	140	93	101	108
Derby	30	0.195	0.064	115	125	135	89	97	105
Durham	30	0.179	0.062	115	130	140	89	101	108
Eastford	40	0.172	0.063	120	130	140	93	101	108
East Granby	35	0.177	0.065	110	120	130	85	93	101
East Haddam	30	0.172	0.061	120	130	140	93	101	108
New London	30	0.161	0.058	125	135	145	97	105	112

Ice

Results:

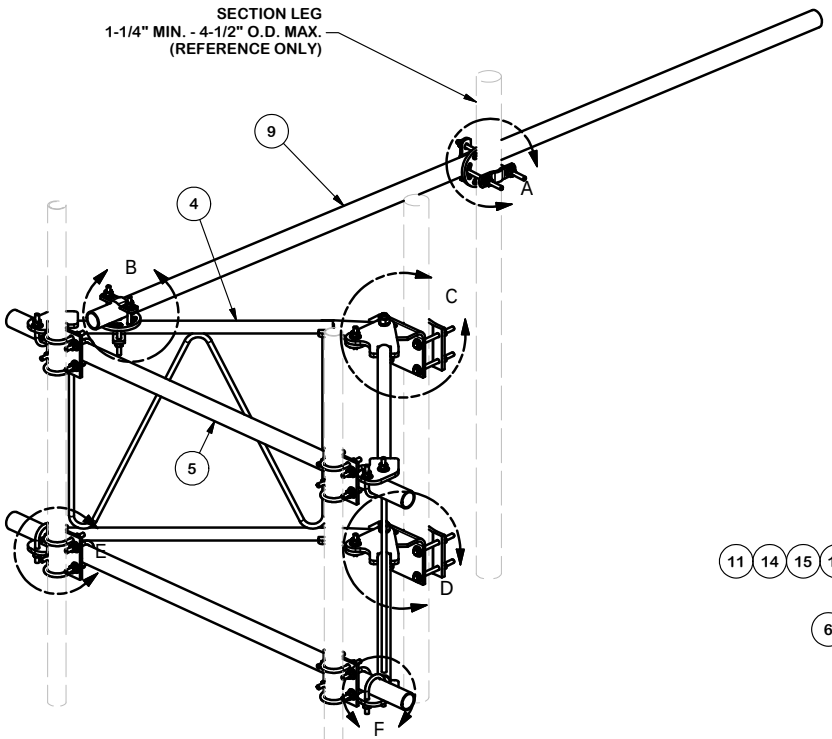
Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Nov 03 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

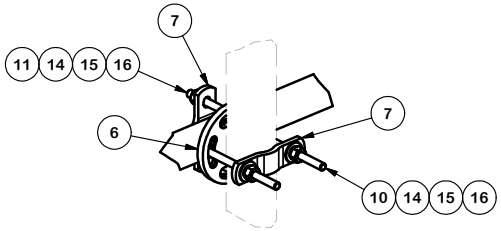
APPENDIX D

MANUFACTURER DRAWINGS

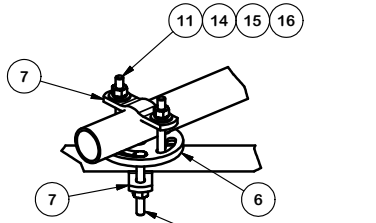


PARTS LIST

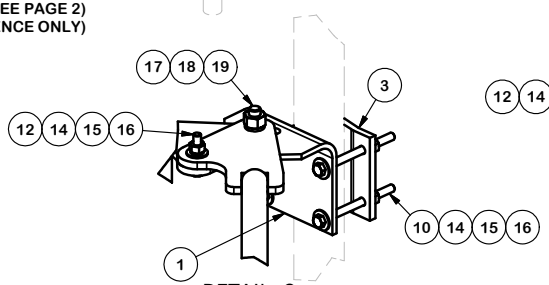
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-192043	UPPER MOUNTING BRACKET FOR V-FRAME		8.73	8.73
2	1	X-192044	LOWER MOUNTING BRACKET FOR V-FRAME		8.73	8.73
3	2	X-159999	BACKING PLATE	6 9/16	5.73	11.46
4	2	X-197544	SUPPORT ARM, BC-FRAME		43.48	86.96
5	2	P272	2-3/8" X 72" SCH 40 GALVANIZED PIPE	72"	23.07	46.13
6	2	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.48	4.97
7	4	X-100064	CLAMP (S) (4" V-CLAMP) GALVANIZED		0.91	3.65
8	4	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6	3.71	14.83
9	1	P2126	2-3/8" OD X 126" SCH 40 GALVANIZED PIPE	126"	40.75	40.75
10	10	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD		0.41	4.09
11	6	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD		0.27	1.62
12	2	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5		0.20	0.41
13	20	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" GALV. U-BOLT		0.66	13.13
14	60	G12FW	1/2" HDG USS FLATWASHER	0.095	0.03	2.04
15	58	G12LW	1/2" HDG LOCKWASHER	.125	0.01	0.81
16	58	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.15
17	2	A34234	3/4"-10 X 2-3/4" A325 BOLT WITH 1-3/8" THREAD		0.54	1.07
18	2	G34LW	3/4" HDG LOCKWASHER		0.04	0.09
19	2	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.42
					TOTAL WT. #	238.42



DETAIL A



DETAIL B



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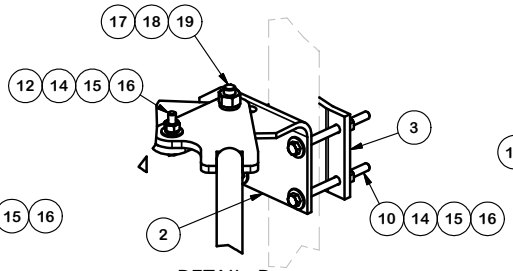

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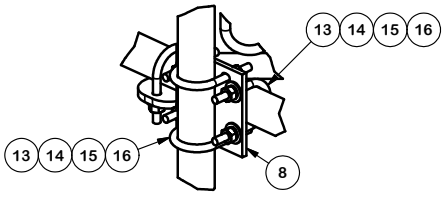

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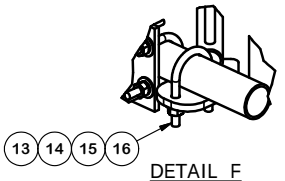

DETAIL F

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
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BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	P1126 CHAGNED TO P2126		CEK	11/13/2015

REVISION HISTORY

DESCRIPTION
6'
V-FRAME ASSEMBLY
W/ STIFF ARM

SITE PRO 1 — A valmont COMPANY

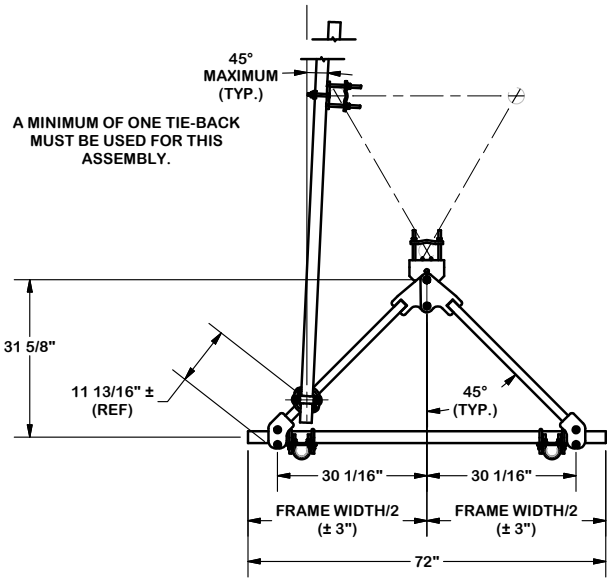
Engineering Support Team: 1-888-753-7446

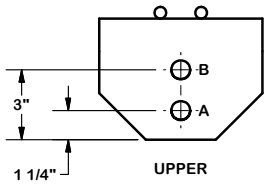
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

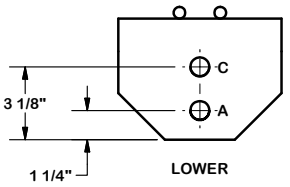
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 5/2/2011		VFA6-U

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
		CUSTOMER	BMC 11/13/2015	VFA6-U

PAGE 1 OF 2

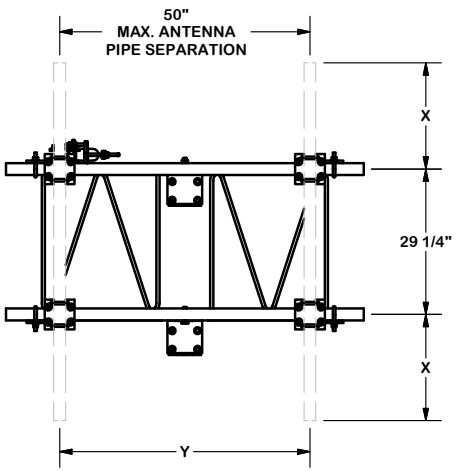




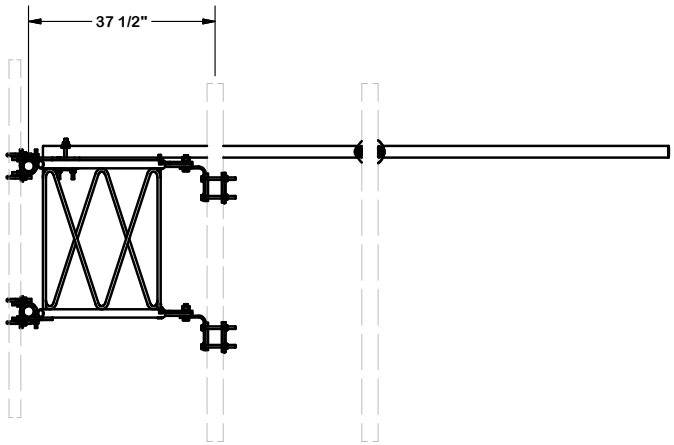


NOTES:

1. USE HOLE "A" IN UPPER AND LOWER BRACKETS FOR STRAIGHT LEGS.
2. USE HOLE "A" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 2' IN 20' TAPER LEGS. (3.309°)
3. USE HOLE "B" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 6" IN 20' TAPER LEGS. (0.827°)



PIPES MUST BE SPACED EVENLY ACROSS THE FACE OF THE V-FRAME (± 3")



TOLERANCE NOTES

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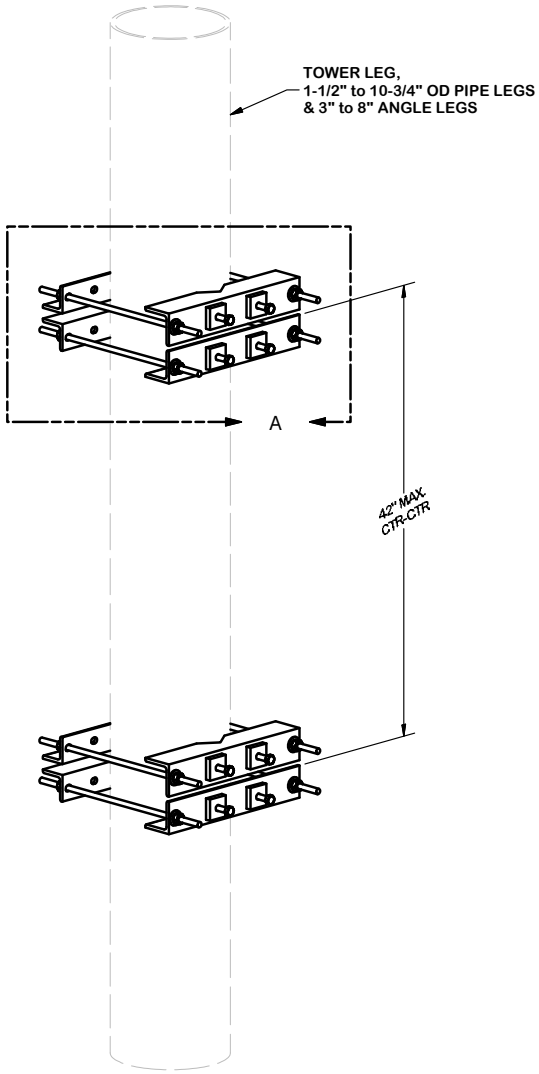
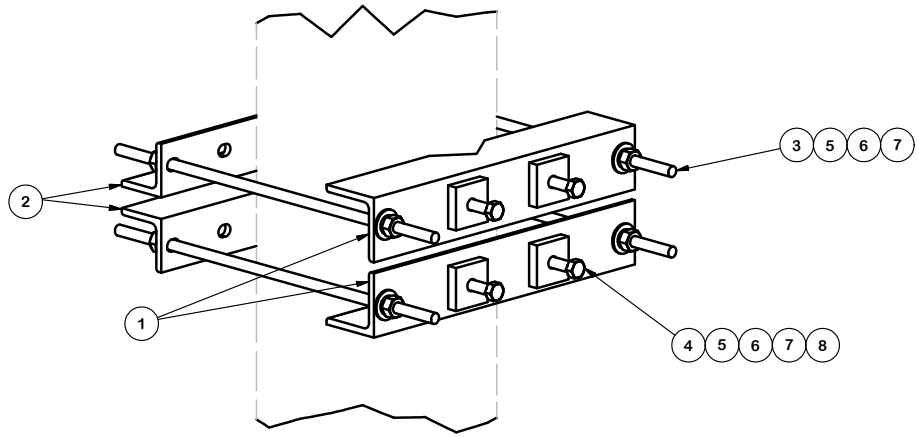
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: 6' V-FRAME ASSEMBLY W/ STIFF ARM			
CPD NO.	DRAWN BY: CEK 5/2/2011	ENG. APPROVAL	PART NO.: VFA6-U
CLASS / SUB	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 11/13/2015	DWG. NO.: VFA6-U

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-158320	ANGLE CLAMP	16 1/2 in	8.51	34.03
2	4	X-126501	BRACKET ANGLE LEG MOUNTING	16 1/2 in	7.13	28.51
3	8	G12R-20	1/2" x 20" GALV. THREADED ROD		1.12	8.92
4	8	G1203	1/2" x 3" HDG HEX BOLT GR5 FULL THREAD	3 in	0.22	1.74
5	24	G12FW	1/2" HDG USS FLATWASHER		0.03	0.82
6	24	G12LW	1/2" HDG LOCKWASHER		0.01	0.33
7	24	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.72
8	8	X-124312	1/2" X 2" X 2" ANGLE SPACER; WITH 9/16" HOLE		0.53	4.26
					TOTAL WT. #	77.61



DETAIL A

TOLERANCE NOTES

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ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
LARGE LEG
ADAPTER KIT
SITE PRO 1

SITE PRO 1
A valmont COMPANY

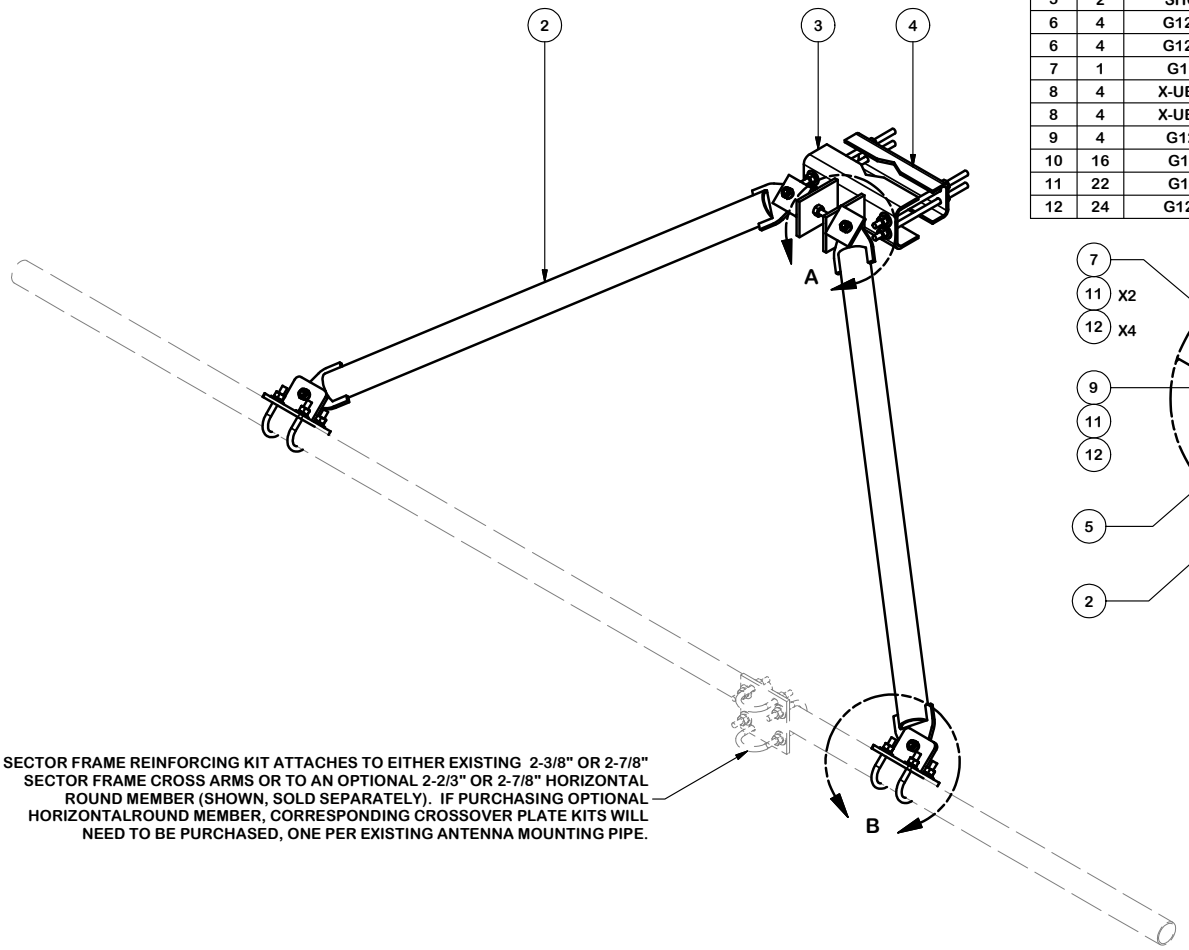
Engineering
Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

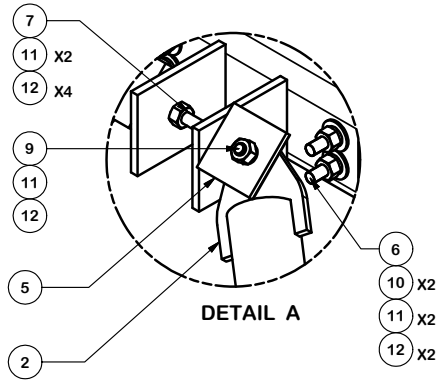
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4718	RH18 3/30/2010		LLEG-K	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 9/16/2010	LLEG-K

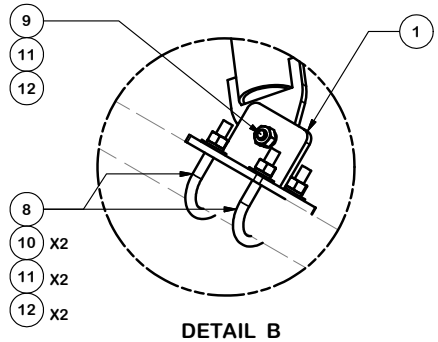
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VSKBRKT	T-BRACKET WELDMENT FOR VSK REINFORCEMENTS		4.19	8.38
2	2	X-VSK	SUPPORT WELDMENT FOR VSK REINFORCEMENTS		27.05	54.11
3	1	CFS	LOWER GATE FOOT WELDMENT		12.72	12.72
4	1	GBB	GATE BACKING BAR	11 1/2 in	4.53	4.53
5	2	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	3.72
6	4	G12R-15	1/2" x 15" THREADED ROD (HDG.)		0.84	3.35
6	4	G12R-12	1/2" x 12" THREADED ROD (HDG.)		0.67	2.68
7	1	G12R-6	1/2" x 6" GALV. THREADED ROD		0.33	0.33
8	4	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	2.68
8	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	2.39
9	4	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	0.59
10	16	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.55
11	22	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.31
12	24	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.72
					TOTAL WT. #	98.04



SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING 2-3/8" OR 2-7/8" SECTOR FRAME CROSS ARMS OR TO AN OPTIONAL 2-2/3" OR 2-7/8" HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTALROUND MEMBER, CORRESPONDING CROSSOVER PLATE KITS WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.



DETAIL A



DETAIL B

TOLERANCE NOTES

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BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

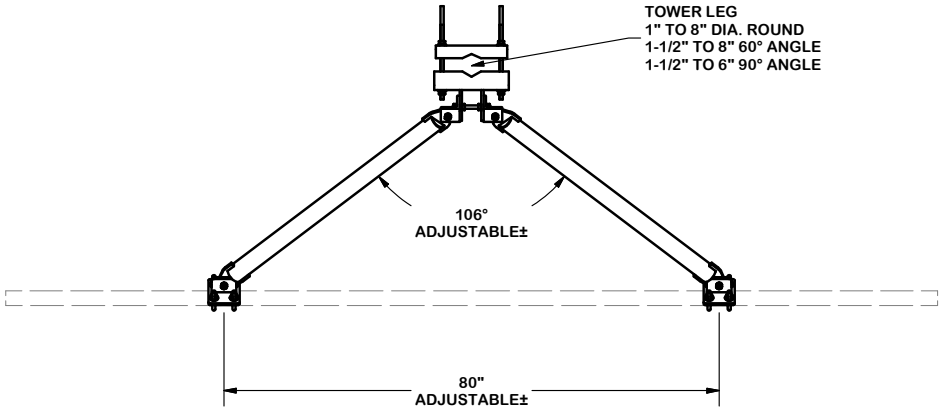
DESCRIPTION: SECTOR FRAME STABILIZER VERTICAL PIPE ARMS

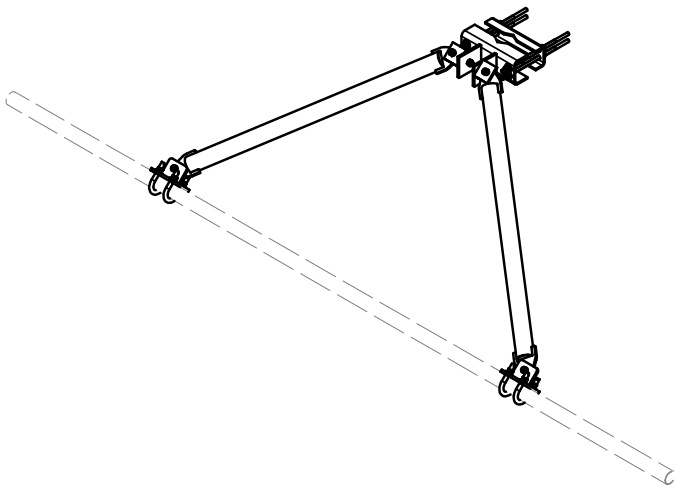
SITE PRO 1 — A valmont COMPANY

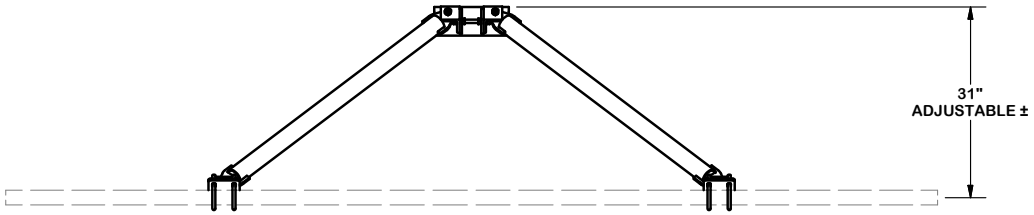
Engineering Support Team: 1-888-753-7446

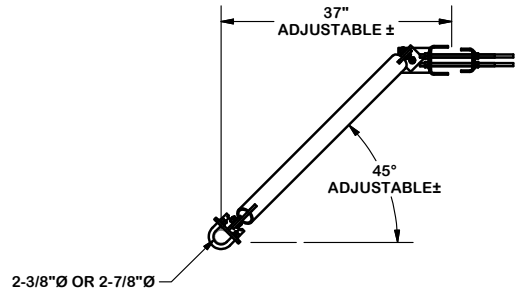
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
SP1	CSL 8/1/2019		VSK-TV	1 OF 3
CLASS / SUB: 87 / 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 8/19/2019	DWG. NO.: VSK-TV	









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DESCRIPTION: SECTOR FRAME STABILIZER VERTICAL PIPE ARMS

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 8/1/2019		VSK-TV

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 8/19/2019	VSK-TV

Exhibit F

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Date: **November 20, 2020**

Mount Modification Analysis Report

Tower Owner:	Subcarrier Communication Inc.
Carrier:	T-Mobile
Site ID:	CTNL814C
Site Name:	CTNL814C
Site Data:	401 Chapel Hill Rd, Oakdale, New London County, CT 06370 Latitude *41° 28' 07.67"*, Longitude *-72° 12' 12.04"* 6 ft Sector Frame Mount
Tectonic Project Number:	10473.CTNL814C

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this **"Mount Modification Analysis Report"** to determine the structural integrity of the above mentioned mount.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Sector Frame: **Sufficient Capacity – 77%**

***The structure has sufficient capacity once the changes, described in the Results / Conclusions section of this report, are completed.**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second gust wind speed of 105 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Structure Class II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with this analysis for the determined available structural capacity to be effective.

We at Tectonic appreciate the opportunity of providing our continuing professional services to you and T-Mobile. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: John-Fritz Julien / Ian Marinaccio

Respectfully submitted by:
Tectonic Engineering & Surveying Consultants P.C.

Edward N. Iamiceli, P.E.
Managing Director - Structural

Project Contact Info

1279 Route 300 | Newburgh, NY 12550
845.567.6656 Tel | 845.567.8703 Fax

tectonicengineering.com
Equal Opportunity Employer

TABLE OF CONTENTS

1) INTRODUCTION

The existing sector frame mount cannot accommodate the T-Mobile load configurations, therefore we are proposing to add a sector frame stabilizer kit and to relocate the existing stiffarm to an appropriate location as detailed in the report below.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-G
Structure Class: II
Wind Speed: 105 mph
Exposure Category: B
Topographic Factor: 1.0
Ice Thickness: 0.75 in
Wind Speed with Ice: 50 mph
Service Wind Speed: 60 mph

Table 1 - Proposed Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Proposed Mount Type	Note
180.0	T-Mobile	3	ericsson	AIR 6449 B41	(3) VFA-6-RRU w/ VSK-TV	1
		3	rfs	APXVAALL24_43-U-NA20		
		3	ericsson	AIR 32 B66A B2A		
		3	ericsson	RADIO 4449 B71 + B85		
		3	ericsson	RRUS 4415 B25		

Note:
1) Proposed equipment to be installed on the existing sector frame mount.

Table 2 - Existing Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Existing Mount Type	Note
180.0	T-Mobile	3	rfs	APX16DWV-16DWV-S-E-A20	(3) VFA-6-RRU	1
		3	andrew	LNX-6515DS-A1M		
		3	ericsson	RRUS11 B2		
		3	ericsson	RRUS11 B4		
		3	ericsson	RRUS11 B12		

Note:
1) Existing equipment to be removed, not considered in analysis

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Dated
ASSEMBLY DRAWINGS (VFA-6-RRU)	SitePro1	02/26/15
CONSTRUCTION DRAWINGS	All-Points Technology	11/02/16
STABILIZER KIT DRAWINGS	SitePro1	08/01/19
RFDS	T-Mobile	10/14/20
FIELD NOTES	Tectonic	10/22/20
MOUNT ANALYSIS REPORT	Tectonic	11/20/20

3.1) Analysis Method

A tool internally developed, using Microsoft Excel, was used to calculate wind loading on all appurtenances and mount members. This information was then used in conjunction with another program, RISA-3D, which is a commercially available analysis software package, used to check the supporting building framing and calculate member stresses for various loading cases. The selected output from the analysis is included in Appendices B and C.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Tables 1 and 2.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Tectonic should be notified to determine the effect on the structural integrity of the mount.

4) ANALYSIS RESULTS

Table 4 - Mount Component Stresses vs. Capacity (Sector Mount)

Notes	Component	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	180.0	52	Pass
	Sector Horizontal		22	Pass
	Mount Pipe		70	Pass
	Sector Brace		77	Pass
	Stabilizer kit		6	Pass
	Stiffarm Pipe		13	Pass

Structure Rating (max from all components) =	77%

Note:
1) See additional documentation in "Appendix C - Analysis Output" for calculations supporting the % capacity consumed.

4.1) Results / Conclusions

The existing sector frame mount will have sufficient capacity to carry the proposed T-Mobile load configurations once the following proposed modifications have been satisfied as detailed in the report below:

1) Add a sector frame stabilizer kit (Sitepro1 P/N: VSK-TV) to each mount.
2) Relocate the existing stiffarm pipe to the face of the existing sector frame mount. The stiffarm may be replaced with a longer pipe as required (Sitepro1 P/N: STK-U).

This structural modification analysis only includes evaluation of the antenna sector mounts and not the self-support tower. The self-support tower is to be analyzed under a separate structural analysis by others.

Contractor shall field verify existing conditions and recommendations as noted on the construction drawings and notify the design engineer of any discrepancies prior to construction. Any further changes to the antenna and/or appurtenance configuration should be reviewed with respect to their effect on structural loads prior to implementation.

APPENDIX A

SOFTWARE INPUT CALCULATIONS

Tectonic	Job No.	10473.CTNL814C - Rev 1		
	Sheet No.	1	of	3
	Calculated By	JJ	Date :	11/20/2020
	Checked By	IM	Date :	11/20/2020

WIND AND ICE LOADS PER TIA-222-G

W.O.	10473.CTNL814C - Rev 1
Project Name	CTNL814C
Location	401 Chapel Hill Rd, Oakdale, CT 06370
County	New London

Tower Type	SST	Self-Supporting (lattice)
Structure Class	2	Substantial hazard
Exposure Category	B	Suburban/wooded/obstructed
Topo Category	1	Flat or rolling terrain
Height of crest	0	ft

Basic Wind Speed (3-sec gust):		
Without ice	105	mph*
With ice	50	mph
Service	60	mph
Ice thickness	0.75	in

Importance Factor	
Wind only	1.00
Wind with ice	1.00
Ice thickness	1.00
Supporting Data:	
K_e	0.90
K_t	N/A
f	N/A
z_g	1200
α	7
$K_{z,min}$	0.7
K_d	0.95
G_h	1.00

Height	z (ft)**	180
	Kh	N/A
	Kzt	1.00
	Kz	1.17
	Kiz	1.18
Wind Pressure, qz (psf)	No Ice	31.34
	With Ice	7.11
	Service	10.23
(tiz)	Ice Thk	1.78
Appurtenances (qzGh)	No Ice	31.34
	With Ice	7.11
	Service	10.23

*Ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second wind gust speed of 105 mph per Section 1609.3 and Appendix N, as required for use in the TIA-222-G Standard.

Job No.	10473.CTNL814C - Rev 1		
Sheet No.	2	of	3
Calculated By	JJ	Date :	11/20/20
Checked By	IM	Date :	11/20/20

Appurtenance Information

Effective Projected Area for Appurtenance $(EPA)_A=Max((EPA)_N,(EPA)_T)$

$(EPA)_T=\sum(C_aA_A)_T$ | | $(EPA)_N=\sum(C_aA_A)_N$

Reduction Factor = 1

Wind Only Load Combinations

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(Aa)_T$ (ft^2)	Wind ward Side Face (CaAa)T (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Antenna Weight (lb)	Total Weight (lb)
AIR 6449 B41	P	3	180	2.76	20.50	8.30	Flat	1.27	1.20	1.91	7.25	4.71	16.96	177	76	103.0	309.0
RRUS 4415 B25	P	3	180	1.24	13.20	5.40	Flat	1.21	1.20	0.56	2.03	1.37	4.92	51	21	46.3	138.9
RADIO 4449 B71 + B85	P	3	180	1.25	13.19	10.51	Flat	1.20	1.20	1.09	3.93	1.37	4.93	52	41	75.0	224.9
APXVAALL24_43-U-NA20	P	3	180	7.99	24.00	8.50	Flat	1.54	1.27	5.66	26.20	15.98	60.73	634	274	149.9	449.7
AIR-32 B2A/B66A	P	3	180	4.72	12.90	8.70	Flat	1.38	1.28	3.42	14.14	5.07	19.53	204	148	132.2	396.6
										$\sum(CaA_A)_T$	53.54	$\sum(CaA_A)_N$	107.07				1519

Note: Appurtenances listed above are to be installed along three (3) sector mounts.

Wind with Ice Load Combinations **Ice Thk=** 1.78 in

Antenna Configuration	(E), (R) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(A_a)_T$ (ft^2)	Windward Side Face (CaAa)T (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward Face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Ice Area for Weight (ft^2)	Ice Weight Alone (lbs)
AIR 6449 B41	P	3.00	180.00	3.05	24.05	11.85	Cylindrical	1.23	1.20	3.02	11.10	6.12	22.04	52	26	13.2	109.8
RRUS 4415 B25	P	3.00	180.00	1.54	16.75	8.95	Cylindrical	1.20	1.20	1.15	4.13	2.15	7.73	18	10	3.8	31.9
RADIO 4449 B71 + B85	P	3.00	180.00	1.54	16.74	14.06	Cylindrical	1.20	1.20	1.81	6.51	2.15	7.75	18	15	4.9	40.8
APXVAALL24_43-U-NA20	P	3.00	180.00	8.29	27.55	12.05	Cylindrical	1.44	1.25	8.33	36.01	19.03	71.33	169	85	43.3	359.0
AIR-32 B2A/B66A	P	3.00	180.00	5.01	16.45	12.25	Cylindrical	1.31	1.25	5.12	20.07	6.87	25.80	61	48	17.0	140.8
										$\sum(CaA_A)_T$	77.82	$\sum(CaA_A)_N$	134.65				682

Job No.	10473.CTNL814C - Rev 1				
Sheet No.	3	of	3		
Calculated By	JJ	Date :	11/20/20		
Checked By	IM	Date :	11/20/20		

Modified Sector Mount

Mount Center Line=	180 ft

Member sizes and lengths are based on the assembly drawing by SitePro1 VFA-6-RRU

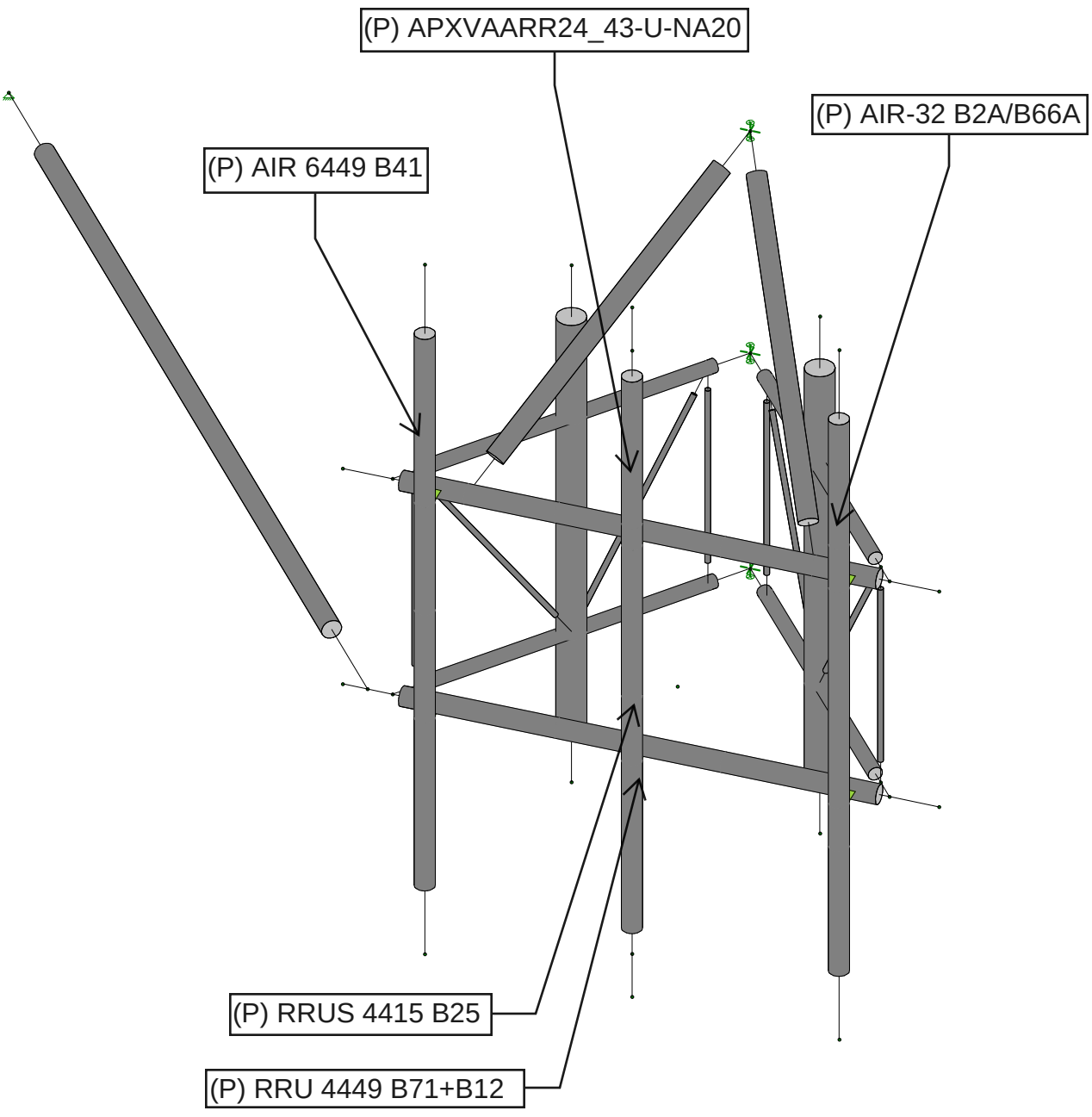
Reduction Factor = 1

Mount Part	Quantity	Length (ft)	Projected Width (in)	Depth (in)	Flat or Cylindrical?	Drag Factor	Projected Area (ft^2)	Wind Force (lbs/ft)	Ice Weight Area (ft^2)	Ice Weight (lbs/ft)	Projected Area with Ice (ft^2)	Wind Force Ice (lbs/ft)	Service Wind Force (lbs/ft)
Face Horizontal_2.0" STD Pipe	2	10.50	2.38	2.38	Cylindrical	1.2	5.00	7.5	13.08	5.2	12.46	4.2	2.4
Sector Horizontal_1.25" STD Pipe	4	3.50	1.66	1.66	Cylindrical	1.2	2.32	5.2	6.08	3.6	7.30	3.7	1.7
Sector Vertical_5/8" SR	4	2.50	0.63	0.63	Cylindrical	1.2	0.63	2.0	1.64	1.4	4.18	3.0	0.6
Sector Diagonal_5/8" SR	4	2.50	0.63	0.63	Cylindrical	1.2	0.63	2.0	1.64	1.4	4.18	3.0	0.6
Mount Pipe_2.0" STD	4	8.00	2.38	2.38	Cylindrical	1.2	7.60	7.4	19.89	5.2	18.97	4.2	2.4
Vertical Pipe_HSS3.5x1/8	2	6.00	3.50	3.50	Cylindrical	1.2	4.20	11.0	10.99	7.6	8.47	5.0	3.6
(P) Sector Frame Stabilizer Kits	1	4.00	2.38	2.38	Cylindrical	1.2	0.95	7.5	2.49	5.2	2.37	4.2	2.4
Stiffarm_2.0" STD Pipe	1	10.50	2.38	2.38	Cylindrical	1.2	2.49	7.4	6.53	5.2	6.23	4.2	2.4

* Proposed

APPENDIX B

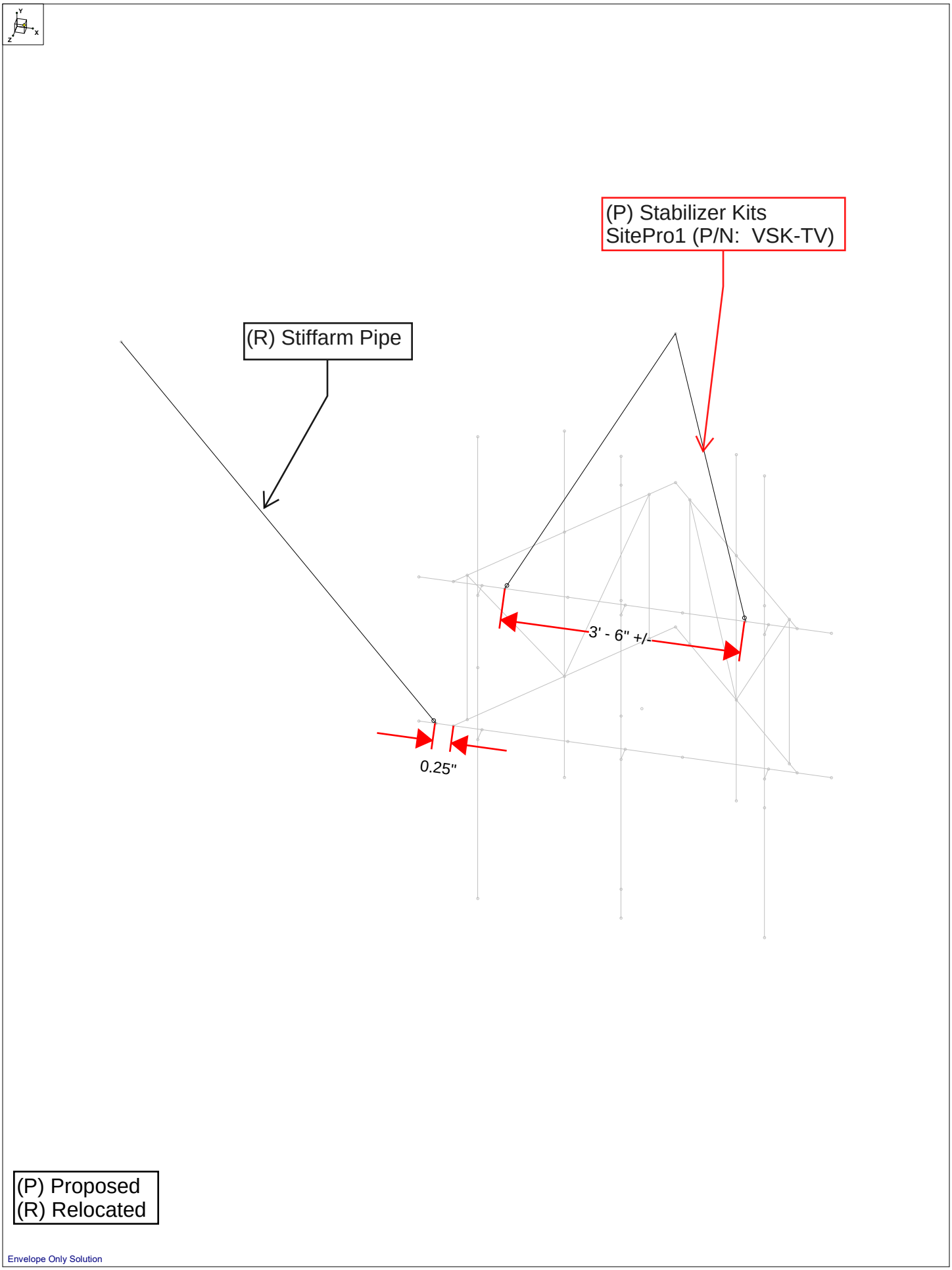
WIRE FRAME AND RENDERED MODELS



NOTES:
1)EXISTING AND PROPOSED ANTENNAS AND MOUNTING PIPES HAVE BEEN VERTICALLY CENTERED ALONG THE EXISTING MOUNT (NO OFFSET).
2) LISTED APPURTENANCES ABOVE ARE TYPICAL FOR ALL SECTORS.
3) RADIOS ARE LOCATED BEHIND THE ANTENNAS.

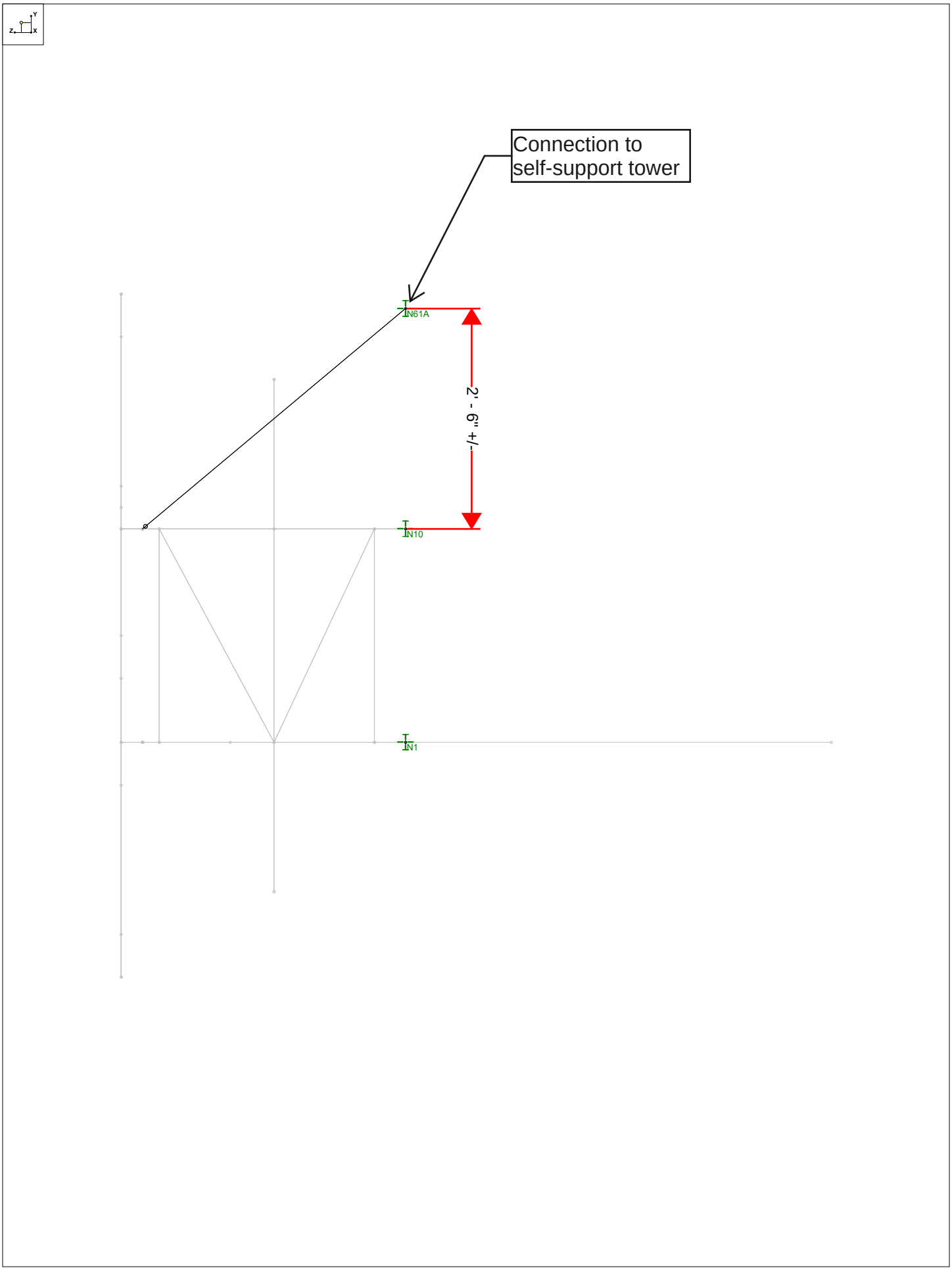
(P) PROPOSED

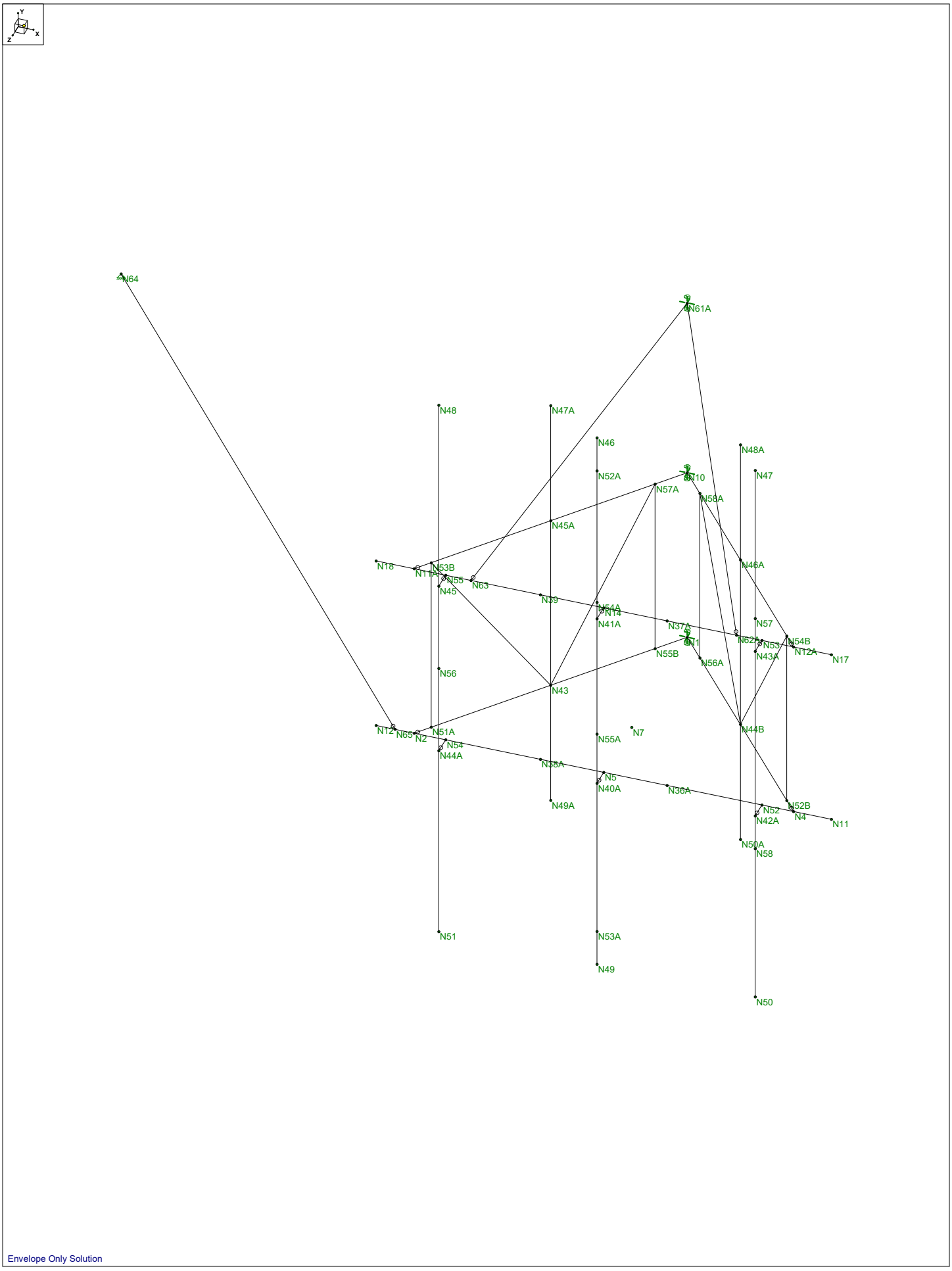
Envelope Only Solution

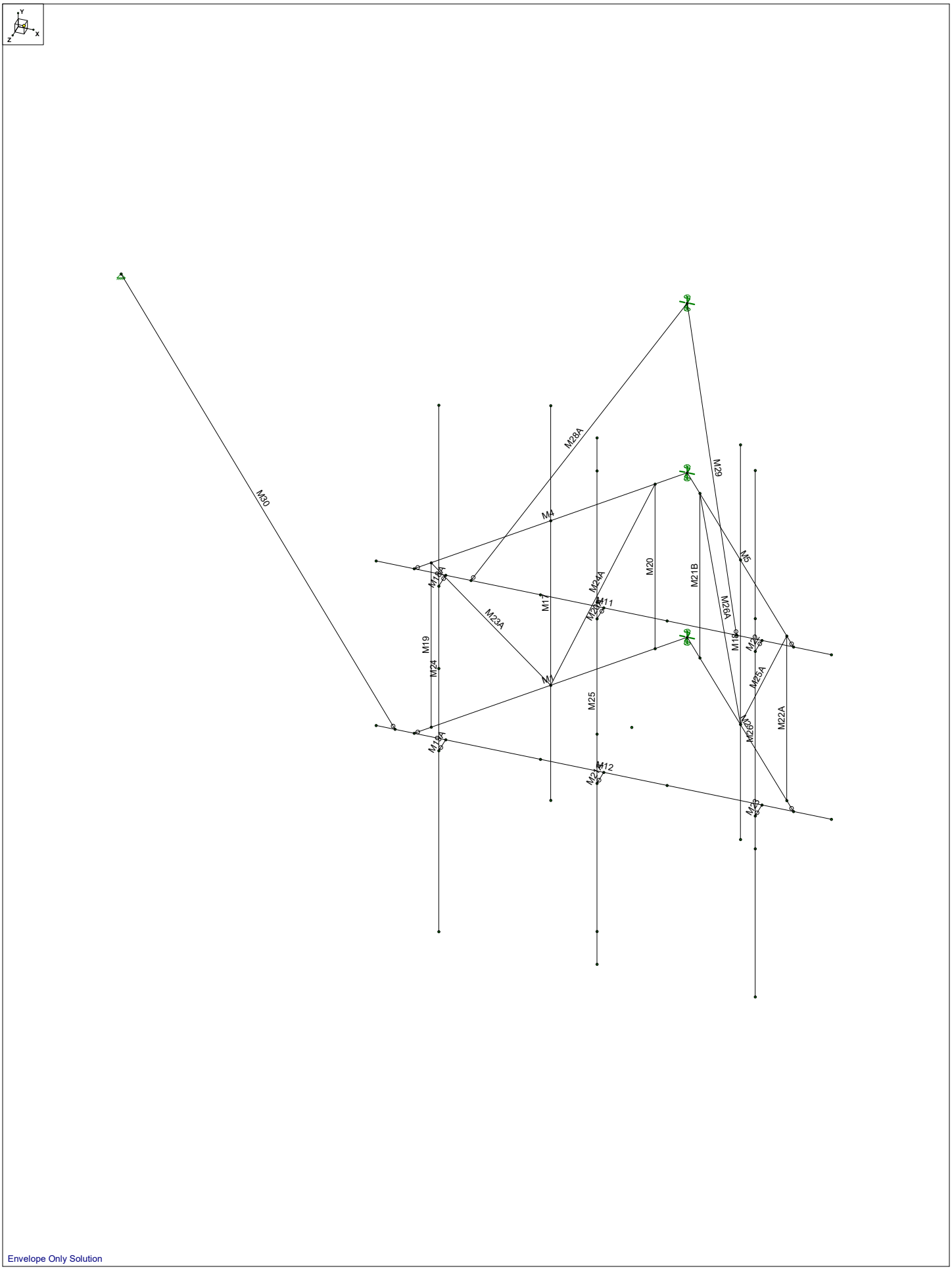


(P) Proposed
(R) Relocated

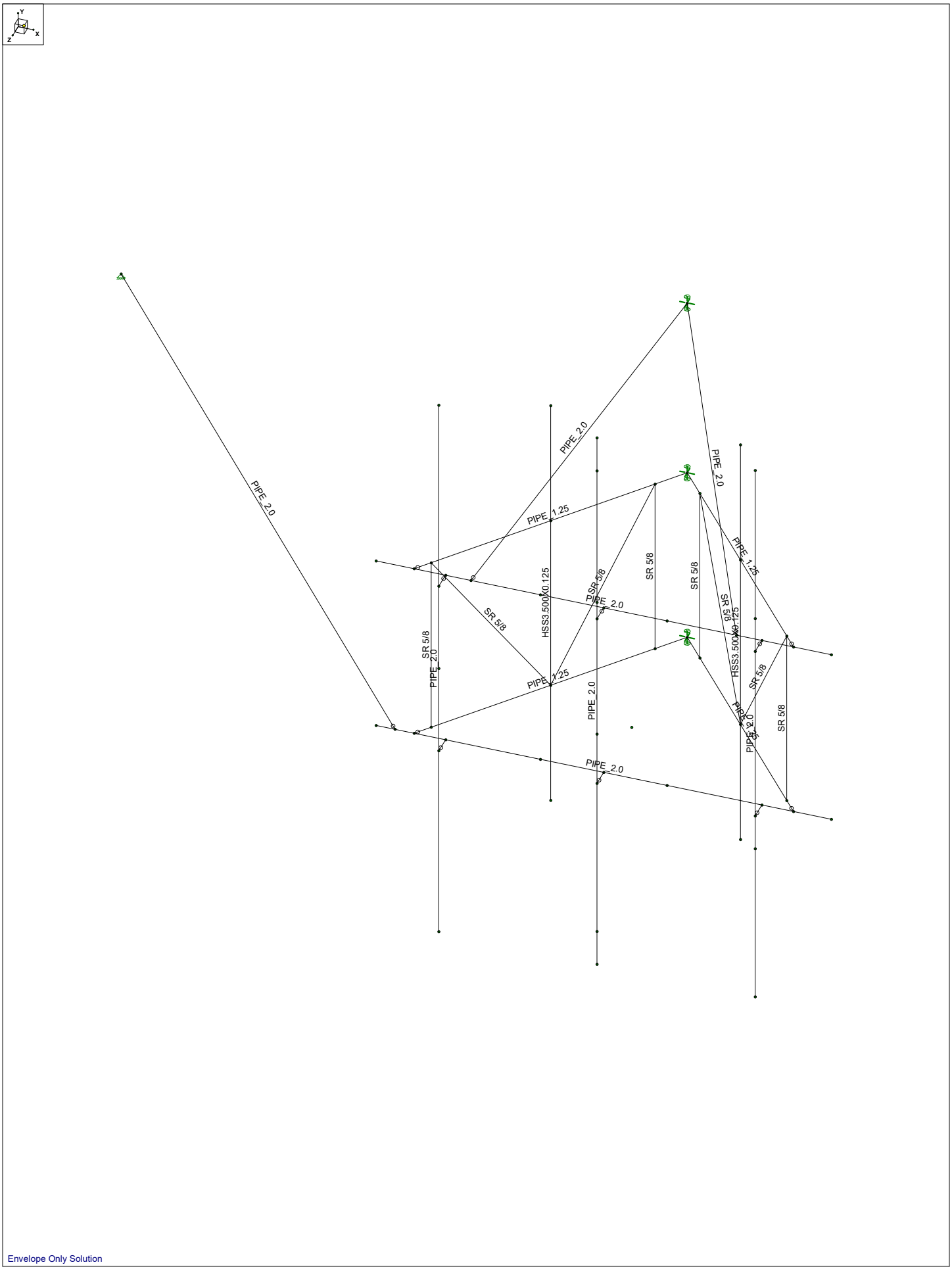
Envelope Only Solution


Connection to
self-support tower
N61A
2' - 6" +/-
N10
N1

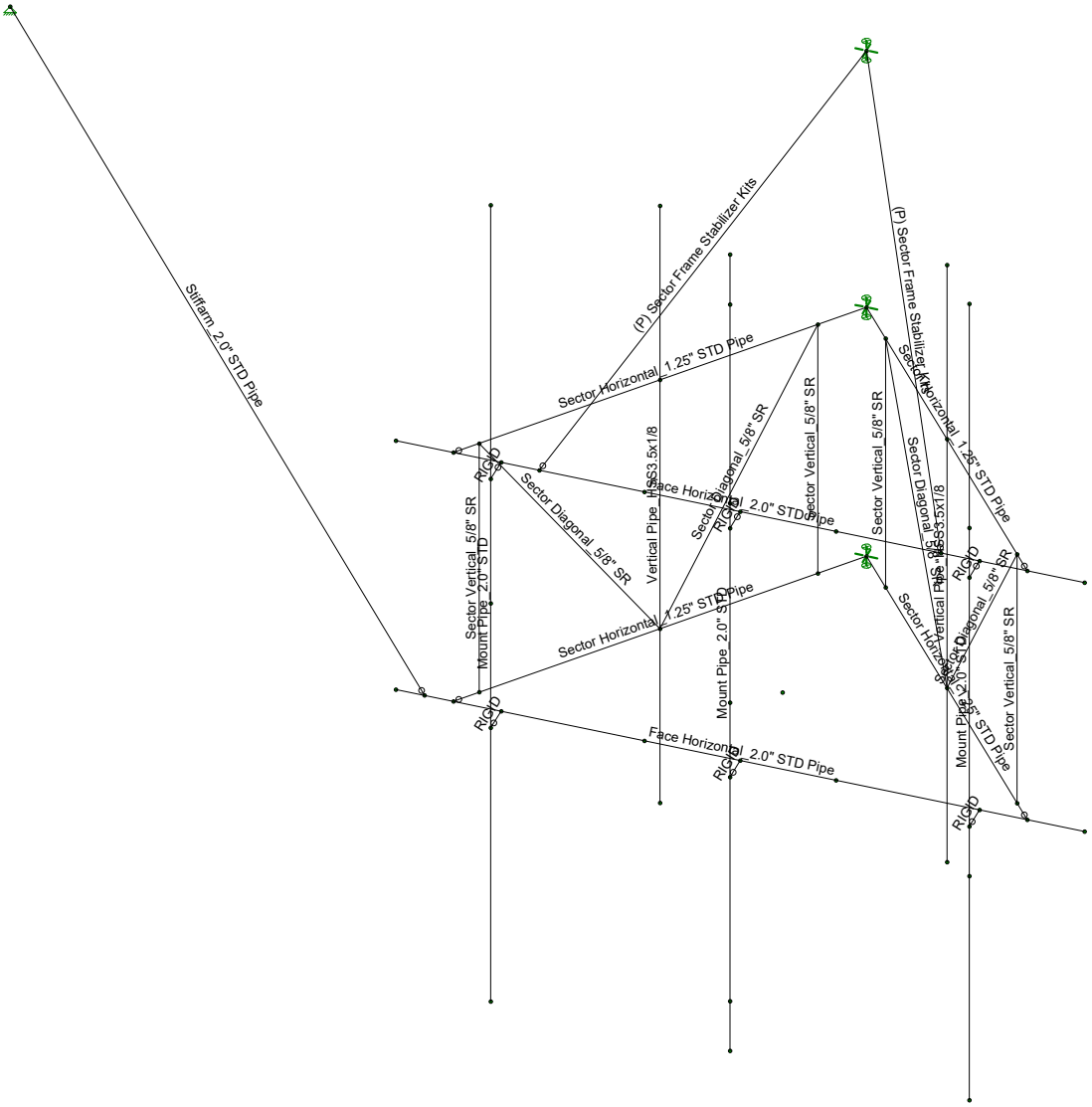

Y
X
Z
N64
N61A
N48
N47A
N46
N48A
N52A
N10
N47
N57A
N58A
N45A
N46A
N18
N53B
N55
N63
N45
N39
N54A
N14
N41A
N37A
N57
N62A
N53
N54B
N12A
N17
N1
N43A
N55B
N56A
N56
N43
N44B
N12
N65
N2
N51A
N7
N55A
N54
N44A
N38A
N5
N40A
N36A
N52B
N52
N4
N42A
N11
N49A
N50A
N58
N51
N53A
N49
N50
Envelope Only Solution



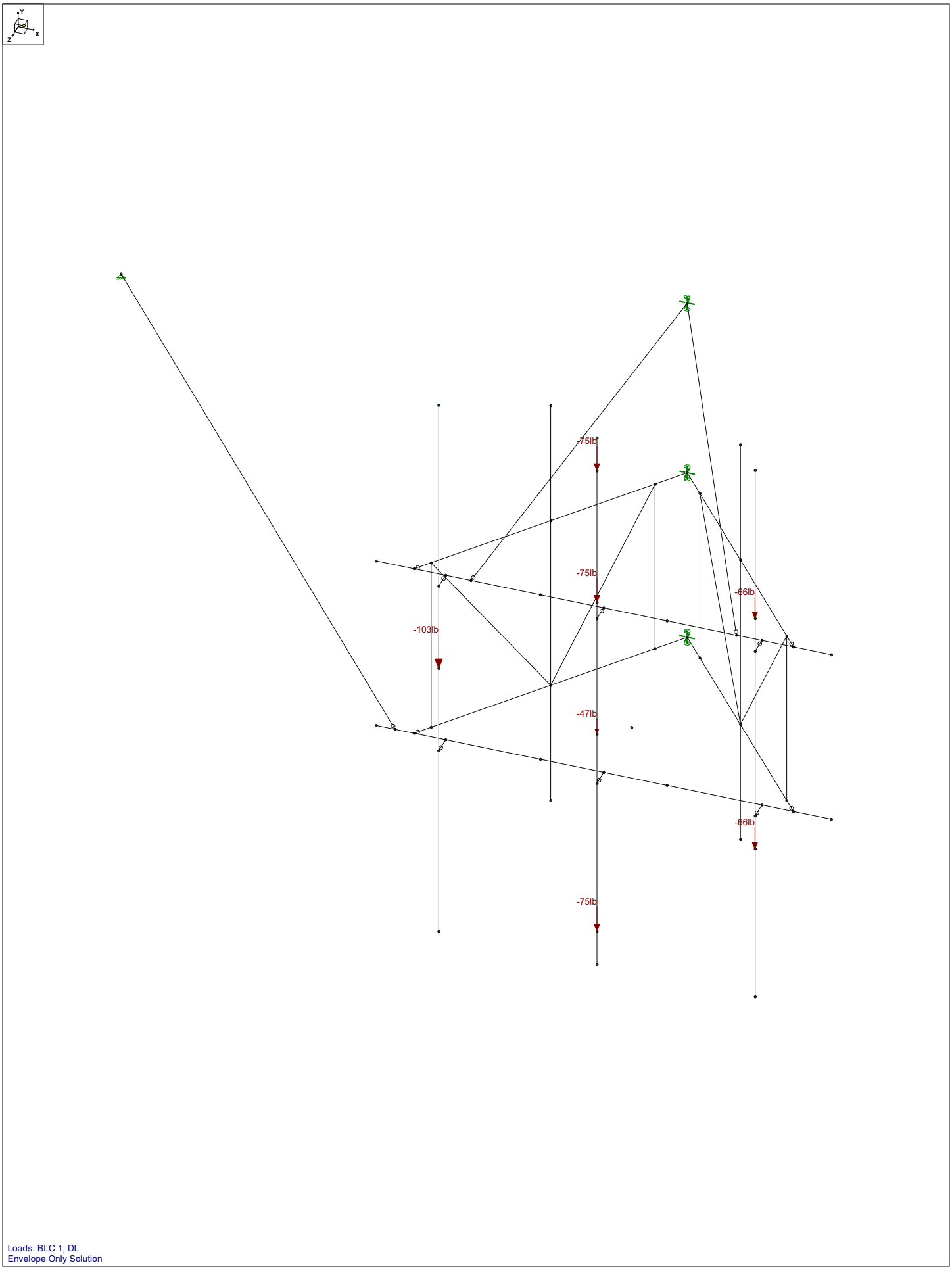
Envelope Only Solution



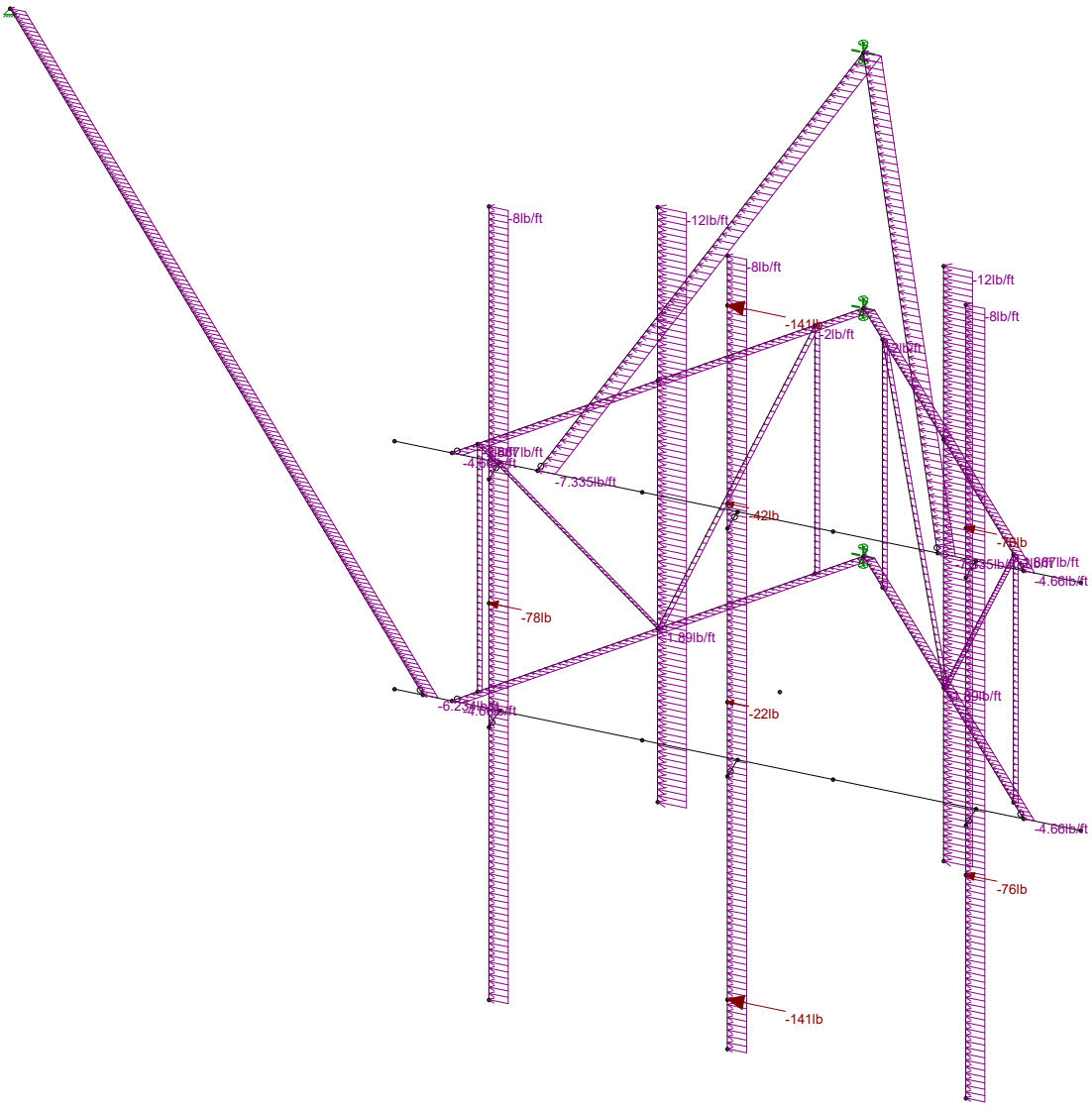
Envelope Only Solution



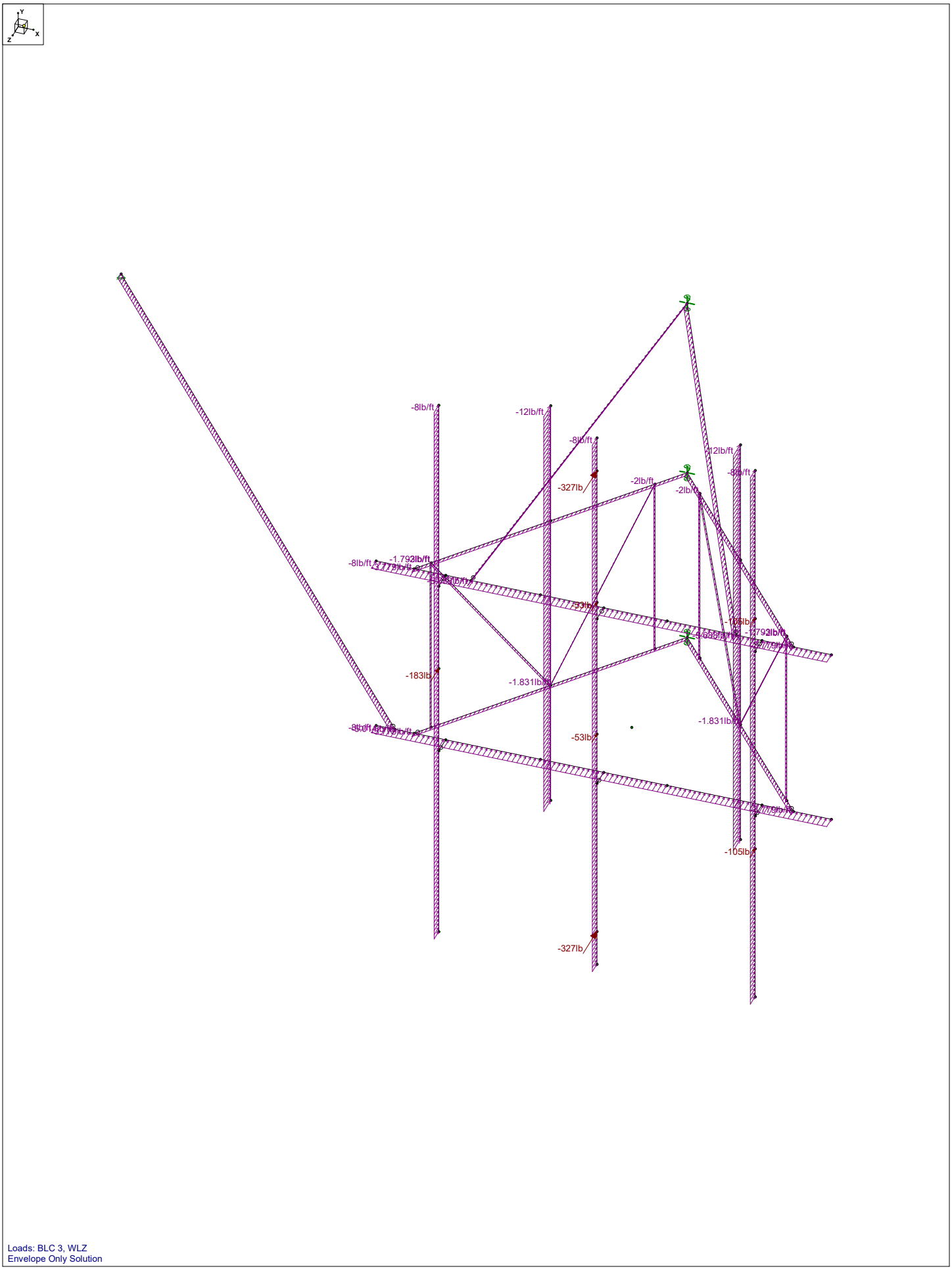
Envelope Only Solution



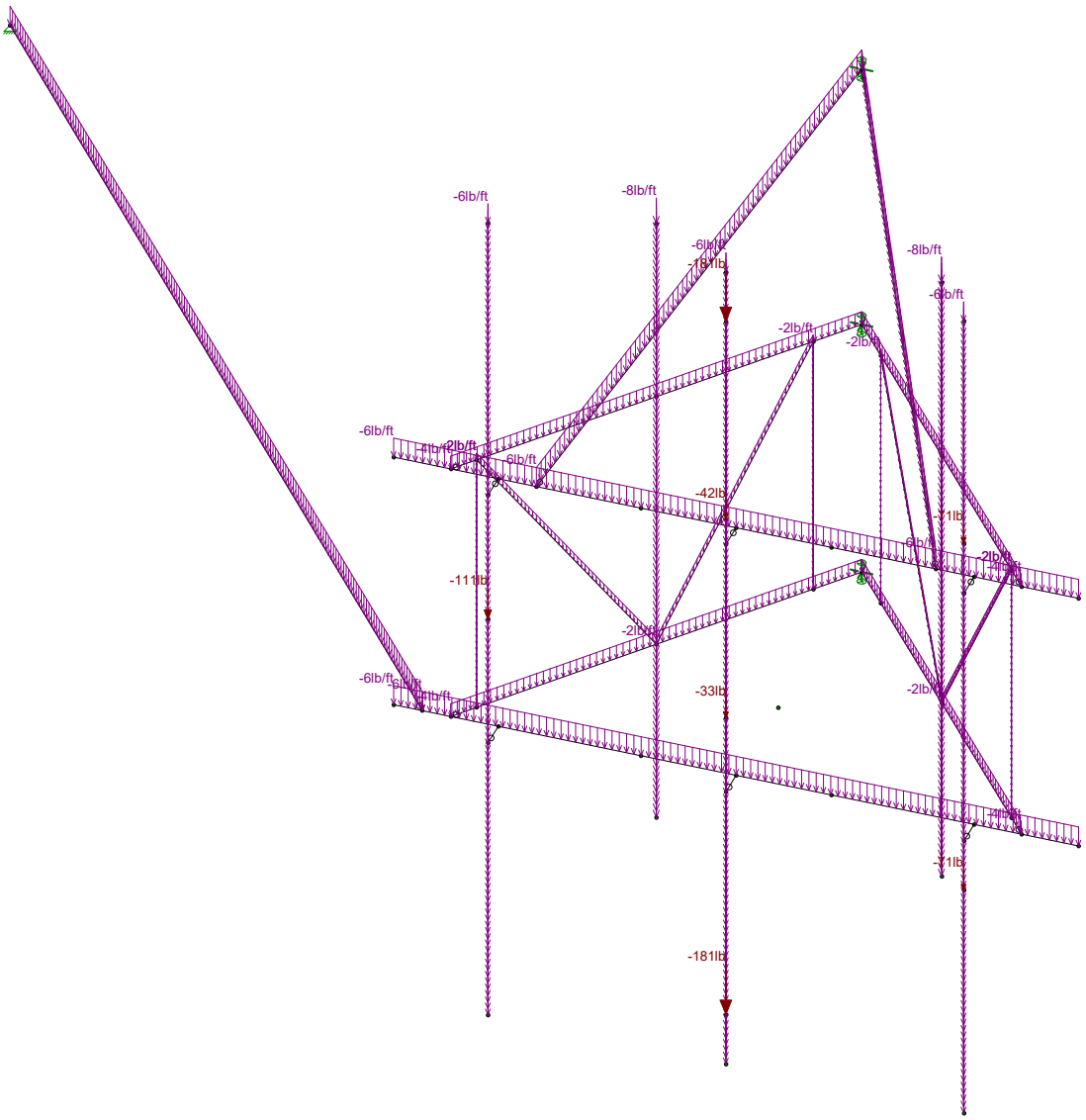
Loads: BLC 1, DL
Envelope Only Solution



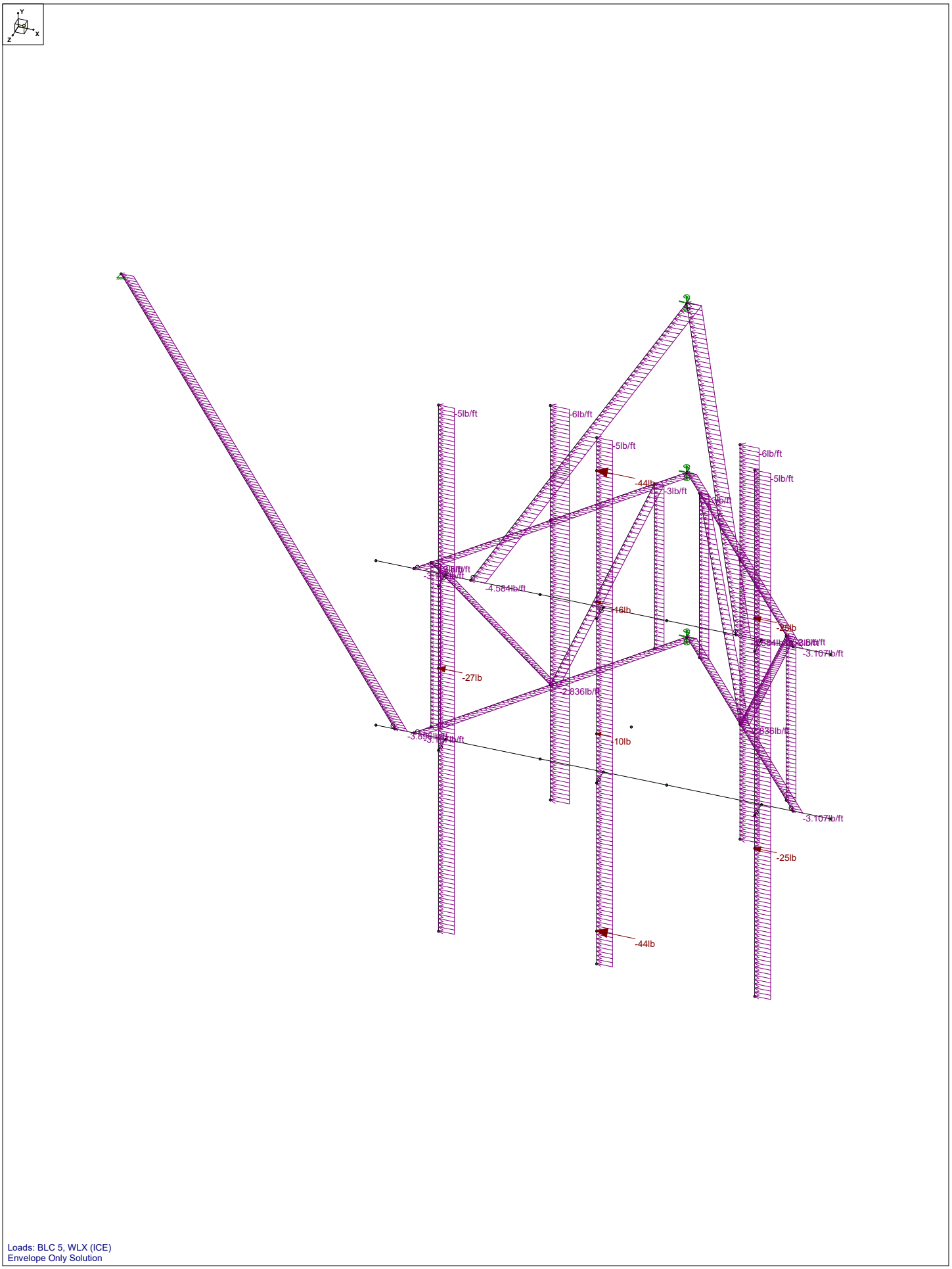
Loads: BLC 2, WLX
Envelope Only Solution



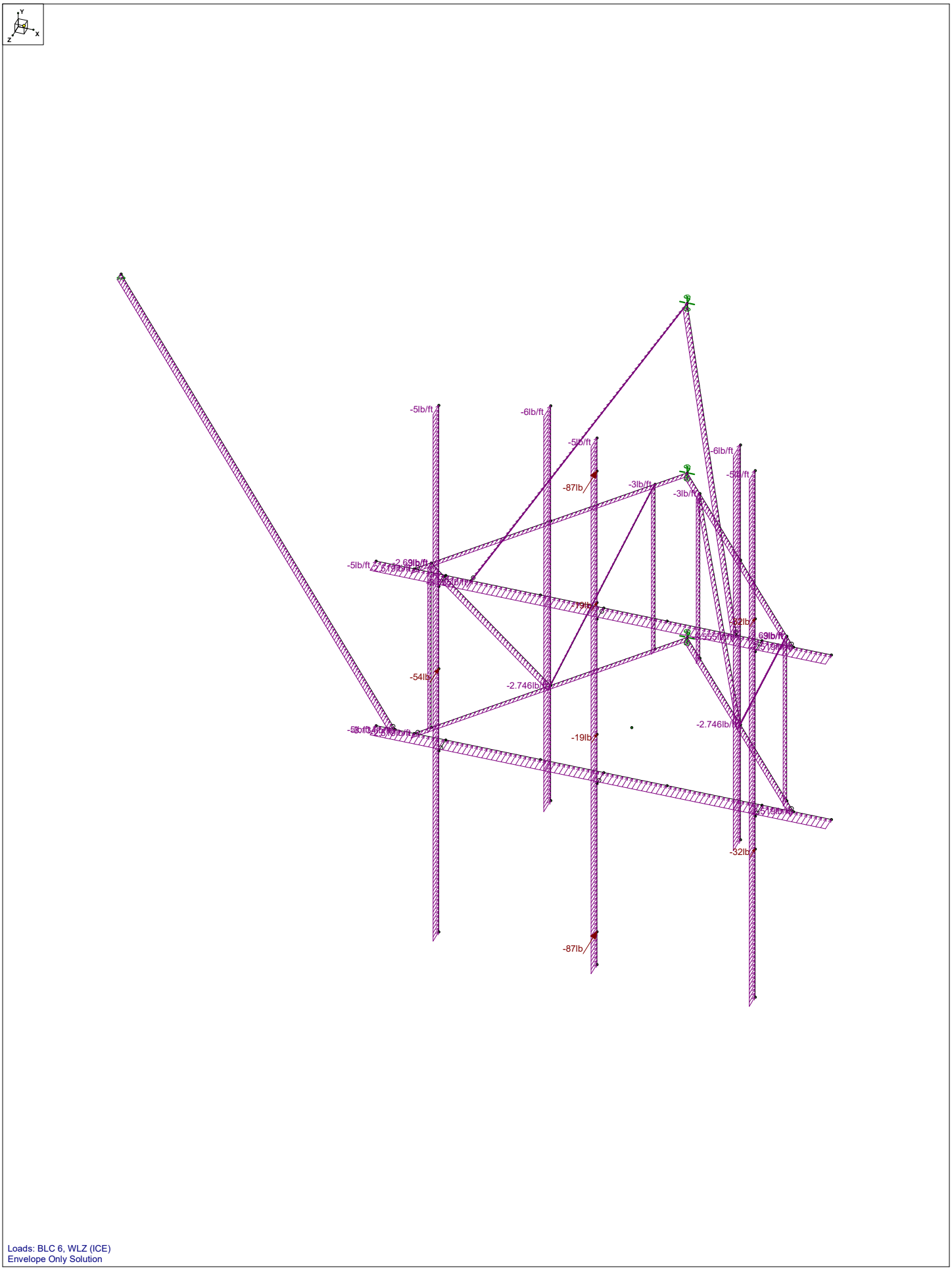
Loads: BLC 3, WLZ
Envelope Only Solution



Loads: BLC 4, DL (ICE)
Envelope Only Solution



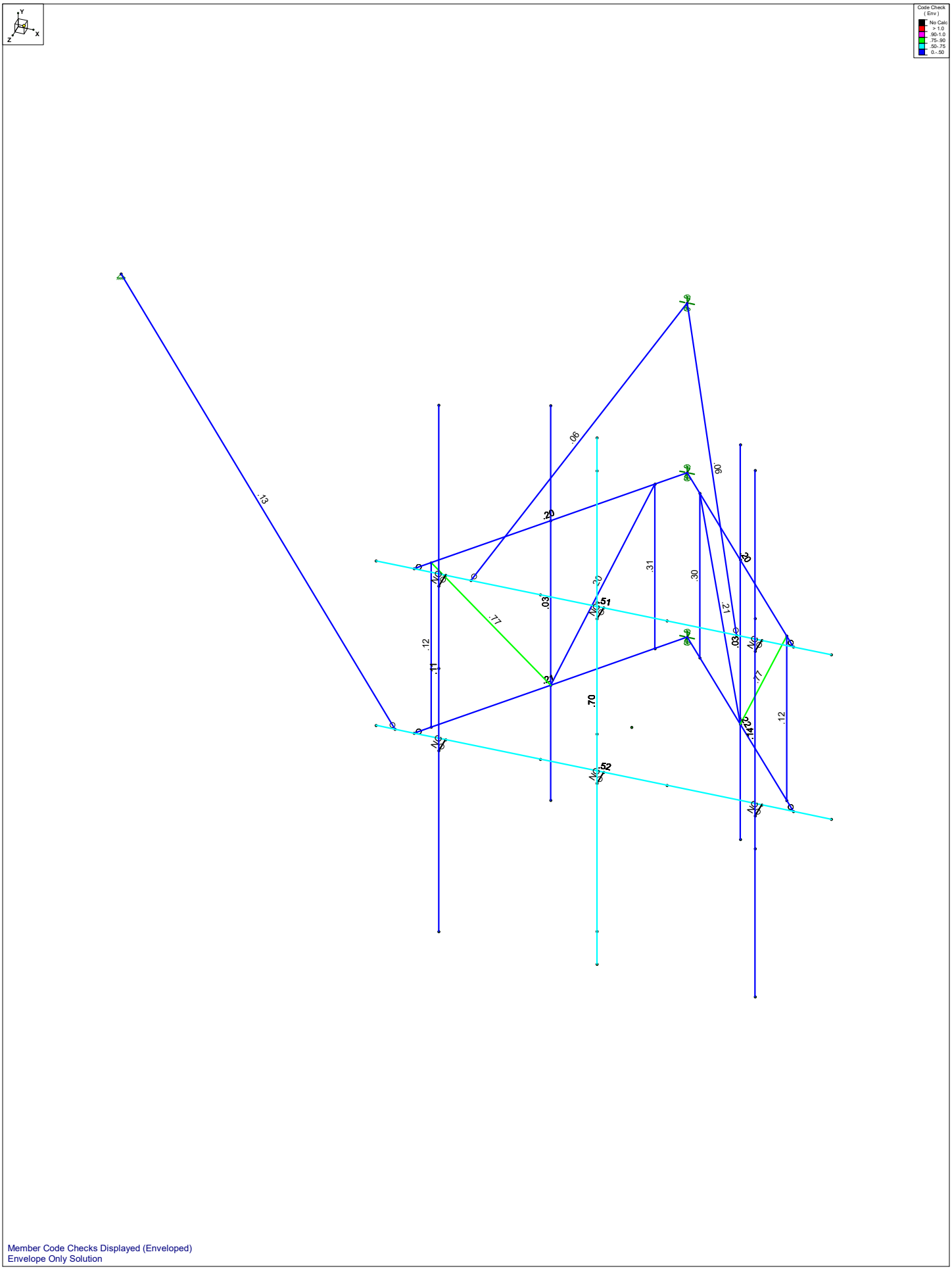
Loads: BLC 5, WLX (ICE)
Envelope Only Solution



Loads: BLC 6, WLZ (ICE)
Envelope Only Solution

APPENDIX C

SOFTWARE ANALYSIS OUTPUT


Code Check
(Env)
No Calc
> 1.0
.90-1.0
.75-.90
.50-.75
0-.50
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Sector Horizontal_1.25" STD ...	PIPE_1.25	None	None	A53 Gr.B	Typical	.625	.184	.184	.368
2	Face Horizontal_2.0" STD Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Sector Vertical_5/8" SR	SR 5/8	None	None	A36 Gr.36	Typical	.307	.007	.007	.015
4	Sector Diagonal_5/8" SR	SR 5/8	None	None	A36 Gr.36	Typical	.307	.007	.007	.015
5	Vertical Pipe_HSS3.5x1/8	HSS3.500...	None	None	A500 Gr.B RND	Typical	1.23	1.77	1.77	3.53
6	Mount Pipe_2.0" STD	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Stiffarm_2.0" STD Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	(P) Sector Frame Stabilizer Kits	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D+1.6(WLX+WLZ) - 0 Deg	Yes	Y		1	1.2	2	1.6																
3	1.2D+1.6(WLX+WLZ) - 30 Deg	Yes	Y		1	1.2	2	1.3...	3	.8														
4	1.2D+1.6(WLX+WLZ) - 60 Deg	Yes	Y		1	1.2	2	.8	3	1.3...														
5	1.2D+1.6(WLX+WLZ) - 90 Deg	Yes	Y		1	1.2	2		3	1.6														
6	1.2D+1.6(WLX+WLZ) - 120 Deg	Yes	Y		1	1.2	2	-.8	3	1.3...														
7	1.2D+1.6(WLX+WLZ) - 150 Deg	Yes	Y		1	1.2	2	-1....	3	.8														
8	1.2D+1.6(WLX+WLZ) - 180 Deg	Yes	Y		1	1.2	2	-1.6	3															
9	1.2D+1.6(WLX+WLZ) - 210 Deg	Yes	Y		1	1.2	2	-1....	3	-.8														
10	1.2D+1.6(WLX+WLZ) - 240 Deg	Yes	Y		1	1.2	2	-.8	3	-1....														
11	1.2D+1.6(WLX+WLZ) - 270 Deg	Yes	Y		1	1.2	2		3	-1.6														
12	1.2D+1.6(WLX+WLZ) - 300 Deg	Yes	Y		1	1.2	2	.8	3	-1....														
13	1.2D+1.6(WLX+WLZ) - 330 Deg	Yes	Y		1	1.2	2	1.3...	3	-.8														
14	**Wind Load with Ice**																							
15	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	1	6													
16	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.87	6	.5												
17	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.5	6	.87												
18	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5		6	1												
19	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.5	6	.87												
20	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.87	6	.5												
21	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-1	6													
22	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.87	6	-.5												
23	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	-.5	6	-.87												
24	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5		6	-1												
25	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.5	6	-.87												
26	1.2D+1.0Di+1.0(WLXi+WLZi) - ...	Yes	Y		1	1.2	4	1	5	.87	6	-.5												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	402.516	2	632.355	18	3112.984	6	0	26	98.964	2	0	26
2		min	-400.558	8	-125.54	11	-1818.368	12	0	1	-100.306	8	0	1
3	N10	max	386.268	2	754.608	18	330.82	11	0	26	197.397	2	0	26
4		min	-378.48	8	-131.743	11	-620.339	5	0	1	-195.053	8	0	1
5	N61A	max	306.442	2	1223.58	11	477.323	5	0	26	175.635	2	0	26
6		min	-314.157	8	-364.546	5	-1474.576	11	0	1	-172.249	8	0	1
7	N64	max	756.476	2	53.779	21	876.509	2	0	26	0	26	0	26
8		min	-758.508	8	22.451	3	-878.642	8	0	1	0	1	0	1
9	Totals:	max	1851.702	2	2213.102	24	2861.503	5						
10		min	-1851.703	8	988.951	5	-2861.503	11						

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

	Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M23A	SR 5/8	.771	0	4	.013	0		5	1269.101	9940.19	103.542	103.542	2...	H1-1a
2	M25A	SR 5/8	.769	0	6	.009	3.043		4	1269.101	9940.19	103.542	103.542	2...	H1-1a
3	M25	PIPE_2.0	.696	2.75	11	.067	2.75		5	14916.0...	32130	1871.625	1871.625	2...	H1-1b
4	M12	PIPE_2.0	.516	3	5	.104	.5		2	20866.7...	32130	1871.625	1871.625	1	H1-1b
5	M11	PIPE_2.0	.510	3	4	.077	5.5		6	20866.7...	32130	1871.625	1871.625	1	H1-1b
6	M20	SR 5/8	.306	2.5	18	.009	2.5		6	1880.092	9940.19	103.542	103.542	2...	H1-1a
7	M21B	SR 5/8	.304	2.5	18	.007	2.5		4	1880.092	9940.19	103.542	103.542	2...	H1-1a
8	M2	PIPE_1.25	.218	3.514	6	.137	.248		5	16665.4...	19687.5	800.625	800.625	2...	H1-1b
9	M26A	SR 5/8	.214	0	12	.006	0		18	1374.929	9940.19	103.542	103.542	1.9	H1-1a
10	M1	PIPE_1.25	.214	3.514	5	.160	.248		5	16665.4...	19687.5	800.625	800.625	2...	H1-1b
11	M24A	SR 5/8	.197	0	10	.007	0		18	1374.929	9940.19	103.542	103.542	1...	H1-1b*
12	M4	PIPE_1.25	.196	3.514	4	.118	3.969		18	16665.4...	19687.5	800.625	800.625	2...	H1-1b
13	M5	PIPE_1.25	.196	3.514	6	.124	.248		5	16665.4...	19687.5	800.625	800.625	1...	H1-1b
14	M26	PIPE_2.0	.142	2.75	12	.021	2.75		5	14916.0...	32130	1871.625	1871.625	2...	H1-1b
15	M30	PIPE_2.0	.127	5.18	13	.006	0		26	9163.983	32130	1871.625	1871.625	1...	H1-1b
16	M19	SR 5/8	.124	2.5	4	.021	2.5		2	1880.092	9940.19	103.542	103.542	1...	H1-1b
17	M22A	SR 5/8	.120	2.5	6	.020	2.5		7	1880.092	9940.19	103.542	103.542	1...	H1-1b
18	M24	PIPE_2.0	.107	5.25	7	.021	2.75		11	14916.0...	32130	1871.625	1871.625	3...	H1-1b
19	M29	PIPE_2.0	.058	4.385	9	.047	0		4	25515.7...	32130	1871.625	1871.625	1...	H1-1b
20	M28A	PIPE_2.0	.057	4.385	2	.044	0		6	25515.7...	32130	1871.625	1871.625	1...	H1-1b
21	M17	HSS3.500X...	.028	4.25	4	.019	1.75		7	37265.4...	46494	4189.5	4189.5	2...	H1-1b
22	M18	HSS3.500X...	.026	4.25	5	.017	1.75		2	37265.4...	46494	4189.5	4189.5	3...	H1-1b

THE MAXIMUM MEMBER STRESS IS AT 77% OF ITS CAPACITY AND IS ADEQUATE TO SUPPORT THE PROPOSED T-MOBILE UPGRADE.

SERVICE DEFLECTION = 1.22" x [(60MPH)^2/(105MPH)^2] = 0.4" < 1.6"
HENCE, OK.

BASED ON THE CURRENT REACTIONS AND STRESS RATIO'S IN THE FRAME MEMBERS, WE EXPECT THE CONNECTIONS TO BE ADEQUATE TO SUPPORT THE PROPOSED UPGRADE.

CONNECTICUT DESIGN CRITERIA - STATE

Revison:

CT is NOT a Home Rule State; Tab added only for Design Criteria

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS

Municipality	Ground Snow Load	*Wind Design Parameters*							
		MCE Spectral Accelerations (%g)		Ultimate Design Wind Speeds, V_{ult} (mph)			Nominal Design Wind Speeds, V_{asd} (mph)		
		S_s	S_1	Risk Cat.I	Risk Cat.II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV
Andover	30	0.176	0.063	120	130	140	93	101	108
Ansonia	30	0.195	0.064	115	125	135	89	97	105
Ashford	35	0.173	0.063	120	130	140	93	101	108
Avon	35	0.181	0.064	110	120	130	85	93	101
Barkhamsted	40	0.177	0.065	110	120	125	85	93	97
Beacon Falls	30	0.192	0.064	115	125	135	89	97	105
Berlin	30	0.183	0.063	115	125	135	89	97	105
Bethany	30	0.189	0.063	115	125	135	89	97	105
Bethel	30	0.215	0.066	110	120	125	85	93	97
Bethlehem	35	0.190	0.065	110	120	125	85	93	97
Bloomfield	35	0.180	0.064	115	125	130	89	97	101
Bolton	30	0.177	0.063	115	125	135	89	97	105
Bozrah	30	0.170	0.061	120	135	145	93	105	112
Branford	30	0.180	0.061	120	130	140	93	101	108
Bridgeport	30	0.209	0.064	115	125	135	89	97	105
Bridgewater	35	0.201	0.066	110	120	125	85	93	97
Bristol	35	0.185	0.064	110	120	130	85	93	101
Brookfield	35	0.208	0.066	110	120	125	85	93	97
Brooklyn	35	0.171	0.062	120	130	140	93	101	108
Burlington	35	0.182	0.064	110	120	130	85	93	101
Canaan	40	0.173	0.065	105	115	120	81	89	93
Canterbury	35	0.171	0.061	120	130	140	93	101	108
Canton	35	0.180	0.064	110	120	130	85	93	101
Chaplin	35	0.173	0.062	120	130	140	93	101	108
Cheshire	30	0.186	0.063	115	125	135	89	97	105
Chester	30	0.172	0.060	120	130	140	93	101	108
Clinton	30	0.169	0.059	120	135	140	93	105	108
Colchester	30	0.174	0.061	120	130	140	93	101	108
Colebrook	40	0.174	0.065	105	115	125	81	89	97
Columbia	30	0.175	0.062	120	130	140	93	101	108
Cornwall	40	0.180	0.065	105	115	120	81	89	93
Coventry	30	0.176	0.063	120	130	140	93	101	108
Cromwell	30	0.181	0.063	115	125	135	89	97	105
Danbury	30	0.217	0.067	110	120	125	85	93	97
Darien	30	0.242	0.068	110	120	130	85	93	101
Deep River	30	0.170	0.060	120	130	140	93	101	108
Derby	30	0.195	0.064	115	125	135	89	97	105
Durham	30	0.179	0.062	115	130	140	89	101	108
Eastford	40	0.172	0.063	120	130	140	93	101	108
East Granby	35	0.177	0.065	110	120	130	85	93	101
East Haddam	30	0.172	0.061	120	130	140	93	101	108
New London	30	0.161	0.058	125	135	145	97	105	112

Ice

Results:

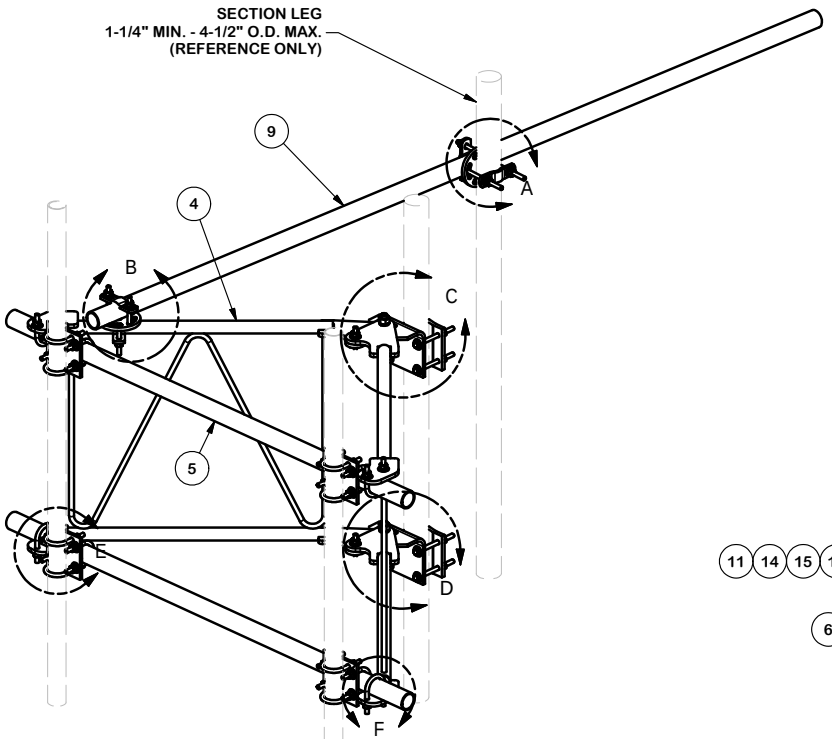
Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Nov 03 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

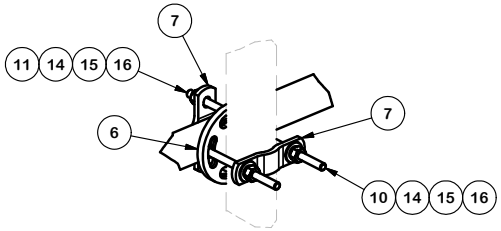
APPENDIX D

MANUFACTURER DRAWINGS

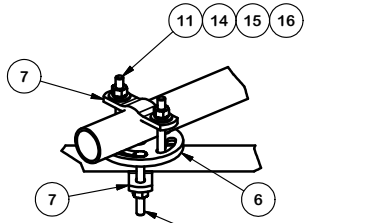


PARTS LIST

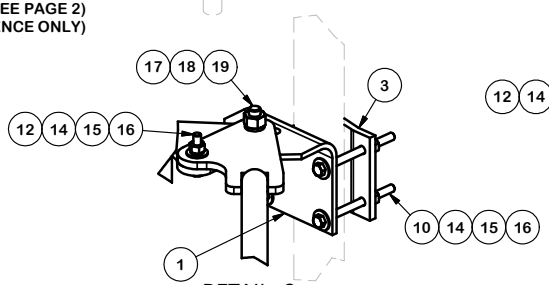
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-192043	UPPER MOUNTING BRACKET FOR V-FRAME		8.73	8.73
2	1	X-192044	LOWER MOUNTING BRACKET FOR V-FRAME		8.73	8.73
3	2	X-159999	BACKING PLATE	6 9/16	5.73	11.46
4	2	X-197544	SUPPORT ARM, BC-FRAME		43.48	86.96
5	2	P272	2-3/8" X 72" SCH 40 GALVANIZED PIPE	72"	23.07	46.13
6	2	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.48	4.97
7	4	X-100064	CLAMP (S) (4" V-CLAMP) GALVANIZED		0.91	3.65
8	4	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6	3.71	14.83
9	1	P2126	2-3/8" OD X 126" SCH 40 GALVANIZED PIPE	126"	40.75	40.75
10	10	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD		0.41	4.09
11	6	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD		0.27	1.62
12	2	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5		0.20	0.41
13	20	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" GALV. U-BOLT		0.66	13.13
14	60	G12FW	1/2" HDG USS FLATWASHER	0.095	0.03	2.04
15	58	G12LW	1/2" HDG LOCKWASHER	.125	0.01	0.81
16	58	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.15
17	2	A34234	3/4"-10 X 2-3/4" A325 BOLT WITH 1-3/8" THREAD		0.54	1.07
18	2	G34LW	3/4" HDG LOCKWASHER		0.04	0.09
19	2	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.42
					TOTAL WT. #	238.42



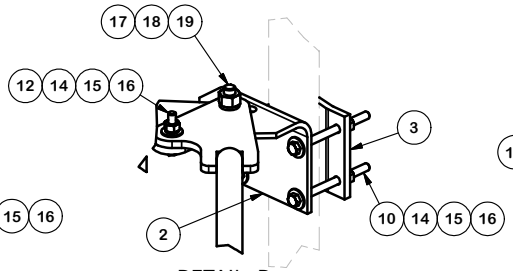
DETAIL A



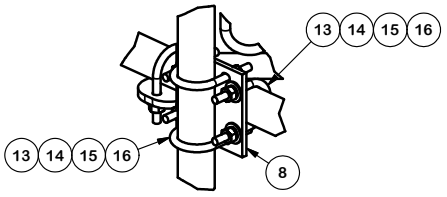
DETAIL B



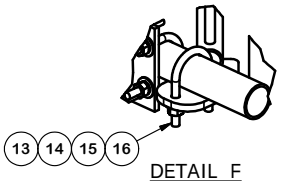
DETAIL C



DETAIL D



DETAIL E



DETAIL F

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	P1126 CHAGNED TO P2126		CEK	11/13/2015

REVISION HISTORY

DESCRIPTION
6'
V-FRAME ASSEMBLY
W/ STIFF ARM

SITE PRO 1 — A valmont COMPANY

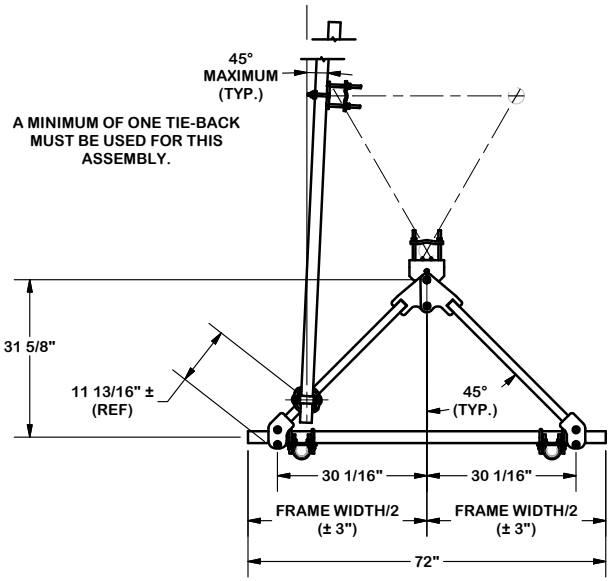
Engineering Support Team: 1-888-753-7446

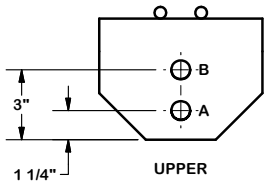
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

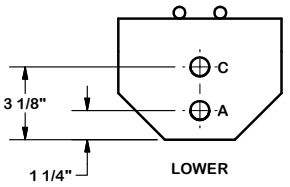
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 5/2/2011		VFA6-U

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
		CUSTOMER	BMC 11/13/2015	VFA6-U

PAGE 1 OF 2

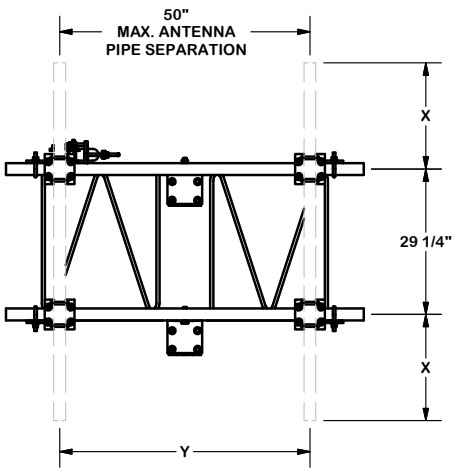




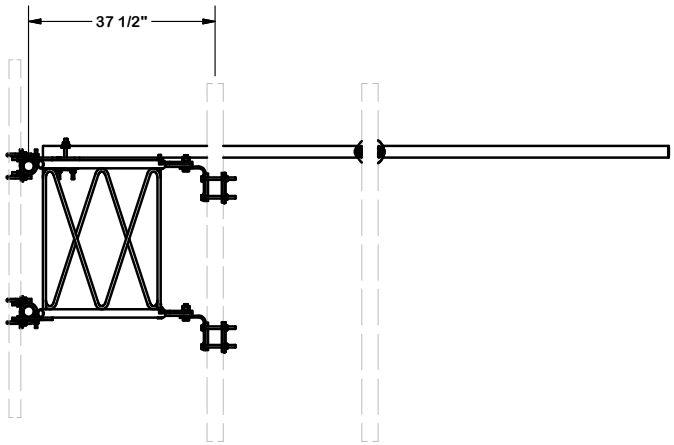


NOTES:

1. USE HOLE "A" IN UPPER AND LOWER BRACKETS FOR STRAIGHT LEGS.
2. USE HOLE "A" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 2' IN 20' TAPER LEGS. (3.309°)
3. USE HOLE "B" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 6" IN 20' TAPER LEGS. (0.827°)



PIPES MUST BE SPACED EVENLY ACROSS THE FACE OF THE V-FRAME (± 3")



TOLERANCE NOTES

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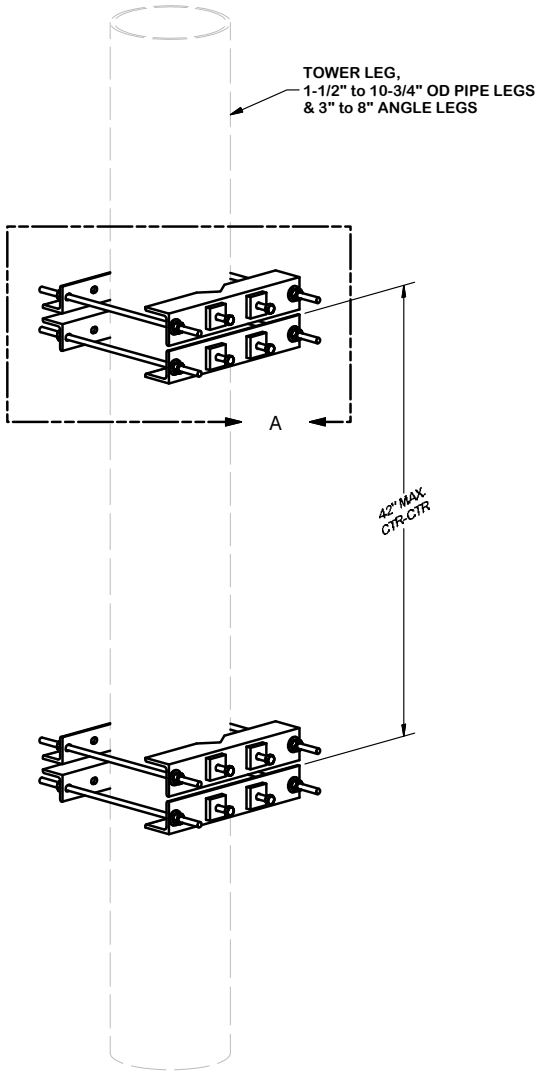
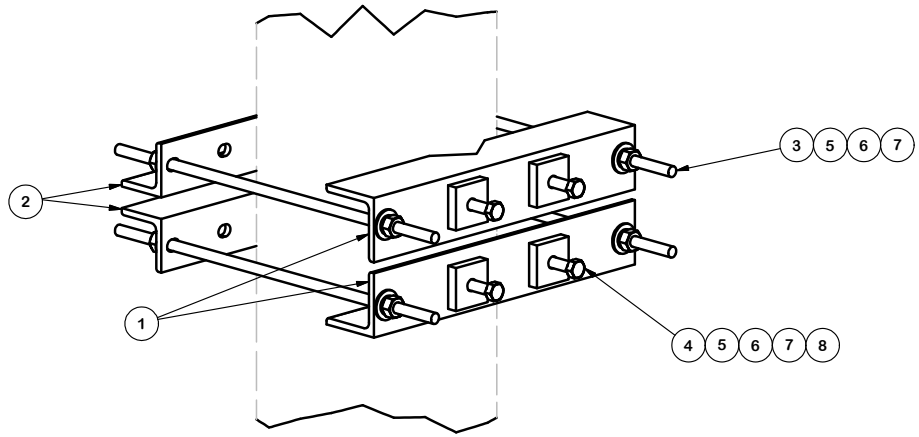
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: 6' V-FRAME ASSEMBLY W/ STIFF ARM			
CPD NO.	DRAWN BY: CEK 5/2/2011	ENG. APPROVAL	PART NO.: VFA6-U
CLASS / SUB	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 11/13/2015	DWG. NO.: VFA6-U

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-158320	ANGLE CLAMP	16 1/2 in	8.51	34.03
2	4	X-126501	BRACKET ANGLE LEG MOUNTING	16 1/2 in	7.13	28.51
3	8	G12R-20	1/2" x 20" GALV. THREADED ROD		1.12	8.92
4	8	G1203	1/2" x 3" HDG HEX BOLT GR5 FULL THREAD	3 in	0.22	1.74
5	24	G12FW	1/2" HDG USS FLATWASHER		0.03	0.82
6	24	G12LW	1/2" HDG LOCKWASHER		0.01	0.33
7	24	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.72
8	8	X-124312	1/2" X 2" X 2" ANGLE SPACER; WITH 9/16" HOLE		0.53	4.26
					TOTAL WT. #	77.61



DETAIL A

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
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DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
LARGE LEG
ADAPTER KIT
SITE PRO 1

SITE PRO 1
A valmont COMPANY

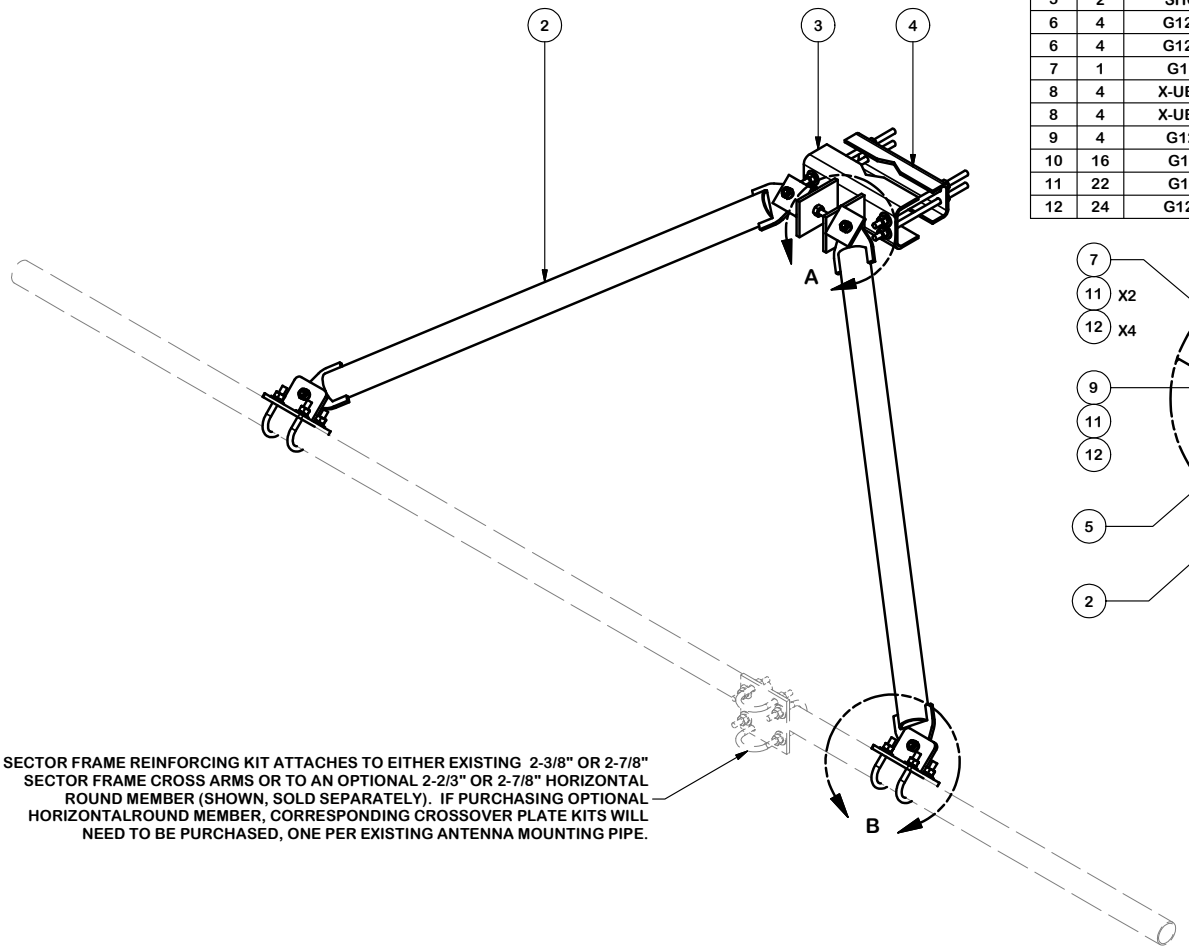
Engineering
Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

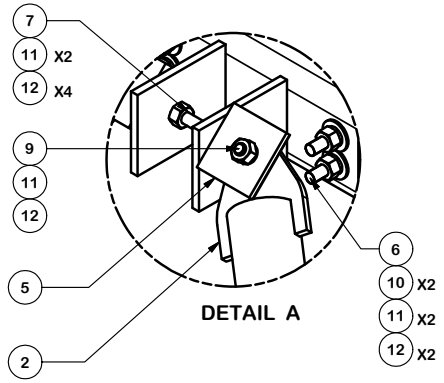
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4718	RH18 3/30/2010		LLEG-K	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 9/16/2010	LLEG-K

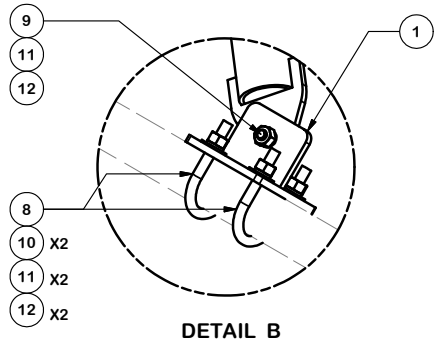
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VSKBRKT	T-BRACKET WELDMENT FOR VSK REINFORCEMENTS		4.19	8.38
2	2	X-VSK	SUPPORT WELDMENT FOR VSK REINFORCEMENTS		27.05	54.11
3	1	CFS	LOWER GATE FOOT WELDMENT		12.72	12.72
4	1	GBB	GATE BACKING BAR	11 1/2 in	4.53	4.53
5	2	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	3.72
6	4	G12R-15	1/2" x 15" THREADED ROD (HDG.)		0.84	3.35
6	4	G12R-12	1/2" x 12" THREADED ROD (HDG.)		0.67	2.68
7	1	G12R-6	1/2" x 6" GALV. THREADED ROD		0.33	0.33
8	4	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	2.68
8	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	2.39
9	4	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	0.59
10	16	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.55
11	22	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.31
12	24	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.72
					TOTAL WT. #	98.04



SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING 2-3/8" OR 2-7/8" SECTOR FRAME CROSS ARMS OR TO AN OPTIONAL 2-2/3" OR 2-7/8" HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTALROUND MEMBER, CORRESPONDING CROSSOVER PLATE KITS WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.



DETAIL A



DETAIL B

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

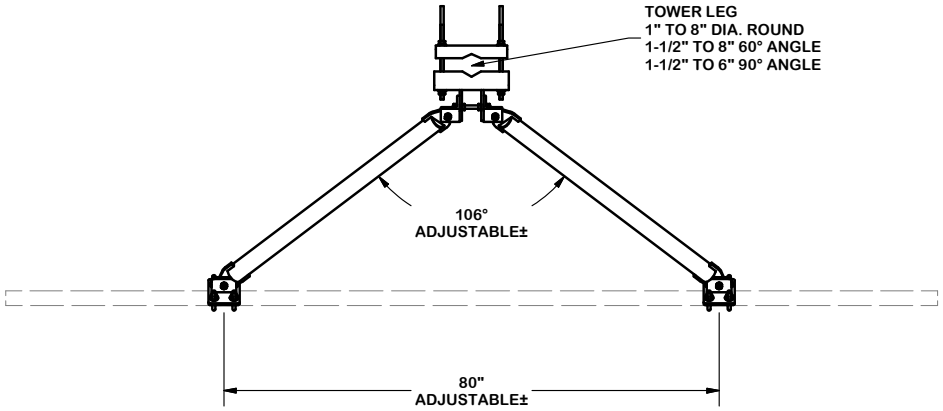
DESCRIPTION: SECTOR FRAME STABILIZER VERTICAL PIPE ARMS

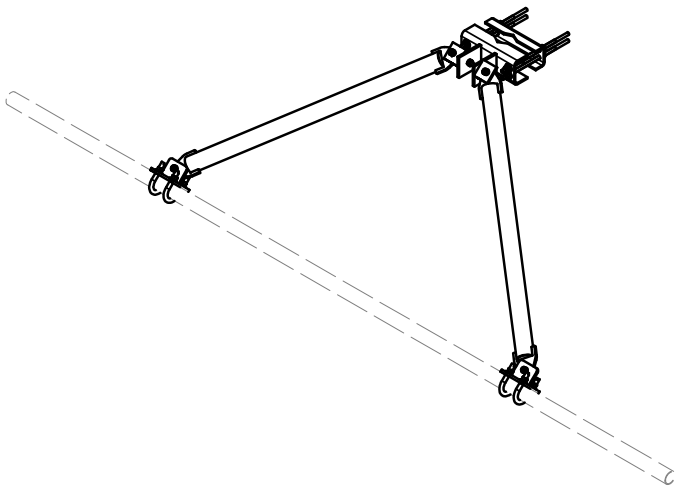
SITE PRO 1 — A valmont COMPANY

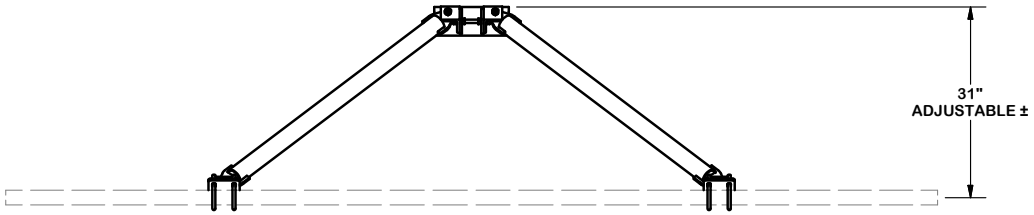
Engineering Support Team: 1-888-753-7446

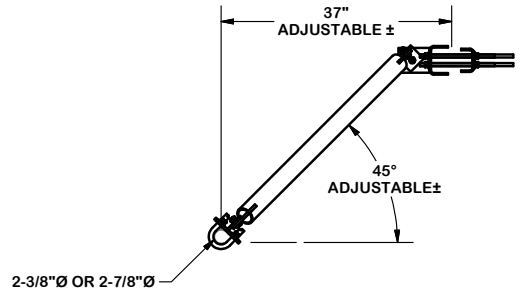
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
SP1	CSL 8/1/2019		VSK-TV	1 OF 3
CLASS / SUB: 87 / 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 8/19/2019	DWG. NO.: VSK-TV	









TOLERANCE NOTES

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DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
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ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: SECTOR FRAME STABILIZER VERTICAL PIPE ARMS

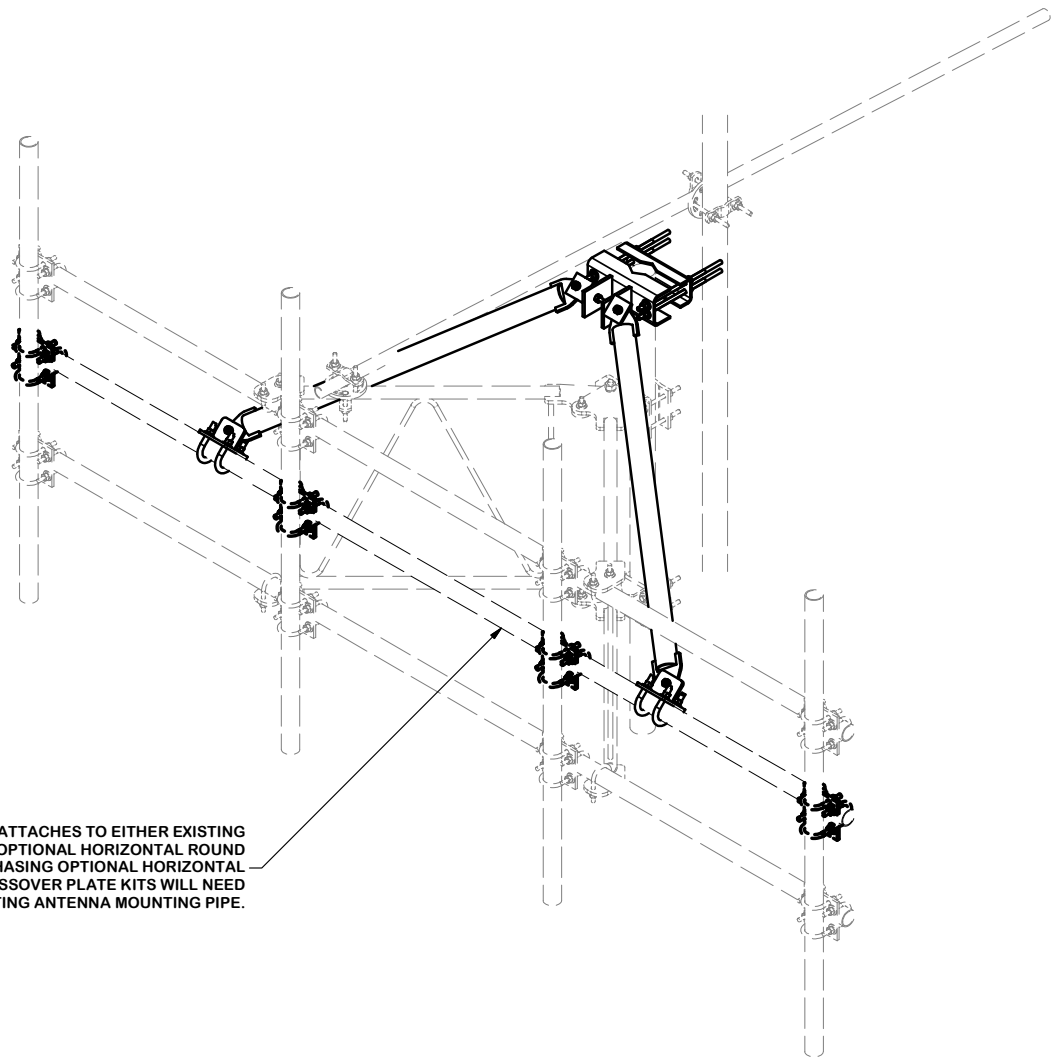
SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 8/1/2019		VSK-TV

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 8/19/2019	VSK-TV



SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING SECTOR FRAME CROSS ARMS OR TO AN OPTIONAL HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTAL ROUND MEMBER, CORRESPONDING CROSSOVER PLATE KITS WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
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ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: SECTOR FRAME STABILIZER VERTICAL PIPE ARMS				
CPD NO. SP1	DRAWN BY CSL 8/1/2019	ENG. APPROVAL	PART NO. VSK-TV	PAGE 3 OF 3
CLASS 87 / SUB 02	DRAWING USAGE CUSTOMER	CHECKED BY BMC 8/19/2019	DWG. NO. VSK-TV	

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

Exhibit G

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CTNL814C

Oakdale Subcarrier Communications
401 Chapel Hill Road
Oakdale, Connecticut 06370

May 4, 2021

EBI Project Number: 6221002136

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**4.49%**

May 4, 2021

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTNL814C - Oakdale Subcarrier Communications

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **401 Chapel Hill Road** in **Oakdale, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 401 Chapel Hill Road in Oakdale, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

9) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

10) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

11) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

12) The antenna mounting height centerline of the proposed antennas is 180 feet above ground level (AGL).

13) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

14) Emissions from additional carriers were not included because emissions data for the site location are not available.

15) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A1 MPE %:	**1.04%**	Antenna B1 MPE %:	**1.04%**	Antenna C1 MPE %:	**1.04%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	10,465.36	ERP (W):	10,465.36	ERP (W):	10,465.36
Antenna A2 MPE %:	**1.92%**	Antenna B2 MPE %:	**1.92%**	Antenna C2 MPE %:	**1.92%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	**1.53%**	Antenna B3 MPE %:	**1.53%**	Antenna C3 MPE %:	**1.53%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	4.49%
no additional carriers	N/A
Site Total MPE % :	4.49%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	4.49%
T-Mobile Sector B Total:	4.49%
T-Mobile Sector C Total:	4.49%
Site Total MPE % :	4.49%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz LTE	2	2056.61	180.0	4.88	1900 MHz LTE	1000	0.49%
T-Mobile 2100 MHz LTE	2	2307.55	180.0	5.48	2100 MHz LTE	1000	0.55%
T-Mobile 600 MHz LTE	2	591.73	180.0	1.41	600 MHz LTE	400	0.35%
T-Mobile 600 MHz NR	1	1577.94	180.0	1.87	600 MHz NR	400	0.47%
T-Mobile 700 MHz LTE	2	695.22	180.0	1.65	700 MHz LTE	467	0.35%
T-Mobile 1900 MHz UMTS	2	1052.26	180.0	2.50	1900 MHz UMTS	1000	0.25%
T-Mobile 1900 MHz LTE	2	2104.51	180.0	5.00	1900 MHz LTE	1000	0.50%
T-Mobile 2500 MHz LTE	1	6444.38	180.0	7.65	2500 MHz LTE	1000	0.77%
T-Mobile 2500 MHz NR	1	6444.38	180.0	7.65	2500 MHz NR	1000	0.77%
						Total:	**4.49%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

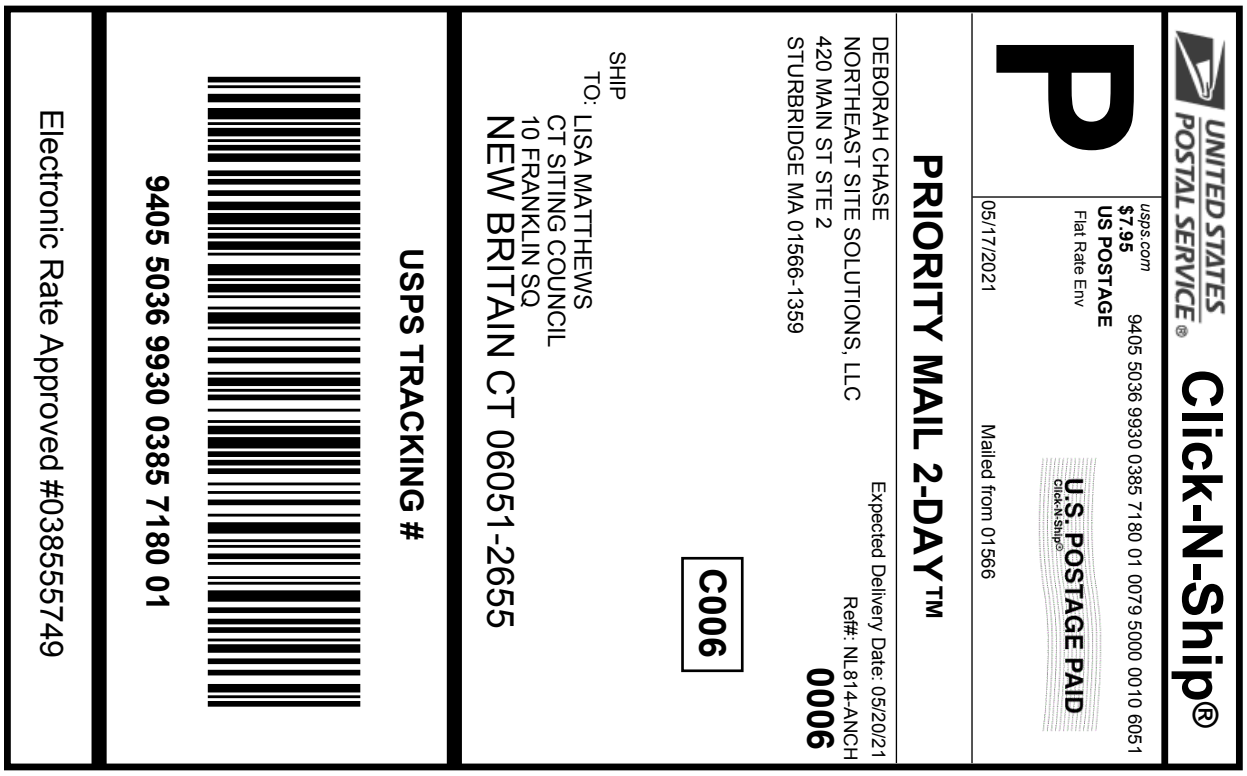
The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	4.49%
Sector B:	4.49%
Sector C:	4.49%
T-Mobile Maximum MPE % (Sector A):	4.49%
Site Total:	4.49%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **4.49%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Exhibit H



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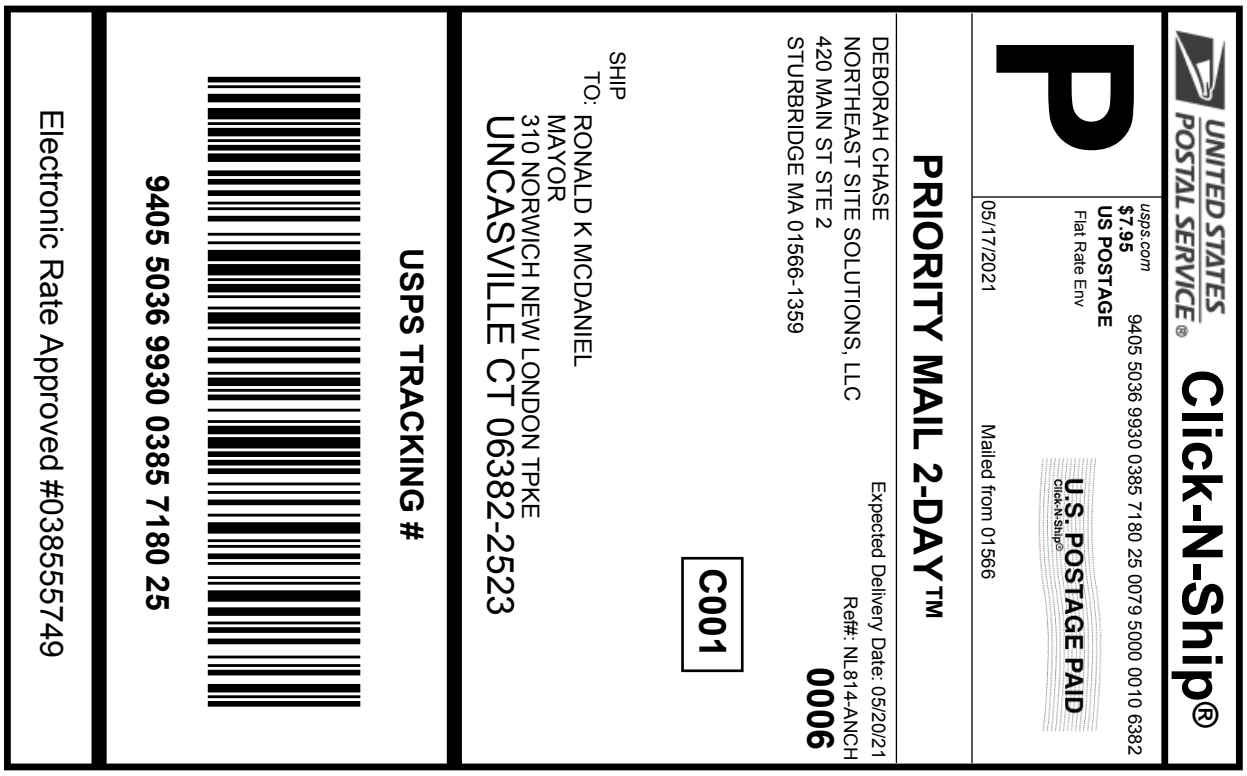

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Ship Date:	05/17/2021
Expected Delivery Date:	05/20/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

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STURBRIDGE MA 01566-1359

To: RONALD K MCDANIEL
MAYOR
310 NORWICH NEW LONDON TPKE
UNCASVILLE CT 06382-2523

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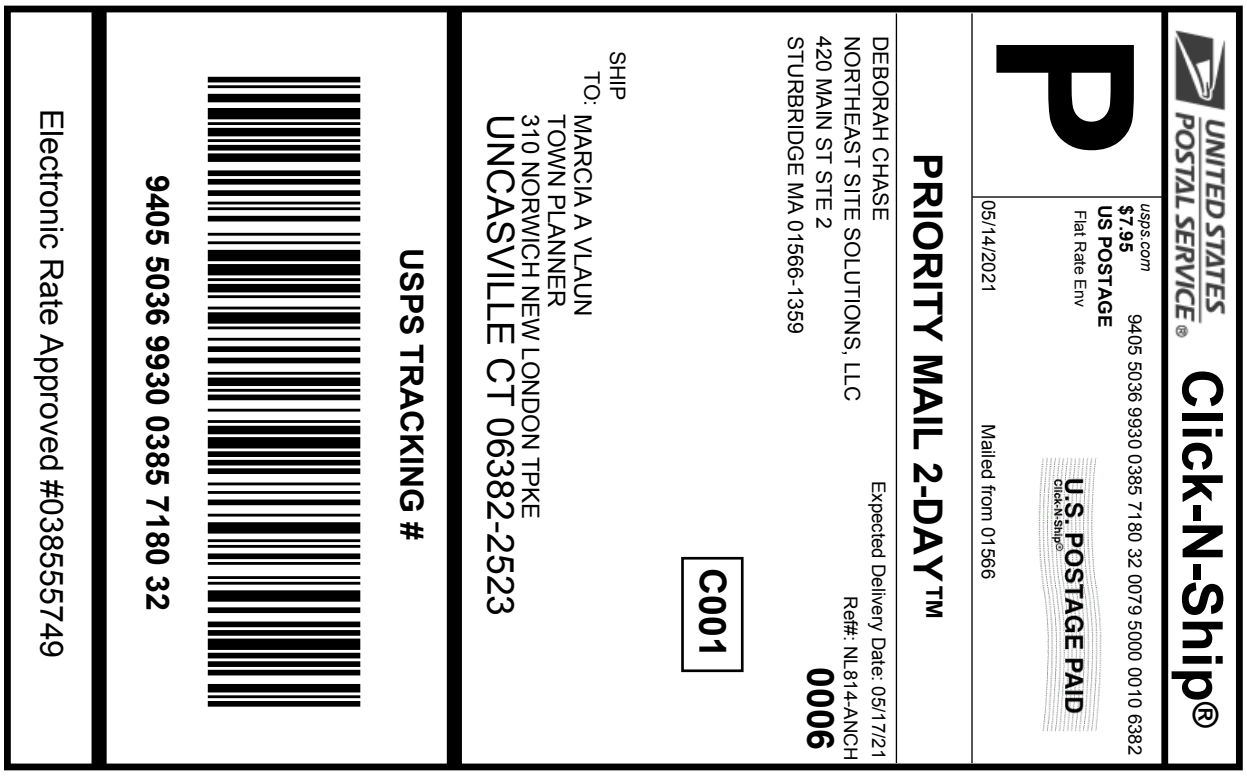

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420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: MARCIA A VLAUN
TOWN PLANNER
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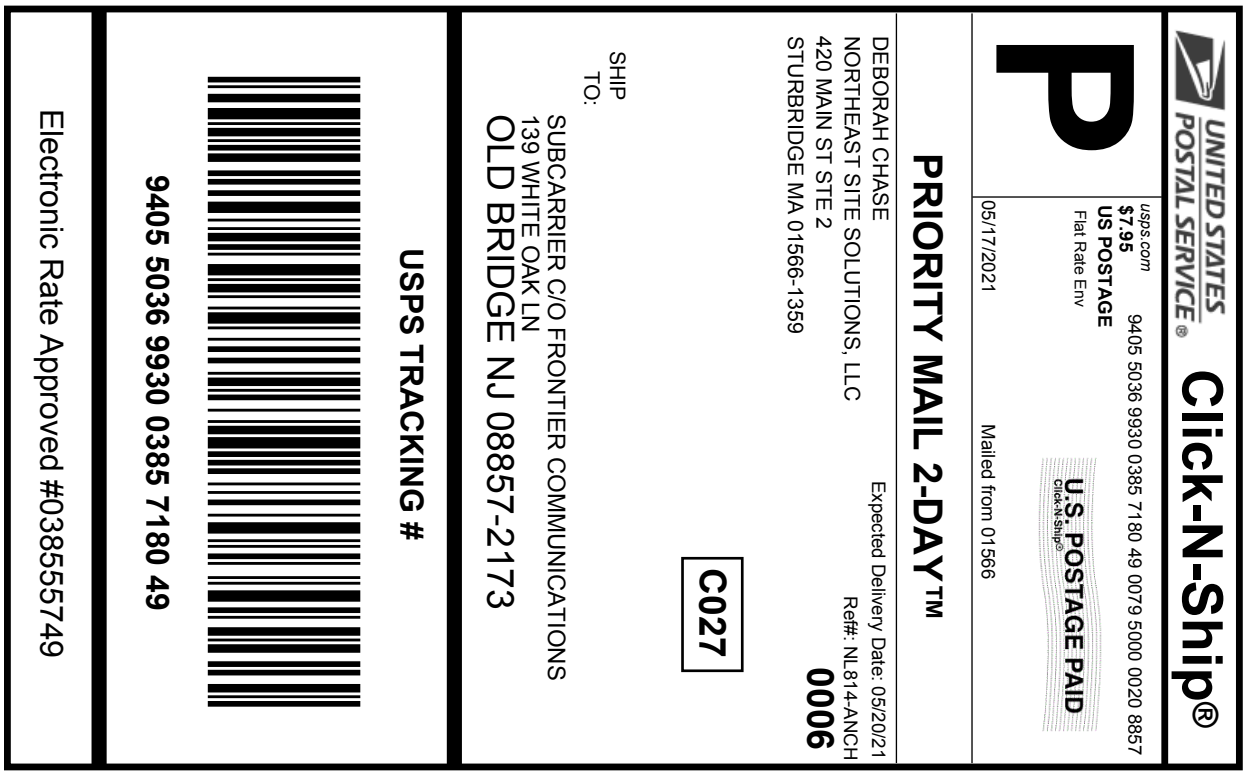

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Expected Delivery Date:	05/20/2021

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Total:	**$7.95**

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NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: SUBCARRIER C/O FRONTIER COMMUNICATIONS
139 WHITE OAK LN
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