NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

November 6, 2020

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

RE: Exempt Modification Application
35 Wildwood Street, New Britain CT 06051
Latitude: 41.668239
Longitude: -72.754955
T-Mobile Site#: CT11634C-Anchor

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing 110-foot monopole located at 35 Wildwood Street, New Britain CT 06051. T-Mobile currently has nine (9) antennas at the 110-foot level of the existing 110-foot tower. The property is owned by the City of New Britain and the monopole is owned by Blue Sky Towers. T-Mobile now intends to replace three (3) antenna with three new 600/700 MHZ antenna. The new antenna would be installed at the 110-foot and level of the tower.

Planned Tower Modifications:
Remove:
(6) Coax
(2) Hybrid Lines

Remove and Replace:
(3) AIR21 Antenna (Remove) – AIR6449 Antenna 2500 MHz **(Replace)**

Install New:
(3)Fiber line
(3) Diplexers
(3) RRU 4415 B25

Existing to Remain:
(3) APXAARR24_43U-NA20 Antenna 600/700 MHz
(6) 1-5/8" coax
(3) RRU 4449 B12
(3) AIR32 Antenna – 1900/2100 MHz
(3)Twin TMA

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This facility was approved by the City of New Britain PZC at a public hearing on August 11, 2004. The City approved the replacement of the existing 60-foot light pole with a new 110-foot pole– See attached letter from Cingular notifying Council

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 Mayor Erin Stewart, Elected Official and David Zajac, Zoning Enforcement for the City of New Britain, as well as the property owner and the tower owner.

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

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Attachments
cc: Erin Stewart- Mayor - as elected official
Davis Zajac, Zoning Enforcement Officer
Blue Sky Tower - as tower owner
City of New Britain – as property owner

Exhibit A

Petition No. 703
New Cingular Wireless PCS, LLC
New Britain, Connecticut
Staff Report
March 3, 2005

New Cingular Wireless LLC (Cingular) is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for a proposed light pole facility in the City of New Britain on the basis that the light pole is not within the Council's jurisdiction.

Cingular intends to replace a 60-foot light pole with a 110-foot light pole at a ball field in Chesley Park, a municipal park on Wildwood Avenue in New Britain. The existing light pole is one of 14 in the park.

The proposed light pole would contain stadium lights at the 60-foot level and Cingular's antennas at the 110-foot level. A fenced compound containing an equipment shelter and ball field scoreboard would be located at the base of the light pole.

The City of New Britain approved the project during a public hearing on August 11, 2004. The City of New Britain would own the proposed light pole.

Cingular asserts the proposed light pole is not within the Council's jurisdiction since the light pole is an existing use and does not constitute a telecommunications tower. Furthermore, if the Council rules that the light pole is a telecommunications tower, Cingular asserts it would be a municipal tower since it would be owned by the city, located on city owned property, and would be available to the city for future communication use.

Exhibit B

City of New Britain, Connecticut - Assessment Parcel Map

MBL: A8B 1 **Address:** 35 WILDWOOD ST

Approximate Scale:

1 inch = 300 feet

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The City of New Britain and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced January 2015

35 WILDWOOD ST

Location	35 WILDWOOD ST	Mblu	A8B/ 1/ / /
Acct#	91200035	Owner	NEW BRITAIN CITY OF - PARK
Assessment	$1,632,330	Appraisal	$2,331,900
PID	1830	Building Count	1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2012	$1,646,900	$685,000	$2,331,900
Assessment			
Valuation Year	Improvements	Land	Total
2012	$1,152,830	$479,500	$1,632,330

Owner of Record

Owner	NEW BRITAIN CITY OF - PARK	Sale Price	$0
Co-Owner	CHESLEY PARK	Certificate	
Address	27 WEST MAIN ST NEW BRITAIN, CT 06051	Book & Page	
		Sale Date	01/01/1900

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
NEW BRITAIN CITY OF - PARK	$0			01/01/1900

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

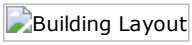
Building Attributes	
Field	Description

Style	Outbuildings
Model	
Grade	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Central Heat Sys	
AC Type	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs	
Total Rooms	
Bath Style	
Kitchen Style	
Whirlpool Tub	
Fireplaces	
Rec Room Finish	
Rec Room Qual	
Bsmt Garages	
Bldg Nbhd	

Building Photo

(http://images.vgsi.com/photos/NewBritainCTPhotos//\00\02\1

Building Layout



Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	903A
Description	Mun Park MDL-00
Zone	T
Neighborhood	107

Land Line Valuation

Size (Acres)	11.85
Depth	
Assessed Value	$479,500
Appraised Value	$685,000

Exhibit C

T-Mobile

NORTHEAST, LLC.

PROJECT: ANCHOR

SITE I.D. NUMBER:

CT11634C

SITE NAME:

CT634/CING/CHESLEYPARK_ET

SITE ADDRESS:

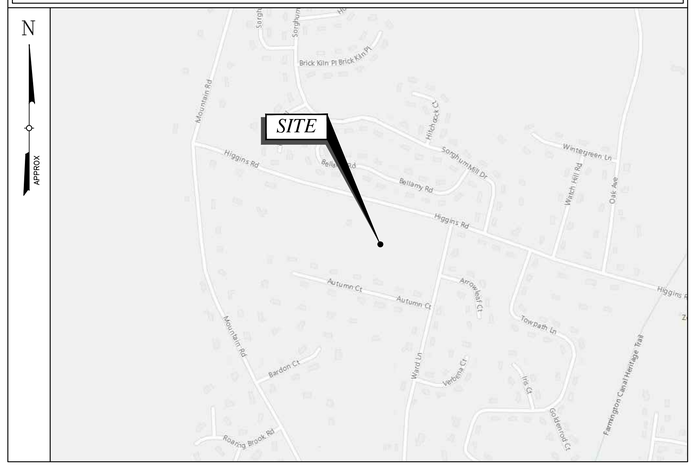
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

PROJECT INDEX

SITE NUMBER:	CT11634C
SITE NAME:	CT634/CING/CHESLEYPARK_ET
SITE ADDRESS:	35 WILDWOOD STREET NEW BRITAIN, CT 06051
PROPERTY OWNER:	AT&T ONE AT&T WAY BEDMINSTER, NJ 07921
APPLICANT:	T-MOBILE NORTHEAST LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
STRUCTURE TYPE:	MONOPOLE
LATTITUDE (NAD83):	N 41.668239"
LONGITUDE (NAD83):	W 72.754955"
GRADE ELEVATION:	59' AMSL (PER GOOGLE EARTH)
MUNICIPALITY:	NEW BRITAIN
ZONING:	T
PARCEL ID:	A8B 1

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	0	10/15/20
A-1	SITE PLAN	0	10/15/20
A-2	TOWER ELEVATION	0	10/15/20
A-3	EXISTING AND PROPOSED EQUIPMENT PLANS	0	10/15/20
A-4	EXIST/NEW T-MOBILE ANTENNA PLANS & ANTENNA SCHEDULE	0	10/15/20
A-5	DETAILS, ANTENNA SCHEMATIC & SPECIFICATIONS	0	10/15/20
A-6	NOTES	0	10/15/20
E-1	ELECTRICAL NOTES & ONE-LINE DIAGRAM	0	10/15/20
G-1	GROUNDING DETAILS & NOTES	0	10/15/20

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 7/1/2020, VERSION 6.

RAN TEMPLATE: 67D5A997DB HYBRID
A&L TEMPLATE: 67D5997DB_2xAIR+1OP (U21 MARKET)

STRUCTURAL NOTE

ANTENNA FRAME

REFER TO THE "MOUNT ANALYSIS REPORT" BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. DATED SEPTEMBER 4, 2020.

TOWER

REFER TO THE "RIGOROUS STRUCTURAL ANALYSIS FOR AT&T TOWERS" BY CLS ENGINEERING PLLC DATED OCTOBER 7, 2020.

Know what's below.
Call before you dig.

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

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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.CT11634C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/15/20	ISSUED FOR CONSTRUCTION	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

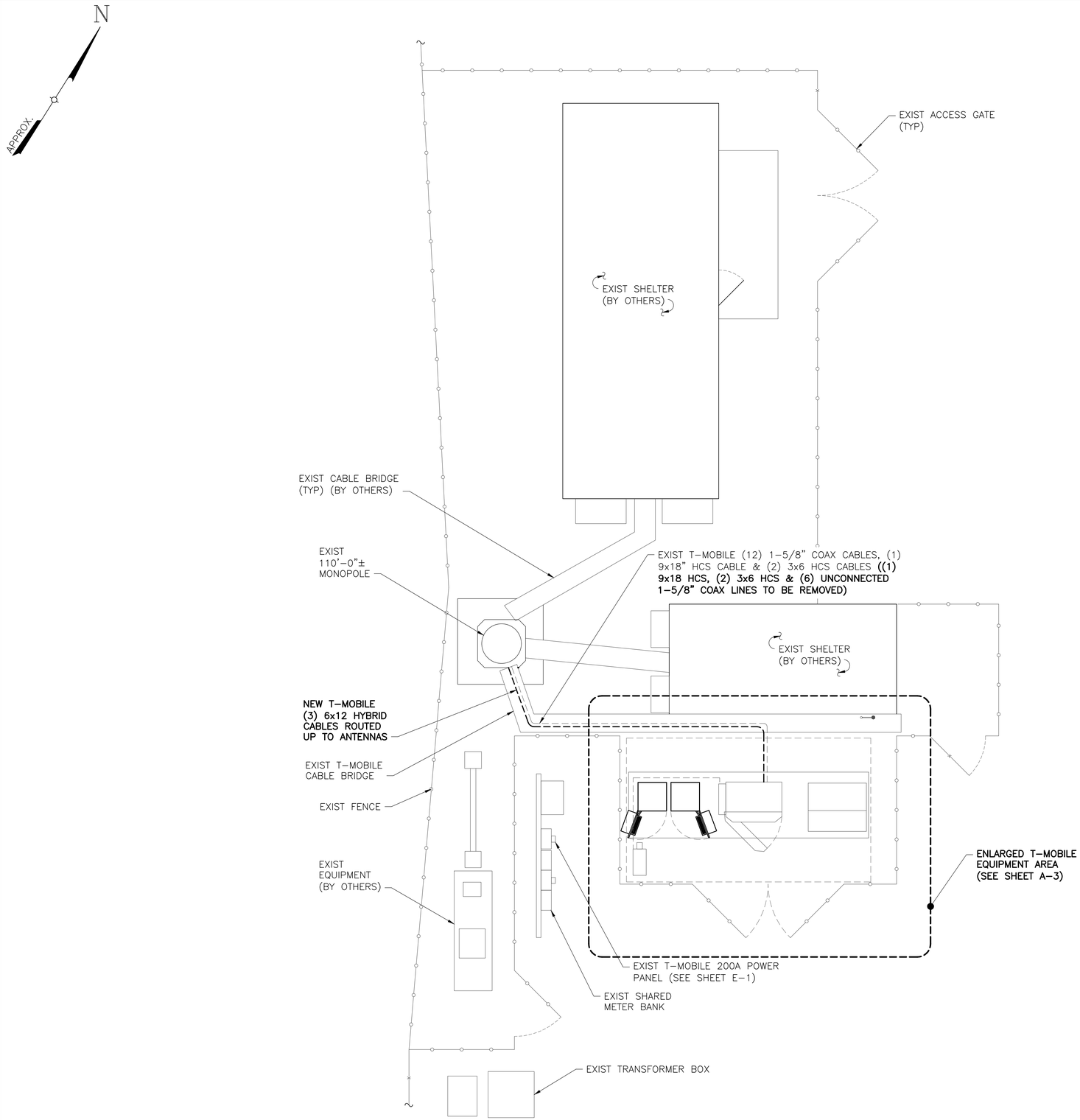
CT634/CING/CHESLEYPARK_ET
CT11634C
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



1 / A-1 SITE PLAN

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

STRUCTURAL NOTE

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SITE INFORMATION

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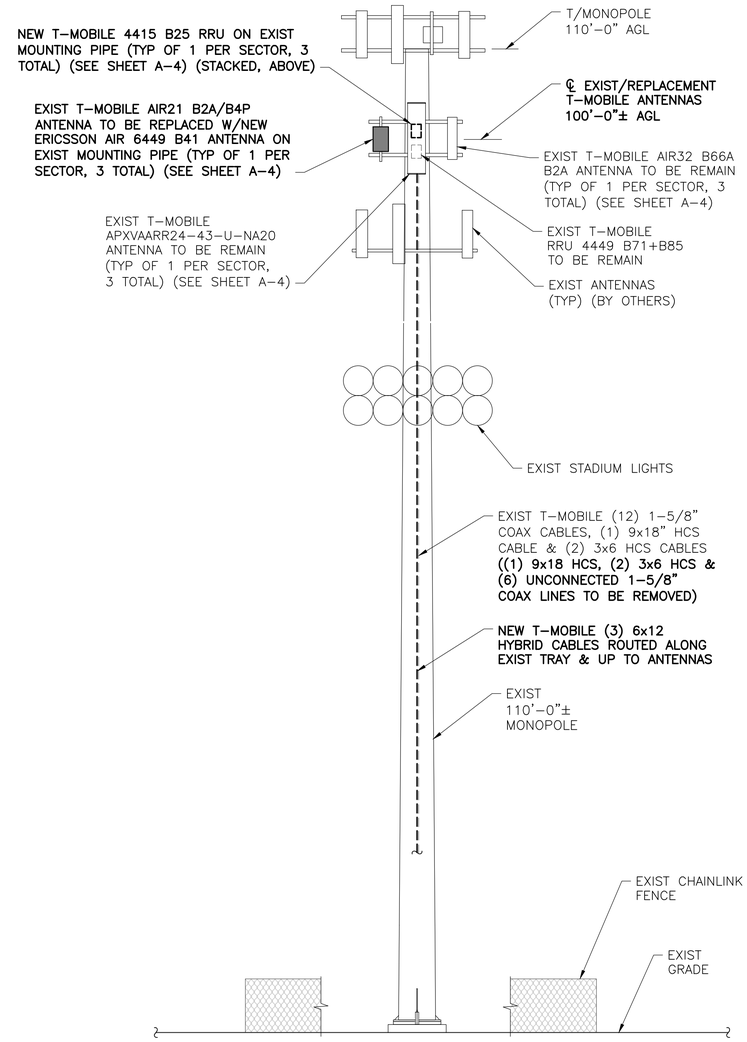
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

SHEET TITLE

SITE PLAN

SHEET NUMBER

A-1



NOTE: NOT ALL SITE FEATURES SHOWN FOR CLARITY.

1 / A–2 TOWER ELEVATION

SCALE: 1/8" = 1'–0"

STRUCTURAL NOTE

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ORIGINAL SIZE IN INCHES

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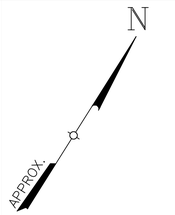
CT11634C
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

SHEET TITLE

TOWER ELEVATION

SHEET NUMBER

A–2



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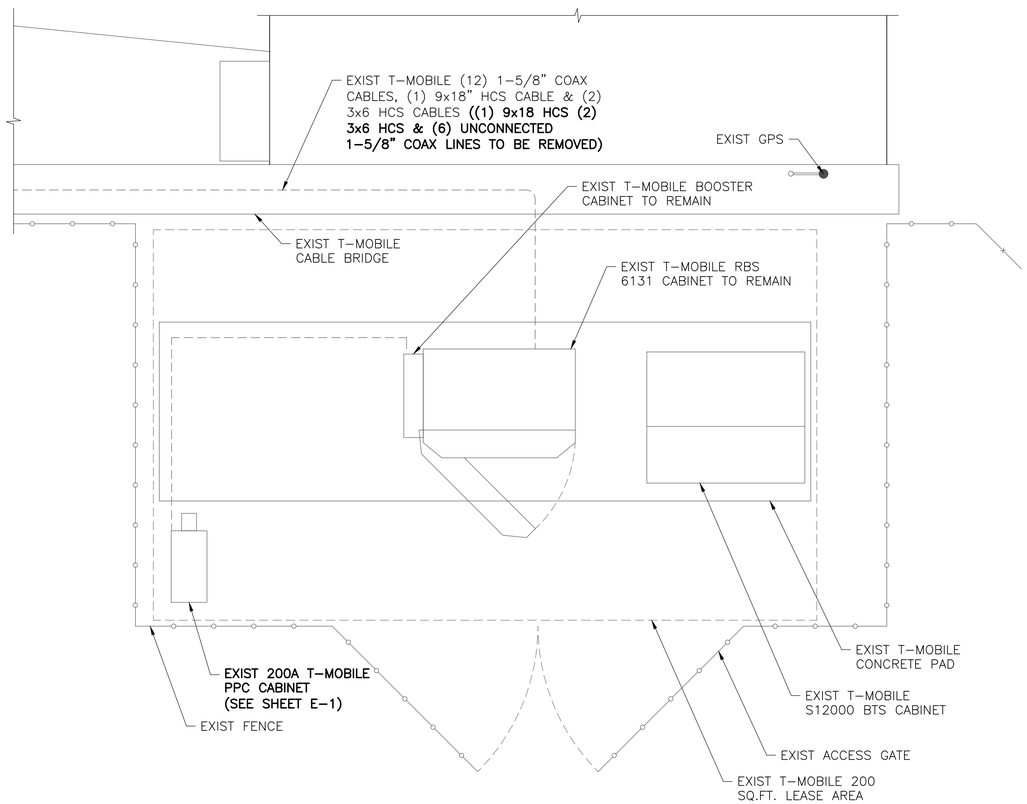
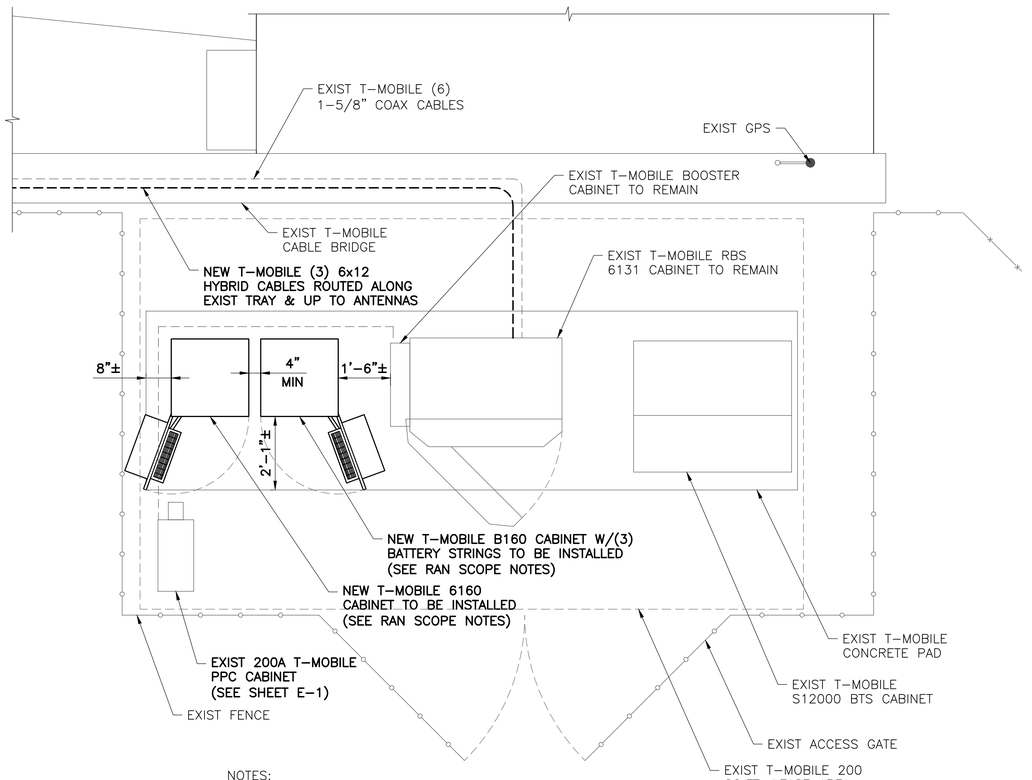
RAN SCOPE NOTES

1. ADD (1) ENCLOSURE 6160.
2. ADD (1) BATTERY CABINET B160.
3. ADD (1) IXRE ROUTER TO NEW ENCLOSURE 6160.
4. ADD (1) BB6630 FOR L2500 TO NEW ENCLOSURE 6160.
5. ADD (1) BB6648 FOR N2500 TO NEW ENCLOSURE 6160.
6. ADD (3) 6x12 HCS. LENGHT OF NEW HCS WILL MATCH THAT OF EXISTING HCS.
7. REPLACE BB5216 WITH (1) BB6630 FOR L2100, L1900, L700 AND L600 IN EXISTING RBS6131 CABINET IF PRESENT.
8. REMOVE (1) 9x18 HCS & (2) 3x6 HCS.
9. REMOVE (6) UNCONNECTED COAX LINES.
10. REMOVE XMU FROM EXISTING RBS6131 CABINET IF PRESENT.
11. EXISTING (12) 1-5/8" COAX LINES
12. KEEP (6) COAX LINES FOR U2100.



1 / A-3 EXIST T-MOBILE EQUIPMENT PLAN

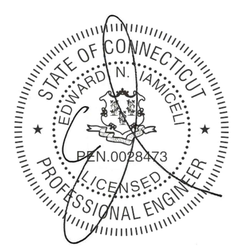
SCALE: 1/2" = 1'-0"



NOTES:
1. CONTRACTOR TO REMOVE VEGETATION WITHIN COMPOUND.
2. ALL EQUIPMENT TO BE GROUNDED TO EXISTING GROUND RING.

2 / A-3 NEW T-MOBILE EQUIPMENT PLAN

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



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ORIGINAL SIZE IN INCHES

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SHEET TITLE

EXISTING AND PROPOSED EQUIPMENT PLANS

SHEET NUMBER

A-3

N

APPROX.

STRUCTURAL NOTE

ANTENNA FRAME

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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/GSM	ERICSSON AIR32 B66A/B2A	60°	2°	0°	100'-0"±	LEFT ALPHA	EXISTING	0/0	SHARED 6x12 HYBRID CABLE	FIBER	148'- 0"
A-2 LTE/UMTS	RFS APXVAARR24-43-U-NA20	60°	2°	0°	100'-0"±	CENTER ALPHA	EXISTING	1/2	SHARED 6x12 HCS (2) 1-5/8" COAX	FIBER	148'- 0"
A-3 LTE	**ERICSSON AIR6449 B41**	**60°**	**2°**	**0°**	**100'-0"±**	**RIGHT ALPHA**	**REPLACEMENT**	**0/0**	**NEW 6x12 HYBRID CABLE**	**FIBER**	**148'- 0"**
B-1 LTE/GSM	ERICSSON AIR32 B66A/B2A	160°	2°	0°	100'-0"±	LEFT ALPHA	EXISTING	0/0	SHARED 6x12 HYBRID CABLE	FIBER	148'- 0"
B-2 LTE/UMTS	RFS APXVAARR24-43-U-NA20	160°	2°	0°	100'-0"±	CENTER BETA	EXISTING	1/2	SHARED 6x12 HCS (2) 1-5/8" COAX	FIBER	148'- 0"
B-3 LTE	**ERICSSON AIR6449 B41**	**160°**	**2°**	**0°**	**100'-0"±**	**RIGHT BETA**	**REPLACEMENT**	**0/0**	**NEW 6x12 HYBRID CABLE**	**FIBER**	**148'- 0"**
C-1 LTE/GSM	ERICSSON AIR32 B66A/B2A	310°	2°	0°	100'-0"±	LEFT ALPHA	EXISTING	0/0	SHARED 6x12 HYBRID CABLE	FIBER	148'- 0"
C-2 LTE/UMTS	RFS APXVAARR24-43-U-NA20	310°	2°	0°	100'-0"±	CENTER GAMMA	EXISTING	1/2	SHARED 6x12 HCS (2) 1-5/8" COAX	FIBER	148'- 0"
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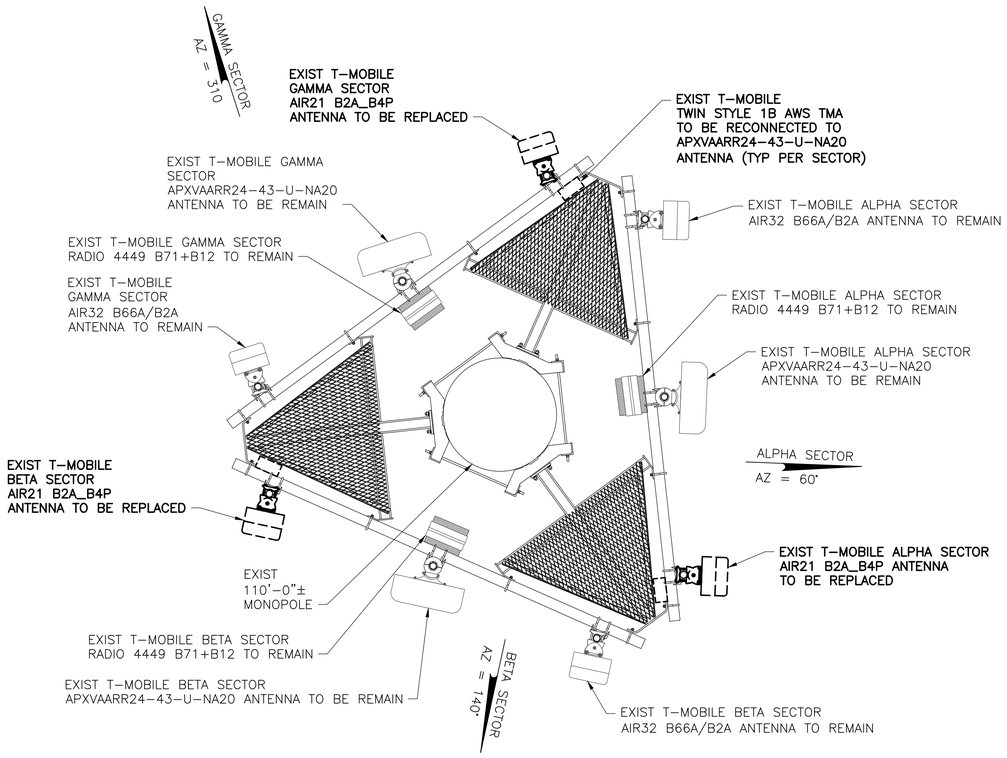
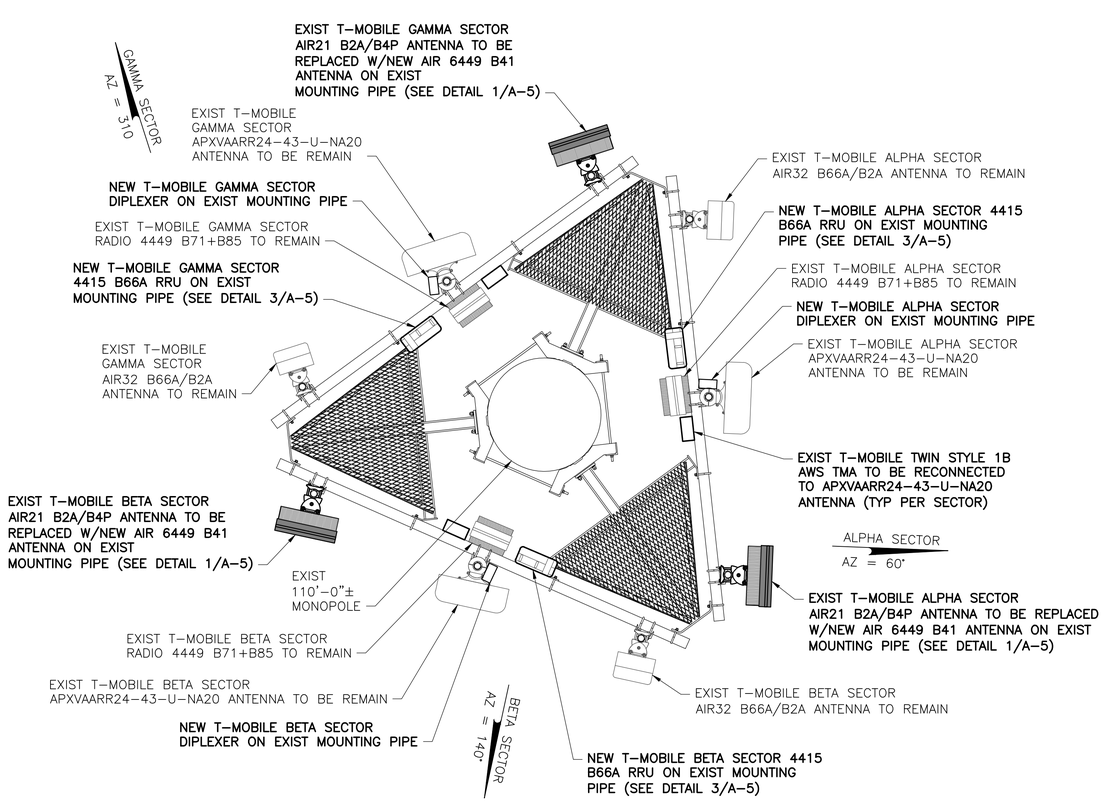


ALL SECTORS, CENTERLINE ELEVATION 100'-0" AGL

1 / A-4 EXIST T-MOBILE ANTENNA PLAN

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



ALL SECTORS, CENTERLINE ELEVATION 100'-0" AGL

2 / A-4 NEW T-MOBILE ANTENNA PLAN

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

STATE OF CONNECTICUT
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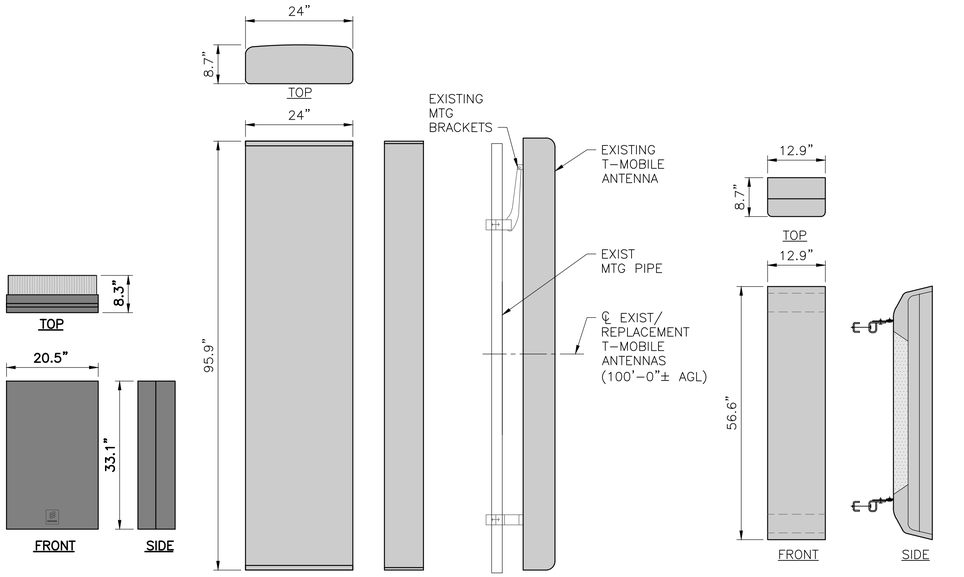
EXIST/NEW T-MOBILE ANTENNA PLANS & ANTENNA SCHEDULE

SHEET NUMBER

A-4



AIR6449 B41
WEIGHT: 103 LBS

PROPOSED

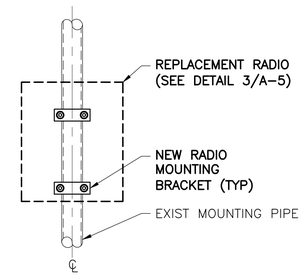
RFS: APXVAARR24_43_U_NA20
WEIGHT: 128 LBS

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

EXISTING

1 A-5 ANTENNA DETAILS

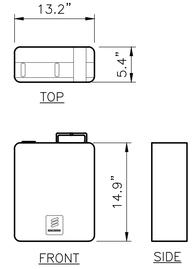
SCALE: 3/4" = 1'-0"



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

2 A-5 RADIO MOUNTING DETAIL

SCALE: 1" = 1'-0"

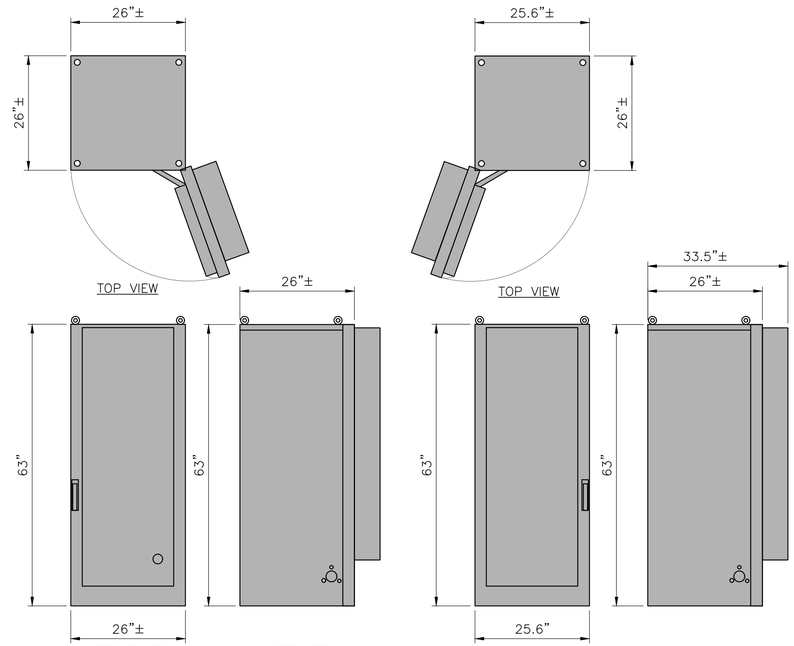


WEIGHT 46.3 LB

RRUS-4415 B25

3 A-5 RADIO DETAIL

SCALE: 1" = 1'-0"



WEIGHT: 1883 LBS (W/3 BATTERY STRINGS)

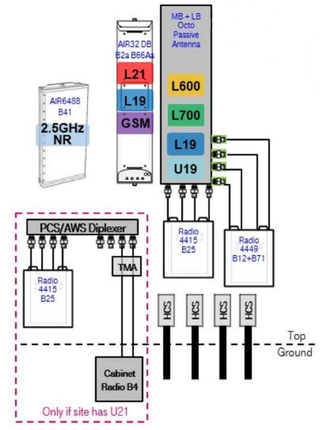
ERICSSON ENCLOSURE B160

WEIGHT: 605 LB (FULLY LOADED)

ERICSSON ENCLOSURE 6160 AC

4 A-5 EQUIPMENT CABINET SPECIFICATIONS

SCALE: NTS



TYP ALL SECTORS

5 A-5 ANTENNA SCHEMATIC

SCALE: NTS

STATE OF CONNECTICUT
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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.CT11634C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/15/20	ISSUED FOR CONSTRUCTION	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

CT634/CING/CHESLEYPARK_ET
CT11634C
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

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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NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
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SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
10473.CT11634C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/15/20	ISSUED FOR CONSTRUCTION	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

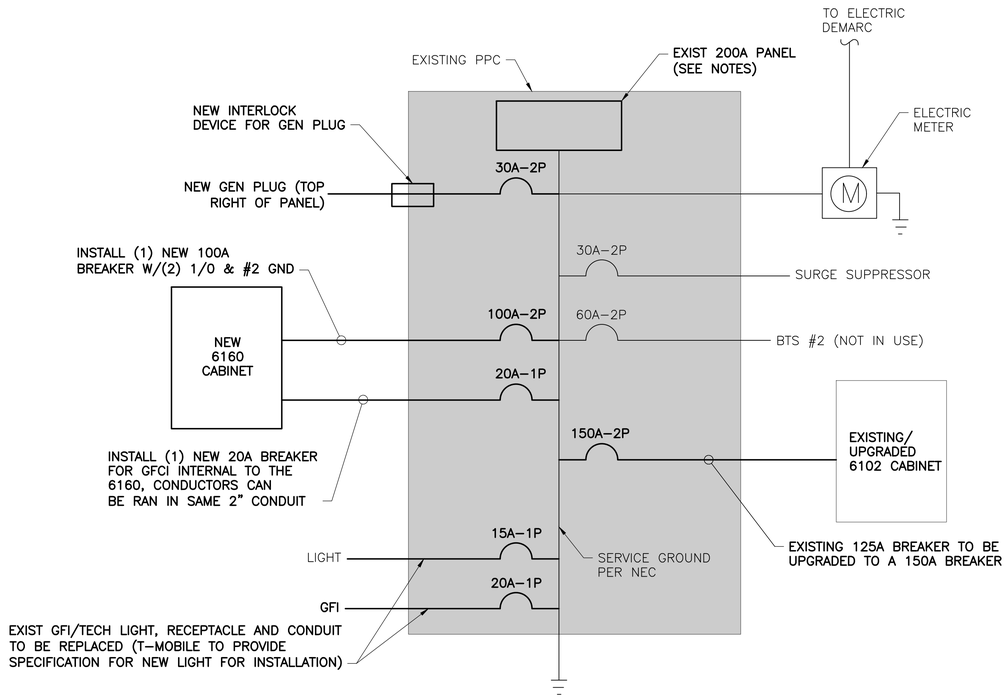
CT634/CING/CHESLEYPARK_ET
CT11634C
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

SHEET TITLE

NOTES

SHEET NUMBER

A–6



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.

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

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
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Mountainville, NY 10953
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Project Contact Info
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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.CT11634C	EI

REV.	DATE	DESCRIPTION	DRAWN BY
0	10/15/20	ISSUED FOR CONSTRUCTION	BWY

ISSUED BY _____ DATE _____

0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

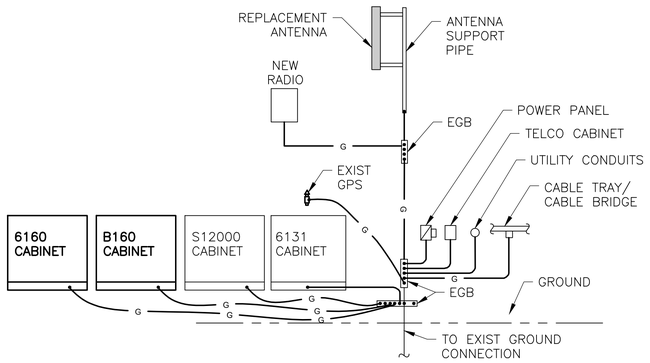
CT634/CING/CHESLEYPARK_ET
CT11634C
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

SHEET TITLE

ELECTRICAL NOTES & ONE–LINE DIAGRAM

SHEET NUMBER

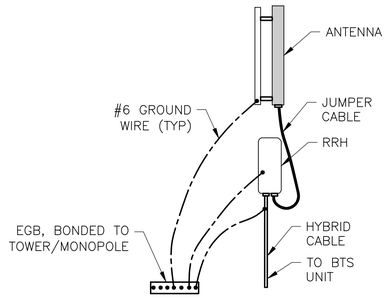
E–1



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

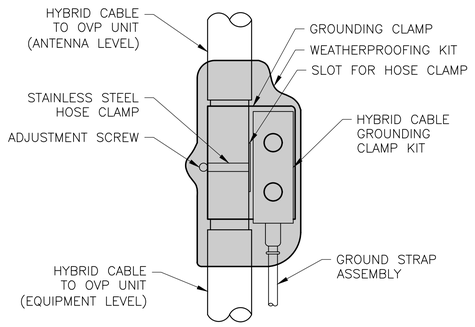
1 / G-1 GROUNDING RISER DIAGRAM

SCALE: NTS



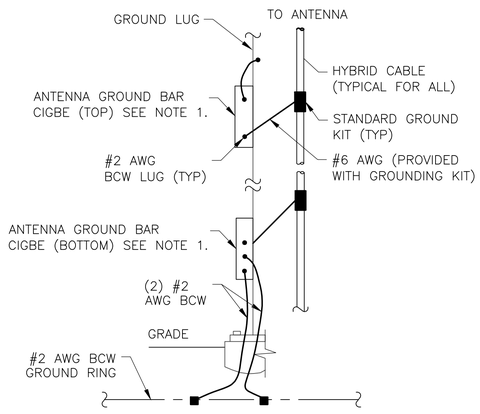
2 / G-1 HYBRID CABLE CONNECTION DETAIL

SCALE: NTS



3 / G-1 HYBRID CABLE GROUNDING DETAIL

SCALE: NTS

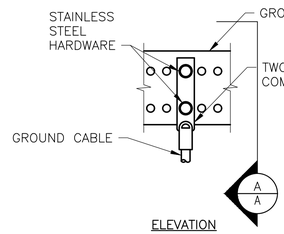


NOTES:

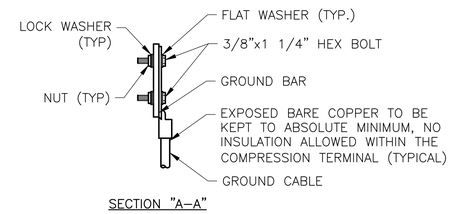
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS UNIT IF REQUIRED.

4 / G-1 ANTENNA CABLE GROUNDING

SCALE: NTS



ELEVATION



SECTION "A-A"

NOTES:

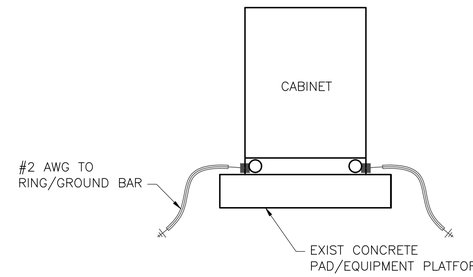
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.
4. ALL GROUND LUGS MUST NE HEAT SHRUNK AT WIRE/LUG CONNECTION.

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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CT634/CING/CHESLEYPARK_ET
CT11634C
35 WILDWOOD STREET
NEW BRITAIN, CT 06051

SHEET TITLE

GROUNDING DETAILS & NOTES

SHEET NUMBER

G-1

Exhibit D

Rigorous Structural Analysis for AT&T Towers
CT1160 - New Britain Wildwood Street
FA #: 10050945
T-Mobile Site #: CT11634C
T-Mobile Site Name: CT634/CING/CHESLEY PARK_ET

CLS Engineering Project #63925-10050945-01-STR-R1
October 7, 2020

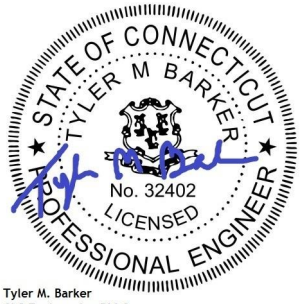
STRUCTURE	110 ft Monopole
ADDRESS	Wildwood Street, New Britain, CT 06051, Hartford County
GPS COORDINATES	41.668186, -72.7552
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / ASCE7-10 / TIA-222-G
WIND LOADING	125 mph, V_{ult} / 96.8 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice

- **ANALYSIS RESULTS**

TOWER USAGE	74%	Pass
FOUNDATION USAGE	57%	Pass

Prepared by:
Sean M. Rock, E.I.

Reviewed and Approved by:
Tyler M. Barker, P.E.



Tyler M. Barker
CLS Engineering PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2021
COA # PEC.001833 Exp. 8/14/2022

TABLE OF CONTENTS

■ INTRODUCTION

A **Rigorous Structural Analysis** was performed on the **110 ft Monopole** located in **Hartford County, CT**. Its purpose is to **determine the adequacy of the structure to support the loading listed in this report pursuant to** applicable standards and based on provided documentation. The analysis utilizes *tnxTower v. 8.0.5.0*, an industry-standard finite element analysis program.

■ STRUCTURAL DOCUMENTS PROVIDED

LOADING DATA	Site Lease Application by AT&T, FA #10050945, dated July 14, 2020 RFDS by AT&T, RFDS ID #2282468 Ver. 4.00, dated January 10, 2020
PREVIOUS ANALYSES	Structural Analysis by GPD Group, GPD# 2018723.13.88241.03, dated August 22, 2018

It is assumed that all information provided to CLS Engineering for this analysis is accurate and, unless otherwise noted, the structure has been maintained in accordance with code standards and is in good condition.

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / ASCE7-10 / TIA-222-G
BASIC WIND SPEED	125 mph, V_{ult} / 96.8 mph, V_{asd} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
SERVICE WIND SPEED	60 mph (3-Second Gust)
EXPOSURE CATEGORY	B
TOPOGRAPHIC CATEGORY	1
RISK CATEGORY	II

■ EXISTING AND RESERVED EQUIPMENT

ELEVATION		ANTENNAS		MOUNTS	FEEDLINES		CARRIER
MOUNT	RAD	#	NAME		#	NAME	
110.0	114.0	3	Powerwave 7770.00	Platform w/ Handrails & Kicker Kit	12 4 2	1 5/8" Coax DC Power Fiber Cable	AT&T Mobility
		3	Kathrein 80010798				
	113.0	6	Kaelus DBC0061F1V51-2				
		6	Powerwave LGP21401				
		3	Ericsson RRUS 12 B2				
		3	Ericsson RRUS 4478 B5				
		3	Ericsson RRUS 4426 B66				
		3	Ericsson RRUS 32 B30				
		3	KW AM-X-CD-16-65-00T-RET				
		3	Ericsson RRUS 11 B12				
	110.0	1	Raycap DC6-48-60-18-8F				
		1	Raycap DC6-48-60-18-8C				
97.0	100.0	3	Ericsson AIR32 DB B66Aa B2a	Platform w/ Handrails	6	1 5/8" Coax	T-Mobile
		3	RFS APXVARR24_43-C-NA20				
		3	Ericsson RRUS 4449 B12/71				
		3	RFS 1412D-1S20				
90.0	90.0	3	Antel BXA-80063/4CF	T-Arm	18	1 5/8" Coax	Verizon Wireless
		3	Antel BXA-171063-8BF-2				
		3	Antel BXA-70063-6CF-2				
60.0	61.5	5	Stadium Light (2')	T-Arm	-	-	Township
	58.5	5	Stadium Light (2')				

Mount elevation is measured from base of structure to center of mount; Rad elevation is measured from ground level to center of antenna. All loading information is based on supplied documents and is assumed to be accurate.

■ PROPOSED EQUIPMENT

ELEVATION		ANTENNAS		MOUNTS	FEEDLINES		CARRIER
MOUNT	RAD	#	NAME		#	NAME	
97.0	100.0	3	Ericsson AIR6449 B41	Platform w/ Handrails	3	1 3/8" Coax	T-Mobile
		3	Ericsson RRUS 4415 B25				
		3	Commscope E14F05P86				

■ FOUNDATION REACTIONS

REACTION TYPE	ANALYSIS REACTIONS
Moment (ft-k)	1622.6
Compression (k)	28.2
Shear (k)	18.6

■ RESULTS SUMMARY

COMPONENT	PEAK USAGE	RESULT
Pole	74%	Pass
Anchor Rods	56%	Pass
Baseplate / Flanges	64%	Pass
Foundation	57%	Pass

■ SERVICE DEFLECTION, TWIST AND TILT

MAXIMUM TOWER DEFLECTION (ft)	MAXIMUM TOWER TWIST (°)	MAXIMUM TOWER TILT (°)
1.313	0	1.21

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the structure has been found to **PASS**. The structure is capable of supporting the referenced loading pursuant to applicable standards.

■ ASSUMPTIONS AND CONDITIONS

This analysis considers only the theoretical capacity of structural components and it is not a condition assessment of the tower or foundation. The validity of the analysis is dependent on the accuracy of structural information supplied by others. The tower owner is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering should be notified immediately to revise results.

This analysis assumes the following:

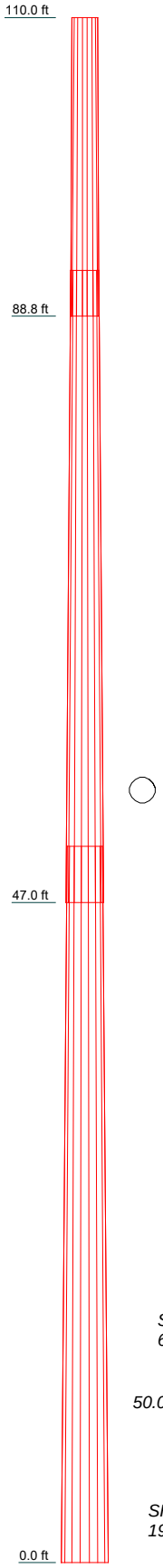
1. The tower and foundation (if applicable) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. The geotechnical properties are accurate as supplied or are assumed as stated in the calculations. If no data is available, the foundation is not verified. In these cases, it is the tower owner's responsibility to ensure that the foundation is adequate to support the new base reactions.
5. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
6. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
7. All mounts are assumed adequate to support their antenna loading. No structural verification of the mounts has been performed. This analysis is limited to analyzing only the tower and foundation (if applicable).
8. Some conservative assumptions are made regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing tower or foundation. The structural analysis by CLS Engineering verifies the adequacy of the main structural members of the tower. CLS Engineering provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	21.25	18	0.19	3.25	21.00	24.82		1.0
2	45.00	18	0.25	4.00	23.86	31.99	A572-65	3.4
3	51.00	18	0.31		30.77	39.93		6.0
								10.4



ALL REACTIONS ARE FACTORED

AXIAL 60 K
SHEAR 6 K
MOMENT 537 kip-ft
TORQUE 1 kip-ft
50.00 mph WIND - 1.00 in ICE

AXIAL 28 K
SHEAR 19 K
MOMENT 1623 kip-ft
TORQUE 3 kip-ft
REACTIONS - 97.00 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97.00 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50.00 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 74.2%

CLS Engineering
319 Chapanoke Road, Suite 118
Raleigh, NC 27603
Phone: (405) 348-5460
FAX:

Job: ***New Britain Wildwood Street - CT1160 (FA #1005094***			
Project: ***63925-10050945-01-STR-R1***			
Client: AT&T Towers	Drawn by: sean.rock	App'd:	
Code: TIA-222-G	Date: 10/07/20	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 97.00 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.00 in.
Ice thickness is considered to increase with height.
Ice density of 56.00 pcf.
A wind speed of 50.00 mph is used in combination with ice.
Temperature drop of 50.00 °F.
Deflections calculated using a wind speed of 60.00 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	110.00-88.75	21.25	3.25	18	21.00	24.82	0.19	0.75	A572-65 (65 ksi)
L2	88.75-47.00	45.00	4.00	18	23.86	31.99	0.25	1.00	A572-65 (65 ksi)
L3	47.00-0.00	51.00		18	30.77	39.93	0.31	1.25	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	21.30	12.39	677.83	7.39	10.67	63.54	1356.54	6.19	3.37	17.952
	25.18	14.66	1124.44	8.75	12.61	89.16	2250.36	7.33	4.04	21.542
L2	24.79	18.74	1320.23	8.38	12.12	108.90	2642.19	9.37	3.76	15.041
	32.44	25.18	3204.81	11.27	16.25	197.22	6413.84	12.59	5.19	20.759
L3	31.92	30.21	3539.03	10.81	15.63	226.44	7082.72	15.11	4.86	15.567
	40.50	39.30	7792.12	14.06	20.28	384.14	15594.49	19.65	6.48	20.729

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 110.00-88.75				1	1	1			
L2 88.75-47.00				1	1	1			
L3 47.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										
Step Pegs 5/8" Dia, 7" L, 30" S	B	No	Surface Ar (CaAa)	110.00 - 8.00	1	1	0.000 0.000	0.29		1.220
Safety Line 3/8	B	No	Surface Ar (CaAa)	110.00 - 8.00	1	1	0.000 0.000	0.38		0.220
LDF7-50A(1-5/8")	C	No	Surface Ar (CaAa)	90.00 - 8.00	6	6	0.000 0.000	1.98		0.820
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
***									
LDF7-50A(1-5/8")	B	No	No	Inside Pole	110.00 - 8.00	12	No Ice	0.00	0.820
							1/2" Ice	0.00	0.820
							1" Ice	0.00	0.820
3/4" DC Power Line	B	No	No	Inside Pole	110.00 - 8.00	4	No Ice	0.00	0.330
							1/2" Ice	0.00	0.330
							1" Ice	0.00	0.330
1/2" Fiber Cable	B	No	No	Inside Pole	110.00 - 8.00	2	No Ice	0.00	0.150
							1/2" Ice	0.00	0.150
							1" Ice	0.00	0.150
***									
LDF7-50A(1-5/8")	A	No	No	Inside Pole	97.00 - 8.00	6	No Ice	0.00	0.820
							1/2" Ice	0.00	0.820
							1" Ice	0.00	0.820
HCS 6X12 6AWG(1-3/8)	A	No	No	Inside Pole	97.00 - 8.00	3	No Ice	0.00	1.700
							1/2" Ice	0.00	1.700
							1" Ice	0.00	1.700
***									
LDF7-50A(1-5/8")	C	No	No	Inside Pole	90.00 - 8.00	12	No Ice	0.00	0.820
							1/2" Ice	0.00	0.820
							1" Ice	0.00	0.820
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	110.00-88.75	A	0.000	0.000	0.000	0.000	0.08
		B	0.000	0.000	1.417	0.000	0.27
		C	0.000	0.000	1.485	0.000	0.02
L2	88.75-47.00	A	0.000	0.000	0.000	0.000	0.42
		B	0.000	0.000	2.783	0.000	0.54
		C	0.000	0.000	49.599	0.000	0.62
L3	47.00-0.00	A	0.000	0.000	0.000	0.000	0.39
		B	0.000	0.000	2.600	0.000	0.50
		C	0.000	0.000	46.332	0.000	0.58

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	110.00-88.75	A	2.232	0.000	0.000	0.000	0.000	0.08
		B		0.000	0.000	20.392	0.000	0.57
		C		0.000	0.000	2.554	0.000	0.06
L2	88.75-47.00	A	2.148	0.000	0.000	0.000	0.000	0.42
		B		0.000	0.000	40.065	0.000	1.12
		C		0.000	0.000	85.300	0.000	1.88
L3	47.00-0.00	A	1.928	0.000	0.000	0.000	0.000	0.39
		B		0.000	0.000	36.110	0.000	1.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	78.859	0.000	1.71

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	110.00-88.75	0.48	0.39	2.48	-1.02
L2	88.75-47.00	0.29	6.23	1.67	3.37
L3	47.00-0.00	0.28	5.91	1.64	3.39

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	2	Step Pegs 5/8" Dia, 7" L, 30" S	88.75 - 110.00	1.0000	1.0000
L1	3	Safety Line 3/8	88.75 - 110.00	1.0000	1.0000
L1	15	LDF7-50A(1-5/8")	88.75 - 90.00	1.0000	1.0000
L2	2	Step Pegs 5/8" Dia, 7" L, 30" S	47.00 - 88.75	1.0000	1.0000
L2	3	Safety Line 3/8	47.00 - 88.75	1.0000	1.0000
L2	15	LDF7-50A(1-5/8")	47.00 - 88.75	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***									
7770.00 w/Mount Pipe	A	From Centroid-Leg	4.00 0.00 4.00	30.00	110.00	No Ice 1/2" Ice 1" Ice	5.55 5.92 6.29	4.04 4.67 5.32	0.05 0.10 0.15
7770.00 w/Mount Pipe	B	From Centroid-Leg	4.00 0.00 4.00	30.00	110.00	No Ice 1/2" Ice 1" Ice	5.55 5.92 6.29	4.04 4.67 5.32	0.05 0.10 0.15
7770.00 w/Mount Pipe	C	From	4.00	30.00	110.00	No Ice	5.55	4.04	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		Centroid-Le	0.00				1/2" Ice	5.92	4.67	0.10
		g	4.00				1" Ice	6.29	5.32	0.15
AM-X-CD-16-65-00T-RET	A	From	4.00		30.00	110.00	No Ice	4.63	3.27	0.07
w/ Mount Pipe		Centroid-Le	0.00				1/2" Ice	5.06	3.69	0.13
		g	3.00				1" Ice	5.51	4.12	0.20
AM-X-CD-16-65-00T-RET	B	From	4.00		30.00	110.00	No Ice	4.63	3.27	0.07
w/ Mount Pipe		Centroid-Le	0.00				1/2" Ice	5.06	3.69	0.13
		g	3.00				1" Ice	5.51	4.12	0.20
AM-X-CD-16-65-00T-RET	C	From	4.00		30.00	110.00	No Ice	4.63	3.27	0.07
w/ Mount Pipe		Centroid-Le	0.00				1/2" Ice	5.06	3.69	0.13
		g	3.00				1" Ice	5.51	4.12	0.20
80010798 w/ Mount Pipe	A	From	4.00		30.00	110.00	No Ice	7.79	4.90	0.11
		Centroid-Le	0.00				1/2" Ice	8.40	5.47	0.19
		g	4.00				1" Ice	9.02	6.06	0.27
80010798 w/ Mount Pipe	B	From	4.00		30.00	110.00	No Ice	7.79	4.90	0.11
		Centroid-Le	0.00				1/2" Ice	8.40	5.47	0.19
		g	4.00				1" Ice	9.02	6.06	0.27
80010798 w/ Mount Pipe	C	From	4.00		30.00	110.00	No Ice	7.79	4.90	0.11
		Centroid-Le	0.00				1/2" Ice	8.40	5.47	0.19
		g	4.00				1" Ice	9.02	6.06	0.27
RRUS 11 B12	A	From	4.00		30.00	110.00	No Ice	2.83	1.18	0.05
		Centroid-Le	0.00				1/2" Ice	3.04	1.33	0.07
		g	3.00				1" Ice	3.26	1.48	0.10
RRUS 11 B12	B	From	4.00		30.00	110.00	No Ice	2.83	1.18	0.05
		Centroid-Le	0.00				1/2" Ice	3.04	1.33	0.07
		g	3.00				1" Ice	3.26	1.48	0.10
RRUS 11 B12	C	From	4.00		30.00	110.00	No Ice	2.83	1.18	0.05
		Centroid-Le	0.00				1/2" Ice	3.04	1.33	0.07
		g	3.00				1" Ice	3.26	1.48	0.10
RRUS 12 B2	A	From	4.00		30.00	110.00	No Ice	3.14	1.28	0.05
		Centroid-Le	0.00				1/2" Ice	3.36	1.43	0.07
		g	3.00				1" Ice	3.59	1.60	0.10
RRUS 12 B2	B	From	4.00		30.00	110.00	No Ice	3.14	1.28	0.05
		Centroid-Le	0.00				1/2" Ice	3.36	1.43	0.07
		g	3.00				1" Ice	3.59	1.60	0.10
RRUS 12 B2	C	From	4.00		30.00	110.00	No Ice	3.14	1.28	0.05
		Centroid-Le	0.00				1/2" Ice	3.36	1.43	0.07
		g	3.00				1" Ice	3.59	1.60	0.10
RRUS 4478 B5	A	From	4.00		30.00	110.00	No Ice	1.84	1.06	0.06
		Centroid-Le	0.00				1/2" Ice	2.01	1.20	0.08
		g	3.00				1" Ice	2.19	1.34	0.09
RRUS 4478 B5	B	From	4.00		30.00	110.00	No Ice	1.84	1.06	0.06
		Centroid-Le	0.00				1/2" Ice	2.01	1.20	0.08
		g	3.00				1" Ice	2.19	1.34	0.09
RRUS 4478 B5	C	From	4.00		30.00	110.00	No Ice	1.84	1.06	0.06
		Centroid-Le	0.00				1/2" Ice	2.01	1.20	0.08
		g	3.00				1" Ice	2.19	1.34	0.09
RRUS 4426 B66	A	From	4.00		30.00	110.00	No Ice	1.64	0.73	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.84	0.06
		g	3.00				1" Ice	1.97	0.97	0.08
RRUS 4426 B66	B	From	4.00		30.00	110.00	No Ice	1.64	0.73	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.84	0.06
		g	3.00				1" Ice	1.97	0.97	0.08
RRUS 4426 B66	C	From	4.00		30.00	110.00	No Ice	1.64	0.73	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.84	0.06
		g	3.00				1" Ice	1.97	0.97	0.08
RRUS 32 B30	A	From	4.00		30.00	110.00	No Ice	2.69	1.57	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		Centroid-Leg	0.00				1/2" Ice	2.91	1.76	0.08
			3.00				1" Ice	3.14	1.95	0.10
RRUS 32 B30	B	From Centroid-Leg	4.00		30.00	110.00	No Ice	2.69	1.57	0.06
			0.00				1/2" Ice	2.91	1.76	0.08
			3.00				1" Ice	3.14	1.95	0.10
RRUS 32 B30	C	From Centroid-Leg	4.00		30.00	110.00	No Ice	2.69	1.57	0.06
			0.00				1/2" Ice	2.91	1.76	0.08
			3.00				1" Ice	3.14	1.95	0.10
(2) LGP21401	A	From Centroid-Leg	4.00		30.00	110.00	No Ice	1.10	0.21	0.01
			0.00				1/2" Ice	1.24	0.27	0.02
			3.00				1" Ice	1.38	0.35	0.03
(2) LGP21401	B	From Centroid-Leg	4.00		30.00	110.00	No Ice	1.10	0.21	0.01
			0.00				1/2" Ice	1.24	0.27	0.02
			3.00				1" Ice	1.38	0.35	0.03
(2) LGP21401	C	From Centroid-Leg	4.00		30.00	110.00	No Ice	1.10	0.21	0.01
			0.00				1/2" Ice	1.24	0.27	0.02
			3.00				1" Ice	1.38	0.35	0.03
(2) DBC0061F1V51-2	A	From Centroid-Leg	4.00		30.00	110.00	No Ice	0.43	0.41	0.03
			0.00				1/2" Ice	0.52	0.50	0.03
			3.00				1" Ice	0.61	0.59	0.04
(2) DBC0061F1V51-2	B	From Centroid-Leg	4.00		30.00	110.00	No Ice	0.43	0.41	0.03
			0.00				1/2" Ice	0.52	0.50	0.03
			3.00				1" Ice	0.61	0.59	0.04
(2) DBC0061F1V51-2	C	From Centroid-Leg	4.00		30.00	110.00	No Ice	0.43	0.41	0.03
			0.00				1/2" Ice	0.52	0.50	0.03
			3.00				1" Ice	0.61	0.59	0.04
DC6-48-60-18-8F	C	From Leg	0.50		0.00	110.00	No Ice	0.92	0.92	0.02
			0.00				1/2" Ice	1.46	1.46	0.04
			0.00				1" Ice	1.64	1.64	0.06
DC6-48-60-18-8C	B	From Leg	0.50		0.00	110.00	No Ice	2.74	2.74	0.03
			0.00				1/2" Ice	2.96	2.96	0.05
			0.00				1" Ice	3.20	3.20	0.08
Pipe Mount 6'x2.375"	A	From Centroid-Leg	4.00		30.00	110.00	No Ice	1.43	1.43	0.03
			0.00				1/2" Ice	1.92	1.92	0.04
			3.00				1" Ice	2.29	2.29	0.05
Pipe Mount 6'x2.375"	B	From Centroid-Leg	4.00		30.00	110.00	No Ice	1.43	1.43	0.03
			0.00				1/2" Ice	1.92	1.92	0.04
			3.00				1" Ice	2.29	2.29	0.05
Pipe Mount 6'x2.375"	C	From Centroid-Leg	4.00		30.00	110.00	No Ice	1.43	1.43	0.03
			0.00				1/2" Ice	1.92	1.92	0.04
			3.00				1" Ice	2.29	2.29	0.05
Toe Rail Reinforcement (L3x3x1/4)	A	From Centroid-Leg	4.00		30.00	110.00	No Ice	3.99	0.07	0.07
			0.00				1/2" Ice	4.90	0.11	0.10
			0.00				1" Ice	5.81	0.16	0.15
Toe Rail Reinforcement (L3x3x1/4)	B	From Centroid-Leg	4.00		30.00	110.00	No Ice	3.99	0.07	0.07
			0.00				1/2" Ice	4.90	0.11	0.10
			0.00				1" Ice	5.81	0.16	0.15
Toe Rail Reinforcement (L3x3x1/4)	C	From Centroid-Leg	4.00		30.00	110.00	No Ice	3.99	0.07	0.07
			0.00				1/2" Ice	4.90	0.11	0.10
			0.00				1" Ice	5.81	0.16	0.15
Kicker Kit	C	From Centroid-Leg	0.00		0.00	110.00	No Ice	11.84	11.84	0.28
			0.00				1/2" Ice	16.96	16.96	0.30
			-1.00				1" Ice	22.08	22.08	0.32
Platform w/ Handrails	C	None			0.00	110.00	No Ice	33.04	33.04	2.17
							1/2" Ice	43.38	43.38	2.68
							1" Ice	53.72	53.72	3.19

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
AIR6449 B41 w/Mount Pipe	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	6.90 7.74 8.49	4.32 5.37 6.28	0.09 0.15 0.21
AIR6449 B41 w/Mount Pipe	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	6.90 7.74 8.49	4.32 5.37 6.28	0.09 0.15 0.21
AIR6449 B41 w/Mount Pipe	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	6.90 7.74 8.49	4.32 5.37 6.28	0.09 0.15 0.21
AIR32 DB B66Aa B2a w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	6.75 7.20 7.65	6.07 6.87 7.58	0.13 0.19 0.26
AIR32 DB B66Aa B2a w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	6.75 7.20 7.65	6.07 6.87 7.58	0.13 0.19 0.26
AIR32 DB B66Aa B2a w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	6.75 7.20 7.65	6.07 6.87 7.58	0.13 0.19 0.26
APXVARR24_43-C-NA20 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	11.65 12.36 13.09	6.52 7.17 7.84	0.13 0.24 0.37
APXVARR24_43-C-NA20 w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	11.65 12.36 13.09	6.52 7.17 7.84	0.13 0.24 0.37
APXVARR24_43-C-NA20 w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	11.65 12.36 13.09	6.52 7.17 7.84	0.13 0.24 0.37
RRUS 4415 B25	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	0.68 0.79 0.91	0.04 0.06 0.07
RRUS 4415 B25	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	0.68 0.79 0.91	0.04 0.06 0.07
RRUS 4415 B25	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	0.68 0.79 0.91	0.04 0.06 0.07
Ericsson RRUS 4449 B12/71	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
Ericsson RRUS 4449 B12/71	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
Ericsson RRUS 4449 B12/71	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
Commscope E14F05P86	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	0.91 1.03 1.15	0.55 0.65 0.75	0.02 0.03 0.04
Commscope E14F05P86	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	0.91 1.03 1.15	0.55 0.65 0.75	0.02 0.03 0.04
Commscope E14F05P86	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	0.91 1.03 1.15	0.55 0.65 0.75	0.02 0.03 0.04
RFS 1412D-1S20	A	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	0.41 0.50 0.59	1.00 1.13 1.26	0.01 0.02 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RFS 1412D-1S20	B	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	0.41 0.50 0.59	1.00 1.13 1.26	0.01 0.02 0.03
RFS 1412D-1S20	C	From Centroid-Leg	4.00 0.00 3.00	30.00	97.00	No Ice 1/2" Ice 1" Ice	0.41 0.50 0.59	1.00 1.13 1.26	0.01 0.02 0.03
Platform w/ Handrails	C	None		0.00	97.00	No Ice 1/2" Ice 1" Ice	32.03 38.71 45.39	32.03 38.71 45.39	1.34 1.80 2.26
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BXA-80063/4CF w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.42 4.02 4.64	0.03 0.07 0.12
BXA-80063/4CF w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.42 4.02 4.64	0.03 0.07 0.12
BXA-80063/4CF w/ Mount Pipe	C	From Leg	5.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.42 4.02 4.64	0.03 0.07 0.12
BXA-171063-8BF-2 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	3.18 3.56 3.93	3.35 3.97 4.60	0.03 0.06 0.10
BXA-171063-8BF-2 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	3.18 3.56 3.93	3.35 3.97 4.60	0.03 0.06 0.10
BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	3.18 3.56 3.93	3.35 3.97 4.60	0.03 0.06 0.10
BXA-70063-6CF-2 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0.04 0.10 0.17
BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0.04 0.10 0.17
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0.04 0.10 0.17
10' T-Arm - Round (GPD)	A	From Leg	1.50 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	3.90 4.30 4.70	2.33 2.96 3.60	0.25 0.30 0.35
10' T-Arm - Round (GPD)	B	From Leg	1.50 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	3.90 4.30 4.70	2.33 2.96 3.60	0.25 0.30 0.35
10' T-Arm - Round (GPD)	C	From Leg	1.50 0.00 0.00	0.00	90.00	No Ice 1/2" Ice 1" Ice	3.90 4.30 4.70	2.33 2.96 3.60	0.25 0.30 0.35
***									
10' T-Arm - Round (GPD)	C	From Face	1.50 0.00 1.50	0.00	60.00	No Ice 1/2" Ice 1" Ice	3.90 4.30 4.70	2.33 2.96 3.60	0.25 0.30 0.35
10' T-Arm - Round (GPD)	C	From Face	1.50 0.00 -1.50	0.00	60.00	No Ice 1/2" Ice 1" Ice	3.90 4.30 4.70	2.33 2.96 3.60	0.25 0.30 0.35
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
***											
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 -6.00 1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 -3.00 1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 0.00 1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 3.00 1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 6.00 1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 -6.00 -1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 -3.00 -1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 0.00 -1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 3.00 -1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
Stadium Light (2')	C	Paraboloid w/o Radome	From Face	3.00 6.00 -1.50	0.00		60.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.08 0.02 0.00
***											

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice

Comb. No.	Description
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	110 - 88.75	Pole	Max Tension	2	0.00	-0.00	-0.00
			Max. Compression	26	-27.46	-0.33	-0.29
			Max. Mx	8	-9.28	-156.23	-0.13
			Max. My	14	-9.26	-0.03	-156.38
			Max. Vy	8	10.79	-156.23	-0.13
			Max. Vx	2	-10.80	-0.03	156.32
			Max. Torque	23			0.18
L2	88.75 - 47	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.73	-0.60	-6.05
			Max. Mx	8	-17.87	-714.76	-6.40
			Max. My	14	-17.80	-0.05	-729.42
			Max. Vy	8	15.20	-714.76	-6.40
			Max. Vx	2	-16.64	-0.06	722.28
			Max. Torque	10			-3.02
L3	47 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.03	-1.45	-8.18

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-28.19	-1542.83	-7.55
			Max. My	2	-28.19	-0.15	1622.61
			Max. Vy	8	17.19	-1542.83	-7.55
			Max. Vx	2	-18.59	-0.15	1622.61
			Max. Torque	10			-3.01

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	60.03	0.00	0.00
	Max. H_x	21	21.16	17.16	-0.01
	Max. H_z	3	21.16	0.00	18.56
	Max. M_x	2	1622.61	0.00	18.55
	Max. M_z	8	1542.83	-17.15	-0.01
	Max. Torsion	18	2.92	15.03	-8.94
	Min. Vert	3	21.16	0.00	18.56
	Min. H_x	9	21.16	-17.16	-0.01
	Min. H_z	15	21.16	0.00	-18.02
	Min. M_x	14	-1602.87	0.00	-18.02
	Min. M_z	20	-1542.53	17.15	-0.01
	Min. Torsion	10	-3.01	-15.03	-8.94

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	23.51	-0.00	-0.00	5.48	-0.12	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	28.21	-0.00	-18.55	-1622.61	-0.15	-0.09
0.9 Dead+1.6 Wind 0 deg - No Ice	21.16	-0.00	-18.56	-1602.51	-0.11	-0.09
1.2 Dead+1.6 Wind 30 deg - No Ice	28.21	8.36	-16.31	-1419.96	-758.14	0.06
0.9 Dead+1.6 Wind 30 deg - No Ice	21.16	8.36	-16.31	-1402.17	-747.41	0.05
1.2 Dead+1.6 Wind 60 deg - No Ice	28.21	14.80	-10.23	-867.40	-1332.94	1.51
0.9 Dead+1.6 Wind 60 deg - No Ice	21.16	14.80	-10.23	-857.41	-1314.21	1.50
1.2 Dead+1.6 Wind 90 deg - No Ice	28.21	17.15	0.01	7.55	-1542.83	2.52
0.9 Dead+1.6 Wind 90 deg - No Ice	21.16	17.16	0.01	5.76	-1521.42	2.51
1.2 Dead+1.6 Wind 120 deg - No Ice	28.21	15.03	8.94	800.93	-1347.41	3.01
0.9 Dead+1.6 Wind 120 deg - No Ice	21.16	15.03	8.94	788.13	-1328.55	3.00
1.2 Dead+1.6 Wind 150 deg - No Ice	28.21	8.82	15.47	1381.05	-786.49	2.42
0.9 Dead+1.6 Wind 150 deg -	21.16	8.82	15.47	1360.20	-775.51	2.42

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.6 Wind 180 deg - No Ice	28.21	-0.00	18.02	1602.87	-0.15	0.09
0.9 Dead+1.6 Wind 180 deg - No Ice	21.16	-0.00	18.02	1579.52	-0.11	0.09
1.2 Dead+1.6 Wind 210 deg - No Ice	28.21	-8.82	15.47	1381.05	786.19	-2.26
0.9 Dead+1.6 Wind 210 deg - No Ice	21.16	-8.82	15.47	1360.20	775.28	-2.26
1.2 Dead+1.6 Wind 240 deg - No Ice	28.21	-15.03	8.94	800.93	1347.11	-2.92
0.9 Dead+1.6 Wind 240 deg - No Ice	21.16	-15.03	8.94	788.13	1328.33	-2.91
1.2 Dead+1.6 Wind 270 deg - No Ice	28.21	-17.15	0.01	7.55	1542.53	-2.52
0.9 Dead+1.6 Wind 270 deg - No Ice	21.16	-17.16	0.01	5.76	1521.20	-2.51
1.2 Dead+1.6 Wind 300 deg - No Ice	28.21	-14.80	-10.23	-867.40	1332.64	-1.60
0.9 Dead+1.6 Wind 300 deg - No Ice	21.16	-14.80	-10.23	-857.42	1313.99	-1.59
1.2 Dead+1.6 Wind 330 deg - No Ice	28.21	-8.36	-16.31	-1419.96	757.84	-0.22
0.9 Dead+1.6 Wind 330 deg - No Ice	21.16	-8.36	-16.31	-1402.17	747.19	-0.21
1.2 Dead+1.0 Ice+1.0 Temp	60.03	-0.00	-0.00	8.18	-1.45	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	60.03	-0.00	-5.65	-528.52	-1.47	-0.03
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	60.03	2.62	-4.94	-460.02	-256.64	0.02
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	60.03	4.61	-3.04	-274.22	-448.22	0.37
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	60.03	5.34	0.00	8.48	-518.37	0.63
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	60.03	4.67	2.75	271.56	-451.69	0.74
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	60.03	2.73	4.75	464.00	-263.45	0.59
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	60.03	-0.00	5.52	537.10	-1.47	0.03
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	60.03	-2.73	4.75	464.00	260.52	-0.53
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	60.03	-4.67	2.75	271.56	448.76	-0.71
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	60.03	-5.34	0.00	8.48	515.44	-0.63
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	60.03	-4.61	-3.04	-274.22	445.29	-0.41
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	60.03	-2.62	-4.94	-460.02	253.71	-0.08
Dead+Wind 0 deg - Service	23.51	-0.00	-3.97	-340.08	-0.12	-0.02
Dead+Wind 30 deg - Service	23.51	1.79	-3.48	-296.79	-160.73	0.01
Dead+Wind 60 deg - Service	23.51	3.16	-2.19	-179.71	-282.53	0.31
Dead+Wind 90 deg - Service	23.51	3.67	0.00	5.75	-327.13	0.54
Dead+Wind 120 deg - Service	23.51	3.21	1.91	173.87	-285.59	0.65
Dead+Wind 150 deg - Service	23.51	1.88	3.30	296.80	-166.75	0.52
Dead+Wind 180 deg - Service	23.51	-0.00	3.85	344.16	-0.12	0.02
Dead+Wind 210 deg - Service	23.51	-1.88	3.30	296.80	166.50	-0.49
Dead+Wind 240 deg - Service	23.51	-3.21	1.91	173.87	285.35	-0.63
Dead+Wind 270 deg - Service	23.51	-3.67	0.00	5.75	326.88	-0.54
Dead+Wind 300 deg - Service	23.51	-3.16	-2.19	-179.71	282.28	-0.33

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 330 deg - Service	23.51	-1.79	-3.48	-296.79	160.48	-0.04

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-23.51	0.00	0.00	23.51	0.00	0.004%
2	0.00	-28.21	-18.57	0.00	28.21	18.55	0.048%
3	0.00	-21.16	-18.57	0.00	21.16	18.56	0.040%
4	8.36	-28.21	-16.31	-8.36	28.21	16.31	0.001%
5	8.36	-21.16	-16.31	-8.36	21.16	16.31	0.001%
6	14.80	-28.21	-10.23	-14.80	28.21	10.23	0.001%
7	14.80	-21.16	-10.23	-14.80	21.16	10.23	0.001%
8	17.16	-28.21	0.01	-17.15	28.21	-0.01	0.021%
9	17.16	-21.16	0.01	-17.16	21.16	-0.01	0.017%
10	15.03	-28.21	8.94	-15.03	28.21	-8.94	0.001%
11	15.03	-21.16	8.94	-15.03	21.16	-8.94	0.001%
12	8.82	-28.21	15.47	-8.82	28.21	-15.47	0.001%
13	8.82	-21.16	15.47	-8.82	21.16	-15.47	0.001%
14	0.00	-28.21	18.04	0.00	28.21	-18.02	0.049%
15	0.00	-21.16	18.04	0.00	21.16	-18.02	0.040%
16	-8.82	-28.21	15.47	8.82	28.21	-15.47	0.001%
17	-8.82	-21.16	15.47	8.82	21.16	-15.47	0.001%
18	-15.03	-28.21	8.94	15.03	28.21	-8.94	0.001%
19	-15.03	-21.16	8.94	15.03	21.16	-8.94	0.001%
20	-17.16	-28.21	0.01	17.15	28.21	-0.01	0.021%
21	-17.16	-21.16	0.01	17.16	21.16	-0.01	0.017%
22	-14.80	-28.21	-10.23	14.80	28.21	10.23	0.001%
23	-14.80	-21.16	-10.23	14.80	21.16	10.23	0.001%
24	-8.36	-28.21	-16.31	8.36	28.21	16.31	0.001%
25	-8.36	-21.16	-16.31	8.36	21.16	16.31	0.001%
26	0.00	-60.03	0.00	0.00	60.03	0.00	0.001%
27	0.00	-60.03	-5.65	0.00	60.03	5.65	0.008%
28	2.62	-60.03	-4.95	-2.62	60.03	4.94	0.007%
29	4.62	-60.03	-3.04	-4.61	60.03	3.04	0.008%
30	5.35	-60.03	0.00	-5.34	60.03	-0.00	0.007%
31	4.67	-60.03	2.75	-4.67	60.03	-2.75	0.008%
32	2.73	-60.03	4.75	-2.73	60.03	-4.75	0.008%
33	0.00	-60.03	5.53	0.00	60.03	-5.52	0.008%
34	-2.73	-60.03	4.75	2.73	60.03	-4.75	0.008%
35	-4.67	-60.03	2.75	4.67	60.03	-2.75	0.008%
36	-5.35	-60.03	0.00	5.34	60.03	-0.00	0.007%
37	-4.62	-60.03	-3.04	4.61	60.03	3.04	0.007%
38	-2.62	-60.03	-4.95	2.62	60.03	4.94	0.007%
39	0.00	-23.51	-3.97	0.00	23.51	3.97	0.026%
40	1.79	-23.51	-3.49	-1.79	23.51	3.48	0.026%
41	3.17	-23.51	-2.19	-3.16	23.51	2.19	0.026%
42	3.67	-23.51	0.00	-3.67	23.51	-0.00	0.026%
43	3.22	-23.51	1.91	-3.21	23.51	-1.91	0.026%
44	1.89	-23.51	3.31	-1.88	23.51	-3.30	0.027%
45	0.00	-23.51	3.86	0.00	23.51	-3.85	0.027%
46	-1.89	-23.51	3.31	1.88	23.51	-3.30	0.027%
47	-3.22	-23.51	1.91	3.21	23.51	-1.91	0.026%
48	-3.67	-23.51	0.00	3.67	23.51	-0.00	0.026%
49	-3.17	-23.51	-2.19	3.16	23.51	2.19	0.026%
50	-1.79	-23.51	-3.49	1.79	23.51	3.48	0.026%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	8	0.00000001	0.00003568
2	Yes	12	0.00056810	0.00072236
3	Yes	12	0.00038990	0.00059047
4	Yes	17	0.00000001	0.00054561
5	Yes	16	0.00000001	0.00092753
6	Yes	17	0.00000001	0.00056124
7	Yes	16	0.00000001	0.00095625
8	Yes	13	0.00025937	0.00099204
9	Yes	13	0.00017412	0.00078463
10	Yes	17	0.00000001	0.00057729
11	Yes	16	0.00000001	0.00098302
12	Yes	17	0.00000001	0.00053997
13	Yes	16	0.00000001	0.00091578
14	Yes	12	0.00056855	0.00072650
15	Yes	12	0.00039028	0.00059420
16	Yes	17	0.00000001	0.00054109
17	Yes	16	0.00000001	0.00091789
18	Yes	17	0.00000001	0.00057617
19	Yes	16	0.00000001	0.00098107
20	Yes	13	0.00025937	0.00099187
21	Yes	13	0.00017412	0.00078454
22	Yes	17	0.00000001	0.00056034
23	Yes	16	0.00000001	0.00095472
24	Yes	17	0.00000001	0.00054694
25	Yes	16	0.00000001	0.00093005
26	Yes	11	0.00000001	0.00002820
27	Yes	14	0.00063903	0.00037724
28	Yes	14	0.00063832	0.00085040
29	Yes	14	0.00063856	0.00085124
30	Yes	14	0.00064025	0.00038769
31	Yes	14	0.00063883	0.00091567
32	Yes	14	0.00063853	0.00086981
33	Yes	14	0.00063926	0.00038727
34	Yes	14	0.00063858	0.00086401
35	Yes	14	0.00063890	0.00090712
36	Yes	14	0.00064033	0.00038575
37	Yes	14	0.00063863	0.00084410
38	Yes	14	0.00063837	0.00084565
39	Yes	11	0.00098758	0.00036883
40	Yes	11	0.00098737	0.00048681
41	Yes	11	0.00098795	0.00046101
42	Yes	11	0.00099016	0.00039780
43	Yes	11	0.00098855	0.00059469
44	Yes	11	0.00098786	0.00046177
45	Yes	11	0.00098808	0.00037968
46	Yes	11	0.00098786	0.00046417
47	Yes	11	0.00098856	0.00058972
48	Yes	11	0.00099017	0.00039755
49	Yes	11	0.00098796	0.00045863
50	Yes	11	0.00098738	0.00049189

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 88.75	15.76	45	1.21	0.00
L2	92 - 47	11.32	45	1.12	0.00
L3	51 - 0	3.51	45	0.64	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
110.00	7770.00 w/Mount Pipe	45	15.76	1.21	0.00	26864
97.00	AIR6449 B41 w/Mount Pipe	45	12.53	1.15	0.00	10332
90.00	BXA-80063/4CF w/ Mount Pipe	45	10.85	1.10	0.00	7096
61.50	Stadium Light (2')	45	5.07	0.78	0.00	3880
60.00	10' T-Arm - Round (GPD)	45	4.83	0.76	0.00	3788
58.50	Stadium Light (2')	45	4.59	0.74	0.00	3701

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 88.75	73.41	2	5.64	0.02
L2	92 - 47	52.77	2	5.22	0.02
L3	51 - 0	16.44	2	2.98	0.01

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
110.00	7770.00 w/Mount Pipe	2	73.41	5.64	0.02	5787
97.00	AIR6449 B41 w/Mount Pipe	2	58.37	5.37	0.02	2224
90.00	BXA-80063/4CF w/ Mount Pipe	2	50.58	5.15	0.02	1525
61.50	Stadium Light (2')	2	23.69	3.64	0.01	840
60.00	10' T-Arm - Round (GPD)	2	22.55	3.54	0.01	820
58.50	Stadium Light (2')	2	21.45	3.45	0.01	801

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	110 - 88.75 (1)	TP24.83x21x0.19	21.25	0.00	0.0	14.31	-9.27	988.23	0.009
L2	88.75 - 47 (2)	TP31.99x23.87x0.25	45.00	0.00	0.0	24.61	-17.80	1718.42	0.010
L3	47 - 0 (3)	TP39.93x30.77x0.31	51.00	0.00	0.0	39.30	-28.19	2723.90	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	110 - 88.75 (1)	TP24.83x21x0.19	156.47	488.81	0.320	0.00	488.81	0.000
L2	88.75 - 47 (2)	TP31.99x23.87x0.25	729.42	1095.76	0.666	0.00	1095.76	0.000
L3	47 - 0 (3)	TP39.93x30.77x0.31	1622.62	2219.01	0.731	0.00	2219.01	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	110 - 88.75 (1)	TP24.83x21x0.19	10.82	494.11	0.022	0.03	979.96	0.000
L2	88.75 - 47 (2)	TP31.99x23.87x0.25	16.10	852.15	0.019	0.09	2196.86	0.000
L3	47 - 0 (3)	TP39.93x30.77x0.31	18.59	1351.82	0.014	0.09	4448.73	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	110 - 88.75 (1)	0.009	0.320	0.000	0.022	0.000	0.330	1.000	4.8.2
L2	88.75 - 47 (2)	0.010	0.666	0.000	0.019	0.000	0.676	1.000	4.8.2
L3	47 - 0 (3)	0.010	0.731	0.000	0.014	0.000	0.742	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	110 - 88.75	Pole	TP24.83x21x0.19	1	-9.27	988.23	33.0	Pass

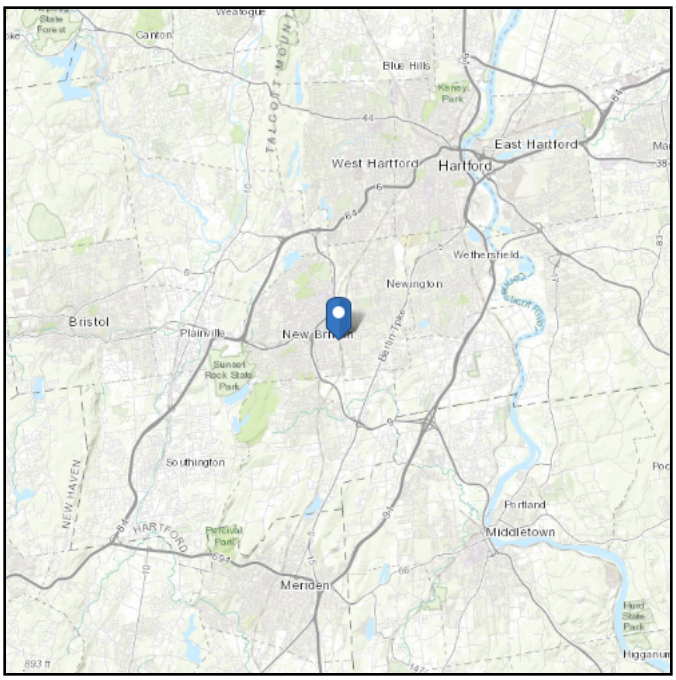
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L2	88.75 - 47	Pole	TP31.99x23.87x0.25	2	-17.80	1718.42	67.6	Pass
L3	47 - 0	Pole	TP39.93x30.77x0.31	3	-28.19	2723.90	74.2	Pass
							Summary	
						Pole (L3)	74.2	Pass
						RATING =	**74.2**	**Pass**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 56.31 ft (NAVD 88)
Latitude: 41.668186
Longitude: -72.7552



Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	77 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Wed Sep 30 2020

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

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

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

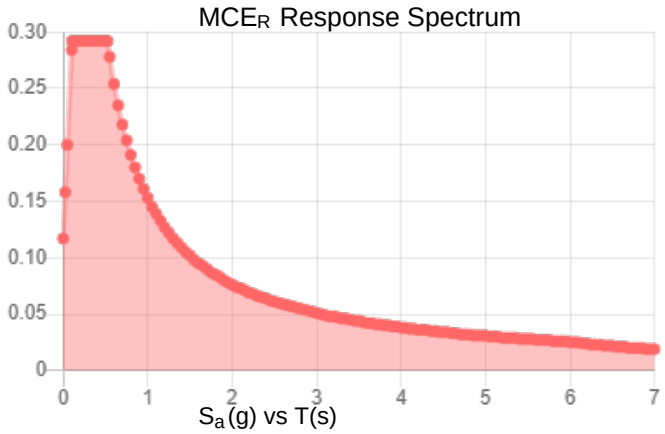
Seismic

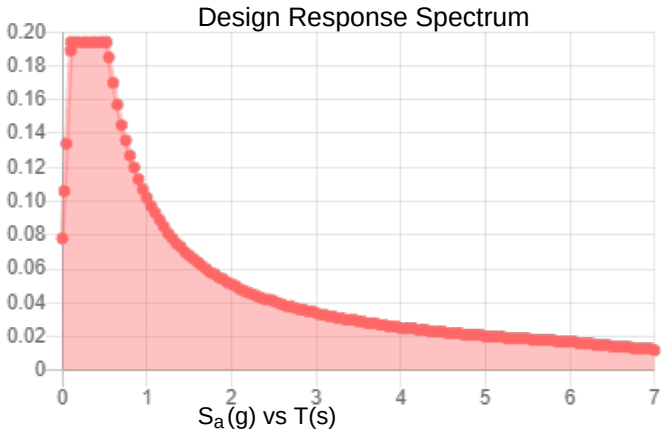
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.182	S_{DS} :	0.194
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.093
S_{MS} :	0.292	PGA_M :	0.148
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Sep 30 2020

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Sep 30 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.

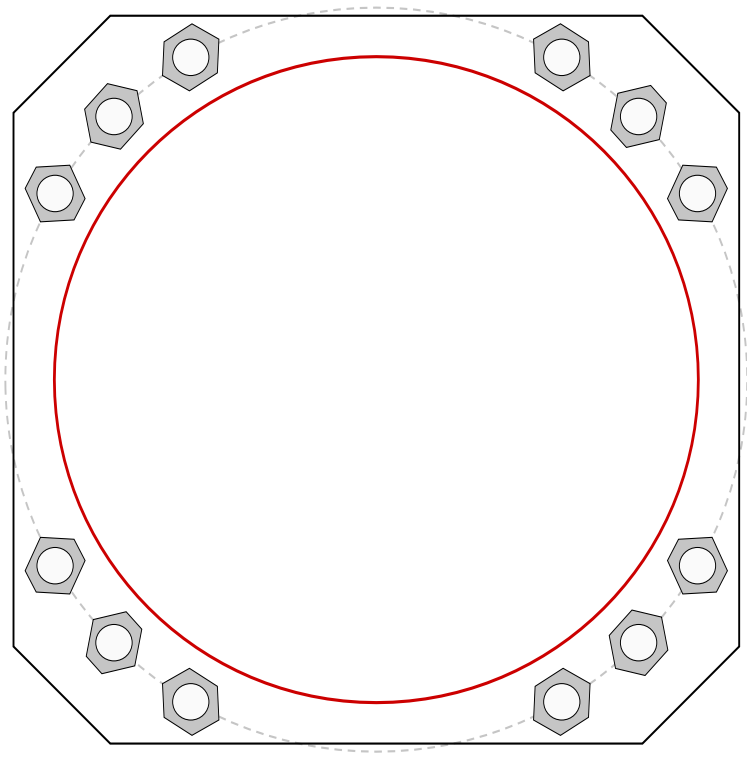
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from 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.

Monopole Base Plate Connection

Site Info	
Site #	CT1160 (FA #10050945
Site Name	w Britain Wildwood Str
Job #	925-10050945-01-STR-

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
l_{ar} (in)	2
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	1622.61
Axial Force (kips)	28.19
Shear Force (kips)	18.59



Connection Properties

Anchor Rod Data

(12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 46" BC

Anchor Spacing: 6 in

Base Plate Data

45" OD x 2.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

39.93" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu_c = 143.31	ϕPn_t = 260	**Stress Rating**
Vu = 1.55	ϕVn = n/a	**56.3%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	28.58	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**63.5%**	**Pass**

Analysis Date: 10/7/2020

Pier and Pad Foundation

Site #	CT1160 (FA #1005
Site Name	New Britain Wildwo
Job #	63925-10050945-0

TIA-222 Revision:	G
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐

Superstructure Analysis Reactions

Compression, P_{comp}:	28.21	kips
Base Shear, Vu_comp:	18.55	kips
Moment, M_u:	1622.61	ft-kips
Tower Height, **H**:	110	ft
BP Dist. Above Fdn, bp_{dist}:	2	in

Foundation Analysis Checks

	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	96.34	18.55	**19.3%**	**Pass**
Bearing Pressure (ksf)	4.50	1.74	**38.7%**	**Pass**
*Overturning (kip*ft)*	3066.43	1746.28	**56.9%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	3778.63	1687.54	**44.7%**	**Pass**
Pier Compression (kip)	13497.04	46.02	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	2401.63	589.90	**24.6%**	**Pass**
Pad Shear - 1-way (kips)	667.70	100.93	**15.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.022	**13.1%**	**Pass**

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	6	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	36	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	4	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Soil Rating:	**56.9%**
Structural Rating:	**44.7%**

Pad Properties

Depth, **D**:	6	ft
Pad Width, **W**:	21.5	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom), **Sp**:	8	
Pad Rebar Quantity (Bottom), **mp**:	22	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	100	pcf
Ultimate Gross Bearing, Qult:	6.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:		degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.3	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Exhibit E

Date: **September 4, 2020**

Mount Analysis Report

Tower Owner: AT&T
Carrier: T-Mobile Northeast LLC

Site ID: CT11634C
Site Name: CT634/Cing/Chesleypark_ET
Site Data: 35 Wildwood Street, New Britain, Hartford County, CT 06051
Latitude *41° 40' 05.66"*, Longitude *-72° 45' 17.84"*
12.5 ft Platform Mount

Tectonic Project Number: 10473.CT11634C

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this **"Mount 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 – 52%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 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 C 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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TABLE OF CONTENTS

1) INTRODUCTION

The existing mount is a 12.5' platform mount which was mapped by HighTower Solutions, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Structure Class:	II
Wind Speed:	97 mph
Exposure Category:	C
Topographic Factor:	1.0
Ice Thickness:	1.00 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
100.0	T-Mobile	3	ericsson	AIR6449 B41	-	1
		3	commscope	SDX1926Q-43		
		3	ericsson	RRUS 4415 B25		

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

Table 2 - Existing Equipment Loading Information

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Existing Mount Type	Note
100.0	T-Mobile	3	rfs	APXVARR24_43-C-NA20	12.5' Platform	1
		3	ericsson	AIR 32 B66a B2a		
		3	ericsson	Radio 4449 B71/B85		
		3	ericsson	TWIN TMA		
		3	ericsson	AIR21 B2A B4P	-	2

Notes:
1) Existing equipment.
2) Existing equipment to be removed, not considered in analysis.

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Dated
RFDS	T-Mobile	07/06/20
FIELD NOTES	Tectonic	07/17/20
MOUNT MAPPING REPORT	HighTower Solutions, Inc.	08/26/20

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 (Platform Mount)

Notes	Component	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontal	100.0	34	Pass
	Standoff Horizontal		44	Pass
	Mount Pipe		52	Pass
	Standoff Brace		28	Pass
	Corner Connection		11	Pass
	Connection to Collar Mount		29	Pass

Structure Rating (max from all components) =	52%

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

4.1) Result / Conclusions

The existing platform mount and its connection to the collar mount have sufficient capacity to carry the proposed T-Mobile load configurations. No modification is required at this time.

This structural analysis only includes evaluation of the antenna platform mount and not the monopole tower. The monopole 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.CT11634C		
	Sheet No.	1	of	3
	Calculated By	JJ	Date :	9/4/2020
	Checked By	IM	Date :	9/4/2020

WIND AND ICE LOADS PER TIA-222-G

W.O.	10473.CT11634C
Project Name	CT634/Cing/ChesleyPark_ET
Location	35 Wildwood Street, New Britain, CT 06051
County	Hartford

Tower Type	MP	Monopole
Structure Class	2	Substantial hazard
Exposure Category	C	Open terrain
Topo Category	1	Flat or rolling terrain
Height of crest	0	ft

Basic Wind Speed (3-sec gust):		
Without ice	97	mph*
With ice	50	mph
Service	60	mph
Ice thickness	1.00	in

Importance Factor	
Wind only	1.00
Wind with ice	1.00
Ice thickness	1.00
Supporting Data:	
K_e	1.00
K_t	N/A
f	N/A
z_g	900
α	9.5
$K_{z,min}$	0.85
K_d	0.95
G_h	1.00

Height	z (ft)	100
	Kh	N/A
	Kzt	1.00
	Kz	1.27
	Kiz	1.12
Wind Pressure, qz (psf)	No Ice	28.96
	With Ice	7.69
	Service	11.08
(tiz)	Ice Thk	2.23
Appurtenances (qzGh)	No Ice	28.96
	With Ice	7.69
	Service	11.08

*Ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second wind gust speed of 97 mph per Section 1609.3 and Appendix N, as required for use in the TIA-222-G Standard.

Tectonic

Job No.	10473.CT11634C		
Sheet No.	2	of	3
Calculated By	JJ	Date :	09/04/20
Checked By	IM	Date :	09/04/20

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**	100	2.76	20.50	8.30	Flat	1.27	1.20	1.91	7.25	4.71	16.96	164	70	103.0	309.0
RRUS 4415 B25	**P**	**3**	100	1.24	13.20	5.40	Flat	1.21	1.20	0.56	2.03	1.37	4.92	47	20	46.3	138.9
SDX1926Q-43	**P**	**3**	100	0.35	6.93	2.91	Flat	1.20	1.20	0.08	0.30	0.20	0.72	7	3	6.2	18.5
TMA	E	3	100	1.32	14.00	3.10	Flat	1.32	1.20	0.34	1.34	1.54	5.53	53	13	33.0	99.0
RADIO 4449 B71/B85	E	3	100	1.25	13.19	10.51	Flat	1.20	1.20	1.09	3.93	1.37	4.93	48	38	75.0	224.9
AIR-32 B2A/B66A	E	3	100	4.72	12.90	8.70	Flat	1.38	1.28	3.42	14.14	5.07	19.53	189	136	132.2	396.6
APXVAARR24_43-U-NA20	E	3	100	7.99	24.00	8.70	Flat	1.53	1.27	5.79	26.67	15.98	60.73	586	257	153.3	459.9
										$\sum(CaA_A)_T$	55.66	$\sum(CaA_A)_N$	113.32				1647

Wind with Ice Load Combinations **Ice Thk=** 2.23 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	100.00	3.13	24.97	12.77	Cylindrical	1.22	1.20	3.33	12.19	6.51	23.45	60	31	13.2	138.1
RRUS 4415 B25	P	3.00	100.00	1.61	17.67	9.87	Cylindrical	1.20	1.20	1.33	4.78	2.38	8.56	22	12	3.8	40.1
SDX1926Q-43	P	3.00	100.00	0.72	11.40	7.38	Cylindrical	1.20	1.20	0.44	1.59	0.68	2.46	6	4	0.6	5.9
TMA	E	3.00	100.00	1.69	18.47	7.57	Cylindrical	1.21	1.20	1.07	3.86	2.60	9.36	24	10	3.8	39.1
RADIO 4449 B71/B85	E	3.00	100.00	1.62	17.66	14.98	Cylindrical	1.20	1.20	2.02	7.28	2.38	8.58	22	19	4.9	51.3
AIR-32 B2A/B66A	E	3.00	100.00	5.09	17.37	13.17	Cylindrical	1.29	1.25	5.58	21.70	7.37	27.52	71	56	17.0	177.1
APXVAARR24_43-U-NA20	E	3.00	100.00	8.36	28.47	13.17	Cylindrical	1.42	1.25	9.18	39.12	19.84	74.15	190	100	43.6	454.2
										$\sum(CaA_A)_T$	90.52	$\sum(CaA_A)_N$	154.07				906

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No.	10473.CT11634C		
Sheet No.	3	of	3
Calculated By	JJ	Date :	09/04/20
Checked By	IM	Date :	09/04/20

Existing Platform Mount

Mount Center Line=	100 ft

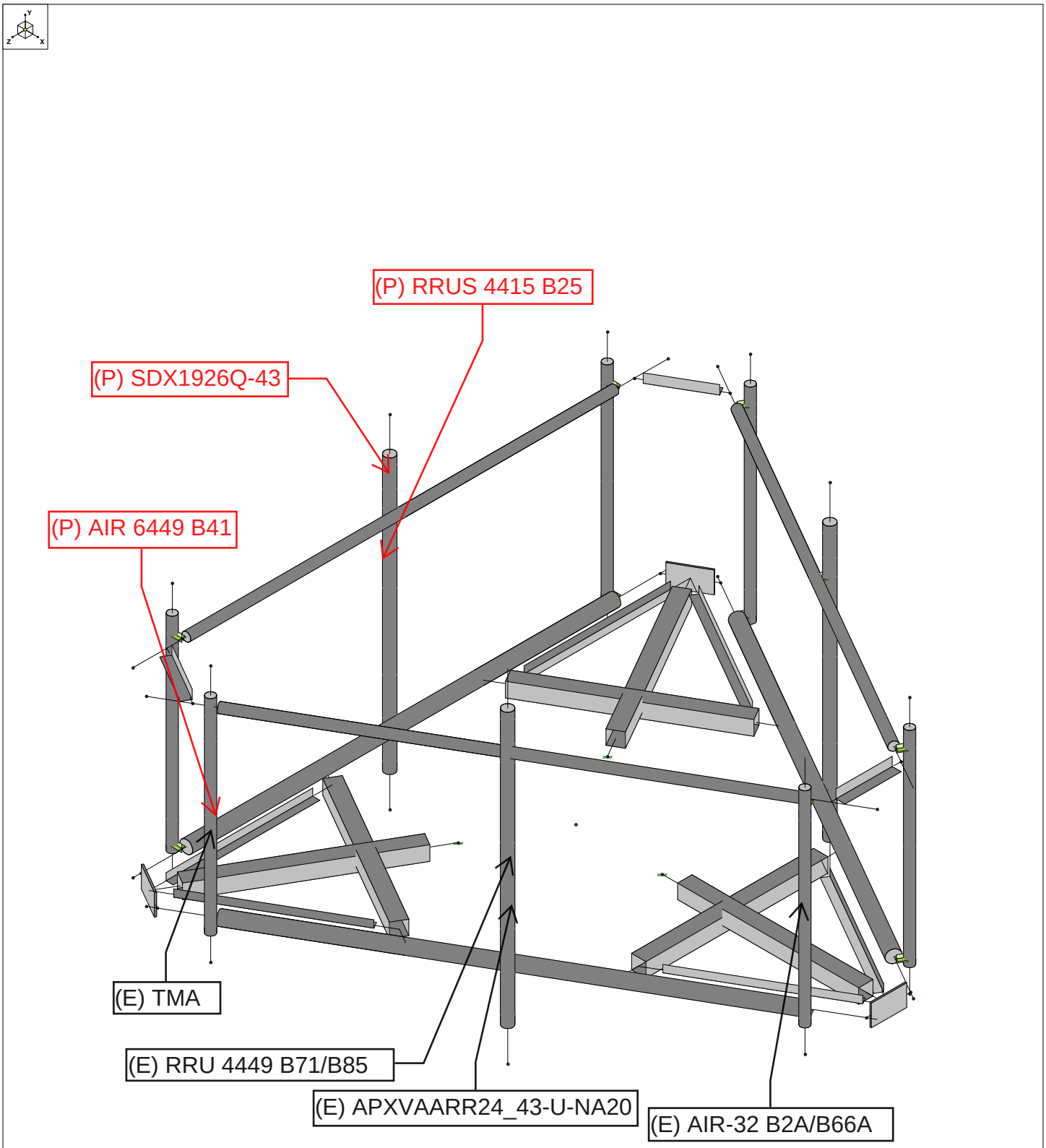
Member sizes are based on the mount mapping report by HighTower Solutions, Inc. dated 8/27/20

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)
Top Face Horizontal_2.0" STD Pipe	3	12.50	2.38	2.38	Cylindrical	1.2	8.93	6.9	23.35	6.5	25.68	5.3	2.6
Bottom Face Horizontal_3.0 STD Pipe	3	12.50	3.50	3.50	Cylindrical	1.2	13.13	10.1	34.34	9.5	29.88	6.1	3.9
Standoff Horizontal_HSS4x4x1/4	3	5.28	4.00	4.00	Flat	2	10.56	19.3	21.12	13.9	22.36	10.9	7.4
Standoff Brace_L2x2x3/16	3	4.28	2.00	2.00	Flat	2	4.28	9.7	8.56	7.0	13.84	8.3	3.7
Mount Pipe_2.0" STD	6	6.00	2.38	2.38	Cylindrical	1.2	8.57	6.9	22.42	6.5	24.66	5.3	2.6
Mount Pipe_2.5" STD	3	8.00	3.00	3.00	Cylindrical	1.2	7.20	8.7	18.84	8.2	17.93	5.7	3.3
Bottom Connection_PL6x7/16	3	1.03	6.00	0.44	Flat	2	3.09	29.0	3.32	11.2	5.39	13.4	11.1
Top Connection_L2.5x2.5x1/4	3	1.63	2.50	2.50	Flat	2	2.04	12.1	4.08	8.7	5.68	8.9	4.6

APPENDIX B

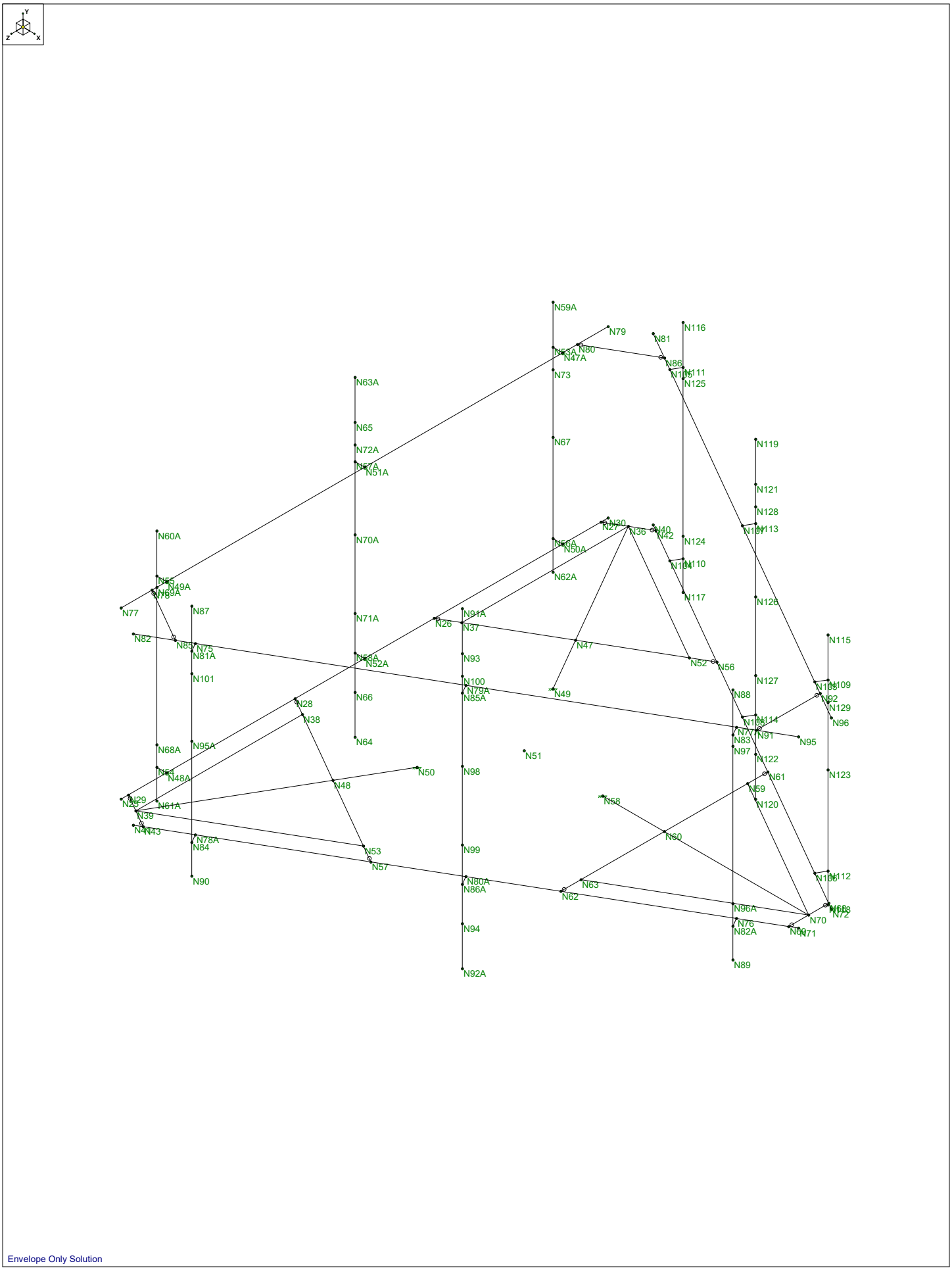
WIRE FRAME AND RENDERED MODELS



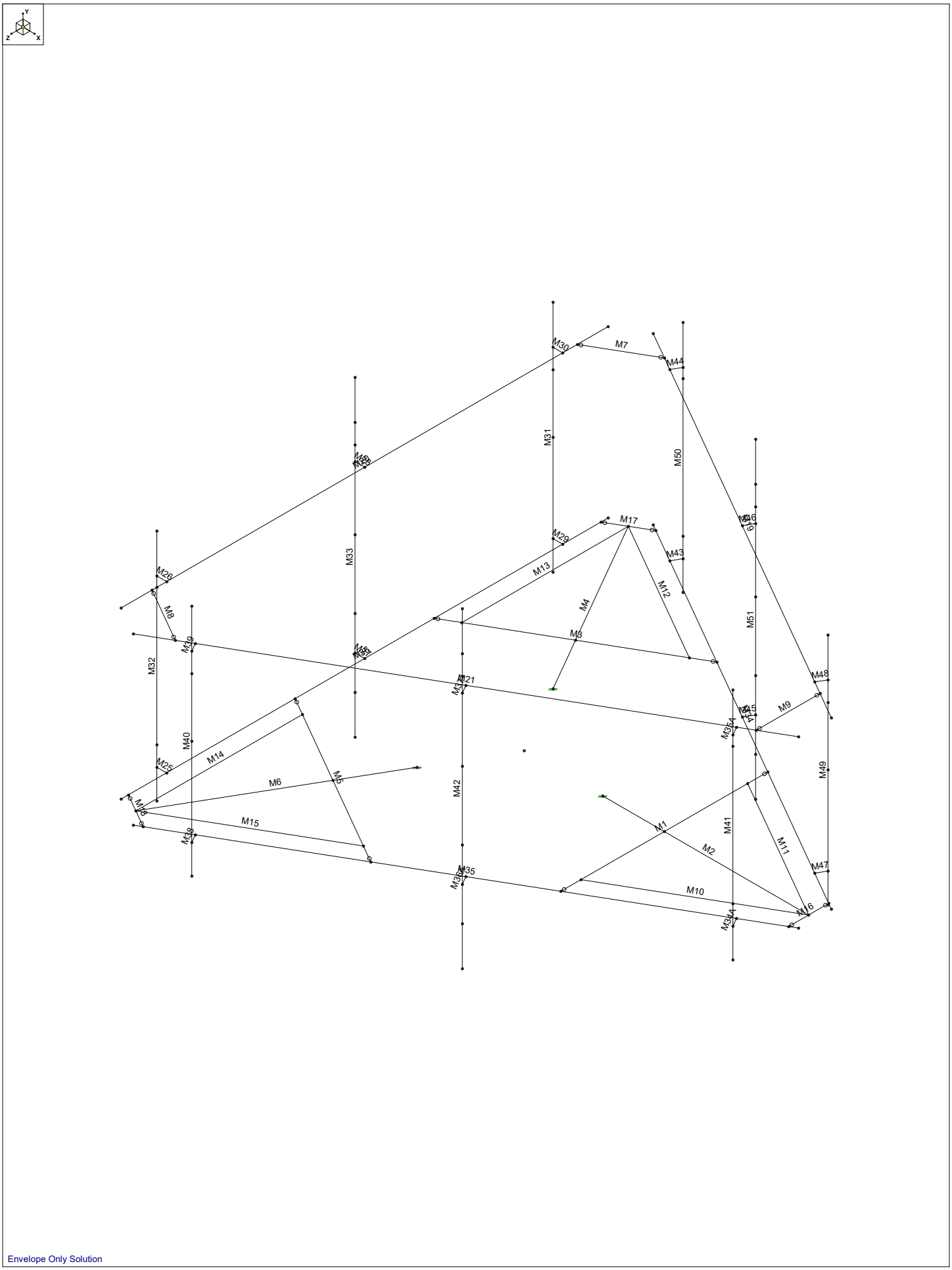
(P) PROPOSED
(E) EXISTING

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

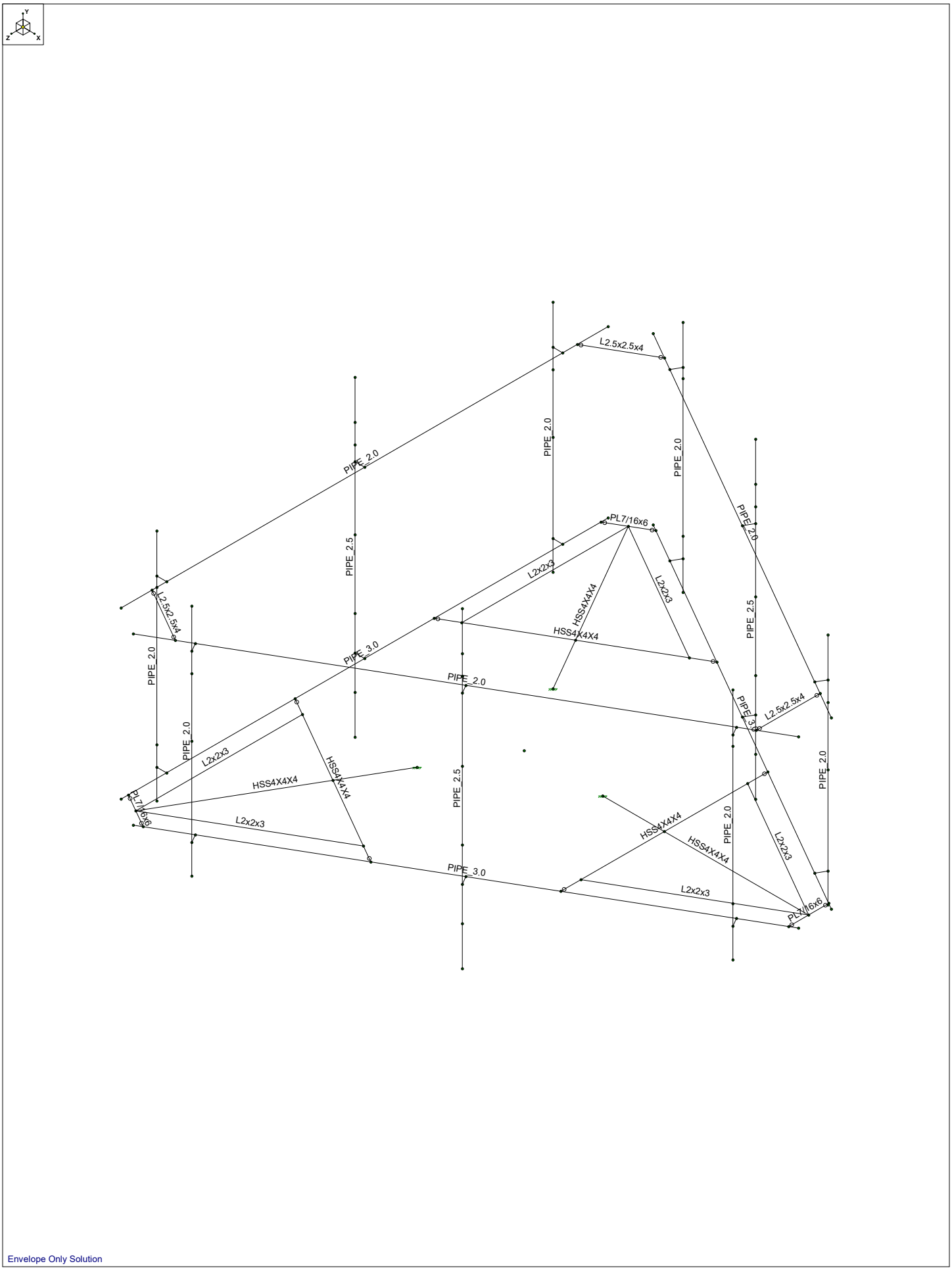
Envelope Only Solution



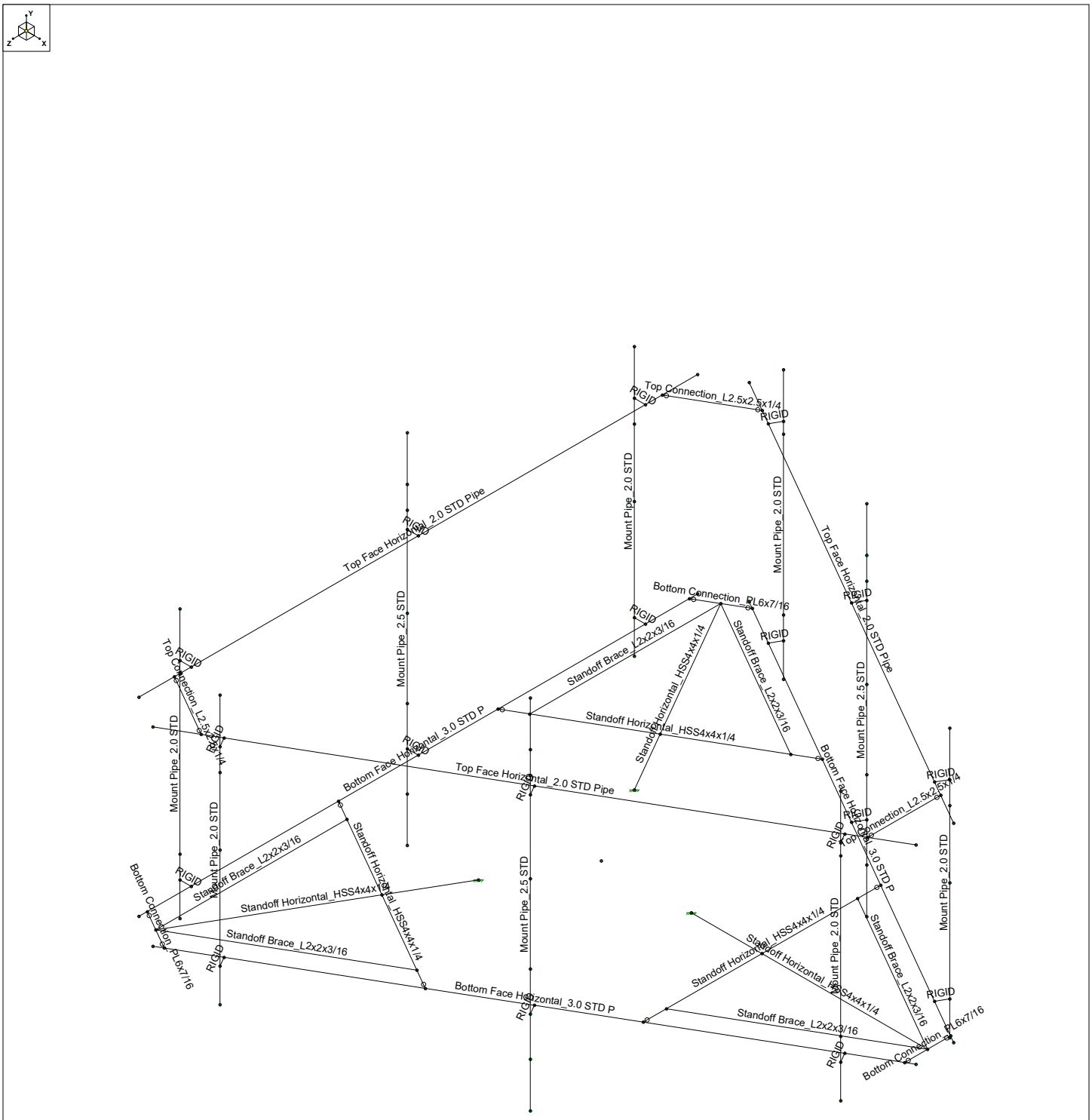
Envelope Only Solution



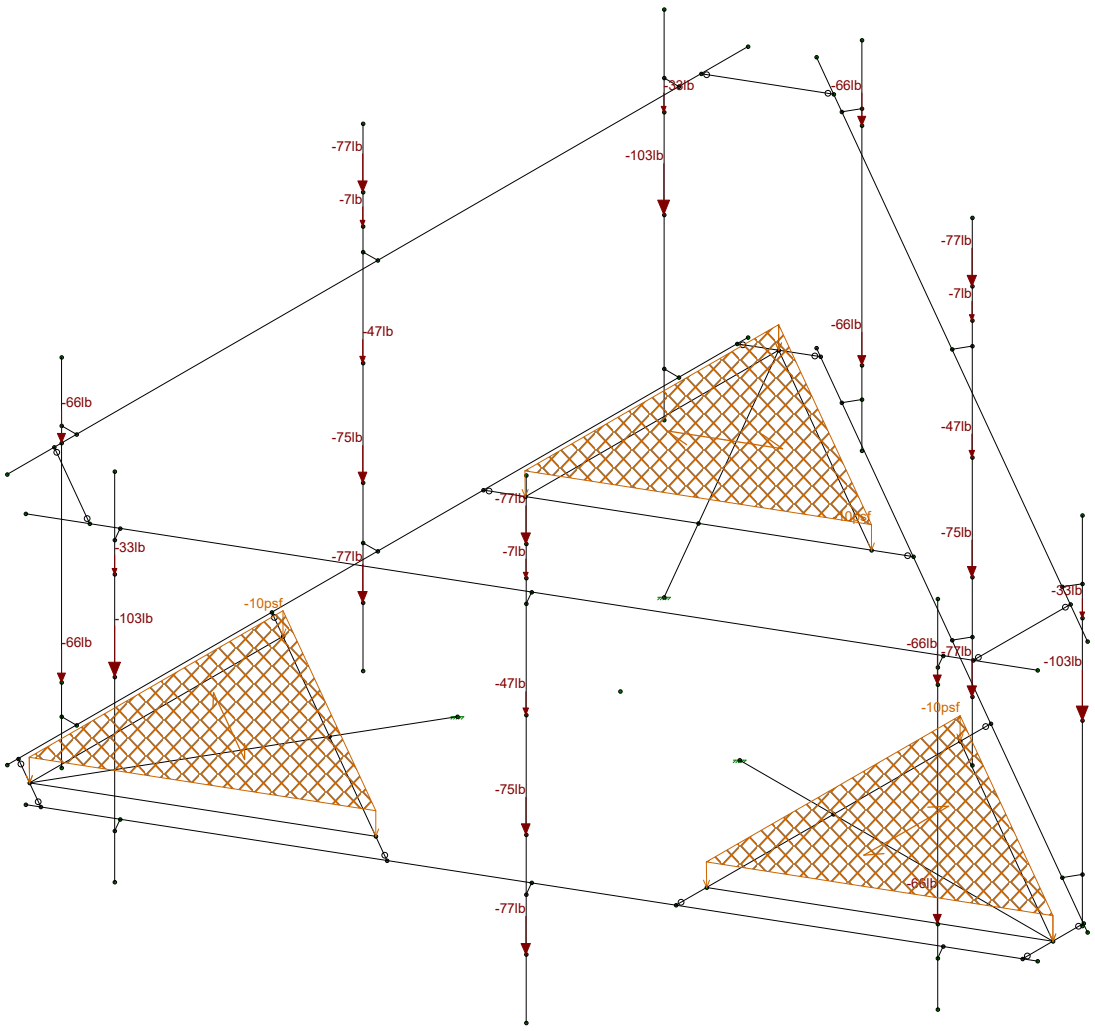
Envelope Only Solution



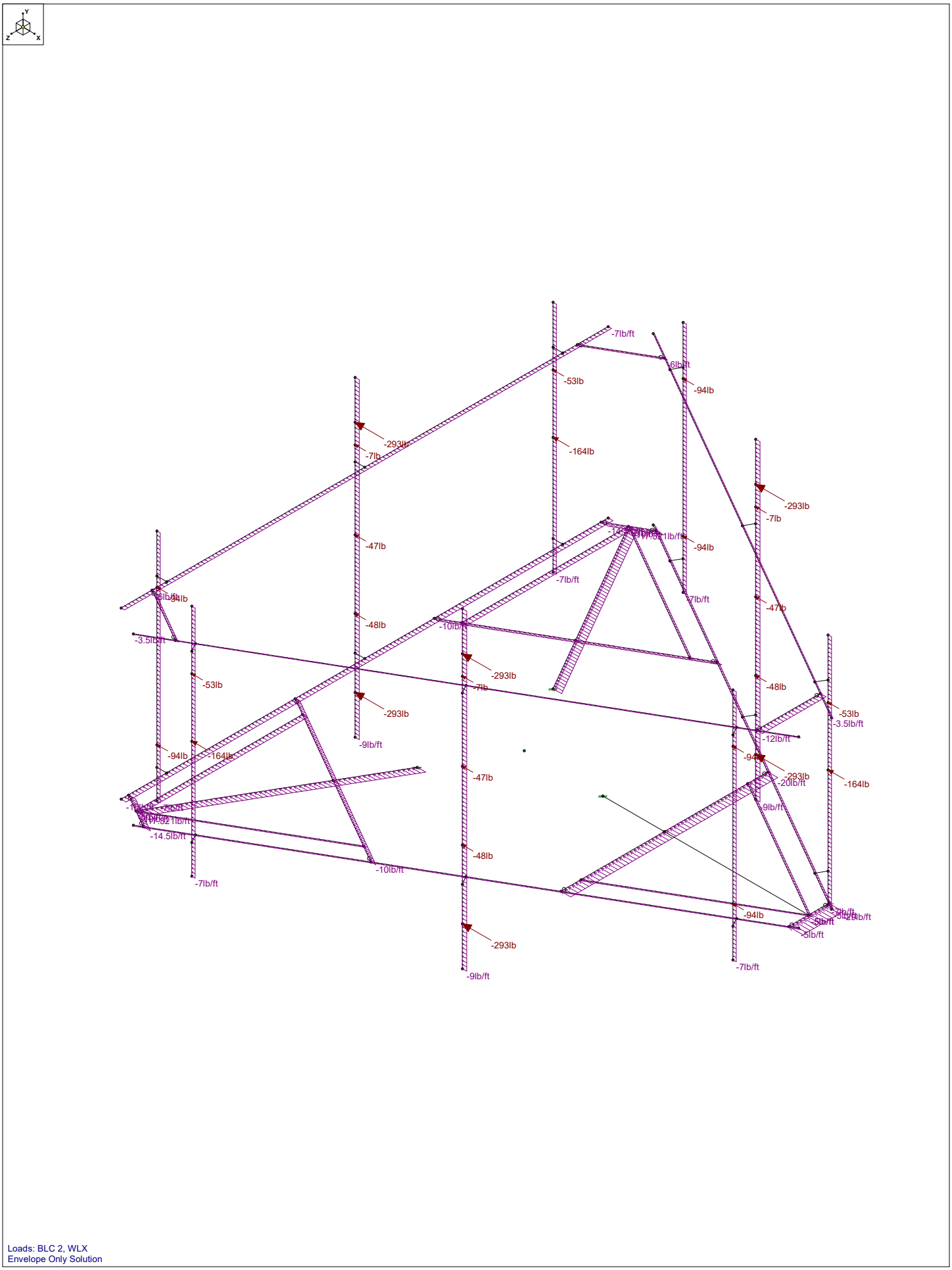
Envelope Only Solution



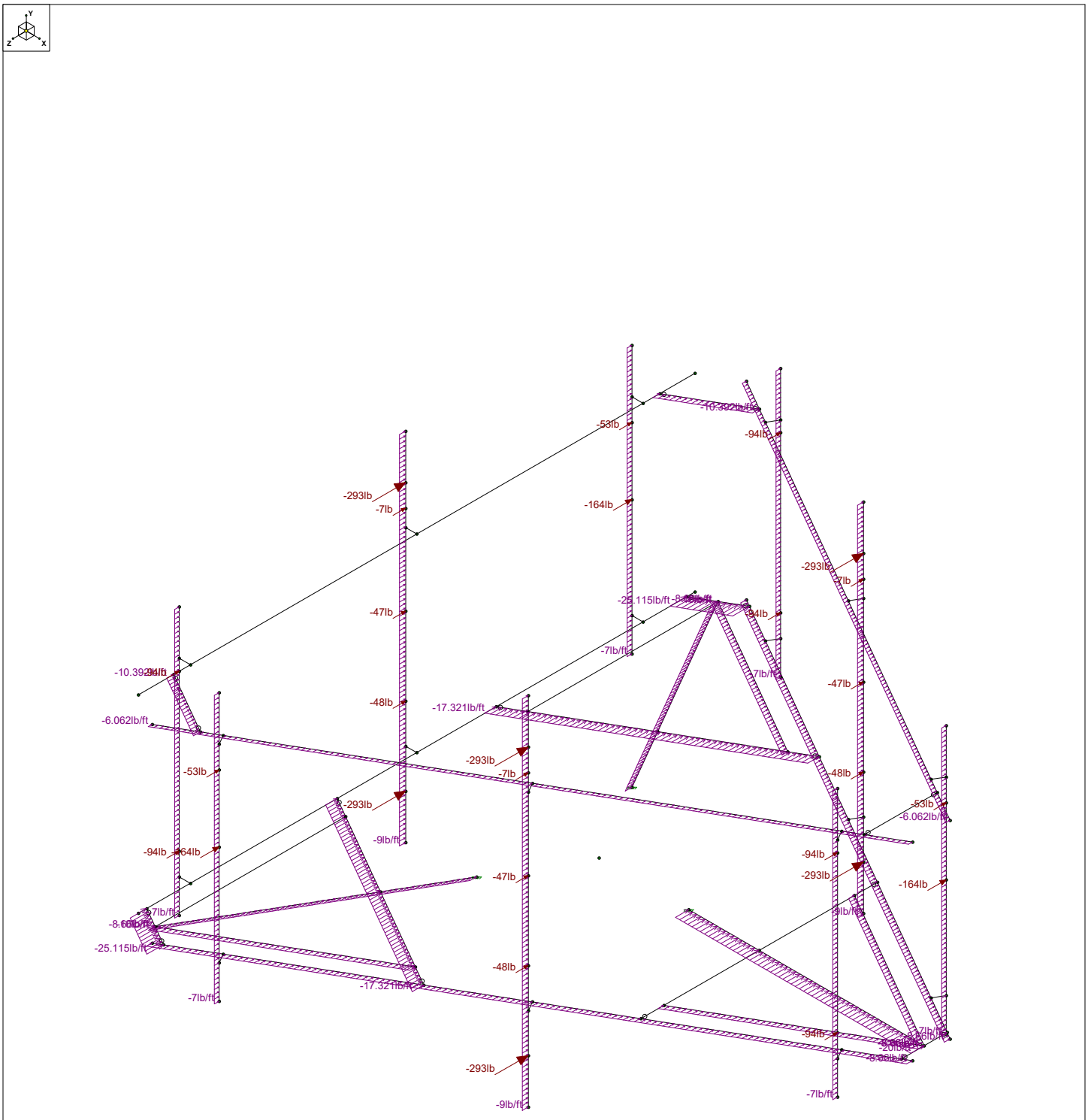
Envelope Only Solution



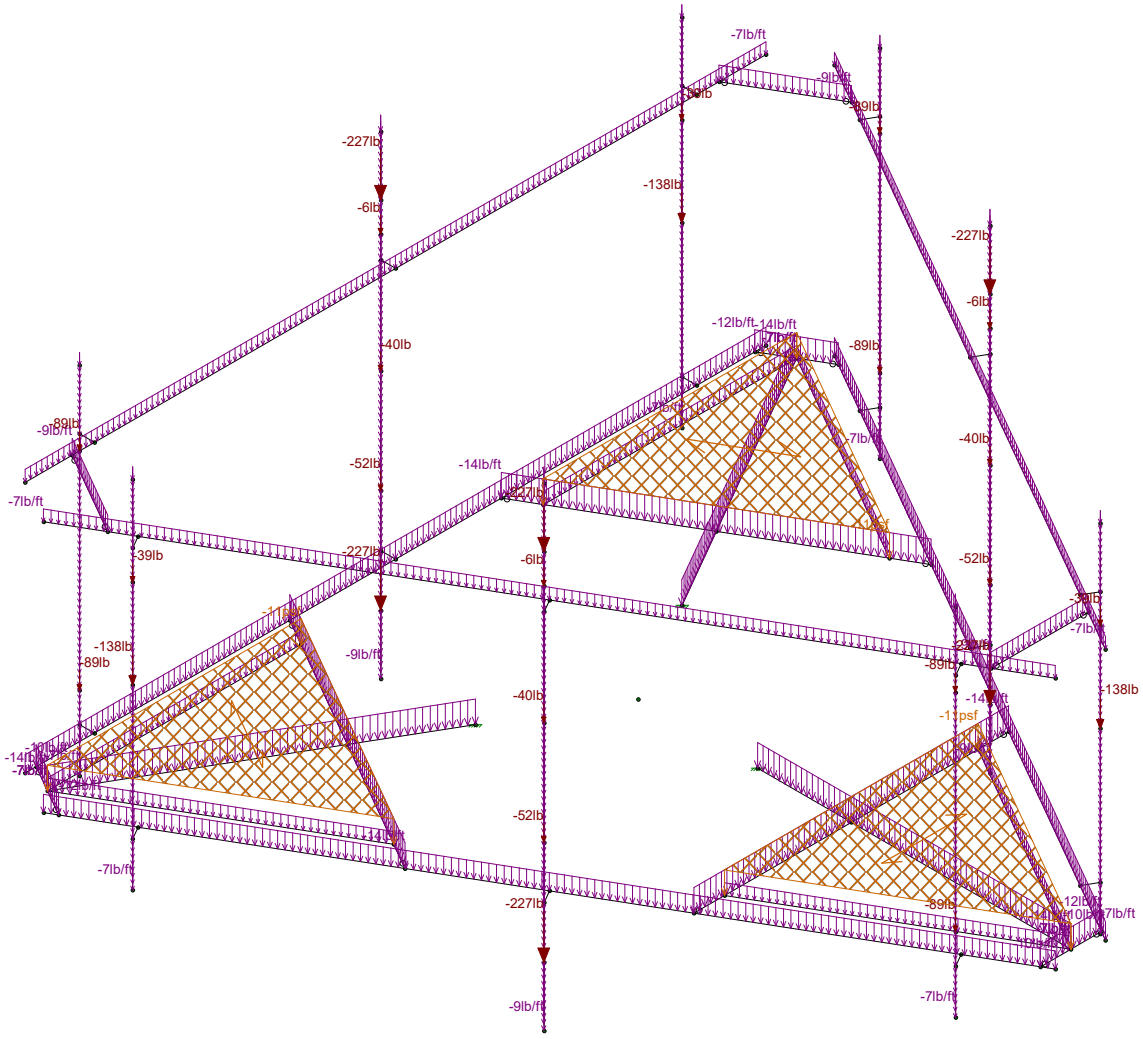
Loads: BLC 1, DL
Envelope Only Solution



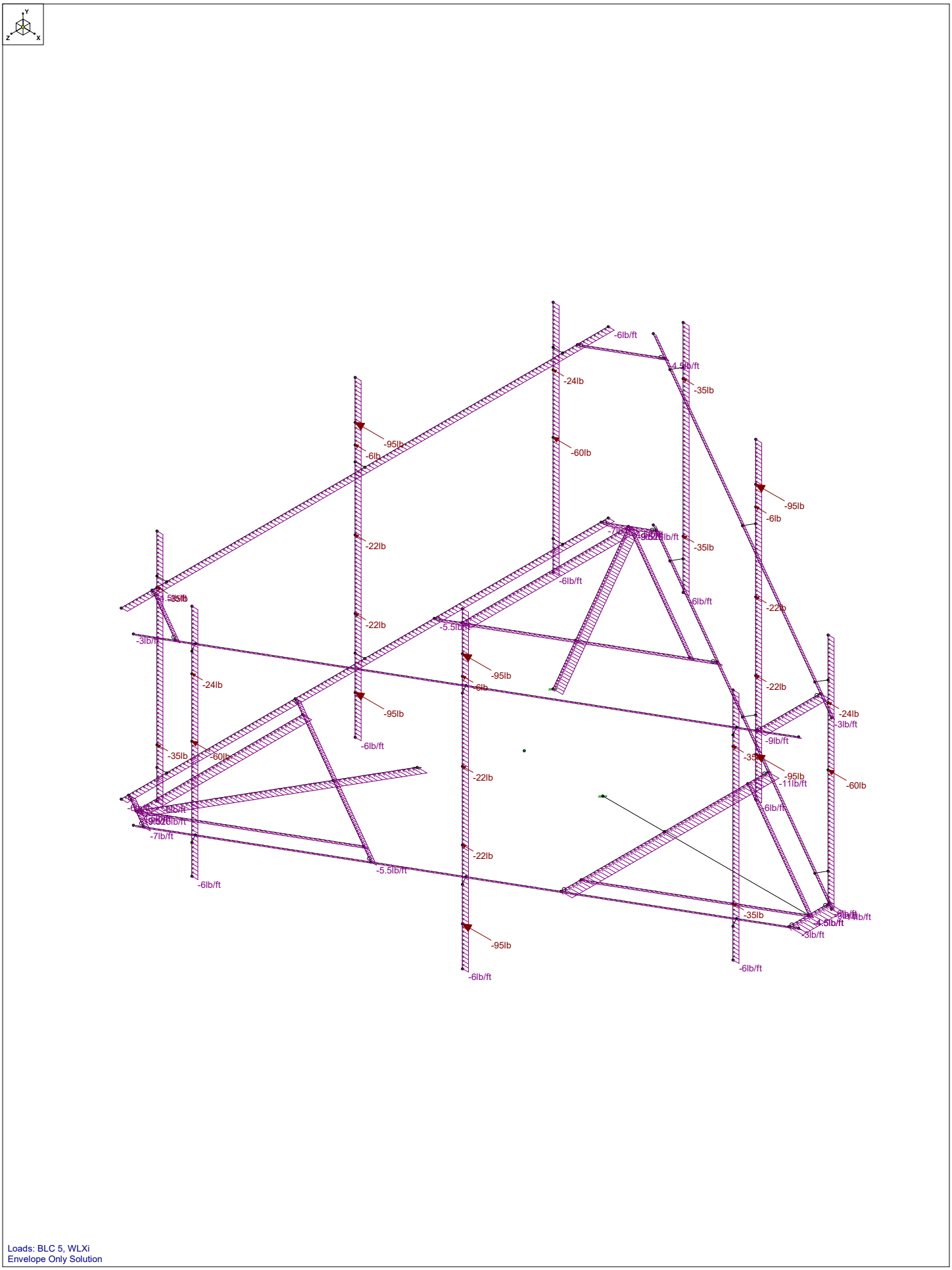
Loads: BLC 2, WLX
Envelope Only Solution



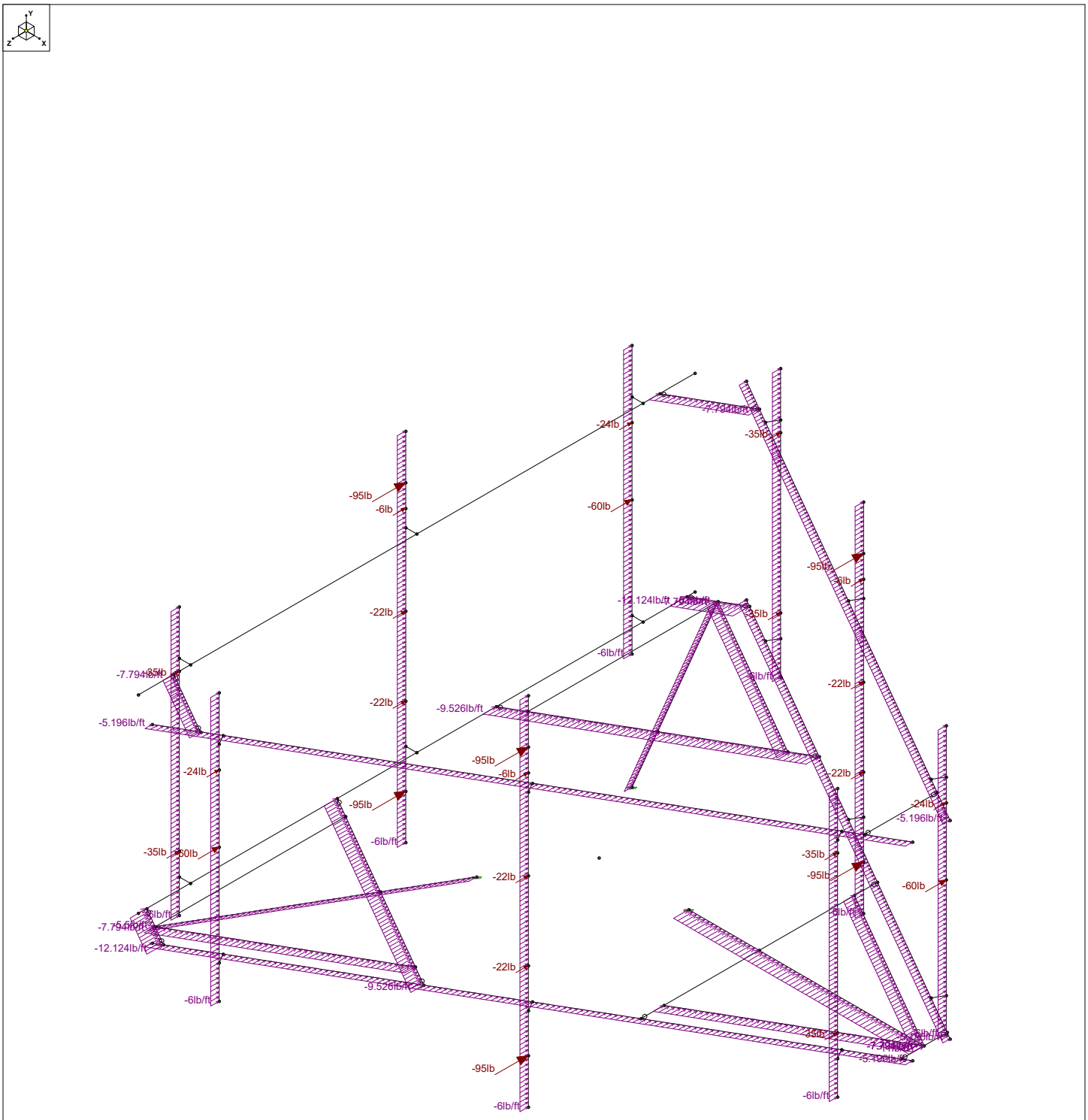
Loads: BLC 3, WLZ
Envelope Only Solution



Loads: BLC 4, DLi
Envelope Only Solution



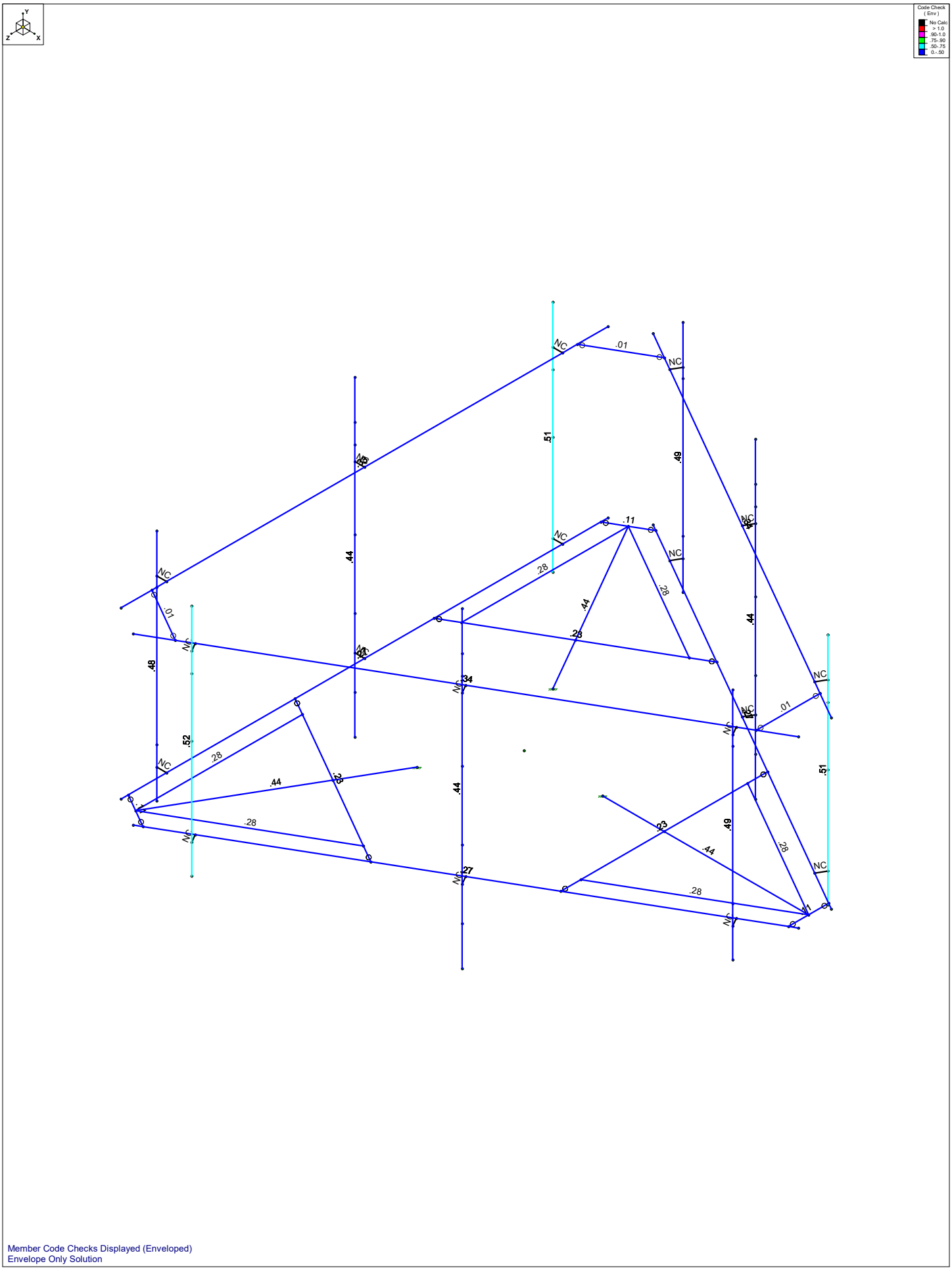
Loads: BLC 5, WLXi
Envelope Only Solution



Loads: BLC 6, WLZi
Envelope Only Solution

APPENDIX C

SOFTWARE ANALYSIS OUTPUT



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	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	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

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	DL	DL		-1.05		27			3	
2	WLX	WLX				27		33		
3	WLZ	WLZ				27		33		
4	DLi	OL1				27		33	3	
5	WLXi	OL2				27		33		
6	WLZi	OL3				27		33		
7	BLC 1 Transient Area...	None						12		
8	BLC 4 Transient Area...	None						12		

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+(WLX+WLZ) - 0 Deg	Yes	Y		1	1.2	2	1																
3	1.2D+(WLX+WLZ) - 30 Deg	Yes	Y		1	1.2	2	.866	3	.5														
4	1.2D+(WLX+WLZ) - 60 Deg	Yes	Y		1	1.2	2	.5	3	.866														
5	1.2D+(WLX+WLZ) - 90 Deg	Yes	Y		1	1.2	2		3	1														
6	1.2D+(WLX+WLZ) - 120 Deg	Yes	Y		1	1.2	2	-.5	3	.866														
7	1.2D+(WLX+WLZ) - 150 Deg	Yes	Y		1	1.2	2	-.8...	3	.5														
8	1.2D+(WLX+WLZ) - 180 Deg	Yes	Y		1	1.2	2	-1	3															
9	1.2D+(WLX+WLZ) - 210 Deg	Yes	Y		1	1.2	2	-.8...	3	-.5														
10	1.2D+(WLX+WLZ) - 240 Deg	Yes	Y		1	1.2	2	-.5	3	-.8...														
11	1.2D+(WLX+WLZ) - 270 Deg	Yes	Y		1	1.2	2		3	-1														
12	1.2D+(WLX+WLZ) - 300 Deg	Yes	Y		1	1.2	2	.5	3	-.8...														
13	1.2D+(WLX+WLZ) - 330 Deg	Yes	Y		1	1.2	2	.866	3	-.5														
14	**Wind Load with Ice**																							
15	1.2D+1.0Di+1.0(WLXi+WLZi) - 0...	Yes	Y		1	1.2	4	1	5	1	6													
16	1.2D+1.0Di+1.0(WLXi+WLZi) - 3...	Yes	Y		1	1.2	4	1	5	.866	6	.5												
17	1.2D+1.0Di+1.0(WLXi+WLZi) - 6...	Yes	Y		1	1.2	4	1	5	.5	6	.866												
18	1.2D+1.0Di+1.0(WLXi+WLZi) - 9...	Yes	Y		1	1.2	4	1	5		6	1												
19	1.2D+1.0Di+1.0(WLXi+WLZi) - 1...	Yes	Y		1	1.2	4	1	5	-.5	6	.866												
20	1.2D+1.0Di+1.0(WLXi+WLZi) - 1...	Yes	Y		1	1.2	4	1	5	-.8...	6	.5												
21	1.2D+1.0Di+1.0(WLXi+WLZi) - 1...	Yes	Y		1	1.2	4	1	5	-1	6													
22	1.2D+1.0Di+1.0(WLXi+WLZi) - 2...	Yes	Y		1	1.2	4	1	5	-.8...	6	-.5												
23	1.2D+1.0Di+1.0(WLXi+WLZi) - 2...	Yes	Y		1	1.2	4	1	5	-.5	6	-.8...												
24	1.2D+1.0Di+1.0(WLXi+WLZi) - 2...	Yes	Y		1	1.2	4	1	5		6	-1												
25	1.2D+1.0Di+1.0(WLXi+WLZi) - 3...	Yes	Y		1	1.2	4	1	5	.5	6	-.8...												
26	1.2D+1.0Di+1.0(WLXi+WLZi) - 3...	Yes	Y		1	1.2	4	1	5	.866	6	-.5												

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe_2.0 STD	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Top Face Horizontal...	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Bottom Face Horizon...	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Standoff Horizontal_...	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
5	Standoff Brace_L2x2...	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
6	Bottom Connection_...	PL7/16x6	Beam	RECT	A36 Gr.36	Typical	2.625	.042	7.875	.16
7	Top Connection_L2....	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
8	Mount Pipe_2.5 STD	PIPE_2.5	Beam	Single Angle	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

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	N49	max	1432.137	2	3368.331	17	1710.855	5	6025.055	17	1108.362	7	626.313	10
2		min	-1455.311	8	95.717	10	-1751.732	11	-1104.807	10	-1109.301	13	-3473.033	17
3	N58	max	1989.677	2	3379.619	21	1266.319	5	241.286	5	1264.724	11	6977.86	21
4		min	-1942.671	8	82.448	2	-1265.904	11	-238.926	11	-1265.984	5	-1297.99	2
5	N50	max	1415.783	2	3368.395	25	1767.225	5	1103.525	6	1107.675	3	628.61	6
6		min	-1439.628	8	95.732	6	-1726.767	11	-6027.751	25	-1109.221	9	-3468.596	25
7	Totals:	max	4837.598	2	8516.446	22	4744.4	5						
8		min	-4837.61	8	3722.247	3	-4744.403	11						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	Cb	Eqn
1	M40	PIPE_2.0	.515	.75	8	.145	.75	12	20866...	32130	1871....	1871....	2.214	H1-1b
2	M49	PIPE_2.0	.514	.75	4	.142	.75	8	20866...	32130	1871....	1871....	1.743	H1-1b
3	M31	PIPE_2.0	.507	.75	12	.147	.75	4	20866...	32130	1871....	1871....	2.17	H1-1b
4	M50	PIPE_2.0	.487	.75	8	.148	.75	4	20866...	32130	1871....	1871....	2.013	H1-1b
5	M41	PIPE_2.0	.486	.75	12	.146	.75	8	20866...	32130	1871....	1871....	1.788	H1-1b
6	M32	PIPE_2.0	.479	.75	4	.151	.75	12	20866...	32130	1871....	1871....	1.998	H1-1b
7	M33	PIPE_2.5	.454	1.917	8	.128	1.9...	11	30038...	50715	3596....	3596....	1.619	H1-1b
8	M42	PIPE_2.5	.449	1.917	4	.128	1.9...	7	30038...	50715	3596....	3596....	1.594	H1-1b
9	M51	PIPE_2.5	.449	1.917	12	.128	1.9...	9	30038...	50715	3596....	3596....	1.611	H1-1b
10	M4	HSS4X4X4	.440	5.286	16	.090	5.2...	y 18	12411...	139518	16180...	16180...	2.919	H1-1b
11	M2	HSS4X4X4	.440	5.286	20	.090	5.2...	y 20	12411...	139518	16180...	16180...	2.916	H1-1b
12	M6	HSS4X4X4	.439	5.286	26	.091	5.2...	y 24	12411...	139518	16180...	16180...	2.92	H1-1b
13	M21	PIPE_2.0	.338	6.25	13	.160	6.25	12	6295....	32130	1871....	1871....	1.75	H1-1b
14	M19	PIPE_2.0	.337	6.25	9	.159	6.25	8	6295....	32130	1871....	1871....	1.751	H1-1b
15	M20	PIPE_2.0	.326	6.25	5	.161	6.25	4	6295....	32130	1871....	1871....	1.756	H1-1b
16	M15	L2x2x3	.282	4.279	4	.017	4.2...	z 4	9348....	23392...	557.7...	1239....	2.384	H2-1
17	M13	L2x2x3	.281	4.279	8	.017	4.2...	z 8	9348....	23392...	557.7...	1239....	2.408	H2-1
18	M11	L2x2x3	.280	4.279	12	.017	4.2...	z 12	9348....	23392...	557.7...	1239....	2.386	H2-1
19	M12	L2x2x3	.278	4.279	12	.017	4.2...	y 12	9348....	23392...	557.7...	1239....	2.386	H2-1
20	M14	L2x2x3	.277	4.279	8	.017	4.2...	y 8	9348....	23392...	557.7...	1239....	2.411	H2-1
21	M10	L2x2x3	.276	4.279	4	.017	4.2...	y 4	9348....	23392...	557.7...	1239....	2.389	H2-1
22	M36	PIPE_3.0	.267	8.073	2	.156	4.5...	13	28250...	65205	5748....	5748....	1.687	H1-1b
23	M34	PIPE_3.0	.267	4.427	6	.155	6.25	11	28250...	65205	5748....	5748....	1.69	H1-1b
24	M35	PIPE_3.0	.265	4.427	10	.154	4.5...	9	28250...	65205	5748....	5748....	1.679	H1-1b
25	M5	HSS4X4X4	.225	2.655	24	.168	.498	z 4	12398...	139518	16180...	16180...	1.338	H1-1b
26	M3	HSS4X4X4	.225	2.655	18	.169	.498	z 8	12398...	139518	16180...	16180...	1.338	H1-1b
27	M1	HSS4X4X4	.225	2.655	20	.167	.498	z 12	12398...	139518	16180...	16180...	1.338	H1-1b
28	M16	PL7/16x6	.112	.516	7	.414	.516	y 11	32085...	85050	775.1...	10631...	1.471	H1-1b
29	M17	PL7/16x6	.111	.516	3	.418	.516	y 7	32085...	85050	775.1...	10631...	1.467	H1-1b
30	M18	PL7/16x6	.110	.516	11	.416	.516	y 3	32085...	85050	775.1...	10631...	1.473	H1-1b
31	M9	L2.5x2.5x4	.011	.818	8	.144	0	y 11	35328...	38556	1113....	2537....	1.136	H2-1
32	M8	L2.5x2.5x4	.010	.818	12	.146	0	y 3	35328...	38556	1113....	2537....	1.136	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	...	phi*P...	phi*P...	phi*M...	phi*M...	Cb	Eqn
33	M7	L2.5x2.5x4	.010	.818	4	.146	0	y	7	35328..	38556	1113....	2537....	1.136	H2-1

THE MAXIMUM MEMBER STRESS IS AT 52% OF ITS CAPACITY AND IS ADEQUATE TO SUPPORT THE PROPOSED UPGRADE.

SERVICE DEFLECTION = 2.27" x [(60MPH)^2/(97MPH)^2] = 0.87" < 1.6"
HENCE, OK.

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No. 10473.CT11634C
Calculated By: JJ Date : 9/4/20
Checked By: IM Date : 9/4/20

Design connection per AISC Steel Manual, 14th edition [LRFD].

Connection Details

Bolts

Quantity =	4	
Diameter =	0.625	
Vertical Spacing =	8	in (assumed)
Horizontal Spacing =	8	in (assumed)
Grade =	A325	
F_{nt} =	90	ksi
F_{nv} =	54	ksi

Loading Details

Node N58

Shear, Z =	1.266	k
Shear, Y =	3.38	k
Tension, X =	1.99	k
Mz =	6.978	k-ft
My =	0.241	k-ft
Mx =	1.266	k-ft

[Table J3.2]
[Table J3.2]

1 - Tensile Capacity

$$\phi R_{nt} = F_{nt} A_b$$ [Eqn. J3-1]

φ =	0.75	
F_{nt} =	90	ksi
A_b =	0.307	in^2
φR_{nt} =	20.72	k
T_{max} =	5.91	k

Rnt > Tmax
29%
OK

2 - Shear Capacity

$$\phi R_{nv} = F_{nv} A_b$$ [Eqn. J3-1]

φ =	0.75	
F_{nv} =	54	ksi
A_b =	0.307	in^2
φR_{nv} =	12.43	k
V_{max} =	2.25	k

Rnv > Vmax
18%
OK

3 - Combined Tension and Shear Capacity

$$\phi R'_{nt} = F'_{nt} A_b$$ [Eqn. J3-2]

$$F'_{nt} = 1.3F_{nt} - \frac{F_{nt}}{\phi F_{nv}} f_{rv} \leq F_{nt}$$ [Eqn. J3-3a]

φ =	0.75	
F'_{nt} =	90	ksi
A_b =	0.307	in^2
$\varphi R'_{nt}$ =	20.72	k
T_{max} =	5.91	k

R'nt > Tmax
29%
OK

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
East Hampton	30	0.177	0.062	120	130	140	93	101	108

East Hartford	30	0.180	0.064	115	125	135	89	97	105
East Haven	30	0.182	0.062	120	130	140	93	101	108
East Lyme	30	0.164	0.059	125	135	145	97	105	112
Easton	30	0.215	0.066	110	120	130	85	93	101
East Windsor	35	0.177	0.064	115	125	135	89	97	105
Ellington	35	0.176	0.064	115	125	135	89	97	105
Enfield	35	0.176	0.065	110	125	130	85	97	101
Essex	30	0.168	0.059	120	135	145	93	105	112
Fairfield	30	0.215	0.065	115	125	135	89	97	105
Farmington	35	0.183	0.064	115	125	135	89	97	105
Franklin	30	0.171	0.061	120	130	140	93	101	108
Glastonbury	30	0.180	0.063	115	125	135	89	97	105
Goshen	40	0.181	0.065	105	115	125	81	89	97
Granby	35	0.176	0.065	110	120	130	85	93	101
Greenwich	30	0.259	0.070	110	120	130	85	93	101
Griswold	30	0.168	0.060	125	135	145	97	105	112
Groton	30	0.160	0.058	125	135	145	97	105	112
Guilford	30	0.176	0.061	120	130	140	93	101	108
Haddam	30	0.175	0.061	120	130	140	93	101	108
Hamden	30	0.185	0.063	115	125	135	89	97	105
Hampton	35	0.172	0.062	120	130	140	93	101	108
Hartford	30	0.181	0.064	115	125	135	89	97	105
Hartland	40	0.175	0.065	110	120	125	85	93	97
Harwinton	35	0.183	0.065	110	120	130	85	93	101
Hebron	30	0.177	0.063	120	130	140	93	101	108
Kent	40	0.188	0.065	105	115	120	81	89	93
Killingly	40	0.171	0.062	120	130	140	93	101	108
Killingworth	30	0.173	0.061	120	130	140	93	101	108
Lebanon	30	0.173	0.062	120	130	140	93	101	108
Ledyard	30	0.163	0.059	125	135	145	97	105	112
Lisbon	30	0.169	0.061	125	135	145	97	105	112
Litchfield	40	0.184	0.065	110	120	125	85	93	97
Lyme	30	0.164	0.059	125	135	145	97	105	112
Madison	30	0.173	0.060	120	130	140	93	101	108
Manchester	30	0.178	0.064	115	125	135	89	97	105
Mansfield	35	0.173	0.062	120	130	140	93	101	108
Marlborough	30	0.177	0.062	120	130	140	93	101	108
Meriden	30	0.183	0.063	115	125	135	89	97	105
Middlebury	35	0.191	0.064	110	120	130	85	93	101
Middlefield	30	0.181	0.063	115	125	135	89	97	105
Middletown	30	0.180	0.063	115	130	135	89	101	105
Milford	30	0.194	0.063	115	125	135	89	97	105
Monroe	30	0.205	0.065	110	120	130	85	93	101
Montville	30	0.165	0.059	125	135	145	97	105	112
Morris	35	0.187	0.065	110	120	125	85	93	97
Naugatuck	30	0.190	0.064	110	125	135	85	97	105
New Britain	30	0.183	0.064	115	125	135	89	97	105
New Canaan	30	0.240	0.068	110	120	130	85	93	101
New Fairfield	35	0.212	0.067	105	115	125	81	89	97
New Hartford	40	0.180	0.065	110	120	130	85	93	101
New Haven	30	0.186	0.062	115	125	135	89	97	105
Newington	30	0.182	0.064	115	125	135	89	97	105
New London	30	0.161	0.058	125	135	145	97	105	112

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Sep 04 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.

Exhibit F

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: CT11634C

CT634/Cing/ChesleyPark_ET
35 Wildwood Street
New Britain, Connecticut 06051

October 14, 2020

EBI Project Number: 6220005386

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**31.72%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

October 14, 2020

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

Emissions Analysis for Site: CT11634C - CT634/Cing/ChesleyPark_ET

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **35 Wildwood Street** in **New Britain, 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 35 Wildwood Street in New Britain, 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 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) 4 GSM 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 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

7) 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.

8) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

9) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

10) 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.

11) 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.

12) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 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 / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 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 / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 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.

13) The antenna mounting height centerline of the proposed antennas is 100 feet above ground level (AGL).

14) 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.

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 / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	100 feet	Height (AGL):	100 feet	Height (AGL):	100 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A1 MPE %:	**4.62%**	Antenna B1 MPE %:	**4.62%**	Antenna C1 MPE %:	**4.62%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	100 feet	Height (AGL):	100 feet	Height (AGL):	100 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):	11,055.53	ERP (W):	11,055.53	ERP (W):	11,055.53
Antenna A2 MPE %:	**6.00%**	Antenna B2 MPE %:	**6.00%**	Antenna C2 MPE %:	**6.00%**
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:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	100 feet	Height (AGL):	100 feet	Height (AGL):	100 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A3 MPE %:	**9.22%**	Antenna B3 MPE %:	**9.22%**	Antenna C3 MPE %:	**9.22%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	19.84%
AT&T	6.18%
Clearwire	0.69%
Verizon	5.01%
Site Total MPE % :	31.72%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	19.84%
T-Mobile Sector B Total:	19.84%
T-Mobile Sector C Total:	19.84%
Site Total MPE % :	31.72%

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 GSM	4	1028.30	100.0	14.79	1900 MHz GSM	1000	1.48%
T-Mobile 1900 MHz LTE	2	2056.61	100.0	14.79	1900 MHz LTE	1000	1.48%
T-Mobile 2100 MHz LTE	2	2307.55	100.0	16.59	2100 MHz LTE	1000	1.66%
T-Mobile 600 MHz LTE	2	591.73	100.0	4.25	600 MHz LTE	400	1.06%
T-Mobile 600 MHz NR	1	1577.94	100.0	5.67	600 MHz NR	400	1.42%
T-Mobile 700 MHz LTE	2	648.82	100.0	4.67	700 MHz LTE	467	1.00%
T-Mobile 1900 MHz LTE	2	2203.69	100.0	15.85	1900 MHz LTE	1000	1.58%
T-Mobile 2100 MHz UMTS	2	1294.56	100.0	9.31	2100 MHz UMTS	1000	0.93%
T-Mobile 2500 MHz LTE	2	6412.98	100.0	46.11	2500 MHz LTE	1000	4.61%
T-Mobile 2500 MHz NR	2	6412.98	100.0	46.11	2500 MHz NR	1000	4.61%
						Total:	**19.84%**

• 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.

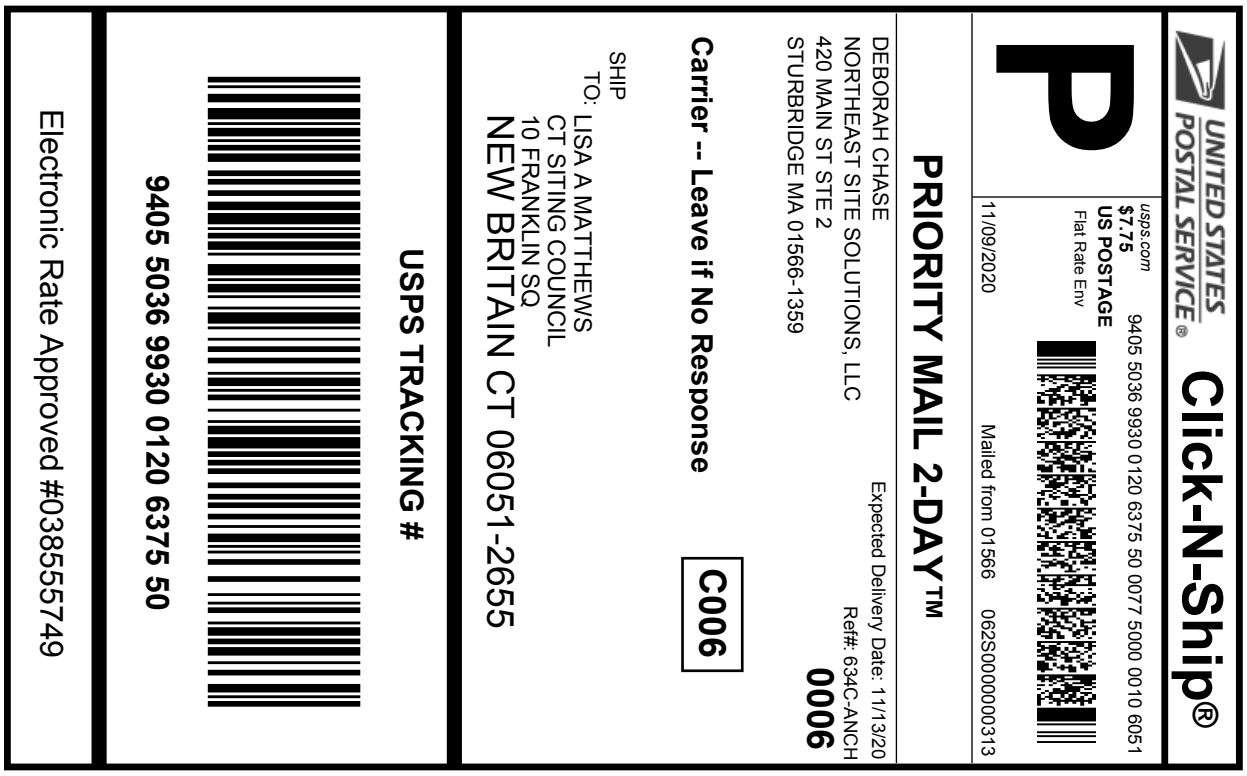
The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	19.84%
Sector B:	19.84%
Sector C:	19.84%
T-Mobile Maximum MPE % (Sector A):	19.84%
Site Total:	31.72%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **31.72%** 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 G



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0120 6375 50

Trans. #:	513362184
Print Date:	11/09/2020
Ship Date:	11/09/2020
Expected Delivery Date:	11/13/2020

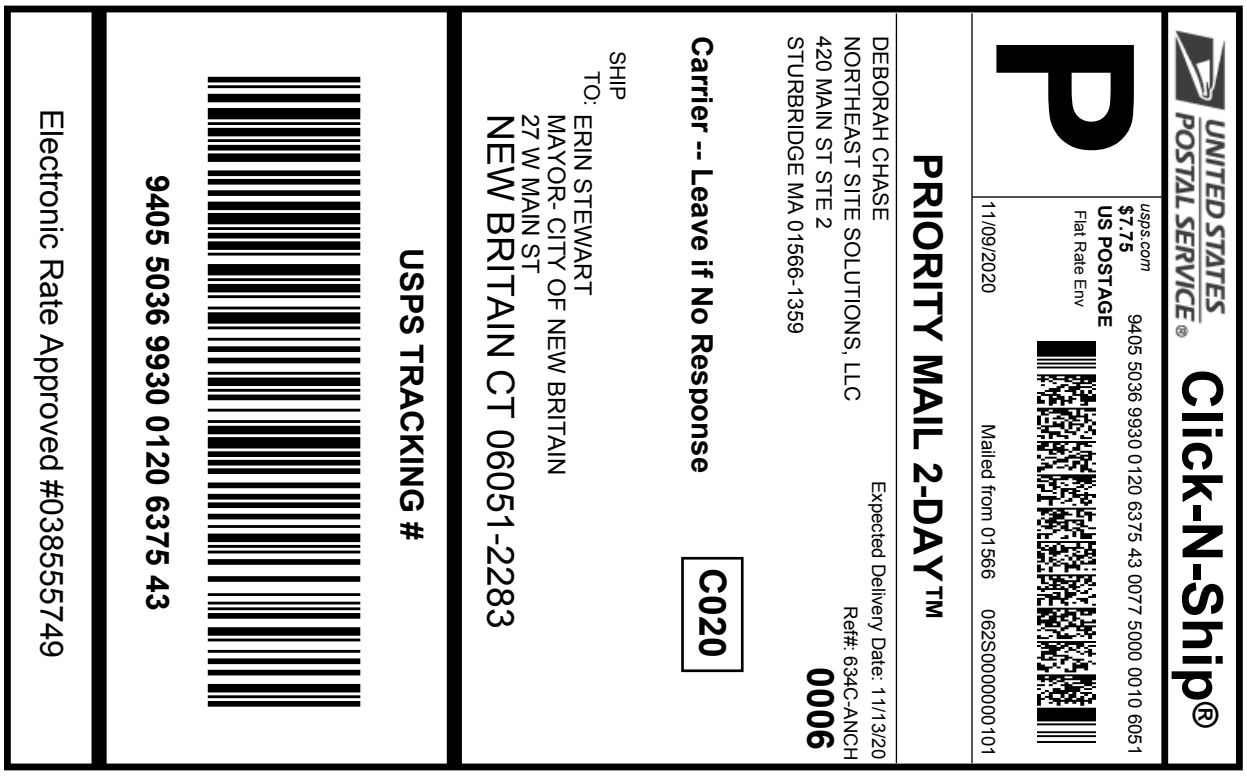
Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 634C-ANCH
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: LISA A MATTHEWS
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0120 6375 43

Trans. #:	513362184
Print Date:	11/09/2020
Ship Date:	11/09/2020
Expected Delivery Date:	11/13/2020

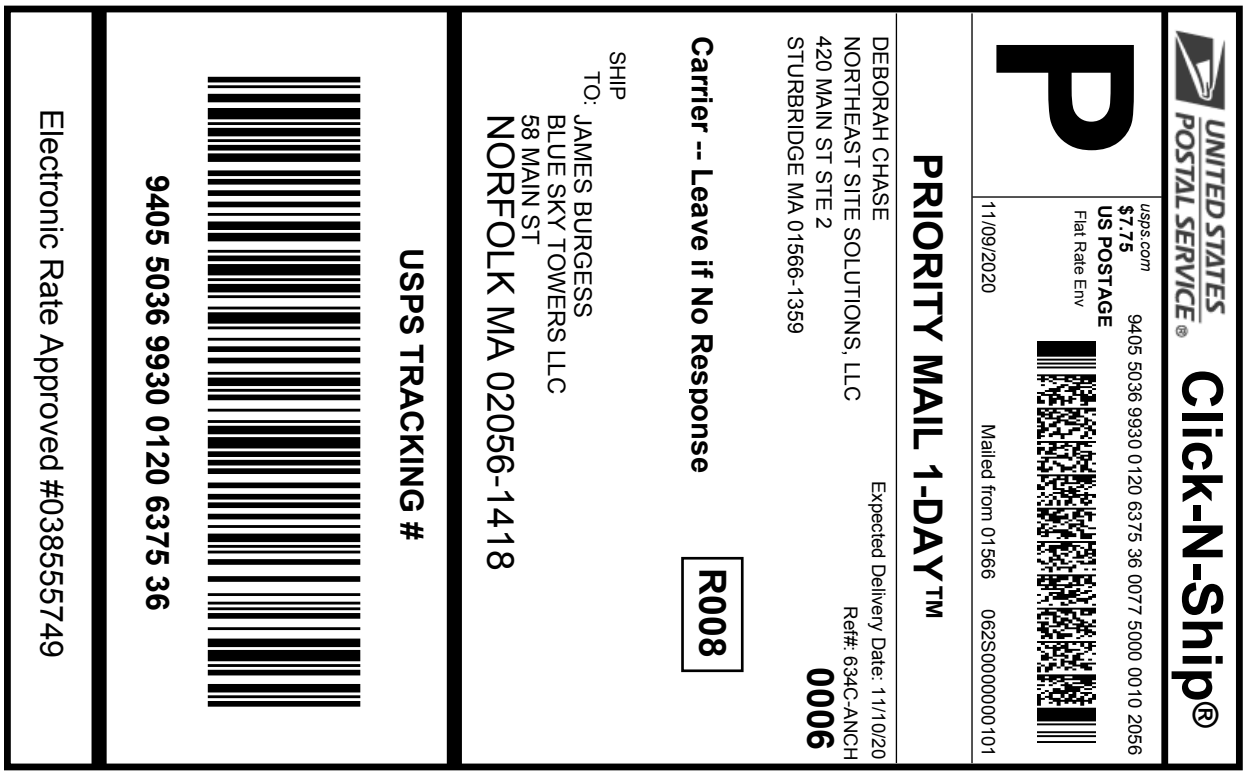
Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 634C-ANCH
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: ERIN STEWART
MAYOR- CITY OF NEW BRITAIN
27 W MAIN ST
NEW BRITAIN CT 06051-2283

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0120 6375 36

Trans. #:	513362184
Print Date:	11/09/2020
Ship Date:	11/09/2020
Expected Delivery Date:	11/10/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 634C-ANCH
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: JAMES BURGESS
BLUE SKY TOWERS LLC
58 MAIN ST
NORFOLK MA 02056-1418

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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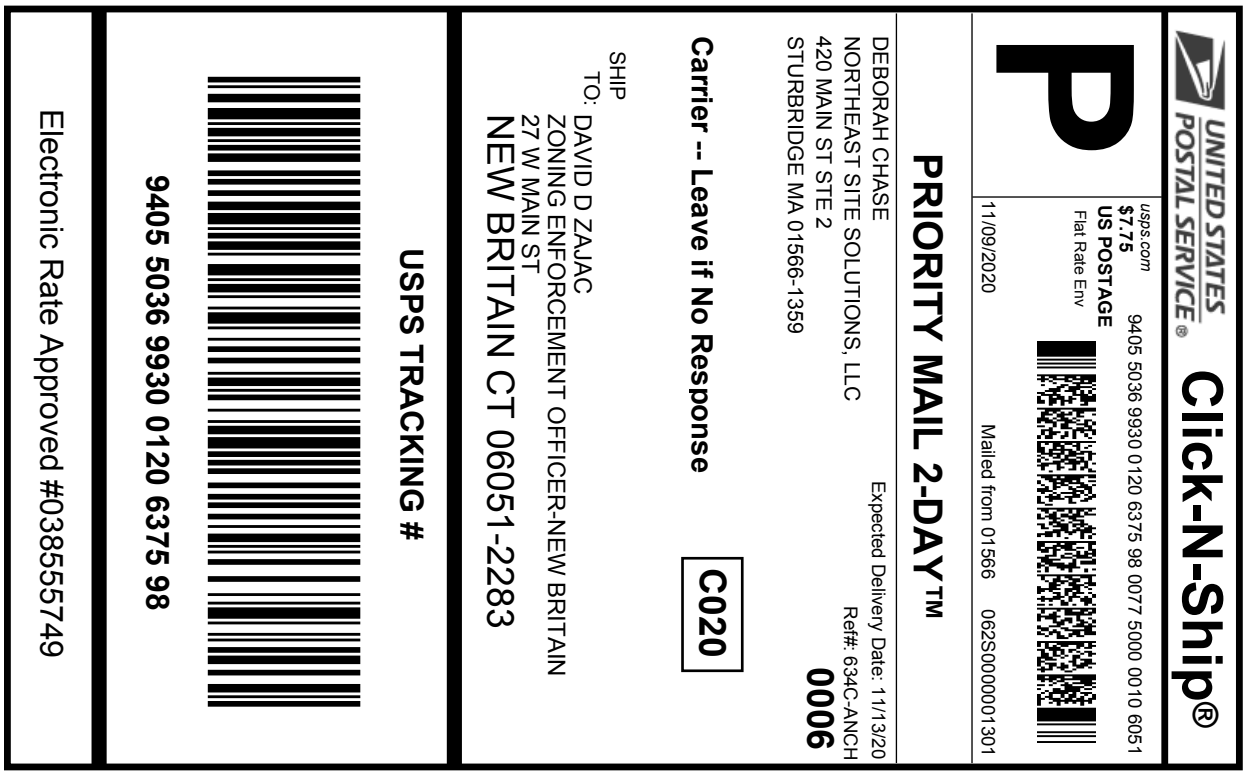

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0120 6375 98

Trans. #:	513362184
Print Date:	11/09/2020
Ship Date:	11/09/2020
Expected Delivery Date:	11/13/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 634C-ANCH
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: DAVID D ZAJAC
ZONING ENFORCEMENT OFFICER-NEW BRITAIN
27 W MAIN ST
NEW BRITAIN CT 06051-2283

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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UNITED STATES POSTAL SERVICE®

Click-N-Ship®

9405 5036 9930 0120 8396 02 0077 5000 0010 6051

usps.com
$7.75
US POSTAGE
Flat Rate Env

P

11/09/2020 Mailed from 01566 062S0000000309

PRIORITY MAIL 2-DAY™

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

Expected Delivery Date: 11/13/20
Ref#: 634C-ANCH

0006

Carrier -- Leave if No Response

C020

SHIP TO: MARK H BERNACKI
TOWN OF NEW BRITAIN- TOWN CLERK
27 W MAIN ST
NEW BRITAIN CT 06051-2283

USPS TRACKING #

9405 5036 9930 0120 8396 02

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0120 8396 02

Trans. #:	513378659
Print Date:	11/09/2020
Ship Date:	11/09/2020
Expected Delivery Date:	11/13/2020

Priority Mail® Postage:	**$7.75**
Total:	**$7.75**

From: DEBORAH CHASE Ref#: 634C-ANCH
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: MARK H BERNACKI
TOWN OF NEW BRITAIN- TOWN CLERK
27 W MAIN ST
NEW BRITAIN CT 06051-2283

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

UNITED STATES POSTAL SERVICE®

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Exhibit H

Deborah Chase

From: Deborah Chase
Sent: Monday, November 9, 2020 3:28 PM
To: 'Mayor@NewBritainCT.gov'; 'Nbmaster@newbritainct.gov'
Cc: 'jamesb@blueskytower.com'
Subject: 33 WILDWOOD STREET NEW BRITAIN CT 06051 T-MOBILE EM APPLICATION (CT11634C-ANCHOR)
Attachments: 33 WILDWOOD STREET, NEW BRITAIN CT T-MOBILE EM APPLICATION (CT11634C- ANCHOR).pdf

Good afternoon
On behalf of our client, (T-Mobile), I am forwarding copies of T-Mobiles Exempt Modification Request to collocate on a wireless telecommunications facility located at 33 Wildwood Street, New Britain.
Hard copies will be sent as well for your records.
Please do not hesitate to contact me with any questions regarding T-Mobile's Exempt Modification Request.
Thank you very much

Deborah Chase
Senior Project Coordinator & Analyst
Mobile: 860-490-8839

NORTHEAST
SITE SOLUTIONS
Turnkey Wireless Development
www.northeastsitesolutions.com

Save a tree. Refuse.Reduce. Reuse. Recycle.