NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

September 20, 2022

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

RE: Notice of Exempt Modification
387 Shore Road, Old Lyme CT 06376
Latitude: 41.29652867
Longitude: -72.2583376
T-Mobile Site#: CTNL804B_L600

Dear Ms. Bachman:
T-Mobile currently maintains nine (9) antenna at the 78-foot level of the existing 80-foot monopole at 387 Shore Road, Old Lyme CT. The tower is owned by Blue Sky Towers. The property is owned by Kathy Benoit. T-Mobile now intends to remove replace three existing antenna (3) with three (3) new 600/700 MHz antenna. The new antennas would be installed at the 78-foot level of the monopole. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.
T-Mobile Planned Modifications:
Remove:
(1) Hybrid Line

Remove and Replace:
(3) Andrew LNX-6515DS Antenna (Remove) – (3) RFS APXVAALL24 600/700 MHz Antenna (Replace)
(3) RRUS 11 B12 Radio (Remove) – (3) RRU 4480 B71+B85 Radio Antenna (Replace)

Install New:
(1) Hybrid Line

Existing to Remain:
(3) AIR21 KRC118023-1 B2A_B4P Antenna 1900 MHz Antenna
(3) AIR21 KRC118023-1 B4A_B2P Antenna 2100 MHz Antenna
(3) Generic Twin Style 1B AWS TMA

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

This facility was approved by the CT Siting Council per the attached Docket No. 392 – Dated September 23, 2010. T-Mobile received approval to install a 80-foot steel monopole, in which T-Mobile's equipment would be installed at the 77-ft 9-inches level. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to The Honorable Timothy C. Griswold, First Selecman and Eric Knapp, Land Use Coordinator for the Town of Old Lyme, as well as Kathy Benoit the property owner and Blue Sky Towers the tower owner.

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

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments:

cc: The Honorable Timothy C. Griswold, First Selecman
Old Lyme Memorial Town Hall
52 Lyme Street
Old Lyme, CT 06371

Eric Knapp- Land Use Coordinator
Old Lyme Memorial Town Hall
52 Lyme Street
Old Lyme, CT 06371

Blue Sky Towers - as tower owner
PO Box 191
Franklin, MA 02038

Kathy Benoit- as property owner
34 Irvingdell PL
East Lyme, CT 06333

Exhibit A

Original Facility Approval

DOCKET NO. 392 - T-Mobile Northeast, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located 387 Shore Road, Old Lyme, Connecticut.	Connecticut Siting Council September 23, 2010

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to T-Mobile Northeast, LLC (T-Mobile), hereinafter referred to as the Certificate Holder, for a telecommunications facility at the proposed site, located at 387 Shore Road, Old Lyme, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 80 feet above ground level (agl). The height at the top of T-Mobile's antennas shall not exceed 80 feet above ground level. The wireless antennas shall be attached to the tower via T-arm mounts.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Old Lyme for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound with privacy slats, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Old Lyme public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Old Lyme. Any proposed modifications to this Decision and Order shall likewise be so served.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

12. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder\transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder\transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in *The Day*.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
T-Mobile Northeast, LLC	Julie D. Kohler, Esq. Monte E. Frank, Esq. Jesse A. Langer, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604

Party	**Its Representative**
Town of Old Lyme	The Honorable Timothy G. Griswold Office of the Selectman Town of Old Lyme 52 Lyme Street Old Lyme, CT 06371

Party	**Its Representative**
Mary Staley	Mary Staley 5805 Ogden Road Bethesda, MD 20816

Exhibit B

Property Card

387 SHORE RD

Location	387 SHORE RD	**Mblu**	10/ / 8/ /
Acct#	00027500	**Owner**	BENOIT KATHY
Assessment	$356,000	**Appraisal**	$508,400
PID	293	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$124,400	$384,000	$508,400
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$87,200	$268,800	$356,000

Owner of Record

Owner	BENOIT KATHY	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	34 IRVINGDELL PL EAST LYME, CT 06333-1221	**Book & Page**	0402/0316
		Sale Date	12/30/2014

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
BENOIT KATHY	$0		0402/0316	12/30/2014
BENOIT GREGORY	$285,000		0400/0060	08/07/2014
BENOIT GREGORY	$330,000		0339/0601	11/03/2006
SALKA DAVID	$100,000		0227/0921	10/05/1995

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	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Cndtn	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	

Building Photo

(http://images.vgsi.com/photos/OldLymeCTPhotos//default.jpg)

Building Layout

Building Layout
(http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/293_293.jpg)

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	4340
Description	CELL TWR
Zone	C-30
Neighborhood	C3
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	2.15
Frontage	0
Depth	0
Assessed Value	$268,800
Appraised Value	$384,000

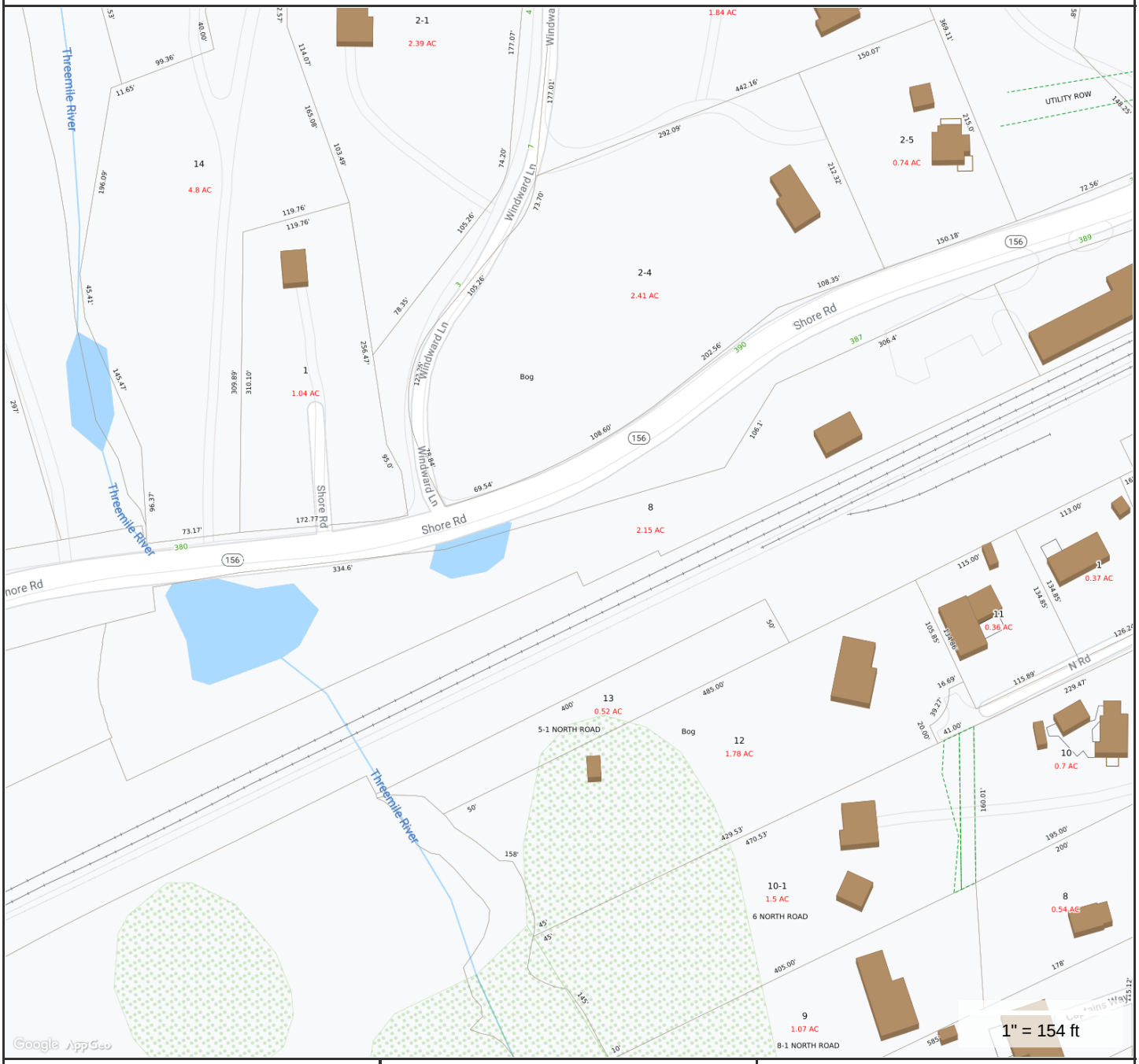
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			3000.00 S.F.	$3,800	1
FN3	FENCE-6' CHAIN			180.00 L.F.	$1,300	1
ARRY	CELL ARRAY			1.00 UNITS	$76,500	1
TWR	CELL TOWER			50.00 L.F.	$42,800	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$124,400	$384,000	$508,400
2019	$376,600	$170,800	$547,400
2018	$376,600	$170,800	$547,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$87,200	$268,800	$356,000
2019	$263,700	$119,600	$383,300
2018	$263,700	$119,600	$383,300



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Old Lyme, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 6/24/2021
Data updated on a daily basis

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Exhibit C

Construction Drawings

MODIFICATION OF EXISTING WIRELESS FACILITY BY

T-MOBILE NORTHEAST LLC

PROJECT TITLE: L600
SITE NUMBER: CTNL804B

SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

RF CONFIGURATION: 67E02C_2XAIR+1OP

PROJECT NOTES:

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
   HANDICAPPED ACCESS IS NOT REQUIRED.
   POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.

CODE COMPLIANCE:

ALL WORK SHALL COMPLY WITH THE CURRENT NATIONAL AND CONNECTICUT STATE BUILDING AND LIFE SAFETY CODES, SUPPLEMENTS AND AMENDMENTS INCLUDING BUT NOT LIMITED TO THE LATEST EDITION OF:

CONNECTICUT STATE BUILDING CODE (CSBC).

ANSI/TIA-222-G STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

NATIONAL ELECTRICAL CODE (NEC) FOR POWER AND GROUNDING REQUIREMENTS.

OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).

NFPA - NATIONAL FIRE PROTECTION ASSOCIATION.

811 Connecticut - Call Before You Dig
811 or
1-800-922-4455

Advance Notice:
Minimum of 2 working days in advance, no more than 30 days in advance

CONTRACTOR'S NOTES:

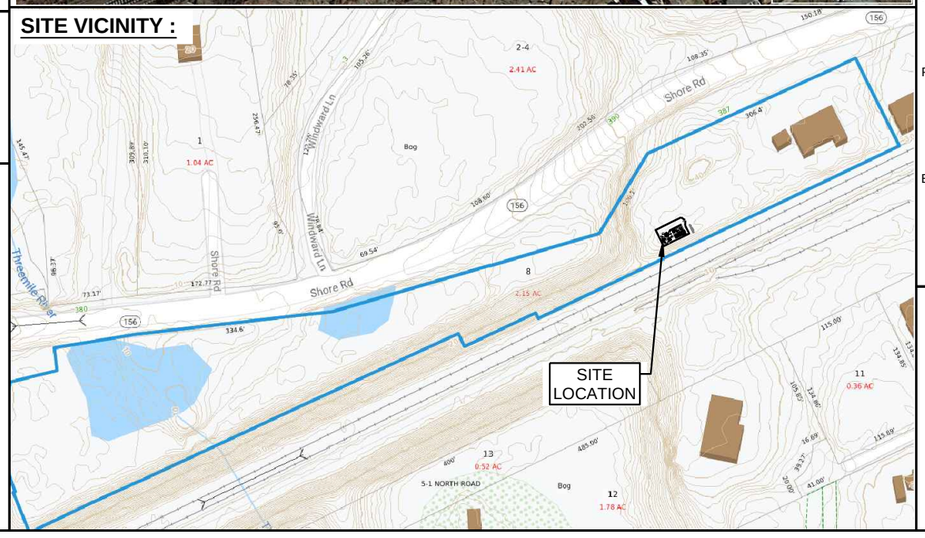
CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.

APPROVALS:

FSA CM	DATE
RF ENGINEER	DATE
	DATE
T-MOBILE ENGINEERING AND DEVELOPMENT	DATE
	DATE
	DATE

SITE IMAGE:

SITE VICINITY :



PROJECT DESCRIPTION:

CABINETS: UPGRADE THE EXISTING 6131 CABINET INTERNALLY, UPGRADE THE CABINET CIRCUIT BREAKER TO 125A,

ANTENNAS: REPLACE (3) OF (9) EXISTING ANTENNAS ON EXISTING TOWER.

COMPONENTS: REMOVE (3) OF (3) EXISTING RADIOS (RRU) AND INSTALL (3) NEW RADIOS BEHIND NEW ANTENNAS.

CABLES: REMOVE (1) EXISTING HYBRID CABLE, ADD (1) 6X24 HYBRID CABLE FOR FINAL CONFIGURATION OF (12) (E) 7/8" COAX AND (1) (P) 6X24 HYBRID CABLES.

PROJECT INFORMATION:

ADDRESS:	387 SHORE ROAD OLD LYME, CT 06376
MBLU:	10/ /8/ /
PID:	293
ZONING DISTRICT:	C-30
USE CODE:	4340 - CELL TWR
COORDINATES:	41° 17' 47.54" N 72° 15' 34.72" W
GROUND ELEV:	43'± (AMSL)

PROJECT TEAM:

APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 860-692-7100
PROPERTY OWNER:	BENOIT KATHY 34 IRVINGDELL PL EAST LYME, CT 06333-1221
PROJECT MANAGER:	NORTHEAST SITE SOLUTIONS 420 MAIN STREET, BLDG 4 STURBRIDGE, MA 01566 SHELDON FREINCLE SHELDON@NORTHEASTSITESOLUTIONS.COM 201-776-8521
ENGINEERING CONSULTANTS:	FORESITE LLC 462 WALNUT ST NEWTON, MA 02460 SAEED MOSSAVAT SMOSSAVAT@FORESITELLC.COM 617-212-3123

SHEET INDEX:

APPLICANT:
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

PROFESSIONAL SEAL

REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

SHEET TITLE:
T-1: TITLE SHEET

GENERAL NOTES:

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CLIENT'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

7. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS DURING CONSTRUCTION.

8. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE BASIC STATE BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJEC

9. THE CONTRACTOR SHALL NOTIFY THE CLIENT'S REPRESENTATIVE IN WRITING WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CLIENT'S REPRESENTATIVE.

10. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

A. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS BUILDING CODES" OR LATEST EDITION.

B. AWS: AMERICAN WELDING SOCIETY INC. AS PUBLISHED IN "STANDARD D1.1-08, STRUCTURAL WELDING CODE" OR LATEST EDITION.

C. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).

11. BOLTING:

A. BOLTS SHALL BE CONFORMING TO ASTM A325 HIGH STRENGTH, HOT DIP GALVANIZED WITH ASTM A153 HEAVY HEX TYPE NUTS.

B. BOLTS SHALL BE 3/4"ϕ MINIMUM (UNLESS OTHERWISE NOTED)

C. ALL CONNECTIONS SHALL BE 2 BOLTS MINIMUM.

12. FABRICATION:

A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES (LATEST EDITION).

B. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 (LATEST EDITION), UNLESS OTHERWISE NOTED.

13. ERECTION OF STEEL:

A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPLETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.

B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.

C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TO PREVENT DANGER TO PERSONS AND PROPERTY. CHECK ALL TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.

14. RELATED WORK, FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:

A. FLASHING OF OPENING INTO OUTSIDE WALLS

B. SEALING AND CAULKING ALL OPENINGS

C. PAINTING

D. CUTTING AND PATCHING

15. REQUIREMENTS OF REGULATORY AGENCIES:

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, AND SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

C. TIA-EIA - 222 (LATEST EDITION). STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

D. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.

E. FCC - FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.

F. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS (LATEST EDITION).

G. NEC - NATIONAL ELECTRICAL CODE - ON TOWER LIGHTING KITS.

H. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.

I. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.

J. 2018 LIFE SAFETY CODE NFPA - 101.

APPLICANT:

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors

462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

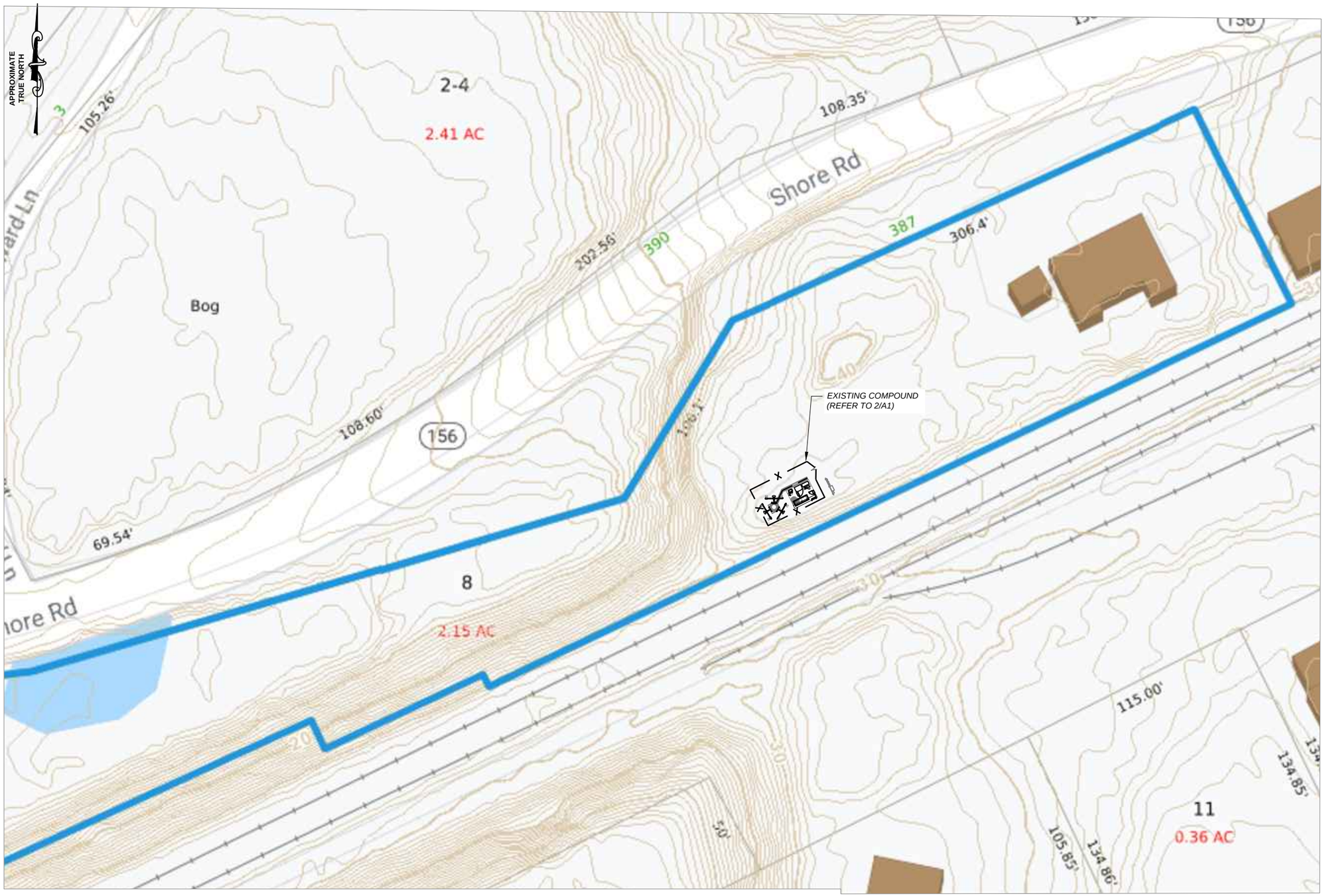
PROFESSIONAL SEAL

REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

SHEET TITLE:
N-1: GENERAL NOTES



GIS OVERLAY

NTS

1
A-1

APPLICANT:

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors

462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

PROFESSIONAL SEAL

STATE OF CONNECTICUT
NO. ARI. 11162
LICENSED ARCHITECT

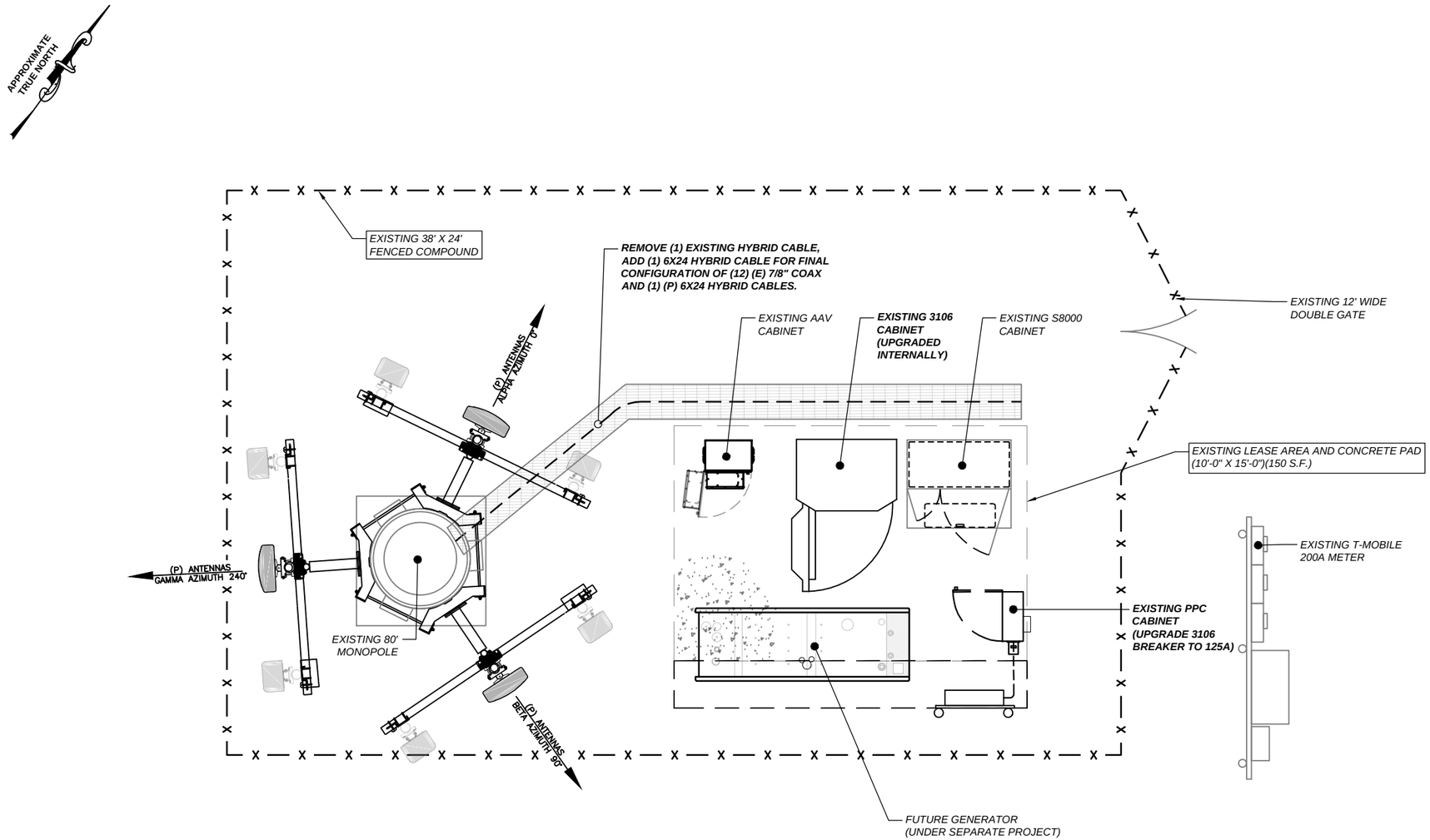
REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

SHEET TITLE:

A-1: GIS OVERLAY



EQUIPMENT LAYOUT PLAN

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

2
A-2

APPLICANT:

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors

462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

PROFESSIONAL SEAL

STATE OF CONNECTICUT
NO. ARI. 11162
LICENSED ARCHITECT

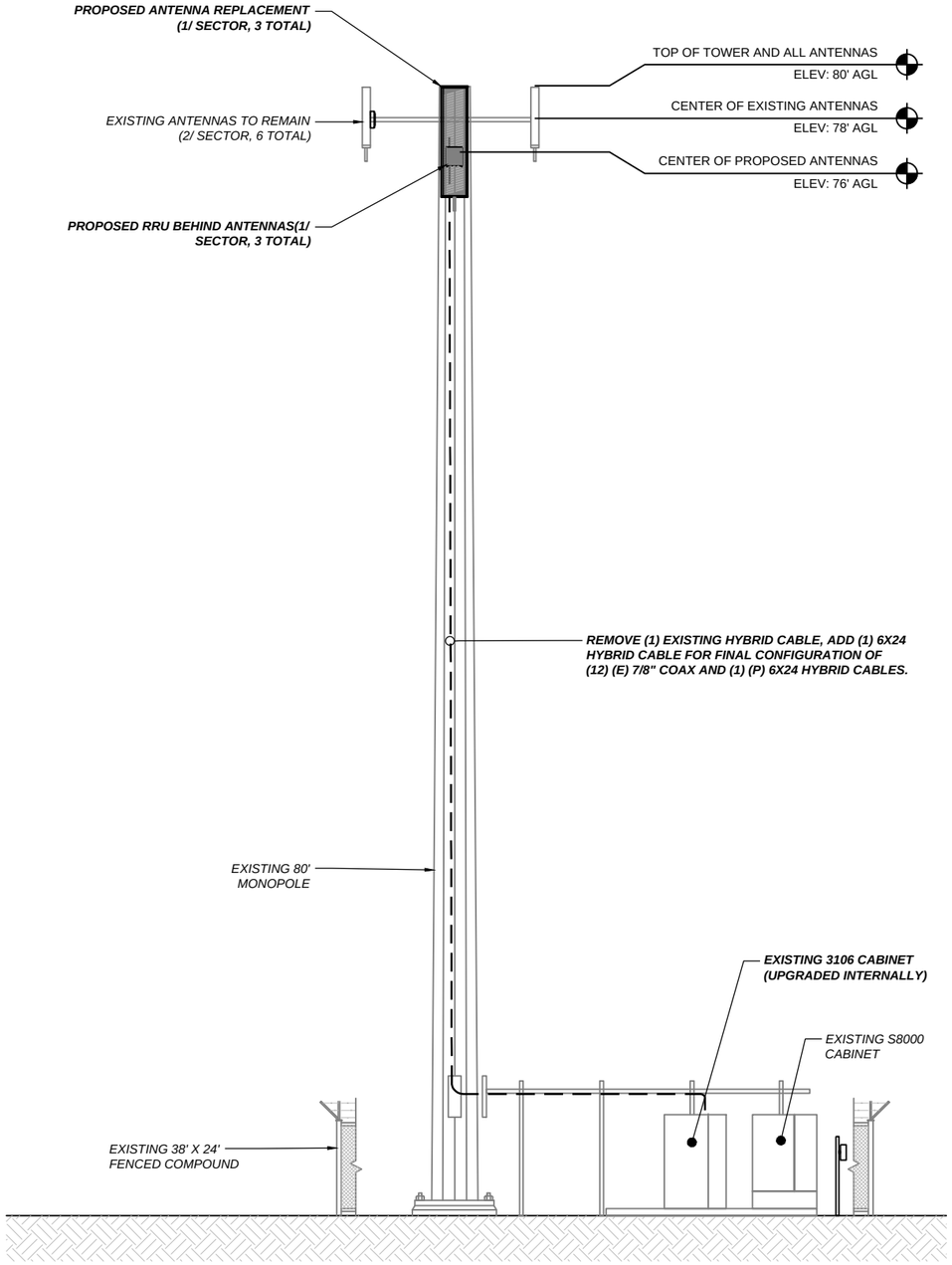
REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

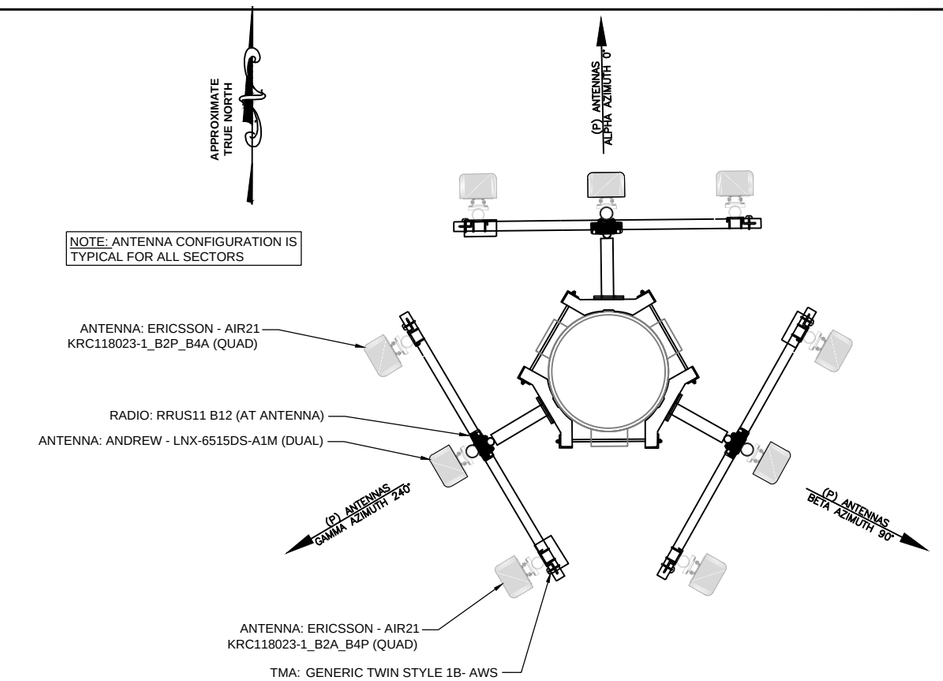
SHEET TITLE:

A-2: EQUIPMENT LAYOUT



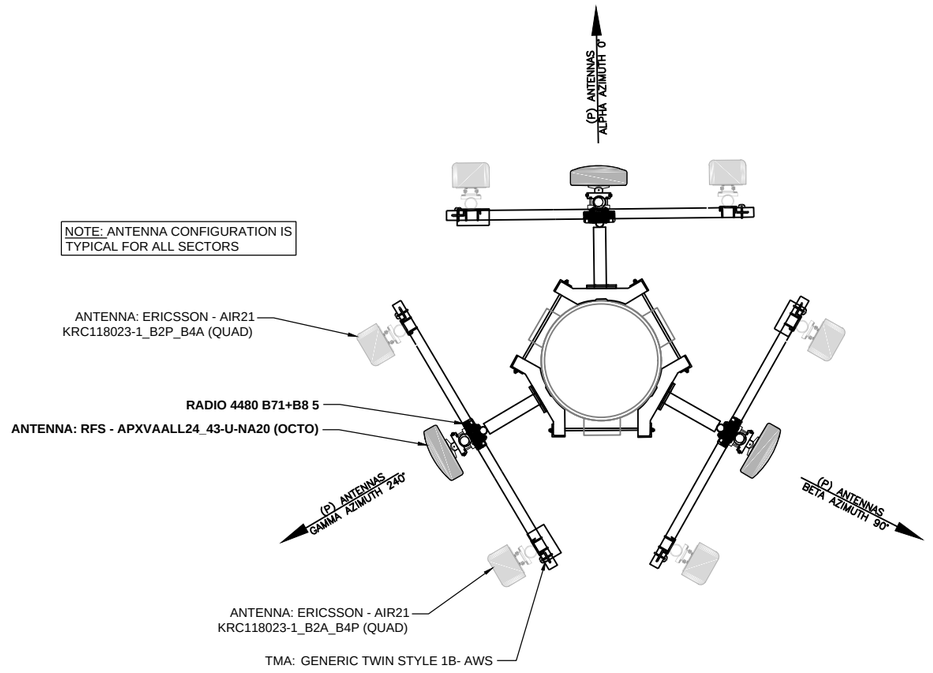
ELEVATION
SCALE: 3/32"=1'-0"

1
A-3



EXISTING ANTENNA PLAN
N.T.S.

2
A-3



FINAL ANTENNA PLAN
N.T.S.

3
A-3

APPLICANT:
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

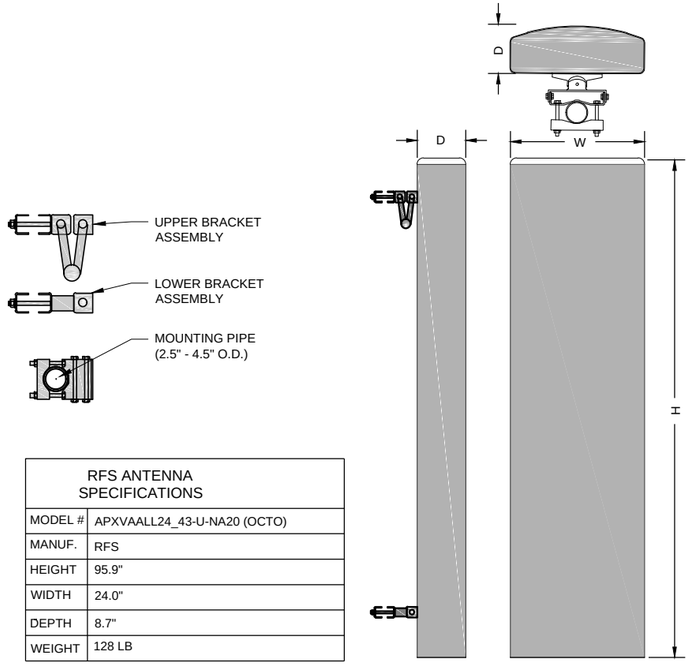
PROFESSIONAL SEAL
STATE OF CONNECTICUT
NO. ARI. 11162
LICENSED ARCHITECT

REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

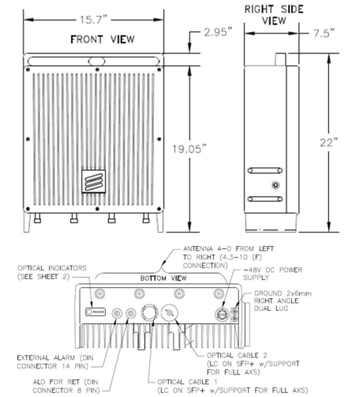
SHEET TITLE:
A-3: ELEVATION AND ANTENNA PLANS



RFS ANTENNA SPECIFICATIONS	
MODEL #	APXVAALL24_43-U-NA20 (OCTO)
MANUF.	RFS
HEIGHT	95.9"
WIDTH	24.0"
DEPTH	8.7"
WEIGHT	128 LB

RFS ANTENNA
N.T.S

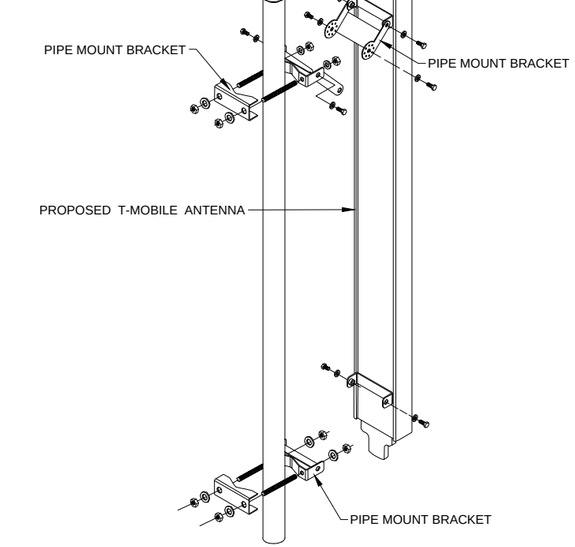
1 / A-4



RRU SPECIFICATIONS	
MODEL #	4480 B71
MANUF.	ERICSSON
LENGTH	22.0"
WIDTH	15.7"
DEPTH	7.5"
WEIGHT	93.0 LB

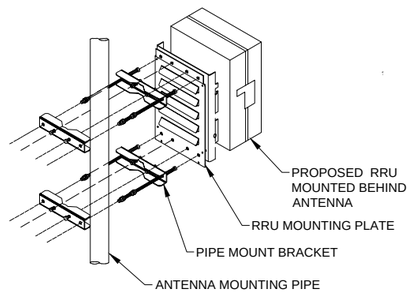
REMOTE RADIO UNIT
N.T.S

2 / A-4



ANTENNA MOUNT DETAIL
N.T.S

3 / A-4



RRU MOUNT DETAIL
N.T.S

4 / A-4

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

PROFESSIONAL SEAL

REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

SHEET TITLE:
A-4: ANTENNA AND EQUIPMENT SPECIFICATIONS

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.

2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PRODUCED PER SPECIFICATION REQUIREMENTS.

3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.

5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) ND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.

6. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.

7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.

8. RUN ELECTRICAL CONDUIT OR CABLING BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE ARE PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.

9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELECOM CABINET AND RBS CABINET AS INDICATED ON DRAWING A -1. PROVIDE FULL LENGTH PULL ROPE INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.

10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NAME 3R ENCLOSURE.

11. GROUNDING SHALL COMPLY WITH NEC ART. 250.

12. GROUNDING COAX CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURES COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

13. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSTALLATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE GROUND.

14. ALL GROUND CONNECTION TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.

15. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AS RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY BOND ANY METER OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.

16. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PROCEDURES (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN RBS UNIT).

17. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.

18. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTION.

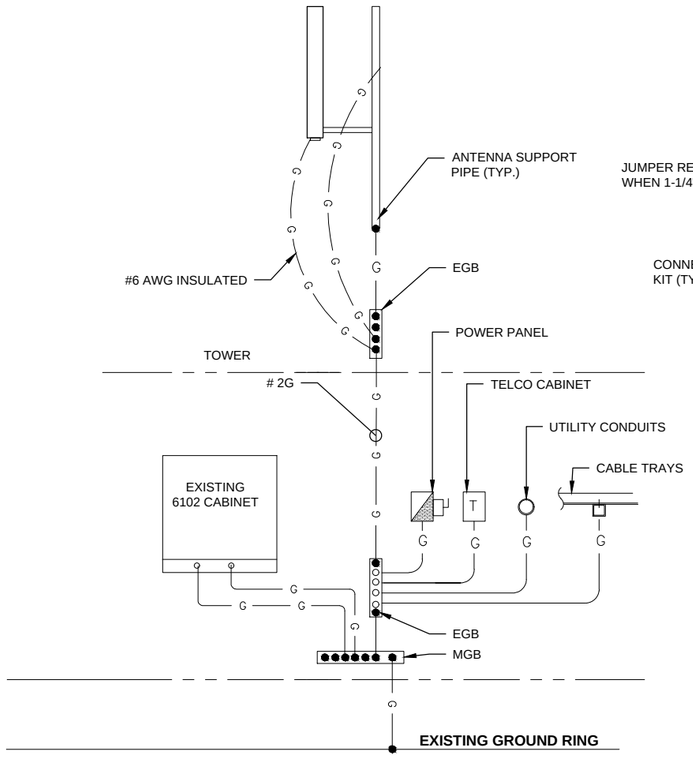
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.

20 BOND ANTENNA EGB'S AND MGB TO WATER MAIN.

21. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.

22. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.

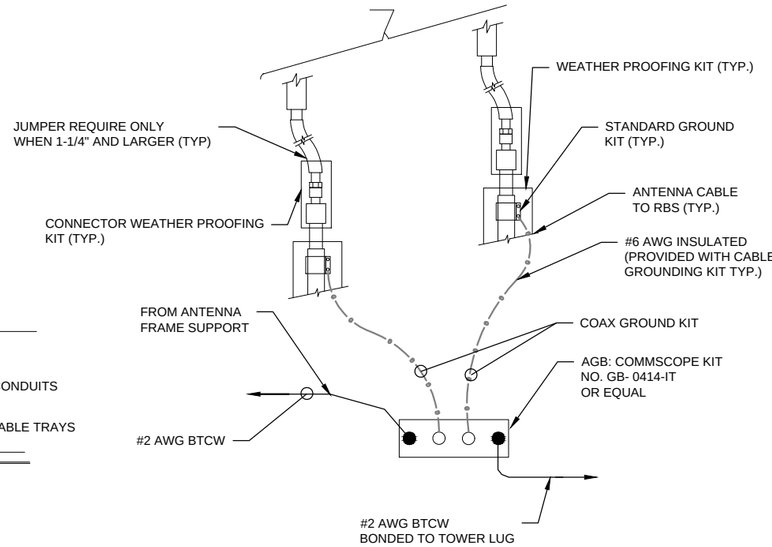
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.



GROUNDING RISER DIAGRAM

1 E–1

N.T.S.



NOTES:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB

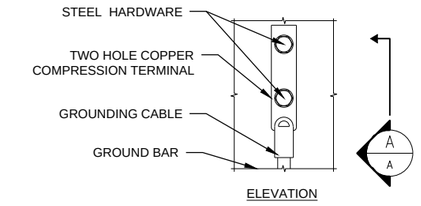
TOWER TOP CABLE GROUNDING DETAIL

2 E–1

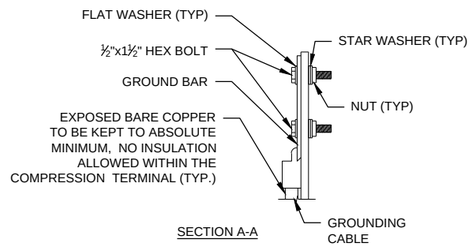
N.T.S.

SPECIAL CONTRACTOR'S NOTES:

CONTRACTOR TO VERIFY THE POWER FEED & PHASE OF METER BANK AND THAT THE EXISTING AND PROPOSED CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.



ELEVATION



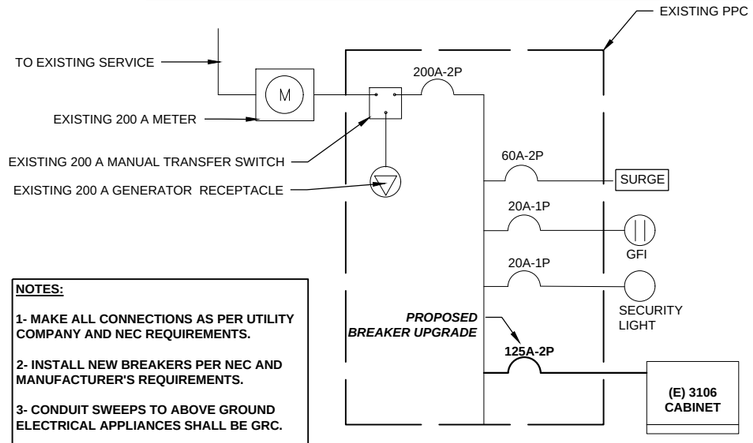
SECTION A-A

NOTES:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR CONNECTIONS DETAIL

3 E–1

N.T.S.



NOTES:

1- MAKE ALL CONNECTIONS AS PER UTILITY COMPANY AND NEC REQUIREMENTS.

2- INSTALL NEW BREAKERS PER NEC AND MANUFACTURER'S REQUIREMENTS.

3- CONDUIT SWEEPS TO ABOVE GROUND ELECTRICAL APPLIANCES SHALL BE GRC.

4- UTILITY COMPANY TO CONFIRM CAPACITY IN METER BANK AND TRANSFORMER.

TYPICAL ONE LINE DIAGRAM

4 E–1

N.T.S.

APPLICANT:

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors

462 WALNUT STREET, SUITE 1
NEWTON, MA 02460
617-212-3123

PROFESSIONAL SEAL

COMMONWEALTH OF MASSACHUSETTS
NO. ARI. 11162
REGISTERED ARCHITECT

REV	DESCRIPTION	DATE
A	PRELIMINARY	05/18/22
0	FINAL ISSUED	07/26/22
1	REVISED PER COMMENTS	09/14/22

SITE NUMBER: CTNL804B
SITE NAME: AMTRAK_OLDLYME5

SITE ADDRESS: 387 SHORE ROAD
OLD LYME, CT 06376

SHEET TITLE:
E-1: ELECTRICAL & GROUNDING DETAIL

Exhibit D

Structural Analysis Report

Phoenix Tower International
999 Yamato Road Suite 100
Boca Raton, FL 33431

GPD Engineering and Architecture Professional Corporation
Chad Burton
520 South Main Street, Suite 2531
Akron, OH 44311
(614) 859-1623
cburton@gpdgroup.com

GPD# 2022791.CT1004.01 Rev 1
September 19, 2022

COMPREHENSIVE STRUCTURAL ANALYSIS REPORT

SITE DESIGNATION:	**PTI Site #:**	**US-CT-1004**
	PTI Site Name:	**AMTRAK_OldLyme5**
	T-Mobile Site #:	**CTNL804B**
	T-Mobile Site Name:	**L600**
ANALYSIS CRITERIA:	**Codes:**	**TIA-222-H & 2018 Connecticut State Building Code** **126 mph (3-second gust) w/ 0" ice** **50 mph (3-second gust) w/ 1" ice**
SITE DATA:		**387 Shore Road, Old Lyme, CT 6371, New London County** **Latitude 41° 17' 47.36" N, Longitude 72° 15' 34.89" W** **80' Sabre Monopole**

To whom it may concern,

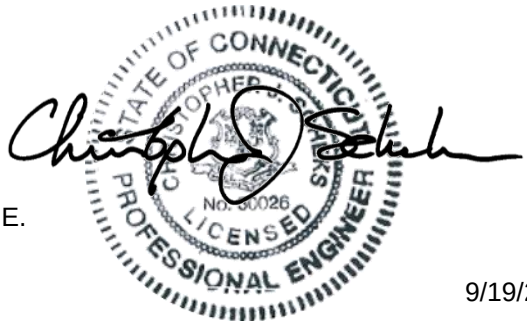
GPD is pleased to submit this Comprehensive Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	60.7%	Sufficient Capacity
Foundation Ratio with Proposed Equipment:	54.5%	Sufficient Capacity

We at GPD appreciate the opportunity of providing our continuing professional services to you and Phoenix Tower International. If you have any questions or need further assistance on this or any other projects, please do not hesitate to call.

Respectfully submitted,



Christopher J. Scheks, P.E.
Connecticut #: 0030026

9/19/2022

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by T-Mobile and commissioned by Phoenix Tower International.

This analysis utilizes a 3-second gust wind speed of 126 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Appendices A & B.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	49.1%	Pass
Flange Bolts	60.7%	Pass
Flange Plates	29.8%	Pass
Anchor Rods	29.1%	Pass
Base Plate	31.9%	Pass
Foundation	54.5%	Pass

RECOMMENDATIONS

The tower and its foundation have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

ANALYSIS METHOD

tnxTower (Version 8.1.1.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various load cases. Selected output from the analysis is included the report appendices. The following table details the information provided to complete this structural analysis. This analysis is based solely on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Collocation Application	PTI T-Mobile Collocation Application, dated 8/23/2022	PTI
Tower Design	Sabre #: 40204, dated 2/7/2011	PTI
Foundation Design	Sabre #: 40204, dated 2/7/2011	PTI
Geotechnical Report	Terracon #: J2105225, dated 11/11/2010	PTI
Previous Tower Analysis	GPD #: 2015791.16, dated 8/28/2015	PTI

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The appurtenance configuration is as supplied, determined from available photos, and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
4. The soil parameters are as per data supplied or as assumed and stated in the calculations.
5. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
8. All prior structural modifications, if applicable, are assumed to be as per data supplied/available and to have been properly installed.
9. Loading interpreted from photos is accurate to ±5' AGL, antenna size accurate to ±3.3 sf, and coax equal to the number of existing antennas without reserve.
10. All existing and proposed loading has been taken from the available site photos as well as documents supplied to GPD at the time of generating this report. All such documents are listed in the Documents Provided Table and are assumed to be accurate. GPD is not responsible for loading scenarios outside those conveyed in the supplied documentation.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Comprehensive Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form and
Detailed Future Loading Information

Tower Analysis Summary Form

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

General Info

Site Name	AMTRAK_OldLyme5
Site Number	US-CT-1004
Date of Analysis	9/19/2022
Company Performing Analysis	GPD

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	80'	
Tower Manufacturer	Sabre	
Tower Model	N/A	
Tower Design	Sabre #: 40204	2/7/2011
Foundation Design	Sabre #: 40204	2/7/2011
Geotechnical Report	Terracon #: J2105225	11/11/2010
Previous Tower Analysis	GPD #: 2015791.16	8/28/2015
Tower Mapping	N/A	

Design Parameters

Design Code Used	TIA-222-H & 2018 Connecticut State Building Code
Location of Tower (County, State)	New London, CT
Wind Speed (mph)	126 (3-second gust)
Ice Thickness (in)	1
Risk Category (I, II, III)	II
Exposure Category (B, C, D)	C
Topographic Category (1 to 5)	1

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	60.7%
Tower Base (%)	31.9%
Foundation (%)	54.5%
Foundation Adequate?	Yes

See next page for detailed future loading information.

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Int/Ext
T-Mobile	78	78	3	Panel	Ericsson	AIR21 B2A/B4P	0/90/240	3	Unknown	T-Arms	12	Unknown	7/8"	Internal
T-Mobile	78	78	3	Panel	Andrew	AIR21 B4A/B2P	0/90/240			on the same mounts	1*	Hybrid	1-5/8"	Internal
T-Mobile	78	76	3*	Panel	Andrew	LNX-6515DS-A1M	0/90/240			on the same mounts				
T-Mobile	78	78	3	TMA	Unknown	Generic Twin Style 1B-AWS				on the same mounts				
T-Mobile	78	78	3*	RRU	Ericsson	RRUS 11 B12				on the same mounts				

*Indicates equipment/feedline quantity to be removed.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Int/Ext
T-Mobile	78	76	3	Panel	RFS	APXVAALL24_43-U-NA20	0/90/240			on the existing mounts	1	Hybrid	6x24	Internal
T-Mobile	78	76	3	RRU	Ericsson	4480 B71+B85				on the existing mounts				

Note: The proposed loading is in addition to the remaining loading at the same elevation.

Detailed Future Loading Information

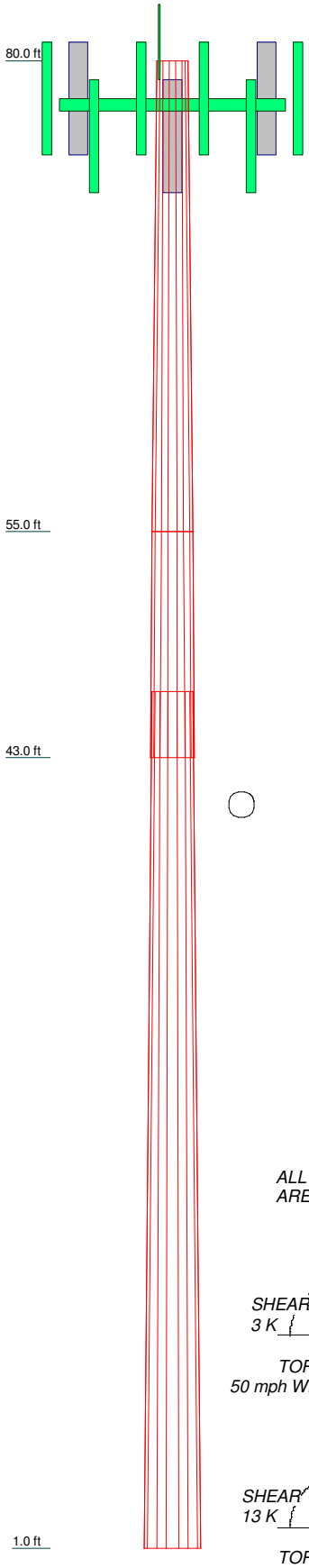
Note: Nominal equipment dimensions (Height x Width) have been utilized for the purposes of the below area calculations.

T-Mobile MLA Information	
Existing Area (in^2)	**11,751**
Proposed Area (in^2)	**3,480**
Final Area (in^2)	**15,230**
Future Area (in^2)	**6,770**
Total Wind Area (in^2)	**22,000**
Does T-Mobile's Loading Exceed 22,000 in^2?	No
If yes, by how much? (in^2)	n/a

APPENDIX B

Tower Analysis Output File

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	25.00	18	0.1875		20.0000	25.4200		1.1
2	12.00	18	0.1875	3.50	25.4200	28.0300		0.6
3	45.50	18	0.3125		26.8938	36.7700		4.8
							A572-65	6.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	79	APXVAALL24_43-U-NA20 w/ Mount Pipe	78
T-Arm Mount [TA 602-3]	78	Generic Twin Style 1B-AWS	78
AIR21 B2A/B4P w/ mount pipe	78	Generic Twin Style 1B-AWS	78
AIR21 B2A/B4P w/ mount pipe	78	Generic Twin Style 1B-AWS	78
AIR21 B2A/B4P w/ mount pipe	78	4480 B71+B85	78
AIR21 B4A/B2P w/ mount pipe	78	4480 B71+B85	78
AIR21 B4A/B2P w/ mount pipe	78	4480 B71+B85	78
AIR21 B4A/B2P w/ mount pipe	78	T-Mobile Reserved	78
APXVAALL24_43-U-NA20 w/ Mount Pipe	78	T-Mobile Reserved	78
APXVAALL24_43-U-NA20 w/ Mount Pipe	78	T-Mobile Reserved	78

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 126 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 49.1%

ALL REACTIONS ARE FACTORED

AXIAL 19 K

SHEAR 3 K *MOMENT 187 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 12 K

SHEAR 13 K *MOMENT 818 kip-ft*

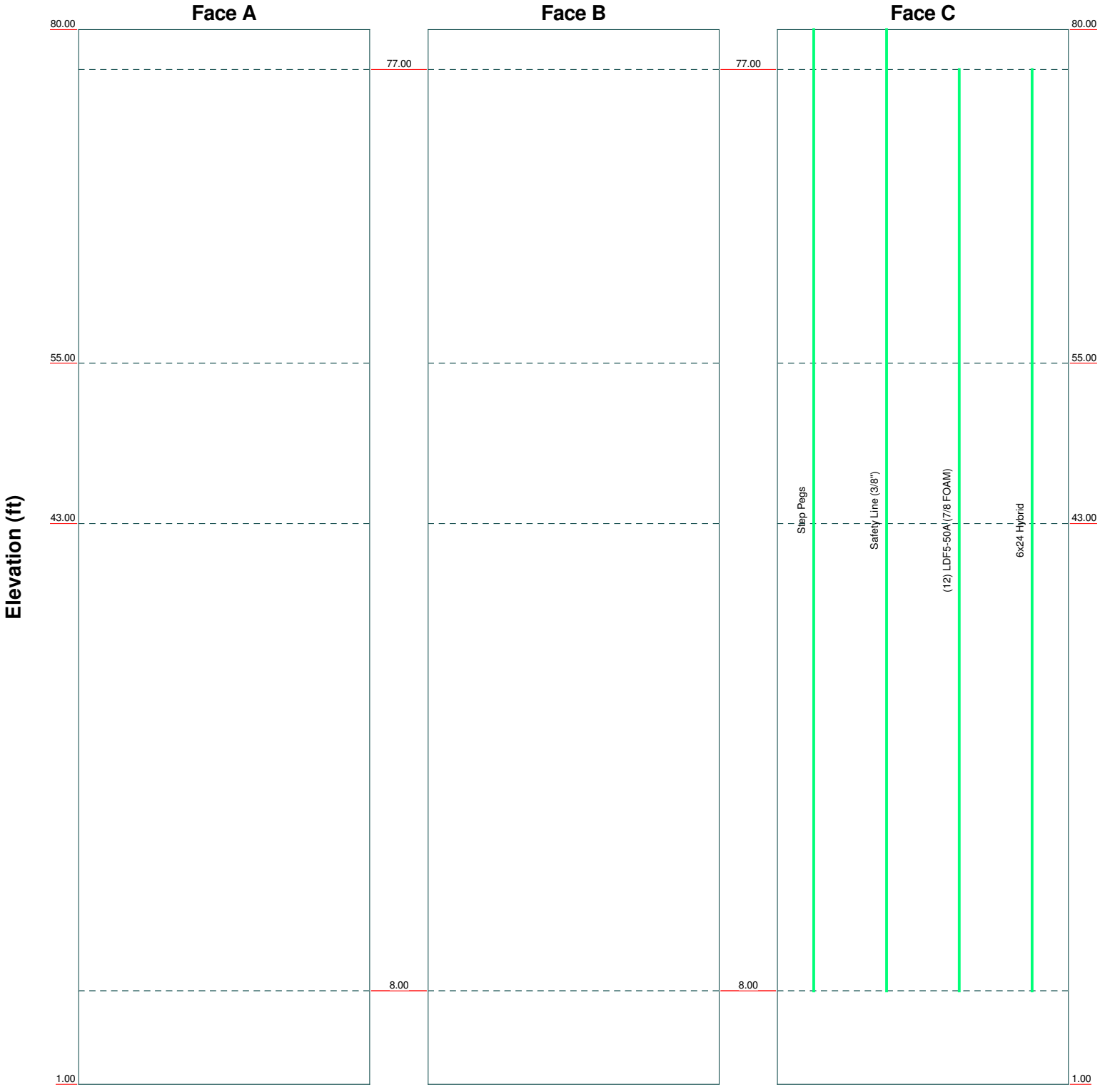
TORQUE 1 kip-ft
REACTIONS - 126 mph WIND

GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: ***US-CT-1004***			
Project: ***2022791.CT1004.01***			
Client: PTI	Drawn by: TR	App'd:	
Code: TIA-222-H	Date: 09/19/22	Scale: NTS	
Path: T:\PTI\US-CT-1004 (CTNL804B)\01 SA 2022791.CT1004 PTI TMO SA\5_Structural\00_Structure\01_Rev 1\03_Modeling\US-CT-1004.eri		Dwg No. E-1	

Feed Line Distribution Chart
1' - 80'

Round | Flat | App In Face | App Out Face | Truss Leg

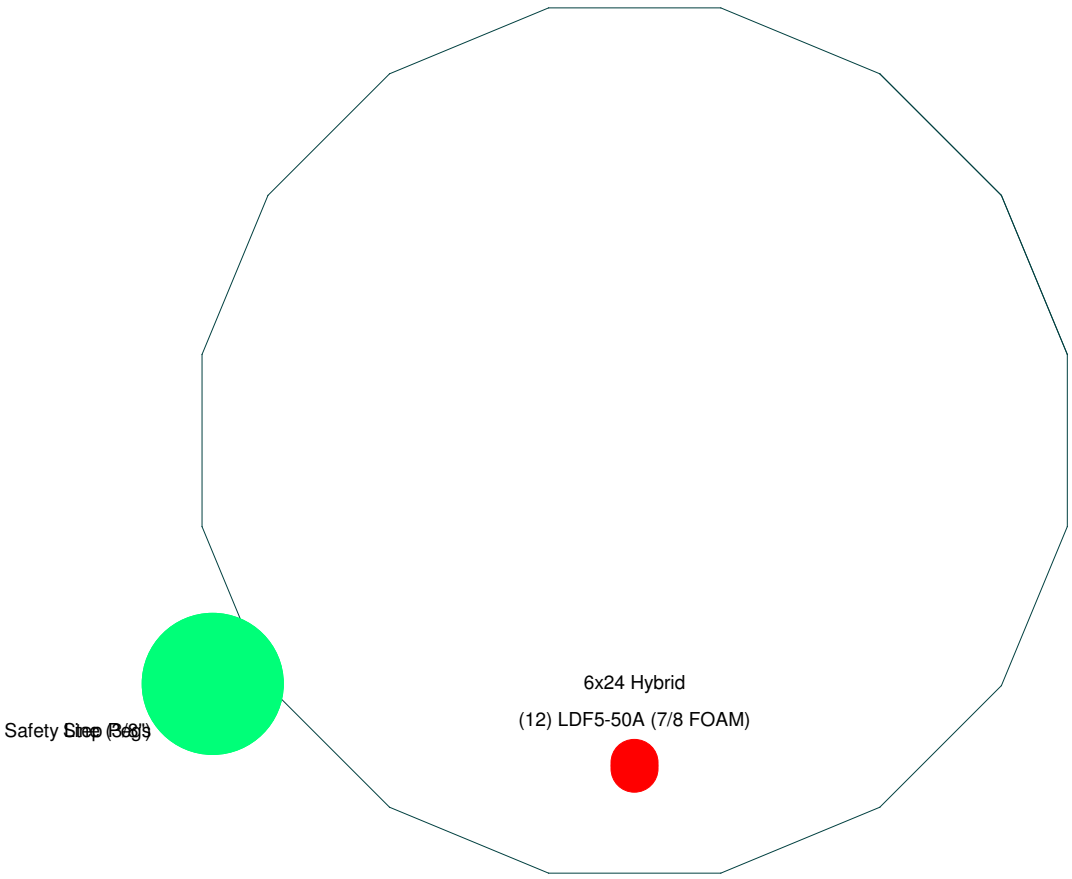


GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: **US-CT-1004**		
Project: **2022791.CT1004.01**		
Client: PTI	Drawn by: TR	App'd:
Code: TIA-222-H	Date: 09/19/22	Scale: NTS
Path: T:\PTI\US-CT-1004 (CTNL804B)\01 SA 2022791.CT1004 PTI TMO SA\5_Structural\00_Structure\01_Rev 1\03_Modeling\US-CT-1004.eri		Dwg No. E-7

Feed Line Plan

Round Flat App In Face App Out Face



GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: ***US-CT-1004***		
Project: ***2022791.CT1004.01***		
Client: PTI	Drawn by: TR	App'd:
Code: TIA-222-H	Date: 09/19/22	Scale: NTS
Path: T:\PTI\US-CT-1004 (CTNL804B)\01 SA 2022791.CT1004 PTI TMO SA\5_Structural\00_Structure\01_Rev 1\03_Modeling\US-CT-1004.eri		Dwg No. E-7

Tower Input Data

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

Tower base elevation above sea level: 31.00 ft.
Basic wind speed of 126 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 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-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H 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*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	80.00-55.00	25.00	0.00	18	20.0000	25.4200	0.1875	0.7500	A572-65 (65 ksi)
L2	55.00-43.00	12.00	3.50	18	25.4200	28.0300	0.1875	0.7500	A572-65

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
L3	43.00-1.00	45.50		18	26.8938	36.7700	0.3125	1.2500	(65 ksi) 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	20.2796	11.7909	584.7409	7.0334	10.1600	57.5532	1170.2512	5.8966	3.1900	17.013
	25.7832	15.0165	1207.8875	8.9575	12.9134	93.5378	2417.3644	7.5097	4.1439	22.101
L2	25.7832	15.0165	1207.8875	8.9575	12.9134	93.5378	2417.3644	7.5097	4.1439	22.101
	28.4335	16.5698	1622.8199	9.8841	14.2392	113.9682	3247.7752	8.2865	4.6033	24.551
L3	28.0319	26.3653	2353.5346	9.4363	13.6620	172.2684	4710.1661	13.1851	4.1833	13.387
	37.2890	36.1613	6072.3256	12.9424	18.6792	325.0856	12152.6412	18.0841	5.9215	18.949

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 80.00-55.00				1	1	1			
L2 55.00-43.00				1	1	1			
L3 43.00-1.00				1	1	1			

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
Step Pegs	C	No	No	CaAa (Out Of Face)	80.00 - 8.00	1	No Ice	0.08	2.72
							1/2" Ice	0.18	3.51
							1" Ice	0.28	4.92
Safety Line (3/8")	C	No	No	CaAa (Out Of Face)	80.00 - 8.00	1	No Ice	0.04	0.22
							1/2" Ice	0.14	0.75
							1" Ice	0.24	1.28
LDF5-50A (7/8 FOAM)	C	No	No	Inside Pole	77.00 - 8.00	12	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
6x24 Hybrid	C	No	No	Inside Pole	77.00 - 8.00	1	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82

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	80.00-55.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.938	0.18
L2	55.00-43.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.410	0.09
L3	43.00-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.112	0.27

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	80.00-55.00	A	1.073	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	13.671	0.27
L2	55.00-43.00	A	1.040	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.403	0.13
L3	43.00-1.00	A	0.960	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	18.674	0.39

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	80.00-55.00	-0.8710	0.5029	-1.8837	1.0875
L2	55.00-43.00	-0.8826	0.5095	-1.9240	1.1108
L3	43.00-1.00	-0.7357	0.4248	-1.6753	0.9673

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

Discrete Tower Loads

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
4' Lightning Rod	C	From Leg	0.00 0.00 2.00	0.0000	79.00	No Ice 1/2" Ice 1" Ice	0.10 0.51 0.89	0.10 0.51 0.89	0.01 0.01 0.02

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
T-Arm Mount [TA 602-3]	A	None		0.0000	78.00	No Ice	13.40	13.40	0.77
						1/2" Ice	16.44	16.44	1.00
						1" Ice	19.70	19.70	1.29
AIR21 B2A/B4P w/ mount pipe	A	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.50 6.16 6.82	0.10 0.15 0.21
AIR21 B2A/B4P w/ mount pipe	B	From Leg	4.00 0.00 0.00	-30.0000	78.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.50 6.16 6.82	0.10 0.15 0.21
AIR21 B2A/B4P w/ mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.50 6.16 6.82	0.10 0.15 0.21
AIR21 B4A/B2P w/ mount pipe	A	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.54 6.20 6.87	0.10 0.16 0.22
AIR21 B4A/B2P w/ mount pipe	B	From Leg	4.00 0.00 0.00	-30.0000	78.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.54 6.20 6.87	0.10 0.16 0.22
AIR21 B4A/B2P w/ mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.54 6.20 6.87	0.10 0.16 0.22
APXVAALL24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 -2.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.63 12.06 13.34	0.18 0.31 0.46
APXVAALL24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 -2.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.63 12.06 13.34	0.18 0.31 0.46
APXVAALL24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 -2.00	-30.0000	78.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.63 12.06 13.34	0.18 0.31 0.46
Generic Twin Style 1B-AWS	A	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	0.40 0.49 0.59	0.58 0.69 0.80	0.01 0.02 0.03
Generic Twin Style 1B-AWS	B	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	0.40 0.49 0.59	0.58 0.69 0.80	0.01 0.02 0.03
Generic Twin Style 1B-AWS	C	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	0.40 0.49 0.59	0.58 0.69 0.80	0.01 0.02 0.03
4480 B71+B85	A	From Leg	4.00 0.00 -2.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.08 0.11 0.13
4480 B71+B85	B	From Leg	4.00 0.00 -2.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.08 0.11 0.13
4480 B71+B85	C	From Leg	4.00 0.00 -2.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.08 0.11 0.13
T-Mobile Reserved	A	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	31.34 33.32 35.17	19.79 21.83 23.89	0.29 0.42 0.57
T-Mobile Reserved	B	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	31.34 33.32 35.17	19.79 21.83 23.89	0.29 0.42 0.57
T-Mobile Reserved	C	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice 1" Ice	31.34 33.32 35.17	19.79 21.83 23.89	0.29 0.42 0.57

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 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 Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	80 - 55	5.051	45	0.5540	0.0032
L2	55 - 43	2.369	45	0.4265	0.0014
L3	46.5 - 1	1.685	45	0.3394	0.0009

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
79.00	4' Lightning Rod	45	4.935	0.5509	0.0031	28271
78.00	T-Arm Mount [TA 602-3]	45	4.819	0.5478	0.0030	28271

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	80 - 55	24.938	14	2.7358	0.0155
L2	55 - 43	11.695	14	2.1061	0.0068
L3	46.5 - 1	8.320	14	1.6758	0.0046

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
79.00	4' Lightning Rod	14	24.364	2.7206	0.0152	5746
78.00	T-Arm Mount [TA 602-3]	14	23.792	2.7053	0.0148	5746

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	80 - 55 (1)	TP25.42x20x0.1875	25.00	0.00	0.0	15.0165	-4.89	878.47	0.006
L2	55 - 43 (2)	TP28.03x25.42x0.1875	12.00	0.00	0.0	16.1167	-5.57	942.83	0.006
L3	43 - 1 (3)	TP36.77x26.8938x0.3125	45.50	0.00	0.0	36.1613	-12.26	2115.44	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

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	80 - 55 (1)	TP25.42x20x0.1875	198.62	521.74	0.381	0.00	521.74	0.000
L2	55 - 43 (2)	TP28.03x25.42x0.1875	282.82	584.79	0.484	0.00	584.79	0.000
L3	43 - 1 (3)	TP36.77x26.8938x0.3125	817.69	1903.66	0.430	0.00	1903.66	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	80 - 55 (1)	TP25.42x20x0.1875	9.62	263.54	0.037	0.94	582.35	0.002
L2	55 - 43 (2)	TP28.03x25.42x0.1875	10.20	282.85	0.036	0.98	670.82	0.001
L3	43 - 1 (3)	TP36.77x26.8938x0.3125	13.26	634.63	0.021	1.18	2026.22	0.001

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	80 - 55 (1)	0.006	0.381	0.000	0.037	0.002	0.388 ✔	1.000	4.8.2 ✔
L2	55 - 43 (2)	0.006	0.484	0.000	0.036	0.001	0.491 ✔	1.000	4.8.2 ✔
L3	43 - 1 (3)	0.006	0.430	0.000	0.021	0.001	0.436 ✔	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	80 - 55	Pole	TP25.42x20x0.1875	1	-4.89	878.47	38.8	Pass
L2	55 - 43	Pole	TP28.03x25.42x0.1875	2	-5.57	942.83	49.1	Pass
L3	43 - 1	Pole	TP36.77x26.8938x0.3125	3	-12.26	2115.44	43.6	Pass
							Summary	
						Pole (L2)	49.1	Pass
						RATING =	**49.1**	**Pass**

APPENDIX C

Additional Calculations

Existing Flange Connection @ 55'
US-CT-1004
2022791.CT1004.01

Moment =	198.62	k-ft
Axial =	4.89	k
Shear =	9.62	k

Maximum Capacity	100%
Apply TIA-222-H Section 15.5?	No

Flange Bolts		
# Bolts =	10	
Bolt Type =	A325	
Threads Included? =	Yes	
Bolt Diameter =	1	in
Bolt Circle =	28.375	in
ϕ_t =	0.75	
ϕ_v =	0.75	
F_{ub} =	120	ksi
A_b =	0.785	in^2
A_n =	0.606	in^2
ϕR_{nv} =	35.34	k
ϕR_{nt} =	54.54	k
ϕR_{nt} (adjusted)=	54.52	k
V_{ub} =	0.96	k
T_{ub} =	33.09	k
Max Comp. on Bolt =	34.07	k

Prying Action Check
N/A, top flange thickness > tc

Shear Capacity =	2.7%
Tensile Capacity =	60.7%
Interaction Capacity =	36.9%
Bolt Capacity =	**60.7% OK**

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Tensile (F_u) =	75	ksi
Plate Thickness =	1	in
Outer Diameter =	32.625	in
ϕ_f =	0.9	
wcalc =	12.61	in
wmax =	18.77	in
w =	12.61	in
Z =	3.15	in^3
M_u =	50.78	k-in
ϕM_n =	170.21	k-in
Upper Plate Capacity =	**29.8% OK**	

Upper Stiffeners	
Configuration =	None

Pole Information		
Shaft Diam. (Upper) =	25.42	in
Thickness (Upper)=	0.1875	in
# of Sides (Upper) =	18	
F_y (Upper) =	65	ksi
Shaft Diam. (Lower) =	25.42	in
Thickness (Lower)=	0.1875	in
# of Sides (Lower) =	18	
F_y (Lower) =	65	ksi

Lower Flange Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	32.625	in
wcalc =	12.61	in
wmax =	18.77	in
w =	12.61	in
Z =	3.15	in^3
M_u =	50.78	k-in
ϕM_n =	170.21	k-in
Lower Plate Capacity =	**29.8% OK**	

Lower Stiffeners	
Configuration =	None

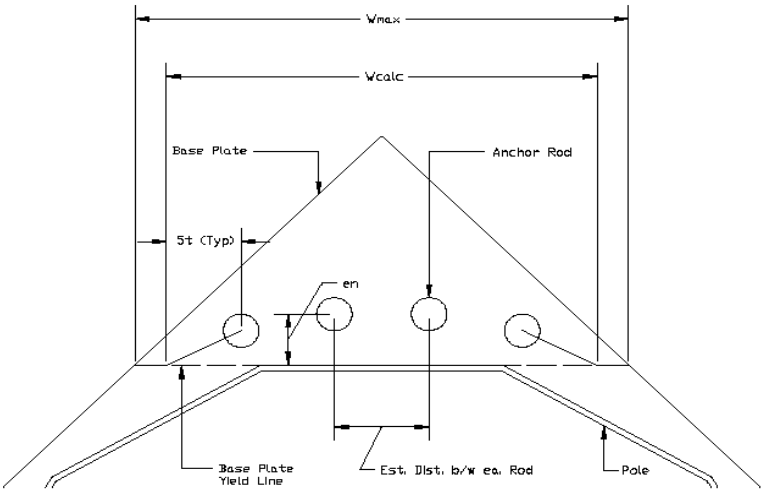
Anchor Rod and Base Plate Stresses, TIA-222-H-1
US-CT-1004
2022791.CT1004.01

Overturning Moment =	818.00	k*ft
Axial Force =	19.00	k
Shear Force =	3.00	k

Maximum Capacity	100%
Apply TIA-222-H Section 15.5?	No

Anchor Rods		
Pole Diameter =	36.77	in
Number of Rods =	12	
Rod Yield Strength, F_y =	75	ksi
Rod Ultimate Strength, F_u =	100	ksi
Rod Circle =	42.75	in
Rod Diameter =	2.25	in
Rod Projection, l_{ar} =	2.25	in
Is grout present?	No	
Max Tension on Rod, P_{ut} =	74.85	k
Max Compression on Rod, P_{uc} =	78.02	k
Shear on Rod, V_u =	0.25	k
Moment on Rod, M_u =	0.00	k-in
Tension Interaction =	**9.4%**	**OK**
Compression Interaction =	**29.1%**	**OK**

Base Plate		
Plate Yield Strength, F_y =	50	ksi
ϕ =	0.9	
Plate Thickness =	2.5	in
Plate Width =	43.5	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	36.88	in
w_{max} =	24.75	in
w =	24.75	in
Z =	38.67	in^3
M_u =	555.47	k-in
φM_n =	1740.11	k-in
Base Plate Capacity =	**31.9%**	**OK**



Mat Foundation Analysis
AMTRAK_OldLyme5 (US-CT-1004)
2022791.00.CT1004.01

General Info	
Foundation Criteria	GPD
TIA Code	TIA-222-H
Apply TIA-222-H Section 15.5?	No
Soil Code	AASHTO 2012
Concrete Code	ACI 318-14
Seismic Design Category	B
Tower Height	80 ft
Bearing On	Soil
Foundation Type	Monopole Pad
Pier Type	Round
Reinforcing Known	Yes
Max Bearing Capacity	100%
Max Overturning Capacity	100%

Tower Reactions	
Moment, M	818 k-ft
Axial, P	12 k
Shear, V	13 k

Pad & Pier Geometry	
Pier Diameter, ø	5.5 ft
Pad Length, L [y]	18.5 ft
Pad Width, W [x]	18.5 ft
Pad Thickness, t	1.5 ft
Depth, D	5.5 ft
Height Above Grade, HG	1 ft
Tower Centroid, X	9.25 ft
Tower Centroid, Y	9.25 ft
Tower Eccentricity	0.0000 ft

Pad & Pier Reinforcing	
Rebar Fy	60 ksi
Concrete F'c	4 ksi
Pier Reinforcing Clear Cover	3 in
Shear Rebar Type	Tie
Shear Rebar Size	# 4
Pad Reinforcing Clear Cover	3 in
Reinforced Top & Bottom?	Yes
Top and Bot. Reinf. Different?	No
Pad Reinforcing Size	# 8
Pad Quantity Per Layer	20
Pier Rebar Size	# 7
Pier Quantity of Rebar	30

Soil Properties	
Soil Type	Granular
Soil Unit Weight	120 pcf
Angle of Friction, ø	30
Base Friction Coeff. Provided in Geo?	Yes
Base Friction Coefficient, µ	0.5
Bearing Type	Net
Ultimate Bearing	6 ksf
Water Table Depth	99 ft
Neglected Depth	3.5 ft

GPD Mat Foundation Analysis - V4.4

Bearing Summary

Case	*Demand/Limits*	*Capacity/Availability*	*Check*	*Eccentricity*	*Load Case*
Qxmax	1.47 ksf	5.00 ksf	OK, <= 100%	L/6.4	1.2D+1.0W
Qymax	1.47 ksf	5.00 ksf	OK, <= 100%	W/6.4	1.2D+1.0W
Qmax @ 45°	1.36 ksf	5.00 ksf	OK, <= 100%	W/10.8	1.2D+1.0W
Controlling Capacity		**29.4%**	**Pass**		

Overturning Summary

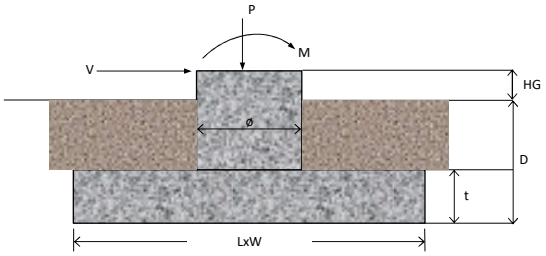
Case	*Demand/Limits*	*Capacity/Availability*	*Check*		*Load Case*
Ovtx	890.4 k-ft	2860.5 k-ft	41.5%	OK	0.9D+1.0W
Ovty	890.4 k-ft	2860.5 k-ft	41.5%	OK	0.9D+1.0W
Ovtxy	525.7 k-ft	2145.4 k-ft	24.5%	OK	0.9D+1.0W
Controlling Capacity		**41.5%**	**Pass**		

Sliding Summary

Case	*Demand/Limits*	*Capacity/Availability*	*Check*		*Load Case*
Slidingx	13.0 k	125.3 k	10.4%	OK	0.9D+1.0W
Slidingy	13.0 k	125.3 k	10.4%	OK	0.9D+1.0W
Controlling Capacity		**10.4%**	**Pass**		

Reinforcement Summary

Component	*Demand/Limits*	*Capacity/Availability*	*Check*		*Load Case*
Pad Flexural Bending	275.0 k-ft	915.2 k-ft	30.0%	OK	1.2D+1.0W
One-Way Shear in Pad	65.2 k	284.3 k	22.9%	OK	1.2D+1.0W
Two-Way Shear in Pad	193.9 k	714.6 k	27.1%	OK	0.9D+1.0W
Compression on Pier	33.4 k	15121.7 k	0.2%	OK	1.2D+1.0W
Moment on Pier	882.3 k-ft	2287.7 k-ft	38.6%	OK	1.2D+1.0W
Pad Flexural 2-Way	529.8 k-ft	971.4 k-ft	54.5%	OK	1.2D+1.0W
As Min Pad Met?	1.71 sq. in.	0.30 sq. in.	Yes		
As Min Pier Met?	18.00 sq. in.	11.39 sq. in.	Yes		
Controlling Capacity		**54.5%**	**Pass**		



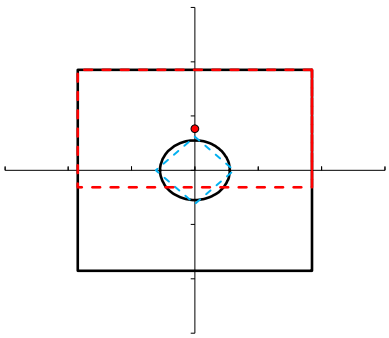


Exhibit E

Mount Analysis

Date: 5/18/2022

To: T-Mobile Northeast, LLC
35 Griffin Road South
Bloomfield, CT 06002

Subject:	**Mount Structural Analysis Report**	
T-Mobile Designation:	**Site ID:**	CTNL804B
	Site Name:	Amtrak_OldLyme5
EFI Designation:	**Project Number:**	049.03314 - 2275017
Site Data:	**387 Shore Road, Old Lyme, CT 06376** **Latitude 41.296523˚, Longitude -72.259678˚**	

EFI Global, Inc. is pleased to submit this **"Mount Structural Analysis Report"** to determine the structural capacity of the antenna mount utilized by T-Mobile at the above referenced site.

The purpose of the analysis is to determine acceptability of the mount stress level for the changes proposed by T-Mobile. Under the following load case we have determined the mount to have:

Existing + Proposed Equipment **Adequate Capacity (70.0%)**
Note: See Analysis Criteria for loading configuration

The analysis has been performed in accordance with TIA-222-G Standard and the 2018 Connecticut State Building Code (2015 IBC).

We at *EFI Global, Inc.* appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely,
EFI Global, Inc.
License No: PEC0001245

5/18/2022

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta, GA 30338 - Tel: (470) 990-6593

1) ANALYSIS CRITERIA

The analysis was performed for the existing and proposed appurtenances as specified in the loading information referenced below, and per the following loading criteria of Table 1.

Table 1 – Loading and Analysis Criteria

Rad Center	78’ & 76’
Structure Type	Monopole
Exposure Category	C
Basic Wind Speed	135 mph*√0.6 = 104.6 mph (ASD)
Ice Loading	0.75” with 50 mph Wind
Risk Category	II
Topographic Factor	Kzt = 1.0

Table 1.1 – Existing Appurtenance Configuration

Qty	Model
3	Ericsson AIR21 B2A/B4P – Antennas
3	Ericsson AIR21 B4A/B2P – Antennas
3	Andrew LNX-6515DS-A1M – Antennas
3	Ericsson RRUS11 B12 – RRUs
3	Generic Twin Style 1B AWS – TMAs

Table 1.2 – Proposed and Final Appurtenance Configuration

Qty	Model
3	Ericsson AIR21 B2A/B4P – Antennas
3	Ericsson AIR21 B4A/B2P – Antennas
3	RFS APXVAALL24_43-U-NA20 – Antennas
3	Ericsson Radio 4480 B71+B85 – RRUs*
3	Generic Twin Style 1B AWS – TMAs*

***Mounted behind antennas.**

Table 1.3 – Assumed Material Properties

Member Type	ASTM Material Designation	Fy (ksi)	Fu (ksi)
Pipes	A53 Gr. B	35	60
Angles/Channels	A36	36	58
Rectangular HSS	A500 Gr. B - 46	46	58
Round HSS	A500 Gr. B - 42	42	58
Others (UNO)	A572 Gr. 50	50	65

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta, GA 30338 - Tel: (470) 990-6593

2) ANALYSIS PROCEDURE

The analysis is based on the following information:

Table 2 – Documents

Document	Provided By	Date
RFDS	T-Mobile	03/31/2022
Construction Drawings	Atlantis Group, Inc.	09/03/2015
Structural Analysis Report	GPD Engineering and Architecture Professional Corporation	08/28/2015

2.1) Analysis Method

Risa-3D, a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in the Appendix.

2.2) Analysis Conditions and Assumptions

1) The mount was built and installed in accordance with the manufacturer's specifications.
2) The mount has been maintained and will be maintained in accordance with the manufacturer's specifications. All structural members and connections of the mount are in good condition and can achieve theoretical strength.
3) The configuration of antennas is as specified in "1) Analysis Criteria".
4) The analysis was performed for the subject mount only. It does not include an evaluation of the other mounts or the tower, which should be analyzed by others.
5) The evaluation does not include any antenna rigging loads. The equipment should not be rigged using the subject antenna mount as the support.
6) The analysis includes a minimum 250 lbf maintenance point load at the worst-case location on the mount, as well as a minimum 250 lbf maintenance point load at each antenna location in conjunction with a 30 mph wind load.
7) Any steel grating represented in this model is for loading purposes only and it is not considered to provide any structural restraint or support.
8) Member sizes per the construction drawings and assumed based on our experience with similar structures. Please refer to calculation output in the appendix of this report for sizes and lengths assumed.
9) 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.

EFI Global, Inc (EFI), must be notified immediately if any of these assumptions are discovered to be incorrect. The results of this analysis may be affected if any of the assumptions are not valid or have been made in error.

3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

Table 3.1 – Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Horizontal Face Pipe	70.0	Pass
Standoff Connection Pipe	<20.0	Pass
Standoff Tube	49.5	Pass
Antenna Mount Pipe	61.3	Pass

Sector Mount: The existing sector mount has **adequate** capacity for the proposed changes by T-Mobile. For the code specified load combinations and as a maximum, the mount members are stressed to **70.0%** of their structural capacity.

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta, GA 30338 - Tel: (470) 990-6593

APPENDIX

INPUT LOADS
ANALYSIS OUTPUT

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta, GA 30338 - Tel: (470) 990-6593

CLIENT: Foresite LLC/T-Mobile

PROJECT: CTNL804B

SUBJECT: Antenna Loads - G Code with Sections 16 Revisions

Tower Height	80.00	ft	Type of Mount	Sector
Basic Wind Speed, V	104.6	mph (=Ultimate Speed*Sqrt(0.6))		
Basic Wind Speed with Ice, V_i	50	mph		
Maintanence Load Factor, L_{FM}	0.0823	Load Factor for Maint. Load Cases (Basic Wind Speed=30 mph)		
Design Ice Thickness, t_i		0.75	inches	

Table 2-3 Importance Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Earthquake
II	1	1	1	1

Table 2-4 Exposure Category Coefficients

Exposure Category	Zg	α	Kzmin	Ke	m
C	900	9.5	0.85	1	0.6

Table 2-5 Topographic Categories

Kzt 1.000

Table 2-2 Wind Directionality Factor, Kd

Structure Type	Kd	
Monopole	0.95	DOES NOT CHANGE

Gust Effect Factor Gh

Structure Type	Gh	
Monopole	1.00	DOES NOT CHANGE

Shielding Factor, Ka

Structure Type	Ka	
Monopole	0.90	DOES NOT CHANGE

CLIENT: Foresite LLC/T-Mobile

PROJECT: CTNL804B

SUBJECT: Antenna Loads - G Code with Sections 16 Revisions

Rad Center **78.00** ft

Antenna AND Mount Without Ice

Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A_N (ft2)	***A_T (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K_z	q_z (psf)	Pounds: Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load
Pos. 1	**78.00**	Ericsson AIR21 B2A/B4P	1	91.5	56.0	12.1	7.9	0.90	4.71	3.06	4.63	7.12	1.29	1.40	1.201	32.0	175.2	123.6	91.5	175	131	176
	78.00	Generic Twin Style 1B AWS	1	84.0	10.1	N/A	2.8	0.90	-	0.20	-	3.61	-	1.25	1.201	32.0	0.0	7.1	84			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				88	**66**	**88**
Pos. 2	**76.00**	RFS APXVAALL24_43-U-NA20	1	149.9	95.9	24.0	8.5	0.90	15.98	5.66	4.00	11.28	1.27	1.54	1.195	31.8	579.1	249.8	149.9	579	289	234
	76.00	Ericsson Radio 4480 B71+B85	1	84.0	21.8	N/A	7.5	0.90	-	1.14	-	2.91	-	1.22	1.195	31.8	0.0	39.6	84			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				290	**145**	**117**
Pos. 3	**78.00**	Ericsson AIR21 B4A/B2P	1	113.3	56.2	12.1	7.9	0.90	4.72	3.07	4.65	7.14	1.30	1.40	1.201	32.0	175.7	124.1	113.32	176	124	113
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				88	**63**	**57**
Pos. 4		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0	0	0	0
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				0	**0**	**0**
																			DL			523

* Enter N/A in the W column for front sheilded apurtanances.

** A_N is the product of H and W

*** A_T is the product of H and D

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	*** Ca	K_z	q_z (psf)	Wind Load (PLF)
	78.00	4.0 STD Pipe	0.00	4.50	0.00	-	-	-	-
	78.00	3.0 STD Pipe	12.00	3.50	0.00	1.20	1.201	28.8	10.1
	78.00	2.5 STD Pipe	12.00	2.88	0.00	1.20	1.201	28.8	8.3
	78.00	2.0 STD Pipe	12.00	2.38	0.00	1.20	1.201	28.8	6.8
	78.00	(L3x3x4)	0.00	3.00	3.00	-	-	-	-
	78.00	(L2.5x2.5x4)	0.00	2.50	2.50	-	-	-	-
	78.00	(L2x2x3)	0.00	2.00	2.00	-	-	-	-
	78.00	PL0.375X6	0.00	6.00	0.38	-	-	-	-
	78.00	Plate Horizontal (PL2.125x3/16)	0.00	2.13	0.19	-	-	-	-
	78.00	HSS 4x4x4	12.00	4.00	4.00	2.00	1.201	28.8	19.2
	78.00	PL0.5X6	0.00	6.00	0.50	-	-	-	-
	78.00	Double Angle (LL2.5x2.5x3x6)	0.00	2.50	2.50	-	-	-	-
	78.00	Double Angle (LL3x3x4x3)	0.00	3.00	6.00	-	-	-	-
	78.00	Channel (Weak Axis Bending)	0.00	0.00	0.00	-	-	-	-
	78.00	Invert U 5.375x3.625x.375	0.00	3.63	5.38	-	-	-	-

* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** Ca will equal 1.2 for round members and 2.0 for flat members

CLIENT: Foresite LLC/T-Mobile

PROJECT: CTNL804B

SUBJECT: Antenna Loads - G Code with Sections 16 Revisions

ti (in) 1.634742 Kiz 1.0898283 reduction 0.22849

Antenna AND Mount With Ice

Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A_N (ft2)	*A_T (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q_z (psf)	Pounds: Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load
Pos. 1	**78.00**	Ericsson AIR21 B2A/B4P	1	56.0	12.1	7.9	0.90	1.62	1.52	2.79	156.03	0.70	0.70	1.201	7.3	7.5	7.0	47.5	35.3	156	47	39	180
	78.00	Generic Twin Style 1B AWS	1	10.1	8.7	2.8	0.90	-	0.37	0.42	23.50	0.70	0.70	1.201	7.3	0.0	1.7	0.0	3.3	24			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					24	**20**	**90**
Pos. 2	**76.00**	RFS APXVAALL24_43-U-NA20	1	95.9	24.0	8.5	0.90	2.80	2.44	7.10	397.46	0.70	0.70	1.195	7.3	12.8	11.2	145.1	68.3	397	145	81	480
	76.00	Ericsson Radio 4480 B71+B85	1	21.8	15.7	7.5	0.90	-	0.74	1.48	82.79	0.70	0.70	1.195	7.3	0.0	3.4	0.0	12.4	83			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					73	**41**	**241**
Pos. 3	**78.00**	Ericsson AIR21 B4A/B2P	1	56.2	12.1	7.9	0.90	1.62	1.53	2.79	156.40	0.70	0.70	1.201	7.3	7.5	7.0	47.6	35.4	156	48	35	156
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					24	**18**	**79**
Pos. 4		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0	0	0	0
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					0	**0**	**0**

* A_N ,A_T, Volume Ice and Weight Ice are calculated per unit

** Ca will equal 1.2 for all ice load calculations

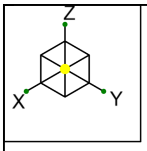
Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A_N (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q_z (psf)	PLF: Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
	78.00	4.0 STD Pipe	0.00	4.50	0.00	-	-	-	-	-	-	-	-	-
	78.00	3.0 STD Pipe	12.00	3.50	0.00	0.43	0.18	10.26	1.20	1.201	6.6	3.4	5.7	10.3
	78.00	2.5 STD Pipe	12.00	2.88	0.00	0.41	0.16	9.01	1.20	1.201	6.6	3.2	5.1	9.0
	78.00	2.0 STD Pipe	12.00	2.38	0.00	0.40	0.14	8.01	1.20	1.201	6.6	3.2	4.7	8.0
	78.00	(L3x3x4)	0.00	3.00	3.00	-	-	-	-	-	-	-	-	-
	78.00	(L2.5x2.5x4)	0.00	2.50	2.50	-	-	-	-	-	-	-	-	-
	78.00	(L2x2x3)	0.00	2.00	2.00	-	-	-	-	-	-	-	-	-
	78.00	PL0.375X6	0.00	6.00	0.38	-	-	-	-	-	-	-	-	-
	78.00	Plate Horizontal (PL2.125x3/16)	0.00	2.13	0.19	-	-	-	-	-	-	-	-	-
	78.00	HSS 4x4x4	12.00	4.00	4.00	0.44	0.36	19.93	1.20	1.201	6.6	3.5	7.8	19.9
	78.00	PL0.5X6	0.00	6.00	0.50	-	-	-	-	-	-	-	-	-
	78.00	Double Angle (LL2.5x2.5x3x6)	0.00	2.50	2.50	-	-	-	-	-	-	-	-	-
	78.00	Double Angle (LL3x3x4x3)	0.00	3.00	6.00	-	-	-	-	-	-	-	-	-
	78.00	Channel (Weak Axis Bending)	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	78.00	Invert U 5.375x3.625x.375	0.00	3.63	5.38	-	-	-	-	-	-	-	-	-

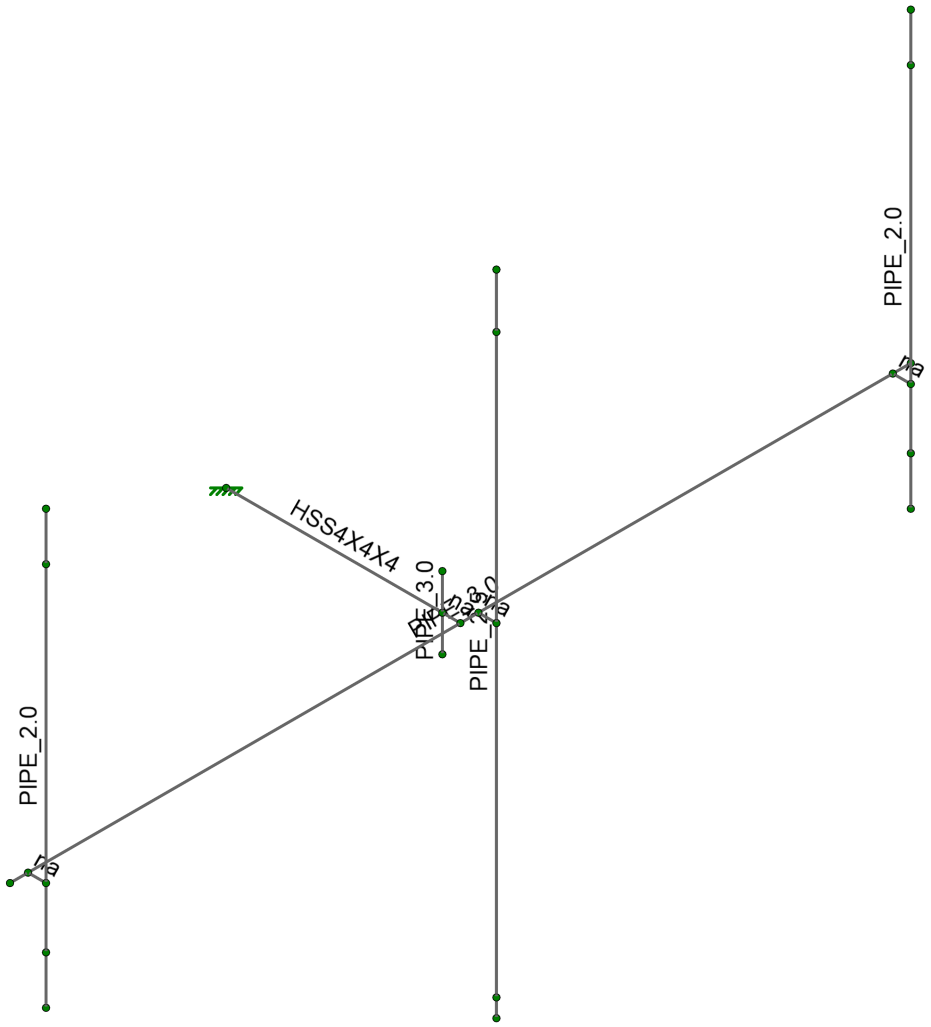
* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** A_N is the area of ice built up on the LW plane

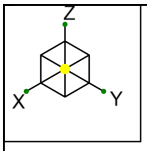
**** Ca will equal 1.2 for all ice load calculations

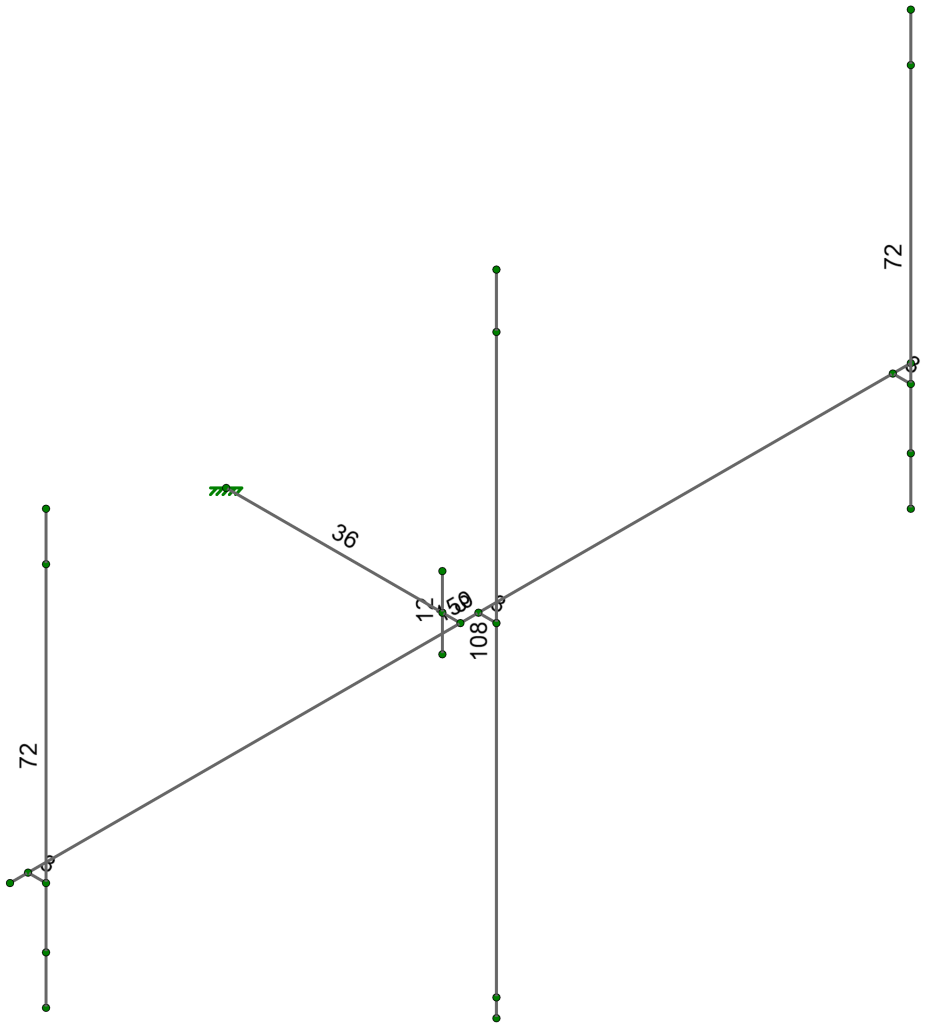




Envelope Only Solution

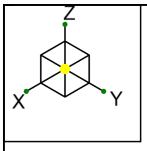
Foresite/EFI	CTNL804B	SK-1
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d

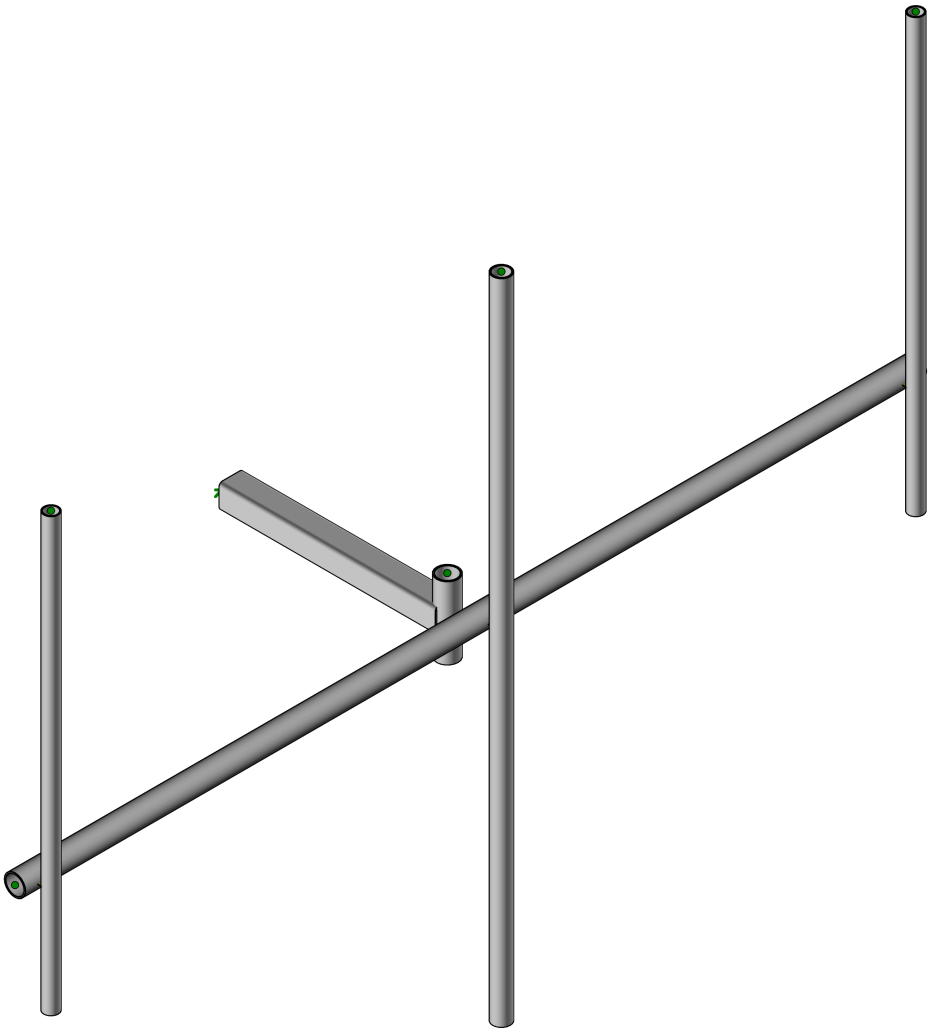




Member Length (in) Displayed
Envelope Only Solution

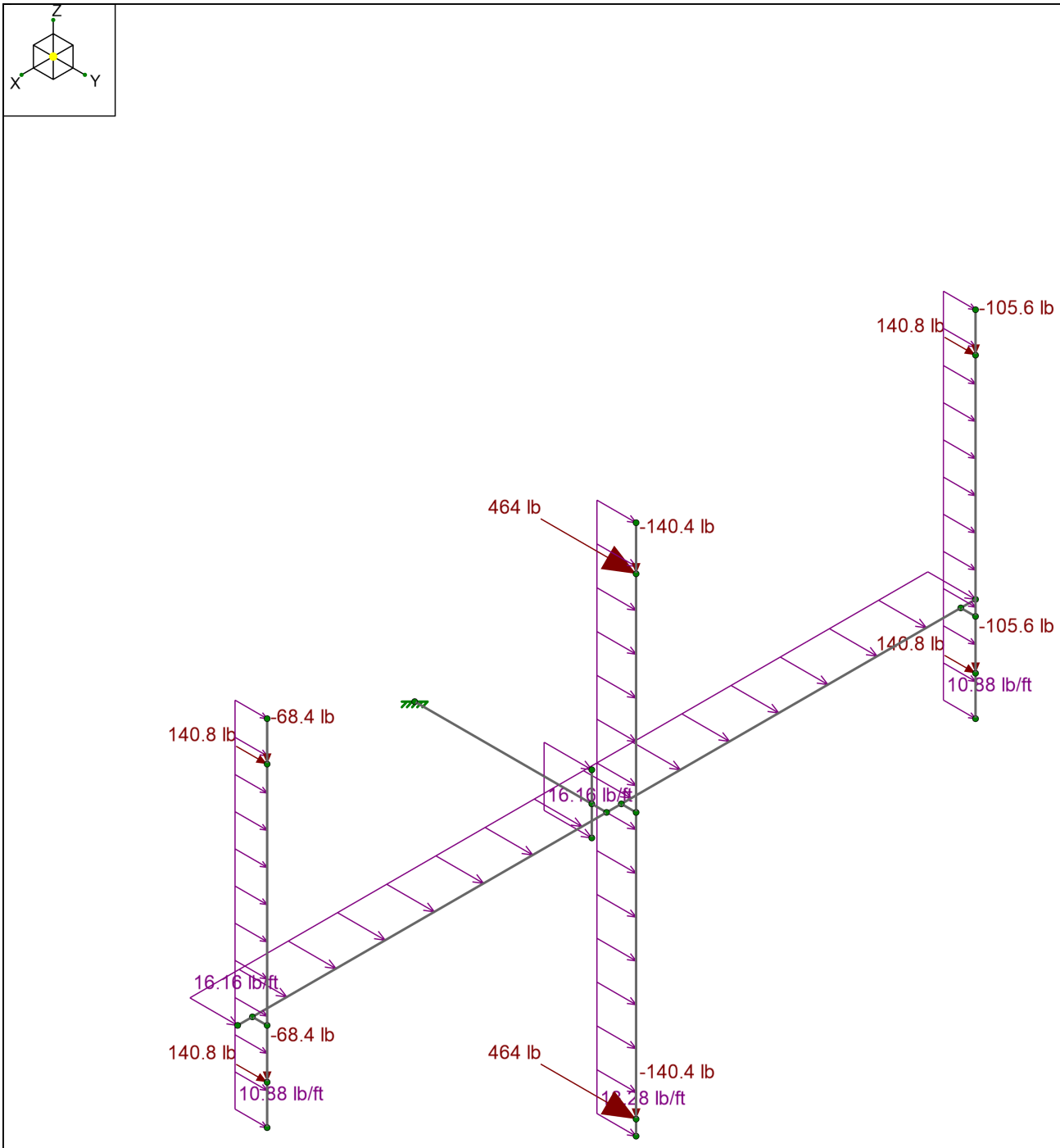
Foresite/EFI	CTNL804B	SK-2
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d





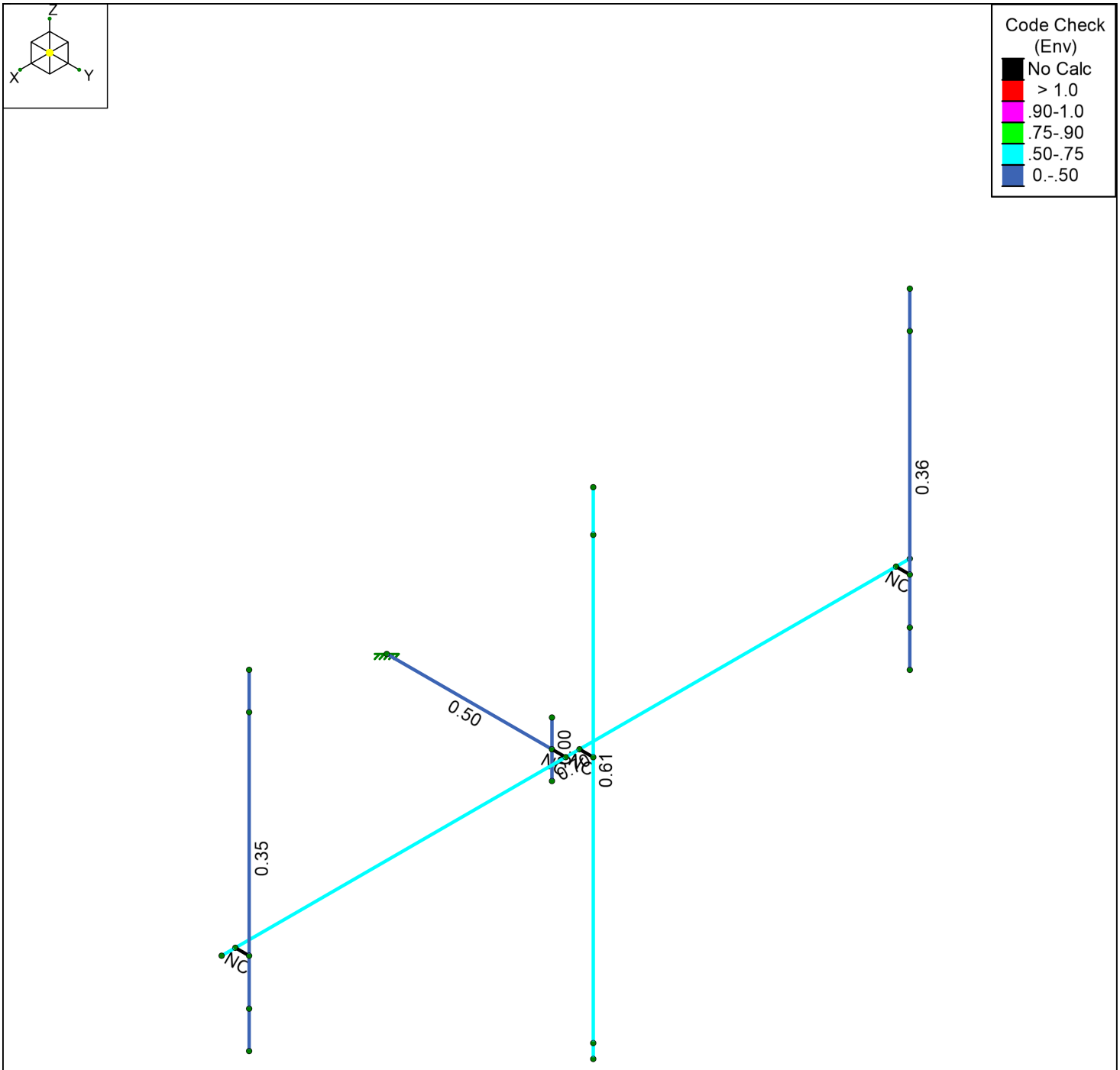
Member Length (in) Displayed
Envelope Only Solution

Foresite/EFI	CTNL804B	SK-3
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d



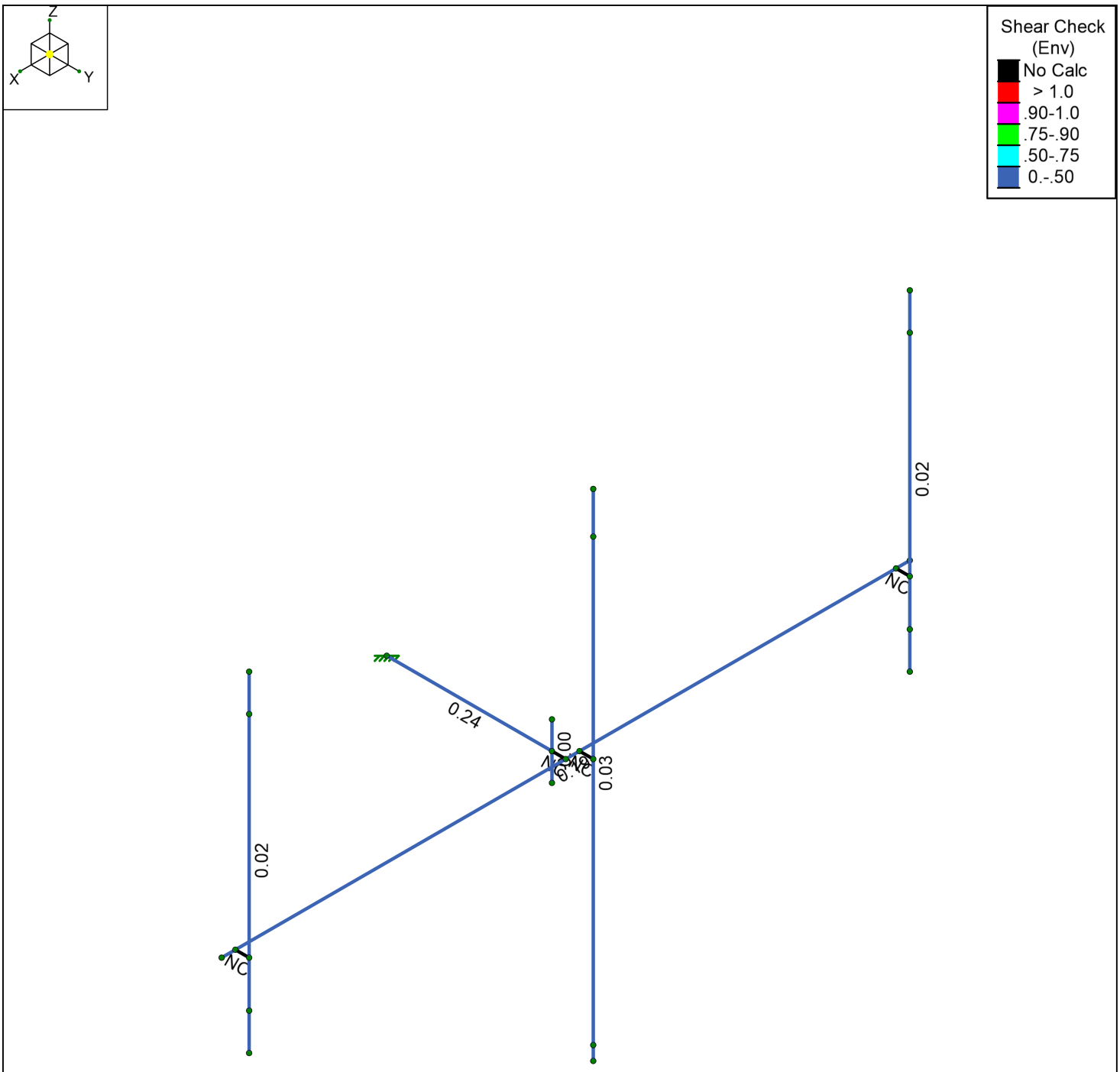
Loads: LC 1, DL + WL (NO ICE) 0 Degree
Envelope Only Solution

Foresite/EFI	CTNL804B	SK-4
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d



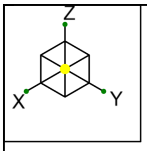
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

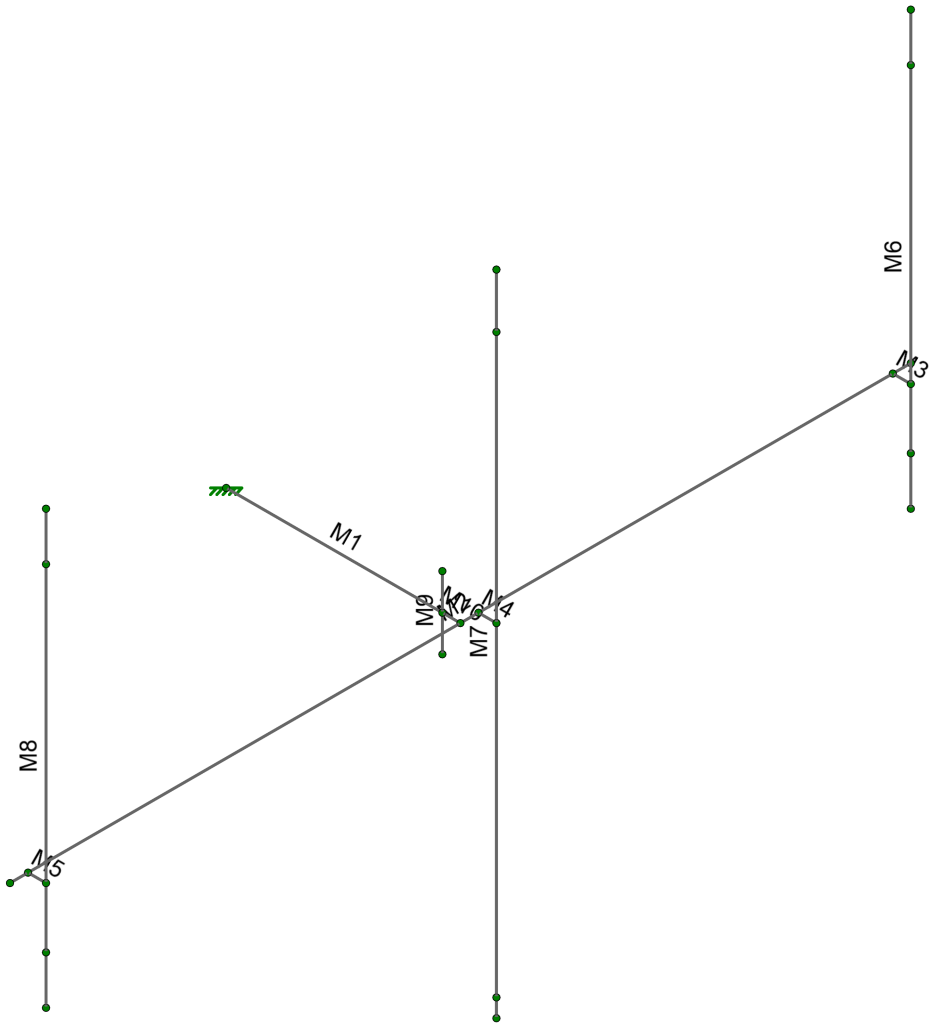
Foresite/EFI	CTNL804B	SK-5
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

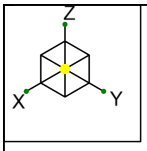
Foresite/EFI	CTNL804B	SK-6
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d

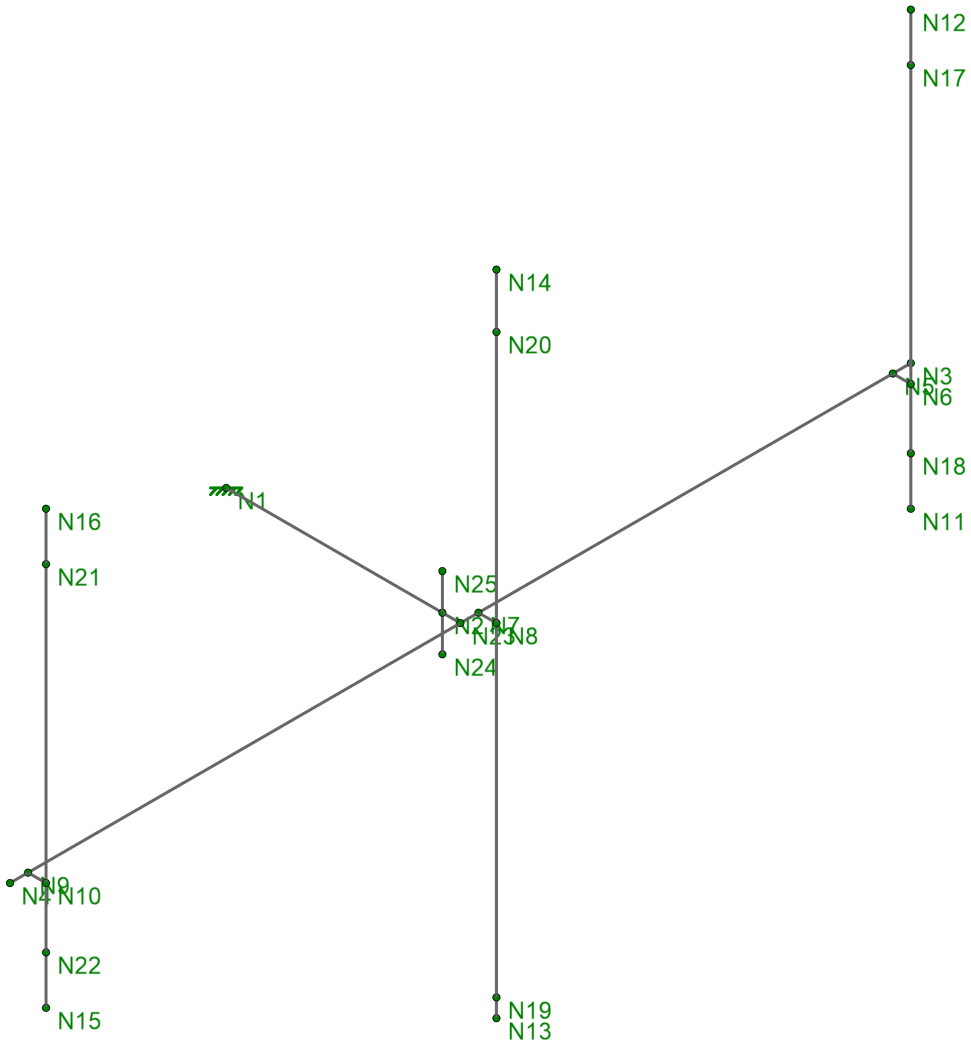




Envelope Only Solution

Foresite/EFI	CTNL804B	SK-7
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d





Envelope Only Solution

Foresite/EFI	CTNL804B	SK-8
AJ		May 18, 2022
049.03314 - 2275017		CTNL804B.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2
7	Q235	29000	11154	0.3	0.65	0.49	34	1.5	58	1.2
8	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
9	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
10	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	HR1A	W10X17	Beam	Wide Flange	A36 Gr.36	Typical	4.99	3.56	81.9	0.156
2	HR1	W4X13	Beam	Wide Flange	A36 Gr.36	Typical	3.83	3.86	11.3	0.151

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M5	N9	N10	RIGID	None	None	RIGID	Typical
2	M3	N5	N6	RIGID	None	None	RIGID	Typical
3	M4	N7	N8	RIGID	None	None	RIGID	Typical
4	M10	N2	N23	RIGID	None	None	RIGID	Typical
5	M2	N4	N3	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
6	M9	N24	N25	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical
7	M7	N13	N14	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
8	M8	N15	N16	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
9	M6	N11	N12	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
10	M1	N1	N2	HSS4X4X4	Beam	Tube	A500 Gr.46	Typical

Member Advanced Data

	Label	Physical	Deflection Ratio Options	Seismic DR
1	M5	Yes	** NA **	None
2	M3	Yes	** NA **	None
3	M4	Yes	** NA **	None
4	M10	Yes	** NA **	None
5	M2	Yes	Default	None
6	M9	Yes	Default	None
7	M7	Yes	Default	None
8	M8	Yes	Default	None
9	M6	Yes	Default	None
10	M1	Yes	Default	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Function
1	M2	PIPE_3.0	150	Lbyy	Lateral
2	M9	PIPE_3.0	12	Lbyy	Lateral
3	M7	PIPE_2.5	108	Lbyy	Lateral
4	M8	PIPE_2.0	72	Lbyy	Lateral
5	M6	PIPE_2.0	72	Lbyy	Lateral
6	M1	HSS4X4X4	36	Lbyy	Lateral

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	0	0	0	
2	N2	0	36	0	
3	N3	-75	39	0	
4	N4	75	39	0	
5	N5	-72	39	0	
6	N6	-72	42	0	
7	N7	-3	39	0	
8	N8	-3	42	0	
9	N9	72	39	0	
10	N10	72	42	0	
11	N11	-72	42	-18	
12	N12	-72	42	54	
13	N13	-3	42	-57	
14	N14	-3	42	51	
15	N15	72	42	-18	
16	N16	72	42	54	
17	N17	-72	42	46	
18	N18	-72	42	-10	
19	N19	-3	42	-54	
20	N20	-3	42	42	
21	N21	72	42	46	
22	N22	72	42	-10	
23	N23	0	39	0	
24	N24	0	36	-6	
25	N25	0	36	6	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed
1	DEAD LOAD	None	-1	6	
2	DEAD LOAD ICE	None		6	6
3	WIND LOAD (NO ICE) FRONT	None		6	6
4	WIND LOAD (NO ICE) SIDE	None		6	6
5	WIND LOAD (ICE) FRONT	None		6	6
6	WIND LOAD (ICE) SIDE	None		6	6
7	LIVE LOAD1	None		1	
8	LIVE LOAD2	None		1	
9	LIVE LOAD3	None			
10	MAINTENANCE LOAD1	None		1	
11	MAINTENANCE LOAD2	None		1	
12	MAINTENANCE LOAD3	None		1	
13	MAINTENANCE LOAD4	None			

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N17	L	Z	-88
2	N18	L	Z	-88
3	N19	L	Z	-117
4	N20	L	Z	-117

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
5	N21	L	Z	-57
6	N22	L	Z	-57

Node Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N17	L	Z	-90
2	N18	L	Z	-90
3	N19	L	Z	-241
4	N20	L	Z	-241
5	N21	L	Z	-79
6	N22	L	Z	-79

Node Loads and Enforced Displacements (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N17	L	Y	88
2	N18	L	Y	88
3	N19	L	Y	290
4	N20	L	Y	290
5	N21	L	Y	88
6	N22	L	Y	88

Node Loads and Enforced Displacements (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N17	L	X	66
2	N18	L	X	66
3	N19	L	X	145
4	N20	L	X	145
5	N21	L	X	63
6	N22	L	X	63

Node Loads and Enforced Displacements (BLC 5 : WIND LOAD (ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N17	L	Y	24
2	N18	L	Y	24
3	N19	L	Y	73
4	N20	L	Y	73
5	N21	L	Y	24
6	N22	L	Y	24

Node Loads and Enforced Displacements (BLC 6 : WIND LOAD (ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N17	L	X	20
2	N18	L	X	20
3	N19	L	X	41
4	N20	L	X	41
5	N21	L	X	18
6	N22	L	X	18

Node Loads and Enforced Displacements (BLC 7 : LIVE LOAD1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N3	L	Z	-250

Node Loads and Enforced Displacements (BLC 8 : LIVE LOAD2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N4	L	Z	-250

Node Loads and Enforced Displacements (BLC 10 : MAINTENANCE LOAD1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N11	L	Z	-250

Node Loads and Enforced Displacements (BLC 11 : MAINTENANCE LOAD2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N13	L	Z	-250

Node Loads and Enforced Displacements (BLC 12 : MAINTENANCE LOAD3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N15	L	Z	-250

Member Point Loads

No Data to Print...

Member Distributed Loads (BLC 2 : DEAD LOAD ICE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M2	Z	-10.3	-10.3	0	%100
2	M7	Z	-9	-9	0	%100
3	M8	Z	-8	-8	0	%100
4	M6	Z	-8	-8	0	%100
5	M1	Z	-19.9	-19.9	0	%100
6	M9	Z	-10.3	-10.3	0	%100

Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M2	PY	10.1	10.1	0	%100
2	M7	PY	8.3	8.3	0	%100
3	M8	PY	6.8	6.8	0	%100
4	M6	PY	6.8	6.8	0	%100
5	M1	PY	19.2	19.2	0	%100
6	M9	PY	10.1	10.1	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M2	PX	10.1	10.1	0	%100
2	M7	PX	8.3	8.3	0	%100
3	M8	PX	6.8	6.8	0	%100
4	M6	PX	6.8	6.8	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
5	M1	PX	19.2	19.2	0	%100
6	M9	PX	10.1	10.1	0	%100

Member Distributed Loads (BLC 5 : WIND LOAD (ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M2	PY	5.7	5.7	0	%100
2	M7	PY	5.1	5.1	0	%100
3	M8	PY	4.7	4.7	0	%100
4	M6	PY	4.7	4.7	0	%100
5	M1	PY	7.8	7.8	0	%100
6	M9	PY	5.7	5.7	0	%100

Member Distributed Loads (BLC 6 : WIND LOAD (ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M2	PX	5.7	5.7	0	%100
2	M7	PX	5.1	5.1	0	%100
3	M8	PX	4.7	4.7	0	%100
4	M6	PX	4.7	4.7	0	%100
5	M1	PX	7.8	7.8	0	%100
6	M9	PX	5.7	5.7	0	%100

Member Area Loads

No Data to Print...

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DL + WL (NO ICE) 0 Degree	Yes	Y	1	1.2			3	1.6		
2	DL + WL (NO ICE) 30 Degree	Yes	Y	1	1.2			3	1.386	4	0.8
3	DL + WL (NO ICE) 60 Degree	Yes	Y	1	1.2			3	0.8	4	1.386
4	DL + WL (NO ICE) 90 Degree	Yes	Y	1	1.2					4	1.6
5	DL + WL (NO ICE) 120 Degree	Yes	Y	1	1.2			3	-0.8	4	1.386
6	DL + WL (NO ICE) 150 Degree	Yes	Y	1	1.2			3	-1.386	4	0.8
7	DL + WL (NO ICE) 180 Degree	Yes	Y	1	1.2			3	-1.6		
8	DL + WL (NO ICE) 210 Degree	Yes	Y	1	1.2			3	-1.386	4	-0.8
9	DL + WL (NO ICE) 240 Degree	Yes	Y	1	1.2			3	-0.8	4	-1.386
10	DL + WL (NO ICE) 270 Degree	Yes	Y	1	1.2					4	-1.6
11	DL + WL (NO ICE) 300 Degree	Yes	Y	1	1.2			3	0.8	4	-1.386
12	DL + WL (NO ICE) 330 Degree	Yes	Y	1	1.2			3	1.386	4	-0.8
13	DL + DL ICE + WL (ICE) 0 Degree	Yes	Y	1	1.2	2	1	5	1		
14	DL + DL ICE + WL (ICE) 30 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	0.5
15	DL + DL ICE + WL (ICE) 60 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	0.866
16	DL + DL ICE + WL (ICE) 90 Degree	Yes	Y	1	1.2	2	1			6	1
17	DL + DL ICE + WL (ICE) 120 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	0.866
18	DL + DL ICE + WL (ICE) 150 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	0.5
19	DL + DL ICE + WL (ICE) 180 Degree	Yes	Y	1	1.2	2	1	5	-1		
20	DL + DL ICE + WL (ICE) 210 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	-0.5
21	DL + DL ICE + WL (ICE) 240 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	-0.866
22	DL + DL ICE + WL (ICE) 270 Degree	Yes	Y	1	1.2	2	1			6	-1
23	DL + DL ICE + WL (ICE) 300 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	-0.866
24	DL + DL ICE + WL (ICE) 330 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	-0.5
25	DEAD LOAD + LIVE LOAD1	Yes	Y	1	1.2					7	1.5
26	DEAD LOAD + LIVE LOAD2	Yes	Y	1	1.2					8	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
27	DEAD LOAD + LIVE LOAD3	Yes	Y	1	1.2					9	1.5
28	DL + MAIN L1+30MPH WL FRONT	Yes	Y	1	1.2	10	1.5	3	0.084		
29	DL + MAIN L2+30MPH WL FRONT	Yes	Y	1	1.2	11	1.5	3	0.084		
30	DL + MAIN L3+30MPH WL FRONT	Yes	Y	1	1.2	12	1.5	3	0.084		
31	DL + MAIN L4+30MPH WL FRONT	Yes	Y	1	1.2	13	1.5	3	0.084		
32	DL + MAIN L1+30MPH WL SIDE	Yes	Y	1	1.2	10	1.5	4	0.084		
33	DL + MAIN L2+30MPH WL SIDE	Yes	Y	1	1.2	11	1.5	4	0.084		
34	DL + MAIN L3+30MPH WL SIDE	Yes	Y	1	1.2	12	1.5	4	0.084		
35	DL + MAIN L4+30MPH WL SIDE	Yes	Y	1	1.2	13	1.5	4	0.084		
36	DL + MAIN L1+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	10	1.5	3	-0.084		
37	DL + MAIN L2+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	11	1.5	3	-0.084		
38	DL + MAIN L3+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	12	1.5	3	-0.084		
39	DL + MAIN L4+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	13	1.5	3	-0.084		
40	DL + MAIN L1+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	10	1.5	4	-0.084		
41	DL + MAIN L2+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	11	1.5	4	-0.084		
42	DL + MAIN L3+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	12	1.5	4	-0.084		
43	DL + MAIN L4+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	13	1.5	4	-0.084		

Node Reactions

No Data to Print...

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	1235.196	10	1959.685	7	2089.252	15	7.199	13	2.886	25	4.133	4
2		min	-1235.196	4	-1959.684	1	893.372	9	2.456	7	-1.818	26	-4.13	10
3	Totals:	max	1235.196	10	1959.685	7	2089.252	15						
4		min	-1235.196	4	-1959.684	1	893.372	9						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0	4	0	1	0	9	0	7	0	26	0	10
2		min	0	10	0	7	0	15	0	13	0	25	0	4
3	N2	max	0.128	4	0.001	1	-0.069	7	-2.7e-3	7	5.501e-3	26	5.547e-3	10
4		min	-0.128	10	-0.001	7	-0.225	13	-9.834e-3	13	-8.734e-3	25	-5.554e-3	4
5	N3	max	0.145	4	0.952	2	-0.253	26	3.329e-3	7	-4.522e-3	34	1.683e-2	8
6		min	-0.145	10	-0.944	8	-2.126	25	-1.319e-2	13	-3.488e-2	25	-1.697e-2	2
7	N4	max	0.145	4	0.862	12	0.141	25	3.884e-3	7	2.864e-2	26	1.575e-2	12
8		min	-0.145	10	-0.854	6	-1.73	26	-1.308e-2	1	-1.666e-3	40	-1.563e-2	6
9	N5	max	0.145	4	0.901	2	-0.24	26	3.329e-3	7	-4.522e-3	34	1.683e-2	8
10		min	-0.145	10	-0.893	8	-2.021	25	-1.319e-2	13	-3.485e-2	25	-1.697e-2	2
11	N6	max	0.173	3	0.901	2	-0.259	26	3.329e-3	7	-4.522e-3	34	1.683e-2	8
12		min	-0.172	9	-0.893	8	-2.041	25	-1.319e-2	13	-3.485e-2	25	-1.697e-2	2
13	N7	max	0.145	4	0.017	3	-0.084	7	-2.756e-3	7	4.634e-3	26	5.869e-3	9
14		min	-0.145	10	-0.017	9	-0.265	13	-1.005e-2	13	-1.085e-2	25	-5.924e-3	3
15	N8	max	0.162	4	0.017	3	-0.092	7	-2.756e-3	7	4.634e-3	26	5.869e-3	9
16		min	-0.161	10	-0.017	9	-0.295	13	-1.005e-2	13	-1.085e-2	25	-5.924e-3	3
17	N9	max	0.145	4	0.815	12	0.136	25	3.884e-3	7	2.861e-2	26	1.575e-2	12
18		min	-0.145	10	-0.807	6	-1.644	26	-1.308e-2	1	-1.666e-3	40	-1.563e-2	6
19	N10	max	0.164	4	0.815	12	0.118	25	3.884e-3	7	2.861e-2	26	1.575e-2	12
20		min	-0.164	10	-0.807	6	-1.663	26	-1.308e-2	1	-1.666e-3	40	-1.563e-2	6
21	N11	max	0.627	25	0.691	2	-0.259	26	2.783e-3	7	-4.542e-3	34	1.683e-2	8
22		min	0.082	26	-0.86	8	-2.041	25	-1.308e-2	13	-3.484e-2	25	-1.697e-2	2
23	N12	max	0.274	4	1.962	1	-0.259	26	1.53e-2	7	4.6e-3	4	1.683e-2	8
24		min	-1.894	25	-1.431	7	-2.041	25	-2.52e-2	1	-3.515e-2	25	-1.697e-2	2

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
25	N13	max	0.638	4	0.521	1	-0.092	7	1.558e-2	1	6.824e-3	10	5.869e-3	9
26		min	-0.357	10	-0.988	7	-0.296	13	-2.377e-2	7	-1.174e-2	4	-5.924e-3	3
27	N14	max	0.379	4	0.767	1	-0.092	7	1.016e-2	7	6.098e-3	4	5.869e-3	9
28		min	-0.632	10	-0.346	7	-0.295	13	-1.844e-2	1	-1.107e-2	10	-5.924e-3	3
29	N15	max	0.03	25	0.607	12	0.118	25	3.339e-3	7	2.861e-2	26	1.575e-2	12
30		min	-0.515	26	-0.765	6	-1.663	26	-1.264e-2	13	-1.647e-3	25	-1.563e-2	6
31	N16	max	1.552	26	1.865	12	0.118	25	1.583e-2	7	2.878e-2	26	1.575e-2	12
32		min	-0.596	10	-1.363	7	-1.663	26	-2.507e-2	1	-1.047e-2	10	-1.563e-2	6
33	N17	max	0.237	4	1.779	2	-0.259	26	1.53e-2	7	4.595e-3	4	1.683e-2	8
34		min	-1.612	25	-1.317	8	-2.041	25	-2.519e-2	1	-3.515e-2	25	-1.697e-2	2
35	N18	max	0.348	25	0.784	2	-0.259	26	2.789e-3	7	-4.542e-3	34	1.683e-2	8
36		min	0.002	9	-0.874	8	-2.041	25	-1.308e-2	13	-3.484e-2	25	-1.697e-2	2
37	N19	max	0.603	4	0.474	1	-0.092	7	1.558e-2	1	6.823e-3	10	5.869e-3	9
38		min	-0.336	10	-0.917	7	-0.296	13	-2.377e-2	7	-1.174e-2	4	-5.924e-3	3
39	N20	max	0.324	4	0.601	1	-0.092	7	1.016e-2	7	6.094e-3	4	5.869e-3	9
40		min	-0.533	10	-0.254	7	-0.295	13	-1.843e-2	1	-1.107e-2	10	-5.924e-3	3
41	N21	max	1.321	26	1.687	12	0.118	25	1.582e-2	7	2.878e-2	26	1.575e-2	12
42		min	-0.512	10	-1.254	6	-1.663	26	-2.507e-2	1	-1.047e-2	10	-1.563e-2	6
43	N22	max	0.045	5	0.698	12	0.118	25	3.344e-3	7	2.861e-2	26	1.575e-2	12
44		min	-0.286	26	-0.783	6	-1.663	26	-1.264e-2	13	-1.647e-3	25	-1.563e-2	6
45	N23	max	0.145	4	0.001	1	-0.077	7	-2.7e-3	7	5.501e-3	26	5.547e-3	10
46		min	-0.144	10	-0.001	7	-0.254	13	-9.834e-3	13	-8.734e-3	25	-5.554e-3	4
47	N24	max	0.128	4	-0.017	7	-0.069	7	-2.701e-3	7	5.501e-3	26	5.547e-3	10
48		min	-0.108	10	-0.059	13	-0.225	13	-9.833e-3	13	-8.734e-3	25	-5.554e-3	4
49	N25	max	0.128	4	0.059	13	-0.069	7	-2.699e-3	7	5.501e-3	26	5.547e-3	10
50		min	-0.147	10	0.015	7	-0.225	13	-9.834e-3	13	-8.734e-3	25	-5.554e-3	4

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M2	PIPE_3.0	0.7	75	25	0.193	75		1	28250.554	65205	5.749	5.749	1.506	H1-1b
2	M9	PIPE_3.0	0	6	24	0	6		12	64856.883	65205	5.749	5.749	1.552	H1-1b*
3	M7	PIPE_2.5	0.613	56.25	1	0.034	56.25		1	26137.193	50715	3.596	3.596	1.448	H1-1b
4	M8	PIPE_2.0	0.353	18	1	0.02	18		1	20866.733	32130	1.872	1.872	1.484	H1-1b
5	M6	PIPE_2.0	0.355	18	1	0.02	18		1	20866.733	32130	1.872	1.872	1.484	H1-1b
6	M1	HSS4X4X4	0.495	0	16	0.244	0	y	25	134360.669	139518	16.181	16.181	1.54	H1-1b

Exhibit F

Power Density/RF Emissions Report

FOX HILL TELECOM

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CTNL804B

Amtrak_OldLyme5
387 Shore Road
Old Lyme, CT 06376

September 1, 2022

Fox Hill Telecom Project Number: 221660

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	9.51 %

September 1, 2022

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CTNL804B – Amtrak_OldLyme5**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **387 Shore Road, Old Lyme, CT**, 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 (μW/cm2). 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.

General population 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 & 700 MHz 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) and 2100 MHz (AWS) 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 performed for the proposed upgrades to the T-MOBILE antenna facility located at **387 Shore Road, Old Lyme, CT**, 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
GSM	1900 MHz (PCS)	1	15
UMTS	2100 MHz (AWS)	1	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	76
A	2	Ericsson AIR21 B2A/B4P	78
A	3	Ericsson AIR21 B4A/B2P	78
B	1	RFS APXVAALL24_43-U-NA20	76
B	2	Ericsson AIR21 B2A/B4P	78
B	3	Ericsson AIR21 B4A/B2P	78
C	1	RFS APXVAALL24_43-U-NA20	76
C	2	Ericsson AIR21 B2A/B4P	78
C	3	Ericsson AIR21 B4A/B2P	78

Table 2: Antenna Data

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

Cable losses were factored in the calculations for this site where required. Since Some of the proposed radios are ground mounted the following cable loss values were used. For each ground mounted **1900 MHz (PCS)** GSM radio there was **1.68 dB** of cable loss calculated into the system gains / losses for this site. This value was calculated based upon the manufacturer's specifications for **100 feet** of **7/8"** coax.

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	4.92
Antenna A2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS)	15.9	1	15	396.36	0.27
Antenna A3	Ericsson AIR21 B4A/B2P	2100 MHz (AWS)	15.9	4	160	6,224.72	4.32
						Sector A Composite MPE%	**9.51**
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	4.92
Antenna B2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS)	15.9	1	15	396.36	0.27
Antenna B3	Ericsson AIR21 B4A/B2P	2100 MHz (AWS)	15.9	4	160	6,224.72	4.32
						Sector B Composite MPE%	**9.51**
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	4.92
Antenna C2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS)	15.9	1	15	396.36	0.27
Antenna C3	Ericsson AIR21 B4A/B2P	2100 MHz (AWS)	15.9	4	160	6,224.72	4.32
						Sector C Composite MPE%	**9.51**

Table 3: T-MOBILE Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**9.51 %**
There are no additional Carriers on This Site	
Site Total MPE %:	**9.51 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	9.51 %
T-MOBILE Sector B Total:	9.51 %
T-MOBILE Sector C Total:	9.51 %
Site Total:	9.51 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	76	13.60	600 MHz	400	3.40%
T-Mobile 700 MHz LTE	2	485.32	76	7.12	700 MHz	467	1.52%
T-Mobile 1900 MHz (PCS) GSM	1	396.36	78	2.75	1900 MHz (PCS)	1000	0.27%
T-Mobile 2100 MHz (AWS) LTE	4	1,556.18	78	43.17	2100 MHz (AWS)	1000	4.32%
						Total:	**9.51 %**

Table 6: T-MOBILE Maximum Sector MPE Power Values

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:	9.51 %
Sector B:	9.51 %
Sector C:	9.51 %
T-MOBILE Maximum Total (per sector):	9.51 %
Site Total:	9.51 %
Site Compliance Status:	**COMPLIANT**

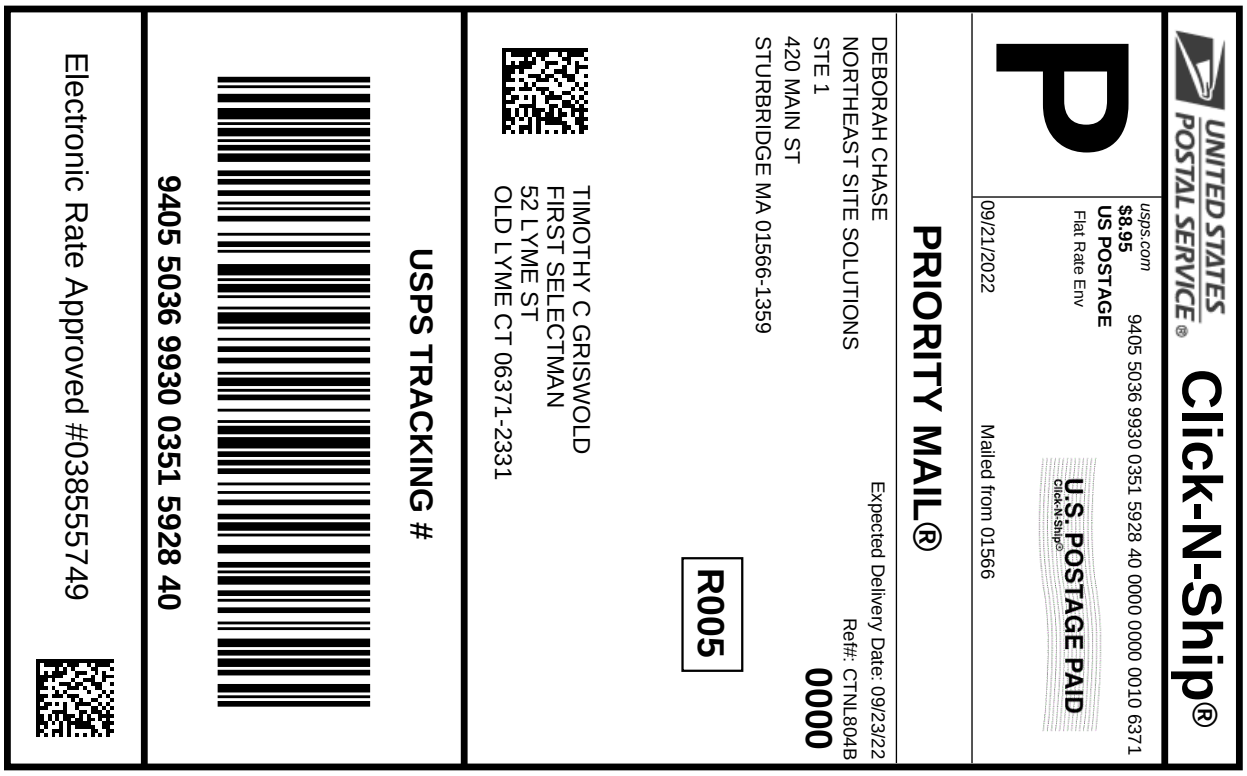
The anticipated composite MPE value for this site assuming all carriers present is **9.51 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Recipient Mailings



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 0351 5928 40

Trans. #:	572211361
Print Date:	09/21/2022
Ship Date:	09/21/2022
Expected Delivery Date:	09/23/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

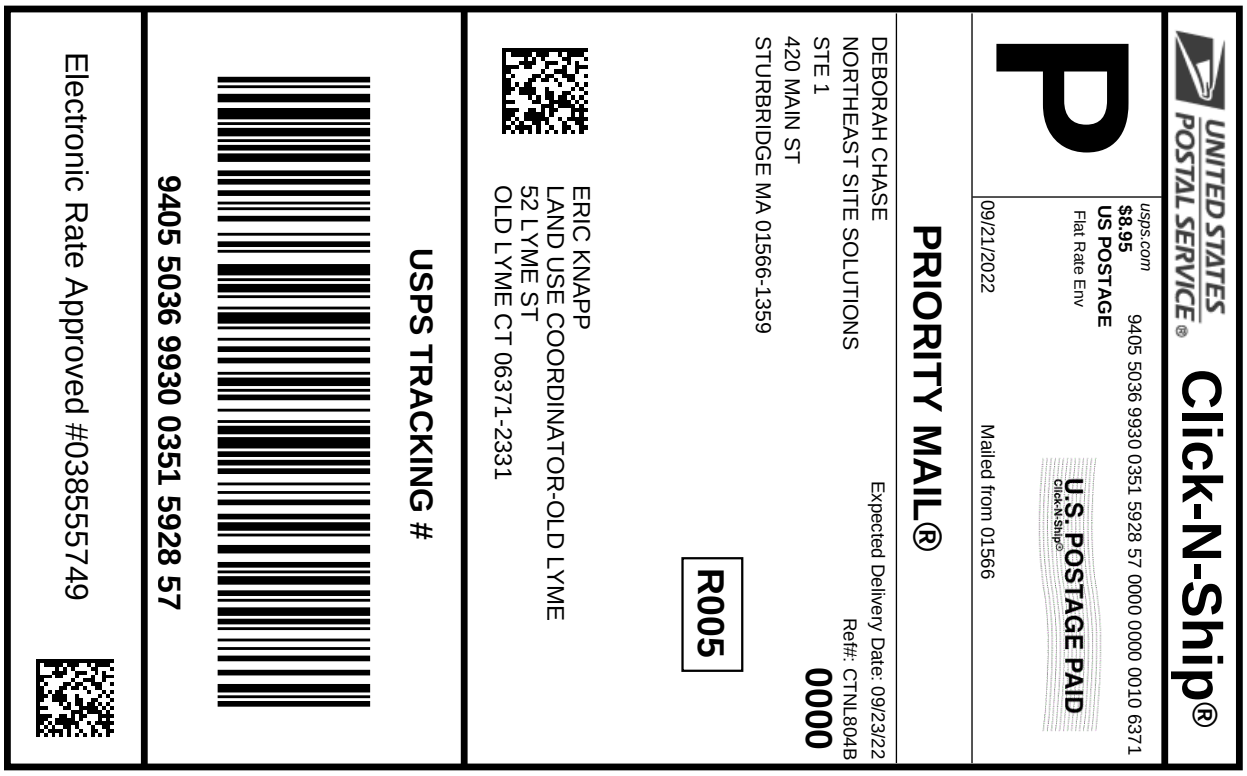
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTNL804B

To: TIMOTHY C GRISWOLD
FIRST SELECTMAN
52 LYME ST
OLD LYME CT 06371-2331

* 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 0351 5928 57

Trans. #:	572211361
Print Date:	09/21/2022
Ship Date:	09/21/2022
Expected Delivery Date:	09/23/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

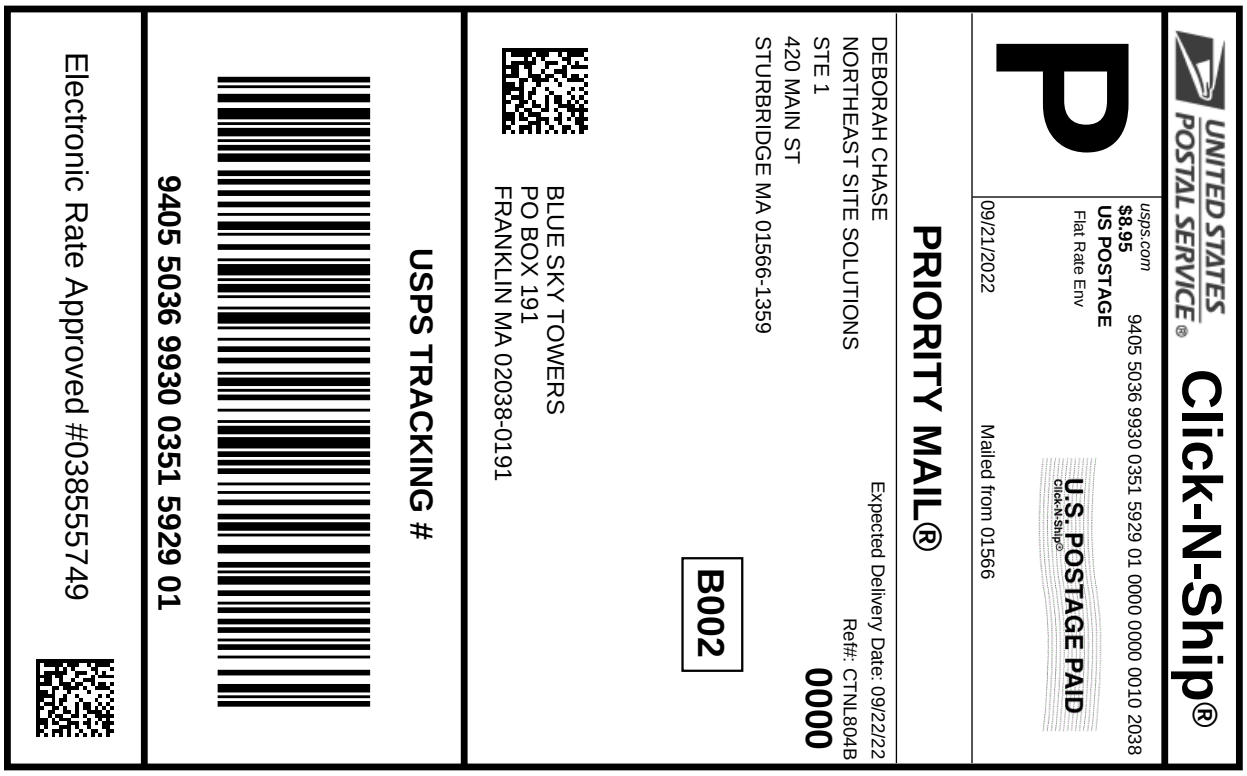
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTNL804B

To: ERIC KNAPP
LAND USE COORDINATOR-OLD LYME
52 LYME ST
OLD LYME CT 06371-2331

* 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 0351 5929 01

Trans. #:	572211361
Print Date:	09/21/2022
Ship Date:	09/21/2022
Expected Delivery Date:	09/22/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

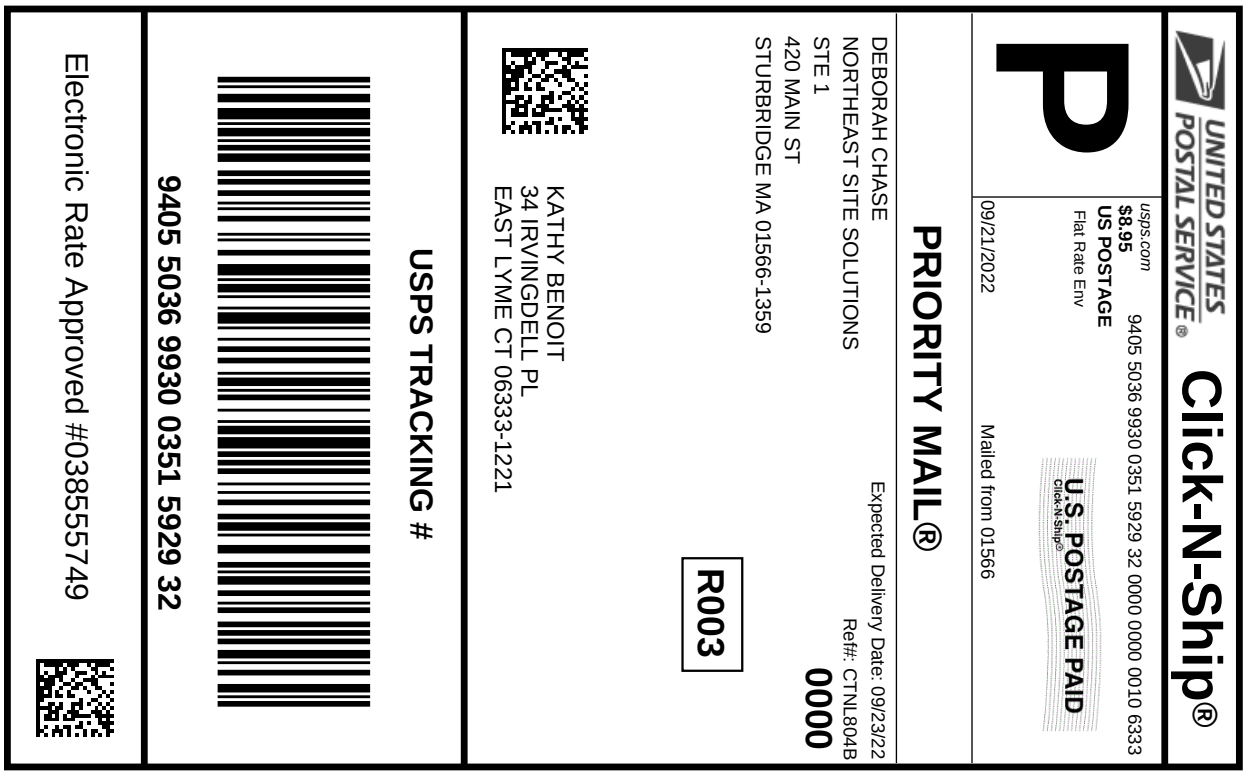
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTNL804B

To: BLUE SKY TOWERS
PO BOX 191
FRANKLIN MA 02038-0191

* 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 0351 5929 32

Trans. #:	572211361
Print Date:	09/21/2022
Ship Date:	09/21/2022
Expected Delivery Date:	09/23/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTNL804B

To: KATHY BENOIT
34 IRVINGDELL PL
EAST LYME CT 06333-1221

* 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

UNITED STATES POSTAL SERVICE.

FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

09/21/2022 04:20 PM

Product	Qty	Unit Price	Price
Prepaid Mail Old Lyme, CT 06371 Weight: 0 lb 8.10 oz Acceptance Date: Wed 09/21/2022 Tracking #: 9405 5036 9930 0351 5928 40	1		$0.00
Prepaid Mail Old Lyme, CT 06371 Weight: 0 lb 8.10 oz Acceptance Date: Wed 09/21/2022 Tracking #: 9405 5036 9930 0351 5928 57	1		$0.00
Prepaid Mail Franklin, MA 02038 Weight: 0 lb 8.10 oz Acceptance Date: Wed 09/21/2022 Tracking #: 9405 5036 9930 0351 5929 01	1		$0.00
Prepaid Mail East Lyme, CT 06333 Weight: 0 lb 8.10 oz Acceptance Date: Wed 09/21/2022 Tracking #: 9405 5036 9930 0351 5929 32	1		$0.00
Grand Total:			$0.00

****
Every household in the U.S. is now
eligible to receive a third set
of 8 free test kits.
Go to www.covidtests.gov
****

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.