STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION FOR A DECLARATORY RULING ON THE NEED TO OBTAIN A SITING COUNCIL CERTIFICATE FOR THE PROPOSED MODIFICATION OF AN EXISTING WIRELESS TELECOMMUNICATIONS FACILITY AT 1 FAIRFIELD AVENUE, DANBURY, CONNECTICUT	:	PETITION NO. ____
	:	
	:	
	:	
	:	
	:	
	:	AUGUST 5, 2022

PETITION FOR A DECLARATORY RULING:
INSTALLATION HAVING NO
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies ("R.C.S.A."), T-Mobile Northeast, LLC ("T-Mobile") hereby petitions the Connecticut Siting Council (the "Council") for a declaratory ruling ("Petition") that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required under Section 16-50k(a) of the Connecticut General Statutes ("C.G.S.") for the modification of an existing wireless telecommunications facility at 1 Fairfield Avenue, Danbury, Connecticut (the "Existing Facility").

II. Existing Facility

The Existing Facility is located on an approximately 1.35-acre parcel owned by Tall Oaks LLC. The Facility consists of a 39-foot pole within an approximately 40-foot false chimney. **Attachment 1** contains the owner's authorization permitting T-Mobile to file this Petition. The Facility was originally approved for T-Mobile's use by the Council on December 14, 2005, as documented in **Attachment 2**.

III. T-Mobile Facility

T-Mobile's proposed modification to its facility is illustrated on the plans submitted as **Attachment 3**. T-Mobile proposes to extend the height of the existing pole and false chimney by 5-feet, to a total height of approximately 45 feet above ground level. T-Mobile will make the following changes to its tower mounted antenna equipment at the Modified Facility.

T-Mobile Planned Modifications:

Remove:

(6) TMA
(3) Smart BIAS-T
(1) 6x12 HCS Line

Remove and Replace at Existing 37' Level

(3) RV4PX306R Antennas (REMOVE) - (3) APXVAA4L18_43-U-NA20 Antennas (REPLACE)

Install New:

(3) ERICSSON AIR6449 B41 Antennas (at 42' 6" AGL)
(1) 6x12 HCS Line
(11) 7/8" Coax

Existing to Remain:

(25) 7/8" Coax

T-Mobile has confirmed that the Modified Facility is capable of supporting the additional antennas and other changes to the tower mounted equipment once the pole and chimney are extended, as documented in the Structural Analysis Report annexed hereto as **Attachment 4.** No changes are proposed to the existing footprint of T-Mobile's ground equipment at the Facility.

IV. The Proposed Modification Will Not Have A Substantial Adverse Environmental Effect

1. Physical Environmental Effects

The modification of T-Mobile's Facility will not involve a significant alteration to the physical and environmental characteristics of the Property. The installation will alter an existing disturbed area immediately adjacent to the existing compound. No native trees will need to be removed and no on-site or off-site wetlands or watercourses will be impacted by the proposed facility expansion.

2. Visual Effects

Given the height of the existing stealth chimney, 40' AGL, T-Mobile's proposed height extension of 5-feet would have a minimal visual impact. The extended stealth chimney will be disguised in the same manner as the existing chimney structure and will have a minimal visual impact when viewed from the public right-of-way or adjacent private properties.

3. FCC Compliance

Radio frequency ("RF") emissions resulting from T-Mobile's proposed modification of the Existing Facility will be well below the standards adopted by the Federal Communications Commission ("FCC"). Included in **Attachment 6** is a Radio Frequency Emissions Analysis Report prepared by Fox Hill Telecom. This report confirms that the modified facility will operate well within the RF emission standards established by the FCC.

V. Notice to the Municipality, Property Owner and Abutting Landowners

On August 5, 2022, a copy of this Petition was sent to Danbury Mayor Dean Esposito and Sharon Calitro, Director of Planning & Zoning. A notice of T-Mobile's intent to file this Petition was also sent to the owners of land that may be considered to abut the Property or are within 200-feet. Included in **Attachment 5** is a sample abutter's letter and the list of those abutting landowners who were sent notice.

VI. Conclusion

Based on the information provided above, the Petitioners respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a temporary tower at the Property will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

Respectfully submitted,

Denise Sabo
Northeast Site Solutions
Agent for T-Mobile
(860) 209-4690
denise@northeastsitesolutions.com

Attachments

Cc: Mayor Dean Esposito
Danbury City Hall
155 Deer Hill Ave.
Danbury, CT 06810

Sharon Calitro, Director of Planning & Zoning
Danbury City Hall
155 Deer Hill Ave.
Danbury, CT 06810

ATTACHMENT 1

Letter of Authorization

February 15, 2022

T-Mobile Site ID: CT11862C

Site Address: 1 Fairfield Ave, Danbury CT

RE: Application for CT Siting Council

This letter authorizes T-Mobile, LLC and its authorized agents from Northeast Site Solutions, LLC to file all necessary administrative approvals, zoning approvals and building permits for the purposes of upgrading and maintaining telecommunications equipment located at 1 Fairfield Ave, Danbury CT.

By: James A Marcus

Name: JAMES A MARCUS

Title: MANAGING MEMBER
TALL OAKS LLC

Date: 5/13/22

1 FAIRFIELD AV #A1

Location	1 FAIRFIELD AV #A1	**Mblu**	J16/ / 138/ A1/
Acct#		**Owner**	TALL OAKS LLC
Assessment	$85,200	**Appraisal**	$121,700
PID	124375	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$121,700	$0	$121,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$85,200	$0	$85,200

Owner of Record

Owner	TALL OAKS LLC	**Sale Price**	$0
Co-Owner		**Book & Page**	1533/ 331
Address	5 CORPORATE DR DANBURY, CT 06810	**Sale Date**	04/28/2003
		Instrument	06

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
TALL OAKS LLC	$0	1533/ 331	06	04/28/2003
TALL OAKS ASSOCIATION	$1,236,842	681/ 933		06/30/1983

Building Information

Building 1 : Section 1

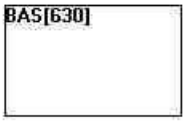
Year Built:	1983
Living Area:	630
Replacement Cost:	$162,288
Building Percent Good:	75
Replacement Cost Less Depreciation:	$121,700

Building Attributes	
Field	**Description**
STYLE	Condominium
MODEL	Res Condo
Stories:	1
Grade	Good
Occupancy	1
Interior Wall 1:	Drywall/Sheet
Interior Wall 2:	
Interior Floor 1	Carpet
Interior Floor 2	
Heat Fuel:	Electric
Heat Type:	Electr Basebrd
AC Type:	Unit/AC
Ttl Bedrms:	1 Bedroom
Ttl Bathrms:	1 Full
Ttl Half Bths:	
Xtra Fixtres	
Total Rooms:	3
Bath Style:	
Kitchen Style:	
Fireplaces	
Whirlpool	
Add'l Kitchen	
Bsmt Gar	
FIn Bsmt Area	
FBM Quality	
Phase	
Grade	Good
Stories:	2
Residential Units:	26
Exterior Wall 1:	Pre-Fab Wood
Exterior Wall 2:	
Roof Structure	Gable
Roof Cover	Asphalt Shngl.
Cmrcl Units:	0
Res/Com Units:	0
Section #:	0
Parking Spaces	0
Section Style:	0
Foundation	

Building Photo

(http://images.vgsi.com/photos2/DanburyCTPhotos//\00\02\76/20.jpg)

Building Layout



(http://images.vgsi.com/photos2/DanburyCTPhotos//Sketches/124375_124

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	630	630
WDK	Deck, Wood	80	0
		710	630

Security:	
Cmplx Cnd	
Xtra Field 1:	
Remodel Ext:	
Super	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	105
Description	Condo
Zone	RMF4
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0
Frontage	
Depth	
Assessed Value	$0
Appraised Value	$0

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$121,700	$0	$121,700
2018	$121,700	$0	$121,700
2017	$121,700	$0	$121,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$85,200	$0	$85,200
2018	$85,200	$0	$85,200
2017	$85,200	$0	$85,200

1 FAIRFIELD AVE

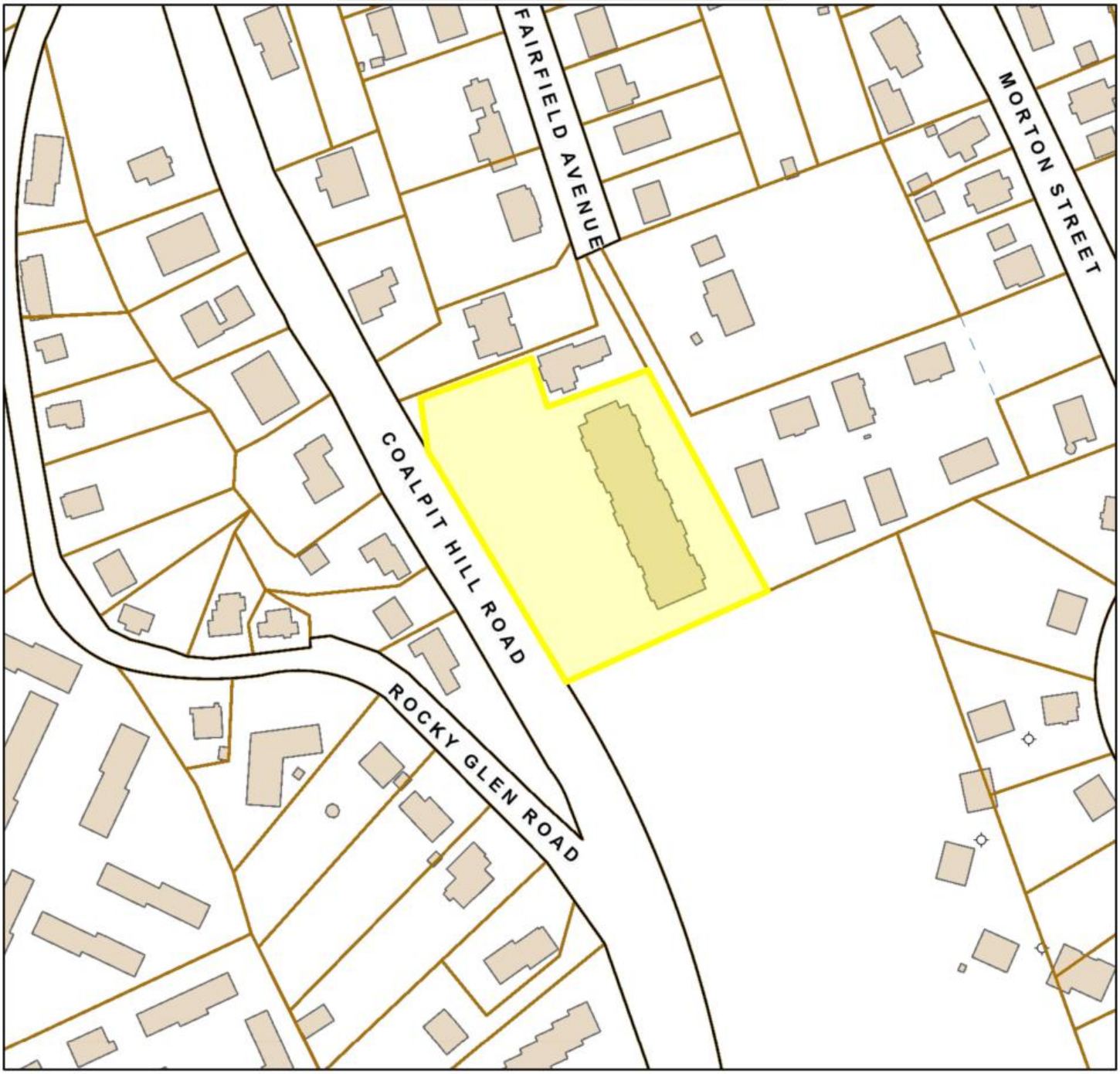
Danbury, CT

1 inch = 150 Feet

August 3, 2022

0 150 300 450

CAI Technologies
Precision Mapping. Geospatial Solutions
www.cai-tech.com



Stream
Building
Light Pole
Historic Parcel Lines
Parcel
Public Right of Way
TownLine

ATTACHMENT 2

Connecticut Siting Council(/CSC)

Decisions (/CSC/Decisions/Decisions)

Meetings and Minutes (/CSC/Common-Elements/v4-template/Council-Activity)

Pending Matters (/CSC/1_Applications-and-Other-Pending-Matters/Pending-Matters)

About Us (/CSC/Common-Elements/Common-Elements/Connecticut-Siting-Council---Description)

Contact Us (/CSC/Common-Elements/Common-Elements/Contact-Us)

Search Connecticut Siting Council

Petition No. 748
Omnipoint Communications, Inc.
1 Fairfield Avenue
Danbury, Connecticut
Staff Report
December 14, 2005

On November 10, 2005, Omnipoint Communications, Inc. (T-Mobile) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for installation of a 39-foot pole within a false chimney at a condominium building located at 1 Fairfield Avenue in Danbury, Connecticut. On December 8, 2005, Council member Edward S. Wilensky and Council staff member Robert Mercier met T-Mobile representatives Christine Farrell and Gregory Piecuch at the proposed site to review this petition.

T-Mobile proposes to construct a 40-foot wood false chimney at the south end of a wood frame condominium building. T-Mobile would install a 39-foot pole within the false chimney to accommodate three flush mounted antennas. Three equipment cabinets would be installed at the base of the chimney, surrounded by a wood frame fence that matches existing building construction.

The false chimney, designed to match existing building construction, would extend 15 feet above the south end of the condominium roof. The south end of the building is screened from adjacent properties by existing ridges and trees. An adjacent building to the north is screened by the existing

condominium building which has a peak roof height of 33 feet at the north end.

T-Mobile notified all condominium residents, adjacent property owners and City officials of the proposal. No comment was received from the City, condominium residents, or adjacent landowners.

ATTACHMENT 3

MODIFICATION OF EXISTING WIRELESS FACILITY BY

T-MOBILE NORTHEAST LLC

PROJECT TITLE: ANCHOR

SITE NUMBER: CT11862C

SITE NAME: CT862/TALL OAKS_STEALTH

SITE ADDRESS: 1 FAIRFIELD AVE.
DANBURY, CT 06810

RF CONFIGURATION:CT11862C_ANCHOR_8_DRAFT_2020-08-20

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.

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.

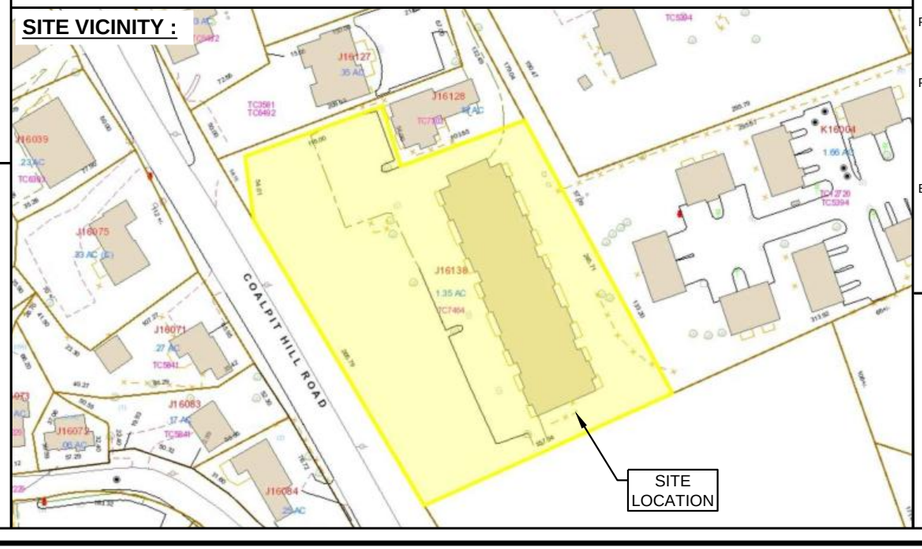
REFER TO STRUCTURAL REPORT:
STRUCTURAL ANALYSIS REPORT - DATED AUGUST 9, 2021 PREPARED BY VECTOR ENGINEERS.

APPROVALS:

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

SITE IMAGE:

SITE VICINITY :



PROJECT SCOPE:

THE PROPOSED PROJECT SCOPE WILL INCLUDE THE FOLLOWING EQUIPMENT MODIFICATIONS:
CHIMNEY: EXTEND THE EXISTING CHIMNEY HOUSING THE EXISTING ANTENNAS BY 5'.
CABINETS: UPGRADE EXISTING RBS 6102 CABINET INTERNALLY.
ADD (1) 6160 AND (1) B160 CABINETS ON EXISTING CONCRETE PAD ON GRADE.
ANTENNAS: REPLACE (3) EXISTING ANTENNAS WITH (6) NEW ANTENNAS ON TOWER FOR A TOTAL OF (6).
RRU AND TMA: REMOVE (6) EXISTING TMA AND (3) SMART BIAS T AT ANTENNAS.
REPLACE (3) OF (6) EXISTING RRUS AND ADD (3) NEW RRUS FOR A TOTAL OF (9) AT THE CABINET.
CABLES: REMOVE EXISTING 6X12 HCS, ADD (11) COAXIAL LINES FOR TOTAL OF (36), INSTALL (1) NEW 6X12 HCS FOR NEW AIR6449 AT NEW RAD CENTER.

PROJECT INFORMATION:

ADDRESS:	1 FAIRFIELD AVE. DANBURY, CT 06810
MBLU:	J16// 138/
PARCEL ID:	124375
USE CODE:	105 - CONDO
ZONING DISTRICT:	RMF4
COORDINATES:	41° 22' 58.56" N 73° 26' 08.56" W
GROUND ELEV:	492'± (AMSL)

PROJECT TEAM:

APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 860-692-7100
PROPERTY OWNER:	TALL OAKS LLC 5 CORPORATE DRIVE DANBURY, CT 06810
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	08/27/21
0	FINAL ISSUED	09/13/21
1	ZONING DRAWINGS ADDED	02/10/22

SITE NUMBER: CT11862C
SITE NAME: CT862/TALL OAKS_STEALTH

SITE ADDRESS: 1 FAIRFIELD AVE.
DANBURY, CT 06810

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. ANTENNA INSTALLATION:

A. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND CLIENT'S REPRESENTATIVE SPECIFICATIONS.

B. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

C. INSTALL COAXIAL / FIBER CABLES AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.

15. ANTENNA AND COAXIAL / FIBER CABLE GROUNDING:

A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH ANDREWS CONNECTOR/SPLICE WEATHERPROOFING KIT TYPE #221213 OR EQUAL.

B. ALL COAXIAL / FIBER CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL / FIBER CABLE (NOT WITHIN BENDS).

16. 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

17. 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

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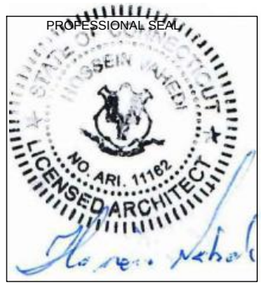

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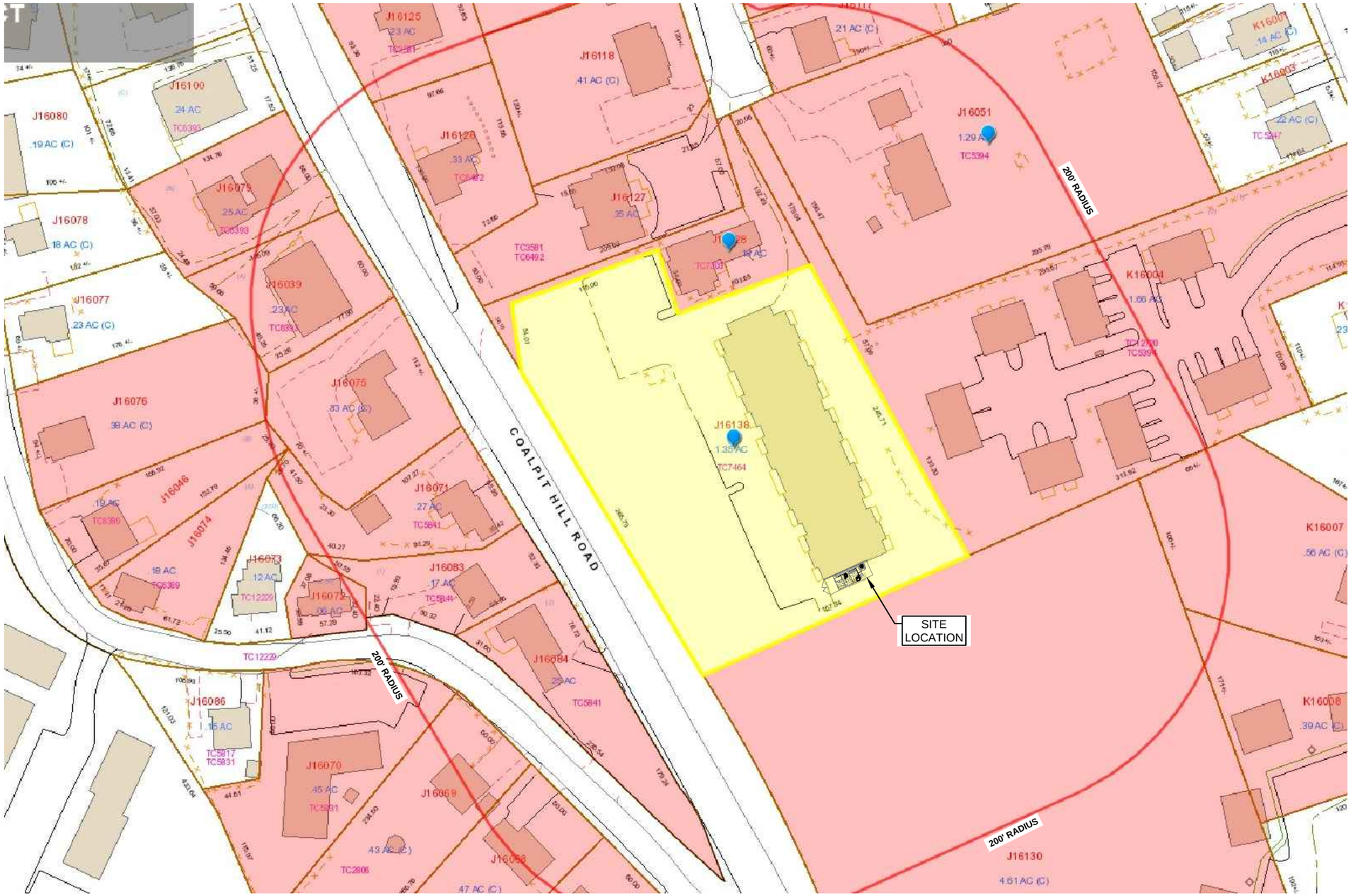

200' RADIUS MAP
SCALE: 1" = 80'

1
Z-1

APPLICANT:

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PROFESSIONAL SEAL

STATE OF CONNECTICUT
NO. ARI. 11162
LICENSED ARCHITECT

REV	DESCRIPTION	DATE
A	PRELIMINARY	08/27/21
0	FINAL ISSUED	09/13/21
1	ZONING DRAWINGS ADDED	02/10/22

SITE NUMBER: CT11862C
SITE NAME: CT862/TALL OAKS_STEALTH

SITE ADDRESS: 1 FAIRFIELD AVE.
DANBURY, CT 06810

SHEET TITLE:

Z-1: 200' RADIUS MAP

SITE IMAGERY
SCALE: 1" = 100'

2
Z-2

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

STATE OF CONNECTICUT
NO. ARI. 11162
LICENSED ARCHITECT

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SHEET TITLE:

Z-2: 200' SITE IMAGERY

200' ABUTTER'S LIST

Parcel Number	GIS Number	Cama Number	Property Address	Owner Name	Co-Owner Name	Owner Address	Owner City	Owner State	Owner Zip
J160390000	J160390000	J16039-0000	55 COALPIT HILL	WILLIAMS COAL PIT HILL	INVESTMENTS LLC	11 WESTMINSTER RD	DANBURY	CT	06811
J160460000	J160460000	J16046-0000	35A ROCKY GLEN	US BANK NATIONAL ASSOCIATION TR	C/O WELLS FARGO BANK NA	3476 STATEVIEW BL	FORT MILL	SC	29715
J160510000	J160510000	J16051-0000	1 FAIRFIELD	WOCHEK MADELINE C		PO BOX 85	BETHEL	CT	06801
J160660000	J160660000	J16066-0000	69 COALPIT HILL	EASTERN STATES	DEVELOPMENT CORP	PO BOX 2120	DANBURY	CT	06813
J160670000	J160670000	J16067-0000	19 ROCKY GLEN	MENDES MARIO M	MARIA DELOURDES	19 ROCKY GLEN RD	DANBURY	CT	06810
J160680000	J160680000	J16068-0000	30 ROCKY GLEN	HAFERL RUDY P & LAURIE A		30 ROCKY GLEN RD	DANBURY	CT	06810-8004
J160690000	J160690000	J16069-0000	32 ROCKY GLEN	ANDREWS JOSEPH D & LESLIE M		PO BOX 841	BETHEL	CT	06801
J160700000	J160700000	J16070-0000	34 ROCKY GLEN	AMOS HOUSE INC		34 ROCKY GLEN RD	DANBURY	CT	06810-8004
J160710000	J160710000	J16071-0000	61 COALPIT HILL	VEIGA MAXIMINO L &	MARIA CECILIA	61 COALPIT HILL RD	DANBURY	CT	06810
J160720000	J160720000	J16072-0000	ROCKY GLEN	OLIVEIRA JAIRO & CARLA S		31 ROCKY GLEN RD	DANBURY	CT	06810
J160740000	J160740000	J16074-0000	35 ROCKY GLEN	RIVERA-GONZALEZ LUIS J		35 ROCKY GLEN RD	DANBURY	CT	06810
J160750000	J160750000	J16075-0000	57 COALPIT HILL	ESPITIA MARIA T &	ESPITIA MORENO JUAN	57 COALPIT HILL RD	DANBURY	CT	06810
J160760000	J160760000	J16076-0000	33 ROCKY GLEN	PICKEL CLARA		33 ROCKY GLEN RD	DANBURY	CT	06810
J160790000	J160790000	J16079-0000	53 COALPIT HILL	WILLIAMS COAL PIT HILL	INVESTMENTS LLC	11 WESTMINSTER RD	DANBURY	CT	06811
J160830000	J160830000	J16083-0000	63 COALPIT HILL	LAWRENIA PETER A & IRENE F		63 COALPIT HILL RD	DANBURY	CT	06810
J160840000	J160840000	J16084-0000	65 COALPIT HILL	KY SEAN BY & BOPTA		65 COALPIT HILL RD	DANBURY	CT	06810
J161160000	J161160000	J16116-0000	5 FAIRFIELD	LARIVIERE LUCIEN		28 KELLOGG ST	BROOKFIELD	CT	06804
J161170000	J161170000	J16117-0000	3 FAIRFIELD	GARCES HENNRRI R		3 FAIRFIELD AVE	DANBURY	CT	06810
J161180000	J161180000	J16118-0000	2-4 FAIRFIELD	BOA JOSEPH A		17 CHESTER ST	BROOKFIELD	CT	06804
J161190000	J161190000	J16119-0000	6 FAIRFIELD	RUIZ BARBARA J-TR & RUIZ	ROLANDO G-TR	11590 EAST CAVEDALE DR	SCOTTSDALE	AZ	85262
J161250000	J161250000	J16125-0000	50 COALPIT HILL	DEGRAZIA MARISA &ROSEMARIE L &	CLAUDIA M & CHRISTINA A	5 DEER HILL AVE	DANBURY	CT	06810
J161260000	J161260000	J16126-0000	54 COALPIT HILL	DEGRAZIA MARISA &ROSEMARIE L &	CLAUDIA M & CHRISTINA A	5 DEER HILL AVE	DANBURY	CT	06810
J161270000	J161270000	J16127-0000	FAIRFIELD	DEGRAZIA MARISA &ROSEMARIE L &	CLAUDIA M & CHRISTINA A	5 DEER HILL AVE	DANBURY	CT	06810
J161280000	J161280000	J16128-0000	1 FAIRFIELD	TALL OAKS LLC		5 CORPORATE DR	DANBURY	CT	06810
J161280000	J161280000	J16128-0001	1 FAIRFIELD 1	VELASQUEZ MARICEL P		1 FAIRFIELD AVE #1	DANBURY	CT	06810
J161280000	J161280000	J16128-0002	1 FAIRFIELD 2	OSTAPENKO ALEXANDER D		1 FAIRFIELD AV #2	DANBURY	CT	06810
J161280000	J161280000	J16128-0003	1 FAIRFIELD 3	MAULLON CRISTINA		1 FAIRFIELD AVE #3	DANBURY	CT	06810
J161300000	J161300000	J16130-0000	68-84 COALPIT HILL	HOUSING AUTHORITY OF THE CITY OF DANBURY		2 MILL RIDGE RD	DANBURY	CT	06811-5231
J161300000	J161300000	J16130-0001	FAIRFIELD RIDGE	FAIRFIELD RIDGE/MILL RIDGE	LIMITED PARTNERSHIP	2 MILL RIDGE RD	DANBURY	CT	06811-5231
K160040000	K160040000	K16004-0000	14 MORTON	MADELINE RIDGE LLC	C/O RRS MANAGEMENT	PO BOX 2636	DANBURY	CT	06813
K160040000	K160040000	K16004-0001	14 MORTON 1	CRUZ TATIANA		14 MORTON ST #1	DANBURY	CT	06810
K160040000	K160040000	K16004-0002	14 MORTON 2	QUEZADA JUAN J & DEQUEZADA	JUANA M M & MORONTA REYFOR F	14 MORTON ST #2	DANBURY	CT	06810
K160040000	K160040000	K16004-0003	14 MORTON 3	LAMOUR ACHILLE		14 MORTON ST #3	DANBURY	CT	06810
K160040000	K160040000	K16004-0004	14 MORTON 4	CHETAL SUSHIL & RADHIKA		14 MORTON ST #4	DANBURY	CT	06810
K160040000	K160040000	K16004-0005	14 MORTON 5	PEGUERO BELKYS		14 MORTON ST #5	DANBURY	CT	06810
K160040000	K160040000	K16004-0006	14 MORTON 6	SO KRISTINE M & JEANETTE LAO		14 MORTON ST #6	DANBURY	CT	06810
K160040000	K160040000	K16004-0007	14 MORTON 7	SMITH NICHOLAS		14 MORTON ST #7	DANBURY	CT	06810
K160040000	K160040000	K16004-0008	14 MORTON 8	TALARICO LISA A & ASHLEY L		14 MORTON ST #8	DANBURY	CT	06810
K160040000	K160040000	K16004-0009	14 MORTON 9	HEERING JOHN JR		14 MORTON ST #9	DANBURY	CT	06810
K160040000	K160040000	K16004-0010	14 MORTON 10	LANGER KAREN A & ARTHUR L		14 MORTON ST #10	DANBURY	CT	06810
K160040000	K160040000	K16004-0011	14 MORTON 11	MOREL MARIA M & YAMAILYN CASTRO		14 MORTON ST #11	DANBURY	CT	06810
K160040000	K160040000	K16004-0012	14 MORTON 12	DEL ROSARIO ILIANA M & BUTLER	CLIFFORD J	14 MORTON ST #12	DANBURY	CT	06810
K160040000	K160040000	K16004-0013	14 MORTON 13	POIDEVIN ANTONELLA & FRATTO	CARMINE LU FRATTO ANTONIO & MARIA	14 MORTON ST #13	DANBURY	CT	06810
K160040000	K160040000	K16004-0014	14 MORTON 14	COSTELLO KRISTINA		14 MORTON ST #14	DANBURY	CT	06810
K160070000	K160070000	K16007-0000	3-5 FAIRFIELD RIDGE	HOUSING AUTHORITY OF THE CITY OF DANBURY		2 MILL RIDGE RD	DANBURY	CT	06811-5231
K160080000	K160080000	K16008-0000	7 FAIRFIELD RIDGE	HOUSING AUTHORITY OF THE CITY OF DANBURY		2 MILL RIDGE RD	DANBURY	CT	06811-5231

APPLICANT:

T-MOBILE NORTHEAST LLC

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

PROJECT MANAGER

NORTHEAST SITE SOLUTIONS

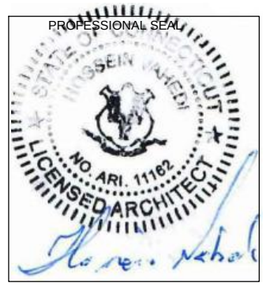
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors

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

PROFESSIONAL SEAL



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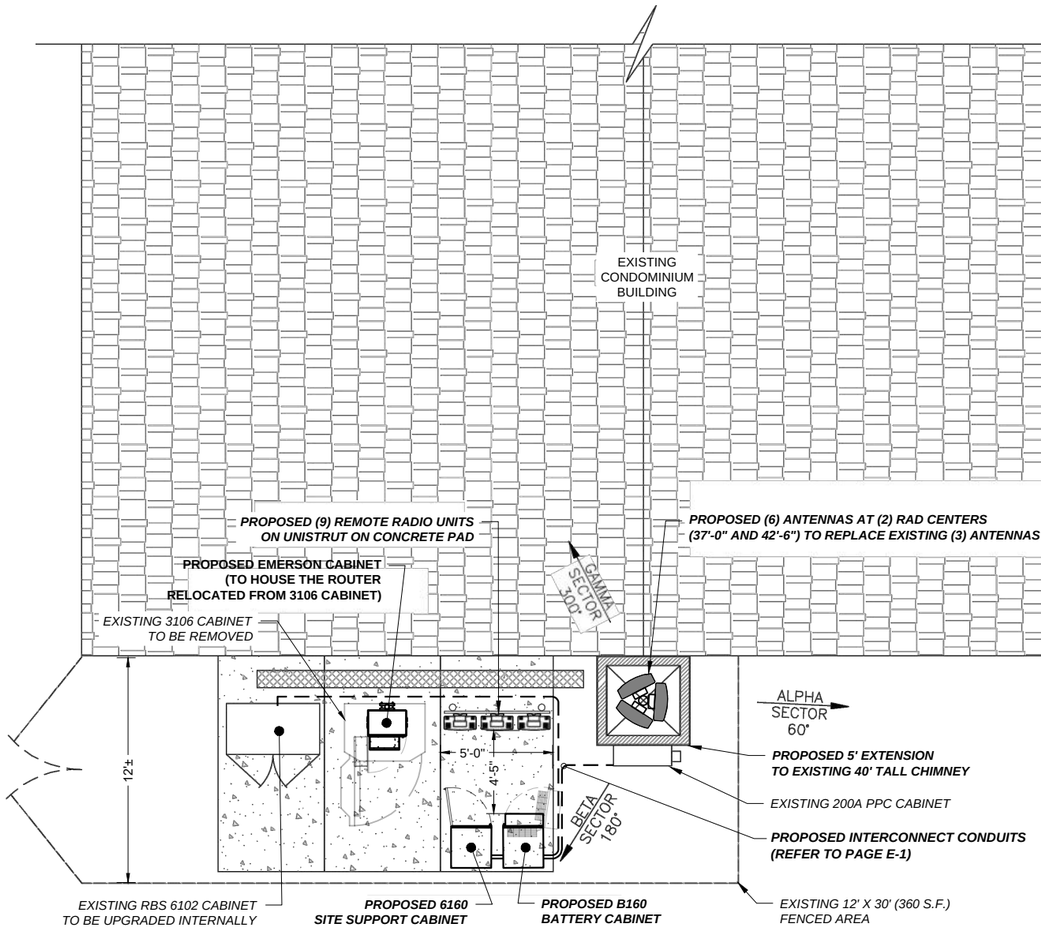
DANBURY, CT 06810

SHEET TITLE:

Z-3: 200' ABUTTER'S LIST

EXISTING
PARKING LOT



SITE PLAN
SCALE: 1" = 10'-0"

1
A-1

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:

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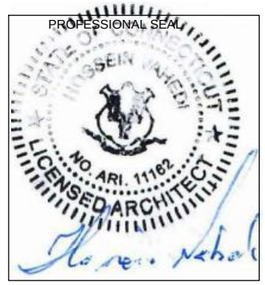

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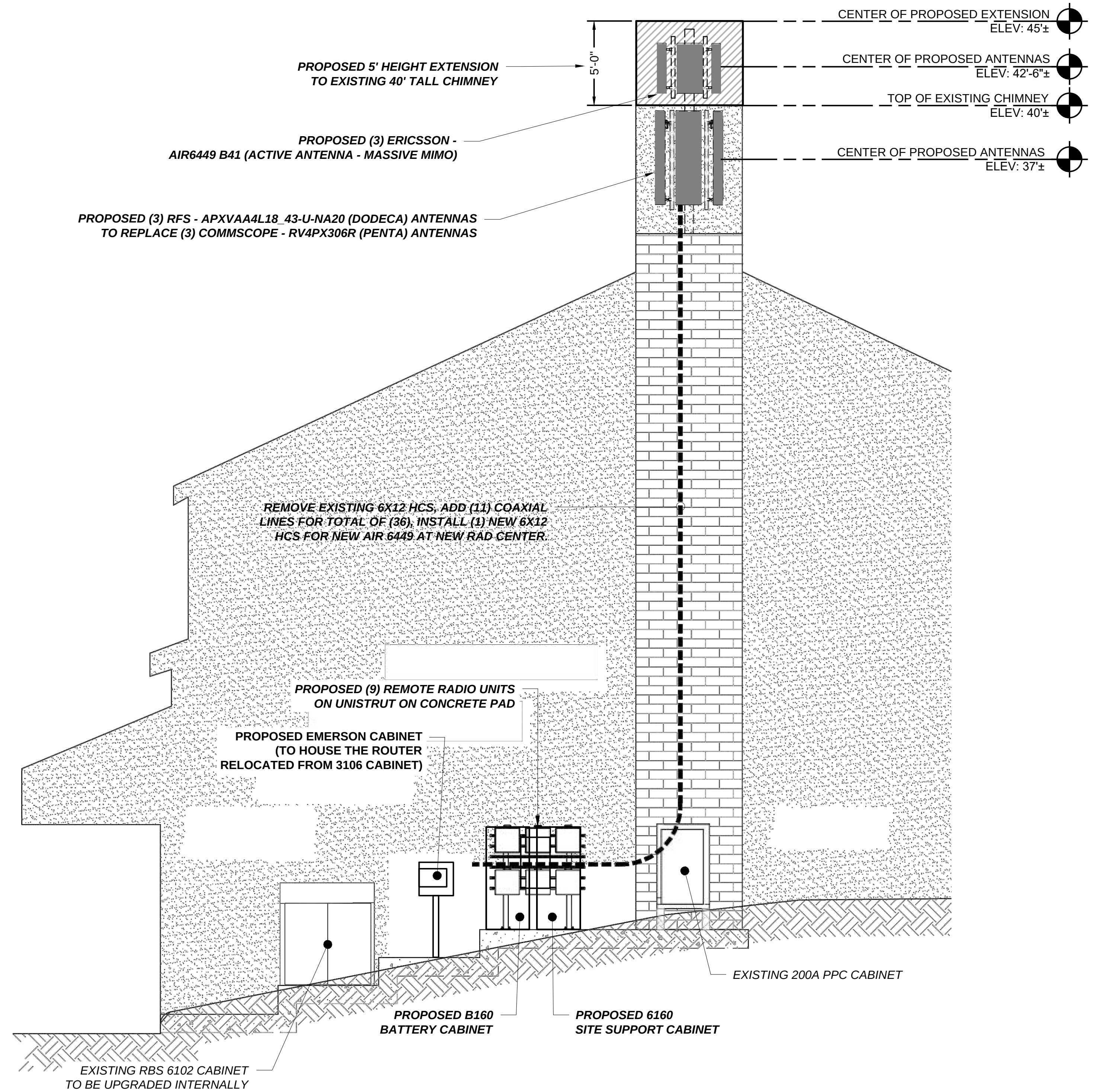
DANBURY, CT 06810

SHEET TITLE:

A-1: PLANS



ELEVATION
SCALE: 1/8" = 1'-0" (1 / A-2)

APPLICANT:

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
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Turnkey Wireless Development

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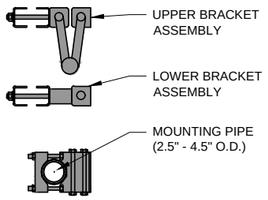
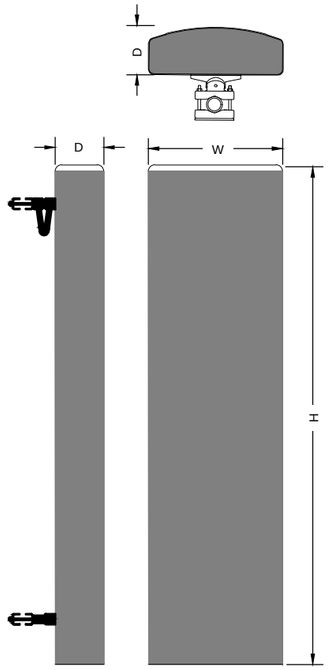
SITE ADDRESS: 1 FAIRFIELD AVE.
DANBURY, CT 06810

SHEET TITLE:
A-2: ELEVATION AND ANTENNA PLANS

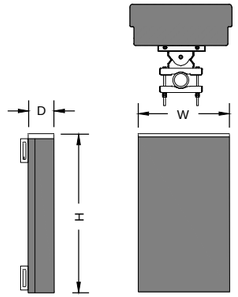




RFS ANTENNA SPECIFICATIONS	
MODEL #	APXVAA4L18_43-U-NA20 (DODECA)
MANUF.	RFS
HEIGHT	72"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	106 LB

RFS ANTENNA
N.T.S

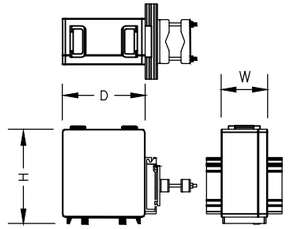
1 A-3



ERICSON ANTENNA SPECIFICATIONS	
MODEL #	AIR6449 B41
MANUF.	ERICSSON
HEIGHT	33.1"
WIDTH	20.5"
DEPTH	8.3"
WEIGHT	103 LB

ERICSSON ANTENNA
N.T.S

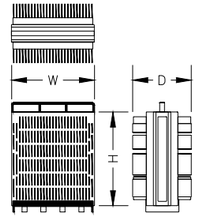
2 A-3



REMOTE RADIO UNIT SPECIFICATIONS	
MODEL #	RADIO 4415 B66A
MANUF.	ERICSSON
HEIGHT	14.9"
WIDTH	13.2"
DEPTH	5.4"
WEIGHT	46.3 LB

REMOTE RADIO UNIT
N.T.S

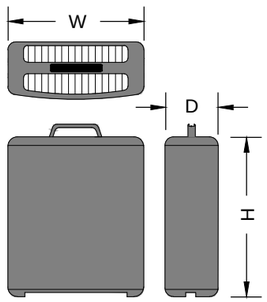
3 A-3



REMOTE RADIO UNIT SPECIFICATIONS	
MODEL #	RADIO 4449 B71+B85
MANUF.	ERICSSON
HEIGHT	14.9"
WIDTH	13.2"
DEPTH	9.3"
WEIGHT	74 LB

REMOTE RADIO UNIT
N.T.S.

4 A-3



REMOTE RADIO UNIT SPECIFICATIONS	
MODEL	RADIO 4424 B25
MANUF.	ERICSSON
HEIGHT	16.5"
WIDTH	13.5"
DEPTH	9.6"
WEIGHT	88 LB

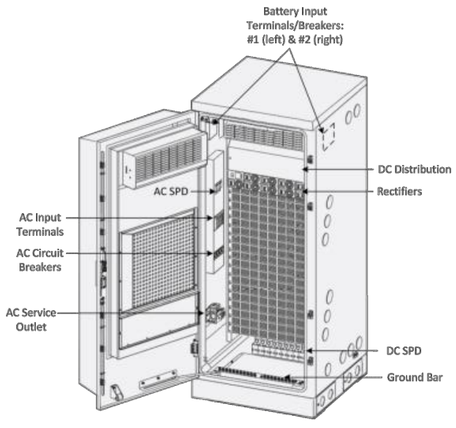
REMOTE RADIO UNIT
N.T.S.

5 A-3

BATTERY CABINET SPECIFICATIONS	
MODEL #	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH	26"
WEIGHT	1883 lbs

BATTERY CABINET
N.T.S.

6 A-3



SITE SUPPORT CABINET SPECIFICATIONS	
MODEL #	6160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	25.6"
DEPTH	33.5"
WEIGHT	605 lbs

SITE SUPPORT CABINET
N.T.S.

7 A-3

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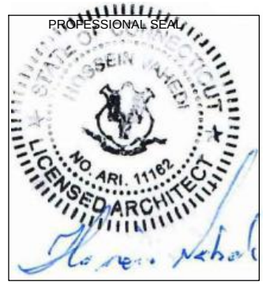
PROFESSIONAL SEAL



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SHEET TITLE:
A-3: EQUIPMENT SPECIFICTIONS

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.

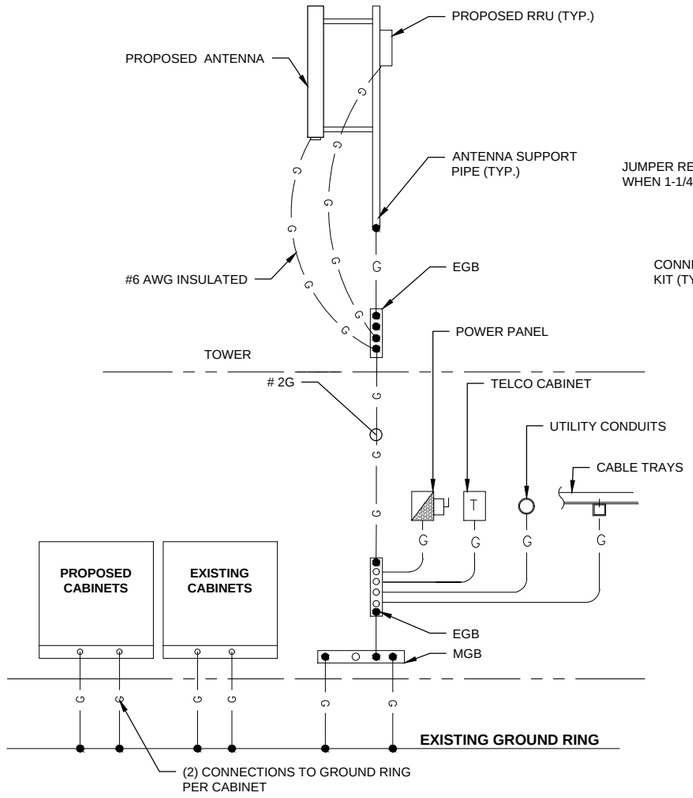
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.

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.

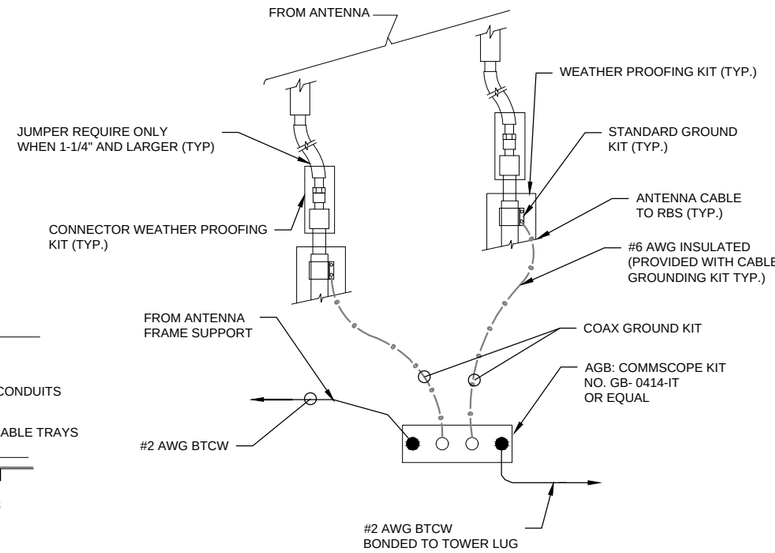
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.



GROUNDING RISER DIAGRAM

1 E–1

N.T.S.

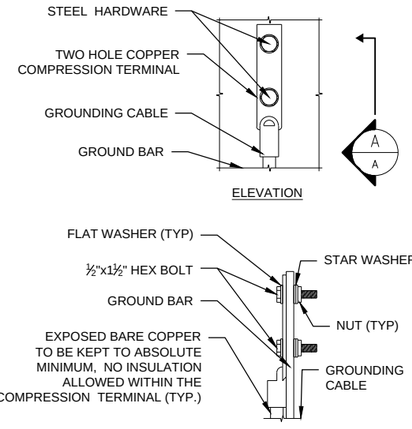


NOTES:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND
AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB

TOWER TOP CABLE GROUNDING DETAIL

2 E–1

N.T.S.



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

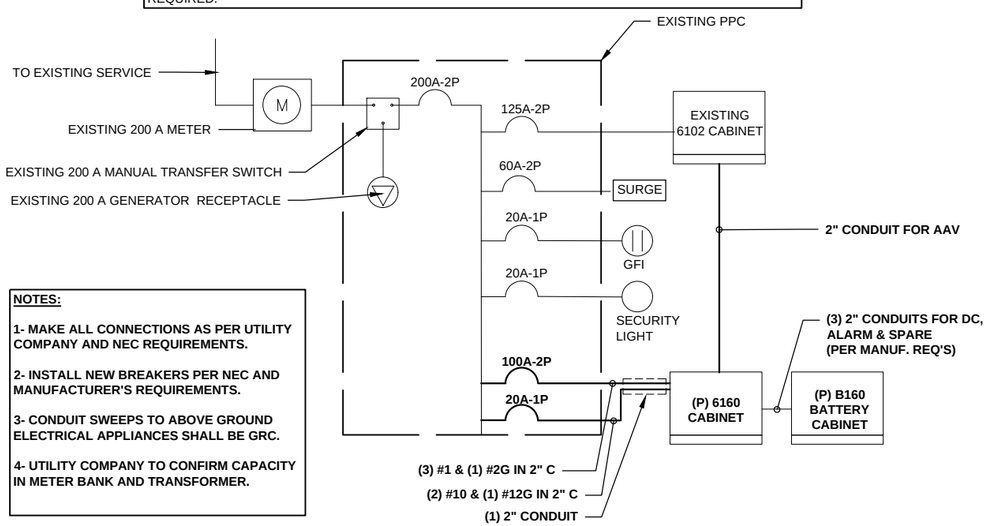
TYPICAL GROUND BAR CONNECTIONS DETAIL

3 E–1

N.T.S.

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.



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 NORTHEAST LLC

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BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NORTHEAST SITE SOLUTIONS

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CONSULTANT:

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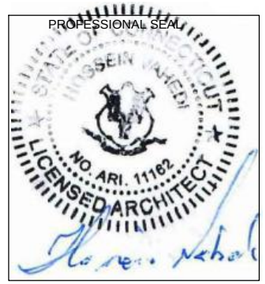
PROFESSIONAL SEAL



REV	DESCRIPTION	DATE
A	PRELIMINARY	08/27/21
0	FINAL ISSUED	09/13/21
1	ZONING DRAWINGS ADDED	02/10/22

SITE NUMBER: CT11862C
SITE NAME: CT862/TALL OAKS_STEALTH

SITE ADDRESS: 1 FAIRFIELD AVE.
DANBURY, CT 06810

SHEET TITLE:
E-1: ELECTRICAL & GROUNDING DETAIL

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF VECTOR STRUCTURAL ENGINEERING, LLC PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.
2. NO FIELD MODIFICATIONS MAY BE MADE WITHOUT EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. ENGINEER OF RECORD ASSUMES NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.
3. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR CO0RDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
5. THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES, IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.
6. IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.
7. CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.
8. CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.
10. WEATHER PROOFING AND/OR FLASHING TO BE PROVIDED BY CONTRACTOR AS REQUIRED.
11. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE ARCHITECT/ ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED.
12. THESE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS, AND PEDESTRIANS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED WORK, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT/ ENGINEER SHALL NOT INCLUDE INSPECTION OF SUCH ITEMS.
13. ALL STRUCTURAL MEMBERS, HARDWARE, & FASTENERS TO BE STEEL, U.N.O.
14. ALL ASPECTS OF THE EXISTING STRUCTURE ARE TO REMAIN UNDISTURBED U.N.O. CONTRACTOR TO VERIFY ALL ASPECTS AND DIMENSIONS OF THE EXISTING STRUCTURE FOR CONFORMITY WITH THE VALUES SHOWN IN THESE PLANS. CONTRACTOR TO NOTIFY VECTOR OF ANY DISCREPANCIES BETWEEN THE VALUES SHOWN ON THESE PLANS AND THE EXISTING STRUCTURE.
15. ALL ASPECTS OF THE EXISTING STRUCTURE ARE ASSUMED TO BE IN GOOD CONDITION, FREE FROM DAMAGE OR DETERIORATION. CONTRACTOR TO VERIFY CONDITION OF STRUCTURE AND INFORM VECTOR OF ANY DAMAGED STRUCTURAL MEMBERS.
16. ALL STRUCTURAL COMPONENTS TO BE CONNECTED TOGETHER SHALL BE COMPLETELY FIT UP ON THE GROUND OR OTHERWISE VERIFIED FOR COMPATIBILITY PRIOR TO LIFTING ANY COMPONENT INTO PLACE. REPAIRS REQUIRED DUE TO FIT-UP OR CONNECTION COMPATIBILITY PROBLEMS AFTER PARTIAL ERECTION ARE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.

DESIGN CRITERIA

1. STRUCTURAL DESIGN IS BASED ON THE INTERNATIONAL BUILDING CODE, 2015 EDITION AND THE ASCE 7-10 STANDARD
2. DESIGN LOADS:
   - WIND: WIND SPEED = 120 MPH (3-SEC GUST) PER THE ASCE 7-10 STANDARD
     - RISK CATEGORY: II
     - EXPOSURE: C
   - SEISMIC:
     - IMPORTANCE FACTOR: 1.00
     - RISK CATEGORY: II
     - MAPPED SPECTRAL RESPONSE ACCELERATIONS:
       - S_s = 0.217g, S_1 = 0.067g
     - SITE CLASS: D
     - SPECTRAL RESPONSE COEFFICIENTS:
       - S_{DS} = 0.231g, S_{D1} = 0.107g
     - SEISMIC DESIGN CATEGORY: B
     - ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

STRUCTURAL STEEL

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION. STEEL SECTIONS SHALL BE IN ACCORDANCE WITH ASTM AS INDICATED BELOW:

WIDE FLANGE:	ASTM A992 GR. 50
RECT/SQ. HSS:	ASTM A500 GR B (46 ksi)
PIPE:	ASTM A53 GR. B
ANGLES, CHANNELS, PLATES:	ASTM A36
STEEL TO STEEL BOLTS	ASTM F3125 GR. A325N
FRP TO STEEL BOLTS:	ASTM A307
BOLTS FOR GRATING CLIPS:	ASTM A307
SCREWS:	SAE GR. 5 (OR EQUIVALENT)

2. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ASTM F2329. FIELD MODIFICATIONS ARE TO BE COATED WITH ZINC ENRICHED PAINT.
3. ALL WELDING TO BE PERFORMED USING E70XX ELECTRODES AND SHALL CONFORM TO AISC. WHERE FILLET WELDS SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC MANUAL OF STEEL CONSTRUCTION. PAINTED SURFACES SHALL BE TOUCHED UP. ALL WELDING SHALL BE PERFORMED IN AN APPROVED SHOP, U.N.O., BY WELDERS CERTIFIED IN ACCORDANCE WITH AWS D1.1.
4. ALL STRUCTURAL BOLTS SHALL BE TIGHTENED PER THE "TURN OF THE NUT" METHOD AS DEFINED BY AISC. HOLES TO RECEIVE BOLTS SHALL BE 1/16" LARGER THAN NOMINAL BOLT DIAMETER, U.N.O.

POST-INSTALLED ANCHORS

1. USE, INSTALLATION, EMBEDMENT DEPTH, AND DIAMETER OF EXPANSION/WEDGE OR ADHESIVE ANCHORS IN HARDENED CONCRETE OR CMU SHALL CONFORM TO ICC REPORT & MANUFACTURER'S RECOMMENDATIONS.
2. MAINTAIN CRITICAL EDGE DISTANCE SPECIFIED IN ICC REPORT AS A MINIMUM, U.N.O. IN THESE DRAWINGS
3. LOCATE AND AVOID CUTTING EXISTING REBAR OR TENDONS WHEN DRILLING HOLES IN ELEVATED CONCRETE SLABS, CONCRETE WALLS, OR CMU.

STRUCTURAL FRP/RF FRIENDLY PANELS

1. ALL FRP STRUCTURAL SHAPES SHALL BE BEDFORD SERIES 1525, MANUFACTURED USING THE PULTRUSION PROCESS.
2. ALL FRP MEMBERS AND PANELS TO BE SUPPLIED BY THE CONTRACTOR.
3. ALL CUT EDGES AND HOLES SHALL BE SEALED WITH A RESIN COMPATIBLE WITH THE RESIN MATRIX USED IN THE STRUCTURAL SHAPE.
4. THE FABRICATOR AND CONTRACTOR SHALL EXERCISE PRECAUTIONS NECESSARY TO PROTECT THE FIBERGLASS PULTRUDED STRUCTURAL SHAPES FROM ABUSE TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING, AND INSTALLATION.
5. STRUCTURAL SHAPES SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THESE DRAWINGS.
6. FRP BOLTS SHOULD BE TIGHTENED 1/2 TURN PAST SNUG AND LOCKED WITH EPOXY.
7. FRP OR STEEL BOLTS THROUGH FRP MEMBERS SHALL MEET THE FOLLOWING SPACING AND EDGE DISTANCE REQUIREMENTS, MEASURED FROM BOLT CENTERS:
   - -MIN. BOLT SPACING = 4 TIMES BOLT DIA.
   - -MIN. EDGE DISTANCE = 3 TIMES BOLT DIA. IN DIRECTION OF PULTRUSION
   - -MIN. EDGE DISTANCE = 2 TIMES BOLT DIA. PERPENDICULAR TO DIRECTION OF PULTRUSION
8. NO FIELD MODIFICATIONS MAY BE MADE TO FRP MEMBERS OR RF FRIENDLY PANELS WITHOUT THE EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD AND MANUFACTURER. ENGINEER OF RECORD ASSUME NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.
9. RF FRIENDLY PANELS AND THEIR CONNECTIONS TO THE SUPPORTING STRUCTURE TO BE DESIGNED BY THE MANUFACTURER FOR THE LOADS SHOWN ON THE DRAWINGS. SUBMIT CALCULATIONS AND SHOP DRAWINGS TO ENGINEER OF RECORD FOR REVIEW AND APPROVAL.

STRUCTURAL WOOD MEMBERS

1. FRAMING LUMBER:
   DOUGLAS FIR LARCH NO. 2 GRADE IDENTIFIED BY THE GRADING OR INSPECTION AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION BODY THAT COMPLIES WITH DOC PS 20. GRADING PRACTICES AND IDENTIFICATION SHALL COMPLY WITH RULES PUBLISHED BY AN AGENCY APPROVED IN ACCORDANCE WITH THE PROCEDURES OF DOC PS 20
2. BOLT HOLES SHALL BE 1/16" MAXIMUM LARGER THAN THE BOLT SIZE. RE-TIGHTEN ALL NUTS PRIOR TO CLOSING IN.
3. ALL SILLS OR PLATES RESTING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR. BOLTS SHALL BE PLACED 9 INCHES FROM THE END OF A PLATE, OR FROM A NOTCH GREATER THAN ⅓ THE WIDTH OF THE PLATE, AND SPACED AT INTERVALS NOTED.
4. DO NOT NOTCH JOISTS, RAFTERS OR BEAMS EXCEPT WHERE SHOWN IN DETAILS. OBTAIN ENGINEER'S APPROVAL FOR ANY HOLES OR NOTCHES NOT DETAILED.
5. CONNECTION HARDWARE SHALL BE BY SIMPSON STRONG-TIE, OR ICC APPROVED EQUAL. ALL HARDWARE TO BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
6. FASTENING SCHEDULE PER 2016 EDITION OF THE CALIFORNIA BUILDING CODE, TABLE NO. 2304.9.1. UNLESS NOTED OTHERWISE.
7. ALL NAILS, BOLTS, HOLDOWNS, STRAPS OR OTHER STEEL FASTENERS IN CONTACT WITH PRESSURE TREATED TIMBER SHALL BE HOT-DIPPED GALVANIZED, STAINLESS STEEL OR OTHERWISE TREATED OR ISOLATED TO PREVENT CHEMICAL ATTACK. CONTRACTOR SHALL VERIFY TREATMENT METHOD AND CONFIRM APPROPRIATE CORROSION RESISTANCE BE PROVIDED IN ACCORDANCE WITH HARDWARE SUPPLIER RECOMMENDATIONS.

STRUCTURAL WOOD PANELS

1. ALL WOOD STRUCTURAL PANELS SHALL BE PLYWOOD OR APA RATED ORIENTED STRAND BOARD. PANELS SHALL BEAR THE STAMP OF AN APPROVED AGENCY. SPAN/INDEX RATING: 24/0. FASTENING SHALL BE INDICATED ON THE PLANS.
2. WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN DOC PS 1 OR DOC PS 2. EACH PANEL SHALL BE IDENTIFIED FOR GRADE, BOND CLASSIFICATION, AND PERFORMANCE CATEGORY BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY.
3. ALL PLYWOOD SHALL BE C-D INTERIOR SHEATHING WITH EXTERIOR GLUE. PLYWOOD SHALL BE 4-PLY, MINIMUM.

SPECIAL INSPECTION

1. CONTRACTOR SHALL PROVIDE REQUIRED SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY CARRIER AND THE GOVERNING JURISDICTION, AS REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE FOR THE FOLLOWING:
   - A. PERIODIC FOR HIGH STRENGTH BOLT INSTALLATIONS (IF UTILIZED)
   - B. PERIODIC FOR POST-INSTALLED ANCHORS IN HARDENED CONCRETE
   - C. PERIODIC/CONTINUOUS FOR FIELD WELDING (IF UTILIZED)
2. PROVIDE SPECIAL INSPECTIONS FOR OTHER ITEMS NOTED ON DRAWINGS TO CONFIRM COMPLIANCE WITH CONTRACT DOCUMENTS.
3. STEEL FABRICATION SHALL BE DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
4. SPECIAL INSPECTION IS NOT REQUIRED FOR WORK OF A MINOR NATURE OR AS WARRANTED BY CONDITIONS IN THE JURISDICTION AS APPROVED BY THE BUILDING OFFICIAL. THUS, SPECIAL INSPECTION ITEMS ABOVE MAY BE WAIVED AS DEEMED APPROPRIATE BY THE BUILDING OFFICIAL.
5. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.
6. STRUCTURAL OBSERVATION NOT REQUIRED.

ABBREVIATIONS

A.B.	ANCHOR BOLT
AGL	ABOVE GRADE LEVEL
ARCH'L	ARCHITECTURAL DRAWINGS
B.C.	BOLT CIRCLE
BLDG	BUILDING
BLK	BLOCK
BLK'G	BLOCKING
BM	BEAM
BRN'G	BEARING
CANT'L	CANTILEVERED
C.L.	CENTER LINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONT	CONTINUOUS
DBL	DOUBLE
ø	DIAMETER
DTL	DETAIL
(E)	EXISTING
EA.	EACH
EL	ELEVATION
EOR	ENGINEER OF RECORD
FND	FOUNDATION
FTG	FOOTING
GL or GLB	GLUE LAMINATED (BEAM)
HDR	HEADER
HORIZ.	HORIZONTAL
H.D.	HOLD DOWN
I.D.	INNER DIAMETER
MFR	MANUFACTURER/MANUFACTURED
(N)	NEW
N.T.S.	NOT TO SCALE
o/	OVER
O.C.	ON CENTER
O.D.	OUTER DIAMETER
OPT'L	OPTIONAL
O.S.B.	ORIENTED STRAND BOARD
(P)	PROPOSED
PL	PLATE
REQ'D	REQUIRED
SHTH'G	SHEATHING
SHT	SHEET
SIM.	SIMILAR
STL	STEEL
THK	THICK
t/	TOP OF
T.O.F.	TOP OF FOOTING
T.O.W.	TOP OF WALL
T&B	TOP AND BOTTOM
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
w/	WITH
u/	UNDER

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NEWTON, MA 02460
617-212-3123

DATE: 8/9/2021 | DESIGNED: BRF | DRAFTER: DKF

REVISIONS

REV	DATE	DESCRIPTION

T-MOBILE

STRUCTURAL NOTES

CT11862C

5'-0" ENCLOSURE EXTENSION

1 FAIRFIELD AVENUE
DANBURY, CT 06810
FAIRFIELD COUNTY

STATE OF CONNECTICUT
WILLIS LIND HOLMES
No. 34383
LICENSED PROFESSIONAL ENGINEER

8/9/2021

U4506.002.211

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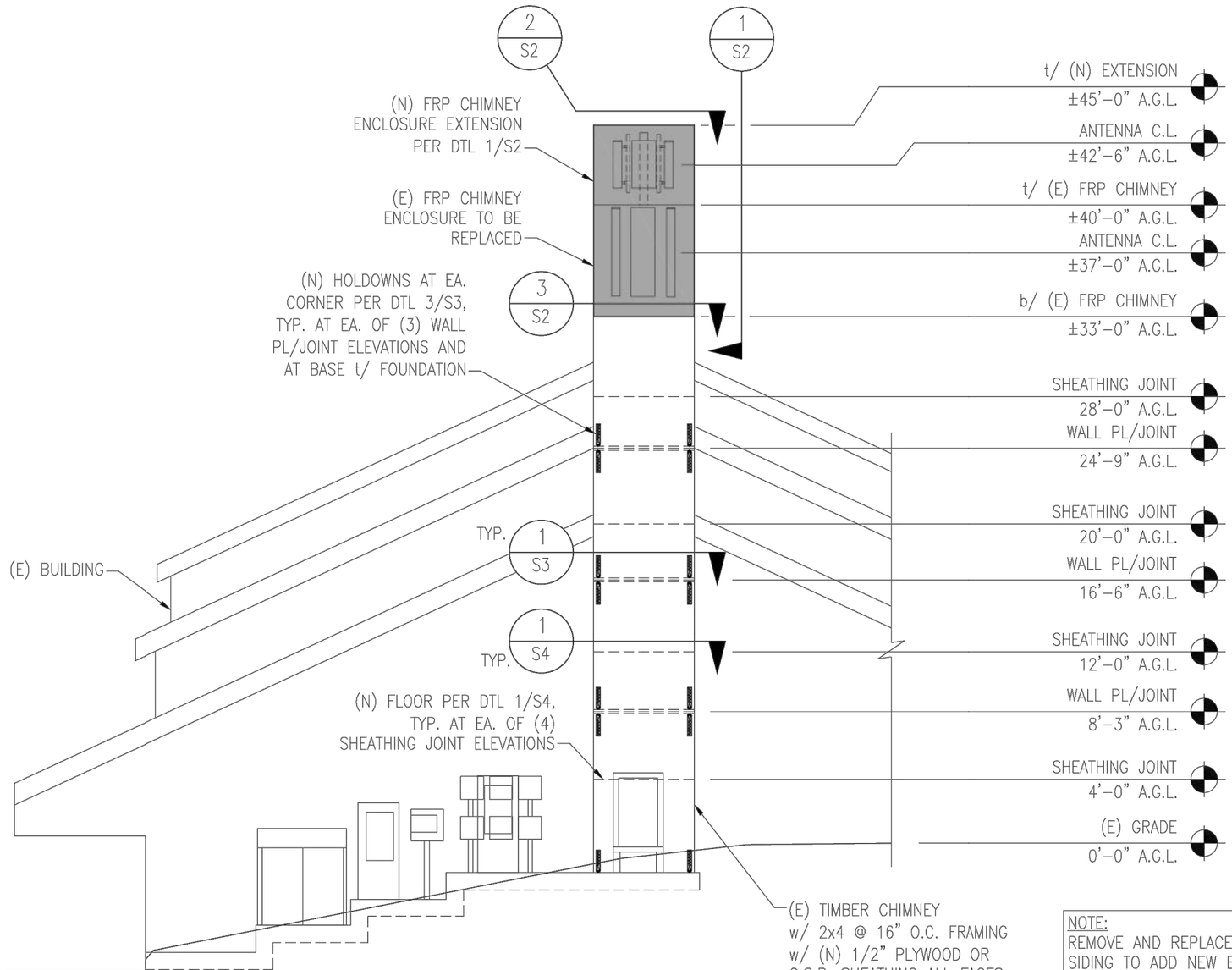

NOTE:
REMOVE AND REPLACE EXISTING SIDING TO ADD NEW EDGE NAILING AT SHEATHING, TYP. ALL FACES OF FRAMED WALLS AT CHIMNEY.

OVERALL ELEVATION VIEW

1

N.T.S.

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T-MOBILE

OVERALL ELEVATION VIEW

CT11862C

5'-0" ENCLOSURE EXTENSION

1 FAIRFIELD AVENUE
DANBURY, CT 06810
FAIRFIELD COUNTY

STATE OF CONNECTICUT
WELLS LIND HOLMES
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8/9/2021

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S1

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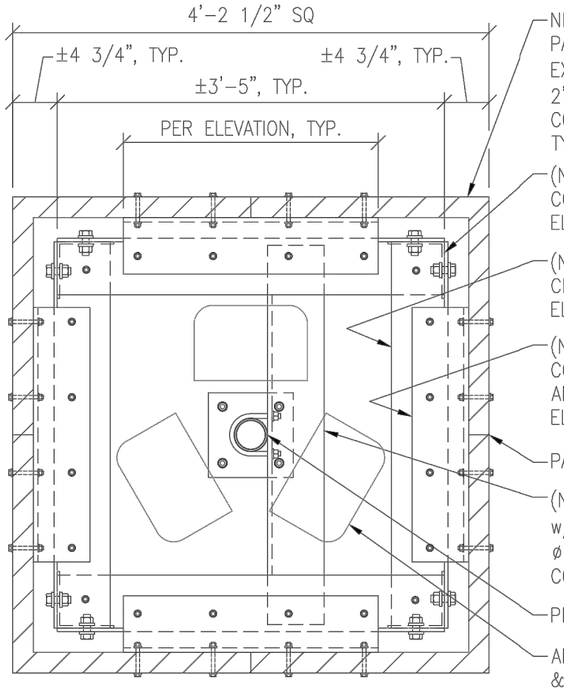


NEW RF FRIENDLY PANELS TO MATCH EXISTING w/ 2'x2'x2" THICK CORNER PANELS, TYP.

(N) FRP ANGLE COLUMN PER ELEVATION, TYP.

(N) FRP TOP CHORD ANGLE PER ELEVATION, TYP.

(N) FRP CONNECTION ANGLE PER ELEVATION, TYP.

PANEL JOINT, TYP.

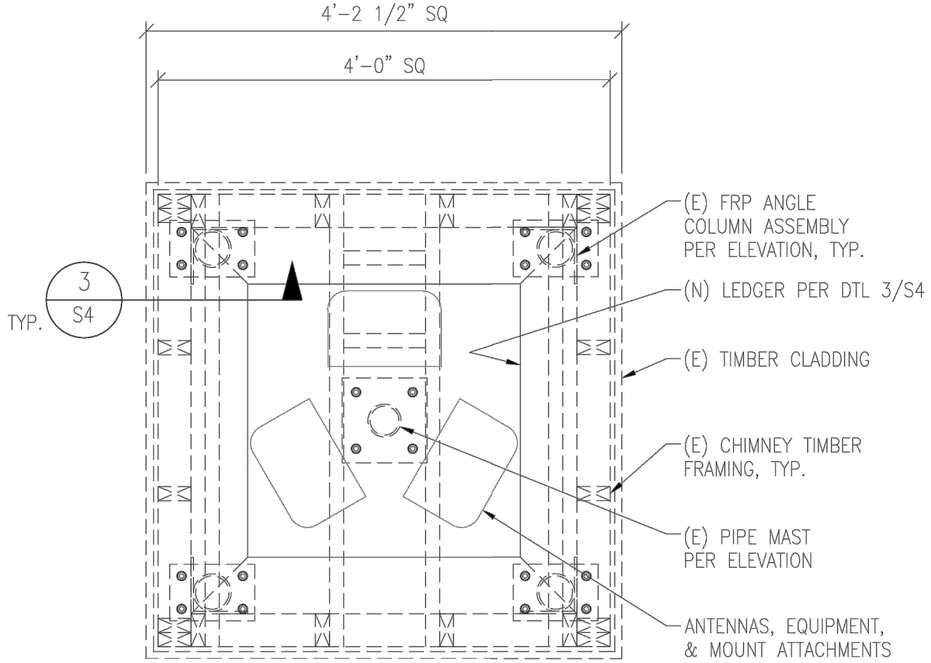
(N) 6x6x1/2" FRP ANGLE HORIZONTAL BRACE w/ U-BOLTS TO PIPE MAST AS SHOWN AND ø1/2" FRP BOLT AT EA END THROUGH CONNECTION ANGLE AND TOP CHORD ANGLE

PIPE MAST PER ELEVATION

ANTENNAS, EQUIPMENT, & MOUNT ATTACHMENTS BY OTHERS

NOTES:
1. (8) FASTENERS, MIN., PER RF FRIENDLY PANEL MFR.
2. SEE FRP NOTES, SHEET N1.
3. RF FRIENDLY PANELS TO BE DESIGNED BY THE MFR FOR THE MAX. SPAN BETWEEN GIRTS AS SHOWN FOR A DESIGN WIND PRESSURE OF 74 psf (1.0 WIND) IN ANY DIRECTION.
4. VERIFY CONNECTIONS TO FRAMING AS SHOWN.

CHIMNEY PLAN VIEW – TOP (2)
N.T.S.



(E) FRP ANGLE COLUMN ASSEMBLY PER ELEVATION, TYP.

(N) LEDGER PER DTL 3/S4

(E) TIMBER CLADDING

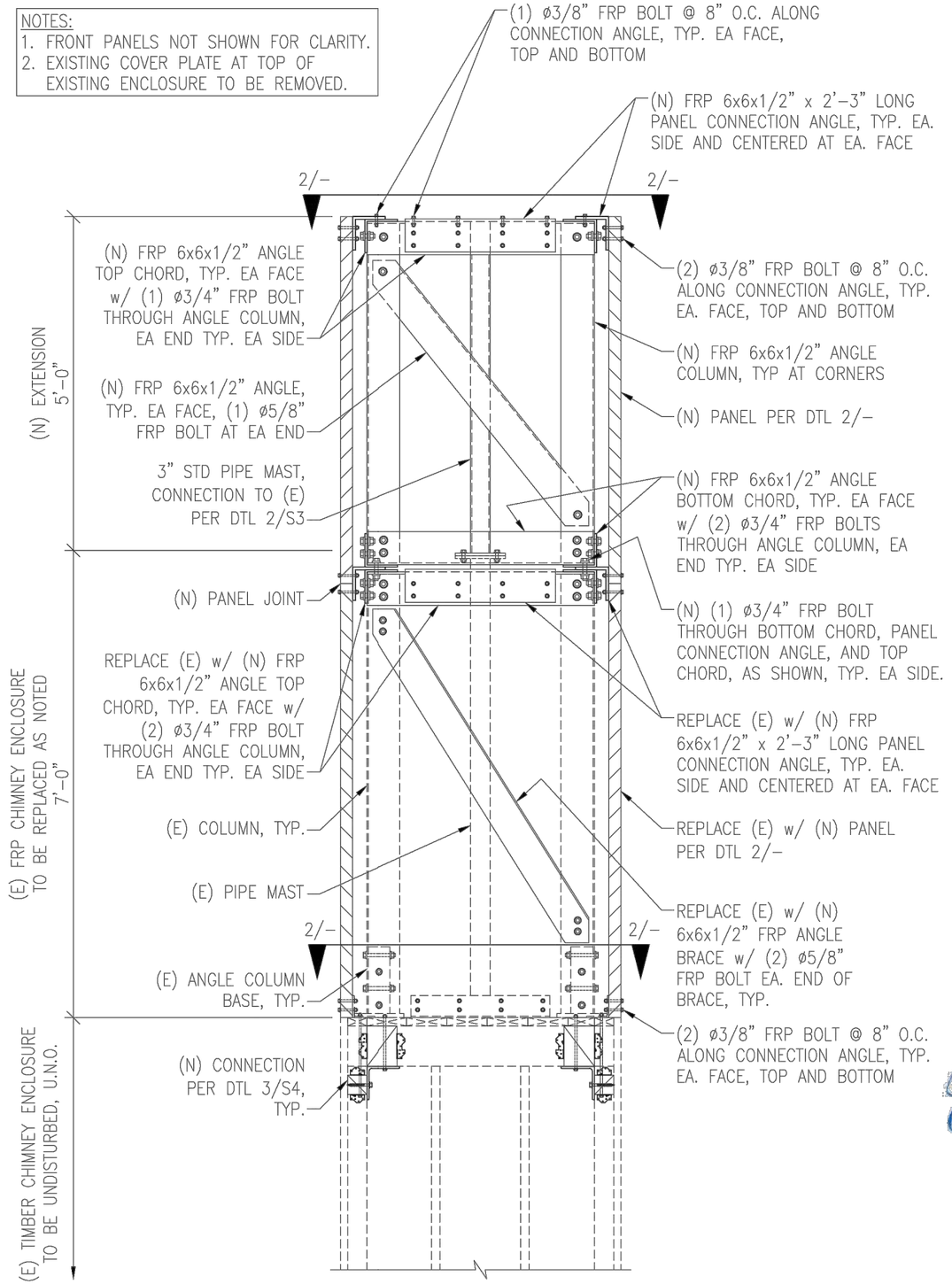
(E) CHIMNEY TIMBER FRAMING, TYP.

(E) PIPE MAST PER ELEVATION

ANTENNAS, EQUIPMENT, & MOUNT ATTACHMENTS BY OTHERS

CHIMNEY SECTION VIEW (3)
N.T.S.

NOTES:
1. FRONT PANELS NOT SHOWN FOR CLARITY.
2. EXISTING COVER PLATE AT TOP OF EXISTING ENCLOSURE TO BE REMOVED.



(1) ø3/8" FRP BOLT @ 8" O.C. ALONG CONNECTION ANGLE, TYP. EA FACE, TOP AND BOTTOM

(N) FRP 6x6x1/2" x 2'-3" LONG PANEL CONNECTION ANGLE, TYP. EA. SIDE AND CENTERED AT EA. FACE

(N) FRP 6x6x1/2" ANGLE TOP CHORD, TYP. EA FACE w/ (1) ø3/4" FRP BOLT THROUGH ANGLE COLUMN, EA END TYP. EA SIDE

(2) ø3/8" FRP BOLT @ 8" O.C. ALONG CONNECTION ANGLE, TYP. EA. FACE, TOP AND BOTTOM

(N) FRP 6x6x1/2" ANGLE COLUMN, TYP AT CORNERS

(N) FRP 6x6x1/2" ANGLE, TYP. EA FACE, (1) ø5/8" FRP BOLT AT EA END

(N) PANEL PER DTL 2/-

3" STD PIPE MAST, CONNECTION TO (E) PER DTL 2/S3

(N) FRP 6x6x1/2" ANGLE BOTTOM CHORD, TYP. EA FACE w/ (2) ø3/4" FRP BOLTS THROUGH ANGLE COLUMN, EA END TYP. EA SIDE

(N) PANEL JOINT

(N) (1) ø3/4" FRP BOLT THROUGH BOTTOM CHORD, PANEL CONNECTION ANGLE, AND TOP CHORD, AS SHOWN, TYP. EA SIDE.

REPLACE (E) w/ (N) FRP 6x6x1/2" ANGLE TOP CHORD, TYP. EA FACE w/ (2) ø3/4" FRP BOLT THROUGH ANGLE COLUMN, EA END TYP. EA SIDE

REPLACE (E) w/ (N) FRP 6x6x1/2" x 2'-3" LONG PANEL CONNECTION ANGLE, TYP. EA. SIDE AND CENTERED AT EA. FACE

(E) COLUMN, TYP.

REPLACE (E) w/ (N) PANEL PER DTL 2/-

(E) PIPE MAST

REPLACE (E) w/ (N) 6x6x1/2" FRP ANGLE BRACE w/ (2) ø5/8" FRP BOLT EA. END OF BRACE, TYP.

(E) ANGLE COLUMN BASE, TYP.

(2) ø3/8" FRP BOLT @ 8" O.C. ALONG CONNECTION ANGLE, TYP. EA. FACE, TOP AND BOTTOM

(N) CONNECTION PER DTL 3/S4, TYP.

CHIMNEY ELEVATION VIEW (1)
N.T.S.

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REVISIONS

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T-MOBILE

CHIMNEY PLAN & ELEVATION VIEWS

CT11862C

5'-0" ENCLOSURE EXTENSION

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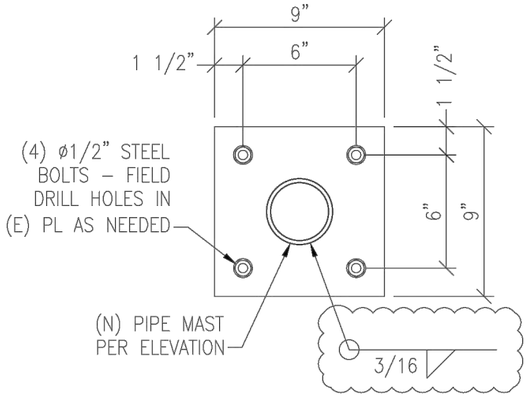
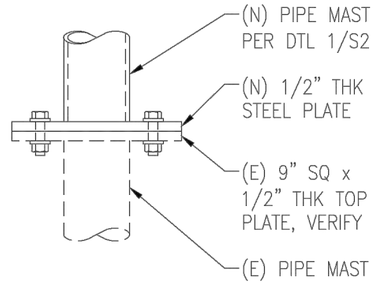
S2 REV 0





PIPE MAST CONNECTION 2

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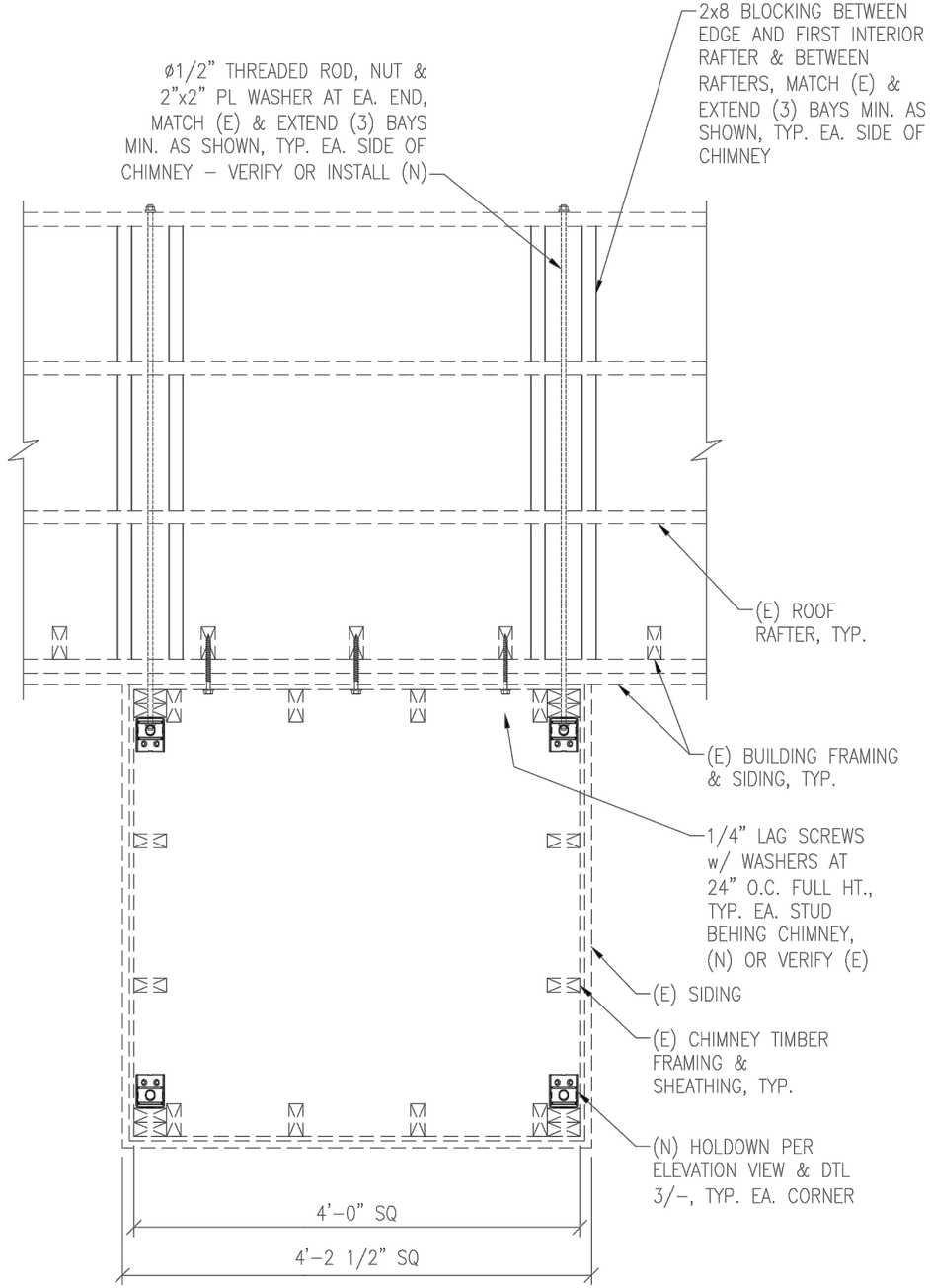

(E) CHIMNEY SECTION VIEW – TIMBER 1

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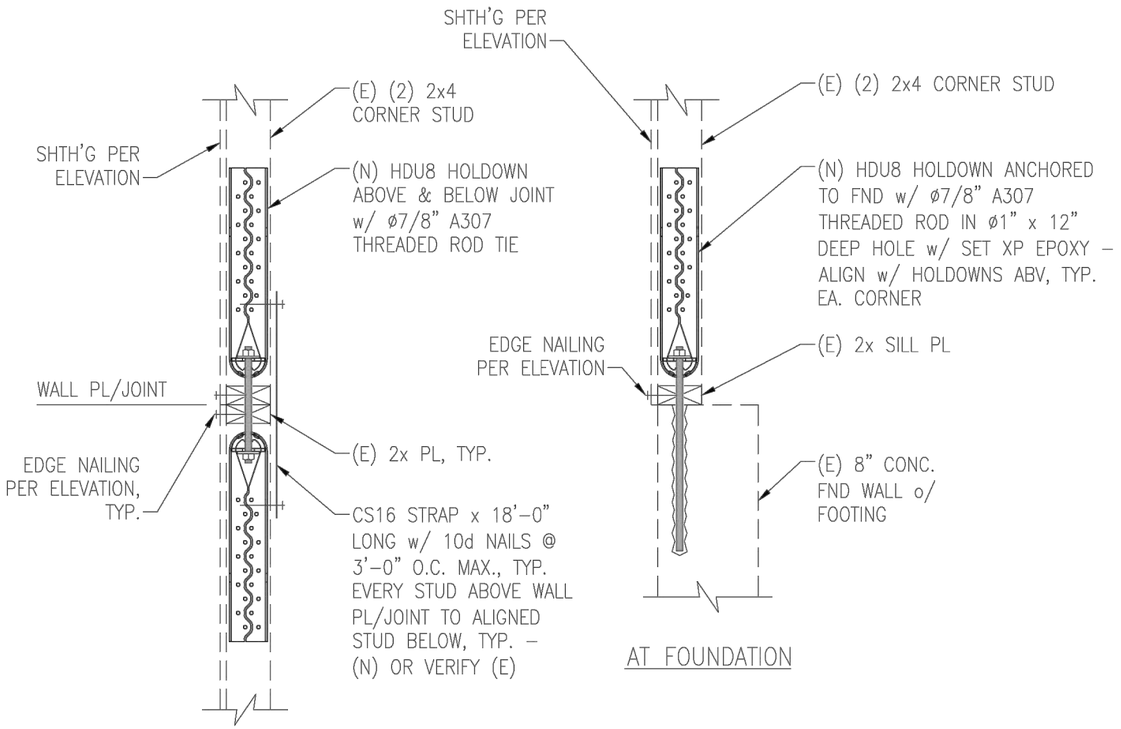


HOLDOWN 3

N.T.S.

VECTOR ENGINEERS
651 W. Galena Park Blvd., Suite 101 (801) 990-1775
Draper, UT 84020 www.vectorse.com
CT FIRM LICENSE #: PEC 0001229

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

DATE: 8/9/2021	DESIGNED: BRF	DRAFTER: DKF

REVISIONS

REV	DATE	DESCRIPTION

T-MOBILE

STRUCTURAL DETAILS

CT11862C

5'-0" ENCLOSURE EXTENSION

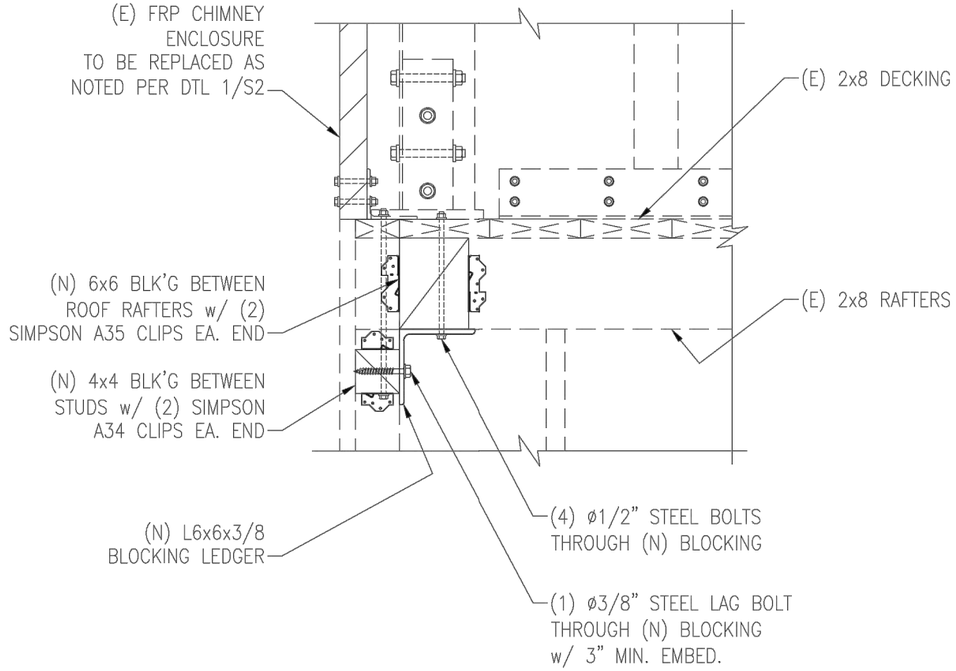
1 FAIRFIELD AVENUE
DANBURY, CT 06810
FAIRFIELD COUNTY

STATE OF CONNECTICUT
WELLS LIND HOLMES
No. 34383
LICENSED PROFESSIONAL ENGINEER

8/9/2021

U4506.002.211

S3 REV 0



BLOCKING LEDGER CONNECTION

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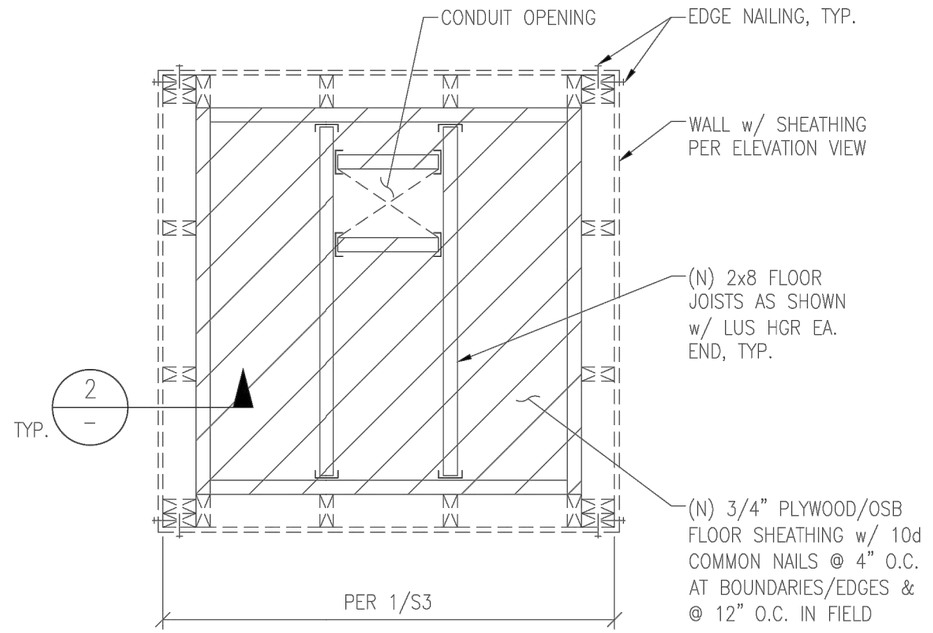
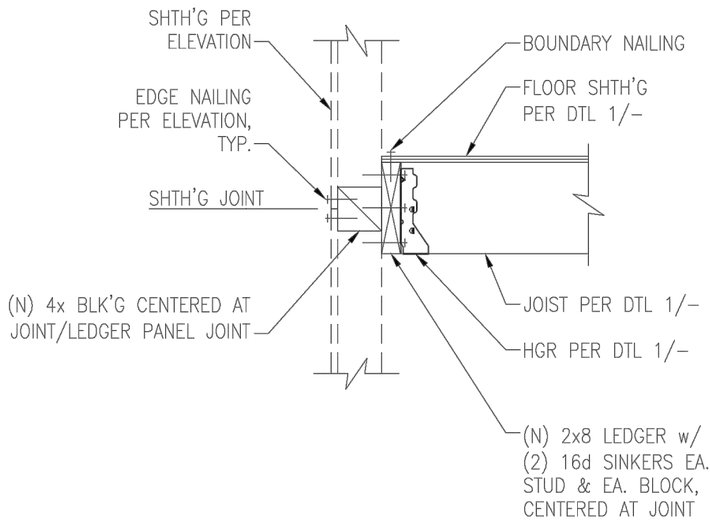
3



(E) CHIMNEY SECTION VIEW – FLOOR

N.T.S.

1



WALL SECTION VIEW

N.T.S.

2

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REVISIONS

REV	DATE	DESCRIPTION

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STRUCTURAL DETAILS

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5'-0" ENCLOSURE EXTENSION

1 FAIRFIELD AVENUE
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FAIRFIELD COUNTY

STATE OF CONNECTICUT
WELLS LIND HOLMES
No. 34383
LICENSED PROFESSIONAL ENGINEER

8/9/2021

U4506.002.211

S4

REV 0

ATTACHMENT 4

Project Number: U4506-002-211
October 5, 2021

Structural Analysis report with upgrades

Prepared for:

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

T-Mobile Site Number: CT11862C

Site Location: 1 Fairfield Ave., Danbury, CT 06810

Subject And Reference:

The purpose of this analysis is to evaluate the structural capacity of the wireless telecommunication installation on the existing concealed monopole located at 1 Fairfield Ave., Danbury, CT 06810, for the additions and alterations proposed by T-Mobile, see Table 1 and 2. The structural analysis is based on the following information provided to Vector Engineers:

Lease Exhibit prepared by Foresite LLC dated 11/10/2020.
Structural opinion letter prepared by Vertical Resources Group, Inc. dated 02/17/2017.
Construction documents prepared by Clough Harbour & Associates LLP, dated 12/30/2005.
Chimney Design Computations prepared by Clough Harbour & Associates LLP, dated 12/30/2005.

Table 1. Existing Configuration of T-Mobile Appurtenances:

Sector	Rad Center (ft.)	Antennas & Equipment	Cables
Alpha, Beta, & Gamma	37	(3) Commscope - RV4PX306R (PENTA) Antennas (3) Generic Twin Style 1A-PCS TMAs (3) Generic Twin Style 1B - AWS TMAs (3) Ericsson Andrew Smart Bias Ts	(25) 7/8" coax (1) 6x12 HCS

Table 2. Proposed Configuration of T-Mobile Appurtenances:

Sector	Rad Center (ft.)	Antennas & Equipment	Cables
Alpha, Beta, & Gamma	37	(3) RFS - APXVAA4L18_43-U-NA20 (DoDeca) Antennas	(36) 7/8" coax
	42.5	(3) Ericsson AIR6449 B41 (Active Antenna - Massive MIMO) Antennas	

U4506-002-211
CT11862C

Please be advised as follows:

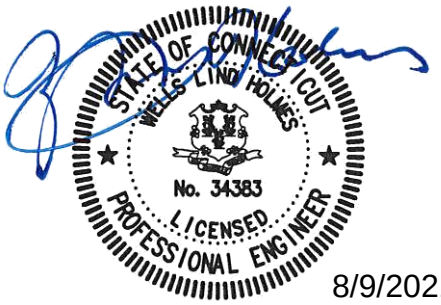
> Based upon our calculations and review of the documents noted above, we conclude that the existing building chimney with upgrades and FRP enclosure extension, as shown in the structural drawings, are adequate to support the loads associated with the proposed equipment. Supporting calculations for the gravity and lateral loading on the existing chimney and FRP enclosure are attached.

The recommendations above are provided based upon calculations prepared by our office and information the client provided. A representative from Vector has not visited the site. The analysis and conclusions described above are limited to those elements of the structure included in this report only and are based on the assumption that the structure was properly designed and constructed. Mount analysis for the proposed antenna equipment and cabinet anchorage design are not part of this scope and are by others. Vector Structural Engineering makes no claim as to the correctness of the original design or the current condition of the structure, which is assumed to be in good condition, free of damage or deterioration. The contractor shall notify Vector Structural Engineering immediately should any damage, deterioration or discrepancies between the as-built condition of the existing structure and the assumed condition described in this report and on the drawings be found.

We hope this meets your needs. If you have any further questions regarding this matter, please call this office at your convenience.

Very truly yours,

VECTOR STRUCTURAL ENGINEERING, LLC



8/9/2021

Wells L. Holmes, P.E.
Project Engineer

WLH/brf
Enclosures

JOB NO.: U4506.002.211

PROJECT: CT11862C

Design Criteria:

Code: Structural design is based on the International Building Code, 2015 Edition and the ASCE 7-10 standard.

Wind: Basic wind speed = 120 mph (3-second gust) per the ASCE 7-10 standard
Risk Category: II
Wind exposure: C

Seismic: Component Importance Factor, Ip = 1.0
Risk Category: II
Mapped spectral response accelerations: S_S = 0.217g S_1 = 0.067g
Site class: D
Spectral response coefficients: S_{DS} = 0.231g S_{D1} = 0.107g
Seismic design category: B
Analysis procedure: Equivalent Lateral Force

General Notes:

1 The contractor shall verify dimensions, conditions and elevations before starting work. The engineer shall be notified immediately if any discrepancies are found.
2 The typical notes and details shall apply in all cases unless specifically detailed elsewhere. Where no detail is shown, the construction shall be as shown for other similar work and as required by the building code.
3 These calculations are limited to the structural members shown in these calculations only.
4 The contractor shall be responsible for compliance with local construction safety orders. Approval of shop drawings by the architect or structural engineer shall not be construed as accepting this responsibility.
5 All structural framing members shall be adequately shored and braced during erection and until full lateral and vertical support is provided by adjoining members.

Structural Steel:

1 All structural steel code checks based on the AISC, 14th Edition per the ASCE 7 standard
2 All steel pipe to be per ASTM A53 GR. B (35 KSI), U.N.O.
3 All steel round tubes (HSS) to be per ASTM A500 GR. B (42 KSI), U.N.O.
4 All steel rectangular tubes (HSS) to be per ASTM A500 GR. B (46 KSI), U.N.O.
5 All other structural steel shapes & plates shall be per ASTM A36, U.N.O.
6 All bolts for steel-to-steel connections shall be per ASTM F3125 GR. A325 U.N.O.
7 All bolted connections shall be tightened per the "turn-of-nut" method as defined by AISC.
8 All welding shall be performed by certified welders in accordance with the latest edition of the American Welding Society (AWS) D1.1
9 All steel surfaces shall be galvanized in accordance with ASTM A123 and ASTM F2329 standards, thoroughly coated with a zinc-rich primer, or otherwise protected as noted on the structural drawings.

JOB NO.: U4506.002.211

PROJECT: CT11862C

Fiberglass Reinforced Plastic (FRP):

1 All structural shapes shall be Bedford Reinforced Plastics produced using the pultrusion process.
2 All cut edges and holes shall be sealed with a resin compatible with the resin matrix used in the structural shape.
3 The fabricator and contractor shall exercise precautions necessary to protect the fiberglass pultruded structural shapes from abuse to prevent breakage, nicks, gouges, etc. during fabrication, handling, and installation.
4 Structural shapes shall be fabricated and assembled as indicated on the design drawings.
5 FRP threaded rods and nuts shall be tightened to snug tight and turned an additional 1/2 turn and locked with epoxy

JOB NO.: U4506.002.211

PROJECT: CT11862C

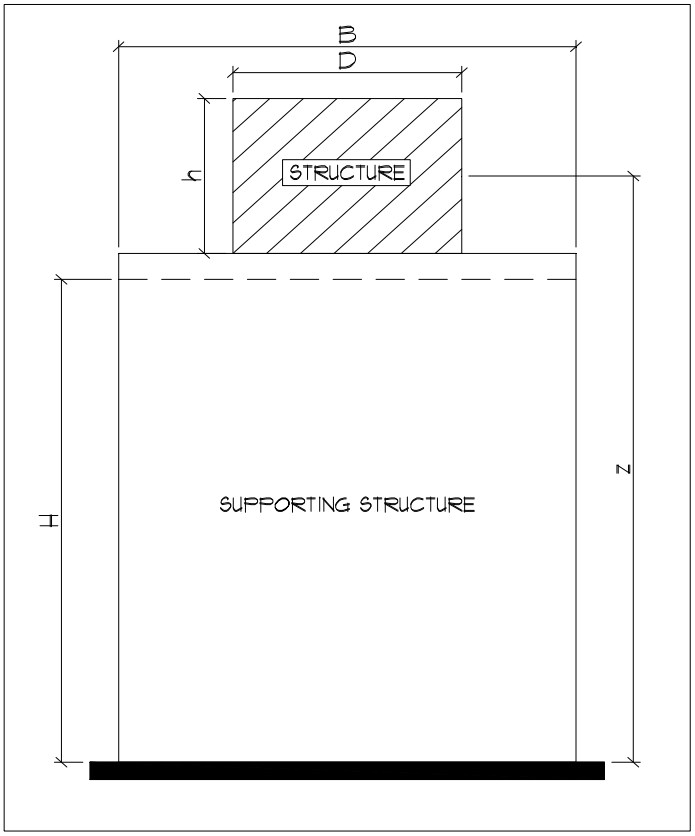
DESIGN WIND LOADS ON OTHER STRUCTURES:

(Chimneys, Tanks, Rooftop Equipment, & Similar Structures)

Label: Enclosure Wind

INPUT DATA:

Basic Wind Speed, V [mph]:	120
Exposure Category:	C
Importance Factor, I:	1.00
Structure:	
Cross-Section:	Square
Height, h [ft]:	12.0
Least Horizontal Dimension, D [ft]:	4.2
Average Elevation, z [ft]:	39.0
For Non-Rooftop, Flexible Structures, (if n_1 < 1 Hz):	
Depth, L [ft]:	
Natural Frequency, n_1 [Hz]:	
Damping Ratio, β:	0.005
Rooftop Structure?	Yes
Supporting Structure (of Rooftop Structure):	
Height, H [ft]:	30.0
Minimum Width, B [ft]:	55.0
For Flexible Supporting Structures, (if n_1 < 1 Hz):	
Depth, L [ft]:	
Natural Frequency, n_1 [Hz]:	
Damping Ratio, β:	0.005



DESIGN SUMMARY:

Design Wind Pressure, p [psf]:	**74.0**
Design Wind Pressure - Diagonal, p_d [psf]:	**57.3**

JOB NO.: U4506.002.211
PROJECT: CT11862C
SUBJECT: Appurtenance Mounting Systems
(TIA-222-H Chapter 16)

Location: Antenna Mount (Enclosed)
On a: building at 42.5 ft A.G.L.

Wind per: Indoor/Enclosed
Seismic per: ASCE 7

Appurtenances	(P) Ericsson AIR6449	(P) RFS APXVAA4L18_43-U								
Unit Weight (lbs)	105	131.3								
Quantity	3	3								
Height (Y) (in)	33.1	72								
Width/Diameter (X) (in)	20.6	24								
Depth (Z) (in)	8.6	8.5								
Shape:	Flat	Flat								
Wind Force per Unit:										
$(EPA)_N$ (ft^2)	5.68	14.67								
$(EPA)_T$ (ft^2)	2.49	6.16								
Factored (LRFD): (1.0W)										
Normal Force ($K_a*q_z*G_h*(EPA)_N$)	28.4	73.3								
Tangential Force ($K_a*q_z*G_h*(EPA)_T$)	12.5	30.8								
Seismic Force per Unit:										
Factored (LRFD): (1.0E)										
Lateral (lbs)	11.7	14.6								
Vertical (lbs)	4.9	6.1								

Dead Load, D:

Weight of Structure:	W_S = 191	lb	(1.05 x Material Weight from RISA Model)
Weight of Appurtenances:	W_A = 709	lb	
Total Weight:	W_p = 900	lb	

Wind Load, W: (5 psf 'Indoor/Enclosed' Wind Pressure)

Indoor/Enclosed Wind Pressure: 5.0 psf

Total Factored X-Direction Wind (Appurt. & Structure):	F_{WX} = 305	lb	**Wind Controls**
Total Factored Z-Direction Wind (Appurt. & Structure):	F_{WZ} = 130	lb	**Wind Controls**

JOB NO.: U4506.002.211
PROJECT: CT11862C
SUBJECT: Appurtenance Mounting Systems
(TIA-222-H Chapter 16)

Seismic Load, E: (ASCE 7, Section 13.3: Seismic Demands on Non-Structural Components)

Risk Category / Structure Class:		II		
Seismic Design Category:		B		
Component Importance Factor:	I_p =	1.00		(ASCE 7, Section 13.1.3)
Site Class:		D		
Mapped Spectral Response Acc. Parameter (Short Periods):	S_s =	0.217		(ASCE 7, Section 11.4.1)
Mapped Spectral Response Acc. Parameter (1 s Period):	S_1 =	0.067		(ASCE 7, Section 11.4.1)
Design Spectral Response Acc. Parameter (Short Periods):	S_{DS} =	0.231		(ASCE 7, Section 11.4.4)
Design Spectral Response Acc. Parameter (1 s Period):	S_{D1} =	0.107		(ASCE 7, Section 11.4.4)
Component Response Modification Factor:	R_p =	2.5		(ASCE 7, Table 13.6-1: Communication Equipment)
Component Amplification Factor:	a_p =	1.0		(ASCE 7, Table 13.6-1: Communication Equipment)
Overstrength Factor (req'd for anchorage to concrete):	Ω_o =	2.0		(ASCE 7, Table 13.6-1: Communication Equipment)
Component Attachment Height (Above Base of Structure):	z =	1.0	ft	
Average Height of Top of Structure (Above Base):	h =	1.0	ft	
	z/h =	1.0		(ASCE 7, Equation 13.3-1)
Lateral Seismic Design Force Weight Multiplier:	F_p/W =	0.111		(ASCE 7, Section 13.3.1.1)
Vertical Seismic Design Force Weight Multiplier:	F_v/W =	0.046		(ASCE 7, Section 13.3.1.2)
Unfactored X-Direction Seismic Design Force:	F_p,x =	100	lb	(ASCE 7, Section 13.3.1.1)
Unfactored Z-Direction Seismic Design Force:	F_p,z =	100	lb	(ASCE 7, Section 13.3.1.1)
Unfactored Vertical Seismic Design Force:	F_v =	42	lb	(ASCE 7, Section 13.3.1.2)
Total Factored (LRFD) X-Dir Seismic Design Force:	$1.0*F_p$,x =	100	lb	
Total Factored (LRFD) Z-Dir Seismic Design Force:	$1.0*F_p$,z =	100	lb	
Total Factored (LRFD) Vertical Seismic Design Force:	$1.0*F_v$ =	42	lb	

Ice Load, Di & Wi: (TIA-222-G, Section 2.6: Wind and Ice Loads)

Does Ice Need to be Considered?:		No		
Design Ice Thickness:	t_i =	0	in	(TIA-222-H, Section 2.6.10)

Live Loads, L:

Maintenance Load at Mount Pipe:	L_M =	N/A	lbs	(TIA-222-H, Section 16.3) - Apply at worst-case mount pipe
Maintenance Load at Center of Horizontal Beam:	L_V =	N/A	lbs	(TIA-222-H, Section 16.3) - Apply for beam supported at each end
Area Load:		N/A	psf	
Affected Area:		N/A	ft^2	

Snow Loads, S,:

Design Roof Snow Load:	S =	N/A	psf	(ASCE 7, Chapter 7)

Summary:

Vertical Loads Controlled By:	**"1.4 Dead" Load Combo**
X-Direction Horizontal Loads Controlled By:	**Wind Load Combos**
Z-Direction Horizontal Loads Controlled By:	**Wind Load Combos**

JOB NO.: U4506.002.211

PROJECT: CT11862C

LOADS SUMMARY

Label: Enclosure FRP: Bedford

Dead Load, D:

Component:	Weight							
6x6x1/2 FRP Angle:	4.80	plf	Length =	143.5	ft	Total =	689	lb
3" STD Steel Pipe:	7.58	plf	Length =	12	ft	Total =	91	lb
3-1/2" STD Steel Pipe:	9.11	plf	Length =	4	ft	Total =	36	lb
3/8" FRP Plate:	3.56	psf	Area =	202	ft^2	Total =	720	lb
L4x4x1/4Steel Angle:	6.60	plf	Length =	8.3	ft	Total =	55	lb
Misc:	967.9856	lb	Number =	1		Total =	968	lb
						W_p =	2559	lb

Wind Load, W:

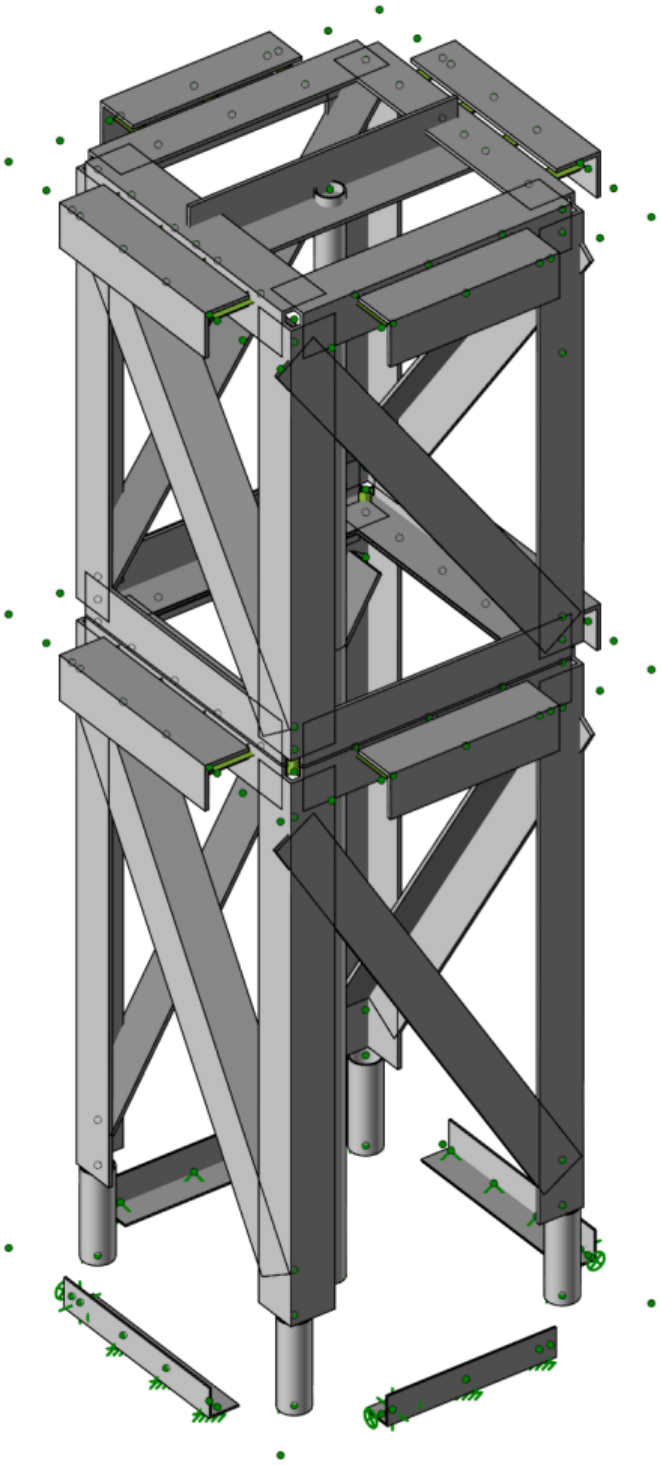
p =	44.4	psf	(ASD pressure - see wind calcs)			
Height, h:	12.0	ft				
Max. Horiz. Dim.:	4.2	ft	V_{trans}:	2243	lb	**Controls**
Min. Horiz. Dim.:	4.2	ft	V_{long}:	2243	lb	**Controls**

Seismic Load, E: Consider Seismic: Yes

Architectural Component: Cantilever element unbraced or braced below center of mass

Risk Category:	II	F_a =	1.6	
Seismic Design Category:	B	F_v =	2.4	
I_p =	1.0	S_{MS} =	0.347	
Site Class:	D	S_{M1} =	0.161	
R_p =	2.5	S_{DS} =	0.231	
S_s =	0.217	S_{D1} =	0.107	
S_1 =	0.067			

a_p =	2.5		0.7 * $F_{p,min}$ =	124	lb
z =	1.0	ft	0.7 * $F_{p,max}$ =	663	lb
h =	1.0	ft			
z/h =	1.0		0.7 * $F_{p,trans}$ =	498	lb
			0.7 * $F_{p,long}$ =	498	lb
			0.7 * $F_{p,vert}$ =	83	lb



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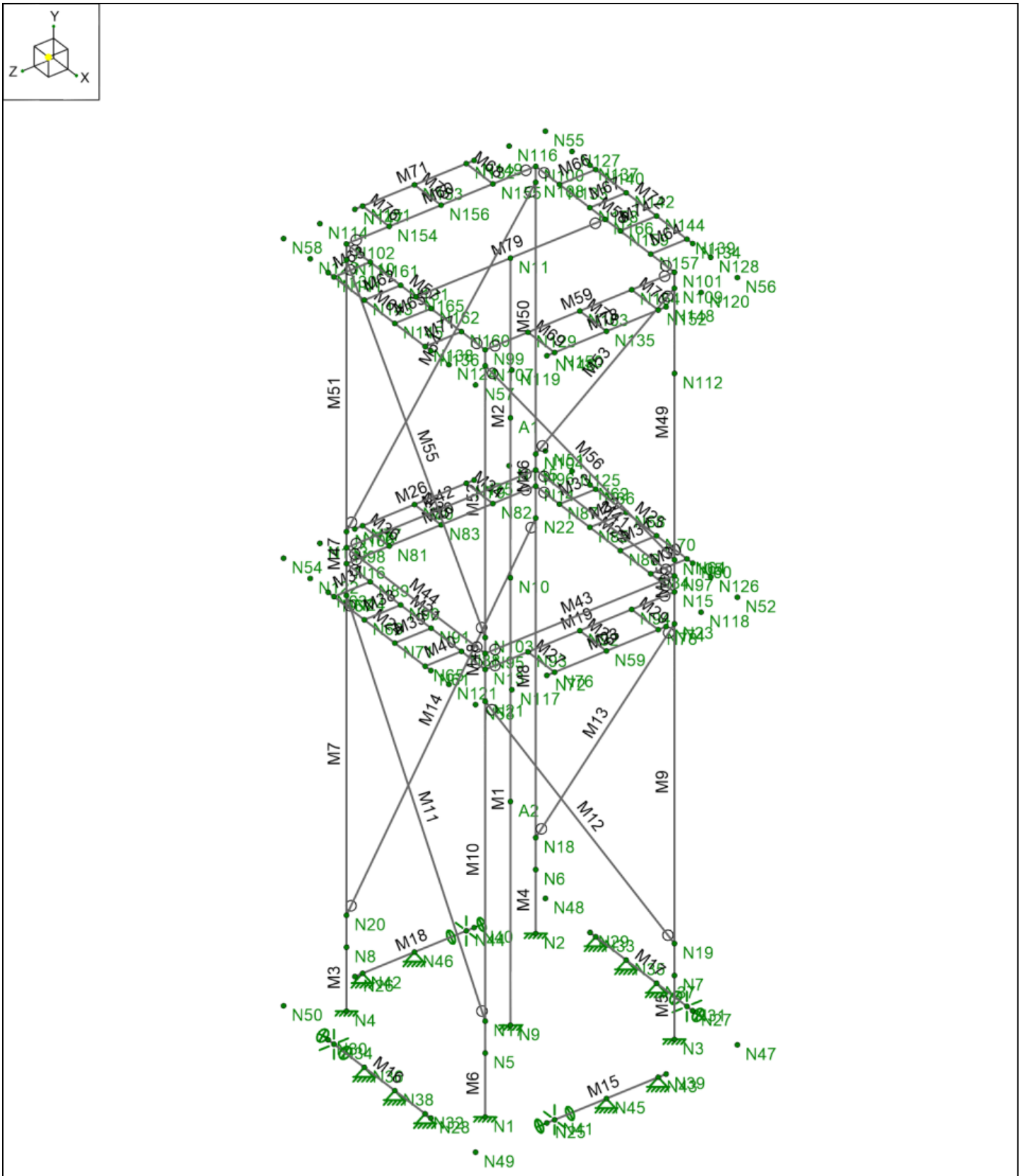

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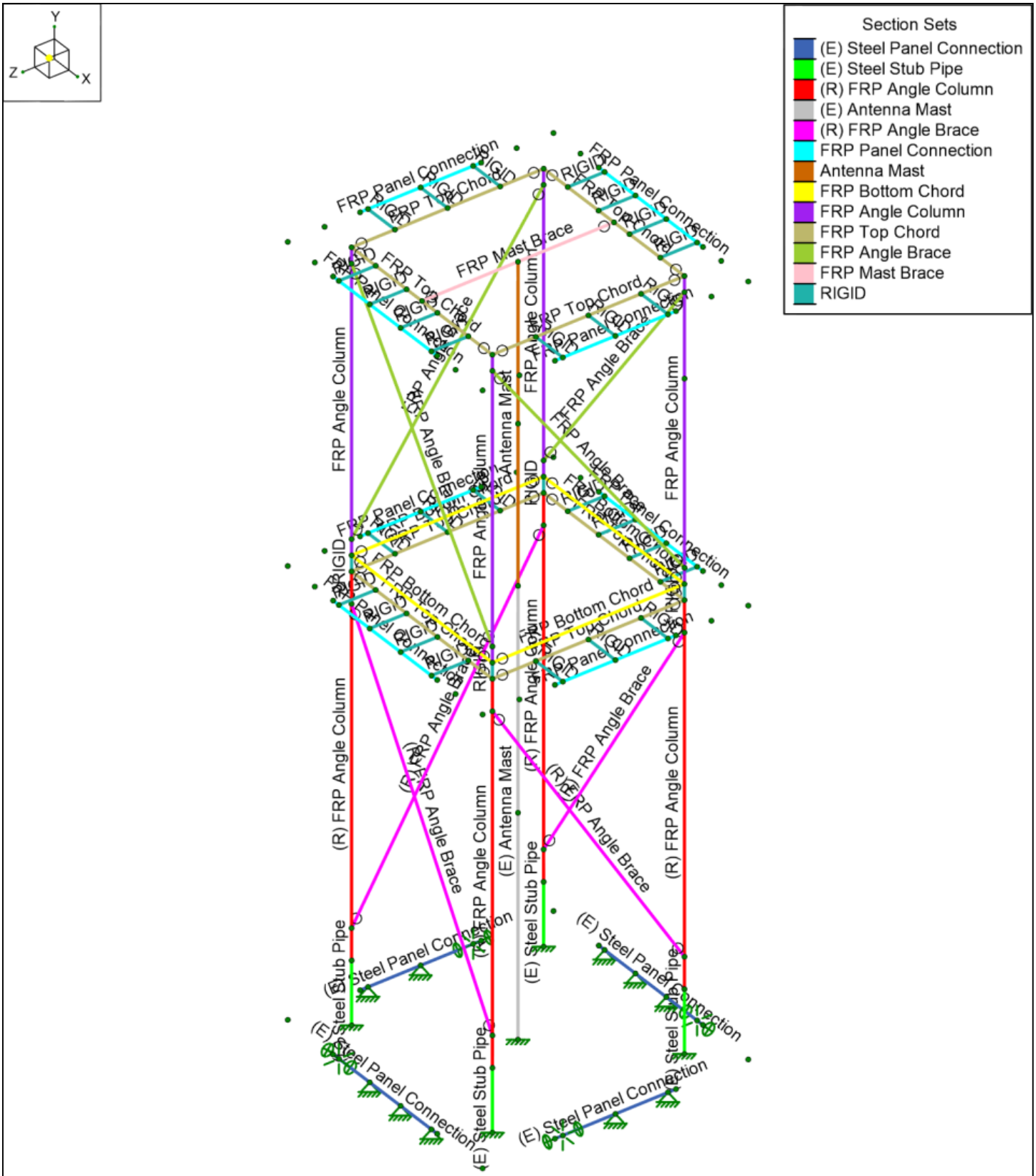

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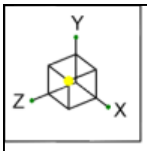

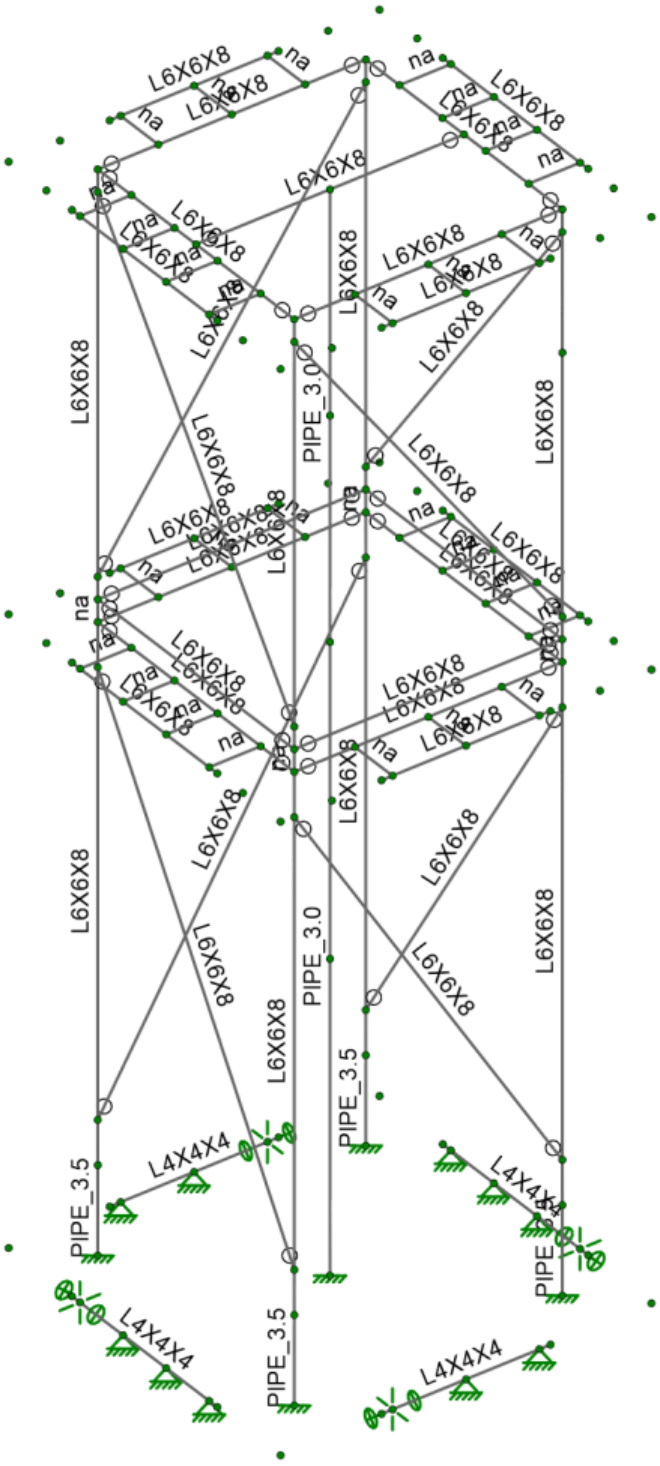

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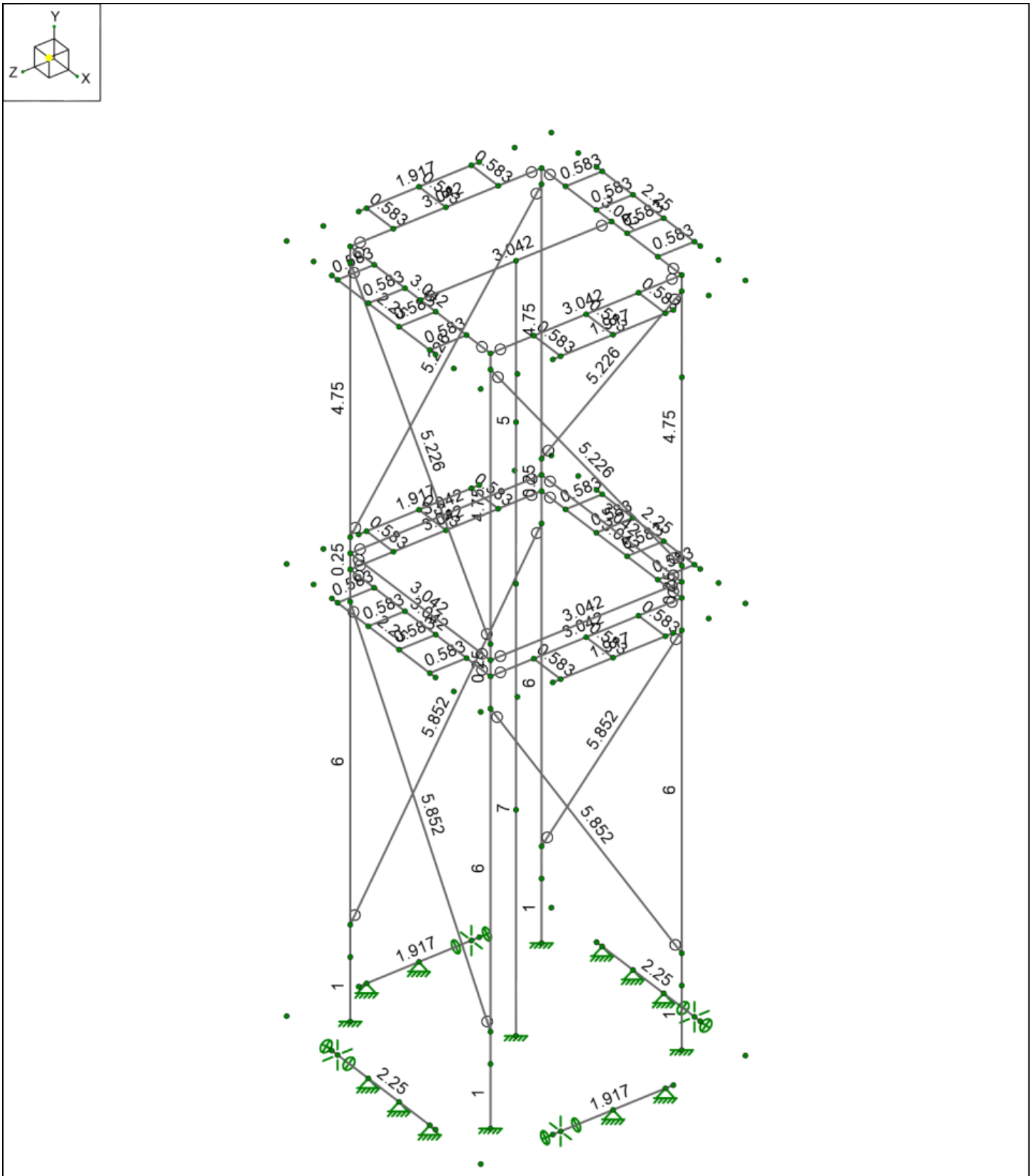

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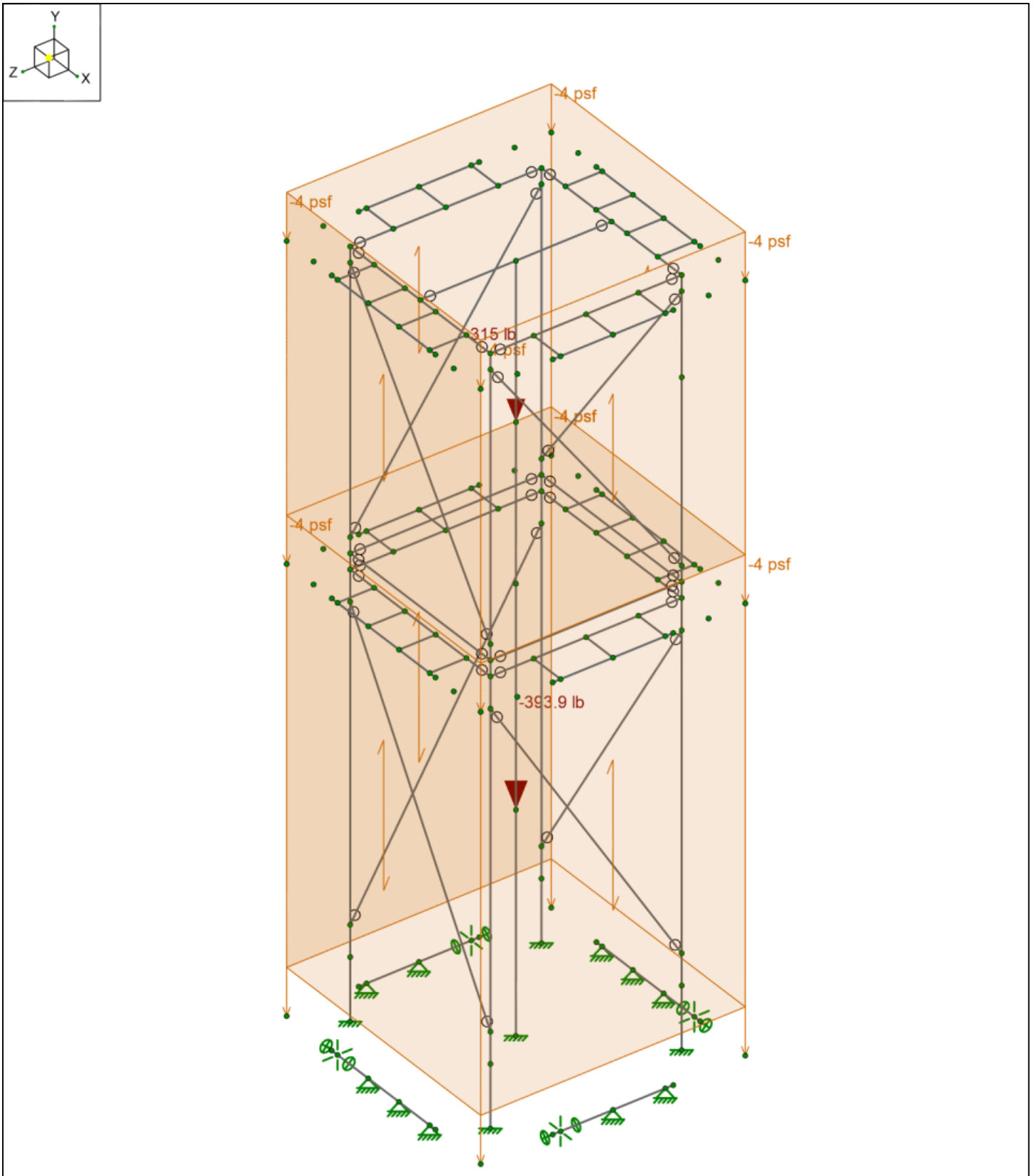

Loads: LC 1, D

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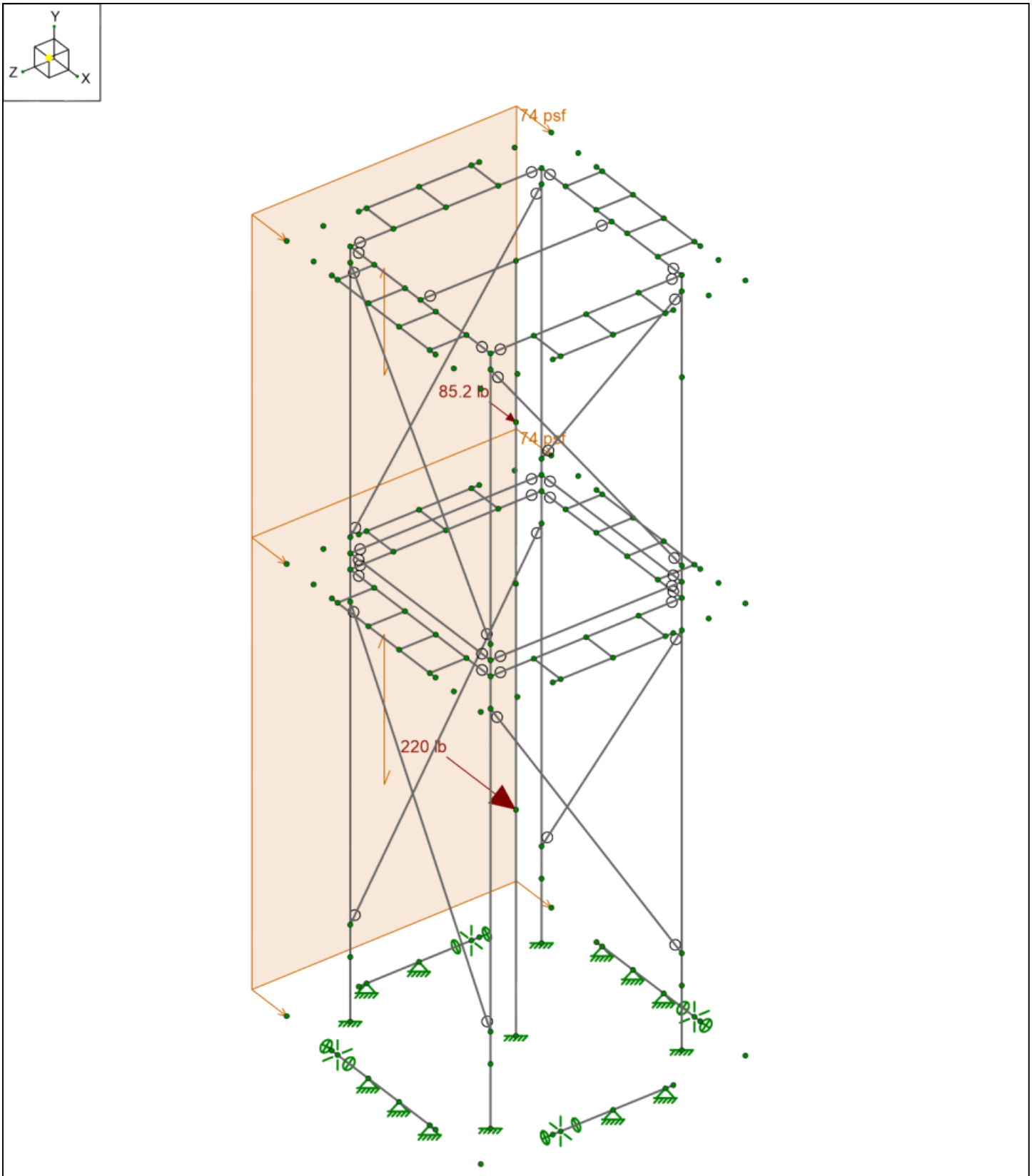

Loads: BLC 2, WL+X

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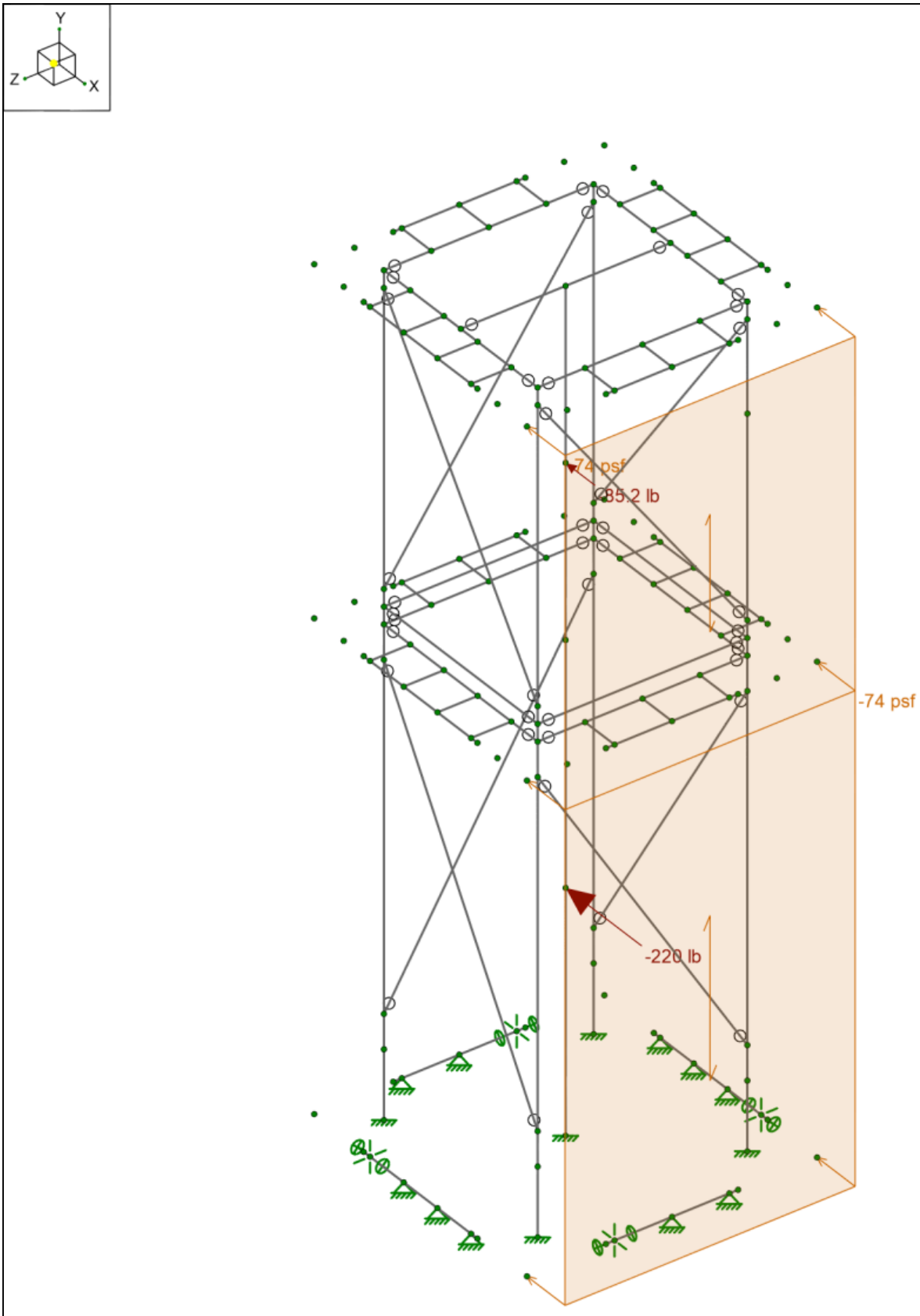

Loads: BLC 3, WL-X

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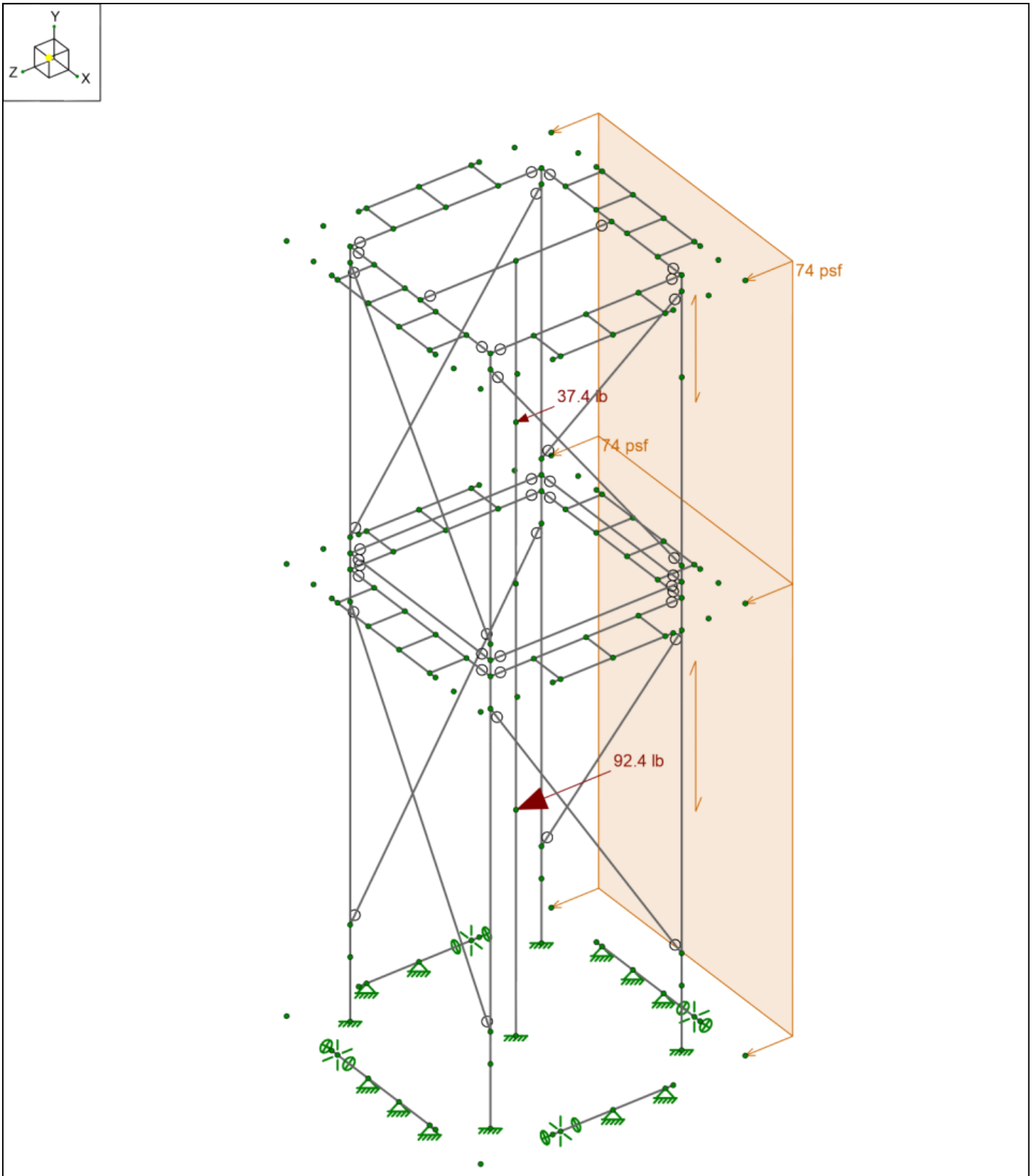

Loads: BLC 4, WL+Z

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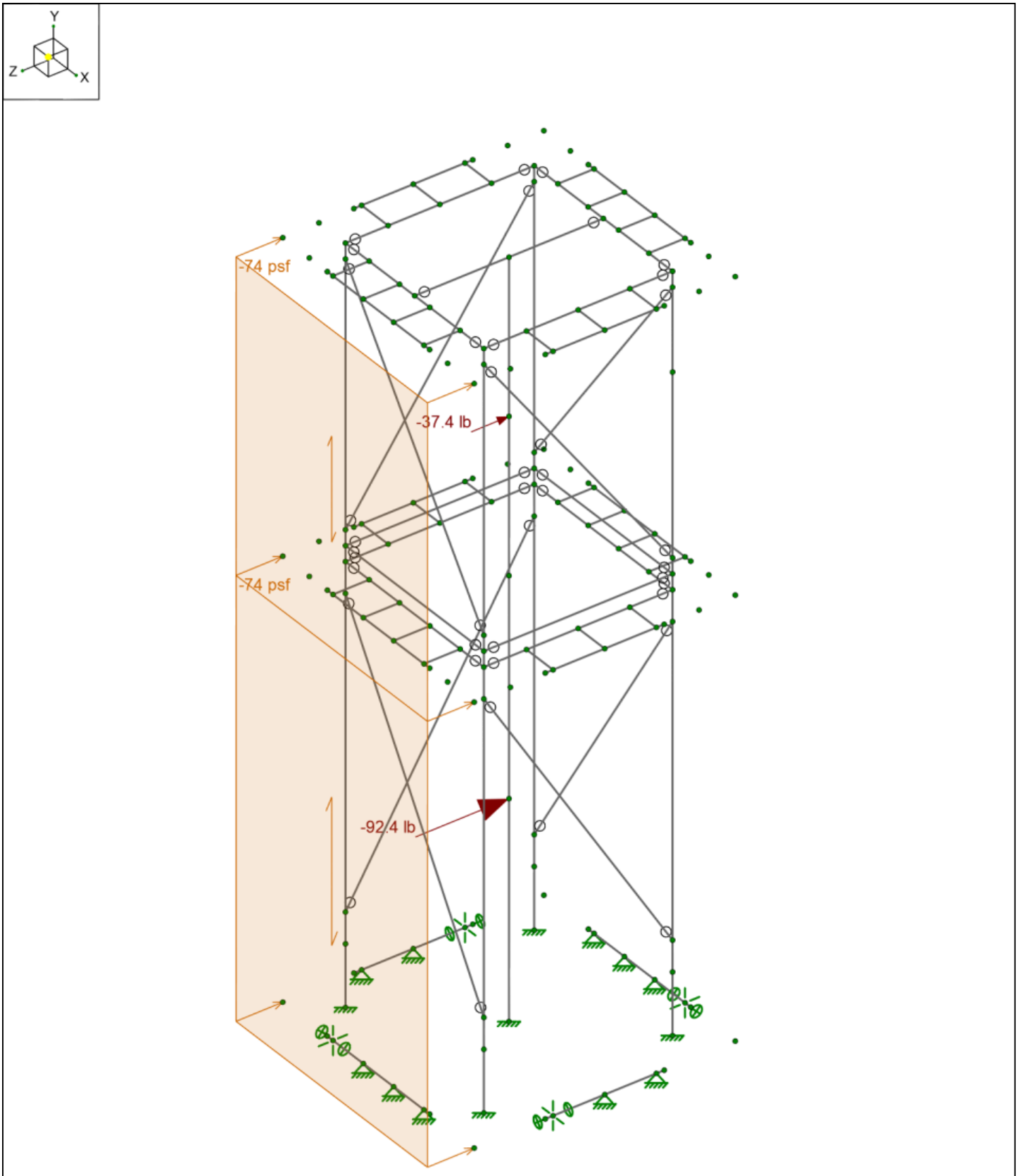
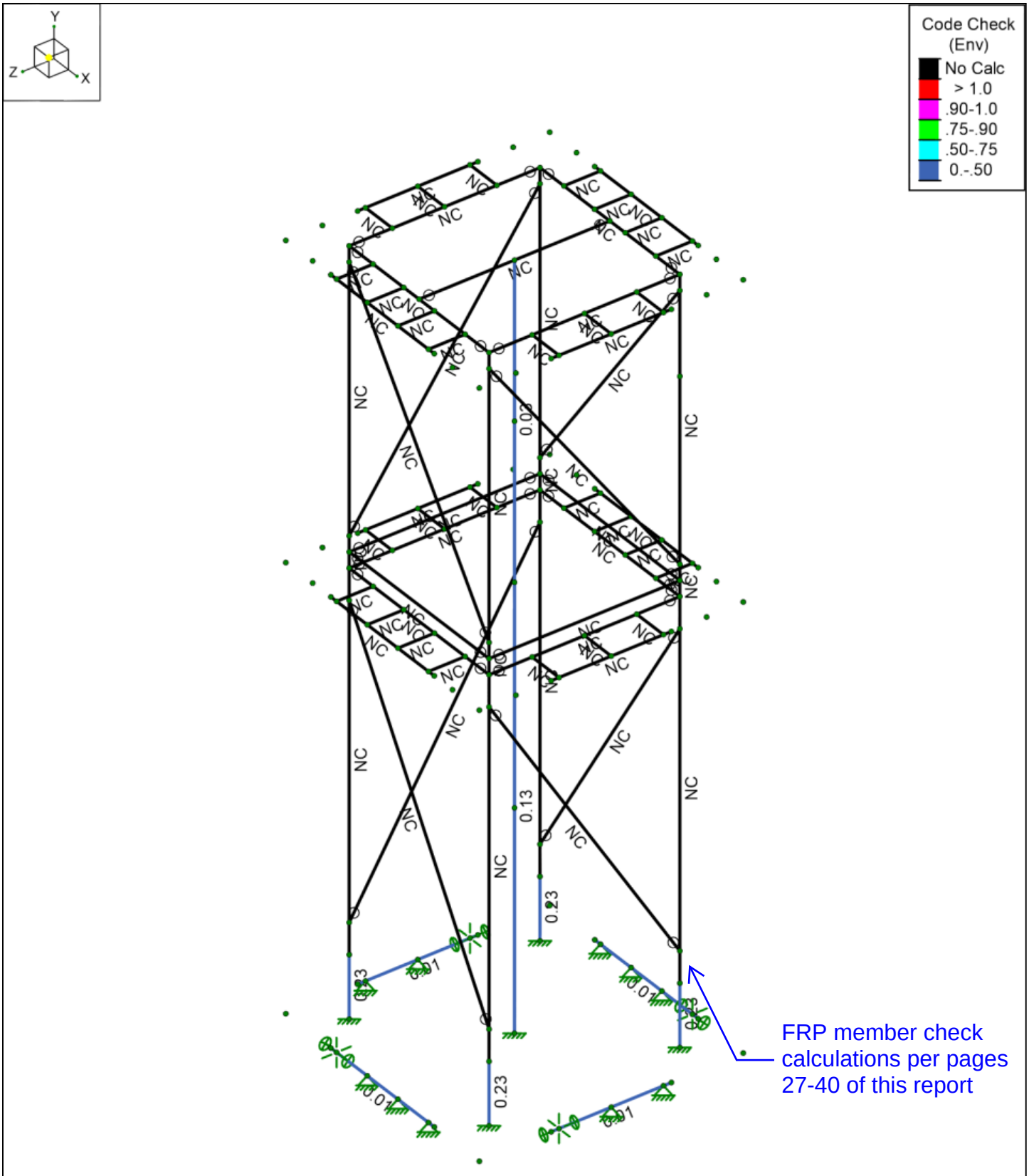


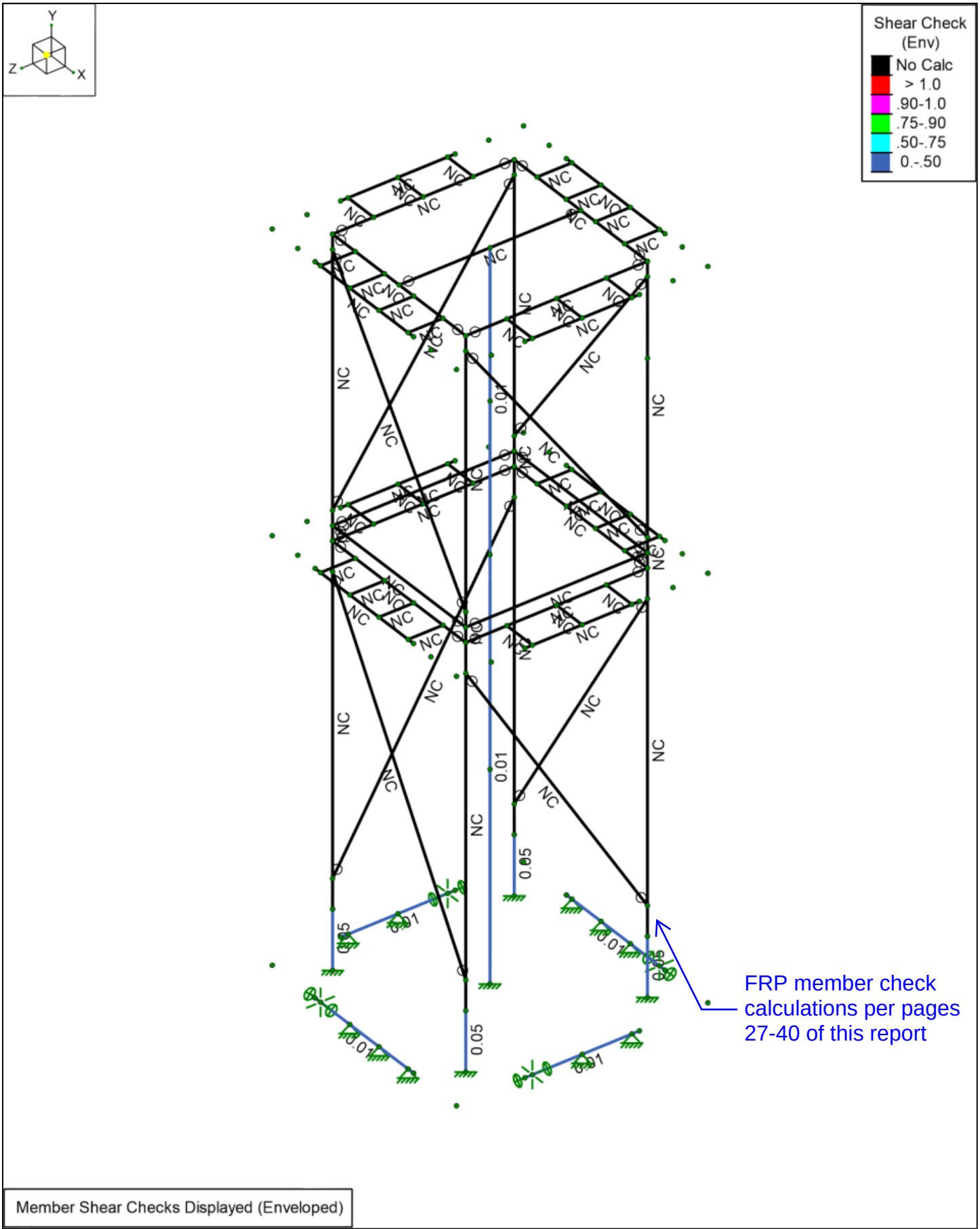
Loads: BLC 5, WL-Z

VSE	CT11862C	SK-10
BRF		Aug 05, 2021
U4506.002.211		Enclosure.r3d



Member Code Checks Displayed (Enveloped)

VSE	CT11862C	SK-11
BRF		Aug 05, 2021
U4506.002.211		Enclosure.r3d



Member Shear Checks Displayed (Enveloped)

VSE	CT11862C	SK-12
BRF		Aug 05, 2021
U4506.002.211		Enclosure.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	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1
11	FRP	2800	450	0.35	0.44	0.12	10	1.5	30	1.2
12	SAE J429 Gr 2	29000	11154	0.3	0.65	0.49	57	1.5	74	1.2

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	N41	Reaction	Reaction	Reaction			Reaction
2	N45	Reaction	Reaction	Reaction			
3	N43	Reaction	Reaction	Reaction			
4	N31	Reaction	Reaction	Reaction	Reaction		
5	N32	Reaction	Reaction	Reaction			
6	N33	Reaction	Reaction	Reaction			
7	N34	Reaction	Reaction	Reaction	Reaction		
8	N42	Reaction	Reaction	Reaction			
9	N35	Reaction	Reaction	Reaction			
10	N44	Reaction	Reaction	Reaction			Reaction
11	N36	Reaction	Reaction	Reaction			
12	N9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N37	Reaction	Reaction	Reaction			
14	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N38	Reaction	Reaction	Reaction			
16	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
17	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
18	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
19	N46	Reaction	Reaction	Reaction			

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	(E) Steel Panel Connection	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044
2	(E) Steel Stub Pipe	PIPE_3.5	Column	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
3	(R) FRP Angle Column	L6X6X8	Column	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
4	(E) Antenna Mast	PIPE_3.0	Column	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
5	(R) FRP Angle Brace	L6X6X8	VBrace	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
6	FRP Panel Connection	L6X6X8	Beam	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
7	Antenna Mast	PIPE_3.0	Column	HSS Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
8	FRP Bottom Chord	L6X6X8	Beam	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
9	FRP Angle Column	L6X6X8	Column	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
10	FRP Top Chord	L6X6X8	Beam	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
11	FRP Angle Brace	L6X6X8	VBrace	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501
12	FRP Mast Brace	L6X6X8	HBrace	Single Angle	FRP	Typical	5.77	19.9	19.9	0.501

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N9	N10		(E) Antenna Mast	Column	Pipe	A53 Gr.B	Typical
2	M2	N10	N11		Antenna Mast	Column	HSS Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
3	M3	N4	N8		(E) Steel Stub Pipe	Column	Pipe	A53 Gr.B	Typical
4	M4	N2	N6		(E) Steel Stub Pipe	Column	Pipe	A53 Gr.B	Typical
5	M5	N3	N7		(E) Steel Stub Pipe	Column	Pipe	A53 Gr.B	Typical
6	M6	N1	N5		(E) Steel Stub Pipe	Column	Pipe	A53 Gr.B	Typical
7	M7	N8	N16	180	(R) FRP Angle Column	Column	Single Angle	FRP	Typical
8	M8	N6	N14	90	(R) FRP Angle Column	Column	Single Angle	FRP	Typical
9	M9	N7	N15		(R) FRP Angle Column	Column	Single Angle	FRP	Typical
10	M10	N5	N13	270	(R) FRP Angle Column	Column	Single Angle	FRP	Typical
11	M11	N24	N17	180	(R) FRP Angle Brace	VBrace	Single Angle	FRP	Typical
12	M12	N21	N19	180	(R) FRP Angle Brace	VBrace	Single Angle	FRP	Typical
13	M13	N23	N18	180	(R) FRP Angle Brace	VBrace	Single Angle	FRP	Typical
14	M14	N22	N20	180	(R) FRP Angle Brace	VBrace	Single Angle	FRP	Typical
15	M15	N39	N25		(E) Steel Panel Connection	Beam	Single Angle	A36 Gr.36	Typical
16	M16	N28	N30		(E) Steel Panel Connection	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N27	N29	270	(E) Steel Panel Connection	Beam	Single Angle	A36 Gr.36	Typical
18	M18	N40	N26	270	(E) Steel Panel Connection	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N13	N15	180	FRP Top Chord	Beam	Single Angle	FRP	Typical
20	M20	N16	N14	90	FRP Top Chord	Beam	Single Angle	FRP	Typical
21	M21	N13	N16	90	FRP Top Chord	Beam	Single Angle	FRP	Typical
22	M22	N15	N14	180	FRP Top Chord	Beam	Single Angle	FRP	Typical
23	M23	N74	N72	90	FRP Panel Connection	Beam	Single Angle	FRP	Typical
24	M24	N61	N63	90	FRP Panel Connection	Beam	Single Angle	FRP	Typical
25	M25	N60	N62	180	FRP Panel Connection	Beam	Single Angle	FRP	Typical
26	M26	N75	N73	180	FRP Panel Connection	Beam	Single Angle	FRP	Typical
27	M27	N93	N76		RIGID	None	None	RIGID	Typical
28	M28	N92	N59		RIGID	None	None	RIGID	Typical
29	M29	N94	N78		RIGID	None	None	RIGID	Typical
30	M30	N84	N64		RIGID	None	None	RIGID	Typical
31	M31	N86	N70		RIGID	None	None	RIGID	Typical
32	M32	N85	N68		RIGID	None	None	RIGID	Typical
33	M33	N87	N66		RIGID	None	None	RIGID	Typical
34	M34	N82	N79		RIGID	None	None	RIGID	Typical
35	M35	N83	N80		RIGID	None	None	RIGID	Typical
36	M36	N81	N77		RIGID	None	None	RIGID	Typical
37	M37	N89	N67		RIGID	None	None	RIGID	Typical
38	M38	N90	N69		RIGID	None	None	RIGID	Typical
39	M39	N91	N71		RIGID	None	None	RIGID	Typical
40	M40	N88	N65		RIGID	None	None	RIGID	Typical
41	M41	N97	N96	270	FRP Bottom Chord	Beam	Single Angle	FRP	Typical
42	M42	N98	N96		FRP Bottom Chord	Beam	Single Angle	FRP	Typical
43	M43	N95	N97	270	FRP Bottom Chord	Beam	Single Angle	FRP	Typical
44	M44	N95	N98		FRP Bottom Chord	Beam	Single Angle	FRP	Typical
45	M45	N15	N97		RIGID	None	None	RIGID	Typical
46	M46	N14	N96		RIGID	None	None	RIGID	Typical
47	M47	N16	N98		RIGID	None	None	RIGID	Typical
48	M48	N13	N95		RIGID	None	None	RIGID	Typical
49	M49	N97	N101		FRP Angle Column	Column	Single Angle	FRP	Typical
50	M50	N96	N100	90	FRP Angle Column	Column	Single Angle	FRP	Typical
51	M51	N98	N102	180	FRP Angle Column	Column	Single Angle	FRP	Typical
52	M52	N95	N99	270	FRP Angle Column	Column	Single Angle	FRP	Typical
53	M53	N109	N104	180	FRP Angle Brace	VBrace	Single Angle	FRP	Typical
54	M54	N108	N106	180	FRP Angle Brace	VBrace	Single Angle	FRP	Typical
55	M55	N110	N103	180	FRP Angle Brace	VBrace	Single Angle	FRP	Typical
56	M56	N107	N105	180	FRP Angle Brace	VBrace	Single Angle	FRP	Typical
57	M57	N102	N99	180	FRP Top Chord	Beam	Single Angle	FRP	Typical
58	M58	N100	N101	90	FRP Top Chord	Beam	Single Angle	FRP	Typical
59	M59	N101	N99	90	FRP Top Chord	Beam	Single Angle	FRP	Typical
60	M60	N100	N102	180	FRP Top Chord	Beam	Single Angle	FRP	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
61	M61	N136	N130	90	FRP Panel Connection	Beam	Single Angle	FRP	Typical
62	M62	N131	N143		RIGID	None	None	RIGID	Typical
63	M63	N161	N141		RIGID	None	None	RIGID	Typical
64	M64	N157	N139		RIGID	None	None	RIGID	Typical
65	M65	N162	N145		RIGID	None	None	RIGID	Typical
66	M66	N133	N140		RIGID	None	None	RIGID	Typical
67	M67	N158	N142		RIGID	None	None	RIGID	Typical
68	M68	N155	N132		RIGID	None	None	RIGID	Typical
69	M69	N129	N150		RIGID	None	None	RIGID	Typical
70	M70	N164	N152		RIGID	None	None	RIGID	Typical
71	M71	N149	N147	180	FRP Panel Connection	Beam	Single Angle	FRP	Typical
72	M72	N134	N137	180	FRP Panel Connection	Beam	Single Angle	FRP	Typical
73	M73	N163	N135		RIGID	None	None	RIGID	Typical
74	M74	N159	N144		RIGID	None	None	RIGID	Typical
75	M75	N156	N153		RIGID	None	None	RIGID	Typical
76	M76	N154	N151		RIGID	None	None	RIGID	Typical
77	M77	N160	N138		RIGID	None	None	RIGID	Typical
78	M78	N148	N146	90	FRP Panel Connection	Beam	Single Angle	FRP	Typical
79	M79	N165	N166		FRP Mast Brace	HBrace	Single Angle	FRP	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Distributed	Area(Member)
1	DL	DL	-1.05	2		8
2	WL+X	WL+X		2		2
3	WL-X	WL-X		2		2
4	WL+Z	WL+Z		2		2
5	WL-Z	WL-Z		2		2
6	BLC 1 Transient Area Loads	None			66	
7	BLC 2 Transient Area Loads	None			18	
8	BLC 3 Transient Area Loads	None			18	
9	BLC 4 Transient Area Loads	None			15	
10	BLC 5 Transient Area Loads	None			15	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor
1	D	Yes	Y	DL	1				
2	D + 0.6Wx	Yes	Y	DL	1	WL+X	0.6		
3	D - 0.6Wx	Yes	Y	DL	1	WL-X	0.6		
4	D + 0.6Wz	Yes	Y	DL	1	WL+Z	0.6		
5	D - 0.6Wz	Yes	Y	DL	1	WL-Z	0.6		
6	D + diag(0.6Wx + 0.6Wz)	Yes	Y	DL	1	WL+X	0.424	WL+Z	0.424
7	D + diag(0.6Wx - 0.6Wz)	Yes	Y	DL	1	WL+X	0.424	WL-Z	0.424
8	D + diag(-0.6Wx - 0.6Wz)	Yes	Y	DL	1	WL-X	0.424	WL-Z	0.424
9	D + diag(-0.6Wx + 0.6Wz)	Yes	Y	DL	1	WL-X	0.424	WL+Z	0.424
10	0.6D + 0.6Wx	Yes	Y	DL	0.6	WL+X	0.6		
11	0.6D - 0.6Wx	Yes	Y	DL	0.6	WL-X	0.6		
12	0.6D + 0.6Wz	Yes	Y	DL	0.6	WL+Z	0.6		
13	0.6D - 0.6Wz	Yes	Y	DL	0.6	WL-Z	0.6		
14	0.6D + diag(0.6Wx + 0.6Wz)	Yes	Y	DL	0.6	WL+X	0.424	WL+Z	0.424
15	0.6D + diag(0.6Wx - 0.6Wz)	Yes	Y	DL	0.6	WL+X	0.424	WL-Z	0.424
16	0.6D + diag(-0.6Wx - 0.6Wz)	Yes	Y	DL	0.6	WL-X	0.424	WL-Z	0.424
17	0.6D + diag(-0.6Wx + 0.6Wz)	Yes	Y	DL	0.6	WL-X	0.424	WL+Z	0.424

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/om [lb]	Pnt/om [lb]	Mnyy/om [lb-ft]	Mnzz/om [lb-ft]	Cb	Eqn
1	M1	PIPE_3.0	0.126	0	3	0.013	3.465		2	33373.787	43383.234	3824.85	3824.85	2.567	H1-1b
2	M2	PIPE_3.0	0.034	2.475	3	0.006	5		2	37949.083	43383.234	3824.85	3824.85	1.165	H1-1b
3	M3	PIPE_3.5	0.229	0	4	0.052	1		13	52182.058	52395.21	5291.916	5291.916	1.127	H1-1b
4	M4	PIPE_3.5	0.234	0	3	0.053	1		3	52182.058	52395.21	5291.916	5291.916	1.408	H1-1b
5	M5	PIPE_3.5	0.229	0	5	0.052	1		12	52182.058	52395.21	5291.916	5291.916	1.127	H1-1b
6	M6	PIPE_3.5	0.235	0	2	0.053	1		2	52182.058	52395.21	5291.916	5291.916	1.408	H1-1b
7	M15	L4X4X4	0.009	0.968	11	0.01	0.136	z	3	37629.736	41604.79	2087.556	4467.655	1.037	H2-1
8	M16	L4X4X4	0.006	1.841	13	0.008	2.114	z	5	37735.732	41604.79	2087.556	4467.655	1.211	H2-1
9	M17	L4X4X4	0.006	1.841	12	0.008	2.114	y	4	37735.732	41604.79	2087.556	4588.849	1.5	H2-1
10	M18	L4X4X4	0.009	0.968	10	0.01	0.136	y	2	37629.736	41604.79	2087.556	4467.655	1.329	H2-1

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N41	max	211.851	3	24.836	3	0	17	0	17	0	17	0	17
2		min	0.172	10	13.369	10	0	1	0	1	0	1	0	1
3	N45	max	230.408	11	27.562	7	0	17	0	17	0	17	0	17
4		min	-0.574	1	11.428	11	0	1	0	1	0	1	0	1
5	N43	max	211.962	3	24.846	3	0	17	0	17	0	17	0	17
6		min	0.172	10	13.375	10	0	1	0	1	0	1	0	1
7	N31	max	0	17	18.216	4	-0.06	16	0	17	0	17	0	17
8		min	0	1	10.423	10	-161.415	4	0	1	0	1	0	1
9	N32	max	0	17	18.216	5	161.415	5	0	17	0	17	0	17
10		min	0	1	10.423	10	0.06	10	0	1	0	1	0	1
11	N33	max	0	17	18.221	4	-0.06	16	0	17	0	17	0	17
12		min	0	1	10.423	10	-161.382	4	0	1	0	1	0	1
13	N34	max	0	17	18.221	5	161.382	5	0	17	0	17	0	17
14		min	0	1	10.423	10	0.06	10	0	1	0	1	0	1
15	N42	max	-0.172	17	24.834	2	0	17	0	17	0	17	0	17
16		min	-211.84	2	13.368	11	0	1	0	1	0	1	0	1
17	N35	max	0	17	19.836	8	0.101	8	0	17	0	17	0	17
18		min	0	1	11.046	12	-165.501	12	0	1	0	1	0	1
19	N44	max	-0.172	17	24.841	2	0	17	0	17	0	17	0	17
20		min	-211.918	2	13.372	11	0	1	0	1	0	1	0	1
21	N36	max	0	17	19.836	9	165.501	13	0	17	0	17	0	17
22		min	0	1	11.046	13	-0.101	1	0	1	0	1	0	1
23	N9	max	139.632	11	851.081	3	66.8	13	248.411	5	7.557	2	433.484	2
24		min	-139.712	10	485.684	10	-66.858	12	-248.853	4	2.015	13	-432.597	3
25	N37	max	0	17	19.832	8	0.099	8	0	17	0	17	0	17
26		min	0	1	11.061	12	-165.522	12	0	1	0	1	0	1
27	N1	max	827.936	11	2987.091	6	14.464	17	70.332	16	0.034	11	1131.089	10
28		min	-824.647	2	-2457.987	16	-16.737	7	-76.267	6	-0.04	2	-1150.847	3
29	N38	max	0	17	19.832	9	165.522	13	0	17	0	17	0	17
30		min	0	1	11.061	13	-0.099	1	0	1	0	1	0	1
31	N2	max	823.325	3	2978.222	8	16.697	9	76.11	8	0.034	10	1149.314	2
32		min	-826.685	10	-2449.208	14	-14.453	15	-70.149	14	-0.039	3	-1129.395	11
33	N3	max	14.1	14	2972.398	7	805.335	5	1105.821	13	0.034	4	76.202	7
34		min	-16.541	8	-2466.846	17	-812.566	12	-1131.211	4	-0.037	13	-69.892	17
35	N4	max	16.601	6	2968.423	9	812.728	13	1131.509	5	0.033	5	69.747	15
36		min	-14.152	16	-2462.871	15	-805.416	4	-1105.998	12	-0.037	12	-76.086	9
37	N46	max	0.574	9	27.555	9	0	17	0	17	0	17	0	17
38		min	-230.326	10	11.425	10	0	1	0	1	0	1	0	1
39	Totals:	max	2425.148	3	2423.428	5	2320.069	13						
40		min	-2425.147	10	1454.052	12	-2320.069	4						

Envelope Maximum Member Section Forces

	Member		Axial[lb]	Loc[ft]	LC	y Shear[lb]	Loc[ft]	LC	z Shear[lb]	Loc[ft]	LC	Torque[lb-ft]	Loc[ft]	LC	y-y Moment[lb-ft]	Loc[ft]	LC	z-z Moment[lb-ft]	Loc[ft]	LC
1	M1	max	851.081	0	3	140.868	3.465	2	67.41	3.465	5	7.557	7	2	248.853	0	4	433.484	0	2
2		min	218.281	7	10	-140.805	0	3	-67.521	0	4	2.015	0	13	-248.411	0	5	-432.597	0	3
3	M2	max	405.409	0	3	43.691	5	3	11.666	2.475	13	7.557	5	2	57.408	2.525	5	108.171	2.475	3
4		min	7.094	5	10	-43.585	2.525	2	-11.727	0	4	2.015	0	13	-58.023	2.525	4	-107.93	2.475	2
5	M3	max	2968.423	0	9	14.146	1	16	811.05	1	13	0.033	1	5	1105.998	0	12	69.747	0	15
6		min	-2468.23	1	15	-16.599	0	6	-807.556	0	4	-0.037	0	12	-1131.509	0	5	-76.086	0	9
7	M4	max	2978.222	0	8	824.943	1	10	16.695	1	9	0.034	1	10	70.149	0	14	1149.314	0	2
8		min	-2454.568	1	14	-825.571	0	3	-14.449	0	15	-0.039	0	3	-76.11	0	8	-1129.395	0	11
9	M5	max	2972.398	0	7	16.539	1	8	807.476	1	5	0.034	1	4	1131.211	0	4	76.202	0	7
10		min	-2472.206	1	17	-14.094	0	14	-810.886	0	12	-0.037	0	13	-1105.821	0	13	-69.892	0	17
11	M6	max	2987.091	0	6	826.909	1	2	14.46	1	17	0.034	1	11	76.267	0	6	1131.089	0	10
12		min	-2463.347	1	16	-826.18	0	11	-16.735	0	7	-0.04	0	2	-70.332	0	16	-1150.847	0	3
13	M15	max	0	1.917	17	17.011	0.136	3	135.302	1.781	3	0	1.917	17	12.817	0.968	11	12.054	0.968	3
14		min	0	0	1	-17.005	1.781	3	-135.367	0.136	3	0	0	1	-10.151	0.426	11	-13.367	0.445	3
15	M16	max	0	2.25	17	12.326	0.136	5	106.5	2.114	5	0	2.25	17	6.391	1.455	13	6.799	1.455	5
16		min	0	0	1	-12.336	2.114	5	-106.474	0.136	5	0	0	1	-8.311	1.841	13	-10.226	1.841	5
17	M17	max	0	2.25	17	106.5	2.114	4	12.326	0.136	4	0	2.25	17	6.391	1.455	12	10.226	1.841	4
18		min	0	0	1	-106.474	0.136	4	-12.336	2.114	4	0	0	1	-8.311	1.841	12	-6.799	1.455	4
19	M18	max	0	1.917	17	135.284	1.781	2	17.007	0.136	2	0	1.917	17	12.813	0.968	10	13.363	0.445	2
20		min	0	0	1	-135.334	0.136	2	-17.003	1.781	2	0	0	1	-10.148	0.426	10	-12.05	0.968	2
21	M27	max	490.446	0.583	11	68.614	0.583	3	11.724	0.583	13	-9.67	0.583	15	391.5	0	3	40.065	0	3
22		min	-1.172	0	7	32.196	0	12	-723.576	0	3	-17.85	0	4	-40.594	0.583	9	0.015	0.583	17
23	M28	max	142.797	0.583	3	0.347	0.583	3	1.434	0.583	3	1.468	0.583	7	0.612	0.583	3	0.101	0	3
24		min	1.093	0	10	0.158	0	10	0.046	0	13	-1.699	0	9	-0.273	0	9	-0.101	0.583	3
25	M29	max	488.775	0.583	11	71.252	0.583	3	721.742	0.583	3	18.122	0.583	7	39.808	0.583	9	41.624	0	3
26		min	-1.105	0	4	31.345	0	15	-11.771	0	13	9.295	0	11	-391.386	0	3	0.012	0.583	15
27	M30	max	428.574	0.583	12	64.524	0.583	4	16.547	0.583	11	-6.204	0.583	16	316.51	0	4	37.709	0	4
28		min	-1.446	0	8	32.383	0	10	-612.336	0	4	-12.111	0	2	-47.421	0.583	6	0.032	0.583	14
29	M31	max	132.921	0.583	4	0.278	0.583	4	-4.75	0.583	10	5.073	0.583	8	40.497	0	4	0.081	0	4
30		min	0.717	0	13	0.137	0	10	-120.992	0	4	0.763	0	14	-30.082	0.583	4	-0.081	0.583	4
31	M32	max	132.904	0.583	4	0.277	0.583	4	120.516	0.583	4	-0.475	0.583	16	29.653	0.583	4	0.081	0	4
32		min	0.719	0	13	0.137	0	15	4.739	0	10	-5.58	0	6	-40.649	0	4	-0.081	0.583	4
33	M33	max	428.127	0.583	12	67.904	0.583	4	612.386	0.583	4	12.472	0.583	8	47.293	0.583	6	39.702	0	4
34		min	-1.389	0	2	31.22	0	16	-16.536	0	11	5.888	0	12	-316.626	0	4	0.026	0.583	16
35	M34	max	489.679	0.583	10	68.605	0.583	2	11.773	0.583	12	-9.668	0.583	17	391.353	0	2	40.06	0	2
36		min	-1.182	0	9	32.201	0	13	-722.075	0	2	-17.845	0	5	-40.075	0.583	7	0.015	0.583	15
37	M35	max	142.836	0.583	2	0.347	0.583	2	-0.047	0.583	13	1.594	0.583	9	0.252	0	9	0.101	0	2
38		min	1.093	0	11	0.158	0	11	-1.636	0	2	-1.606	0	15	-1.054	0.583	2	-0.101	0.583	2
39	M36	max	489.557	0.583	10	71.267	0.583	2	723.317	0.583	2	18.125	0.583	9	40.339	0.583	7	41.632	0	2
40		min	-1.095	0	5	31.347	0	17	-11.726	0	12	9.296	0	10	-391.57	0	2	0.012	0.583	17
41	M37	max	428.862	0.583	13	64.522	0.583	5	16.629	0.583	10	-6.2	0.583	14	316.598	0	5	37.708	0	5
42		min	-1.448	0	6	32.371	0	11	-612.629	0	5	-12.119	0	3	-47.501	0.583	8	0.031	0.583	16
43	M38	max	132.982	0.583	5	0.278	0.583	5	-4.741	0.583	11	5.066	0.583	6	40.448	0	5	0.081	0	5
44		min	0.719	0	12	0.136	0	12	-120.73	0	5	0.744	0	16	-29.978	0.583	5	-0.081	0.583	5
45	M39	max	132.845	0.583	5	0.276	0.583	5	120.778	0.583	5	-0.478	0.583	14	29.758	0.583	5	0.08	0	5
46		min	0.717	0	12	0.136	0	11	4.749	0	11	-5.604	0	8	-40.696	0	5	-0.081	0.583	5
47	M40	max	427.839	0.583	13	67.906	0.583	5	612.156	0.583	5	12.472	0.583	6	47.264	0.583	8	39.703	0	5
48		min	-1.389	0	3	31.209	0	14	-16.636	0	10	5.886	0	13	-316.557	0	5	0.026	0.583	14
49	M45	max	797.161	0.25	7	217.739	0.25	17	462.187	0.25	13	0.112	0.25	16	119.751	0	9	294.886	0	11
50		min	-598.82	0	17	-324.659	0	5	-491.04	0	6	-0.111	0	14	-94.314	0	13	-329.442	0	2
51	M46	max	800.288	0.25	8	498.85	0.25	7	231.369	0.25	14	0.111	0.25	17	324.414	0	5	124.057	0	6
52		min	-590.513	0	14	-473.841	0	11	-329.568	0	3	-0.111	0	15	-290.178	0	12	-99.284	0	11
53	M47	max	792.151	0.25	9	324.726	0.25	4	491.226	0.25	8	0.112	0.25	14	94.283	0	12	329.87	0	3
54		min	-593.587	0	15	-218.086	0	15	-462.244	0	12	-0.112	0	16	-119.784	0	7	-295.27	0	10
55	M48	max	807.182	0.25	6	474.911	0.25	10	329.594	0.25	2	0.111	0.25	15	290.127	0	13	99.571	0	10
56		min	-597.27	0	16	-498.844	0	9	-231.225	0	16	-0.111	0	17	-324.328	0	4	-124.313	0	8
57	M62	max	90.305	0.583	5	0.241	0.583	8	51.006	0.583	4	4.831	0.583	8	8.78	0.583	4	0.07	0	8
58		min	-3.752	0	10	0.014	0	14	-10.434	0	10	-0.093	0	14	-20.974	0	4	-0.07	0.583	8

Envelope Maximum Member Section Forces (Continued)

	Member		Axial[lb]	Loc[ft]	LC	y Shear[lb]	Loc[ft]	LC	z Shear[lb]	Loc[ft]	LC	Torque[lb-ft]	Loc[ft]	LC	y-y Moment[lb-ft]	Loc[ft]	LC	z-z Moment[lb-ft]	Loc[ft]	LC
59	M63	max	144.497	0.583	13	28.242	0.583	5	77.661	0.583	12	1.034	0.583	16	86.873	0	5	16.536	0	5
60		min	-38.519	0	4	15.97	0	10	-162.739	0	5	-7.596	0	6	-41.904	0	12	0.005	0.583	14
61	M64	max	144.436	0.583	12	28.242	0.583	4	77.602	0.583	13	-0.158	0.583	12	86.812	0	4	16.536	0	4
62		min	-38.536	0	5	15.891	0	11	-162.504	0	4	-5.976	0	5	-41.891	0	13	0.016	0.583	13
63	M65	max	90.128	0.583	5	0.237	0.583	8	8.85	0.583	10	0.378	0.583	14	21.049	0	4	0.069	0	8
64		min	-3.644	0	10	0.016	0	14	-51.113	0	4	-5.271	0	8	-8.767	0.583	4	-0.069	0.583	8
65	M66	max	144.245	0.583	12	28.77	0.583	4	162.595	0.583	4	6.126	0.583	5	41.934	0	13	16.848	0	4
66		min	-38.424	0	5	15.673	0	13	-77.692	0	13	-0.034	0	12	-86.816	0	4	0.013	0.583	13
67	M67	max	90.279	0.583	4	0.217	0.583	4	7.302	0.583	10	-0.44	0.583	13	21.05	0	5	0.063	0	4
68		min	-4.047	0	11	0.05	0	13	-51.1	0	5	-4.691	0	4	-8.759	0.583	5	-0.063	0.583	4
69	M68	max	209.198	0.583	10	28.193	0.583	2	-6.349	0.583	12	-5.671	0.583	11	162.382	0	2	16.459	0	2
70		min	-0.345	0	3	15.444	0	12	-296.919	0	2	-9.701	0	7	-12.447	0.583	7	0.007	0.583	10
71	M69	max	209.955	0.583	11	28.19	0.583	3	-6.394	0.583	13	-5.674	0.583	10	162.561	0	3	16.456	0	3
72		min	-0.338	0	2	15.445	0	13	-298.53	0	3	-9.708	0	9	-12.992	0.583	9	0.006	0.583	11
73	M70	max	208.908	0.583	11	28.719	0.583	3	296.87	0.583	3	9.771	0.583	2	12.422	0.583	9	16.77	0	3
74		min	-0.324	0	5	15.221	0	10	6.348	0	13	5.558	0	11	-162.384	0	3	0.006	0.583	10
75	M73	max	48.412	0.583	3	0.102	0.583	3	1.495	0.583	3	0.198	0.583	10	0.775	0.583	3	0.03	0	3
76		min	0.37	0	10	0.053	0	10	0.046	0	13	-0.383	0	3	-0.097	0	3	-0.03	0.583	3
77	M74	max	90.206	0.583	4	0.217	0.583	4	51.131	0.583	5	4.221	0.583	4	8.819	0.583	5	0.063	0	4
78		min	-4.131	0	11	0.05	0	13	-8.183	0	11	0.846	0	13	-21.008	0	5	-0.063	0.583	4
79	M75	max	48.437	0.583	2	0.102	0.583	2	-0.045	0.583	11	0.309	0.583	3	0.063	0	3	0.03	0	2
80		min	0.37	0	11	0.054	0	12	-1.594	0	2	-0.278	0	10	-0.898	0.583	2	-0.03	0.583	2
81	M76	max	209.726	0.583	10	28.726	0.583	2	298.352	0.583	2	9.777	0.583	3	12.924	0.583	7	16.774	0	2
82		min	-0.314	0	4	15.22	0	11	6.397	0	12	5.562	0	10	-162.55	0	2	0.006	0.583	11
83	M77	max	144.207	0.583	13	28.774	0.583	5	162.778	0.583	5	7.59	0.583	6	41.908	0	12	16.849	0	5
84		min	-38.41	0	4	15.648	0	17	-77.613	0	12	-1.088	0	16	-86.884	0	5	0.004	0.583	14

JOB NO.: U4506.002.211

PROJECT: CT11862C

ENCLOSURE CALCULATIONS

FRP Member Design for Compression:

Label: (R) FRP Angle Column

INPUT:

		Notes:
Unbraced Length, L [ft]:	7.0	Wost Case - Member M10
Axial, C [lb]:	2,978	
K:	1.0	

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	521	<	F_a [psi]:	1,460	**OK**

Select 6x6x1/2 Angle FRP column

FRP Member Design for Bending & Shear:

Label: (R) FRP Angle Column

Beam assumed to be simply supported.
Note: The force is horizontal.

INPUT:

		Notes:
Moment, M [lb-ft]:	255	Wost Case - Member M10
Shear, V [lb]:	860	

Beam: 6x6x1/2 Angle

I [in^4]:	19.38	A_w [in^2]:	5.72
S [in^3]:	4.46	E [psi]:	2,800,000
A [in^2]:	5.72	G [psi]:	450,000

OUTPUT:

f_b [psi]:	686	<	F_b [psi]:	10,000	**OK**
f_v [psi]:	150	<	F_v [psi]:	1,500	**OK**

Select 6x6x1/2 Angle FRP beam

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: (R) FRP Angle Column to Sleeve

INPUT:

Design Force, P [lb]:	1,489
FRP Bolt Diameter, d_b [in]:	5/8
# Bolts, n_b:	(2)
FRP Web Thickness, t_w [in]:	1/2
Double Shear:	No
Bearing Stress:	Lengthwise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M10

OUTPUT:

f_{brg} [psi]:	2,382	<	F_{brg} [psi]:	7,500	**OK**
p_{bolt} [lb]:	745	<	P_{bolt} [lb]:	1,250	**OK**

Select (2) 5/8" diameter FRP bolts

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Member Design for Compression:

Label: (R) FRP Angle Brace

INPUT:

		Notes:
Unbraced Length, L [ft]:	5.9	Wost Case - Member M11
Axial, C [lb]:	1,686	
K:	1.0	

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	295	<	F_a [psi]:	1,676	**OK**

Select 6x6x1/2 Angle FRP column

FRP Shear Connection w/ FRP Bolts:

Label: (R) FRP Angle Brace to Column

INPUT:

		Notes:
Design Force, P [lb]:	1,686	
FRP Bolt Diameter, d_b [in]:	5/8	Wost Case - Member M11
# Bolts, n_b:	(2)	
FRP Web Thickness, t_w [in]:	1/2	
Double Shear:	No	
Bearing Stress:	Angle	Angle: 23 degrees
Factor of Safety, FS:	4	

OUTPUT:

f_{brg} [psi]:	2,698	<	F_{brg} [psi]:	6,507	**OK**
p_{bolt} [lb]:	843	<	P_{bolt} [lb]:	1,250	**OK**

Select (2) 5/8" diameter FRP bolts

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Member Design for Compression:

Label: FRP Panel Connection Angle

INPUT:

		Notes:
Unbraced Length, L [ft]:	2.3	Wost Case - Member M24
Axial, C [lb]:	735	
K:	1.0	

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	128	<	F_a [psi]:	2,382	**OK**

Select 6x6x1/2 Angle FRP column

FRP Member Design for Bending & Shear:

Label: FRP Panel Connection Angle

Beam assumed to be simply supported.
Note: The force is horizontal.

INPUT:

		Notes:
Moment, M [lb-ft]:	55	Wost Case - Member M25
Shear, V [lb]:	350	

Beam: 6x6x1/2 Angle

I [in^4]:	19.38	A_w [in^2]:	5.72
S [in^3]:	4.46	E [psi]:	2,800,000
A [in^2]:	5.72	G [psi]:	450,000

OUTPUT:

f_b [psi]:	148	<	F_b [psi]:	10,000	**OK**
f_v [psi]:	61	<	F_v [psi]:	1,500	**OK**

Select 6x6x1/2 Angle FRP beam

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: FRP Panel Connection to Girt

INPUT:

Design Force, P [lb]:	350
FRP Bolt Diameter, d_b [in]:	3/8
# Bolts, n_b:	(1)
FRP Web Thickness, t_w [in]:	1/2
Double Shear:	No
Bearing Stress:	Crosswise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M25

OUTPUT:

f_{brg} [psi]:	1,867	<	F_{brg} [psi]:	3,750	**OK**
p_{bolt} [lb]:	350	<	P_{bolt} [lb]:	525	**OK**

Select (1) 3/8" diameter FRP bolt

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Member Design for Compression:

Label: Bottom Chord

INPUT:

Notes: Wost Case - Member M44

Unbraced Length, L [ft]:	3.1
Axial, C [lb]:	330
K:	1.0

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	58	<	F_a [psi]:	2,225	**OK**

Select 6x6x1/2 Angle FRP column

FRP Member Design for Bending & Shear:

Label: Bottom Chord

Beam assumed to be simply supported.
Note: The force is horizontal.

INPUT:

Notes: Wost Case - Member M41

Moment, M [lb-ft]:	10
Shear, V [lb]:	10

Beam: 6x6x1/2 Angle

I [in^4]:	19.38	A_w [in^2]:	5.72
S [in^3]:	4.46	E [psi]:	2,800,000
A [in^2]:	5.72	G [psi]:	450,000

OUTPUT:

f_b [psi]:	27	<	F_b [psi]:	10,000	**OK**
f_v [psi]:	2	<	F_v [psi]:	1,500	**OK**

Select 6x6x1/2 Angle FRP beam

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: Bottom Chord

INPUT:

Design Force, P [lb]:	330
FRP Bolt Diameter, d_b [in]:	3/4
# Bolts, n_b:	(3)
FRP Web Thickness, t_w [in]:	1/2
Double Shear:	No
Bearing Stress:	Crosswise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M41

OUTPUT:

f_{brg} [psi]:	293	<	F_{brg} [psi]:	3,750	**OK**
p_{bolt} [lb]:	110	<	P_{bolt} [lb]:	1,675	**OK**

Select (3) 3/4" diameter FRP bolts

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Member Design for Compression:

Label: FRP Angle Column

INPUT:

Notes: Wost Case - Member M52

Unbraced Length, L [ft]:	5.0
Axial, C [lb]:	792
K:	1.0

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	138	<	F_a [psi]:	1,852	**OK**

Select 6x6x1/2 Angle FRP column

FRP Member Design for Bending & Shear:

Label: FRP Angle Column

Beam assumed to be simply supported.
Note: The force is horizontal.

INPUT:

Notes: Wost Case - Member M50

Moment, M [lb-ft]:	270
Shear, V [lb]:	335

Beam: 6x6x1/2 Angle

I [in^4]:	19.38	A_w [in^2]:	5.72
S [in^3]:	4.46	E [psi]:	2,800,000
A [in^2]:	5.72	G [psi]:	450,000

OUTPUT:

f_b [psi]:	726	<	F_b [psi]:	10,000	**OK**
f_v [psi]:	59	<	F_v [psi]:	1,500	**OK**

Select 6x6x1/2 Angle FRP beam

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: FRP Angle Column to Bot Girt

INPUT:

Design Force, P [lb]:	936
FRP Bolt Diameter, d_b [in]:	3/4
# Bolts, n_b:	(2)
FRP Web Thickness, t_w [in]:	1/4
Double Shear:	No
Bearing Stress:	Lengthwise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M50

OUTPUT:

f_{brg} [psi]:	2,496	<	F_{brg} [psi]:	7,500	**OK**
p_{bolt} [lb]:	468	<	P_{bolt} [lb]:	1,675	**OK**

Select (2) 3/4" diameter FRP bolts

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: FRP Angle Column to Top Girt

INPUT:

Design Force, P [lb]:	300
FRP Bolt Diameter, d_b [in]:	3/4
# Bolts, n_b:	(1)
FRP Web Thickness, t_w [in]:	1/4
Double Shear:	No
Bearing Stress:	Lengthwise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M50

OUTPUT:

f_{brg} [psi]:	1,600	<	F_{brg} [psi]:	7,500	**OK**
p_{bolt} [lb]:	300	<	P_{bolt} [lb]:	1,675	**OK**

Select (1) 3/4" diameter FRP bolt

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Member Design for Compression:

Label: Top Chord

INPUT:

Notes: Wost Case - Member M21

Unbraced Length, L [ft]:	3.1
Axial, C [lb]:	1,012
K:	1.0

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	177	<	F_a [psi]:	2,225	**OK**

Select 6x6x1/2 Angle FRP column

FRP Member Design for Bending & Shear:

Label: Top Chord

Beam assumed to be simply supported.
Note: The force is horizontal.

INPUT:

Notes: Wost Case - Member M20

Moment, M [lb-ft]:	300
Shear, V [lb]:	65

Beam: 6x6x1/2 Angle

I [in^4]:	19.38	A_w [in^2]:	5.72
S [in^3]:	4.46	E [psi]:	2,800,000
A [in^2]:	5.72	G [psi]:	450,000

OUTPUT:

f_b [psi]:	807	<	F_b [psi]:	10,000	**OK**
f_v [psi]:	11	<	F_v [psi]:	1,500	**OK**

Select 6x6x1/2 Angle FRP beam

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: Top Chord

INPUT:

Design Force, P [lb]:	1,012
FRP Bolt Diameter, d_b [in]:	3/4
# Bolts, n_b:	(1)
FRP Web Thickness, t_w [in]:	1/2
Double Shear:	No
Bearing Stress:	Crosswise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M21

OUTPUT:

f_{brg} [psi]:	2,699	<	F_{brg} [psi]:	3,750	**OK**
p_{bolt} [lb]:	1,012	<	P_{bolt} [lb]:	1,675	**OK**

Select (1) 3/4" diameter FRP bolt

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Member Design for Compression:

Label: FRP Angle Brace

INPUT:

		Notes:
Unbraced Length, L [ft]:	5.3	Wost Case - Member M55
Axial, C [lb]:	610	
K:	1.0	

Column: 6x6x1/2 Angle

r [in]:	1.17
E [psi]:	2,800,000
A [in^2]:	5.72

OUTPUT:

f_a [psi]:	107	<	F_a [psi]:	1,794	**OK**

Select 6x6x1/2 Angle FRP column

FRP Shear Connection w/ FRP Bolts:

Label: (E) FRP Angle Brace to Column

INPUT:

		Notes:
Design Force, P [lb]:	610	Wost Case - Member M55
FRP Bolt Diameter, d_b [in]:	5/8	
# Bolts, n_b:	(1)	
FRP Web Thickness, t_w [in]:	1/2	
Double Shear:	No	
Bearing Stress:	Crosswise	
Factor of Safety, FS:	4	

OUTPUT:

f_{brg} [psi]:	1,952	<	F_{brg} [psi]:	3,750	**OK**
p_{bolt} [lb]:	610	<	P_{bolt} [lb]:	1,250	**OK**

Select (1) 5/8" diameter FRP bolt

JOB NO.: U4506.002.211

PROJECT: CT11862C

FRP Shear Connection w/ FRP Bolts:

Label: FRP Panel To Connection Angle

INPUT:

Design Force, P [lb]:	735
FRP Bolt Diameter, d_b [in]:	3/8
# Bolts, n_b:	(2)
FRP Web Thickness, t_w [in]:	3/8
Double Shear:	No
Bearing Stress:	Crosswise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M24

OUTPUT:

f_{brg} [psi]:	2,613	<	F_{brg} [psi]:	3,750	**OK**
p_{bolt} [lb]:	368	<	P_{bolt} [lb]:	525	**OK**

Select (2) 3/8" diameter FRP bolts

FRP Shear Connection w/ FRP Bolts:

Label: FRP Panel To BOT Connection

INPUT:

Design Force, P [lb]:	140
FRP Bolt Diameter, d_b [in]:	3/8
# Bolts, n_b:	(2)
FRP Web Thickness, t_w [in]:	3/8
Double Shear:	No
Bearing Stress:	Crosswise
Factor of Safety, FS:	4

Notes:
Wost Case - Member M15

OUTPUT:

f_{brg} [psi]:	498	<	F_{brg} [psi]:	3,750	**OK**
p_{bolt} [lb]:	70	<	P_{bolt} [lb]:	525	**OK**

Select (2) 3/8" diameter FRP bolts

VECTOR ENGINEERS

JOB NO.: U4506.002.211

PROJECT: CT11862C **SUBJECT:** CONNECTION ANALYSIS

FOUR-BOLT CONNECTION SUBJECT TO COMBINED LOADING

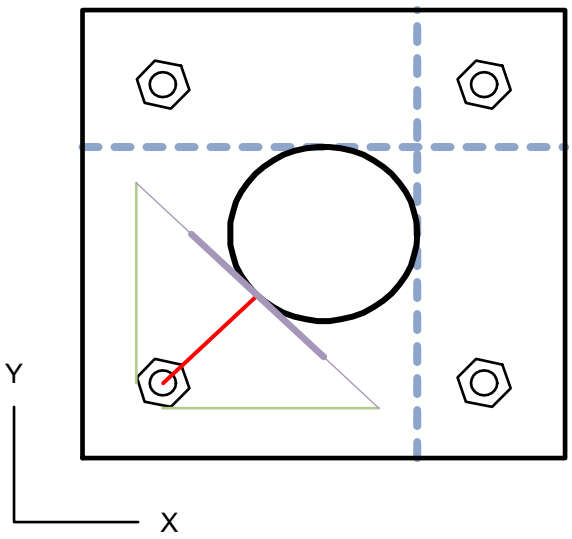
Description: (E) Mast to Deck

Geometry

Column Shape:	Round	
Diameter (in) =	3.5	
Socketed?	No	
Bolt spacing 1 (in) =	6	(parallel to x-axis)
Bolt spacing 2 (in) =	6	(parallel to y-axis)
Bolt diameter (in) =	0.5	
Bolt grade:	A307	
Bolt compression:	Consider	
Tensile strength (lbs):	4418	
Shear strength (lbs):	2356	
Plate width (in) =	9	(parallel to x-axis)
Plate height (in) =	9	(parallel to y-axis)
Thickness (in) =	0.5	
Plate Grade:	A36	
Effective Width:	45° spread plus nut	
	3.50	in
Compression location:	Edge of column	
XX lever arm (in) =	4.75	
YY lever arm (in) =	4.75	
Moment arm (in) =	2.492641	

Weld

Type:	Fillet
Electrode Class Number (ksi):	70
Directional Strength Increase?	No
Required fillet leg size (in) =	0.046
Actual fillet leg size (in) =	**3/16**



Loads

Load Type:	ASD
$Axial_{(Z)}$ (lb) =	847.881
$Shear_X$ (lb) =	48.706
$Shear_Y$ (lb) =	-99.819
$Moment_{XX}$ (ft-lb) =	-309.745
$Moment_{YY}$ (ft-lb) =	-176.753
$Torque_{(ZZ)}$ (ft-lb) =	5.397

Results

Worst LC

Maximum Bolt Tension (lbs) =	826
Maximum Bolt Shear (lbs) =	31
Bolt Stress Ratio:	**18.7%**
Plate Bending Stress Ratio:	**43.7%**
Plate Bearing Stress Ratio:	**0.2%**
Weld stress ratio:	**24.6%**

Nut size across corners (in):	Heavy Hex	1.01
Washer diameter (in):	F436 Standard	1.06
Rect. column corner radius (in):		
Gap size / fit check (in):	1.77	

VECTOR ENGINEERS

JOB NO.: U4506.002.211

PROJECT: CT11862C **SUBJECT:** CONNECTION ANALYSIS

FOUR-BOLT CONNECTION SUBJECT TO COMBINED LOADING

Description: (N) Mast to (E) Mast Top Flange

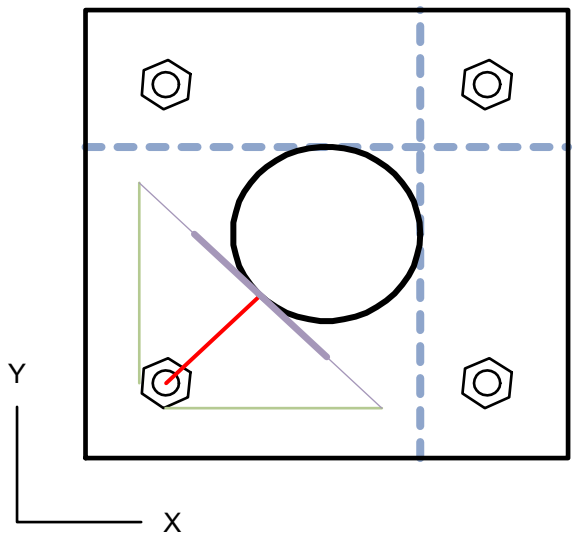
Geometry

Column Shape:	Round	
Diameter (in) =	3.5	
Socketed?	No	
Bolt spacing 1 (in) =	6	(parallel to x-axis)
Bolt spacing 2 (in) =	6	(parallel to y-axis)
Bolt diameter (in) =	0.5	
Bolt grade:	A307	
Bolt compression:	Consider	
Tensile strength (lbs):	4418	
Shear strength (lbs):	2356	
Plate width (in) =	9	(parallel to x-axis)
Plate height (in) =	9	(parallel to y-axis)
Thickness (in) =	0.5	
Plate Grade:	A36	
Effective Width:	45° spread plus nut	
	3.50	in
Compression location:	Edge of column	
XX lever arm (in) =	4.75	
YY lever arm (in) =	4.75	
Moment arm (in) =	2.492641	

Weld

Type: Fillet

Electrode Class Number (ksi):	70
Directional Strength Increase?	No
Required fillet leg size (in) =	0.011
Actual fillet leg size (in) =	**3/16**



Loads

Load Type:	ASD
$Axial_{(Z)}$ (lb) =	405.409
$Shear_X$ (lb) =	1.424
$Shear_Y$ (lb) =	-7.793
$Moment_{XX}$ (ft-lb) =	88.885
$Moment_{YY}$ (ft-lb) =	8.711
$Torque_{(ZZ)}$ (ft-lb) =	6.869

Results

Worst LC

Maximum Bolt Tension (lbs) =	225
Maximum Bolt Shear (lbs) =	7
Bolt Stress Ratio:	**5.1%**
Plate Bending Stress Ratio:	**11.9%**
Plate Bearing Stress Ratio:	**0.0%**
Weld stress ratio:	**5.7%**

Nut size across corners (in):	Heavy Hex	1.01
Washer diameter (in):	F436 Standard	1.06
Rect. column corner radius (in):		
Gap size / fit check (in):	1.77	

JOB NO.: U4506.002.211

PROJECT: CT11862C **SUBJECT:** CONNECTION ANALYSIS

FOUR-BOLT CONNECTION SUBJECT TO COMBINED LOADING

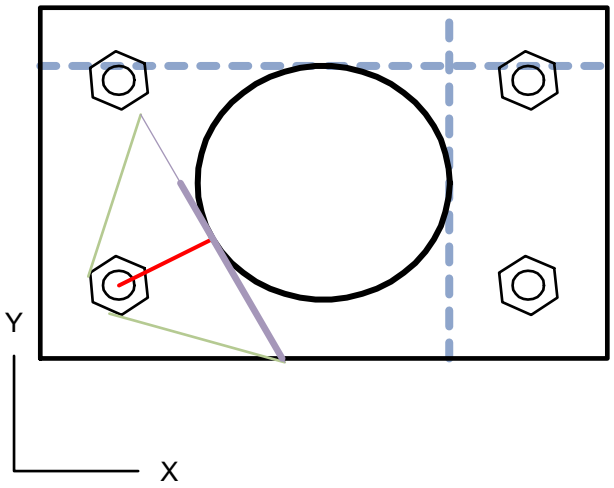
Description: (E) Pipe Stub to New Blocking

Geometry

Column Shape:	Round	
Diameter (in) =	4	
Socketed?	No	
Bolt spacing 1 (in) =	6.5	(parallel to x-axis)
Bolt spacing 2 (in) =	3.5	(parallel to y-axis)
Bolt diameter (in) =	0.5	
Bolt grade:	A307	
Bolt compression:	Consider	
Tensile strength (lbs):	4418	
Shear strength (lbs):	2356	
Plate width (in) =	9	(parallel to x-axis)
Plate height (in) =	6	(parallel to y-axis)
Thickness (in) =	0.75	
Plate Grade:	A36	
Effective Width:	45° spread plus nut	
	3.41	in
Compression location:	Edge of column	
XX lever arm (in) =	3.75	
YY lever arm (in) =	5.25	
Moment arm (in) =	1.691206	

Weld

Type:	Fillet
Electrode Class Number (ksi):	70
Directional Strength Increase?	No
Required fillet leg size (in) =	0.088
Actual fillet leg size (in) =	**5/16**



Loads

Load Type:	ASD
$Axial_{(Z)}$ (lb) =	2205.791
$Shear_X$ (lb) =	-16.067
$Shear_Y$ (lb) =	826.909
$Moment_{XX}$ (ft-lb) =	1129.791
$Moment_{YY}$ (ft-lb) =	56.554
$Torque_{(ZZ)}$ (ft-lb) =	-0.04

Results

Worst LC

Maximum Bolt Tension (lbs) =	2424
Maximum Bolt Shear (lbs) =	207
Bolt Stress Ratio:	**54.9%**
Plate Bending Stress Ratio:	**39.7%**
Plate Bearing Stress Ratio:	**0.8%**
Weld stress ratio:	**28.2%**

Nut size across corners (in):	Heavy Hex	1.01
Washer diameter (in):	F436 Standard	1.06
Rect. column corner radius (in):		
Gap size / fit check (in):	0.85	

PROJECT: CT11862C **JOB NO.:** U4506.002.211 **SUBJECT:** GRAVITY LOADS

ROOF			Increase due to pitch	Original loading
ROOF PITCH/12		0		
ASPHALT SHINGLES		4.00	1.00	4.00
1/2" PLYWOOD		1.50	1.00	1.50
FRAMING		3.00		
INSULATION		2.00		
1/2" GYPSUM CLG.		2.20		
M, E & MISC		2.30		
OTHER		0.00		
	DL	15.00		
	LL	20.00		
	SNOW	30.00		
SNOW INCLUDED IN LATERAL		0.0		

2ND FLOOR (WHERE OCCURS)		
FLOOR COVERING		1.00
3/4" T&G PLYWOOD		2.30
MFG TRUSSES / FRAMING		2.00
INSULATION		1.00
1/2" GYPSUM CEILING		2.20
PARTITION		2.00
M, E & MISC.		1.50
OTHER		0.00
	DL	12.00
	LL	40.00

EXTERIOR WALLS		
STUCCO/SIDING		3.50
2x4 FRAMING W/3 PLATES		1.30
INSULATION		1.00
1/2" GYPSUM		2.20
1/2" PLYWOOD		1.50
OTHER		0.50
	DL	10.00

OVERFILL		
ASPHALT SHINGLES		4.00
1/2" PLYWOOD		1.50
RAFTERS & MISC		3.50
OTHER		0.00
	DL	9.00
	LL	20.00

TYPICAL ROOF OVERBUILD MAX SPAN TABLE

Grade	Size	Spacing (ft)	L_{max} (ft)	C_r	C_D	$C_{F,V}$	M_{allow} (ft-lb)	V_{allow} (lb)	Ctrl'g factor
DFL#2	2X4	2	5.80	1.15	1.00	1.50	385	382	Moment
DFL#2	2X6	2	8.50	1.15	1.00	1.30	824	601	Moment
DFL#2	2X8	2	10.80	1.15	1.00	1.20	1322	792	Moment
DFL#2	2X10	2	13.20	1.15	1.00	1.10	1973	1011	Moment

Project Title:
Engineer:
Project ID:
Project Descr:

Wood Beam

Lic. # : KW-06004714 VECTOR STRUCTURAL ENGINEERS

DESCRIPTION: 2x8 Raters Supporting Mast (2 Rafters)

CODE REFERENCES

Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design
Load Combination : ASCE 7-16

Wood Species : Spruce-Pine-Fir
Wood Grade : No. 1/No. 2

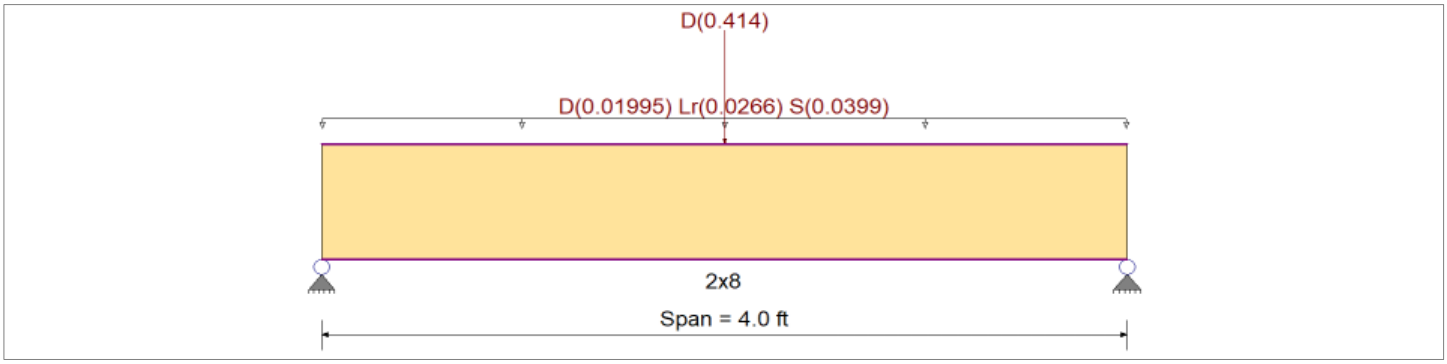
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb +	875.0 psi
Fb -	875.0 psi
Fc - Prll	1,150.0 psi
Fc - Perp	425.0 psi
Fv	135.0 psi
Ft	450.0 psi

E : Modulus of Elasticity

Ebend- xx	1,400.0 ksi
Eminbend - xx	510.0 ksi
Density	26.220 pcf

Repetitive Member Stress Increase



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads
Uniform Load : D = 0.0150, Lr = 0.020, S = 0.030 ksf, Tributary Width = 1.330 ft, (Gravity)
Point Load : D = 0.4140 k @ 2.0 ft, (Mast)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.385 : 1	Maximum Shear Stress Ratio	=	0.270 : 1
Section used for this span		2x8	Section used for this span		2x8
fb: Actual	=	418.12 psi	fv: Actual	=	32.79 psi
Fb: Allowable	=	1,086.75 psi	Fv: Allowable	=	121.50 psi
Load Combination		+D+H	Load Combination		+D+H
Location of maximum on span	=	2.000 ft	Location of maximum on span	=	3.401 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.003 in	Ratio =	13847 >=360
Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Max Downward Total Deflection	0.020 in	Ratio =	2430 >=180
Max Upward Total Deflection	0.000 in	Ratio =	0 <180

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	C_d	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values M	fb	F'b	Shear Values V	fv	F'v
+D+H													0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.385	0.270	0.90	1.200	1.00	1.15	1.00	1.00	1.00	0.46	418.12	1086.75	0.24	32.79	121.50
+D+L+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.346	0.243	1.00	1.200	1.00	1.15	1.00	1.00	1.00	0.46	418.12	1207.50	0.24	32.79	135.00
+D+Lr+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.309	0.225	1.25	1.200	1.00	1.15	1.00	1.00	1.00	0.51	466.70	1509.38	0.28	37.93	168.75
+D+S+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.354	0.261	1.15	1.200	1.00	1.15	1.00	1.00	1.00	0.54	490.99	1388.63	0.29	40.50	155.25
+D+0.750Lr+0.750L+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.301	0.217	1.25	1.200	1.00	1.15	1.00	1.00	1.00	0.50	454.55	1509.38	0.27	36.65	168.75
+D+0.750L+0.750S+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.340	0.248	1.15	1.200	1.00	1.15	1.00	1.00	1.00	0.52	472.77	1388.63	0.28	38.58	155.25

Project Title:
Engineer:
Project ID:
Project Descr:

Wood Beam

File: Beam.ec6

Lic. # : KW-06004714

VECTOR STRUCTURAL ENGINEERS

DESCRIPTION: 2x8 Raters Supporting Mast (2 Rafters)

Load Combination / Segment Length	Span #	Max Stress Ratios M	Max Stress Ratios V	C_d	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values M	Moment Values fb	Moment Values F'b	Shear Values V	Shear Values fv	Shear Values F'v
+D+0.60W+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.216	0.152	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.46	418.12	1932.00	0.24	32.79	216.00
+D+0.750Lr+0.750L+0.450W+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.235	0.170	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.50	454.55	1932.00	0.27	36.65	216.00
+D+0.750L+0.750S+0.450W+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.245	0.179	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.52	472.77	1932.00	0.28	38.58	216.00
+0.60D+0.60W+0.60H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.130	0.091	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.27	250.87	1932.00	0.14	19.67	216.00
+D+0.70E+0.60H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.216	0.152	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.46	418.12	1932.00	0.24	32.79	216.00
+D+0.750L+0.750S+0.5250E+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.245	0.179	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.52	472.77	1932.00	0.28	38.58	216.00
+0.60D+0.70E+H					1.200	1.00	1.15	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 4.0 ft	1	0.130	0.091	1.60	1.200	1.00	1.15	1.00	1.00	1.00	0.27	250.87	1932.00	0.14	19.67	216.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+S+H	1	0.0198	2.015		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	0.331	0.331
Overall MINimum	0.080	0.080
+D+H	0.251	0.251
+D+L+H	0.251	0.251
+D+Lr+H	0.304	0.304
+D+S+H	0.331	0.331
+D+0.750Lr+0.750L+H	0.291	0.291
+D+0.750L+0.750S+H	0.311	0.311
+D+0.60W+H	0.251	0.251
+D+0.750Lr+0.750L+0.450W+H	0.291	0.291
+D+0.750L+0.750S+0.450W+H	0.311	0.311
+0.60D+0.60W+0.60H	0.151	0.151
+D+0.70E+0.60H	0.251	0.251
+D+0.750L+0.750S+0.5250E+H	0.311	0.311
+0.60D+0.70E+H	0.151	0.151
D Only	0.251	0.251
Lr Only	0.053	0.053
S Only	0.080	0.080
H Only		

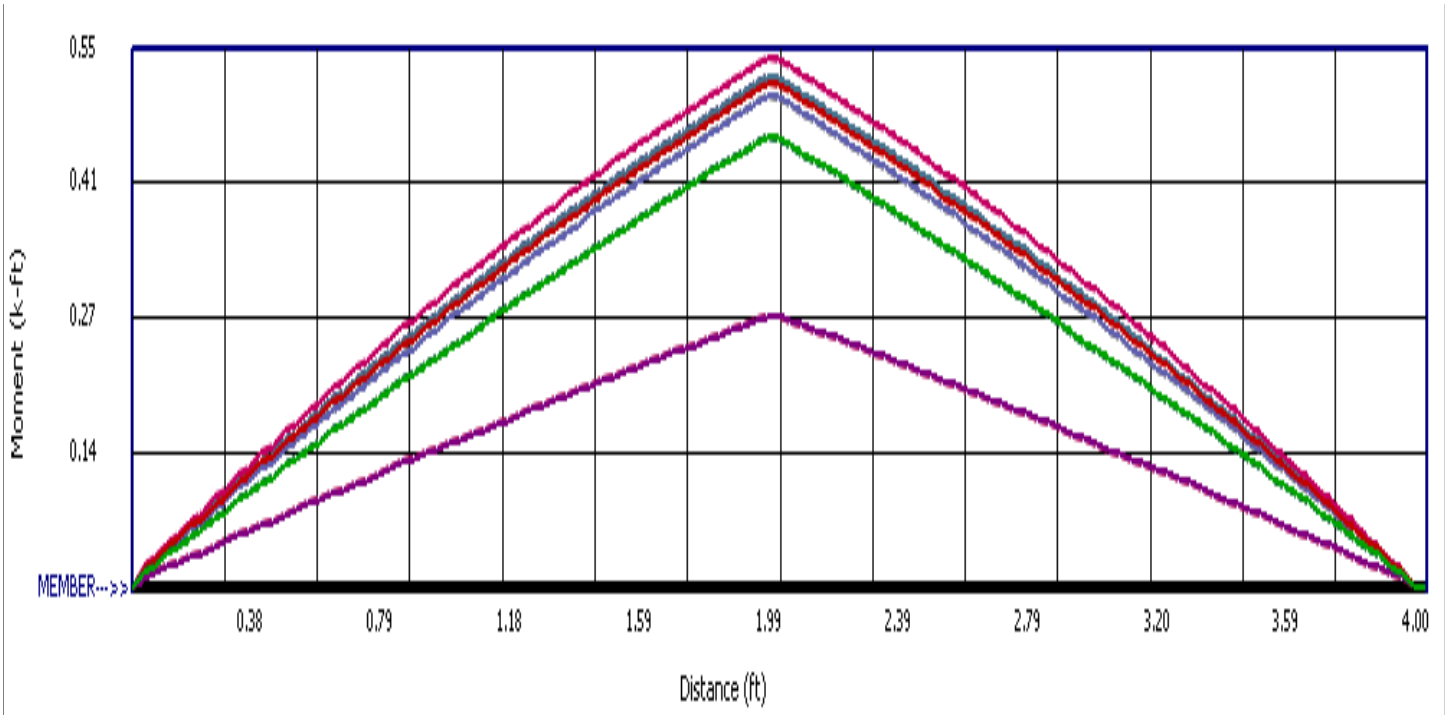
Project Title:
Engineer:
Project ID:
Project Descr:

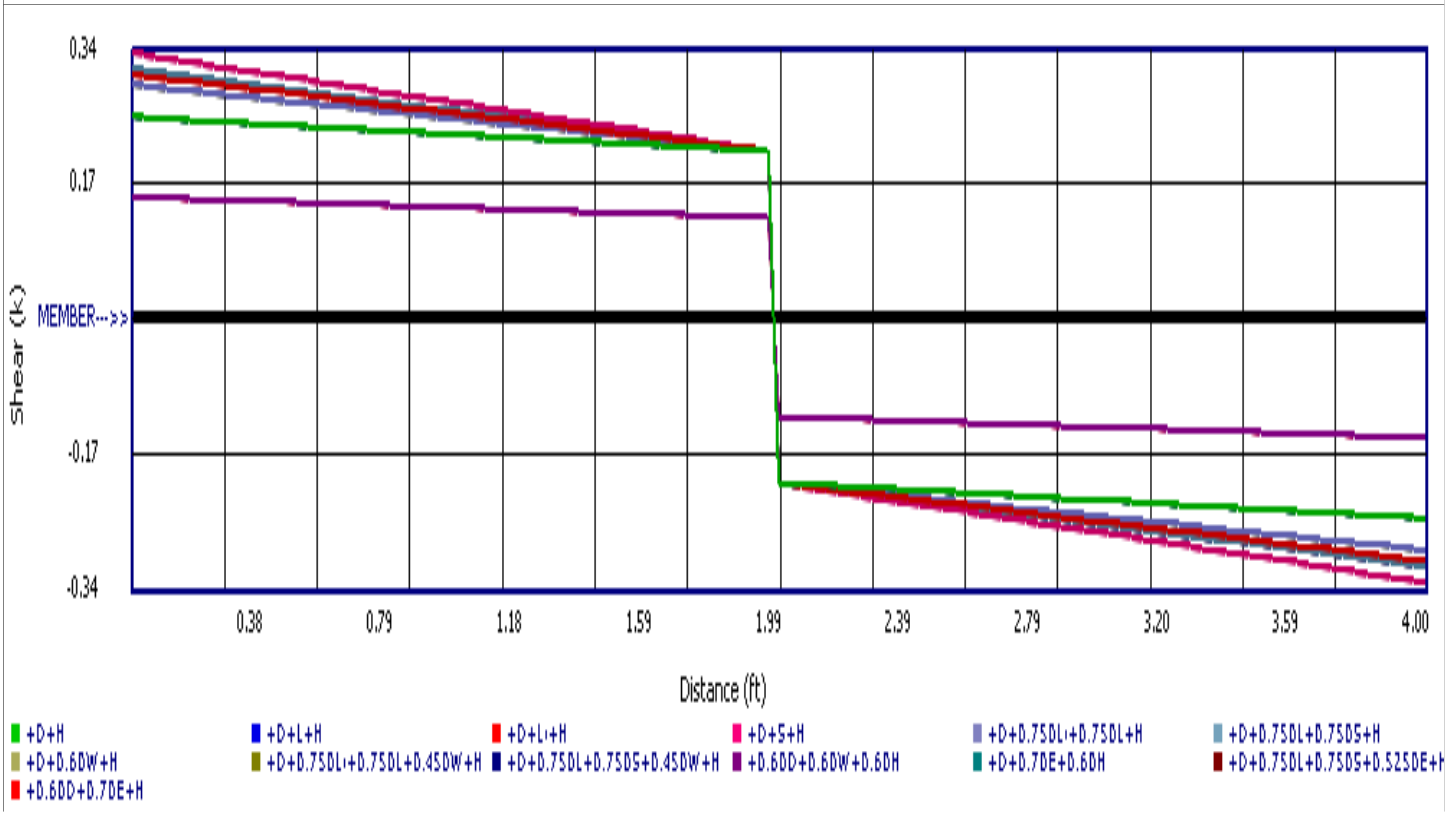
Wood Beam

File: Beam.ec6

Lic. # : KW-06004714
VECTOR STRUCTURAL ENGINEERS

DESCRIPTION: 2x8 Raters Supporting Mast (2 Rafters)





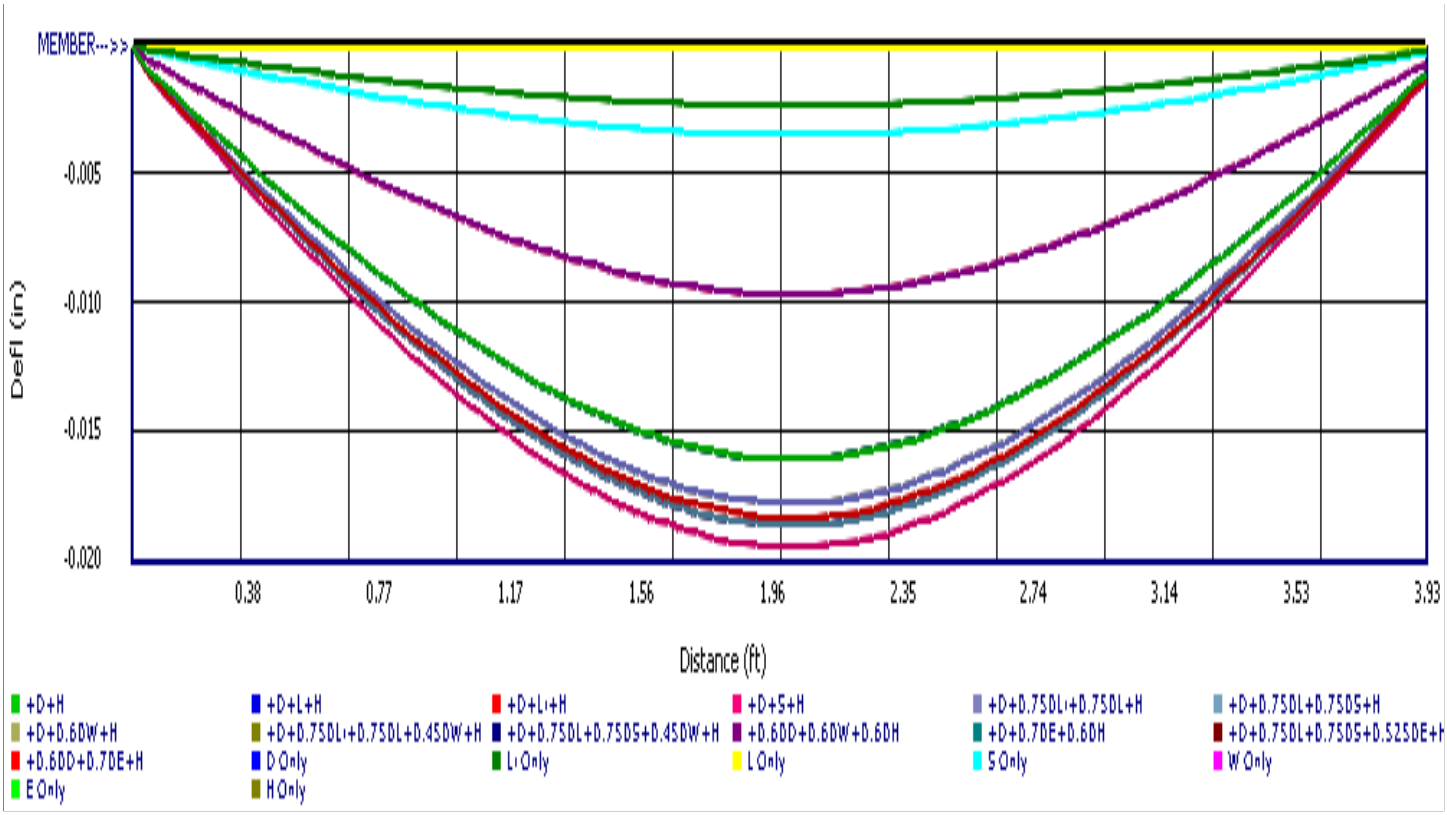
Project Title:
Engineer:
Project ID:
Project Descr:

Wood Beam

File: Beam.ec6

Lic. # : KW-06004714
VECTOR STRUCTURAL ENGINEERS

DESCRIPTION: 2x8 Raters Supporting Mast (2 Rafters)



PROJECT: CT11862C **JOB NO.:** U4506.002.211 **SUBJECT:** LATERAL LOADS

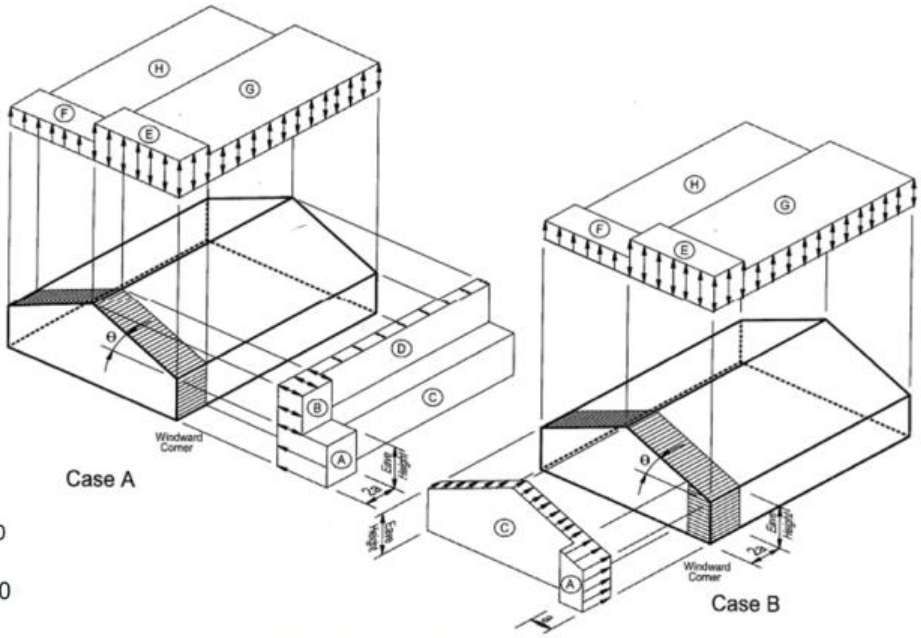
DESIGN OF ENCLOSED SIMPLE DIAPHRAGM LOW-RISE BUILDINGS FOR LATERAL LOADS

Seismic Parameters (ASCE 7-10 Chapters 11, 12, & 22)

Site Class:	D	S. 11.4.2	N =	4	S. 12.8.2.1	Determination of SDC:		
R =	6.5	T. 12.2-1	C_t =	0.02	T. 12.8-2	Per Table 11.6-1:	B	
S_s =	0.231	F. 22-1	h_n (ft) =	45	S. 12.8.2.1	Per Table 11.6-2:	C	
S_1 =	0.107	F. 22-2	x =	0.75	T. 12.8-2	SDC:	C	S. 11.6
F_a =	1.6	T. 11.4-1	T_a =	0.35	E. 12.8-7	I_E =	1.00	T. 1.5-2
F_v =	2.372	T. 11.4-2	T_0=	0.14	S. 11.4.5	C_{SMAX}=	0.075	E. 12.8-3,4
S_{MS} =	0.37	E. 11.4-1	T_S=	0.69	S. 11.4.5	C_S=	0.038	E. 12.8-2
S_{M1} =	0.25	E. 11.4-2	C_U=	1.56	T. 12.8-1	C_{SMIN}=	0.011	E. 12.8-5,6
S_{DS} =	0.246	E. 11.4-3	T_L=	8	F. 22-12	$C_{SCONTROL}$=	0.038	S. 12.8.1.1
S_{DI} =	0.169	E. 11.4-4	S_a=	0.246	S. 11.4.5	$C_{SCONTROL}$*.7=	0.027	S. 2.4.1
						Seismic Analysis Req'd?	No	IBC 1613.1
						Perform Seismic Analysis?	No	

Wind Parameters (ASCE 7-10 Chapter 26)

Wind areas labeled C and D are used for calculating line loads on the following sheet.



Risk Category:	II
Basic Wind Speed (mph):	120
Exposure Category:	C
K_{zt}:	1.00

MAIN WIND FORCE RESISTING SYSTEM - METHOD 2 FIGURE 28.6-1
SIMPLIFIED DESIGN WIND PRESSURE, P_{s30} (psf) *(Exposure B at h=30 feet)*

BASIC WIND SPEED (mph)	ROOF ANGLE (degrees)	LOAD CASE	Note: Wind load determined from pressures below will be multiplied by 0.6 (ASD load factor on wind loads) ZONES									
			HORIZONTAL PRESSURES				VERTICAL PRESSURES				OVERHANGS	
			A	B	C	D	E	F	G	H	E_{OH}	G_{OH}
120	0 to 5°	1	22.9	-11.8	15.1	-7.0	-27.5	-15.5	-19.1	-12.2	-38.5	-30.1
	10°	1	25.7	-10.8	17.1	-6.2	-27.5	-16.7	-19.1	-13.0	-38.5	-30.1
	15°	1	28.7	-9.6	19.1	-5.4	-27.5	-17.9	-19.1	-13.8	-38.5	-30.1
	20°	1	31.7	-8.4	21.1	-4.6	-27.5	-19.1	-19.1	-14.5	-38.5	-30.1
	25°	1	28.7	4.6	20.7	4.8	-12.8	-17.3	-9.2	-14.0	-23.7	-20.1
		2					-4.8	-9.4	-1.4	-6.0		
	30° to 45°	1	25.7	17.5	20.3	14.0	2.0	-15.5	0.6	-13.4	-9.0	-10.4
		2	25.7	17.5	20.3	14.0	10.0	-7.8	8.6	-5.6	-9.0	-10.4

PROJECT: CT11862C **JOB NO.:** U4506.002.211 **SUBJECT:** LINE LOADS

Roof DL	15	psf
Seismic		
Snow	0	psf
Floor DL	12	psf
Wall DL	10	psf
Period, T	0.35	sec

Level Descriptions

Label	Height (ft)	$W_{control}$ (lb)	V_{norm} (lb)	V_{redist} (lb)	Redist Fact
Roof	45	6928	263	341	1.30
Fourth Floor	24.75	1654	63	45	0.71
Third Floor	16.5	1654	63	30	0.48
Second Floor	8.25	960	36	9	0.24
Total Weight (lb)		11197			
Total Base Shear (lb)		424			

k= 1

$\Sigma w_i h_i^k$= 387914

Estimated Total Weight in Longitudinal Direction 11197

Estimated Total Weight in Transverse Direction 11197

Percent difference in estimated weights 0.0%

Seismic Line Loads

Label	Width	Level	Direction	Number of times to include	Roof Trib (ft)	Floor Trib (ft)	Wall Trib Height (ft)	Ext Wall Length (ft)	Other Weight (lb/ft)	Total Weight (lb/ft)	Total Force (lb/ft)	Redist Factor	Revised Force (lb/ft)	Force Redist to 1
ω1	4.208333	Roof	LONG	1	4.2083333		24.375	16.8333	608	1646	62	1.30	81	NO
ω2	4.208333	Roof	TRANS	1	4.2083333		24.375	16.8333	608	1646	62	1.30	81	NO
ω3	4.208333	Fourth Floor	LONG	1	4.2083333		8.25	16.8333		393	15	0.71	11	NO
ω4	4.208333	Fourth Floor	TRANS	1	4.2083333		8.25	16.8333		393	15	0.71	11	NO
ω5	4.208333	Third Floor	LONG	1	4.2083333		8.25	16.8333		393	15	0.48	7	NO
ω6	4.208333	Third Floor	TRANS	1	4.2083333		8.25	16.8333		393	15	0.48	7	NO
ω7	4.208333	Second Floor	LONG	1	4.2083333		4.125	16.8333		228	9	0.24	2	NO
ω8	4.208333	Second Floor	TRANS	1	4.2083333		4.125	16.8333		228	9	0.24	2	NO
ω9								0		0	0	1.00	0	NO
ω10				1				0		0	0	1.00	0	NO
ω11				1				0		0	0	1.00	0	NO
ω12				1				0		0	0	1.00	0	NO
ω13				1				0		0	0	1.00	0	NO
ω14				1				0		0	0	1.00	0	NO
ω15				1				0		0	0	1.00	0	NO
ω16				1				0		0	0	1.00	0	NO
ω17				1				0		0	0	1.00	0	NO
ω18				1				0		0	0	1.00	0	NO
ω19				1				0		0	0	1.00	0	NO
ω20				1				0		0	0	1.00	0	NO

Wind Line Loads *Surface type 'C' is flat wall and 'D' is sloped roof, 'CP1' and 'CP2' represent parapets on only one side and both sides of the structure, respectively*

Label	Roof Pitch /12	Mean Roof Height (ft)	Surface Type 1	Equiv Height Exposed (ft)	Surface Type 2	Equiv Height Exposed (ft)	Roof Angle (°)	Applied Interior Press 1 (psf)	Applied Interior Press 2 (psf)	Applied End Zone Press 1 (psf)	Applied End Zone Press 2 (psf)	Height & Exp Coeff, λ	Total Int Unif Load (plf)	Total End Zone Unif Load (plf)
ω1	0	45	C	20.25	C	4.125	0.0	23.10	23.10	34.88	34.88	1.53	563.14	850.30
ω2							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω3							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω4							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω5							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω6							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω7	0	15	C	4.125			0.0	18.27	0.00	27.59	0.00	1.21	75.37	113.80
ω8							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω9							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω10							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω11							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω12							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω13							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω14							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω15							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω16							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω17							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω18							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω19							0.0	0.00	0.00	0.00	0.00		0.00	0.00
ω20							0.0	0.00	0.00	0.00	0.00		0.00	0.00

PROJECT: PROJECT NAME **JOB NO.:** U4[illegible] **SUBJECT:** SHEAR WALL SHEET EXPLANATION

Global ρ value applied

Calculated ρ values and controlling locations

Aspect ratio limits

Loads applied along line, as calculated previously

Diaphragm shear calculations

PERF/ FTAO wall calcs where applicable

$\rho_{Applied}$ =	1	ρ_i	Loc
Min Diaphragm Width (ft) =	20	1.00	A-1ST
Allowable Seismic Aspect Ratio =	3.5	1.00	A-2ND
Allowable Wind Aspect Ratio =	3.5		
Comb. Overstrength Factors: (Ω-0.5)/1.2 =	2.08		

ρ calculated in acc[illegible] Section 12.3.4.1

Roof DL (psf) = 44 (includes seismic snow where occurs)
Floor DL (psf) = 12

LINE: A 2ND STORY

Line Loads (plf)				Loads from above					Actual Applied Loads (plf unless noted otherwise)					Diaphragm Shear (plf)			Perf/FTAO Wall Info		
Load	Trib w (ft)	E.Z. Appl*	Span (ft)	Line	%	Location	Seis (lbs)	Wind (lbs)	ρ*Seis	Wind	E.Z. Wind	2a (ft)	E.Z. P (lb)	Drag (ft)	Seis (Load vs. Allow.)		(Not Applicable)		
ω1	10	Major	20		1.00	Offset			91.6	113.0	145.5	6	166	8	114	166			
		None			1.00	Offset								8					
					1.00	Above									Wind (Load vs. Allow.)				
						Total	916	**1296**							162	232			

Include Ω for irregularities (above)?

Plate h (ft)= 10
Max opening height (ft)= 10
Apply 2w/l reduction? Yes
Opening elevation

100% Perforated SW? No
Force Transfer @ Openings? No

Shear Length (ft)= 8
Wall DL (psf)= 10

Story V (K)= 1831
Max allow. drift (in) 3

Total seismic shear applied at level, for calculating ρ

Type of wind zone reaction, see below

Selection of wall type, 'No' for both means a segmented wall

Shear-Wall Length (ft)	$Roof_{DL}$ 'w' (ft)	$Floor_{DL}$ 'w' (ft)	$Other_{DL}$ 'w' (plf)	Tension From Above (lb)	Wall Type	Sill Type	Holdown Strap	HD Capacity (Stem 'w'-edge dist)	OTM (wind, seismic) (ft-lb)	.6*RM (ft-lb)	Aspect Ratio	2w/l Reduct.	Seis. Shear (plf)	Seis. Wall Cap. (plf)	Wind Shear (plf)	Wind Wall Cap. (plf)	Sill Plate Cap. (plf)	Tension (lb)	HD Capacity	Max Shear-Wall Δ (in)
3	2				P1	S1	CS16		4859	351	3.33	0.60	114	156	162	365	372	1502	1705	0.19
5	2				P1	S1	CS16		8098	976	2.00	1.00	114	260	162	365	372	1424	1705	0.18

Add'l Comments: Max: 0.19

Information on individual wall piers

Applied unit shears and unit shear capacities (reduced where appropriate)

LINE: A 1ST STORY

Line Loads (plf)				Loads from above					Actual Applied Loads (plf unless noted o					Perf/FTAO Wall Info				
Load	Trib w (ft)	E.Z. Appl*	Span (ft)	Line	%	Location	Seis (lbs)	Wind (lbs)	ρ*Seis	Wind	E.Z. Wind	2a (ft)		Ltotal (ft)	12	Rdl (ft)		
ω3	10	Major	20		1.00	Offset			99.9	100.9	152.5	6				DL (plf)	160	
		None			1.00	Offset								Wall type	P2	Opening (ft)	4	
				A-2ND	1.00	Above	916	1296						HD	STHD10	8"-Corner		
						Total	1915	**2305**						T (lb)	1345	HD cap	2940	
														Seis (plf)	367	Cap (plf)	380	
														Wind (plf)	442	Cap (plf)	520	
														Strap (lb)	884			

Include Ω for irregularities (above)?

Plate h (ft)= 10
Max opening height (ft)= 4
Apply 2w/l reduction? Yes
Opening elevation 2

50% Perforated SW? No
Force Transfer @ Openings? Yes

Shear Length (ft)= 8
Wall DL (psf)= 10

Story V (K)= 383
Max allow. drift (in) 3

Perforated or FTAO calculations

Co factor when applicable

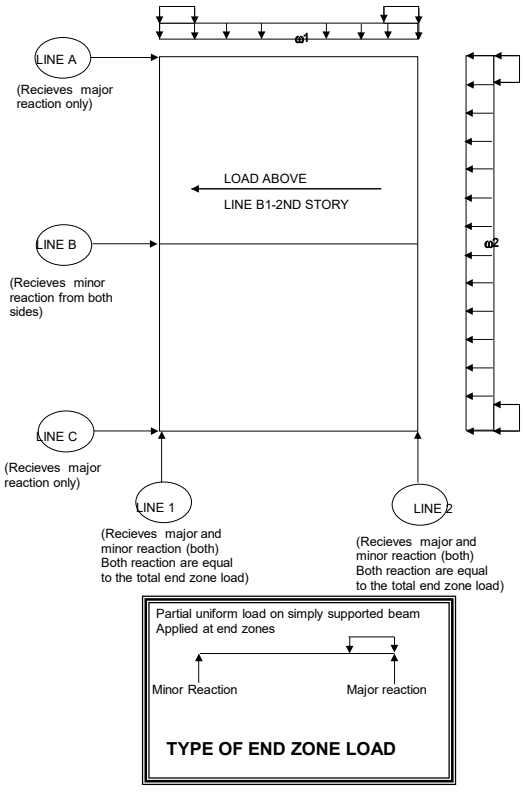
Hold down information for global wall overturning

Required only for FTAO method

Maximum unit shear and strap forces calculated by Diekmann method for FTAO walls

Shear-Wall Length (ft)	$Roof_{DL}$ 'w' (ft)	$Floor_{DL}$ 'w' (ft)	$Other_{DL}$ 'w' (plf)	Tension From Above (lb)	Wall Type	Sill Type	Holdown Strap	HD Capacity (Stem 'w'-edge dist)	OTM (wind, seismic) (ft-lb)	.6*RM (ft-lb)	Aspect Ratio	2w/l Reduct.	Seis. Shear (plf)	Seis. Wall Cap. (plf)	Wind Shear (plf)	Wind Wall Cap. (plf)	Sill Plate Cap. (plf)	Tens (lb)		
3		PERF/FTAO SHEAR-WALL CALCULATIONS APPLY - SEE ABOVE									1.33	1.00								
5											0.80	1.00								

Add'l Comments: Max: 0.00



PROJECT: CT11862C **JOB NO.:** U4506.002.211 **SUBJECT:** SHEAR WALLS

$\rho_{Applied}$ =	1.3	**USE MAX RHO**	ρ_i	Loc	Fp/Fx		**Roof DL (psf) =**	**15**	(includes seismic snow where occurs)
Min Diaphragm Width (ft) =	4.20833				4.20		**Floor DL (psf) =**	**12**	
Allowable Seismic Aspect Ratio =	3.5		1.00	2-2ND	2.25	ρ calculated in accordance with:			
Allowable Wind Aspect Ratio =	3.5				1.66	ASCE7-10 Section 12.3.4.2			
Comb. Overstrength Factors: (Ω-0.5)/1.2=	2.08		1.00	1-4TH	1.00	No Exception in ASCE 7 12.3.4.2b met?			

LINE: 1 4TH STORY **Timber Framed Shearwall Calculations**

Line Loads (plf)				Loads from above					Actual Applied Loads (plf unless noted otherwise)					Diaphragm Shear (plf)			Perf/FTAO Wall Info			
Load	Trib w (ft)	E.Z. Appl*	Span (ft)	Line	%	Location	0.7E (lbs)	0.6W (lbs)	p*Seis	Wind	E.Z. Wind	2a (ft)	E.Z. P (lb)	Drag (ft)	Seis (Load vs. Allow.)		(Not Applicable)			
ω1	2.104167	Major	4.208333		1.00	Offset				337.9	510.2	6	297	4		166				
		None			1.00	Offset								4						
					1.00	Above									Wind (Load vs. Allow.)					
Plate h (ft)=	8.25					Total		**1008**	Include Ω for irregularities (above)?		No				252	232				
Max opening height (ft)=	8.25																			
Apply aspect ratio reduction?	Yes	100%	Perforated SW?	No	Shear Length (ft)=	4	Story V (K)=													
Opening elevation		Force Transfer @ Openings?		No	Wall DL (psf)=	10	Max allow. drift (in)	1.98												

Shear-Wall Length (ft)	$Roof_{DL}$ 'w' (ft)	$Floor_{DL}$ 'w' (ft)	$Other_{DL}$ 'w' (plf)	Tension From Above (lb)	Wall Type	Sill Type	Holdown Strap	HD Capacity (Stem/floor config)	OTM (**wind**, seismic) (ft-lb)	(0.6-.2SDs) *RM (ft-lb)	Aspect Ratio	Aspect Ratio Reduc.	Seis. Shear (plf)	Seis. Wall Cap. (plf)	Wind Shear (plf)	Wind Wall Cap. (plf)	Sill Plate Cap. (plf)	Tension (lb)	HD Capacity	Max Shear-Wall Δ 1.0E (in)
4	1				P1		HDU8		**8314**	468	2.06	0.97		252	252	354		1962	7870	0.23
Add'l Comments:																			Max:	0.23

LINE: 2 2ND STORY **Timber Framed Shearwall Calculations**

Line Loads (plf)				Loads from above					Actual Applied Loads (plf unless noted otherwise)					Diaphragm Shear (plf)			Perf/FTAO Wall Info			
Load	Trib w (ft)	E.Z. Appl*	Span (ft)	Line	%	Location	0.7E (lbs)	0.6W (lbs)	p*Seis	Wind	E.Z. Wind	2a (ft)	E.Z. P (lb)	Drag (ft)	Seis (Load vs. Allow.)		(Not Applicable)			
ω7	2.104167	Major	4.208333		1.00	Offset				45.2	68.3	6	40	4		198				
		None			1.00	Offset								4						
					1.00	Above									Wind (Load vs. Allow.)					
Plate h (ft)=	8.25					Total		**135**	Include Ω for irregularities (above)?		No				34	276				
Max opening height (ft)=	8.25																			
Apply aspect ratio reduction?	Yes	100%	Perforated SW?	No	Shear Length (ft)=	4	Story V (K)=													
Opening elevation		Force Transfer @ Openings?		No	Wall DL (psf)=	10	Max allow. drift (in)	1.98												

Shear-Wall Length (ft)	$Roof_{DL}$ 'w' (ft)	$Floor_{DL}$ 'w' (ft)	$Other_{DL}$ 'w' (plf)	Tension From Above (lb)	Wall Type	Sill Type	Holdown Strap	HD Capacity (Stem/floor config)	OTM (**wind**, seismic) (ft-lb)	(0.6-.2SDs) *RM (ft-lb)	Aspect Ratio	Aspect Ratio Reduc.	Seis. Shear (plf)	Seis. Wall Cap. (plf)	Wind Shear (plf)	Wind Wall Cap. (plf)	Sill Plate Cap. (plf)	Tension (lb)	HD Capacity	Max Shear-Wall Δ 1.0E (in)
4	1				P1	S1	HDU8		**1113**	468	2.06	0.97		252	34	354	372	161	7870	0.02
Add'l Comments:																			Max:	0.02

Hazards by Location

Search Information

Coordinates: 41.38294444, -73.43569444

Elevation: 491 ft

Timestamp: 2021-07-27T23:04:17.560Z

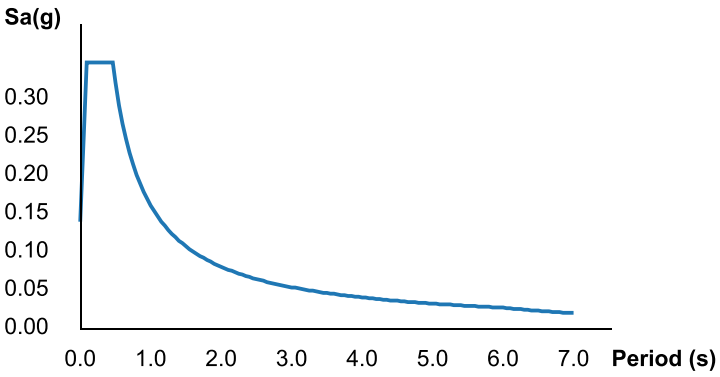
Hazard Type: Seismic

Reference Document: ASCE7-10

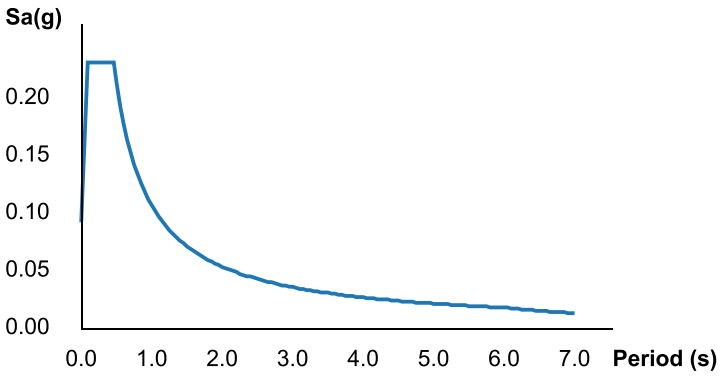
Risk Category: II

Site Class: D

MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.217	MCE_R ground motion (period=0.2s)
S_1	0.067	MCE_R ground motion (period=1.0s)
S_{MS}	0.347	Site-modified spectral acceleration value
S_{M1}	0.16	Site-modified spectral acceleration value
S_{DS}	0.231	Numeric seismic design value at 0.2s SA
S_{D1}	0.107	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2s
F_v	2.4	Site amplification factor at 1.0s
CR_S	0.89	Coefficient of risk (0.2s)

CR_1	0.9	Coefficient of risk (1.0s)
PGA	0.118	MCE_G peak ground acceleration
F_{PGA}	1.563	Site amplification factor at PGA
PGA_M	0.185	Site modified peak ground acceleration
T_L	6	Long-period transition period (s)
SsRT	0.217	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.243	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.067	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.074	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.5	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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ATTACHMENT 5

CERTIFICATION OF SERVICE

I hereby certify that on the 5th day of August 2022, T-Mobile Northeast, LLC provided notice of its intent to file a Petition for a declaratory ruling that a Certificate of Environmental Compatibility and Public Need is not required for the modification of a wireless telecommunications facility at 1 Fairfield Avenue, Danbury, Connecticut, to the following:

Abutters

SEE ATTACHED SHEET

Owner

TALL OAKS LLC
5 CORPORATE DRIVE
DANBURY, CT 06810

Respectfully Submitted,

Victoria Masse
Northeast Site Solutions
420 Main Street #2
Sturbridge, MA 01566

August 5, 2022

VIA USPS CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

TALL OAKS LLC
5 CORPORATE DRIVE
DANBURY, CT 06810

RE: Proposed Modification to Existing Wireless Telecommunications Facility at 1 Fairfield Avenue, Danbury, Connecticut

To Whom It May Concern:

I am writing to you on behalf of T-Mobile Northeast, LLC ("T-Mobile"). T-Mobile intends to file with the Connecticut Siting Council ("Council") a petition for declaratory ruling ("Petition") that a Certificate of Environmental Compatibility and Public Need is not required.

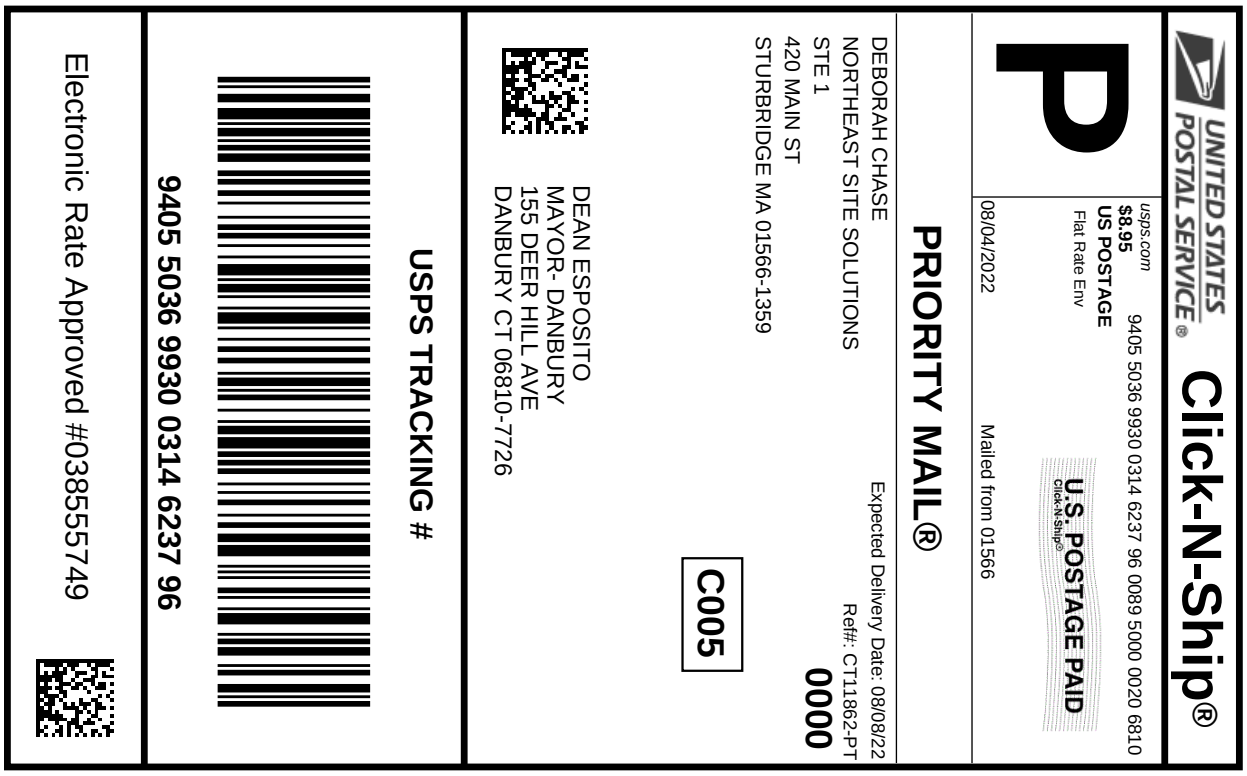
The Petition will provide details of the Existing Facility modification and explain why it will have no significant adverse environmental effect. T-Mobile proposes to extend the height of the existing false chimney by 5-feet, to a total height of approximately 45 feet above ground level.

This letter serves as notice to you as an abutting property owner pursuant to § 16-50j-40 of the Regulations of Connecticut State Agencies. T-Mobile will file the Petition on or about August 5, 2022, and will request that the Council place the Petition on some future agenda.

You may review the Petition at the office of the Council, which is located at Ten Franklin Square, New Britain, Connecticut, 06051, or at the Office of the City Clerk at the Danbury City Hall. All inquiries should be addressed to Council or to the undersigned.

Sincerely,

Victoria Masse
Northeast Site Solutions
420 Main Street #2
Sturbridge, MA 01566



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Total:	**$8.95**

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

Ref#: CT11862-PT

To: DEAN ESPOSITO
MAYOR- DANBURY
155 DEER HILL AVE
DANBURY CT 06810-7726

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

Ref#: CT11862-PT

0000

C005

SHARON CALITRO
DIRECTOR OF PLANNING & ZONING
155 DEER HILL AVE
DANBURY CT 06810-7726

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USPS TRACKING # :
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Trans. #:	569102858
Print Date:	08/04/2022
Ship Date:	08/04/2022
Expected Delivery Date:	08/08/2022

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

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

Ref#: CT11862-PT

To: SHARON CALITRO
DIRECTOR OF PLANNING & ZONING
155 DEER HILL AVE
DANBURY CT 06810-7726

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Total Postage and Fees	$7.85

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Sent To: Sushil / Radhika Chetal

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Sent To: Nicolas Smith
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Sent To: Kristine So / Jeanette Lao
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Certified Mail® Tracking #: 70220410000110996785			$4.00
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Total			$7.85
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Certified Mail® Tracking #: 70220410000110996761			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9831 10			$3.25
Total			$7.85
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Return Receipt Tracking #: 9590 9402 7596 2098 9832 19			$3.25
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Return Receipt Tracking #: 9590 9402 7596 2098 9832 02			$3.25
Total			$7.85
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Return Receipt Tracking #: 9590 9402 7596 2098 9831 89			$3.25
Total			$7.85
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Return Receipt Tracking #: 9590 9402 7596 2098 9831 65			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
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Return Receipt Tracking #: 9590 9402 7596 2098 9831 58			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996785			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9831 41			$3.25
Total			$7.85
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Certified Mail® Tracking #: 70220410000110996778			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9831 34			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996761			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9831 10			$3.25
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Total			$7.85
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Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
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Sent To: Alexander Ostapenko

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City, State, ZIP+4®: Danbury CT 06810

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Sent To: Mario Mendes

Street and Apt. No., or PO Box No.: 19 Rocky Glen Rd

City, State, ZIP+4®: Danbury CT 06810

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Total Postage and Fees	$7.85

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08/04/2022

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Street and Apt. No., or PO Box No.: 2 Mill Ridge Rd

City, State, ZIP+4®: Danbury CT 06811-5231

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☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.60
Total Postage and Fees	$7.85

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Sent To: Joseph BOA

Street and Apt. No., or PO Box No.: 1 Chester St

City, State, ZIP+4®: Brookfield CT 06804

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Certified Mail Fee	$4.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$3.25
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.60
Total Postage and Fees	$7.85

1106 17

Postmark Here

08/04/2022

Sent To: Housing Authority - Danbury

Street and Apt. No., or PO Box No.: 2 Mill Ridge Rd

City, State, ZIP+4®: Danbury CT 06811-5235

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6891

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Danbury, CT 06810

OFFICIAL USE

Certified Mail Fee	$4.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$3.25
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.60
Total Postage and Fees	$7.85

1106 17

Postmark Here

08/04/2022

Sent To: Iliana Rosario / Clifford Barber

Street and Apt. No., or PO Box No.: 14 Morton St #12

City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047

7022 0410 0001 1099 6754

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Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.60

Total Postage and Fees $7.85

$3.25

1106 17

Postmark Here

08/04/2022

7022 0410 0001 1099 6747

Sent To Maria Morel / Yamailyn Castro
Street and Apt. No., or PO Box No. 14 Morlan St #11
City, State, ZIP+4® Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Certified Mail Fee $4.00
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.60

Total Postage and Fees $7.85

$3.25

1106 17

Postmark Here

AUG - 4 2022

08/04/2022

7022 0410 0001 1099 6730

Sent To Arthur - Karen Langer
Street and Apt. No., or PO Box No. 14 Morlan St #10
City, State, ZIP+4® Danbury CT 06810

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Certified Mail Fee $4.00
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.60

Total Postage and Fees $7.85

$3.25

1106 17

Postmark Here

AUG - 4 2022

08/04/2022

7022 0410 0001 1099 6723

Sent To Tatiana Cruz
Street and Apt. No., or PO Box No. 14 Morlan St #1
City, State, ZIP+4® Danbury CT 06810

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Scottsdale, AZ 85262

OFFICIAL USE

Certified Mail Fee $4.00
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.60

Total Postage and Fees $7.85

$3.25

1106 17

Postmark Here

AUG - 4 2022

08/04/2022

7022 0410 0001 1099 6716

Sent To Barbara Ruiz
Street and Apt. No., or PO Box No. 11540 East Cavedale Dr
City, State, ZIP+4® Scottsdale AZ 85262

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Danbury, CT 06811

OFFICIAL USE

Certified Mail Fee $4.00
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.60

Total Postage and Fees $7.85

$3.25

1106 17

Postmark Here

AUG - 4 2022

08/04/2022

7022 0410 0001 1099 6709

Sent To Williams Coal Pit Hill Rd Invst.
Street and Apt. No., or PO Box No. 11 Westminster Rd
City, State, ZIP+4® Danbury CT 06811

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Danbury, CT 06810

OFFICIAL USE

Certified Mail Fee $4.00
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.60

Total Postage and Fees $7.85

$3.25

1106 17

Postmark Here

AUG - 4 2022

08/04/2022

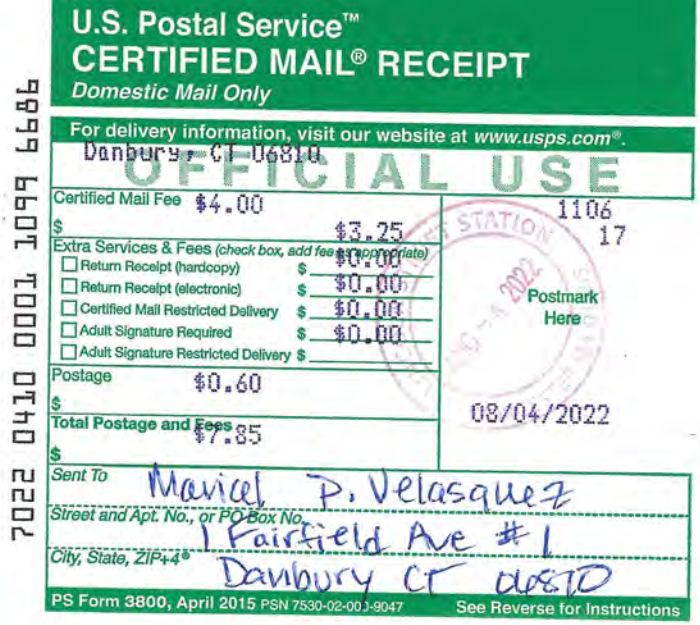
7022 0410 0001 1099 6693

Sent To Cristina Mauillon
Street and Apt. No., or PO Box No. 1 Fairfield Ave #3
City, State, ZIP+4® Danbury CT 06810

LINCOLN MALL
560 LINCOLN ST STE 8
WORCESTER, MA 01605-1925
(800)275-8777

08/04/2022 09:49 AM

Product	Qty	Unit Price	Price
First-Class Mail® Letter Danbury, CT 06811 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996884			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9834 62			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996877			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9834 55			$3.25
Total			$7.85
First-Class Mail® Letter Brookfield, CT 06804 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996860			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9834 48			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06811 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996891			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9834 79			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996754			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9831 03			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996747			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9830 97			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996730			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9830 80			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996723			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9830 73			$3.25
Total			$7.85
First-Class Mail® Letter Scottsdale, AZ 85262 Weight: 0 lb 0.40 oz Estimated Delivery Date Tue 08/09/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996716			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9837 21			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06811 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996709			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9830 28			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996693			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9830 35			$3.25
Total			$7.85



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OFFICIAL USE

Certified Mail Fee $4.00
$
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $0.60
$
Total Postage and Fees $7.85
$

1106
17

$3.25
$0.00
$0.00
$0.00

Postmark Here
AUG 4 2022
08/04/2022

Sent To Maricel P. Velasquez
Street and Apt. No., or PO Box No. 1 Fairfield Ave #1
City, State, ZIP+4® Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6686

First-Class Mail® Letter	1	$0.60
Danbury, CT 06810		
Weight: 0 lb 0.40 oz		
Estimated Delivery Date		
Mon 08/08/2022		
Certified Mail®		$4.00
Tracking #:		
70220410000110996686		
Return Receipt		$3.25
Tracking #:		
9590 9402 7596 2098 9830 42		
Total		$7.85

First-Class Mail® Letter	1	$0.60
Danbury, CT 06810		
Weight: 0 lb 0.40 oz		
Estimated Delivery Date		
Mon 08/08/2022		
Certified Mail®		$4.00
Tracking #:		
70220410000110996679		
Return Receipt		$3.25
Tracking #:		
9590 9402 7596 2098 9830 59		
Total		$7.85

Grand Total:	$102.05

Credit Card Remitted	$102.05
Card Name: VISA	
Account #: XXXXXXXXXXXX7594	
Approval #: 08051G	
Transaction #: 762	
AID: A0000000031010	Chip
AL: VISA CREDIT	
PIN: Not Required	CHASE VISA

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Danbury, CT 06810

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

Postmark Here

08/04/2022

Sent To: Maria / Juan Moreno Espitia

Street and Apt. No., or PO Box No.: 57 Coalpit Hill Rd

City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7003

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Bethel, CT 06801

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

Postmark Here

08/04/2022

Sent To: Madeline Wachak

Street and Apt. No., or PO Box No.: PO Box 85

City, State, ZIP+4®: Bethel CT 06801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7188

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Bethel, CT 06801

OFFICIAL USE

Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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08/04/2022

Sent To: JOSEPH / LESLIE ANDREWS

Street and Apt. No., or PO Box No.: P.O. BOX 841

City, State, ZIP+4®: BETHEL CT 06801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7171

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Danbury, CT 06813

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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08/04/2022

Sent To: Madeline Ridge C/O RDS Mngmnt

Street and Apt. No., or PO Box No.: PO Box 2636

City, State, ZIP+4®: Danbury CT 06813

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7164

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$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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08/04/2022

Sent To: Eastern States Development Corp

Street and Apt. No., or PO Box No.: P.O. Box 2120

City, State, ZIP+4®: Danbury CT 06813

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7157

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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08/04/2022

Sent To: Peter & Irene Lawrenia

Street and Apt. No., or PO Box No.: 63 Coalpit Hill Rd

City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7027

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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08/04/2022

Sent To: Sean / Bopta KY

Street and Apt. No., or PO Box No.: 65 Coalpit Hill Rd

City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7140

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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AUG - 2022

08/04/2022

Sent To: MARISA-ROSEMARIE DEGRAZIA

Street and Apt. No., or PO Box No.: 5 DEER HILL AVE

City, State, ZIP+4®: DANBURY CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6990

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OFFICIAL USE

Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

Postmark Here

08/04/2022

Sent To: Maximino / Cecilia Viega

Street and Apt. No., or PO Box No.: 61 Coalpit Hill Rd

City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 7010

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Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

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08/04/2022

Sent To: Tall Oaks LLC

Street and Apt. No., or PO Box No.: 5 Corporate Drive

City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6983

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

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Fort Mill, SC 29715

OFFICIAL USE

Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

Postmark Here

AUG - 2022

08/04/2022

Sent To: US Bank Nat'l Assoc. c/o Wells Fargo

Street and Apt. No., or PO Box No.: 3476 Stateview Blvd

City, State, ZIP+4®: Fort Mill SC 29715

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6969

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

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Danbury, CT 06810

OFFICIAL USE

Certified Mail Fee	$4.00
$	$3.25
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
$	
Total Postage and Fees	$7.85
$	

1106 17

Postmark Here

AUG - 2022

08/04/2022

Sent To: Amos House Inc

Street and Apt. No., or PO Box No.: 34 Rocky Glen Rd

City, State, ZIP+4®: Danbury CT 06810-8004

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6952

7022 0410 0001 1099 6945

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Danbury, CT 06810
OFFICIAL USE

Certified Mail Fee	$4.00
Extra Services & Fees (check box, add fee as appropriate)	$3.25
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
Total Postage and Fees	$7.85

1106 17
LINCOLN STREET STATION WORCESTER MA
Postmark Here
AUG – 4 2022
08/04/2022

Sent To: Carla Pickel
Street and Apt. No., or PO Box No.: 33 Rocky Glen Rd
City, State, ZIP+4®: Danbury CT 06810

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0001 1099 6938

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Danbury, CT 06810
OFFICIAL USE

Certified Mail Fee	$4.00
Extra Services & Fees (check box, add fee as appropriate)	$3.25
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
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Certified Mail Fee	$4.00
Extra Services & Fees (check box, add fee as appropriate)	$3.25
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
Total Postage and Fees	$7.85

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Sent To: Rudy & Laurie Hafer
Street and Apt. No., or PO Box No.: 30 Rocky Glen Rd
City, State, ZIP+4®: Danbury CT 06810-8004

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.60
Total Postage and Fees	$7.85

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Sent To: Lucien Lapriere
Street and Apt. No., or PO Box No.: 28 Kellogg St
City, State, ZIP+4®: Brookfield CT 06804

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

UNITED STATES POSTAL SERVICE.

LINCOLN MALL
560 LINCOLN ST STE 8
WORCESTER, MA 01605-1925
(800)275-8777

08/04/2022 12:24 PM

Product	Qty	Unit Price	Price
First-Class Mail® Letter Bethel, CT 06801 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997188			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9833 56			$3.25
Total			$7.85
First-Class Mail® Letter Bethel, CT 06801 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997171			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9833 63			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06813 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997164			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9833 49			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06813 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997157			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9833 32			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997140			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9833 25			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997027			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9832 26			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997010			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9834 86			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110997003			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9834 93			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996990			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9835 16			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996983			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9835 23			$3.25
Total			$7.85
First-Class Mail® Letter Danbury, CT 06810 Weight: 0 lb 0.40 oz Estimated Delivery Date Mon 08/08/2022	1		$0.60
Certified Mail® Tracking #: 70220410000110996976			$4.00
Return Receipt Tracking #: 9590 9402 7596 2098 9835 30			$3.25
Total			$7.85

First-Class Mail® 1 $0.60
Letter
Fort Mill, SC 29715
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996969
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9832 88
Total $7.85

First-Class Mail® 1 $0.60
Letter
Danbury, CT 06810
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996952
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9832 95
Total $7.85

First-Class Mail® 1 $0.60
Letter
Danbury, CT 06810
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996945
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9833 01
Total $7.85

First-Class Mail® 1 $0.60
Letter
Danbury, CT 06810
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996938
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9833 18
Total $7.85

First-Class Mail® 1 $0.60
Letter
Danbury, CT 06810
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996921
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9832 57
Total $7.85

First-Class Mail® 1 $0.60
Letter
Danbury, CT 06810
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996914
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9832 64
Total $7.85

First-Class Mail® 1 $0.60
Letter
Brookfield, CT 06804
Weight: 0 lb 0.40 oz
Estimated Delivery Date
Mon 08/08/2022
Certified Mail® $4.00
Tracking #:
70220410000110996907
Return Receipt $3.25
Tracking #:
9590 9402 7596 2098 9832 71
Total $7.85

CT11862C Archer

UNITED STATES POSTAL SERVICE.

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

08/05/2022 02:56 PM

Product	Qty	Unit Price	Price
Prepaid Mail Danbury, CT 06810 Weight: 0 lb 10.40 oz Acceptance Date: Fri 08/05/2022 Tracking #: 9405 5036 9930 0314 6238 33	1		$0.00
Prepaid Mail Danbury, CT 06810 Weight: 0 lb 10.40 oz Acceptance Date: Fri 08/05/2022 Tracking #: 9405 5036 9930 0314 6237 96	1		$0.00
Grand Total:			$0.00

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or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 082618-0132
Receipt #: 840-50600020-1-4858822-1
Clerk: 9

ATTACHMENT 6

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CT11862C

CT862/Tall Oaks_Stealth
1 Fairfield Avenue
Danbury, CT 06810

August 1, 2022

Fox Hill Telecom Project Number: 221297

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**13.93 %**

Fox Hill Telecom

August 1, 2022

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

Emissions Analysis for Site: **CT11862C – CT862/Tall Oaks_Stealth**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **1 Fairfield Avenue, Danbury, 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), 2100 MHz (AWS) and 2500 MHz (BRS) 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 **1 Fairfield Avenue, Danbury, 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 20 dB for these specific directional panel antennas, was focused toward the base of the stealth chimney enclosure. For this property, a 20 dB reduction was used due to the constrictive property lines and sloping terrain to areas where the general population can access. Based upon the manufacturer's antenna pattern data the gain reduction for these antennas will be closer to 30 dB along a radial out to the property boundary. The 20 dB reduction factor was utilized for a more conservative prediction. For this report the sample point is the top of a 6-foot person standing at the base of the stealth chimney enclosure.

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 this site there were no additional carriers listed.

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
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
UMTS	2100 MHz (AWS)	1	40
LTE / 5G NR	2500 MHz (BRS)	8	20

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), 2100 MHz (AWS) and 2500 MHz (BRS) 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 the prior described 20 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 APXVAA4L18_43-U-NA20	37
A	2	Ericsson AIR6449 B41	42.5
B	1	RFS APXVAA4L18_43-U-NA20	37
B	2	Ericsson AIR6449 B41	42.5
C	1	RFS APXVAA4L18_43-U-NA20	37
C	2	Ericsson AIR6449 B41	42.5

Table 2: Antenna Data

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

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 APXVAA4L18_43-U-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	12.15 / 12.25 / 15.85 / 16.75	14	495	18,177.37	7.83
Antenna A2	Ericsson AIR6449 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	6.10
						Sector A Composite MPE%	**13.93**
Antenna B1	RFS APXVAA4L18_43-U-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	12.15 / 12.25 / 15.85 / 16.75	14	495	18,177.37	7.83
Antenna B2	Ericsson AIR6449 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	6.10
						Sector B Composite MPE%	**13.93**
Antenna C1	RFS APXVAA4L18_43-U-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	12.15 / 12.25 / 15.85 / 16.75	14	495	18,177.37	7.83
Antenna C2	Ericsson AIR6449 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	6.10
						Sector C Composite MPE%	**13.93**

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	**13.93 %**
No Additional Carriers Present on Site	NA
Site Total MPE %:	**13.93 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	13.93 %
T-MOBILE Sector B Total:	13.93 %
T-MOBILE Sector C Total:	13.93 %
Site Total:	13.93 %

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	656.24	37	4.91	600 MHz	400	1.23%
T-Mobile 700 MHz LTE	2	335.76	37	2.51	700 MHz	467	0.54%
T-Mobile 1900 MHz (PCS) LTE	4	1,538.37	37	23.02	1900 MHz (PCS)	1000	2.30%
T-Mobile 1900 MHz (PCS) GSM	1	576.89	37	2.16	1900 MHz (PCS)	1000	0.22%
T-Mobile 2100 MHz (AWS) LTE	4	1,892.61	37	28.32	2100 MHz (AWS)	1000	2.83%
T-Mobile 2100 MHz (AWS) UMTS	1	1,892.61	37	7.08	2100 MHz (AWS)	1000	0.71%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	42.5	60.99	2500 MHz (BRS)	1000	6.10%
						Total:	**13.93%**

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:	13.93 %
Sector B:	13.93 %
Sector C:	13.93 %
T-MOBILE Maximum Total (per sector):	13.93 %
Site Total:	13.93 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **13.93 %** 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