



Filed by:

G. Scott Shepherd, Sr. Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbsite.com

August 30, 2019

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Notice of Exempt Modification

71 Moxley Road, Uncasville (Montville), CT 06381

41.435211

-72.123319

T-Mobile #: CT11146F_L600

Dear Ms. Bachman:

T-Mobile currently maintains antennas at the 150-foot level of the existing 190-foot Guyed Tower at 71 Moxley Rd., Uncasville (Montville), CT. The tower is owned by SBA Towers II LLC. The property is owned by Ernest and Walter Wainwright. T-Mobile now intends to remove (3) three L600/L700/1900 MHz antennas and install (3) new L600/L700/1900 MHz antennas. The new antennas would be installed at the 150-foot level of the tower.

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) Andrew RR65-18-VDPL2 – Panel (Remove) - (3) APXVAARR24_43U-NA20 1900/600/700 MHz (Replace)
- (2) 1-5/8" Coax (Remove) - (2) 1-5/8 Hybrid (Replace)

Install New:

- (3) Ericsson Air32 KRD901146-1_B66A_B2A 1900/2100 MHz

Existing Equipment to Remain:

- (10) 1-5/8" Coax



Entitlements:

- (3) Andrew RR65-18-VDPL2 – Panel
- (1) 1-5/8" Hybrid fiber

GROUND

Install New:

- Equipment inside existing 6102 cabinet

This facility was approved by the Town of Montville with Site Plan Approval on January 13, 1998. The tower was approved at a height of 190' with appropriate guide wires and a chain link fence. There was initial approval for four utility sheds and a driveway. No further tower conditions were set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Montville's Mayor, Ronald K. McDaniels, and Zoning Officer, Nancy Woodlock, as well as the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

G. Scott Shepherd

Sr. Property Specialist

SBA COMMUNICATIONS CORPORATION

134 Flanders Rd., Suite 125

Westborough, MA 01581

508.251.0720 x3804 + T

508.366.2610 + F

508.868.6000 + C

GShepherd@sbsite.com

Attachments



cc: Ronald K. McDaniels, Mayor / with attachments
Town of Montville, Montville Town Hall, 310 Norwich-New London Tpke., Uncasville, CT 06382
Nancy Woodlock, Zoning Officer / with attachments
Town of Montville, Montville Town Hall, 310 Norwich-New London Tpke., Uncasville, CT 06382
Ernest Wainwright and Walter Wainwright, Jr. / with attachments
149 Great Neck Road, Waterford, CT 06385

Exhibit List

Exhibit 1	Check Copy	x
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Montville P&Z 1/13/98
Exhibit 6	Construction Drawings	Chappell dated 8/8/19
Exhibit 7	Structural Analysis	TES dated 7/9/19
Exhibit 8	Mount Analysis	TES dated 7/31/19
Exhibit 9	EME Report	Transcom 5/22/19

EXHIBIT 1

EXHIBIT 2

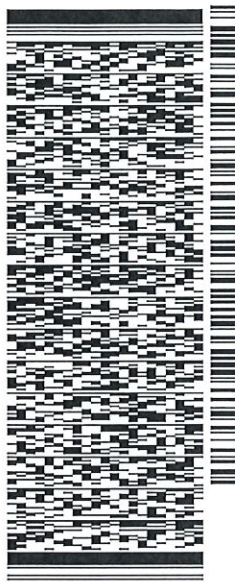
ORIGIN ID:BBFA (508) 254-0720
KRI PELLETIER
SBA NETWORK SERVICES INC
134 FLANDERS RD.
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 30AUG19
ACTWTG1: 1.00 LB
CAD: 105843304/NET/4/160
BILL SENDER

TO **MELANIE A. BACHMAN ACTING EXEC. DIR**
CONNECTICUT SITING COUNCIL
TEN FRANKLIN SQUARE

NEW BRITAIN CT 06051

(508) 251-0720 X 302 REF: 10-56-92009-6099
INV/ DEPT:
PO:



567J3/E9E7/05A2

TRK# 7761 2179 3089
0201

TUE - 03 SEP 10:30A
PRIORITY OVERNIGHT

SEBDLA

06051
CT-US BDL



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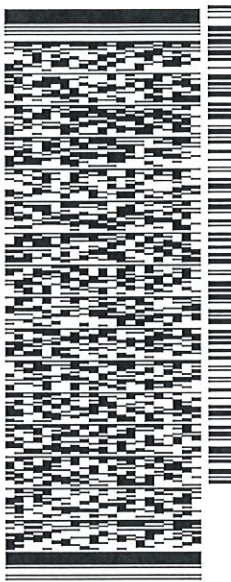
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:BBFA (508) 251-0720
KRI PELLETIER
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH MA 01581
UNITED STATES US

SHIP DATE: 30AUG19
ACT WGT: 1.00 LB
CAD: 105843304/NET/4:160
BILL SENDER

TO RONALD K. MCDANIELS
MAYOR
MONTVILLE TOWN HALL
310 NORWICH-NEW LONDON TPKE
UNCASVILLE CT 06382
(508) 251-0720 X-3807 REF:10-56-92009-6089
INV/ PO: DEPT:

567J3/E9E7/05A2



J192019062401uv

TRK# 7761 2180 4826
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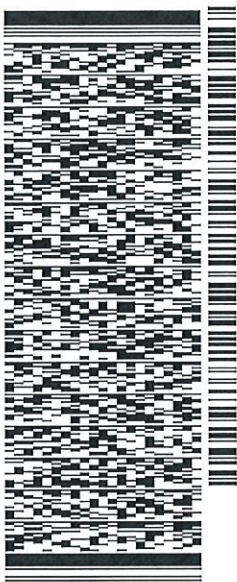
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SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 30AUG19
ACTWGT: 1.00 LB
CAD: 105843304/NET4160
BILL SENDER

TO NANCY WOODLOCK
ZONING OFFICER
MONTVILLE TOWN HALL
310 NORWICH-NEW LONDON TPKE
UNCASVILLE CT 06382
REF: 10-56-92009-6089
DEPT:
PO:
INV: (508) 251-0720 X 3807

567J3/E9E705A2



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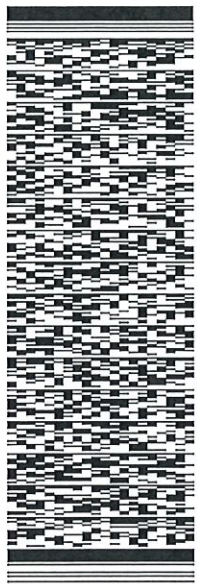
SHIP DATE: 30AUG19
ACT WGT: 1.00 LB
CAD: 105843304/NET14160
BILL SENDER

TO **WALTER WAINWRIGHT, JR.**
ERNEST WAINWRIGHT AND
149 GREAT NECK RD

WATERFORD CT 06385

(805) 251-0720 X 3807 REF: 10-56-92009-6099
INV: DEPT:
PO:

567J3/E9E7/05A2



TRK# 7761 2181 8248
0201

TUE - 03 SEP 10:30A
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EXHIBIT 3



Property Card: 71 MOXLEY RD

Town of Montville, CT

Parcel Information

Location:	71 MOXLEY RD	Property Use:	Use Assessment	Primary Use:	Residential
Unique ID:	W00061700	Map Block Lot:	017-012-000	Acres:	14.34
		Zone:	R40	Volume / Page:	0151/1005
		Sale Date:	03/23/1983	Sale Price:	\$0

Value Information

	Appraised Value	Assessed Value
Land	35850	6730
Buildings	0	0
Detached Outbuildings	207290	145100
Total	243140	151830

Owner's Information

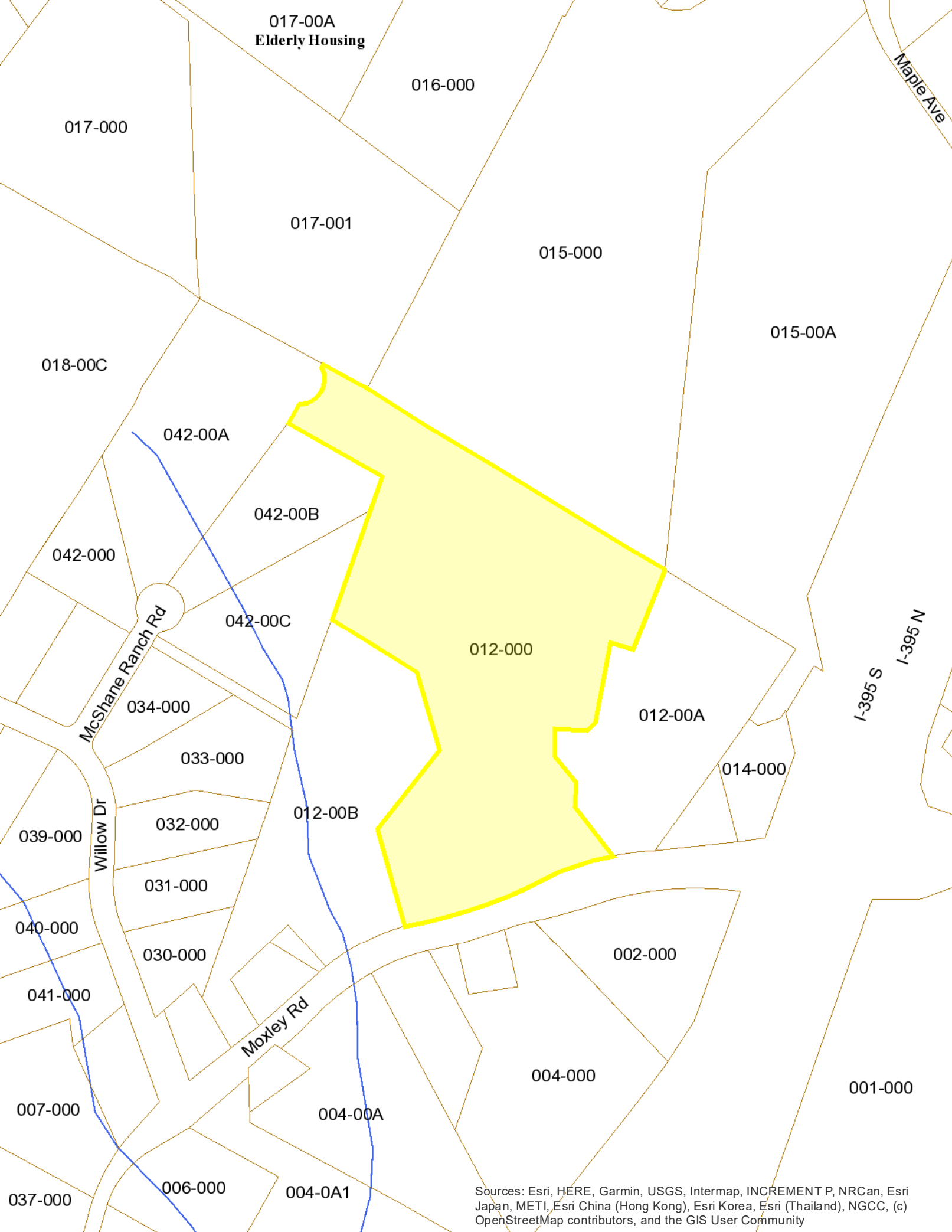
Owner's Data
WAINWRIGHT ERNEST C & WALTER N JR 149 GREAT NECK RD WATERFORD, CT 06385



www.cai-tech.com

Data shown on this report is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this report.

EXHIBIT 4



017-00A
Elderly Housing

016-000

017-000

017-001

015-000

015-00A

018-000

042-00A

042-00B

042-000

042-00C

012-000

034-000

012-00A

033-000

014-000

039-000

032-000

012-00B

031-000

040-000

030-000

002-000

041-000

Moxley Rd

004-000

001-000

007-000

004-00A

006-000

004-0A1

037-000

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

EXHIBIT 5

TEL: 848-854
FAX: 848-2354

**TOWN OF MONTVILLE
PLANNING & ZONING COMMISSION**

310 NORWICH-NEW LONDON TPKE.
UNCASVILLE, CONNECTICUT 06382-2599

FAXED

LEGAL NOTICE

The Montville Planning and Zoning Commission at its meeting held on January 13, 1998, took the following action:

APPROVED site plan for **Wireless Solutions, Ltd./Walter & Ernest Wainwright** to construct a 190' radio tower and antenna for wireless communication purposes with appropriate guide wires and chain link fence with four small utility sheds and driveway on property located at 71 Moxley Road, Montville, Ct. Shown on Assessor's Map 17, Lot 12.

Maps and documentation concerning the above applications are on file in the office of the Town Planner, Town Hall Annex, Montville, Ct.

Dated at Montville, Ct. this 14th day of January, 1998.

MONTVILLE PLANNING AND ZONING COMMISSION

Gregory Majewski, Chairman

PUBLISH IN THE NEW LONDON DAY January 16, 1998

PLEASE REFERENCE PURCHASE ORDER 6100 G 1 ON INVOICE.

TOWN OF MONTVILLE
PLANNING DEPARTMENT
STAFF REPORT

DATE: 01/13/98

APPLICANT: WIRELESS SOLUTIONS LLC.

OWNER: ERNEST & WALTER JR., WAINWRIGHT

ADDRESS: 71 MOXLEY ROAD MONTVILLE, CT..

ASSESSOR'S MAP # 17 LOT #2

TYPE: SITE PLAN

	REQUIRED	PROVIDED
LIGHT INDUSTRIAL ZONE	80,000 SF	623,000SF/LEASEHOLD AREA
FRONTAGE	200 FEET	558.64 FEET
SETBACKS FRONT/REAR	50 FT/50 FT	50 FT/50 FT
SETBACKS SIDE	30 FT	30 FT
WATER & SEWER		WELL & SEPTIC

COMMENTS
ASSISTANT PLANNER

APPLICATION IS TO CONSTRUCT A 190' RADIO TRANSMISSION AND RECEIVING TOWER IN A LIGHT INDUSTRIAL ZONE. USE IS PERMITTED UNDER SECTION 13.2.6 OF THE REGULATIONS. THE APPLICATION AND SITE PLAN MAP MEET THE REQUIREMENTS OF THE REGULATIONS.

THE TELECOMMUNICATIONS ACT OF 1996 HAS EMPOWERED THE LOCAL AUTHORITY TO DETERMINE THE LOCATION OF TOWERS PROVIDED THEY DO NOT RESTRICT COMPETITION OR INTERFERE WITH THE SEAMLESS WEB NEEDED TO PROVIDE SERVICE.

A NEW TOWER PERMIT HAS BEEN ISSUED TO WIRELESS COMMUNICATION ON PROPERTY AT 57 COOK DR. OWNED BY ROBERT KINGSBOROUGH. THIS LOCATION IS IN CLOSE PROXIMITY TO TWO OTHER TOWERS, OWNED BY SNET AND WICH. THE LOCATION NEXT TO THESE TOWERS WAS A CONSIDERATION IN GRANTING THE PERMIT. WIRELESS SOLUTIONS IS NOT A LICENSED PROVIDER. WIRELESS SOLUTIONS OWNS TOWERS AND LEASES SPACE ON THE TOWERS FOR EQUIPMENT. APPLICANT WILL SHOW HIS PROPOSED COVERAGE AREA AND HIS LEASE AGREEMENT. THIS WAS REQUESTED BY THE COMMISSION AT THE 12/9/97 MEETING.

TWO PERMITS HAVE BEEN ISSUED BY THIS OFFICE IN THE PAST YEAR FOR EQUIPMENT TO BE INSTALLED ON EXISTING STRUCTURES. THE PERMITS TO TECHSTAR COMMUNICATIONS WERE ISSUED FOR PROPERTY LOCATED AT RICHARD BROWN DR. AND GAY HILL RD.. THE RICHARD BROWN DR. PROPERTY IS OWNED BY HE CITY OF NORWICH DEPARTMENT OF PUBLIC UTILITIES. THE EQUIPMENT IS MOUNTED ON TOP OF THE WATER TOWER. AT THE GAY HILL ROAD SITE THE EQUIPMENT IS MOUNTED ON AN EXISTING 190' TOWER OWNED BY HALL COMMUNICATIONS (WNLC). SEE MAPS OF COVERAGE AREA AND LETTER ATTACHED.

RECOMMENDATIONS:

THE MAP AND LETTER PROVIDED BY TECHSTAR INDICATES THAT THE COVERAGE AREA PROPOSED BY WIRELESS SOLUTIONS IS ALREADY PROVIDED BY THE PIE HILL SITE. HALL COMMUNICATIONS HAS INDICATED BY PROVIDING SPACE THAT THE TOWER IS AVAILABLE FOR OTHER PROVIDERS. THERE DOES NOT APPEAR TO BE ANY NEED AT PRESENT TO ERECT AN ADDITIONAL TOWER IN THIS AREA OF THE TOWN OF MONTVILLE.

UNDER THE TELECOMMUNICATIONS ACT OF 1996 THE TWO MOST IMPORTANT PARTS NOT TO RESTRICT COMPETITION OR INTERFERE WITH THE SEAMLESS WEB NEEDED TO PROVIDE SERVICE, ARE ALREADY PROVIDE FOR IN THIS AREA OF THE TOWN.

EXHIBIT 6

SPECIAL CONSTRUCTION NOTE (SBA-PROVIDED ANTENNA MOUNT STRUCTURAL MOD SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT
 THE T-MOBILE RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL
 ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

MONTVILLE / I-395 X78 1

APPROVALS			
PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
CONSTRUCTION:	DATE:	OPERATIONS:	DATE:
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

71 MOXLEY HILL ROAD
 UNCASVILLE, CT 06382
 NEW LONDON COUNTY

SITE NO.: CT11146F

SITE TYPE: 190'± GUYED TOWER

RF DESIGN GUIDELINE: 67D94DB HYBRID (EVOLVED FROM 4B)

SITE NOTES	
1.	THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE. <ul style="list-style-type: none"> • ADA COMPLIANCE NOT REQUIRED. • POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED. • NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2.	CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON 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 PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3.	NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. <ul style="list-style-type: none"> • BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE • ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE • STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

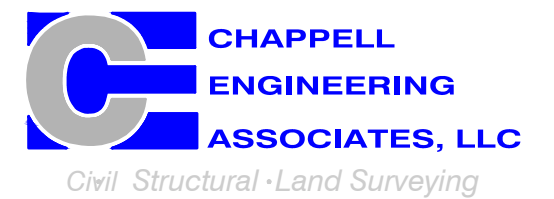
T-MOBILE TECHNICIAN SITE SAFETY NOTES	
LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

**T-MOBILE
NORTHEAST LLC**

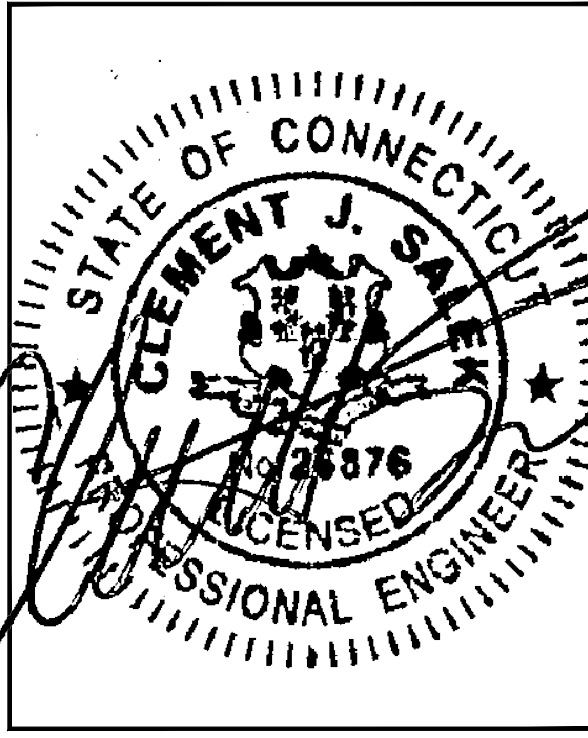
15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 (508) 286-2700



SBA COMMUNICATIONS CORP.
 134 FLANDERS ROAD, SUITE 125
 WESTBOROUGH, MA 01581
 (508) 251-0720

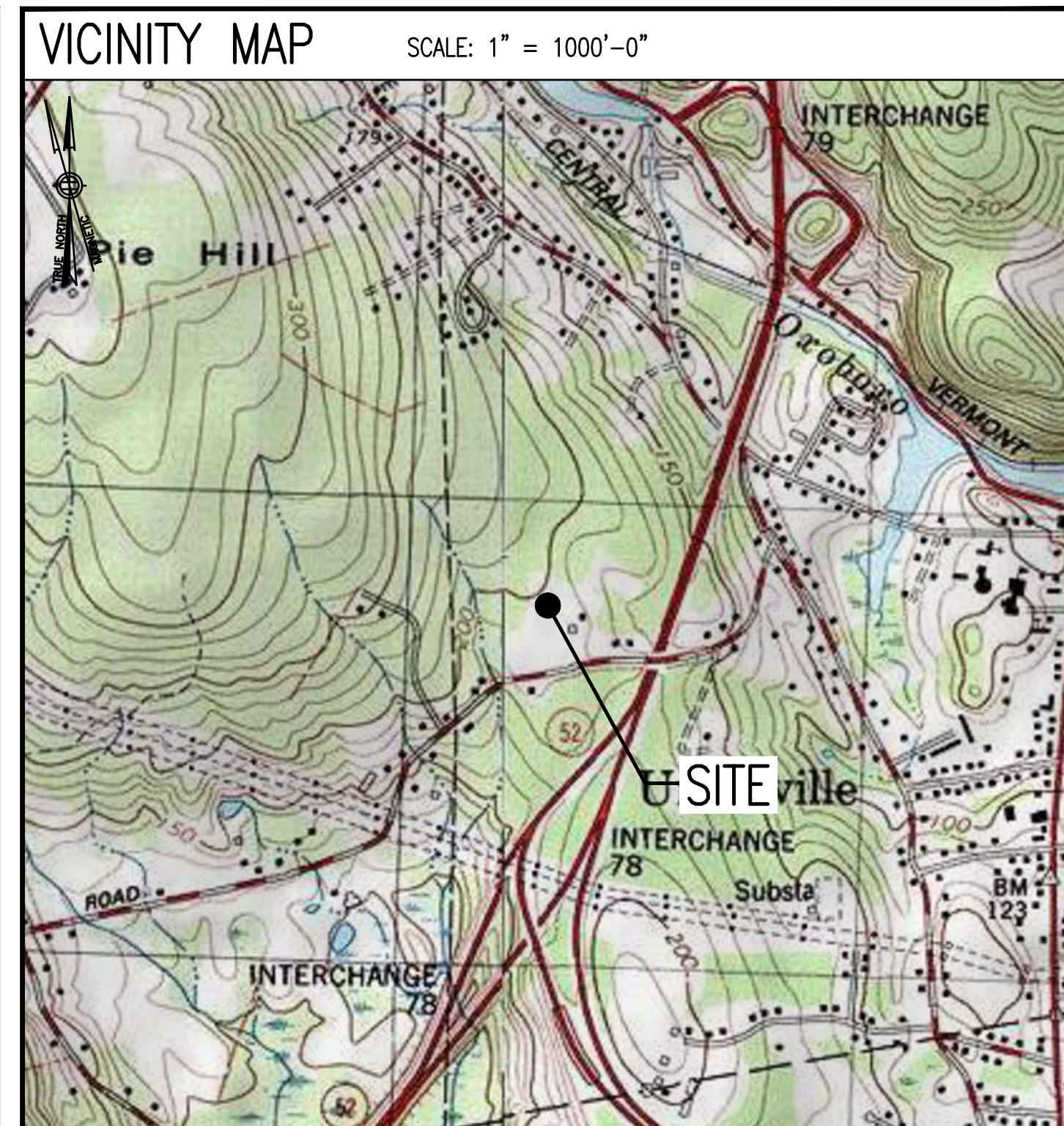


R.K. EXECUTIVE CENTRE
 201 BOSTON POST ROAD WEST, SUITE 101
 MARLBOROUGH, MA 01752
 (508) 481-7400
 www.chappellengineering.com



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.	11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
2. THE ARCHITECT/ENGINEER HAVE 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.	12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
3. THE CONTRACTOR OR BIDDER BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOTENT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.	13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.	14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
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 CONTRACT DOCUMENTS.	15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE 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 LESSEE/LICENSEE REPRESENTATIVE.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.	16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
7. 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.	17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.	
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.	
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.	

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET INDEX		
SHEET NO.	DESCRIPTION	REV. NO.
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GN-1	GENERAL NOTES	0
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A-2	TOWER ELEVATIONS & ANTENNA PLAN	0
A-3	SITE DETAILS	0
E-1	ELECTRIC & GROUNDING DETAILS	0

SPECIAL ZONING NOTE:
 BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

PROJECT SUMMARY	
SITE NUMBER:	CT11146F
SBA SITE NUMBER:	CT10016-A
SBA SITE NAME:	MONTVILLE 3, CT
SITE ADDRESS:	71 MOXLEY HILL ROAD UNCASVILLE, CT 06382
PROPERTY OWNER:	ERNEST C. & WALTER N. JR. WAINWRIGHT 149 GREAT NECK ROAD WATERFORD, CT 06385
TOWER OWNER:	SBA TOWERS II, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	R40 - RESIDENTIAL
STRUCTURE TYPE:	GUYED TOWER
STRUCTURE HEIGHT:	190'
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SROth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.435218° N41°26'06.7888" LONGITUDE: -72.123358° W72°07'24.0888"

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	08/08/19	ISSUED FOR CONSTRUCTION	CMC
0	05/15/19	ISSUED FOR REVIEW	CAW

SITE NUMBER:
CT11146F

SITE ADDRESS:
 71 MOXLEY HILL ROAD
 UNCASVILLE, CT 06382

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – T–MOBILE
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T–MOBILE
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
- CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER2 IN.
#5 AND SMALLER & WWF1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL¾ IN.
BEAMS AND COLUMNS½ IN.
- A CHAMFER ¼" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (BC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIER'S PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
- AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

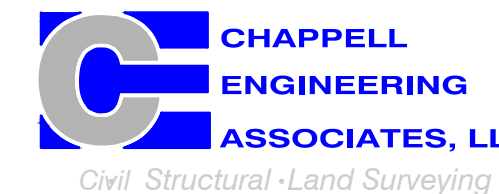
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

**T-MOBILE
NORTHEAST LLC**

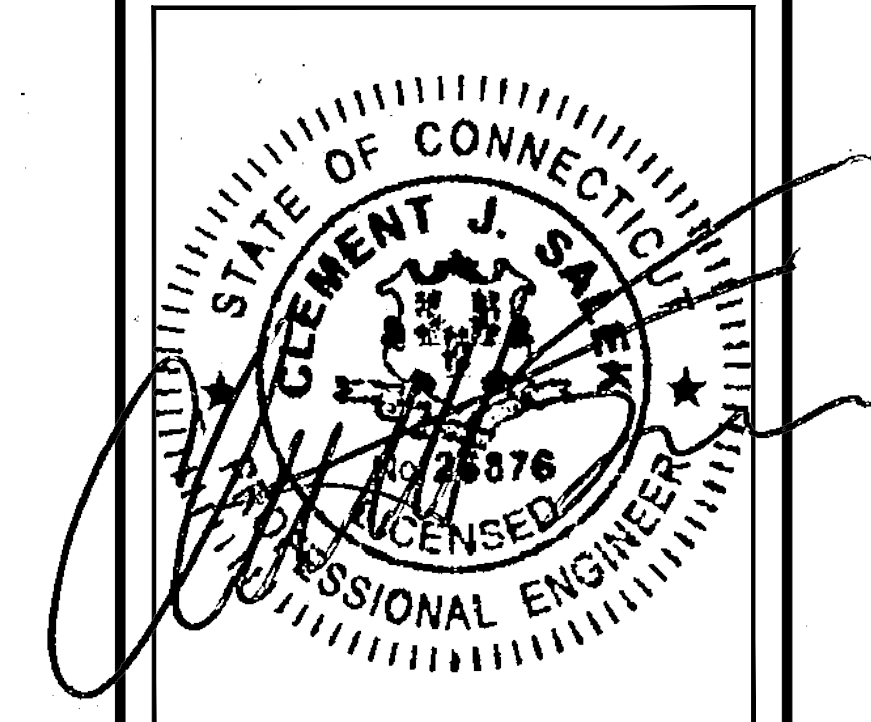
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CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	08/08/19	ISSUED FOR CONSTRUCTION	CMC
0	05/15/19	ISSUED FOR REVIEW	CAW

SITE NUMBER:
CT11146F

SITE ADDRESS:
71 MOXLEY HILL ROAD
UNCASVILLE, CT 06382

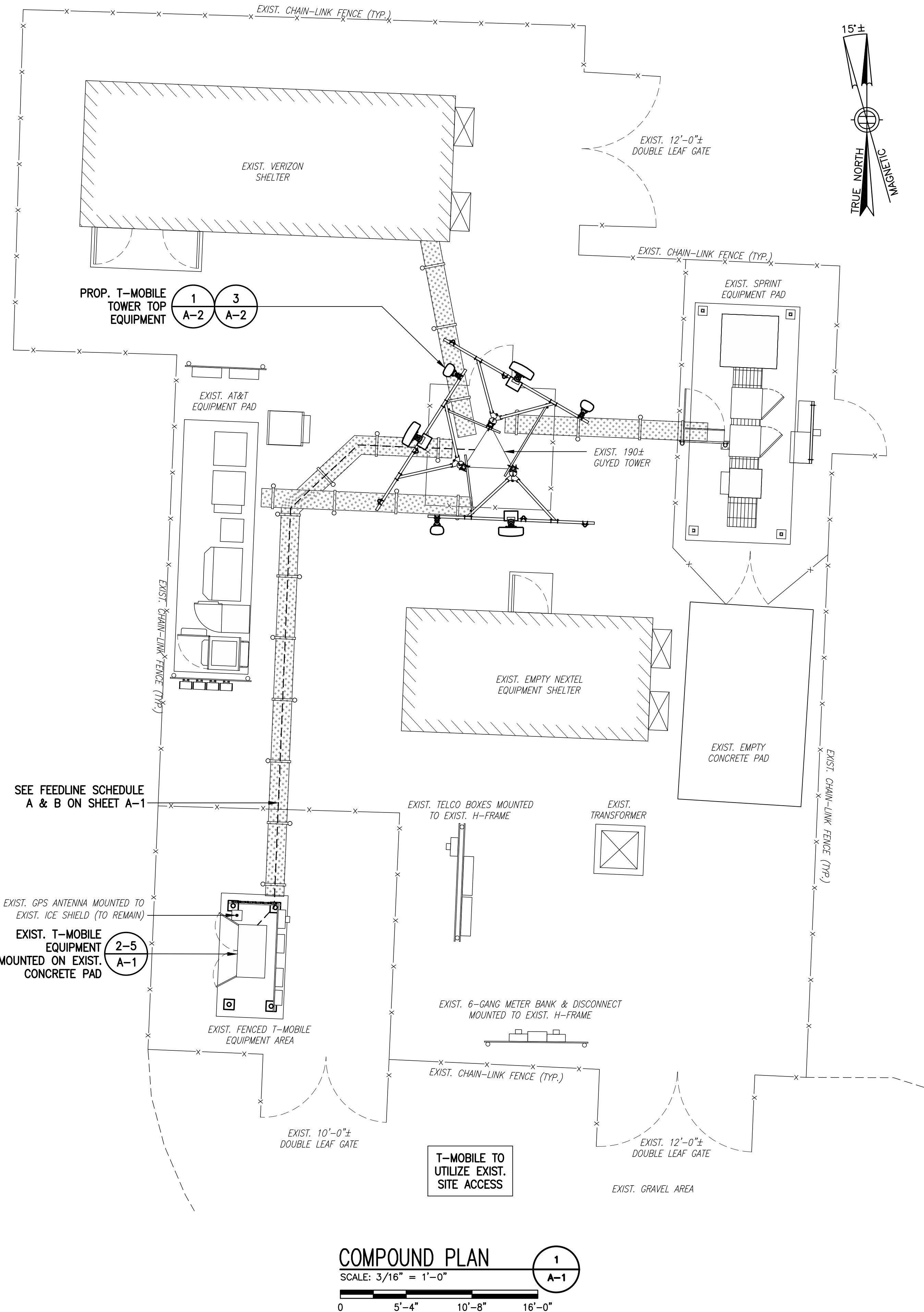
SHEET TITLE

GENERAL NOTES

SHEET NUMBER

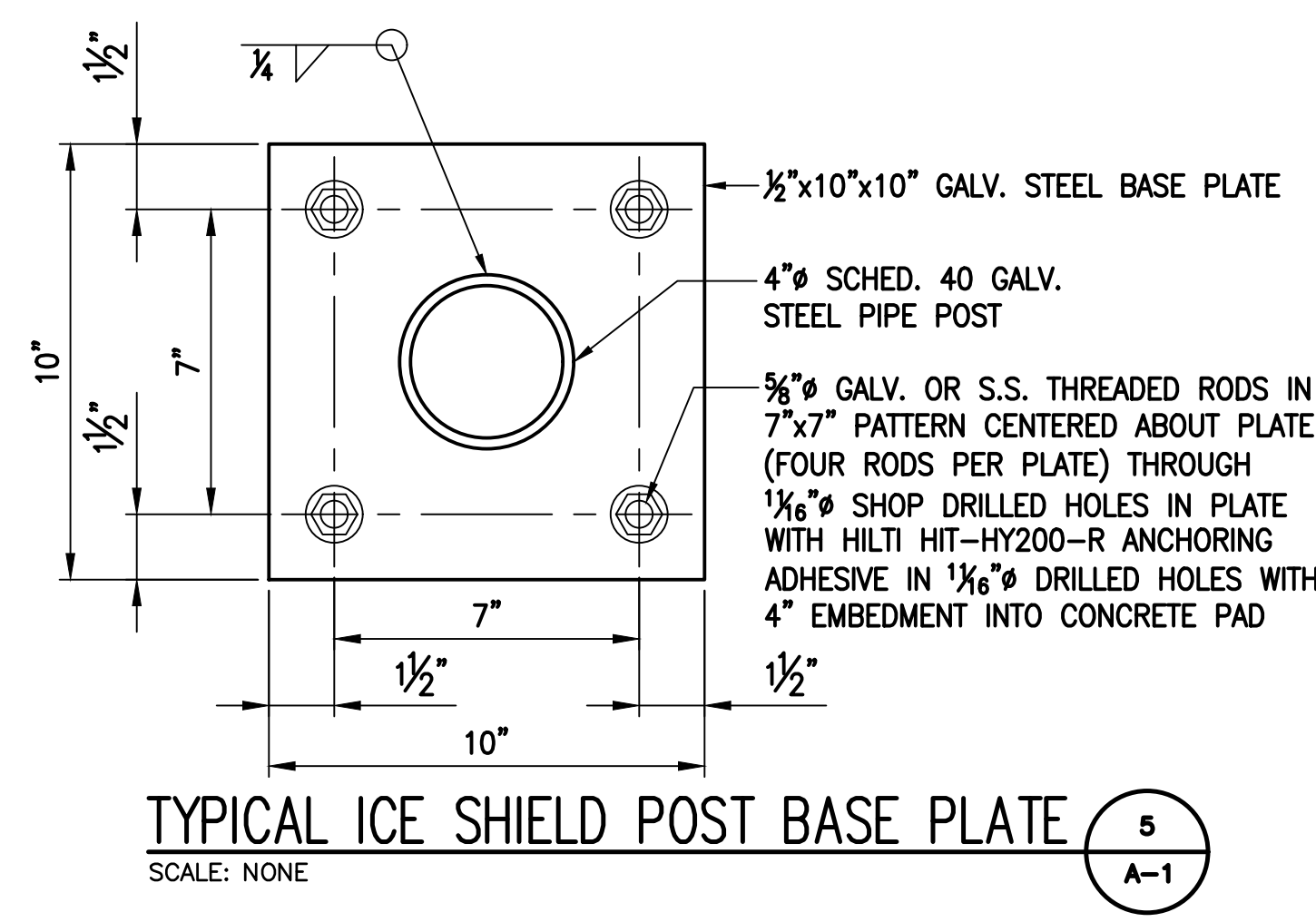
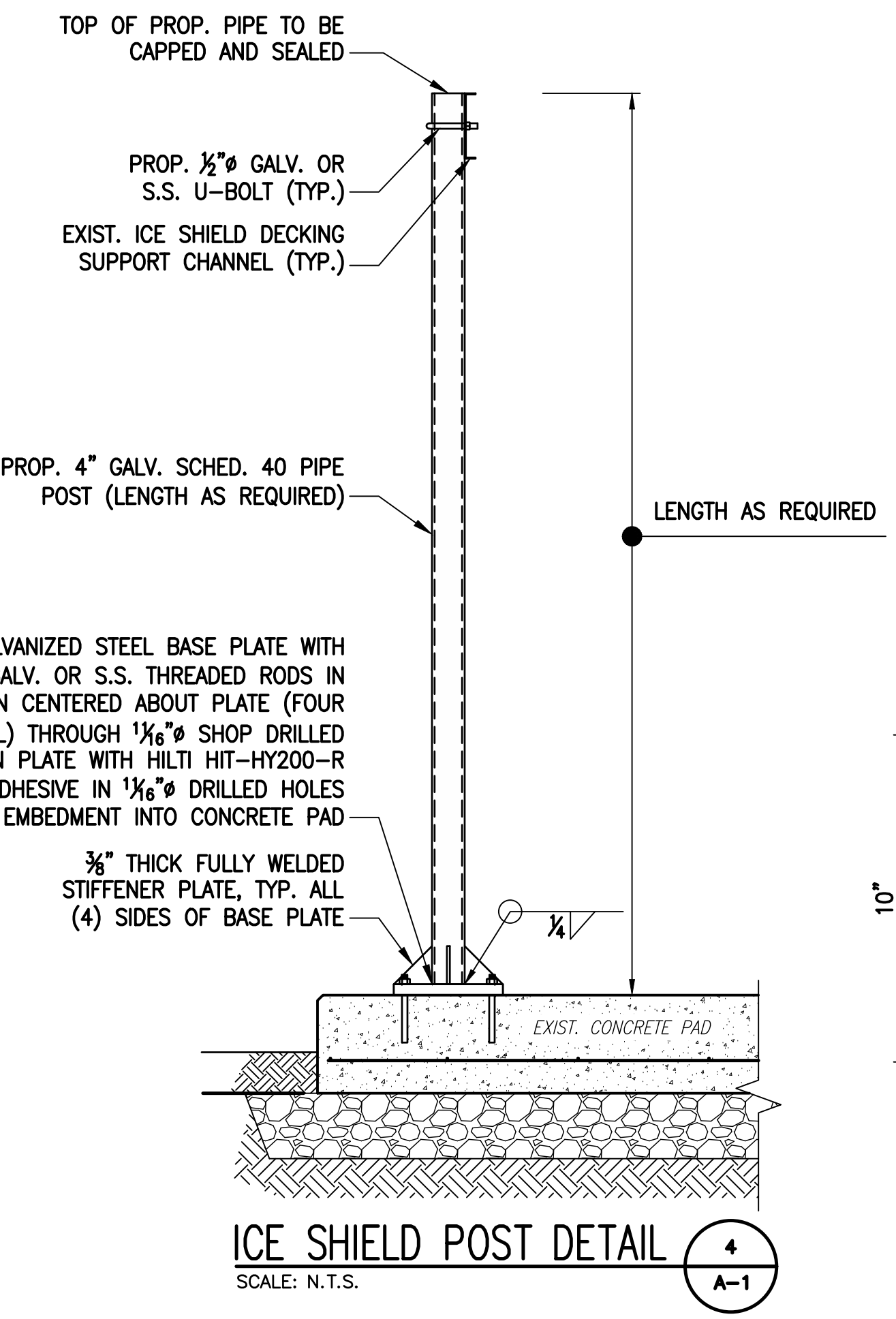
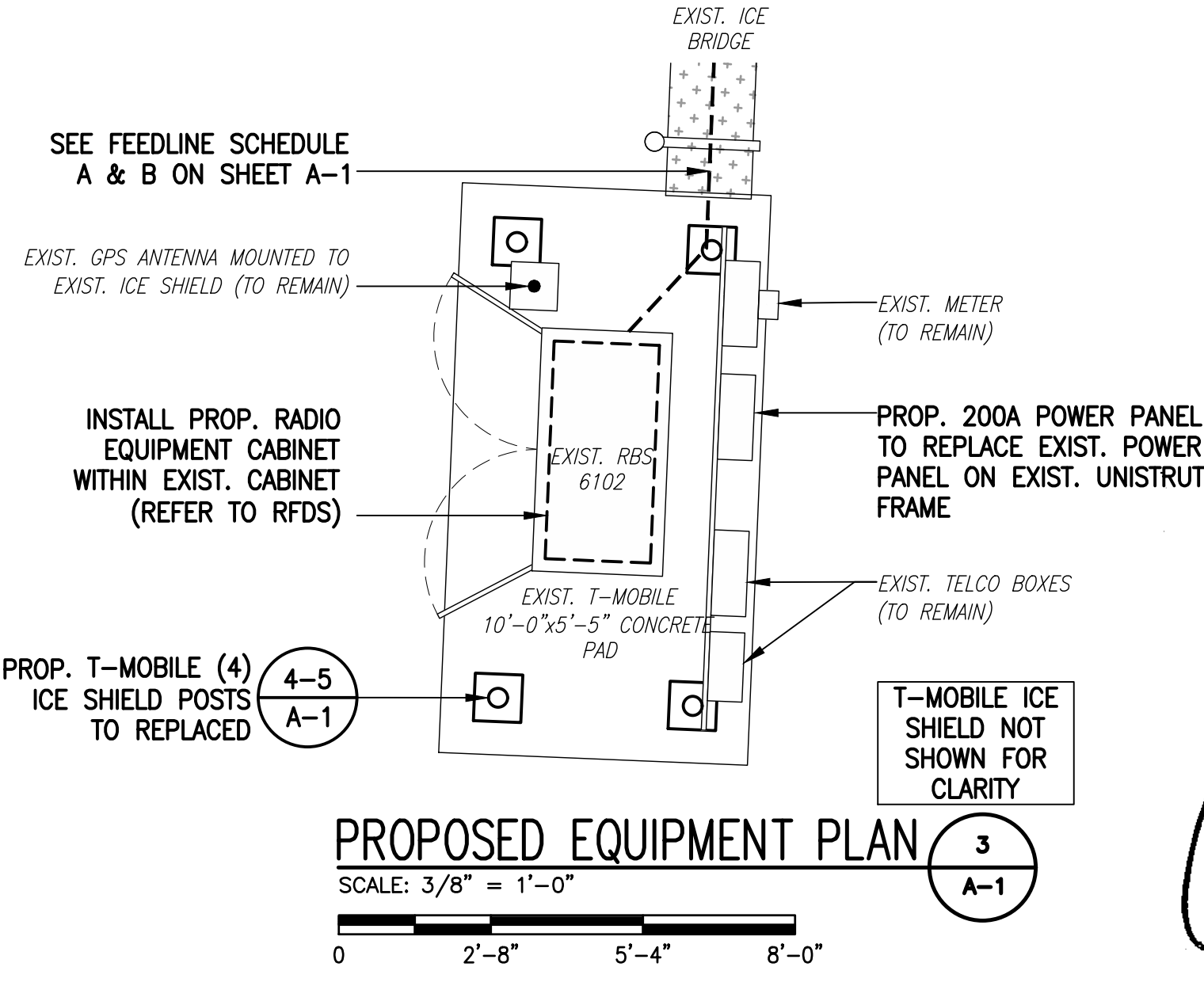
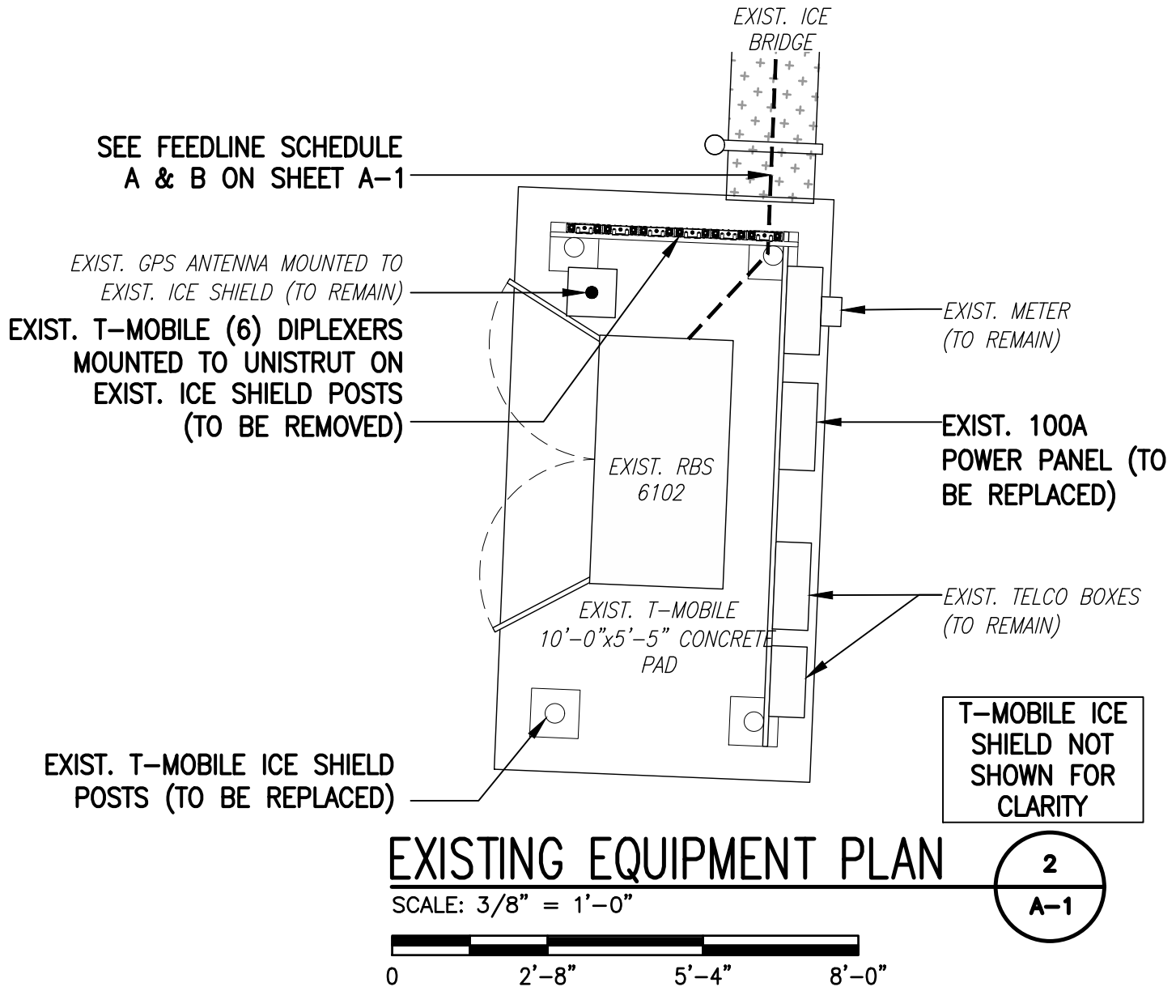
GN-1

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.



FEEDLINE SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (6) 1-5/8" COAX CABLES	ROUTED PER TOWER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 1-5/8" HCS FIBER CABLES	

NOTE:
 EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

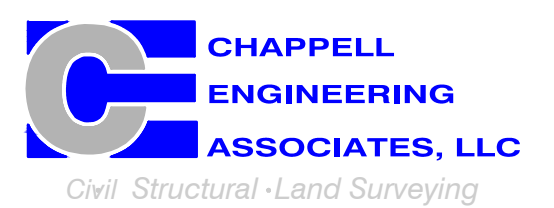


T-MOBILE NORTHEAST LLC

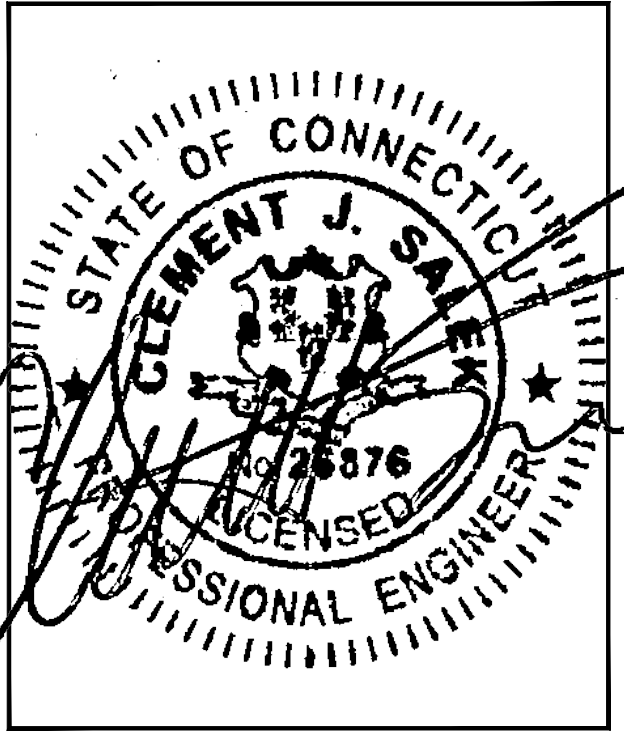
15 COMMERCE WAY, SUITE B
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 (508) 286-2700



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 134 FLANDERS ROAD, SUITE 125
 WESTBOROUGH, MA 01581
 (508) 251-0720



R.K. EXECUTIVE CENTRE
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 (508) 481-7400
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SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
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0	05/15/19	ISSUED FOR REVIEW	CAW

SITE NUMBER:
CT11146F

SITE ADDRESS:
 71 MOXLEY HILL ROAD
 UNCASVILLE, CT 06382

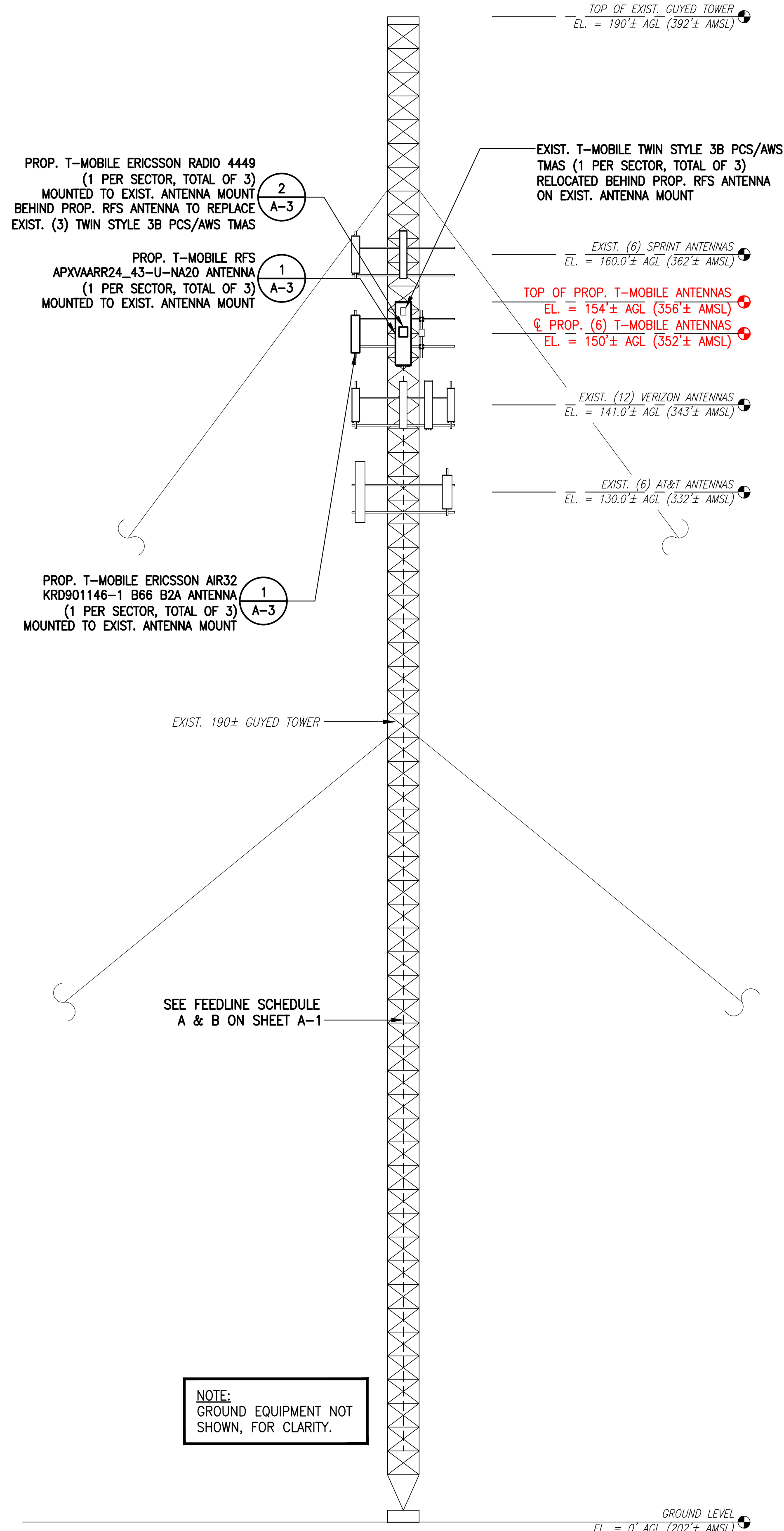
SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

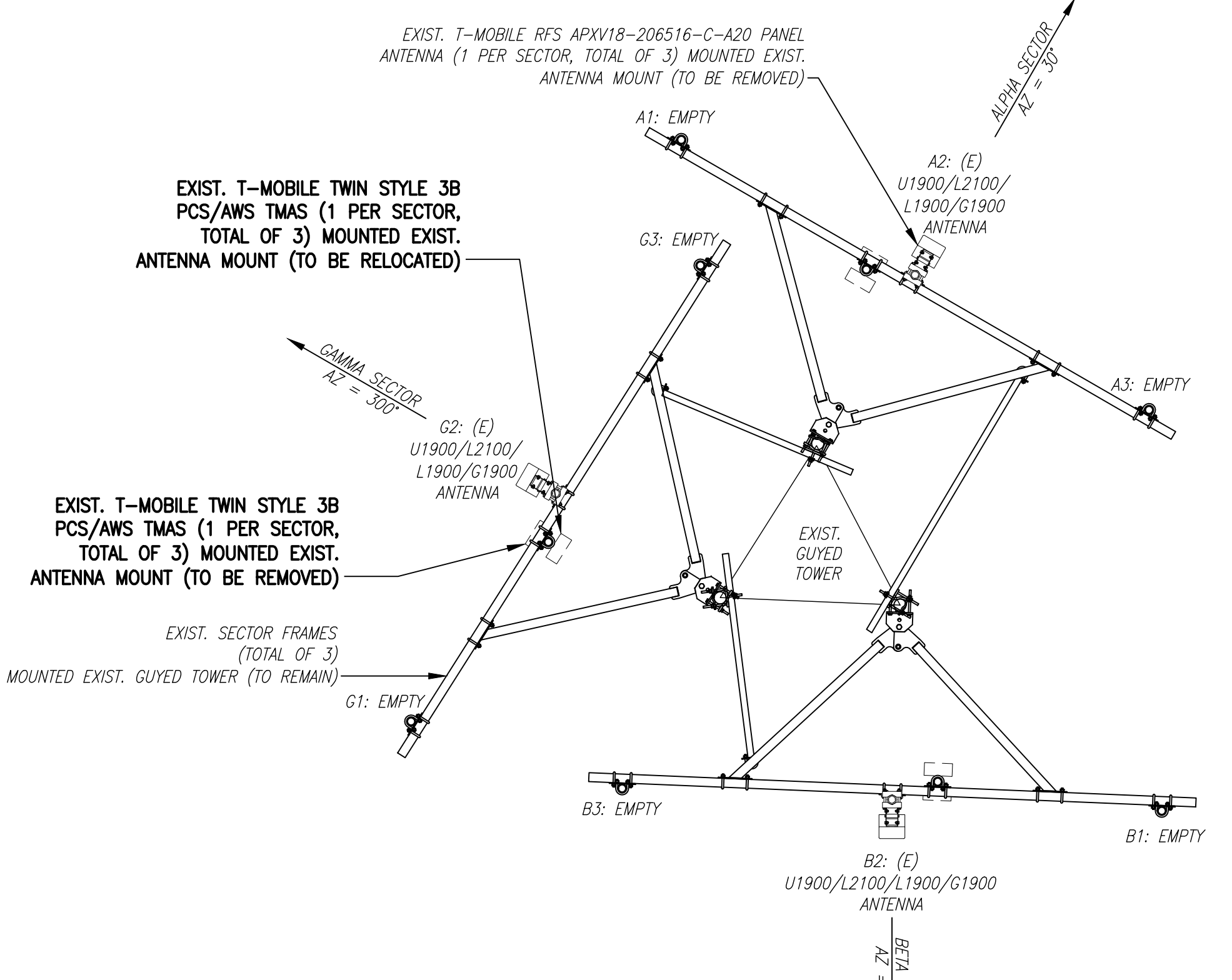
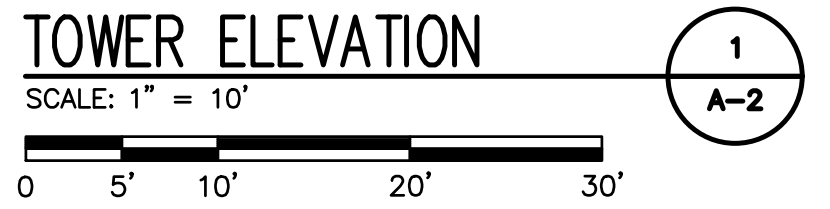
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SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
 GENERAL CONTRACTOR SHALL ORIENT PROPOSED PLATFORM REINFORCEMENT KIT RING-MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH EXISTING OR PROPOSED RING-MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

RAD CENTER NOTE:
 T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

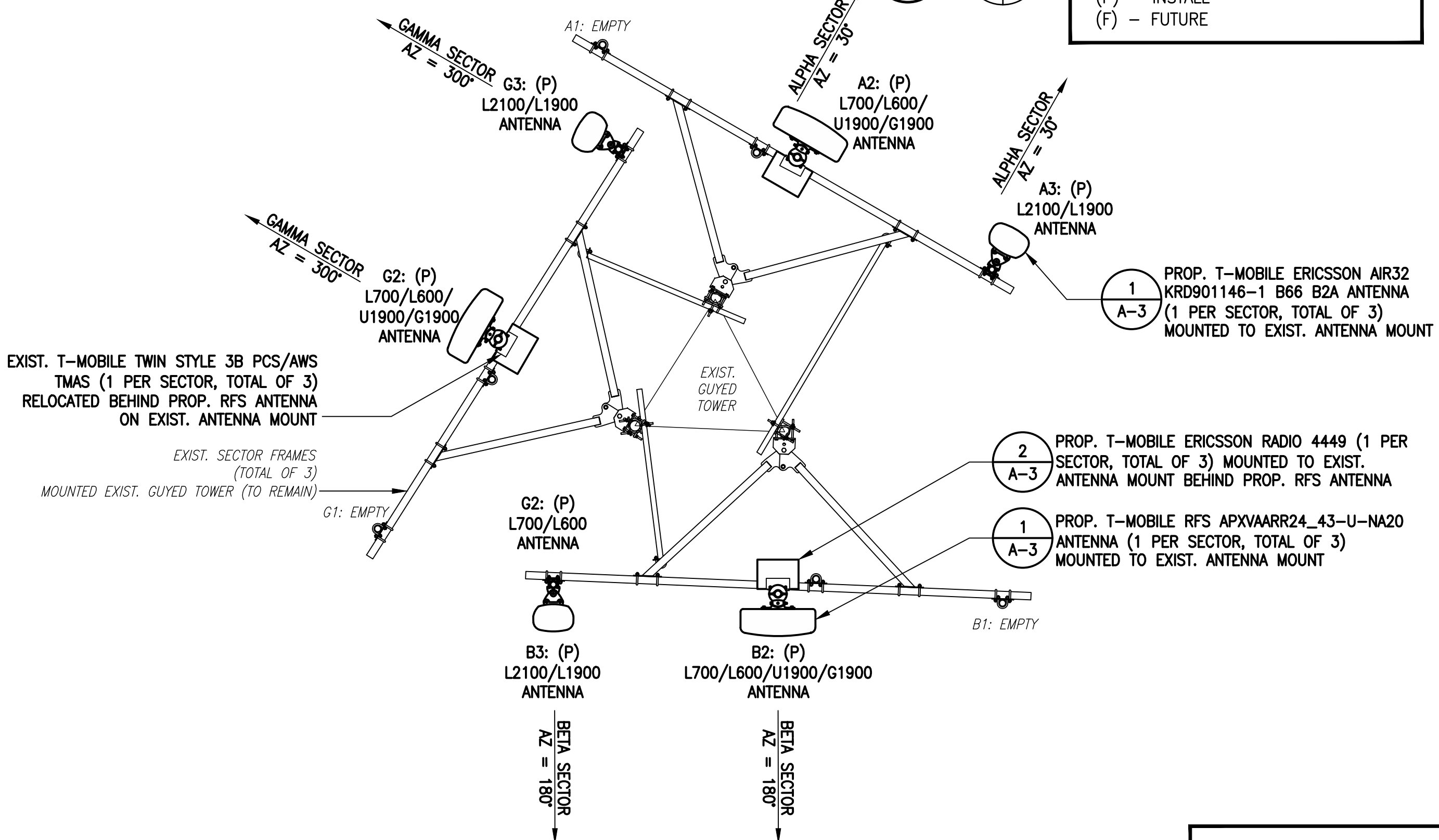


NOTE:
 GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.



EXISTING ANTENNA PLAN
 SCALE: N.T.S.

ANTENNA STATUS LEGEND:
 EMPTY - EMPTY PIPE
 (E) - EXISTING
 (P) - INSTALL
 (F) - FUTURE



PROPOSED ANTENNA PLAN
 SCALE: N.T.S.

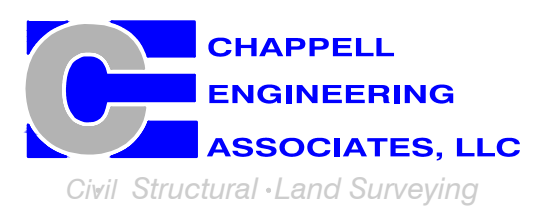
NOTE:
 VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

**T-MOBILE
 NORTHEAST LLC**

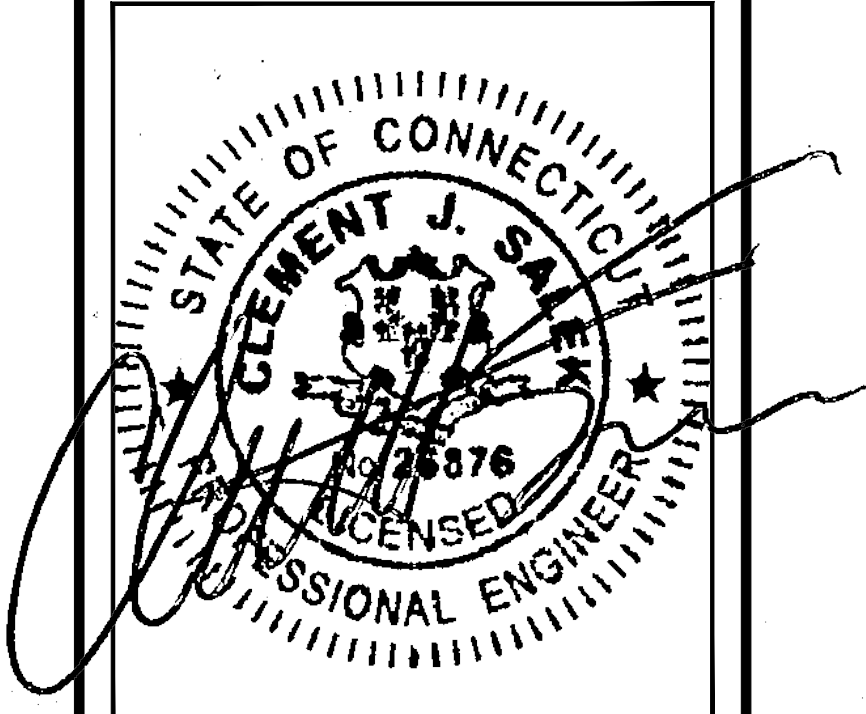
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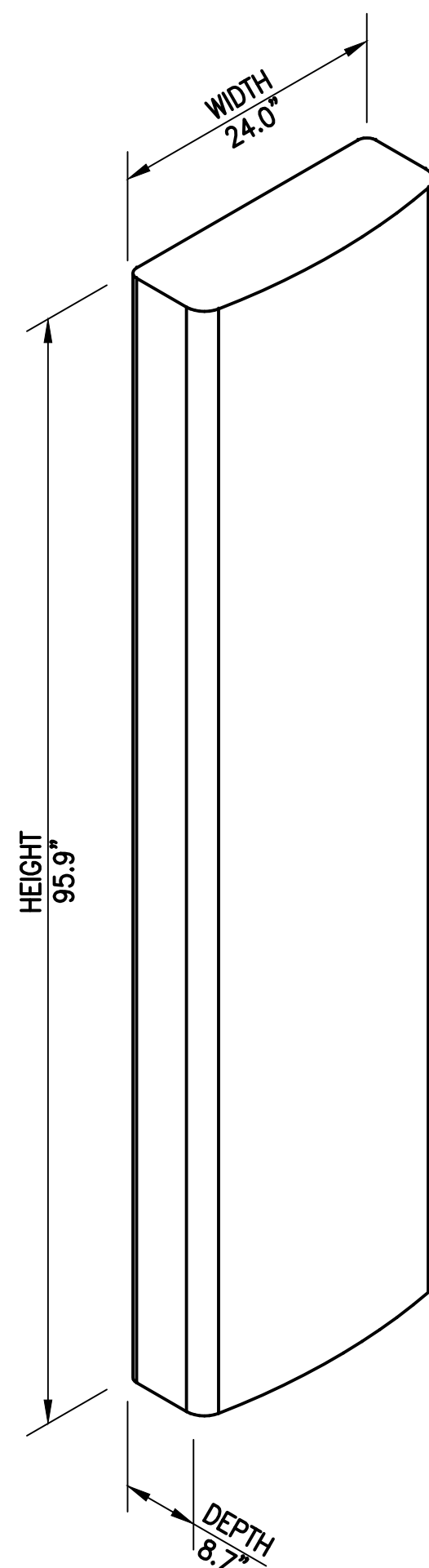
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 71 MOXLEY HILL ROAD
 UNCASVILLE, CT 06382

SHEET TITLE
**TOWER ELEVATIONS &
 ANTENNA PLAN**

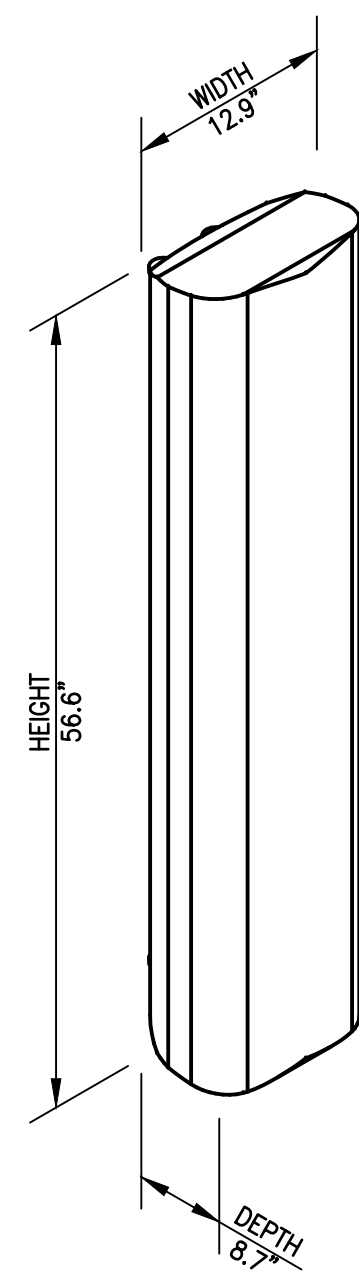
SHEET NUMBER
A-2

FINAL ANTENNA CONFIGURATION								
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	RADIOS/TMAS	CABLES
ALPHA	RFS APXVAARR24_43-U-NA20	150'± AGL	30°	0°	2°	L600/L700	ERICSSON RADIO 4449 B71+B12	(1) 6x12 (1-5/8") HCS CABLE (SHARED-ALPHA)
						U1900/G1900	TWIN STYLE 3B PCS/AWS TMAS	(2) 1-5/8" COAX CABLE
ALPHA	ERICSSON AIR32 KRD901146-1 B66A/B2A	150'± AGL	30°	0°	2°	L2100/L1900	-	(1) 6x12 (1-5/8") HCS CABLE (SHARED-ALPHA)
	BETA	RFS APXVAARR24_43-U-NA20	150'± AGL	180°	0°	2°	L600/L700	ERICSSON RADIO 4449 B71+B12
						U1900/G1900	TWIN STYLE 3B PCS/AWS TMAS	(2) 1-5/8" COAX CABLE
BETA	ERICSSON AIR32 KRD901146-1 B66A/B2A	150'± AGL	180°	0°	2°	L2100/L1900	-	(1) 6x12 (1-5/8") HCS CABLE (SHARED-BETA)
	GAMMA	RFS APXVAARR24_43-U-NA20	150'± AGL	300°	0°	2°	L600/L700	ERICSSON RADIO 4449 B71+B12
						U1900/G1900	TWIN STYLE 3B PCS/AWS TMAS	(2) 1-5/8" COAX CABLE
GAMMA	ERICSSON AIR32 KRD901146-1 B66A/B2A	150'± AGL	300°	0°	2°	L2100/L1900	-	(1) 6x12 (1-5/8") HCS CABLE (SHARED-GAMMA)

NOTE: RFDS REV1.1 - 04/25/19



RFS APXVAARR24_43-NA20 PANEL ANTENNA
DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
WEIGHT: 128.0 LBS
1 PER SECTOR, TOTAL OF 3



ERICSSON AIR32 KRD901146-1 B66A/B2A ANTENNA
DIMENSIONS: 56.6"H x 12.9"W x 8.7"D
WEIGHT: 132.2 LBS
1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS
SCALE: N.T.S.

1
A-3



ERICSSON RADIO 4449 B12+B71
DIMENSIONS: 14.9"H x 13.2"W x 9.3"D
WEIGHT: 74.0 LBS
1 PER SECTOR, TOTAL OF 3

RRU DETAIL
SCALE: N.T.S.

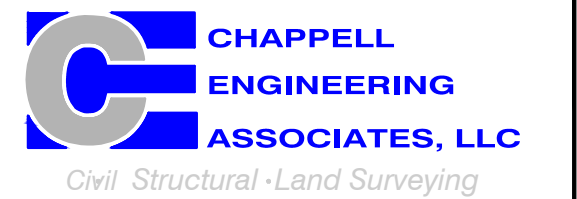
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A-3

T-MOBILE
NORTHEAST LLC

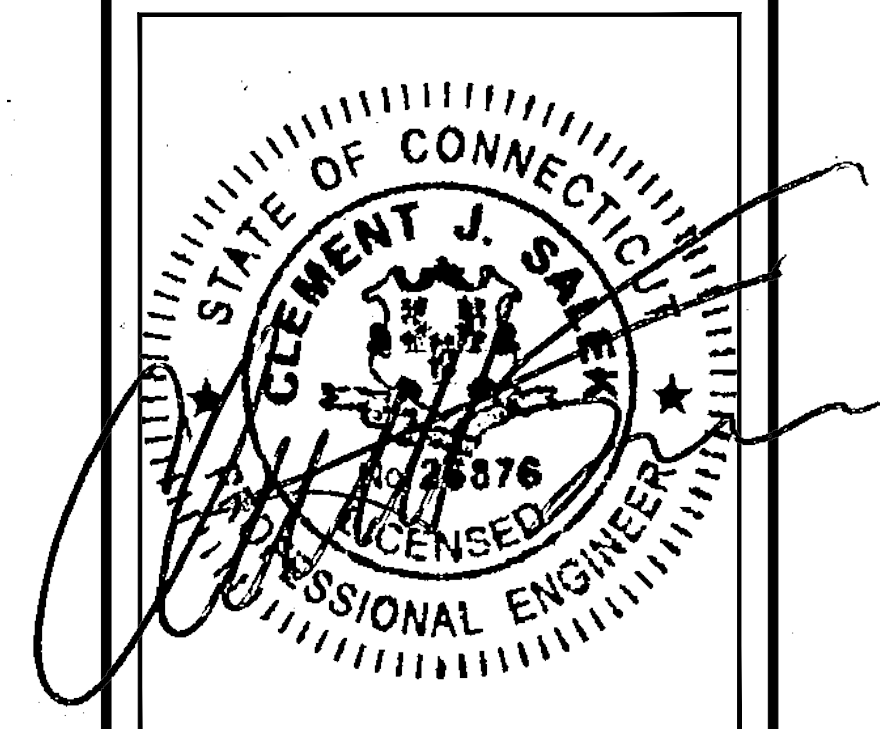
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SITE ADDRESS:
71 MOXLEY HILL ROAD
UNCASVILLE, CT 06382

SHEET TITLE

SITE DETAILS

SHEET NUMBER

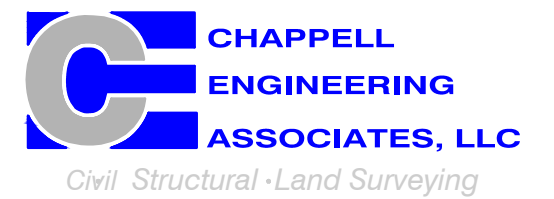
A-3

T-MOBILE
NORTHEAST LLC

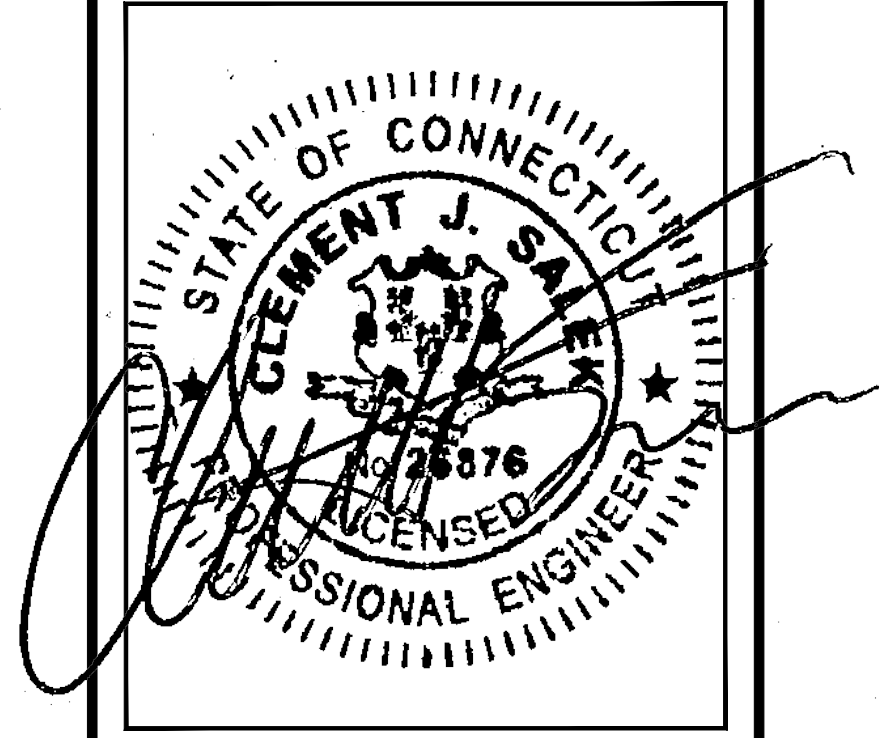
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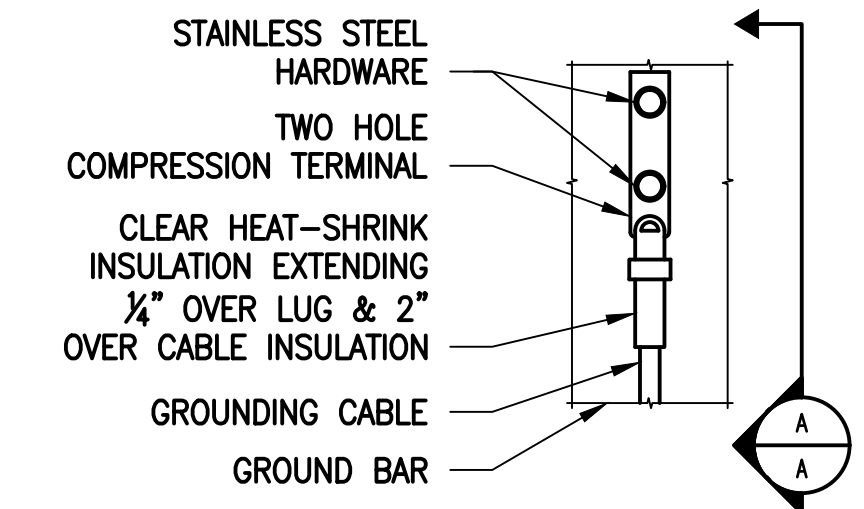
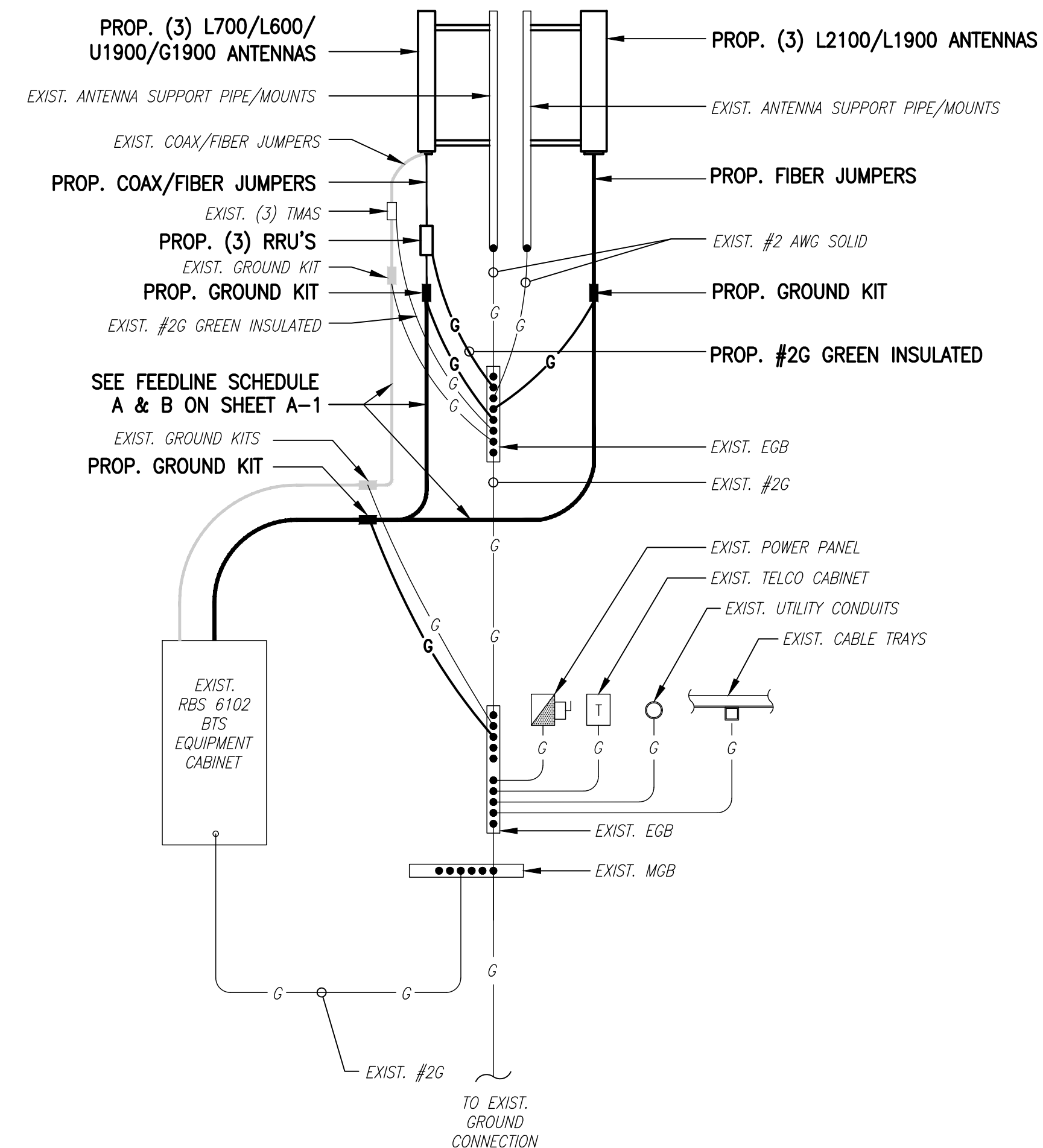
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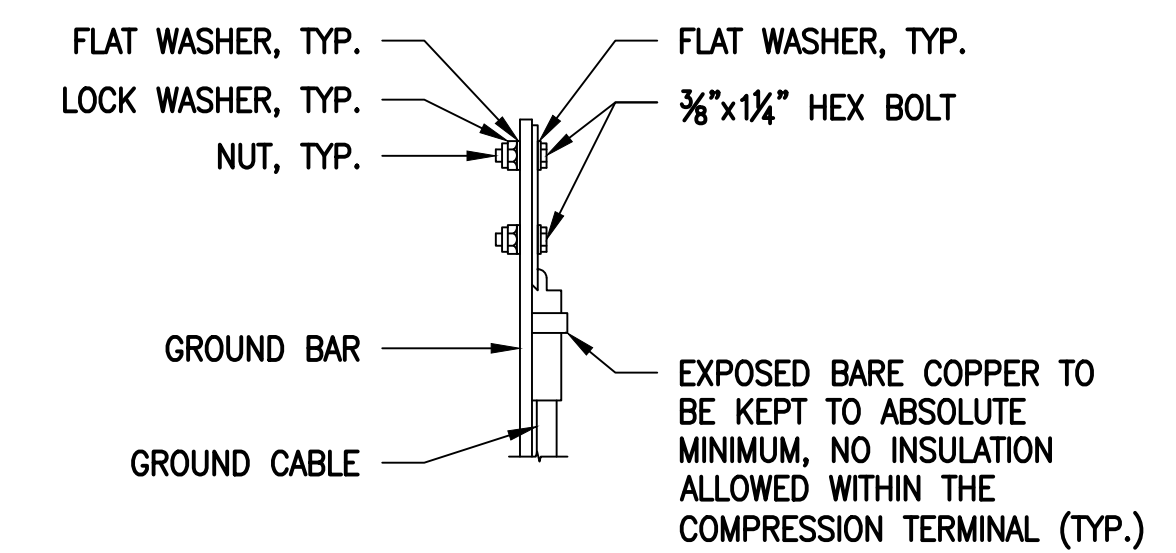
SITE ADDRESS:
71 MOXLEY HILL ROAD
UNCASVILLE, CT 06382

SHEET TITLE
**ELECTRIC & GROUNDING
DETAILS**

SHEET NUMBER
E-1



ELEVATION

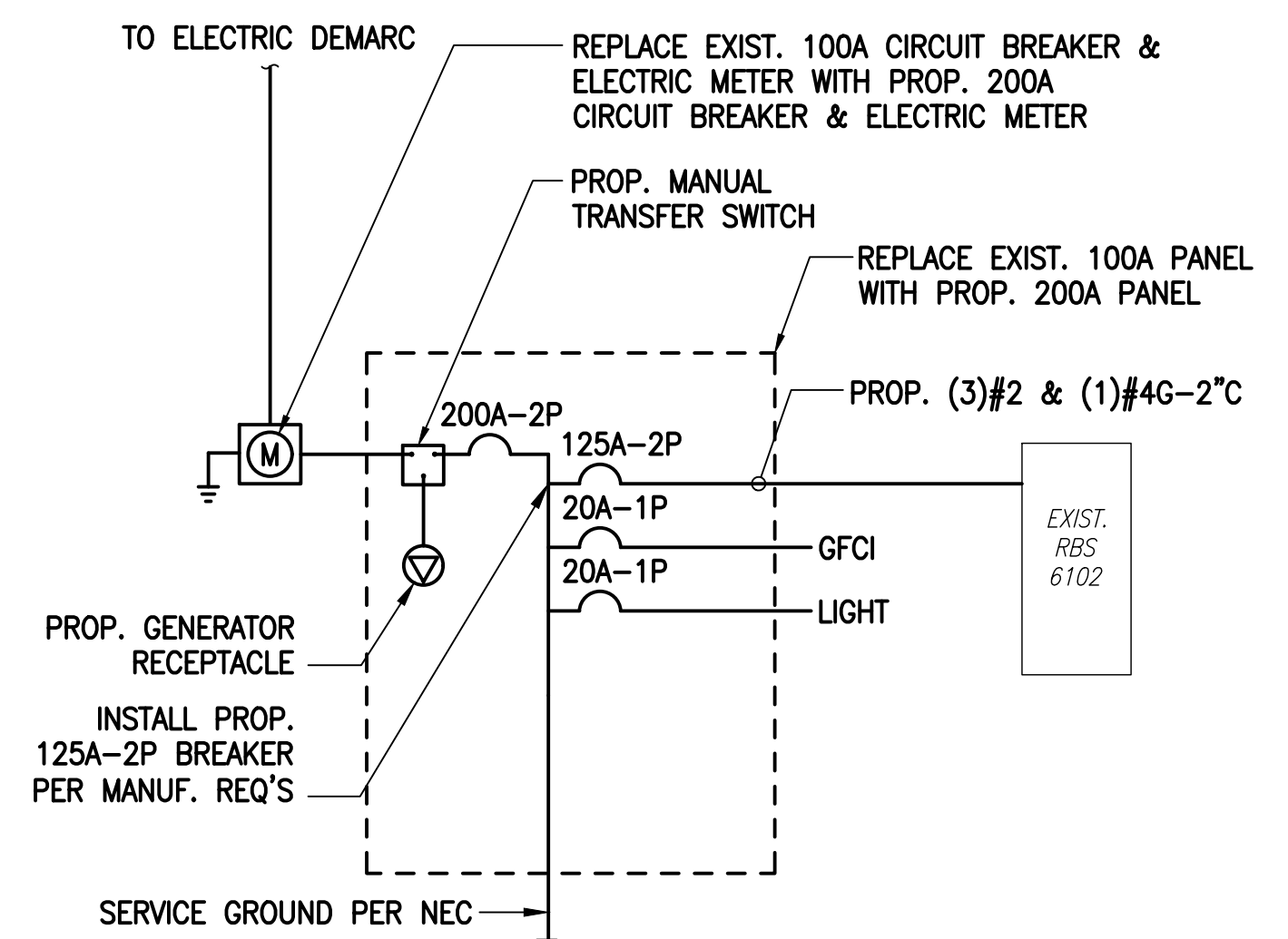


SECTION A-A

- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR
CONNECTIONS DETAIL

SCALE: NOT TO SCALE

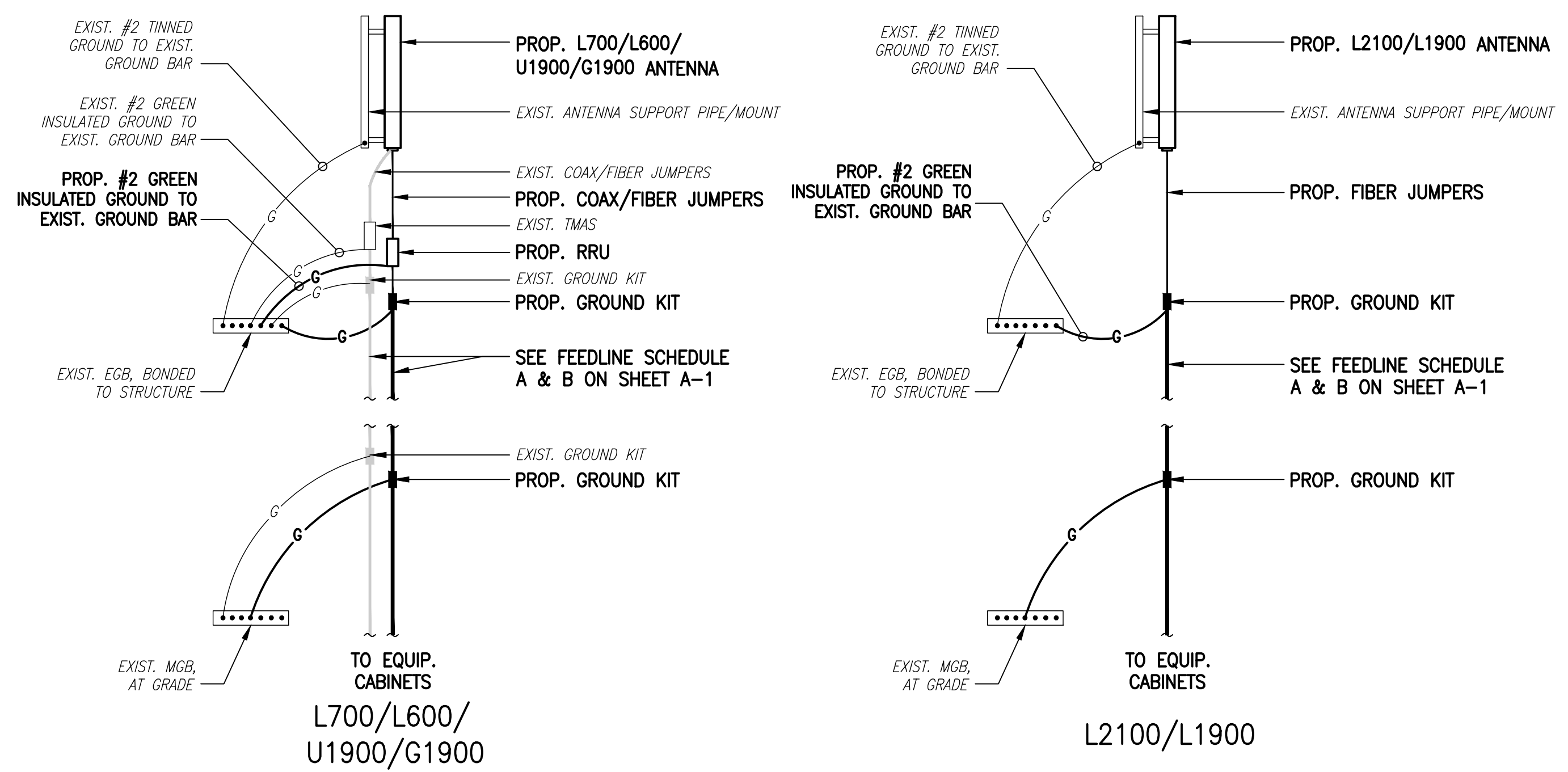


ONE LINE DIAGRAM

SCALE: NOT TO SCALE

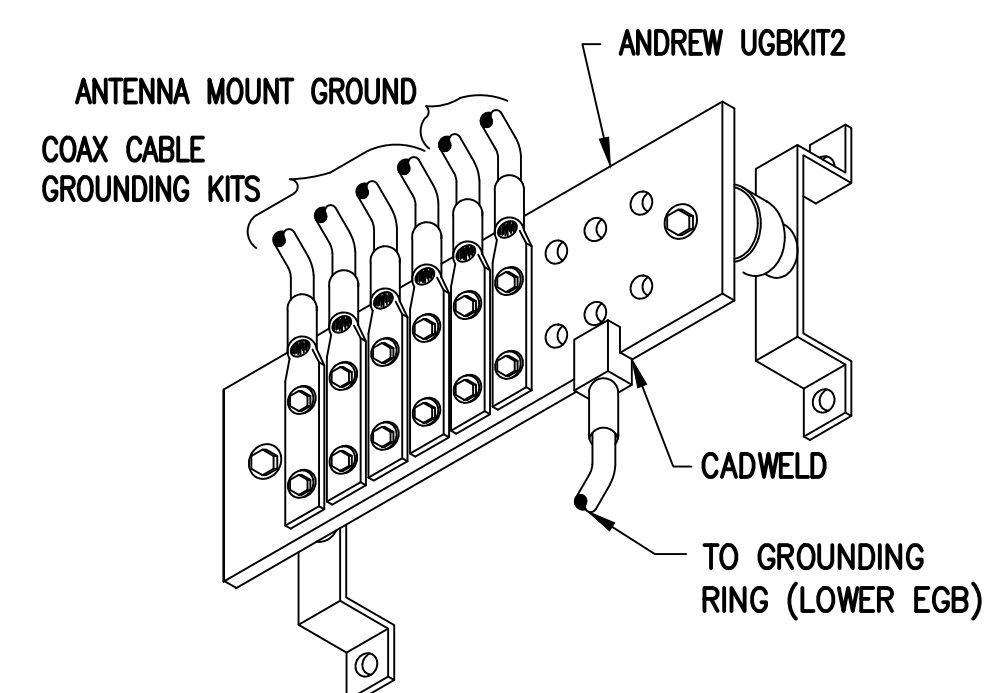
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE



COAX CABLE CONNECTION
AND GROUNDING DETAIL

SCALE: NOT TO SCALE



GROUND BAR (EGB)

SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- 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) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELL EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

EXHIBIT 7



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 190 ft Rohn Guyed Tower
Customer Name: SBA Communications Corp
Customer Site Number: CT10016-A
Customer Site Name: Montville 3, CT
Carrier Name: T-Mobile (App#: 115948, V#1)
Carrier Site ID / Name: CT11146F / Montville/I-395 X78_1
Site Location: 71 Moxley Road
Uncasville, Connecticut
New London County
Latitude: 41.435211
Longitude: -72.123319

Analysis Result:

Max Structural Usage: 92.9% [Pass]
Max Foundation Usage: 60.0% [Pass]
Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Uma S Atluri



Introduction

The purpose of this report is to summarize the analysis results on the 190 ft Rohn Guyed Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn, Inc. Eng. File # 37183AE001 dated 04/21/1998.
Foundation Drawing	Rohn, Inc. Eng. File # 37183AE001 dated 04/21/1998.
Geotechnical Report	FDH Engineering, Inc. Project # 11-02193EG1 dated 08/10/2011.
Modification Drawings	FDH Velocitel, Project # 15BJIT1400 dated 04/22/2015. FDH Engineering, Inc. Project # 1465RU1400 dated 05/29/2014.

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-H. In accordance with this standard, the structure was analyzed using **TESTowers**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	126.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-H / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.195$, $S_1 = 0.053$

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	175.0	6	Kathrein - 800 10504 - Panel	(3) T-Frames	(12) 1 5/8" (1) 3/8"	Metro PCS
2		6	Kathrein - 860 10118 - RET			
3	160.0	3	RFS APXVSP18-C-A20 - Panel	(3) Sector Frames	(4) 1 1/4" Hybrid	Sprint Nextel
4		3	RFS APXVTM14-C-I20 - Panel			
5		4	RFS ACU-A20-N RET			
6		3	Alcatel Lucent 1900 MHz RRH			
7		3	Alcatel Lucent 800 MHz RRH			
8		3	Alcatel Lucent TD-RRH8x20-25			
9		3	Alcatel Lucent 800 MHz Filter			
-	150.0	6	Andrew RR65-18-VDPL2 - Panel	(3) Sector Frames	(12) 1 5/8" (1) 1 5/8" Hybrid	T-Mobile
-		3	Ericsson APXV18 - Panel			
-		6	Ericsson 1301-KRY 112 71/3 Uen			
15	141.0	3	Antel - BXA-70063-6CF-EDIN-0 – Panel	(3) T-Frames	(12) 1 5/8" (1) 1 5/8" Hybrid	Verizon
16		3	Commscope - LNX-8513DS-VTM - Panel			
17		6	Commscope - HBXX-6517DS-A2M - Panel			
18		6	RFS - FD9R6004/2C-3L – Diplexer			
19		3	ALU - RRH2X60-AWS – RRH			
20		1	RFS - DB-T1-6Z-8AB-0Z – DC Surge			
21	130.0	3	Powerwave - 7770.00 - Panel	(3) T-Frames	(12) 1 1/4" (1) 1/2" Hybrid (2) 3/4" DC	AT&T
22		1	CCI - HPA-65R-BUU-H8 - Panel			
23		1	CCI - HPA-65R-BUU-H6 - Panel			
24		1	Andrew - SBNHH-1D65A - Panel			
25		6	Powerwave - LGP21401 – TMA			
26		6	Kathrein - 860 10025 - RET			
27		3	Ericsson - RRUS-11 – RRU			
28		3	Ericsson – RRUS-12 – RRU			
29		3	Ericsson – RRUS-A2 – RRU			
30		1	Raycap - DC6-48-60-18-8F – Surge Supp.			
31	76.0	1	Andrew - GPS 7.5"X3" - GPS	(1) Stand-off Mount	(1) 1/2"	Verizon

Proposed Carrier’s Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier’s final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
10	150.0	3	Andrew RR65-18-VDPL2 - Panel	(3) Sector Frames	(10) 1 5/8" (3) 1 5/8" Hybrid	T-Mobile
11		3	RFS APXVAARR24_43-U-NA20 - Panel			
12		3	Ericsson Air32 KRD901146-1_B66A_B2A - Panel			
13		6	Ericsson KRY 112 144/1			
14		3	Ericsson Radio 4449 B71+B12			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

Tower Component	Legs	Diagonals	Horizontals	Guy Wires
Max. Usage:	81.7%	92.9%	20.6%	47.3%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

Reactions (kips)	Base Reactions		Inner Anchors	
	Axial	Shear	Uplift	Shear
Analysis Reactions	123.4	5.7	37.8	43.8

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-H for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.9394 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-H Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Structure: CT10016-A-SBA

Site Name: Montville 3, CT

Code: EIA/TIA-222-H

7/9/2019

Type: Guyed

Base Shape: Triangle

Basic WS: 126.00

Height: 190.00 (ft)

Base Width: 0.00

Basic Ice WS: 50.00

Base Elev: 0.00 (ft)

Top Width: 3.42

Operational WS: 60.00

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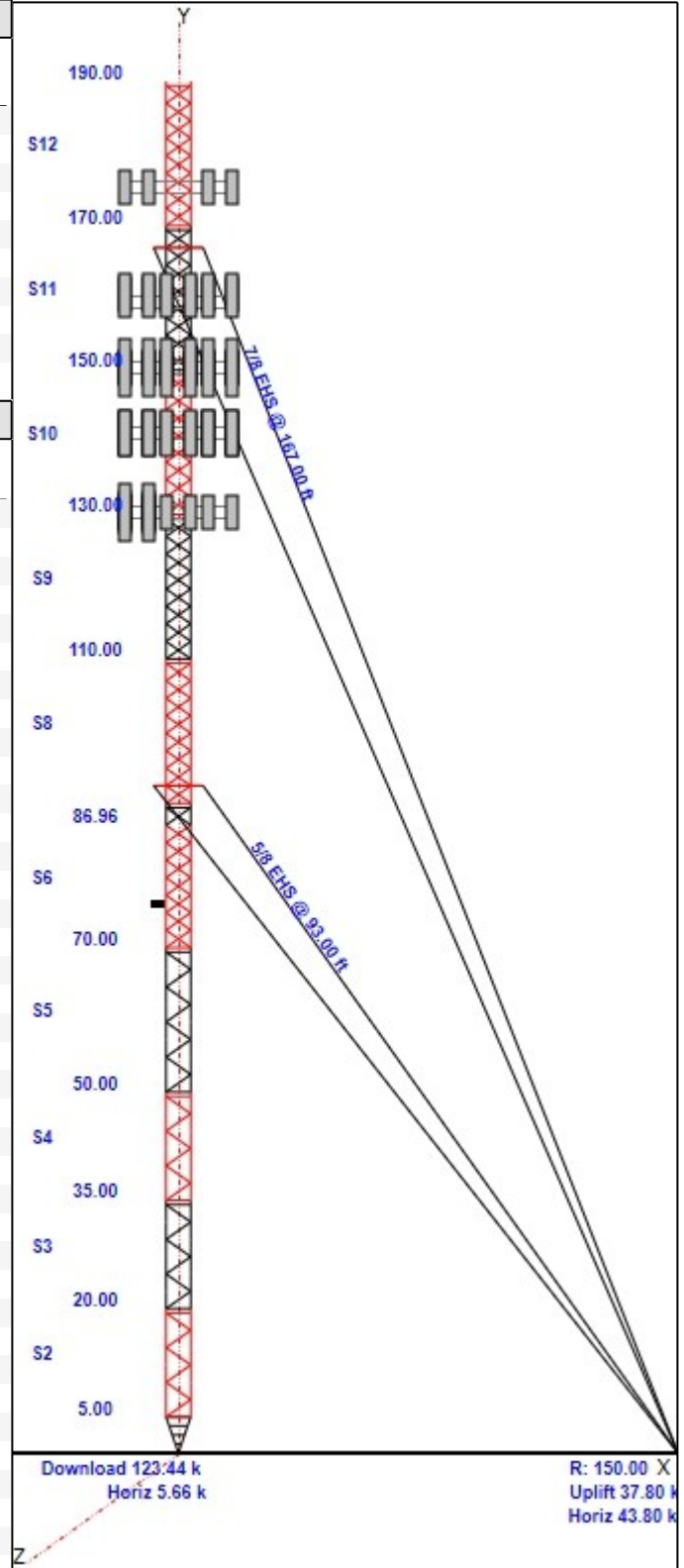


Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1	PX 3" DIA PIPE		SAE 8X8X0.75
2	PX 3" DIA PIPE	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
3-4	PX 3" DIA PIPE	PSP ROHN 1 1/2X16GA	PSP ROHN 1 1/2X16GA
5	PX 3" DIA PIPE	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
6	PX 3" DIA PIPE	PSP ROHN 1 1/2X16GA	PSP ROHN 1 1/2X16GA
7	PX 3" DIA PIPE	SAE 2X2X0.25	PSP ROHN 1 1/2X16GA
8	PX 3" DIA PIPE	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
9	MOD 2.5"PX+3PX1/2P	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
10	MOD 2.5"PX+3PX1/2P	PSP ROHN 1 1/2X16GA	PSP ROHN 1 1/2X16GA
11-12	PX 3" DIA PIPE	SAE 2X2X0.25	SAE 2X2X0.25

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
175.00	175.00	6	800 10504
175.00	175.00	6	860 10118
175.00	175.00	3	Sector Frame
159.00	160.00	3	RFS APXVSP18-C-A20
159.00	160.00	3	RFS APXVTM14-C-I20
159.00	160.00	3	Alcatel Lucent 1900 MHz RRH
159.00	160.00	3	Alcatel Lucent 800 MHz RRH
159.00	160.00	3	Alcatel Lucent TD-RRH8x20-25
159.00	160.00	3	Alcatel Lucent 800 MHz Filter
159.00	160.00	4	RFS ACU-A20-N RET
159.00	159.00	3	Sector Frame
150.00	150.00	6	Ericsson KRY 112 144/1
150.00	150.00	3	Sector Frames
150.00	150.00	3	RFS APXVAARR24_43-U-NA20
150.00	150.00	3	Ericosn Radio 4449 B71+B12
150.00	150.00	3	Ericosn Radio 4449 B12
150.00	150.00	3	Ericsson Air32 KRD901146-1_B66A_B2A
150.00	150.00	3	Andrew RR65-18-VDPL2
141.00	141.00	3	BXA-70063-6CF-EDIN-0
141.00	141.00	3	LNx-8513DS-VTM
141.00	141.00	6	HBXX-6517DS-A2M
141.00	141.00	6	FD9R6004/2C-3L
141.00	141.00	3	RRH2X60-AWS
141.00	141.00	1	DB-T1-6Z-8AB-OZ
141.00	141.00	3	Sector Frame
130.00	130.00	3	7770.00
130.00	130.00	1	HPA-65R-BUU-H8
130.00	130.00	1	HPA-65R-BUU-H6
130.00	130.00	1	SBNHH-1D65A
130.00	130.00	6	LGP21401
130.00	130.00	6	860 10025
130.00	130.00	3	RRUS 12
130.00	130.00	3	RRUS A2 Module
130.00	130.00	1	DC6-48-60-18-8F
130.00	130.00	3	RRUS-11
130.00	130.00	3	Sector Frame
76.00	76.00	1	Andrew - GPS 7.5"X3" - GPS
76.00	76.00	1	Stand-Off



Linear Appurtenances

Structure: CT10016-A-SBA

Site Name: Montville 3, CT

Code: EIA/TIA-222-H

7/9/2019

Type: Guyed

Base Shape: Triangle

Basic WS: 126.00

Height: 190.00 (ft)

Base Width: 0.00

Basic Ice WS: 50.00

Base Elev: 0.00 (ft)

Top Width: 3.42

Operational WS: 60.00

Page: 2



Elev From (ft)	Elev To (ft)	Qty	Description
0.00	175.00	12	1 5/8" Coax
0.00	175.00	1	3/8" Coax
0.00	160.00	4	1-1/4" Hybrid
0.00	150.00	10	1 5/8" Coax
0.00	150.00	3	1 5/8" Hybrid
0.00	141.00	6	1 5/8" Coax
0.00	141.00	6	1 5/8" Coax
0.00	141.00	1	1 5/8" Hybrid
0.00	130.00	12	1 1/4" Coax
0.00	130.00	1	1/2" Hybrid
0.00	130.00	2	3/4" DC
0.00	76.00	1	1/2" Coax

Max Guy Wire

47.30% @ 92.4221 ft - 5/8 EHS

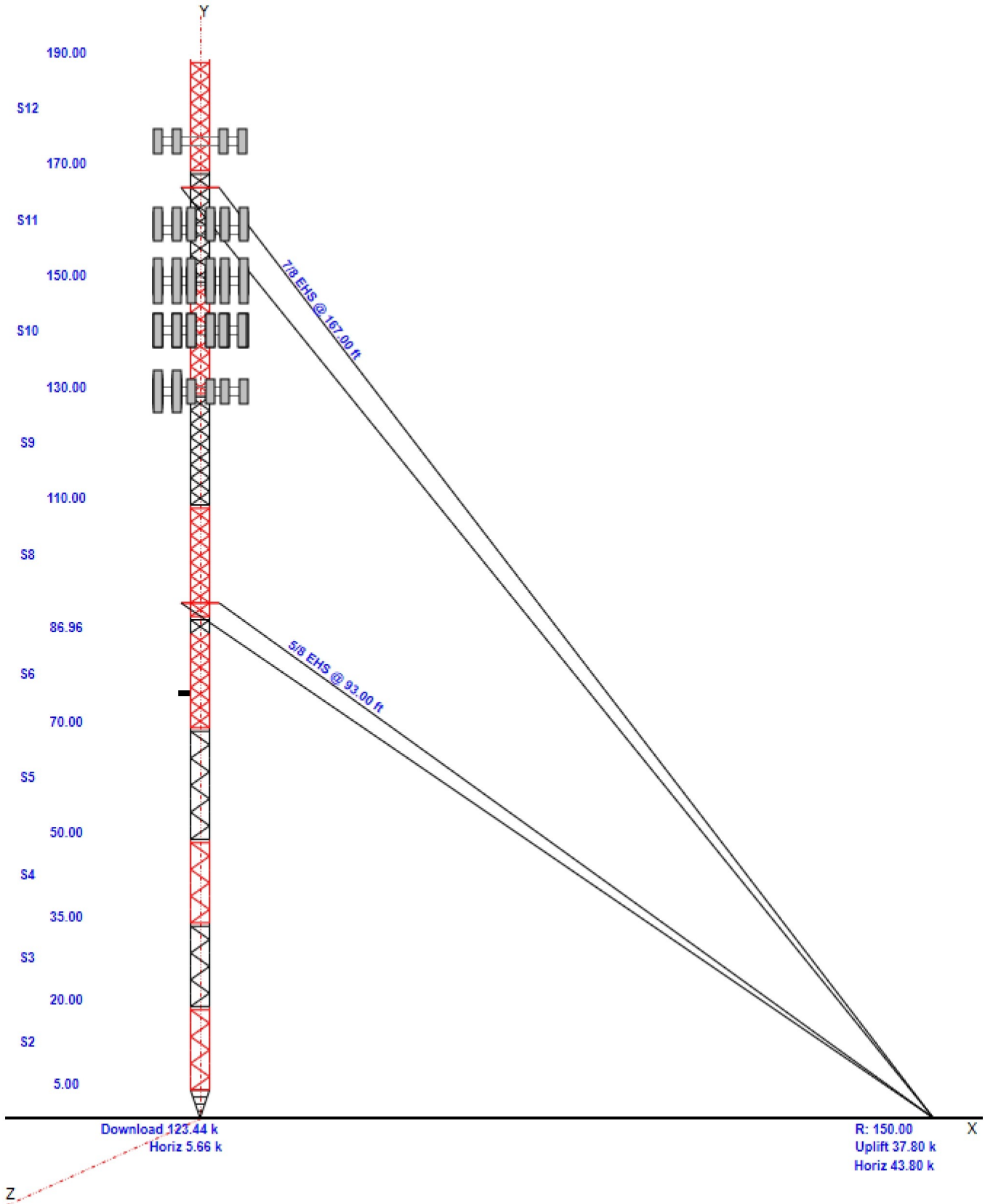
Structure: CT10016-A-SBA

Site Name: Montville 3, CT
Type: Guyed
Height: 190.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: Triangle
Base Width: 0.00
Top Width: 3.42

Code: EIA/TIA-222-H
Basic WS: 126.00
Basic Ice WS: 50.00
Operational WS: 60.00

7/9/2019
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Anchor Drops with Guy Radius - Structure: CT10016-A-SBA

Site Name: Montville 3, CT

Code: EIA_H

7/9/2019

Type: Guyed

Base Shape: Triangle

Basic WS: 126.00

Height: 190.00 (ft)

Base Width: 0.00

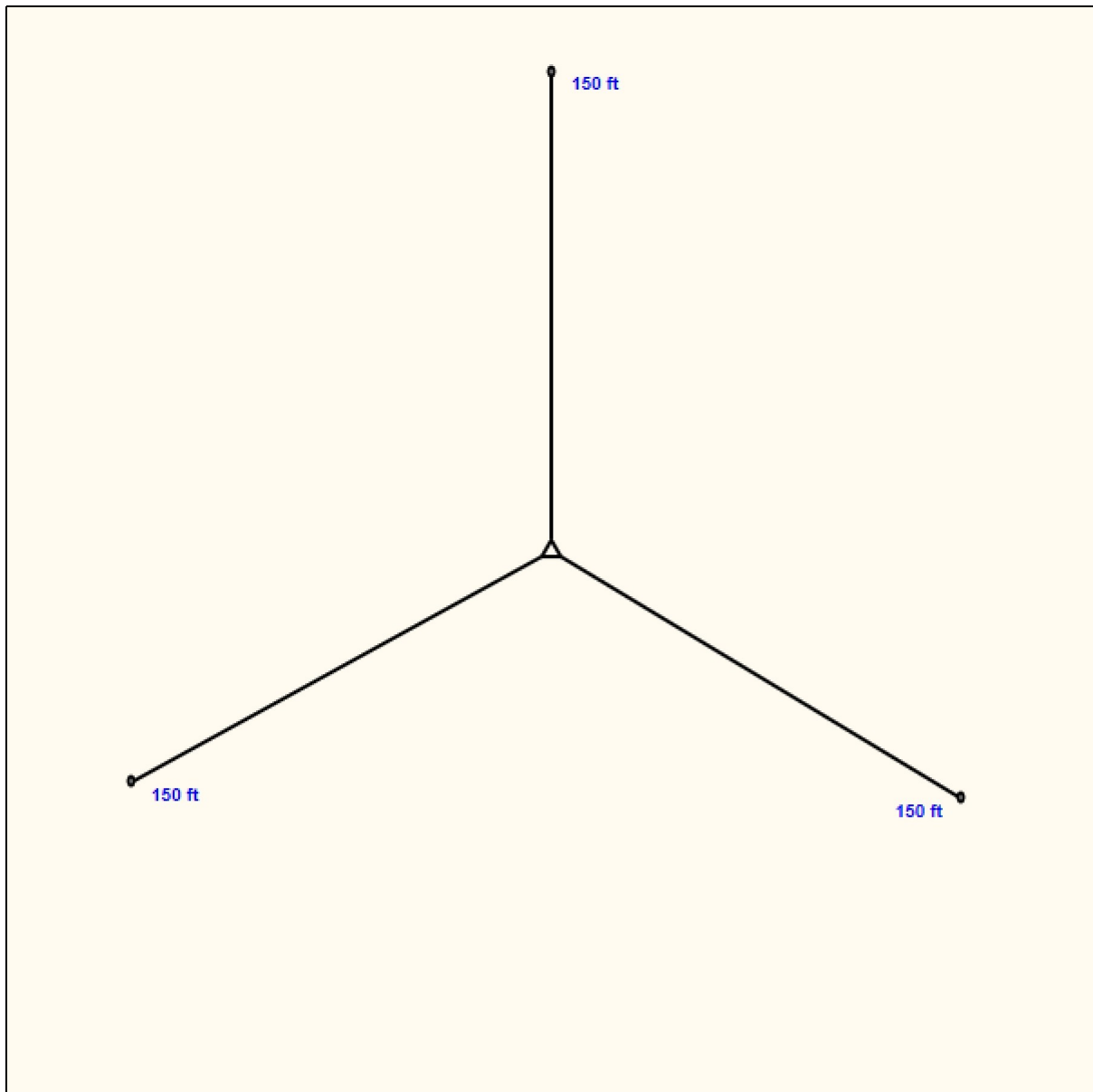
Basic Ice WS: 50.00

Base Elev: 0.00 (ft)

Top Width: 3.42

Operational WS: 60.00

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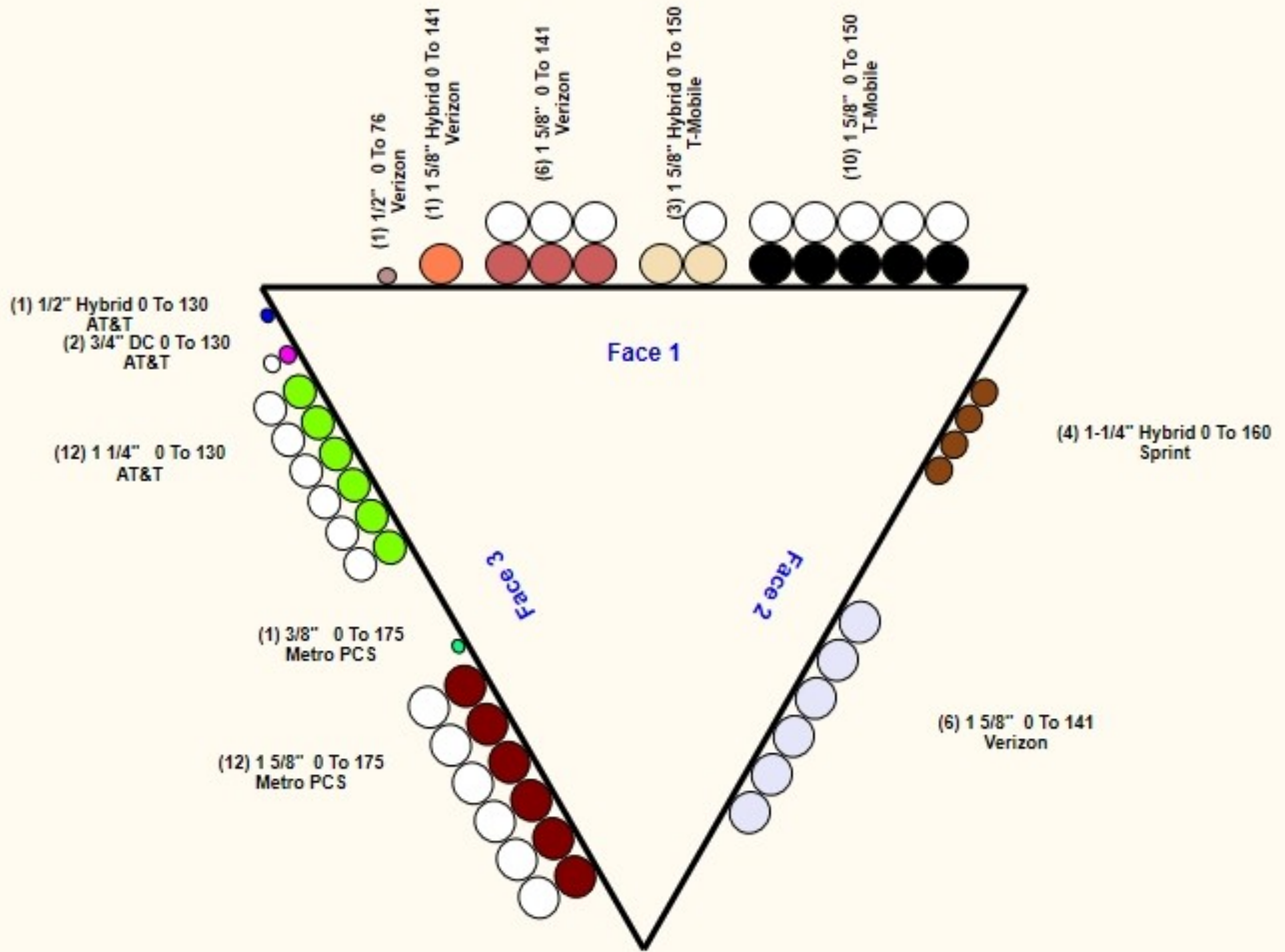
Structure: CT10016-A-SBA - Coax Line Placement

Type: Guyed
Site Name: Montville 3, CT
Height: 190.00 (ft)

7/9/2019



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Loading Summary

Structure: CT10016-A-SBA	Code: EIA/TIA-222-H	7/9/2019
Site Name: Montville 3, CT	Exposure: B	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
175.00	800 10504	6	17.60	3.340	60.33	4.572	54.000	6.100	2.700	0.80	0.72	0.000
175.00	860 10118	6	1.10	0.160	4.60	0.395	7.000	2.400	2.000	0.80	0.50	0.000
175.00	Sector Frame	3	500.00	17.500	973.95	26.955	0.000	0.000	0.000	0.75	0.75	0.000
159.00	RFS APXVSP18-C-A20	3	57.00	8.020	182.56	8.869	72.000	11.800	7.000	0.80	0.83	1.000
159.00	RFS APXVTM14-C-I20	3	56.00	6.340	156.57	7.071	56.300	12.600	6.300	0.80	0.79	1.000
159.00	Alcatel Lucent 1900 MHz RRH	3	60.00	2.770	115.98	3.621	25.000	11.100	11.400	0.80	0.67	1.000
159.00	Alcatel Lucent 800 MHz RRH	3	53.00	2.490	102.63	3.257	19.700	13.000	10.800	0.80	0.50	1.000
159.00	Alcatel Lucent TD-RRH8x20-25	3	70.00	4.050	139.13	4.581	26.100	18.600	6.700	0.80	0.67	1.000
159.00	Alcatel Lucent 800 MHz Filter	3	8.80	0.780	20.64	1.214	10.000	8.000	3.000	0.80	0.67	1.000
159.00	RFS ACU-A20-N RET	4	1.00	0.140	3.88	0.339	4.000	2.000	3.500	0.80	0.67	1.000
159.00	Sector Frame	3	500.00	17.500	968.40	26.845	0.000	0.000	0.000	0.75	0.75	0.000
150.00	Ericsson KRY 112 144/1	6	20.00	0.410	32.98	0.725	12.000	7.000	4.000	0.80	0.50	0.000
150.00	Sector Frames	3	500.00	17.500	962.19	26.721	0.000	0.000	0.000	0.75	0.75	0.000
150.00	RFS APXVAARR24_43-U-NA20	3	128.00	20.240	392.91	21.482	95.900	24.000	7.800	0.80	0.70	0.000
150.00	Ericosn Radio 4449 B71+B12	3	70.00	1.650	111.36	1.993	15.000	13.200	9.300	0.80	0.67	0.000
150.00	Ericosn Radio 4449 B12	3	71.00	1.970	106.34	2.332	17.900	13.200	9.400	0.80	0.50	0.000
150.00	Ericsson Air32	3	132.20	6.510	246.82	7.292	57.000	12.900	8.700	0.80	0.87	0.000
150.00	Andrew RR65-18-VDPL2	3	13.50	4.360	72.43	4.989	56.000	8.000	2.800	0.80	0.68	0.000
141.00	BXA-70063-6CF-EDIN-0	3	17.00	7.570	124.09	8.382	71.000	11.200	5.200	0.80	0.73	0.000
141.00	LNx-8513DS-VTM	3	26.30	8.170	152.35	9.014	72.700	11.900	7.100	0.80	0.83	0.000
141.00	HBXX-6517DS-A2M	6	40.80	8.550	166.98	9.387	74.900	12.000	6.500	0.80	0.77	0.000
141.00	FD9R6004/2C-3L	6	3.10	0.360	8.41	0.653	5.800	6.500	1.500	0.80	0.67	0.000
141.00	RRH2X60-AWS	3	55.00	3.500	107.98	4.022	37.000	11.000	6.000	0.80	0.67	0.000
141.00	DB-T1-6Z-8AB-0Z	1	18.90	4.800	108.42	5.365	24.000	24.000	10.000	1.00	1.00	0.000
141.00	Sector Frame	3	500.00	17.500	962.19	26.721	0.000	0.000	0.000	0.75	0.75	0.000
130.00	7770.00	3	35.00	5.500	116.25	6.179	55.000	11.000	5.000	0.80	0.73	0.000
130.00	HPA-65R-BUU-H8	1	68.00	12.980	246.96	14.009	92.400	14.800	7.400	0.80	0.85	0.000
130.00	HPA-65R-BUU-H6	1	51.00	9.660	203.65	10.532	72.000	14.800	9.000	0.80	0.85	0.000
130.00	SBNHH-1D65A	1	33.50	5.880	129.60	6.568	55.000	11.900	7.100	0.80	0.85	0.000
130.00	LGP21401	6	19.00	1.290	40.96	1.835	14.400	9.200	2.600	0.80	0.67	0.000
130.00	860 10025	6	1.20	0.180	5.11	0.427	7.600	2.400	2.000	0.80	0.67	0.000
130.00	RRUS 12	3	60.00	2.700	103.69	3.130	18.200	17.800	8.000	0.80	0.67	0.000
130.00	RRUS A2 Module	3	21.20	1.860	44.74	2.495	12.800	15.000	3.400	0.80	0.67	0.000
130.00	DC6-48-60-18-8F	1	31.80	0.920	72.11	1.206	24.000	11.000	11.000	1.00	1.00	0.000
130.00	RRUS-11	3	55.00	2.520	105.81	2.933	17.000	17.800	7.200	0.80	0.67	0.000
130.00	Sector Frame	3	500.00	17.500	955.12	26.580	0.000	0.000	0.000	0.75	0.75	0.000
76.00	Andrew - GPS 7.5"X3" - GPS	1	1.00	0.130	6.28	0.270	7.500	3.000	3.000	1.00	1.00	0.000
76.00	Stand-Off	1	15.00	4.310	29.39	7.675	0.000	0.000	0.000	1.00	1.00	0.000
Totals:		122	11,307.00		24,400.59						Number of Appurtenances :	38

Loading Summary

Structure: CT10016-A-SBA	Code: EIA/TIA-222-H	7/9/2019
Site Name: Montville 3, CT	Exposure: B	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 7



Linear Appurtenances Properties

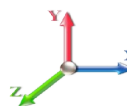
Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	175.00	1 5/8" Coax	12	1.98	1.04	50.00	3	Block		N	0.50	1.00	
0.00	175.00	3/8" Coax	1	0.44	0.08	100.00	3	Individual NR		N	1.00	1.00	
0.00	160.00	1-1/4" Hybrid	4	1.25	0.95	100.00	2	Individual IR		N	1.00	0.67	
0.00	150.00	1 5/8" Coax	10	1.98	1.04	50.00	1	Block		N	0.50	1.00	
0.00	150.00	1 5/8" Hybrid	3	2.00	1.10	50.00	1	Block		N	0.50	1.00	
0.00	141.00	1 5/8" Coax	6	1.98	1.04	100.00	2	Individual IR		N	1.00	0.67	
0.00	141.00	1 5/8" Coax	6	1.98	1.04	50.00	1	Block		N	0.50	1.00	
0.00	141.00	1 5/8" Hybrid	1	2.00	1.10	100.00	1	Individual NR		N	1.00	1.00	
0.00	130.00	1 1/4" Coax	12	1.55	0.66	50.00	3	Block		N	0.50	1.00	
0.00	130.00	1/2" Hybrid	1	0.50	0.52	100.00	3	Individual NR		N	1.00	1.00	
0.00	130.00	3/4" DC	2	0.75	0.40	50.00	3	Block		N	1.00	1.00	
0.00	76.00	1/2" Coax	1	0.65	0.16	100.00	1	Individual NR		N	1.00	1.00	

Section Forces

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/9/2019

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Load Case: 1.2D + 1.0W Normal Wind

1.2D + 1.0W 126 mph Wind at Normal To Face

Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	Ice Importance Factor: 1.00
Ice Dead Load Factor: 0.00	

Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	2.5	24.01	4.917	3.14	0.00	0.81	1.82	1.00	1.00	0.00	7.71	29.47	0.00	1,711.9	0.0	286.23	165.59	428.61
2	12.5	24.01	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,708.6	0.0	379.05	1530.16	1,909.21
3	27.5	24.01	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,619.8	0.0	379.05	1530.16	1,909.21
4	42.5	26.54	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,619.8	0.0	419.07	1691.70	2,110.77
5	60.0	29.29	0.000	16.35	0.00	0.22	2.53	1.00	1.00	0.00	9.66	117.90	0.00	2,264.3	0.0	608.64	2489.15	3,097.78
6	78.5	31.63	0.000	17.11	0.00	0.27	2.37	1.00	1.00	0.00	10.43	99.40	0.00	1,922.8	0.0	665.33	2267.88	2,933.21
7	88.5	32.73	1.299	2.16	0.00	0.31	2.28	1.00	1.00	0.00	2.62	17.74	0.00	412.7	0.0	166.01	419.05	585.06
8	100.0	33.90	0.000	20.24	0.00	0.27	2.37	1.00	1.00	0.00	12.35	116.82	0.00	2,474.0	0.0	843.54	2857.81	3,701.34
9	120.0	35.71	0.000	19.21	0.00	0.26	2.41	1.00	1.00	0.00	11.65	116.82	0.00	2,657.6	0.0	850.22	3010.62	3,860.84
10	140.0	37.32	0.000	19.22	0.00	0.26	2.40	1.00	1.00	0.00	11.65	79.45	0.00	2,087.5	0.0	888.44	2143.78	3,032.22
11	160.0	38.77	11.444	11.67	0.00	0.31	2.27	1.00	1.00	0.00	18.47	28.87	0.00	1,933.4	0.0	1379.27	827.09	2,206.36
12	180.0	40.09	11.435	11.67	0.00	0.31	2.27	1.00	1.00	0.00	18.45	6.18	0.00	1,661.6	0.0	1424.76	188.31	1,613.07
														22,074.0	0.0			27,387.69

Load Case: 1.2D + 1.0W 60° Wind

1.2D + 1.0W 126 mph Wind at 60° From Face

Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	Ice Importance Factor: 1.00
Ice Dead Load Factor: 0.00	

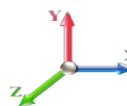
Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	2.5	24.01	4.917	3.14	0.00	0.81	1.82	0.80	1.00	0.00	6.72	29.47	0.00	1,711.9	0.0	249.71	165.59	415.30
2	12.5	24.01	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,708.6	0.0	379.05	1530.16	1,909.21
3	27.5	24.01	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,619.8	0.0	379.05	1530.16	1,909.21
4	42.5	26.54	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,619.8	0.0	419.07	1691.70	2,110.77
5	60.0	29.29	0.000	16.35	0.00	0.22	2.53	0.80	1.00	0.00	9.66	117.90	0.00	2,264.3	0.0	608.64	2489.15	3,097.78
6	78.5	31.63	0.000	17.11	0.00	0.27	2.37	0.80	1.00	0.00	10.43	99.40	0.00	1,922.8	0.0	665.33	2267.88	2,933.21
7	88.5	32.73	1.299	2.16	0.00	0.31	2.28	0.80	1.00	0.00	2.36	17.74	0.00	412.7	0.0	149.56	419.05	568.60
8	100.0	33.90	0.000	20.24	0.00	0.27	2.37	0.80	1.00	0.00	12.35	116.82	0.00	2,474.0	0.0	843.54	2857.81	3,701.34
9	120.0	35.71	0.000	19.21	0.00	0.26	2.41	0.80	1.00	0.00	11.65	116.82	0.00	2,657.6	0.0	850.22	3010.62	3,860.84
10	140.0	37.32	0.000	19.22	0.00	0.26	2.40	0.80	1.00	0.00	11.65	79.45	0.00	2,087.5	0.0	888.44	2143.78	3,032.22
11	160.0	38.77	11.444	11.67	0.00	0.31	2.27	0.80	1.00	0.00	16.19	28.87	0.00	1,933.4	0.0	1208.39	827.09	2,035.49
12	180.0	40.09	11.435	11.67	0.00	0.31	2.27	0.80	1.00	0.00	16.16	6.18	0.00	1,661.6	0.0	1248.15	188.31	1,436.46
														22,074.0	0.0			27,010.44

Section Forces

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.2D + 1.0W 90° Wind

1.2D + 1.0W 126 mph Wind at 90° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (psf) (sqft)	Ice Round Area (psf) (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.5	24.01	4.917	3.14	0.00	0.81	1.82	0.85	1.00	0.00	6.97	29.47	0.00	1,711.9	0.0	258.84	165.59	424.43
2	12.5	24.01	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,708.6	0.0	379.05	1530.16	1,909.21
3	27.5	24.01	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,619.8	0.0	379.05	1530.16	1,909.21
4	42.5	26.54	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,619.8	0.0	419.07	1691.70	2,110.77
5	60.0	29.29	0.000	16.35	0.00	0.22	2.53	0.85	1.00	0.00	9.66	117.90	0.00	2,264.3	0.0	608.64	2489.15	3,097.78
6	78.5	31.63	0.000	17.11	0.00	0.27	2.37	0.85	1.00	0.00	10.43	99.40	0.00	1,922.8	0.0	665.33	2267.88	2,933.21
7	88.5	32.73	1.299	2.16	0.00	0.31	2.28	0.85	1.00	0.00	2.43	17.74	0.00	412.7	0.0	153.67	419.05	572.72
8	100.0	33.90	0.000	20.24	0.00	0.27	2.37	0.85	1.00	0.00	12.35	116.82	0.00	2,474.0	0.0	843.54	2857.81	3,701.34
9	120.0	35.71	0.000	19.21	0.00	0.26	2.41	0.85	1.00	0.00	11.65	116.82	0.00	2,657.6	0.0	850.22	3010.62	3,860.84
10	140.0	37.32	0.000	19.22	0.00	0.26	2.40	0.85	1.00	0.00	11.65	79.45	0.00	2,087.5	0.0	888.44	2143.78	3,032.22
11	160.0	38.77	11.444	11.67	0.00	0.31	2.27	0.85	1.00	0.00	16.76	28.87	0.00	1,933.4	0.0	1251.11	827.09	2,078.21
12	180.0	40.09	11.435	11.67	0.00	0.31	2.27	0.85	1.00	0.00	16.73	6.18	0.00	1,661.6	0.0	1292.30	188.31	1,480.61
													22,074.0	0.0				

Load Case: 0.9D + 1.0W Normal Wind

0.9D + 1.0W 126 mph Wind at Normal To Face

Wind Load Factor: 1.00
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

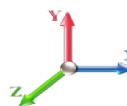
Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (psf) (sqft)	Ice Round Area (psf) (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.5	24.01	4.917	3.14	0.00	0.81	1.82	1.00	1.00	0.00	7.71	29.47	0.00	1,284.0	0.0	286.23	165.59	451.83
2	12.5	24.01	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,281.4	0.0	379.05	1530.16	1,909.21
3	27.5	24.01	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,214.8	0.0	379.05	1530.16	1,909.21
4	42.5	26.54	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,214.8	0.0	419.07	1691.70	2,110.77
5	60.0	29.29	0.000	16.35	0.00	0.22	2.53	1.00	1.00	0.00	9.66	117.90	0.00	1,698.3	0.0	608.64	2489.15	3,097.78
6	78.5	31.63	0.000	17.11	0.00	0.27	2.37	1.00	1.00	0.00	10.43	99.40	0.00	1,442.1	0.0	665.33	2267.88	2,933.21
7	88.5	32.73	1.299	2.16	0.00	0.31	2.28	1.00	1.00	0.00	2.62	17.74	0.00	309.5	0.0	166.01	419.05	585.06
8	100.0	33.90	0.000	20.24	0.00	0.27	2.37	1.00	1.00	0.00	12.35	116.82	0.00	1,855.5	0.0	843.54	2857.81	3,701.34
9	120.0	35.71	0.000	19.21	0.00	0.26	2.41	1.00	1.00	0.00	11.65	116.82	0.00	1,993.2	0.0	850.22	3010.62	3,860.84
10	140.0	37.32	0.000	19.22	0.00	0.26	2.40	1.00	1.00	0.00	11.65	79.45	0.00	1,565.6	0.0	888.44	2143.78	3,032.22
11	160.0	38.77	11.444	11.67	0.00	0.31	2.27	1.00	1.00	0.00	18.47	28.87	0.00	1,450.1	0.0	1379.27	827.09	2,206.36
12	180.0	40.09	11.435	11.67	0.00	0.31	2.27	1.00	1.00	0.00	18.45	6.18	0.00	1,246.2	0.0	1424.76	188.31	1,613.07
													16,555.5	0.0				

Section Forces

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 0.9D + 1.0W 60° Wind

0.9D + 1.0W 126 mph Wind at 60° From Face

Wind Load Factor: 1.00
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.5	24.01	4.917	3.14	0.00	0.81	1.82	0.80	1.00	0.00	6.72	29.47	0.00	1,284.0	0.0	249.71	165.59	415.30
2	12.5	24.01	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,281.4	0.0	379.05	1530.16	1,909.21
3	27.5	24.01	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,214.8	0.0	379.05	1530.16	1,909.21
4	42.5	26.54	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,214.8	0.0	419.07	1691.70	2,110.77
5	60.0	29.29	0.000	16.35	0.00	0.22	2.53	0.80	1.00	0.00	9.66	117.90	0.00	1,698.3	0.0	608.64	2489.15	3,097.78
6	78.5	31.63	0.000	17.11	0.00	0.27	2.37	0.80	1.00	0.00	10.43	99.40	0.00	1,442.1	0.0	665.33	2267.88	2,933.21
7	88.5	32.73	1.299	2.16	0.00	0.31	2.28	0.80	1.00	0.00	2.36	17.74	0.00	309.5	0.0	149.56	419.05	568.60
8	100.0	33.90	0.000	20.24	0.00	0.27	2.37	0.80	1.00	0.00	12.35	116.82	0.00	1,855.5	0.0	843.54	2857.81	3,701.34
9	120.0	35.71	0.000	19.21	0.00	0.26	2.41	0.80	1.00	0.00	11.65	116.82	0.00	1,993.2	0.0	850.22	3010.62	3,860.84
10	140.0	37.32	0.000	19.22	0.00	0.26	2.40	0.80	1.00	0.00	11.65	79.45	0.00	1,565.6	0.0	888.44	2143.78	3,032.22
11	160.0	38.77	11.444	11.67	0.00	0.31	2.27	0.80	1.00	0.00	16.19	28.87	0.00	1,450.1	0.0	1208.39	827.09	2,035.49
12	180.0	40.09	11.435	11.67	0.00	0.31	2.27	0.80	1.00	0.00	16.16	6.18	0.00	1,246.2	0.0	1248.15	188.31	1,436.46
													16,555.5	0.0	27,010.44			

Load Case: 0.9D + 1.0W 90° Wind

0.9D + 1.0W 126 mph Wind at 90° From Face

Wind Load Factor: 1.00
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

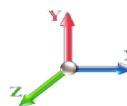
Sect Seq	Wind Height (ft)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.5	24.01	4.917	3.14	0.00	0.81	1.82	0.85	1.00	0.00	6.97	29.47	0.00	1,284.0	0.0	258.84	165.59	424.43
2	12.5	24.01	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,281.4	0.0	379.05	1530.16	1,909.21
3	27.5	24.01	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,214.8	0.0	379.05	1530.16	1,909.21
4	42.5	26.54	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,214.8	0.0	419.07	1691.70	2,110.77
5	60.0	29.29	0.000	16.35	0.00	0.22	2.53	0.85	1.00	0.00	9.66	117.90	0.00	1,698.3	0.0	608.64	2489.15	3,097.78
6	78.5	31.63	0.000	17.11	0.00	0.27	2.37	0.85	1.00	0.00	10.43	99.40	0.00	1,442.1	0.0	665.33	2267.88	2,933.21
7	88.5	32.73	1.299	2.16	0.00	0.31	2.28	0.85	1.00	0.00	2.43	17.74	0.00	309.5	0.0	153.67	419.05	572.72
8	100.0	33.90	0.000	20.24	0.00	0.27	2.37	0.85	1.00	0.00	12.35	116.82	0.00	1,855.5	0.0	843.54	2857.81	3,701.34
9	120.0	35.71	0.000	19.21	0.00	0.26	2.41	0.85	1.00	0.00	11.65	116.82	0.00	1,993.2	0.0	850.22	3010.62	3,860.84
10	140.0	37.32	0.000	19.22	0.00	0.26	2.40	0.85	1.00	0.00	11.65	79.45	0.00	1,565.6	0.0	888.44	2143.78	3,032.22
11	160.0	38.77	11.444	11.67	0.00	0.31	2.27	0.85	1.00	0.00	16.76	28.87	0.00	1,450.1	0.0	1251.11	827.09	2,078.21
12	180.0	40.09	11.435	11.67	0.00	0.31	2.27	0.85	1.00	0.00	16.73	6.18	0.00	1,246.2	0.0	1292.30	188.31	1,480.61
													16,555.5	0.0	27,110.56			

Section Forces

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind

1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face

Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	Ice Importance Factor: 1.00
Ice Dead Load Factor: 1.00	

Sect Seq	Wind Height (ft)	qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	2.5	3.78	4.917	5.62	2.48	0.99	2.08	1.00	1.00	0.77	10.77	33.34	9.01	2,582.9	870.9	71.95	1.90	73.85
2	12.5	3.78	0.000	21.80	9.36	0.38	2.11	1.00	1.00	0.91	13.84	116.57	9.07	3,944.6	2236.0	93.95	322.79	416.74
3	27.5	3.78	0.000	22.57	10.13	0.39	2.09	1.00	1.00	0.98	14.43	118.06	9.82	4,032.9	2413.2	96.81	327.87	424.68
4	42.5	4.18	0.000	23.02	10.58	0.40	2.07	1.00	1.00	1.03	14.79	118.94	10.26	4,139.1	2519.4	108.91	365.74	474.65
5	60.0	4.61	0.000	30.56	14.22	0.39	2.08	1.00	1.00	1.06	19.59	159.54	14.15	5,720.2	3455.9	159.55	542.84	702.39
6	78.5	4.98	0.000	34.55	17.45	0.52	1.87	1.00	1.00	1.09	24.50	135.37	10.34	5,197.3	3274.6	194.08	390.58	584.66
7	88.5	5.15	1.299	5.45	3.29	0.57	1.83	1.00	1.00	1.10	5.28	24.23	1.68	1,056.0	643.4	42.21	64.81	107.02
8	100.0	5.34	0.000	41.44	21.20	0.53	1.86	1.00	1.00	1.12	29.59	159.94	11.17	6,425.0	3951.0	249.93	483.32	733.25
9	120.0	5.62	0.000	40.80	21.59	0.53	1.87	1.00	1.00	1.14	28.98	160.49	11.38	6,658.4	4000.8	258.68	516.87	775.55
10	140.0	5.88	0.000	41.15	21.93	0.53	1.86	1.00	1.00	1.16	29.31	108.68	5.97	5,204.2	3116.7	272.75	356.51	629.27
11	160.0	6.10	11.444	33.89	22.22	0.58	1.82	1.00	1.00	1.17	36.24	37.22	3.90	4,306.0	2372.5	341.73	121.95	463.67
12	180.0	6.31	11.435	34.15	22.48	0.58	1.82	1.00	1.00	1.18	36.48	7.16	0.99	3,501.8	1840.3	355.39	26.54	381.93
														52,768.6	30694.6			5,767.66

Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face

Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	Ice Importance Factor: 1.00
Ice Dead Load Factor: 1.00	

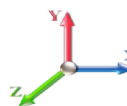
Sect Seq	Wind Height (ft)	qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	2.5	3.78	4.917	5.62	2.48	0.99	2.08	0.80	1.00	0.77	9.79	33.34	9.01	2,582.9	870.9	65.38	1.90	67.28
2	12.5	3.78	0.000	21.80	9.36	0.38	2.11	0.80	1.00	0.91	13.84	116.57	9.07	3,944.6	2236.0	93.95	322.79	416.74
3	27.5	3.78	0.000	22.57	10.13	0.39	2.09	0.80	1.00	0.98	14.43	118.06	9.82	4,032.9	2413.2	96.81	327.87	424.68
4	42.5	4.18	0.000	23.02	10.58	0.40	2.07	0.80	1.00	1.03	14.79	118.94	10.26	4,139.1	2519.4	108.91	365.74	474.65
5	60.0	4.61	0.000	30.56	14.22	0.39	2.08	0.80	1.00	1.06	19.59	159.54	14.15	5,720.2	3455.9	159.55	542.84	702.39
6	78.5	4.98	0.000	34.55	17.45	0.52	1.87	0.80	1.00	1.09	24.50	135.37	10.34	5,197.3	3274.6	194.08	390.58	584.66
7	88.5	5.15	1.299	5.45	3.29	0.57	1.83	0.80	1.00	1.10	5.02	24.23	1.68	1,056.0	643.4	40.13	64.81	104.95
8	100.0	5.34	0.000	41.44	21.20	0.53	1.86	0.80	1.00	1.12	29.59	159.94	11.17	6,425.0	3951.0	249.93	483.32	733.25
9	120.0	5.62	0.000	40.80	21.59	0.53	1.87	0.80	1.00	1.14	28.98	160.49	11.38	6,658.4	4000.8	258.68	516.87	775.55
10	140.0	5.88	0.000	41.15	21.93	0.53	1.86	0.80	1.00	1.16	29.31	108.68	5.97	5,204.2	3116.7	272.75	356.51	629.27
11	160.0	6.10	11.444	33.89	22.22	0.58	1.82	0.80	1.00	1.17	33.95	37.22	3.90	4,306.0	2372.5	320.14	121.95	442.09
12	180.0	6.31	11.435	34.15	22.48	0.58	1.82	0.80	1.00	1.18	34.20	7.16	0.99	3,501.8	1840.3	333.11	26.54	359.65
														52,768.6	30694.6			5,715.15

Section Forces

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 1.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	2.5	3.78	4.917	5.62	2.48	0.99	2.08	0.85	1.00	0.77	10.03	33.34	9.01	2,582.9	870.9	67.03	1.90	68.92
2	12.5	3.78	0.000	21.80	9.36	0.38	2.11	0.85	1.00	0.91	13.84	116.57	9.07	3,944.6	2236.0	93.95	322.79	416.74
3	27.5	3.78	0.000	22.57	10.13	0.39	2.09	0.85	1.00	0.98	14.43	118.06	9.82	4,032.9	2413.2	96.81	327.87	424.68
4	42.5	4.18	0.000	23.02	10.58	0.40	2.07	0.85	1.00	1.03	14.79	118.94	10.26	4,139.1	2519.4	108.91	365.74	474.65
5	60.0	4.61	0.000	30.56	14.22	0.39	2.08	0.85	1.00	1.06	19.59	159.54	14.15	5,720.2	3455.9	159.55	542.84	702.39
6	78.5	4.98	0.000	34.55	17.45	0.52	1.87	0.85	1.00	1.09	24.50	135.37	10.34	5,197.3	3274.6	194.08	390.58	584.66
7	88.5	5.15	1.299	5.45	3.29	0.57	1.83	0.85	1.00	1.10	5.08	24.23	1.68	1,056.0	643.4	40.65	64.81	105.46
8	100.0	5.34	0.000	41.44	21.20	0.53	1.86	0.85	1.00	1.12	29.59	159.94	11.17	6,425.0	3951.0	249.93	483.32	733.25
9	120.0	5.62	0.000	40.80	21.59	0.53	1.87	0.85	1.00	1.14	28.98	160.49	11.38	6,658.4	4000.8	258.68	516.87	775.55
10	140.0	5.88	0.000	41.15	21.93	0.53	1.86	0.85	1.00	1.16	29.31	108.68	5.97	5,204.2	3116.7	272.75	356.51	629.27
11	160.0	6.10	11.444	33.89	22.22	0.58	1.82	0.85	1.00	1.17	34.52	37.22	3.90	4,306.0	2372.5	325.54	121.95	447.48
12	180.0	6.31	11.435	34.15	22.48	0.58	1.82	0.85	1.00	1.18	34.77	7.16	0.99	3,501.8	1840.3	338.68	26.54	365.22
														52,768.6	30694.6			5,728.28

Load Case: 1.0D + 1.0W Normal Wind	1.0D + 1.0W 60 mph Wind at Normal To Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.00	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

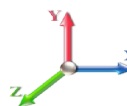
Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	2.5	5.44	4.917	3.14	0.00	0.81	1.82	1.00	1.00	0.00	7.71	29.47	0.00	1,426.6	0.0	64.91	37.55	102.46
2	12.5	5.44	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,423.8	0.0	85.95	346.97	432.93
3	27.5	5.44	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,349.8	0.0	85.95	346.97	432.93
4	42.5	6.02	0.000	12.44	0.00	0.22	2.52	1.00	1.00	0.00	7.37	88.42	0.00	1,349.8	0.0	95.03	383.60	478.63
5	60.0	6.64	0.000	16.35	0.00	0.22	2.53	1.00	1.00	0.00	9.66	117.90	0.00	1,887.0	0.0	138.01	564.43	702.45
6	78.5	7.17	0.000	17.11	0.00	0.27	2.37	1.00	1.00	0.00	10.43	99.40	0.00	1,602.3	0.0	150.87	514.26	665.13
7	88.5	7.42	1.299	2.16	0.00	0.31	2.28	1.00	1.00	0.00	2.62	17.74	0.00	343.9	0.0	37.64	95.02	132.67
8	100.0	7.69	0.000	20.24	0.00	0.27	2.37	1.00	1.00	0.00	12.35	116.82	0.00	2,061.7	0.0	191.28	648.03	839.31
9	120.0	8.10	0.000	19.21	0.00	0.26	2.41	1.00	1.00	0.00	11.65	116.82	0.00	2,214.7	0.0	192.79	682.68	875.47
10	140.0	8.46	0.000	19.22	0.00	0.26	2.40	1.00	1.00	0.00	11.65	79.45	0.00	1,739.6	0.0	201.46	486.12	687.58
11	160.0	8.79	11.444	11.67	0.00	0.31	2.27	1.00	1.00	0.00	18.47	28.87	0.00	1,611.2	0.0	312.76	187.55	500.31
12	180.0	9.09	11.435	11.67	0.00	0.31	2.27	1.00	1.00	0.00	18.46	6.18	0.00	1,384.6	0.0	323.34	42.70	366.04
														18,395.0	0.0			6,215.89

Section Forces

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.0D + 1.0W 60° Wind

1.0D + 1.0W 60 mph Wind at 60° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.00
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	2.5	5.44	4.917	3.14	0.00	0.81	1.82	0.80	1.00	0.00	6.72	29.47	0.00	1,426.6	0.0	56.62	37.55	94.17
2	12.5	5.44	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,423.8	0.0	85.95	346.97	432.93
3	27.5	5.44	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,349.8	0.0	85.95	346.97	432.93
4	42.5	6.02	0.000	12.44	0.00	0.22	2.52	0.80	1.00	0.00	7.37	88.42	0.00	1,349.8	0.0	95.03	383.60	478.63
5	60.0	6.64	0.000	16.35	0.00	0.22	2.53	0.80	1.00	0.00	9.66	117.90	0.00	1,887.0	0.0	138.01	564.43	702.45
6	78.5	7.17	0.000	17.11	0.00	0.27	2.37	0.80	1.00	0.00	10.43	99.40	0.00	1,602.3	0.0	150.87	514.26	665.13
7	88.5	7.42	1.299	2.16	0.00	0.31	2.28	0.80	1.00	0.00	2.36	17.74	0.00	343.9	0.0	33.91	95.02	128.93
8	100.0	7.69	0.000	20.24	0.00	0.27	2.37	0.80	1.00	0.00	12.35	116.82	0.00	2,061.7	0.0	191.28	648.03	839.31
9	120.0	8.10	0.000	19.21	0.00	0.26	2.41	0.80	1.00	0.00	11.65	116.82	0.00	2,214.7	0.0	192.79	682.68	875.47
10	140.0	8.46	0.000	19.22	0.00	0.26	2.40	0.80	1.00	0.00	11.65	79.45	0.00	1,739.6	0.0	201.46	486.12	687.58
11	160.0	8.79	11.444	11.67	0.00	0.31	2.27	0.80	1.00	0.00	16.19	28.87	0.00	1,611.2	0.0	274.01	187.55	461.56
12	180.0	9.09	11.435	11.67	0.00	0.31	2.27	0.80	1.00	0.00	16.18	6.18	0.00	1,384.6	0.0	283.29	42.70	326.00
														18,395.0	0.0			6,125.08

Load Case: 1.0D + 1.0W 90° Wind

1.0D + 1.0W 60 mph Wind at 90° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.00
Ice Dead Load Factor: 0.00

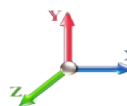
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	2.5	5.44	4.917	3.14	0.00	0.81	1.82	0.85	1.00	0.00	6.97	29.47	0.00	1,426.6	0.0	58.69	37.55	96.24
2	12.5	5.44	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,423.8	0.0	85.95	346.97	432.93
3	27.5	5.44	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,349.8	0.0	85.95	346.97	432.93
4	42.5	6.02	0.000	12.44	0.00	0.22	2.52	0.85	1.00	0.00	7.37	88.42	0.00	1,349.8	0.0	95.03	383.60	478.63
5	60.0	6.64	0.000	16.35	0.00	0.22	2.53	0.85	1.00	0.00	9.66	117.90	0.00	1,887.0	0.0	138.01	564.43	702.45
6	78.5	7.17	0.000	17.11	0.00	0.27	2.37	0.85	1.00	0.00	10.43	99.40	0.00	1,602.3	0.0	150.87	514.26	665.13
7	88.5	7.42	1.299	2.16	0.00	0.31	2.28	0.85	1.00	0.00	2.43	17.74	0.00	343.9	0.0	34.85	95.02	129.87
8	100.0	7.69	0.000	20.24	0.00	0.27	2.37	0.85	1.00	0.00	12.35	116.82	0.00	2,061.7	0.0	191.28	648.03	839.31
9	120.0	8.10	0.000	19.21	0.00	0.26	2.41	0.85	1.00	0.00	11.65	116.82	0.00	2,214.7	0.0	192.79	682.68	875.47
10	140.0	8.46	0.000	19.22	0.00	0.26	2.40	0.85	1.00	0.00	11.65	79.45	0.00	1,739.6	0.0	201.46	486.12	687.58
11	160.0	8.79	11.444	11.67	0.00	0.31	2.27	0.85	1.00	0.00	16.76	28.87	0.00	1,611.2	0.0	283.70	187.55	471.25
12	180.0	9.09	11.435	11.67	0.00	0.31	2.27	0.85	1.00	0.00	16.75	6.18	0.00	1,384.6	0.0	293.31	42.70	336.01
														18,395.0	0.0			6,147.79

Force/Stress Compression Summary

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
						X	Y	Z				
1	5	PX - 3" DIA PIPE	-48.57	1.2D + 1.0Di + 1.0Wi 60° Wind	1.34	100	100	100	14.15	50.00	133.93	36.3 Member X
2	20	PX - 3" DIA PIPE	-66.89	1.2D + 1.0W 60° Wind	2.40	200	200	200	50.47	50.00	112.80	59.3 Member X
3	35	PX - 3" DIA PIPE	-85.31	1.2D + 1.0W 60° Wind	2.40	200	200	200	50.47	50.00	112.80	75.6 Member X
4	50	PX - 3" DIA PIPE	-91.84	1.2D + 1.0W 90° Wind	2.40	200	200	200	50.47	50.00	112.80	81.4 Member X
5	70	PX - 3" DIA PIPE	-91.80	1.2D + 1.0W 90° Wind	2.42	200	200	200	51.01	50.00	112.35	81.7 Member X
6	86.96	PX - 3" DIA PIPE	-81.41	1.2D + 1.0W 90° Wind	2.42	100	100	100	25.51	50.00	129.59	62.8 Member X
7	89.99	PX - 3" DIA PIPE	-81.30	1.2D + 1.0W 90° Wind	2.42	100	100	100	25.49	50.00	129.59	62.7 Member X
8	109.9	PX - 3" DIA PIPE	-80.24	1.2D + 1.0W 90° Wind	2.42	100	100	100	25.51	50.00	129.59	61.9 Member X
9	129.9	MOD - 2.5"PX+3"PX1/2P	-107.51	1.2D + 1.0W 60° Wind	2.42	100	100	100	29.67	50.00	158.72	67.7 Member X
10	149.9	MOD - 2.5"PX+3"PX1/2P	-107.74	1.2D + 1.0W 60° Wind	2.42	100	100	100	29.67	50.00	158.72	67.9 Member X
11	169.9	PX - 3" DIA PIPE	-79.25	1.2D + 1.0W 60° Wind	2.42	100	100	100	25.51	50.00	129.59	61.2 Member X
12	189.9	PX - 3" DIA PIPE	-8.36	1.2D + 1.0W Normal Wind	2.42	100	100	100	25.51	50.00	129.59	6.4 Member X

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
						X	Y	Z								
1	5	SAE - 8X8X0.75	-13.7	1.2D + 1.0W 90° Wind	0.85	100	100	100	6.49	36.00	370.17	0	0		3.7 Member Z	
2	20	PSP - ROHN 1 1/2X11G	-1.40	1.2D + 1.0W Normal Wind	3.42	100	100	100	42.00	9.72	1	2			14.4 User Input	
3	35	PSP - ROHN 1 1/2X16G	-0.83	1.2D + 1.0W 90° Wind	3.42	100	100	100	42.00	6.49	1	2			12.9 User Input	
4	50	PSP - ROHN 1 1/2X16G	-0.50	1.2D + 1.0W Normal Wind	3.42	100	100	100	42.00	6.49	1	2			7.8 User Input	
5	70	PSP - ROHN 1 1/2X11G	-0.98	1.2D + 1.0W 90° Wind	3.42	100	100	100	42.00	9.72	1	2			10.1 User Input	
6	86.9	PSP - ROHN 1 1/2X16G	-0.27	0.9D + 1.0W 60° Wind	3.42	100	100	100	42.00	6.49	1	2			4.2 User Input	
7	89.9	PSP - ROHN 1 1/2X16G	-0.15	0.9D + 1.0W 90° Wind	3.42	100	100	100	42.00	6.49	1	2			2.3 User Input	
8	109.9	PSP - ROHN 1 1/2X11G	-0.73	0.9D + 1.0W 60° Wind	3.42	100	100	100	42.00	9.72	1	2			7.5 User Input	
9	129.9	PSP - ROHN 1 1/2X11G	-0.78	0.9D + 1.0W 60° Wind	3.42	100	100	100	42.00	9.72	1	2			8.1 User Input	
10	149.9	PSP - ROHN 1 1/2X16G	-0.39	0.9D + 1.0W 60° Wind	3.42	100	100	100	42.00	6.49	1	2			6.0 User Input	
11	169.9	SAE - 2X2X0.25	-1.65	0.9D + 1.0W 60° Wind	3.42	100	100	100	112.43	36.00	18.35	2	1	24.86	33.49	9.0 Member Z
12	189.9	SAE - 2X2X0.25	-1.57	0.9D + 1.0W Normal Wind	3.42	100	100	100	112.43	36.00	18.35	2	1	24.86	33.49	8.6 Member Z

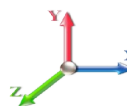
DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
						X	Y	Z								
1	5				0.00					0.00	0	0				
2	20	PSP - ROHN 1 1/2X11G-6.52		1.2D + 1.0W 90° Wind	4.17	100	100	100	42.00	9.72	1	2			67.1 User Input	
3	35	PSP - ROHN 1 1/2X16G-5.27		1.2D + 1.0W Normal Wind	4.17	100	100	100	42.00	6.49	1	2			81.2 User Input	
4	50	PSP - ROHN 1 1/2X16G-3.39		1.2D + 1.0W Normal Wind	4.17	100	100	100	42.00	6.49	1	2			52.3 User Input	
5	70	PSP - ROHN 1 1/2X11G-2.81		1.2D + 1.0W 60° Wind	4.19	100	100	100	42.00	9.72	1	2			28.9 User Input	
6	86.9	PSP - ROHN 1 1/2X16G-2.52		1.2D + 1.0W 90° Wind	4.19	100	100	100	42.00	6.49	1	2			38.9 User Input	
7	89.9	SAE - 2X2X0.25	-3.58	1.2D + 1.0W 60° Wind	4.19	100	100	100	128.54	36.00	14.65	1	1	7.95	10.0	45.1 Bolt Shear
8	109.9	PSP - ROHN 1 1/2X11G-4.83		1.2D + 1.0W 90° Wind	4.19	100	100	100	42.00	9.72	1	2			49.7 User Input	
9	129.9	PSP - ROHN 1 1/2X11G-2.89		1.2D + 1.0W 60° Wind	4.19	100	100	100	42.00	9.72	1	2			29.7 User Input	
10	149.9	PSP - ROHN 1 1/2X16G-3.81		1.2D + 1.0W 90° Wind	4.19	100	100	100	42.00	6.49	1	2			58.6 User Input	
11	169.9	SAE - 2X2X0.25	-8.35	0.9D + 1.0W 90° Wind	4.19	100	100	100	126.56	36.00	15.12	2	1	24.86	33.4	55.2 Member Z
12	189.9	SAE - 2X2X0.25	-1.55	0.9D + 1.0W 90° Wind	4.19	100	100	100	126.56	36.00	15.12	2	1	24.86	33.4	10.3 Member Z

Force/Stress Tension Summary

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	5				0	0.00		
2	20	PX - 3" DIA PIPE	26.21	0.9D + 1.0W Normal Wind	50	135.90	19.3	Member
3	35	PX - 3" DIA PIPE	56.24	0.9D + 1.0W Normal Wind	50	135.90	41.4	Member
4	50	PX - 3" DIA PIPE	72.61	0.9D + 1.0W Normal Wind	50	135.90	53.4	Member
5	70	PX - 3" DIA PIPE	75.08	0.9D + 1.0W Normal Wind	50	135.90	55.2	Member
6	86.962	PX - 3" DIA PIPE	69.24	0.9D + 1.0W Normal Wind	50	135.90	51.0	Member
7	89.999	PX - 3" DIA PIPE	44.07	0.9D + 1.0W 90° Wind	50	135.90	32.4	Member
8	109.99	PX - 3" DIA PIPE	82.05	0.9D + 1.0W Normal Wind	50	135.90	60.4	Member
9	129.99	MOD - 2.5"PX+3"PX1/2P	94.96	0.9D + 1.0W Normal Wind	50	169.27	56.1	Member
10	149.99	MOD - 2.5"PX+3"PX1/2P	94.38	0.9D + 1.0W Normal Wind	50	169.27	55.8	Member
11	169.99	PX - 3" DIA PIPE	52.54	0.9D + 1.0W Normal Wind	50	135.90	38.7	Member
12	189.99	PX - 3" DIA PIPE	6.17	0.9D + 1.0W 60° Wind	50	135.90	4.5	Member

HORIZONTAL MEMBERS

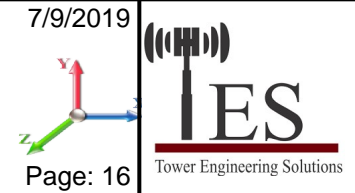
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	5	SAE - 8X8X0.75	22.08	1.2D + 1.0W Normal Wi	36	370.66	0	0				6.0	Member
2	20	PSP - ROHN 1 1/2X11GA	1.38	1.2D + 1.0W 90° Wind	42	9.72	1	2				14.2	User Input
3	35	PSP - ROHN 1 1/2X16GA	1.11	1.2D + 1.0W Normal Wi	42	5.47	1	2				20.3	User Input
4	50	PSP - ROHN 1 1/2X16GA	0.56	1.2D + 1.0W Normal Wi	42	5.47	1	2				10.3	User Input
5	70	PSP - ROHN 1 1/2X11GA	1.25	1.2D + 1.0W 90° Wind	42	9.72	1	2				12.8	User Input
6	86.962	PSP - ROHN 1 1/2X16GA	0.96	1.2D + 1.0W 90° Wind	42	5.47	1	2				17.6	User Input
7	89.999	PSP - ROHN 1 1/2X16GA	0.94	1.2D + 1.0Di + 1.0Wi Nc	42	5.47	1	2				17.2	User Input
8	109.99	PSP - ROHN 1 1/2X11GA	2.00	1.2D + 1.0W Normal Wi	42	9.72	1	2				20.6	User Input
9	129.99	PSP - ROHN 1 1/2X11GA	1.29	1.2D + 1.0W Normal Wi	42	9.72	1	2				13.3	User Input
10	149.99	PSP - ROHN 1 1/2X16GA	0.90	1.2D + 1.0W Normal Wi	42	5.47	1	2				16.4	User Input
11	169.99	SAE - 2X2X0.25	2.67	1.2D + 1.0W Normal Wi	36	30.46	2	1	24.86	33.49	21.01	12.7	Blck Shear
12	189.99	SAE - 2X2X0.25	0.06	0.9D + 1.0W Normal Wi	36	30.46	2	1	24.86	33.49	21.01	0.3	Blck Shear

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	5	-	0.00		36	0.00	0	0					
2	20	PSP - ROHN 1 1/2X11GA	6.33	1.2D + 1.0W 90° Wind	42	9.72	1	2				65.2	User Input
3	35	PSP - ROHN 1 1/2X16GA	5.08	1.2D + 1.0W 90° Wind	42	5.47	1	2				92.9	User Input
4	50	PSP - ROHN 1 1/2X16GA	3.15	1.2D + 1.0W Normal Wi	42	5.47	1	2				57.7	User Input
5	70	PSP - ROHN 1 1/2X11GA	2.45	1.2D + 1.0W 60° Wind	42	9.72	1	2				25.2	User Input
6	86.962	PSP - ROHN 1 1/2X16GA	2.58	1.2D + 1.0W 60° Wind	42	5.47	1	2				47.2	User Input
7	89.999	SAE - 2X2X0.25	3.44	1.2D + 1.0W 90° Wind	36	30.46	1	1	7.95	10.01	10.43	43.3	Bolt Shear
8	109.99	PSP - ROHN 1 1/2X11GA	3.51	1.2D + 1.0W 60° Wind	42	9.72	1	2				36.1	User Input
9	129.99	PSP - ROHN 1 1/2X11GA	2.19	1.2D + 1.0W 60° Wind	42	9.72	1	2				22.5	User Input
10	149.99	PSP - ROHN 1 1/2X16GA	3.64	1.2D + 1.0W Normal Wi	42	5.47	1	2				66.6	User Input
11	169.99	SAE - 2X2X0.25	6.58	0.9D + 1.0W 90° Wind	36	30.46	2	1	24.86	33.49	19.54	33.7	Blck Shear
12	189.99	SAE - 2X2X0.25	1.21	0.9D + 1.0W 90° Wind	36	30.46	2	1	24.86	33.49	19.54	6.2	Blck Shear

Seismic Section Forces

Structure: CT10016-A-SBA	Code: EIA/TIA-222-H	7/9/2019
Site Name: Montville 3, CT	Exposure: B	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh

Dead Load Factor	1.20	Sds	0.208	Ss	0.1950	Fa	1.6000	Ke	1.0000	TL	6.0000
Seismic Load Factor	1.00	Sd1	0.084	S1	0.0530	Fv	2.4000	Kg	0.0105	Cs	0.0694
Seismic Importance Factor	1.00	W1	0.000	R	3.0000	Vs	2.4483	T	0.3596	f1	2.7812

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	2.50	1426.6	2.60	59.38
2	12.50	1423.8	12.97	59.26
3	27.50	1349.7	27.05	56.18
4	42.50	1349.7	41.80	56.18
5	60.00	1886.9	82.50	78.54
6	78.48	1618.3	92.55	67.36
7	88.48	343.89	22.17	14.31
8	100.00	2061.7	150.23	85.81
9	120.00	2214.6	193.65	92.18
10	140.00	6135.8	625.95	255.38
11	160.00	6893.6	803.73	286.92
12	180.00	2996.8	393.07	124.73

Load Case: 0.9D + 1.0Ev + 1.0Eh

Dead Load Factor	0.90	Sds	0.208	Ss	0.1950	Fa	1.6000	Ke	1.0000	TL	6.0000
Seismic Load Factor	1.00	Sd1	0.084	S1	0.0530	Fv	2.4000	Kg	0.0105	Cs	0.0694
Seismic Importance Factor	1.00	W1	0.000	R	3.0000	Vs	2.4483	T	0.3114	f1	3.2115

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	2.50	1426.6	2.60	59.38
2	12.50	1423.8	12.97	59.26
3	27.50	1349.7	27.05	56.18
4	42.50	1349.7	41.80	56.18
5	60.00	1886.9	82.50	78.54
6	78.48	1618.3	92.55	67.36
7	88.48	343.89	22.17	14.31
8	100.00	2061.7	150.23	85.81
9	120.00	2214.6	193.65	92.18
10	140.00	6135.8	625.95	255.38
11	160.00	6893.6	803.73	286.92
12	180.00	2996.8	393.07	124.73

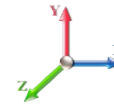
Support Forces Summary

Structure: CT10016-A-SBA
Site Name: Montville 3, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/9/2019



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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal Wind	1	0.00	103.34	-5.43	
	A1	0.00	-0.80	0.62	
	A1b	-31.09	-31.92	-19.31	
	A1a	31.09	-31.92	-19.31	
1.2D + 1.0W 60° Wind	1	-4.16	90.44	-2.40	
	A1	-0.80	-7.20	6.89	
	A1b	-37.93	-37.78	-21.90	
	A1a	5.58	-7.21	-4.14	
1.2D + 1.0W 90° Wind	1	-5.29	98.34	0.86	
	A1	-1.21	-20.02	21.55	
	A1b	-38.17	-37.67	-21.16	
	A1a	1.49	-2.17	-1.27	
0.9D + 1.0W Normal Wind	1	0.00	94.33	-5.66	
	A1	0.00	-0.81	0.62	
	A1b	-30.93	-31.84	-19.21	
	A1a	30.93	-31.84	-19.21	
0.9D + 1.0W 60° Wind	1	-4.26	81.72	-2.45	
	A1	-0.80	-7.27	6.95	
	A1b	-37.88	-37.80	-21.87	
	A1a	5.63	-7.28	-4.17	
0.9D + 1.0W 90° Wind	1	-5.47	89.37	0.94	
	A1	-1.20	-19.97	21.40	
	A1b	-38.01	-37.61	-21.07	
	A1a	1.51	-2.19	-1.28	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	123.44	-1.52	
	A1	0.00	-8.27	8.94	
	A1b	-14.48	-15.36	-8.94	
	A1a	14.48	-15.36	-8.94	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-1.12	123.27	-0.65	
	A1	-0.47	-10.70	11.46	
	A1b	-17.10	-17.70	-9.87	
	A1a	9.68	-10.70	-6.14	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-1.40	123.32	0.11	
	A1	-0.60	-13.02	14.17	
	A1b	-16.60	-17.06	-9.30	
	A1a	8.19	-8.95	-4.99	
1.2D + 1.0Ev + 1.0Eh	1	0.00	75.53	-0.28	
	A1	0.00	-10.39	9.94	
	A1b	-10.46	-12.72	-6.06	
	A1a	10.46	-12.72	-6.06	
0.9D + 1.0Ev + 1.0Eh	1	0.00	67.13	-0.29	
	A1	0.00	-10.55	10.09	
	A1b	-10.58	-12.87	-6.12	
	A1a	10.58	-12.87	-6.12	

1.0D + 1.0W Normal Wind	1	0.00	61.45	-2.44
	A1	0.00	-4.89	4.81
	A1b	-10.11	-11.97	-6.11
	A1a	10.11	-11.97	-6.11

1.0D + 1.0W 60° Wind	1	-1.71	62.37	-0.99
	A1	-0.21	-7.63	7.36
	A1b	-12.81	-14.60	-7.40
	A1a	6.27	-7.63	-3.86

1.0D + 1.0W 90° Wind	1	-2.20	61.92	0.20
	A1	-0.27	-9.79	9.52
	A1b	-12.10	-13.82	-6.84
	A1a	4.78	-5.74	-2.88

Max Reactions (kips)	Base	Anchor 1
Vertical	123.44	37.80
Horizontal	5.66	43.80

Cable Forces Summary

Structure: CT10016-A-SBA	Code: EIA/TIA-222-H	7/9/2019
Site Name: Montville 3, CT	Exposure: B	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kips)	Applied Tension (kips)	Use %			
1.2D + 1.0W Normal	92.42	5/8 EHS	A1	T1	25.44	0.11	0			
			A1b	T1b	25.44	10.06	40			
			A1a	T1a	25.44	8.49	33			
			A1a	T1	25.44	10.06	40			
			A1b	T1a	25.44	8.49	33			
			A1	T1b	25.44	0.11	0			
	166.96	7/8 EHS	A1	T2	47.82	0.74	2			
			A1b	T2b	47.82	19.10	40			
			A1a	T2a	47.82	12.10	25			
			A1a	T2	47.82	19.10	40			
			A1b	T2a	47.82	12.10	25			
			A1	T2b	47.82	0.74	2			
			1.2D + 1.0W 60° Wind	92.42	5/8 EHS	A1	T1	25.44	0.67	3
						A1b	T1b	25.44	11.55	45
A1a	T1a	25.44				0.63	3			
A1a	T1	25.44				0.67	3			
A1b	T1a	25.44				11.50	45			
A1	T1b	25.44				0.64	3			
166.96	7/8 EHS	A1	T2	47.82	5.52	12				
		A1b	T2b	47.82	18.04	38				
		A1a	T2a	47.82	3.94	8				
		A1a	T2	47.82	5.51	12				
		A1b	T2a	47.82	18.03	38				
		A1	T2b	47.82	3.92	8				
		1.2D + 1.0W 90° Wind	92.42	5/8 EHS	A1	T1	25.44	4.82	19	
					A1b	T1b	25.44	10.85	43	
A1a	T1a				25.44	0.22	1			
A1a	T1				25.44	0.23	1			
A1b	T1a				25.44	12.03	47			
A1	T1b				25.44	3.64	14			
166.96	7/8 EHS	A1	T2	47.82	14.11	30				
		A1b	T2b	47.82	15.13	32				
		A1a	T2a	47.82	1.51	3				
		A1a	T2	47.82	1.66	3				
		A1b	T2a	47.82	20.92	44				
		A1	T2b	47.82	7.82	16				
		0.9D + 1.0W Normal	92.42	5/8 EHS	A1	T1	25.44	0.11	0	
					A1b	T1b	25.44	9.89	39	
A1a	T1a				25.44	8.35	33			
A1a	T1				25.44	9.89	39			
A1b	T1a				25.44	8.34	33			
A1	T1b				25.44	0.11	0			
166.96	7/8 EHS	A1	T2	47.82	0.75	2				
		A1b	T2b	47.82	19.15	40				
		A1a	T2a	47.82	12.17	25				
		A1a	T2	47.82	19.15	40				
		A1b	T2a	47.82	12.17	25				
		A1	T2b	47.82	0.75	2				
		0.9D + 1.0W 60° Wind	92.42	5/8 EHS	A1	T1	25.44	0.67	3	
					A1b	T1b	25.44	11.46	45	
A1a	T1a				25.44	0.64	3			
A1a	T1				25.44	0.67	3			
A1b	T1a				25.44	11.41	45			

0.9D + 1.0W 60° Wind	92.42	5/8 EHS	A1	T1b	25.44	0.64	3
	166.96		A1	T2	47.82	5.57	12
			A1b	T2b	47.82	18.12	38
			A1a	T2a	47.82	3.97	8
			A1a	T2	47.82	5.57	12
			A1b	T2a	47.82	18.11	38
0.9D + 1.0W 90° Wind	92.42	5/8 EHS	A1	T2b	47.82	3.95	8
			A1	T1	25.44	4.66	18
			A1b	T1b	25.44	10.71	42
			A1a	T1a	25.44	0.22	1
			A1a	T1	25.44	0.23	1
			A1b	T1a	25.44	11.86	47
	166.96	7/8 EHS	A1	T1b	25.44	3.53	14
			A1	T2	47.82	14.17	30
			A1b	T2b	47.82	15.21	32
			A1a	T2a	47.82	1.53	3
			A1a	T2	47.82	1.67	4
			A1b	T2a	47.82	20.97	44
1.2D + 1.0Di + 1.0Wi	92.42	5/8 EHS	A1	T2b	47.82	7.88	16
			A1	T1	25.44	1.03	4
			A1b	T1b	25.44	2.54	10
			A1a	T1a	25.44	2.48	10
			A1a	T1	25.44	2.54	10
			A1b	T1a	25.44	2.48	10
	166.96	7/8 EHS	A1	T1b	25.44	1.03	4
			A1	T2	47.82	6.11	13
			A1b	T2b	47.82	10.99	23
			A1a	T2a	47.82	9.10	19
			A1a	T2	47.82	10.99	23
			A1b	T2a	47.82	9.10	19
1.2D + 1.0Di + 1.0Wi	92.42	5/8 EHS	A1	T2b	47.82	6.11	13
			A1	T1	25.44	1.34	5
			A1b	T1b	25.44	3.19	13
			A1a	T1a	25.44	1.32	5
			A1a	T1	25.44	1.34	5
			A1b	T1a	25.44	3.18	13
	166.96	7/8 EHS	A1	T1b	25.44	1.32	5
			A1	T2	47.82	8.25	17
			A1b	T2b	47.82	11.18	23
			A1a	T2a	47.82	6.89	14
			A1a	T2	47.82	8.25	17
			A1b	T2a	47.82	11.18	23
1.2D + 1.0Di + 1.0Wi	92.42	5/8 EHS	A1	T2b	47.82	6.88	14
			A1	T1	25.44	1.87	7
			A1b	T1b	25.44	2.99	12
			A1a	T1a	25.44	1.08	4
			A1a	T1	25.44	1.08	4
			A1b	T1a	25.44	3.03	12
	166.96	7/8 EHS	A1	T1b	25.44	1.83	7
			A1	T2	47.82	9.79	20
			A1b	T2b	47.82	10.28	22
			A1a	T2a	47.82	6.22	13
			A1a	T2	47.82	6.84	14
			A1b	T2a	47.82	11.45	24
1.2D + 1.0Ev + 1.0Eh	92.42	5/8 EHS	A1	T2b	47.82	7.90	17
			A1	T1	25.44	0.42	2
			A1b	T1b	25.44	0.51	2
			A1a	T1a	25.44	0.50	2
			A1a	T1	25.44	0.51	2
			A1b	T1a	25.44	0.50	2
	166.96	7/8 EHS	A1	T1b	25.44	0.42	2
			A1	T2	47.82	7.14	15
			A1b	T2b	47.82	8.98	19
			A1a	T2a	47.82	8.31	17
			A1a	T2	47.82	8.98	19
			A1b	T2a	47.82	8.31	17
			A1	T2b	47.82	7.14	15

0.9D + 1.0Ev + 1.0Eh	92.42	5/8 EHS	A1	T1	25.44	0.42	2
			A1b	T1b	25.44	0.51	2
			A1a	T1a	25.44	0.50	2
			A1a	T1	25.44	0.51	2
			A1b	T1a	25.44	0.50	2
	166.96	7/8 EHS	A1	T1b	25.44	0.42	2
			A1	T2	47.82	7.25	15
			A1b	T2b	47.82	9.08	19
			A1a	T2a	47.82	8.42	18
			A1a	T2	47.82	9.08	19
1.0D + 1.0W Normal	92.42	5/8 EHS	A1	T2a	47.82	8.42	18
			A1b	T2a	47.82	8.42	18
			A1	T2b	47.82	7.25	15
			A1	T1	25.44	0.27	1
			A1b	T1b	25.44	0.90	4
	166.96	7/8 EHS	A1a	T1a	25.44	0.86	3
			A1a	T1	25.44	0.90	4
			A1b	T1a	25.44	0.86	3
			A1	T1b	25.44	0.27	1
			A1	T2	47.82	3.52	7
1.0D + 1.0W 60° Wind	92.42	5/8 EHS	A1b	T2b	47.82	9.46	20
			A1a	T2a	47.82	6.38	13
			A1a	T2	47.82	9.46	20
			A1b	T2a	47.82	6.38	13
			A1	T2b	47.82	3.52	7
	166.96	7/8 EHS	A1	T1	25.44	0.37	1
			A1b	T1b	25.44	1.63	6
			A1a	T1a	25.44	0.36	1
			A1a	T1	25.44	0.37	1
			A1b	T1a	25.44	1.63	6
1.0D + 1.0W 90° Wind	92.42	5/8 EHS	A1	T1b	25.44	0.36	1
			A1	T2	47.82	6.37	13
			A1b	T2b	47.82	9.17	19
			A1a	T2a	47.82	4.24	9
			A1a	T2	47.82	6.37	13
	166.96	7/8 EHS	A1b	T2a	47.82	9.17	19
			A1	T2b	47.82	4.23	9
			A1	T1	25.44	0.56	2
			A1b	T1b	25.44	1.35	5
			A1a	T1a	25.44	0.28	1
1.0D + 1.0W 90° Wind	92.42	5/8 EHS	A1a	T1	25.44	0.28	1
			A1b	T1a	25.44	1.41	6
			A1	T1b	25.44	0.54	2
			A1	T2	47.82	8.17	17
			A1b	T2b	47.82	7.88	16
	166.96	7/8 EHS	A1a	T2a	47.82	3.58	7
			A1a	T2	47.82	4.59	10
			A1b	T2a	47.82	9.77	20
			A1	T2b	47.82	5.15	11

Analysis Summary

Structure: CT10016-A-SBA	Code: EIA/TIA-222-H	7/9/2019
Site Name: Montville 3, CT	Exposure: B	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 22



Max Reactions

Base:	123.44 (Vertical)	5.67 (Horizontal)
Anchor 1:	37.80 (Vertical)	43.80 (Horizontal)

Max Usages

Max Leg: 81.7% (1.2D + 1.0W 90° Wind - Sect 5)
 Max Diag: 92.9% (1.2D + 1.0W 90° Wind - Sect 3)
 Max Horiz: 20.6% (1.2D + 1.0W Normal Wind - Sect 8)
 Max Cable: 47.3% (1.2D + 1.0W 90° Wind) - Elev: 92 ft

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0Ev + 1.0Eh - Normal To Face	74.85	0.1841	-0.0011	0.0476
	130.00	0.1455	-0.0002	0.1260
	142.11	0.1161	-0.0001	0.1536
	150.00	0.0939	-0.0001	0.1719
	159.69	0.0649	-0.0001	0.1777
	174.85	0.0187	-0.0001	0.1718
0.9D + 1.0W 126 mph Wind at 60° From Face	74.85	1.1567	0.0292	0.1754
	130.00	1.0740	0.0191	0.5417
	142.11	0.9255	0.0145	0.8594
	150.00	0.7932	0.0112	1.0784
	159.69	0.6067	0.0066	1.1874
	174.85	0.2917	0.0108	1.1733
0.9D + 1.0W 126 mph Wind at 90° From Face	74.85	1.9931	0.1674	0.3993
	130.00	1.6919	0.1424	1.1124
	142.11	1.4246	0.1353	1.4519
	150.00	1.2107	0.1297	1.6836
	159.69	0.9241	0.1294	1.7926
	174.85	0.4556	0.1269	1.7652
0.9D + 1.0W 126 mph Wind at Normal To Face	74.85	2.1272	-0.0010	0.4290
	130.00	1.8291	0.0001	1.1389
	142.11	1.5499	0.0007	1.5096
	150.00	1.3261	0.0001	1.7610
	159.69	1.0257	0.0034	1.8436
	174.85	0.5336	0.0060	1.8378
1.0D + 1.0W 60 mph Wind at 60° From Face	74.85	0.7219	0.0081	0.1358
	130.00	0.5340	0.0059	0.5153
	142.11	0.4150	0.0042	0.6177
	150.00	0.3255	0.0031	0.6925
	159.69	0.2086	0.0017	0.7157
	174.85	0.0196	0.0020	0.7101

1.0D + 1.0W 60 mph Wind at 90° From Face	74.85	0.8596	0.0526	0.1649
	130.00	0.6219	0.0379	0.6255
	142.11	0.4780	0.0315	0.7422
	150.00	0.3709	0.0276	0.8176
	159.69	0.2323	0.0247	0.8476
	174.85	0.0148	0.0226	0.8406
1.0D + 1.0W 60 mph Wind at Normal To Face	74.85	0.9866	-0.0013	0.1948
	130.00	0.7050	0.0002	0.7322
	142.11	0.5381	0.0004	0.8549
	150.00	0.4152	0.0003	0.9394
	159.69	0.2563	0.0007	0.9621
	174.85	0.0010	0.0014	0.9601
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	74.85	0.6033	0.0099	0.0848
	130.00	0.4453	0.0073	0.4142
	142.11	0.3492	0.0055	0.5000
	150.00	0.2770	0.0044	0.5637
	159.69	0.1819	0.0032	0.5839
	174.85	0.0276	0.0028	0.5797
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	74.85	0.7139	0.0599	0.1024
	130.00	0.5089	0.0497	0.5098
	142.11	0.3916	0.0450	0.6065
	150.00	0.3042	0.0422	0.6706
	159.69	0.1909	0.0403	0.6972
	174.85	0.0242	0.0389	0.6926
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	74.85	0.8127	-0.0019	0.1176
	130.00	0.5688	0.0001	0.5952
	142.11	0.4324	0.0001	0.6997
	150.00	0.3319	0.0001	0.7679
	159.69	0.2015	0.0008	0.7915
	174.85	0.0095	-0.0014	0.7914
1.2D + 1.0Ev + 1.0Eh - Normal To Face	74.85	0.1907	-0.0013	0.0481
	130.00	0.1496	-0.0002	0.1313
	142.11	0.1190	-0.0001	0.1593
	150.00	0.0961	-0.0001	0.1778
	159.69	0.0660	-0.0001	0.1837
	174.85	0.0183	-0.0001	0.1778
1.2D + 1.0W 126 mph Wind at 60° From Face	74.85	1.1632	0.0293	0.1709
	130.00	1.0774	0.0192	0.5444
	142.11	0.9283	0.0147	0.8621
	150.00	0.7957	0.0114	1.0812
	159.69	0.6087	0.0068	1.1902
	174.85	0.2930	0.0110	1.1764
1.2D + 1.0W 126 mph Wind at 90° From Face	74.85	2.0130	0.1635	0.3944
	130.00	1.7039	0.1419	1.1230
	142.11	1.4344	0.1361	1.4623
	150.00	1.2191	0.1314	1.6943
	159.69	0.9308	0.1318	1.8027
	174.85	0.4595	0.1298	1.7759
1.2D + 1.0W 126 mph Wind at Normal To Face	74.85	2.1459	-0.0010	0.4228
	130.00	1.8404	0.0002	1.1475
	142.11	1.5593	0.0008	1.5183
	150.00	1.3344	0.0001	1.7695
	159.69	1.0326	0.0034	1.8519
	174.85	0.5383	0.0060	1.8464



Guyed Tower Base Design

Date
7/9/2019

Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-H
Site Name:		Structure Height (Ft.):	190
Site Nmber:	CT10016-A-SBA	Engineer Name:	U. Atluri
Engr. Number:	78231	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Guyed Tower

Analysis or Design?

Analysis

Base Reactions (Factored):

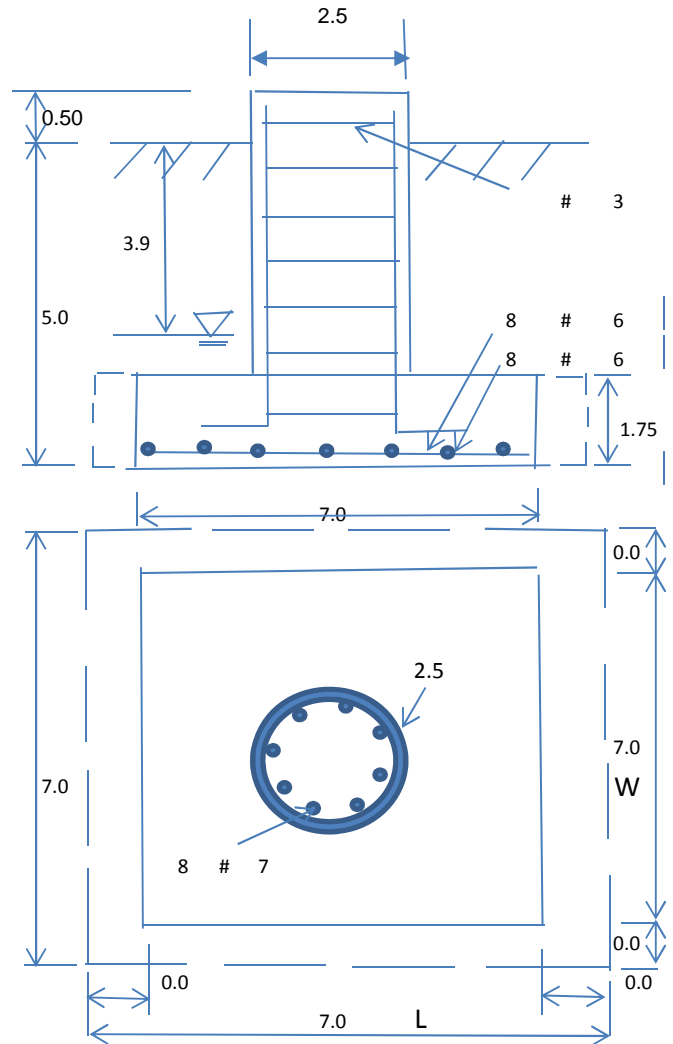
Axial Load (Kips):	123.4	Shear Force (Kips):	5.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	2.5	Depth of Base BG (ft.):	5.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	1.75
Length of Pad (ft.):	7	Width of Pad (ft.):	7
Final Length of pad (ft)	7.0	Final width of pad (ft):	7.0

Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	36	
Vertical Rebar Size #:	7	Tie / Stirrup Size #:	3	
Qty. of Vertical Rebars:	8	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	6	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	8	Qty. of Rebar in Pad (W):	8	



Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	52.6	Pcf	
Water Table B.G.S. (ft):	3.9	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad: 30
					Angle from Bottm of Pad: 25

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.6
Total Dry Soil Volume (cu. Ft.):	143.30	Total Dry Soil Weight (Kips):	16.48
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	16.48	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	50.26	Total Dry Concrete Weight (Kips):	7.54
Total Buoyant Concrete Volume (cu. Ft.):	53.90	Total Buoyant Concrete Weight (Kips):	4.72
Total Effective Concrete Weight (Kips):	12.26	Total Vertical Load on Base (Kips):	152.18

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	3297.0	<	Allowable Factored Soil Bearing (psf):	18000	0.18	OK!
Calculated Foundation Allowable Axail Capacity (Kips):	882.0	>	Design Factored Axial Load (Kips):	142	0.16	OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.60	Tie / Stirrup Area (sq. in./each):	0.11		
Calculated Moment Capacity (Mn,Kips-Ft):	248.7	> Design Factored Moment (Mu, Kips-Ft)	21.2	0.09	OK!
Calculated Shear Capacity (Kips):	89.8	> Design Factored Shear (Kips):	5.7	0.06	OK!
Calculated Tension Capacity (Tn, Kips):	259.2	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	930.9	> Design Factored Axial Load (Pu Kips):	123.4	0.13	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.22	OK!			
Pier Reinforcement Ratio:	0.007				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Dir. Kips);	121.6	> One-Way Factored Shear (L-Dir Kips):	14.2	0.12	OK!
One-Way Design Shear Capacity (W-Dir. Kips):	121.6	> One-Way Factored Shear (W-Dir Kips)	14.2	0.12	OK!
Two-Way Design Shear Capacity (Kips):	433.3	> Two-Way Factored Shear (Kips):	92.3	0.21	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0024	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0024	OK!
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	271.4	> Moment at Bottom (L-Direct. K-Ft):	46.1	0.17	OK!
Lower Steel Pad Moment Capacity (W-Dir. Kips-ft):	271.4	> Moment at Bottom (W-Dir. Kips-Ft):	46.1	0.17	OK!



Guy Anchor Analysis and Design

Date

43655

Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-H
Site Name:	0	Structure Height (Ft.):	190
Site Number:	CT10016-A-SBA	Engineer Name:	U. Atluri
Engr. Number:	78231	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Number of Anchors: 1 Set

Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	52.6	Pcf	Cohesion of Soils (psf):	
Water Table B.G.S. (ft):	3.9	Unit Weight of Water:	62.4	pcf	Internal Angle of Friction (°)	34
Ultimate Lateral Pressure (psf):		Ultimate Skin Friction:	200	Psf	Coefficient of Shear Friction:	0.40
Conical Failure Angle from Top:	30	Failure Angle from Bottom:	20			

Material Properties:

Concrete Strength (psi):	4000	Unit Weight of Concrete:	150.0	psf	Horizontal Rebar Yield (psi):	60000
Shear Strength Reduction Factor:	0.75				Flexure Strength Reduction Factor:	0.9

A. Inner Anchors:

Radius (ft.): 150

1. Design Reactions (Factored):

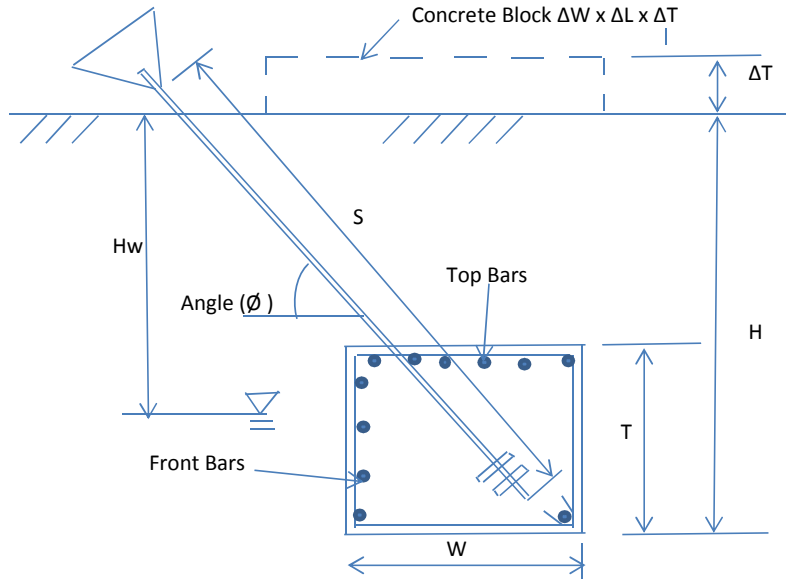
Uplift (Kips): 37.8 Shear (Kips): 43.8 Angle of force resultant (∅): 40.8

2. Foundation Geometries:

Block Base Depth B.G.S. (ft):	12.0	Block with/without toe?	No	Water Table below grade (ft):	3.90
Length of Anchor Block (L, ft.):	10.0	Width of Anchor Block:	3.0 ft.	Thickness of Anchor Block (ft.):	3.0
Concrete Block @ top of Anchor?	No				

(1). Inner Anchors:

Radius (ft.):	150
H (ft.):	12.0
Hw (ft.):	3.9
L (ft.):	10.0
W (ft.):	3.0
T (ft.):	3.0
Angle (∅):	40.8
S (ft.):	19.13
Top bars:	4 # 7
Front bars:	4 # 7
Concrete Volume (Cu. Yd.)/Each:	3.33



3. Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	662.25	Total Dry Soil Weight (Kips):	68.26
Total Buoyant Soil Volume (cu. Ft.):	510.38	Total Buoyant Soil Weight (Kips):	26.85
Total Effective Soil Weight (Kips):	96.03	Weight of the Concrete Block at Top (Kips):	0.00
Total Dry Concrete Volume (cu. Ft.):	0.00	Total Dry Concrete Weight (Kip):	0.00
Total Buoyant Concrete Volume (cu. Ft.):	90.00	Total Buoyant Concrete Weight (Kips):	7.88
Total Effective Concrete Weight (Kips):	7.88	Weight Reduction Factor:	0.9
Soil Uplift Strength Reduction Factor A:	0.75	Shear Strength Reduction Factor on Soil:	0.75
Soil Uplift Strength Reduction Factor B:	0.9		

4. Check Soil and Foundation Capacities:

Nominal Factored Uplift Resistance:	89.65	Kips > Design Uplift Force (Kips):	37.8	OK!
Ultimate Shear Friction Resistance at base:	9.80	Kips Ultimate Resistance Pressure:	2814.4	Psf
Factored Shear Resistance:	73.37	Kips > Design Shear Force (Kips):	43.8	OK!

5. Design Concrete Block:

Rebar Size (#):	7	Wind Load Factor on Concrete Design:	1.00	
Qty. of the Rebar at top of the block:	4	Qty. of the Rebar in the front of the block:	4	
Area of Single Rebar (sq. in.):	0.60	Factor for concrete compression zone:	0.85	
One Way Shear due to Shear Force (Kips):	21.9	One Way Shear Capacity for shear (kips):	109.3	OK!
One Way Shear due to Uplift (Kips):	18.9	One Way Shear Capacity for uplift (kips):	109.3	OK!
Moment due to Shear Load (Kips-ft):	54.8	Flexural Capacity for Shear Load (Kips-ft):	345.4	OK!
Moment due to uplift Load (Kips-ft):	47.2	Flexural Capacity for uplift Load (Kips-ft):	345.4	OK!
Ratio of Design Moment/Moment capacity:	0.16			
Max. Ratio of Shear Force/Shear capacity:	0.20	OK!		

EXHIBIT 8



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Antenna Mount Analysis Report

Existing 190-Ft Guyed Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT10016-A-SBA

Customer Site Name: Montville 3, CT

Carrier Name: T-Mobile (App#: 115948, V1)

Carrier Site ID / Name: CT11146F / Montville/I-395 X78_1

Site Location: 71 Moxley Road

Uncasville, Connecticut

New London County

Latitude: 41.435211

Longitude: -72.123319

Analysis Result:

Max Structural Usage: 98.7% [Pass]

Report Prepared By: Kiran Sharma Paudel



7/31/19

Introduction

The purpose of this report is to summarize the analysis results on the (3) Sector-Frame at 150.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount Mapping by Full Metal and Tower Services, Dated 4/30/2019
Antenna Loading	Provided by SBA Application #: 115948, v1, Dated 6/4/2019
Modification Drawings	N/A

Analysis Criteria

Wind Speed Used in the Analysis: 126 mph (3-Sec. Gust) (Ultimate Wind Speed)
Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-H/ 2015 IBC/ 2018 CSBC
Exposure Category: B
Risk Category: II
Topographic Category: 1
Crest Height (Ft): 0
Ground Elevation Factor: 0.993

The site is a Risk Category II structure per IBC Table 1604.5. This site does not support emergency communication equipment for first responders such as fire departments, police, hospitals, ambulance services or any of the facilities listed for Risk Categories III and IV. The scope of work detailed in this structural analysis does not include items that are a part of emergency service as the 911 or essential facility service of an emergency response system.

Mount Information

(3) Sector-Frame at 150.00' elevation at azimuths 0/120/240

Final Antenna Configuration

3 Andrew RR65-18-VDPL2
3 RFS APXVAARR24_43-U-NA20
3 Ericsson Air32 KRD901146-1_B66A_B2A
6 Ericsson KRY 112 144/1
3 Ericsson Radio 4449 B71+B12

Any proposed antennas not currently installed should be mounted such that the centers of the antennas do not exceed 0.5 ft vertically from the center of the Sector-Frame.

In addition to the proposed equipment loading, a 500 lb serviceability load was also considered in this analysis in accordance with TIA requirements.

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 98.7%, which occurs in the vertical member of the standoff arm. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

1. Mount Photos
2. Antenna Placement Diagram
3. Mount Mapping Information
4. Analysis Calculations

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.
2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.
4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.
6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.
7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.
8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.
9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



Structure: CT10016-A-SBA - Montville 3, CT

Sector: **A**

7/31/2019

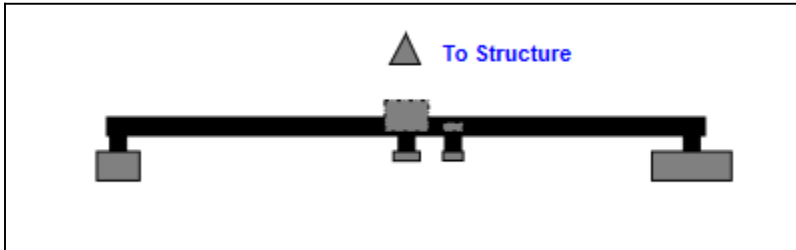
Structure Type: Guyed



Mount Elev: 150.00

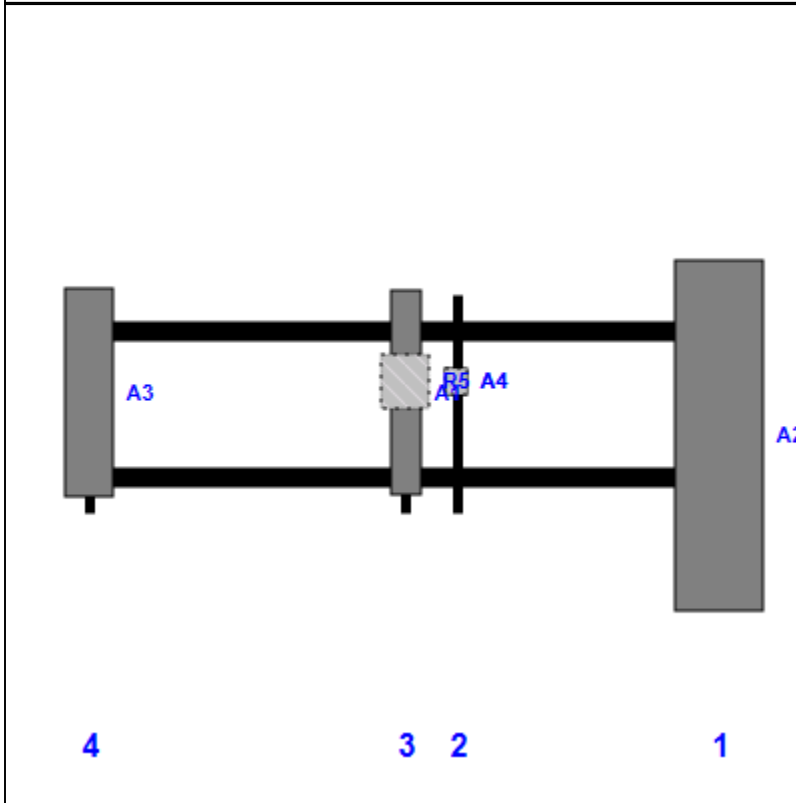
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Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist From Left	Pipe #	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A2	APXVAARR24_43-U-NA20	95.90	24.00	177.00	1	a	Front	39.00	0.00
A4	KRY 112 144/1	6.90	6.10	105.00	2	b	Front	24.00	0.00
A4	KRY 112 144/1	6.90	6.10	105.00	2	c	Behind	24.00	0.00
A1	RR65-18-VDPL2	56.00	8.00	91.00	3	a	Front	27.00	0.00
R5	Radio 4449 B71+B12	15.00	13.20	91.00	3	a	Behind	24.00	0.00
A3	Air32	56.60	12.90	4.00	4	a	Front	27.00	0.00

Structure: CT10016-A-SBA - Montville 3, CT

Sector: **B**

7/31/2019

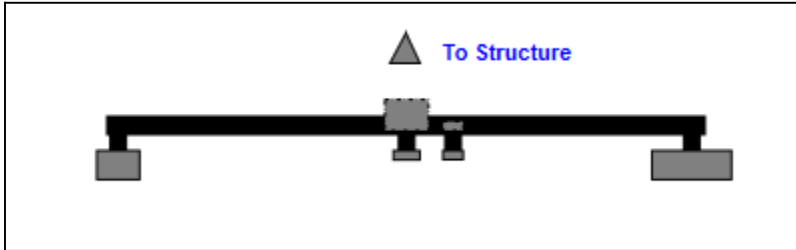
Structure Type: Guyed



Mount Elev: 150.00

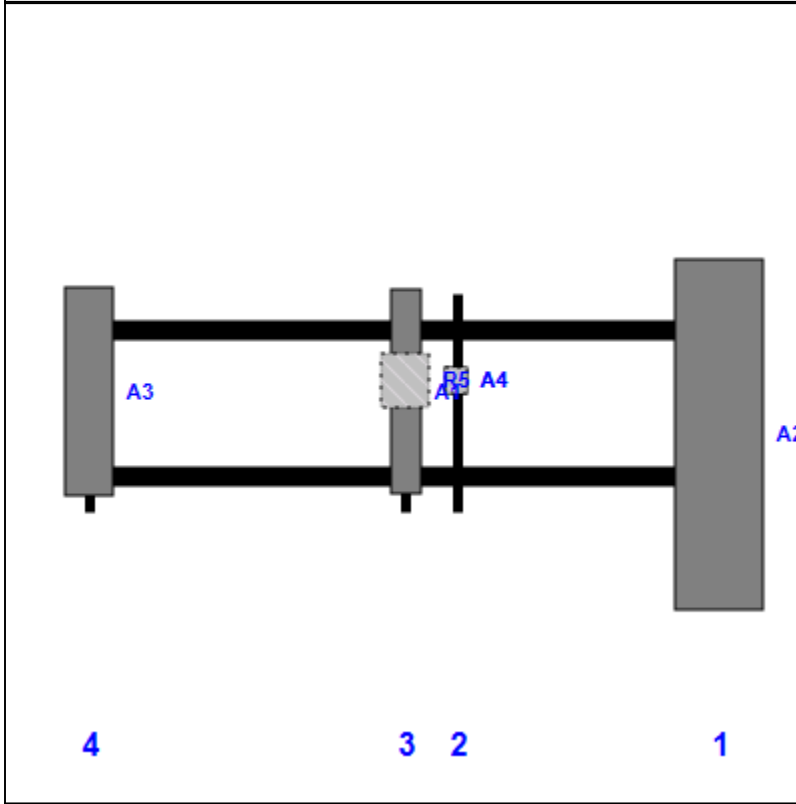
Page: 2

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist From Left	Pipe #	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A2	APXVAARR24_43-U-NA20	95.90	24.00	177.00	1	a	Front	39.00	0.00
A4	KRY 112 144/1	6.90	6.10	105.00	2	b	Front	24.00	0.00
A4	KRY 112 144/1	6.90	6.10	105.00	2	c	Behind	24.00	0.00
A1	RR65-18-VDPL2	56.00	8.00	91.00	3	a	Front	27.00	0.00
R5	Radio 4449 B71+B12	15.00	13.20	91.00	3	a	Behind	24.00	0.00
A3	Air32	56.60	12.90	4.00	4	a	Front	27.00	0.00

Structure: CT10016-A-SBA - Montville 3, CT

Sector: C

7/31/2019

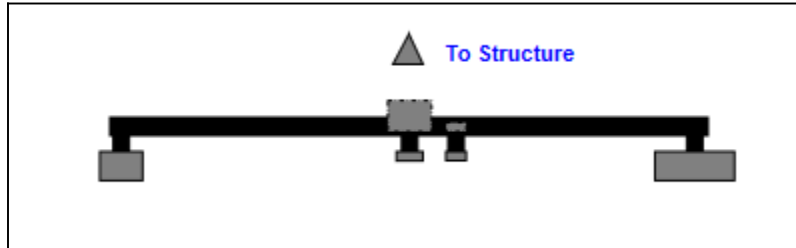


Structure Type: Guyed

Page: 3

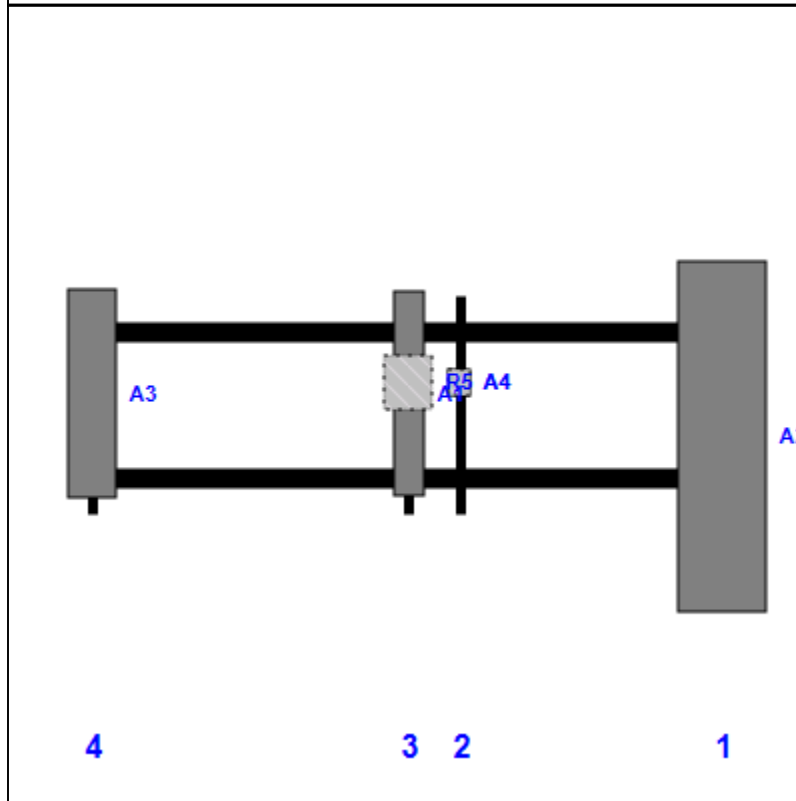
Mount Elev: 150.00

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist From Left	Pipe #	Pipe Pos V	Antenna Pos	Center Ant From Top	Antenna H Offset
A2	APXVAARR24_43-U-NA20	95.90	24.00	177.00	1	a	Front	39.00	0.00
A4	KRY 112 144/1	6.90	6.10	105.00	2	b	Front	24.00	0.00
A4	KRY 112 144/1	6.90	6.10	105.00	2	c	Behind	24.00	0.00
A1	RR65-18-VDPL2	56.00	8.00	91.00	3	a	Front	27.00	0.00
R5	Radio 4449 B71+B12	15.00	13.20	91.00	3	a	Behind	24.00	0.00
A3	Air32	56.60	12.90	4.00	4	a	Front	27.00	0.00

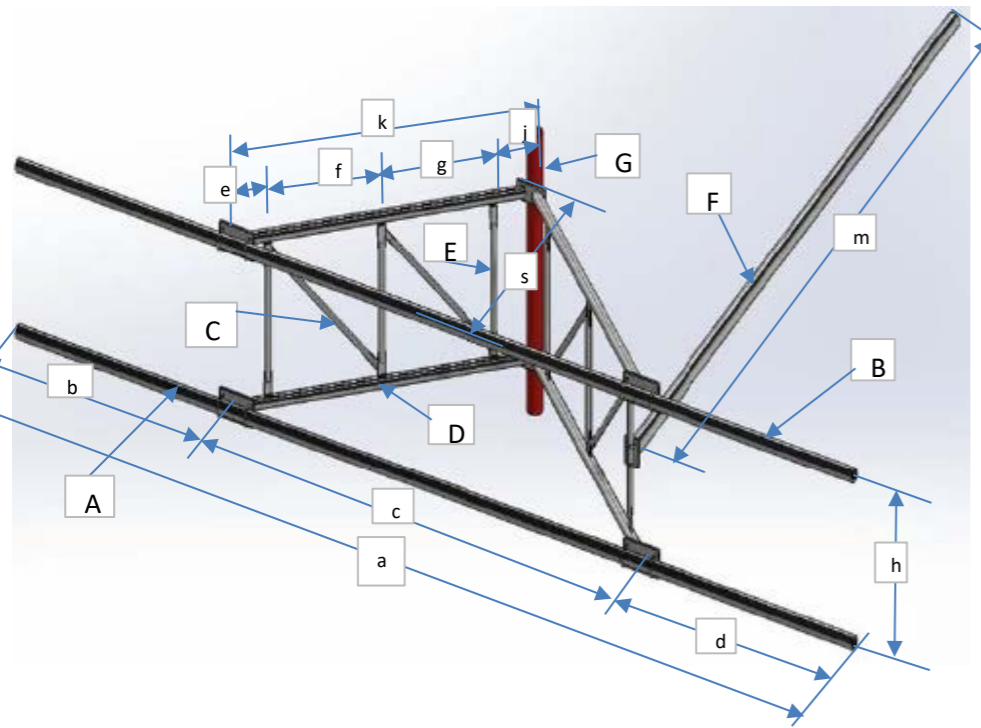


Antenna Mount Type "MT-M" Mapping Form (PATENT PENDING)

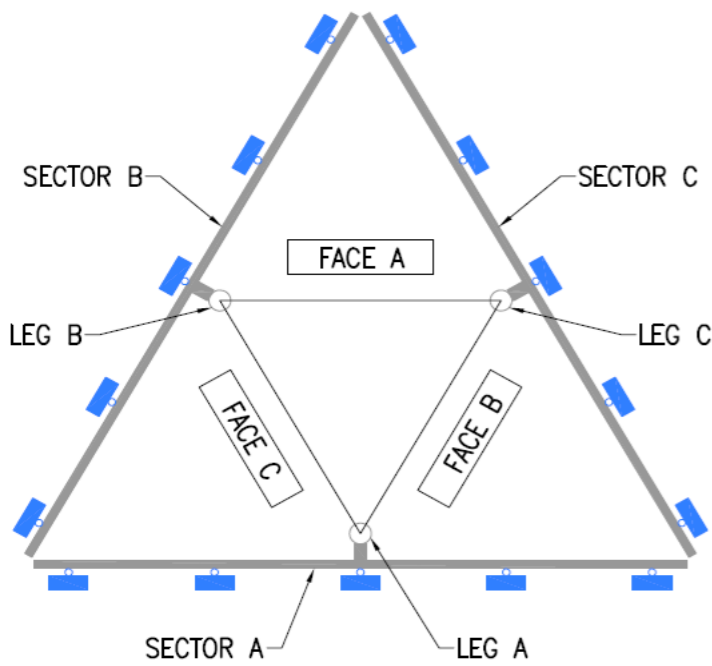
FCC #
1213901

Tower Owner:	SBA Communications	Mapping Date:	4/30/19
Site Name:	Montville 3, CT	Structure Type:	3-Sided Guyed Tower
Site Number or ID:	CT10016-A-SBA	Structure Height (Ft.):	192
Mapping Contractor:	Full Metal Tower Services	Mount Height (Ft.):	149.9

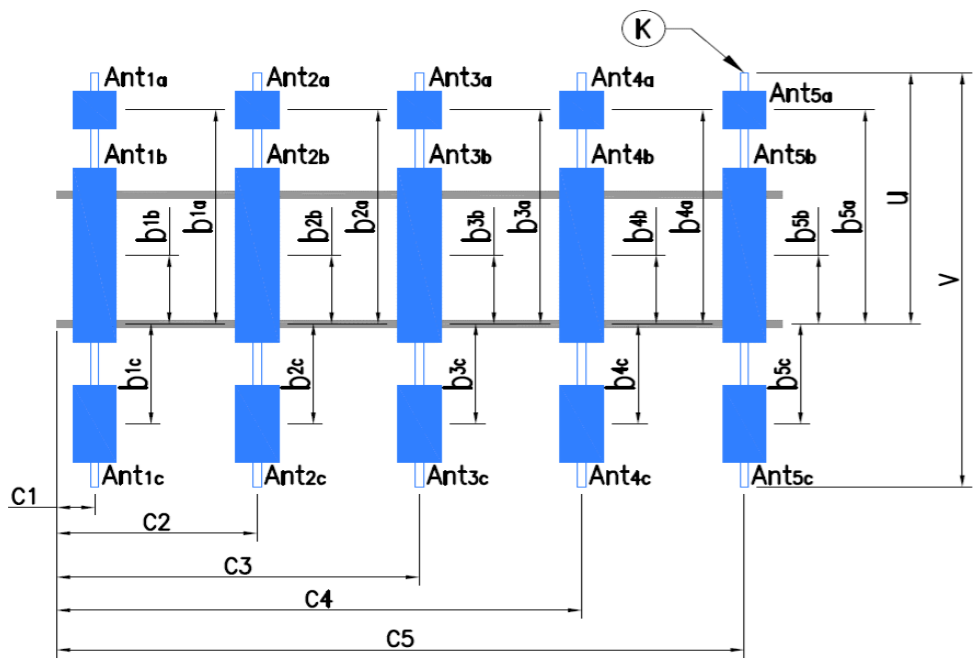
This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.



Geometries (Unit: inches)										
a	181	e	10	j	10	o		s	58	
b	38	f	29	k	78	p		t		
c	106	g	29	m	59	q		u*	50	
d	37	h	40	n		r		v*	60	
Members (Unit: inches) * - See Ant. Layout for "u", "v" and member "K" (pipe)										
Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T	
A	2.875 OD x 0.203 Pipe	2.875	2.469	0.203	F	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	
B	2.875 OD x 0.203 Pipe	2.875	2.469	0.203	G	2.875 OD x 0.203 Pipe	2.875	2.469	0.203	
C	1.66 OD x 0.140 Pipe	1.66	1.38	0.14	H					
D	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	J					
E	1.66 OD x 0.140 Pipe	1.66	1.38	0.14	K (pipe)*	2.375 OD x 0.154 Pipe	2.375	2.067	0.154	
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)									5'	
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)									7'	
Please enter the information below if members can't be found from the drop down lists										
(6) TMAs (9"x2.5"x12") mounted to inside of sector faces.										
Tower Face Width at the mount (ft.):				42"		Tower Leg Size at the mount (in.):				2.875 OD x 0.203 Pipe



Climbing facility is On Leg A, at 15° Degree Azimuth

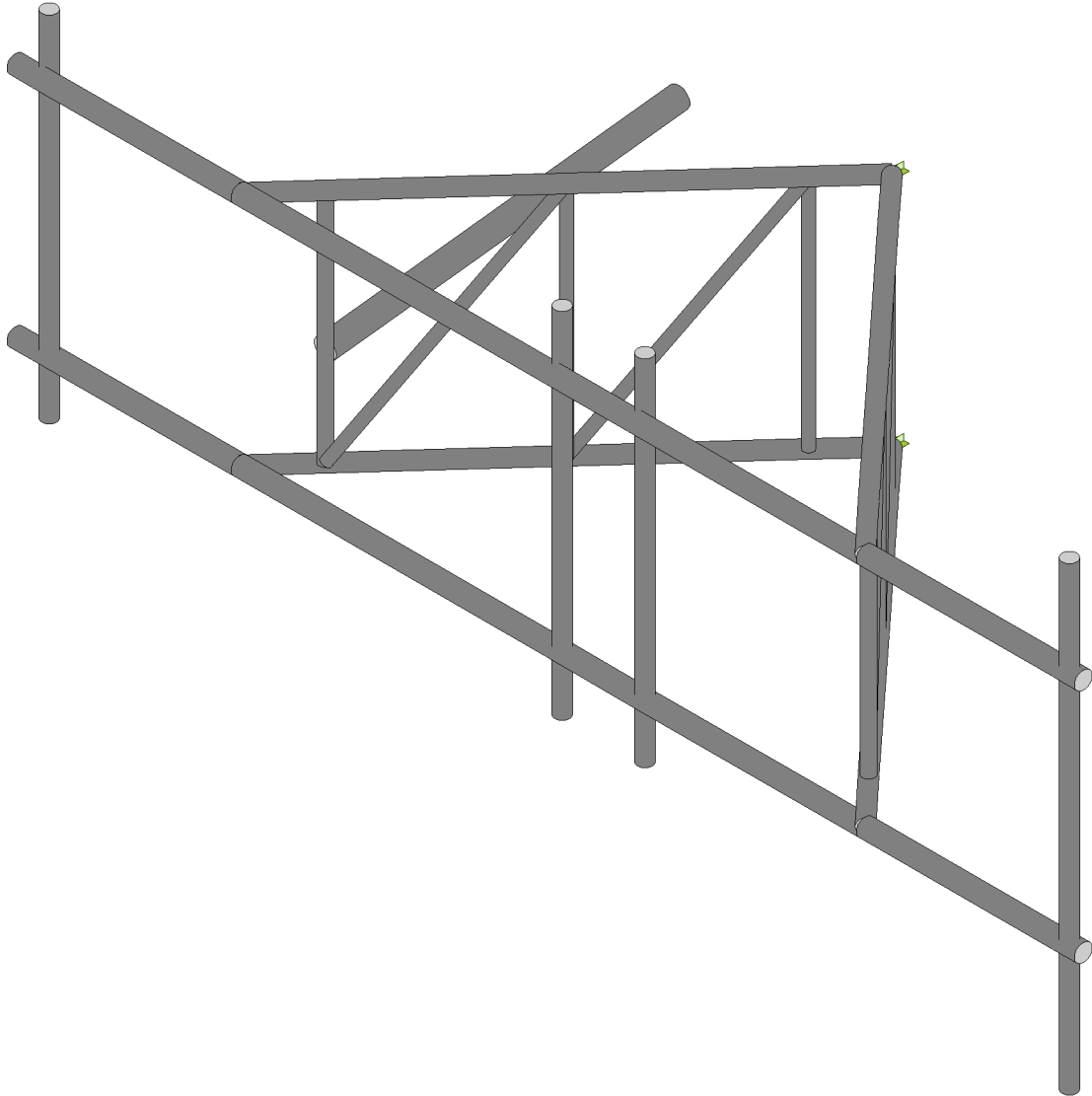
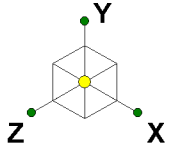


Antenna Layout

Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.					Mounting Locations (Unit: inches)			Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ..." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C ₁ , C ₂ , C ₃ , C ₄ , C ₅ " (in.)	Photo Numbers
Sector A									
Ant _{1a}	Empty Mast							177	
Ant _{1b}									
Ant _{1c}									
Ant _{2a}	TMA	8	3	56	1/2" (2)	+26"	6	105	
Ant _{2b}									
Ant _{2c}									
Ant _{3a}	Antenna A	8	3	56	1/2" (2)	+26"	6	91	
Ant _{3b}									
Ant _{3c}									
Ant _{4a}	Empty Mast							4	
Ant _{4b}									
Ant _{4c}									
Ant _{5a}									
Ant _{5b}									
Ant _{5c}									
Are Ant same as sector A?		Yes		Antennas on Sector B are the same as Sector A					

Azimuth (Degree) of Each Sector and Climbing Information

Sector A:	45°	↗	Deg	
Sector B:	195°		Deg	
Sector C:	320°		Deg	
Climbing	15°		Deg	On Leg A
Climbing Facility	Corrosion Type:		Minor corrosion observed	
	Access:		Climbing path was unobstructed.	
	Condition:		N/A	



Tower Engineering Solutio...

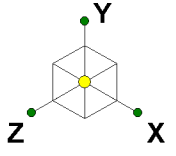
CT10016-A-SBA_MT-MT_Loads Only_Sector A_H

SK - 10

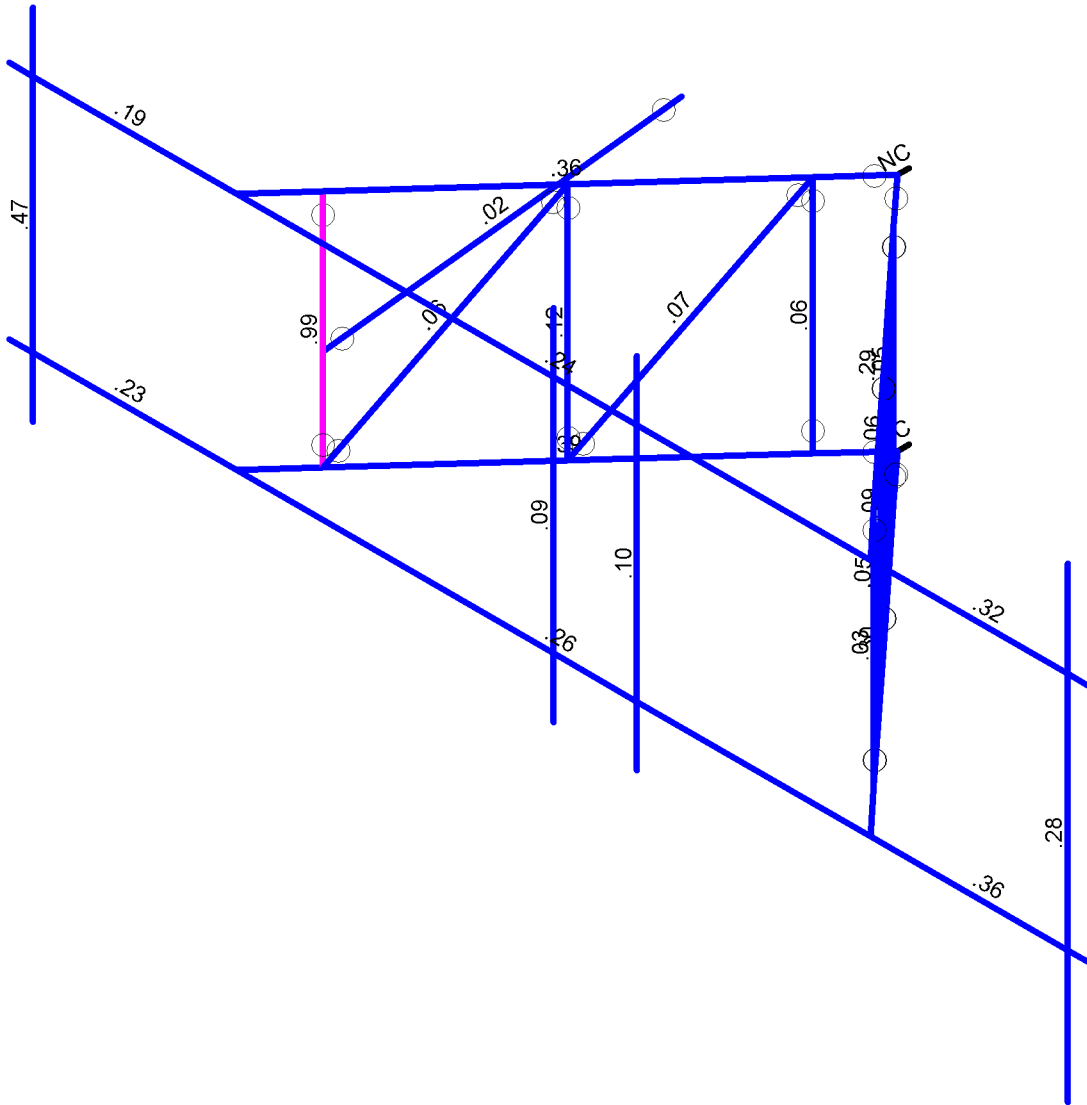
July 31, 2019 at 2:43 PM

TES Project No. 78192

CT10016-A-SBA_78192_H_RISA_L...

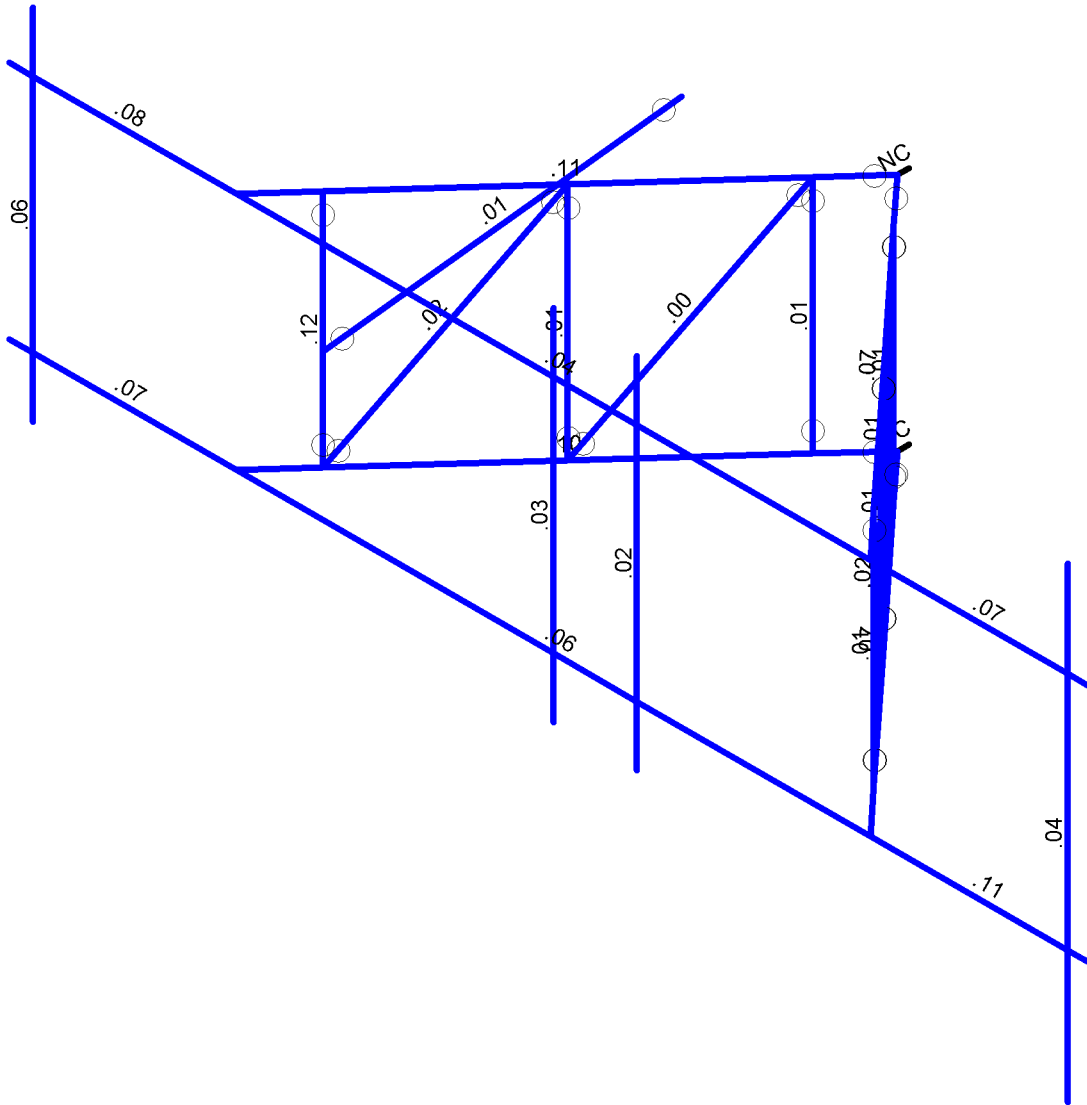
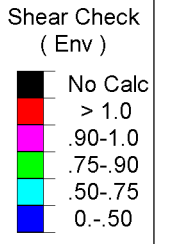
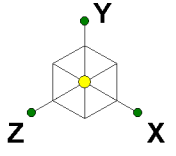


Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0W (Front)

Tower Engineering Solutio...	CT10016-A-SBA_MT-MT_Loads Only_Sector A_H	SK - 11
TES Project No. 78192		July 31, 2019 at 2:43 PM
		CT10016-A-SBA_78192_H_RISA_L...



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0W (Front)

Tower Engineering Solutio...

CT10016-A-SBA_Mt-MT_Loads Only_Sector A_H

SK - 12

July 31, 2019 at 2:43 PM

TES Project No. 78192

CT10016-A-SBA_78192_H_RISA_L...

EXHIBIT 9

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11146F

Montville/ I-395 X78_1
71 Moxley Hill Road
Montville, CT 06382

May 22, 2019

Transcom Engineering Project Number: 737001-0061

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	11.42 %

Transcom Engineering, Inc.

Wireless Network Design and Deployment

May 22, 2019

T-MOBILE

Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 6009

Emissions Analysis for Site: **CT11146F – Montville/ I-395 X78_1**

Transcom Engineering, Inc (“Transcom”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **71 Moxley Hill Road, Montville, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 & 700 MHz bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is $1000 \mu\text{W}/\text{cm}^2$. 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.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **71 Moxley Hill Road, Montville, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	2	60
UMTS	1900 MHz (PCS)	1	40
GSM	1900 MHz (PCS)	1	15
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20

Table 1: Channel Data Table

Transcom Engineering, Inc.

Wireless Network Design and Deployment

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Ericsson AIR32 B66A / B2A	150
A	2	RFS APXVAARR24_43-U-NA20	150
B	1	Ericsson AIR32 B66A / B2A	150
B	2	RFS APXVAARR24_43-U-NA20	150
C	1	Ericsson AIR32 B66A / B2A	150
C	2	RFS APXVAARR24_43-U-NA20	150

Table 2: Antenna Data

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

Cable losses were factored in the calculations for this site. Since all **1900 MHz (PCS) GSM and UMTS** radios are ground mounted the following cable loss values were used. For each ground mounted **1900 MHz (PCS) GSM and UMTS** radio there was **2.06 dB** of cable loss calculated into the system gains / losses for this site. These values were calculated based upon the manufacturers specifications for **200 feet** of **1-5/8"** coax.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	1.87
Antenna A2	RFS APXVAARR24_43-U-NA20	1900 MHz (PCS) / 600 MHz / 700 MHz	15.65 / 12.95 / 13.35	6	175	3,700.10	1.22
Sector A Composite MPE%							3.09
Antenna B1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	1.87
Antenna B2	RFS APXVAARR24_43-U-NA20	1900 MHz (PCS) / 600 MHz / 700 MHz	15.65 / 12.95 / 13.35	6	175	3,700.10	1.22
Sector B Composite MPE%							3.09
Antenna C1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	1.87
Antenna C2	RFS APXVAARR24_43-U-NA20	1900 MHz (PCS) / 600 MHz / 700 MHz	15.65 / 12.95 / 13.35	6	175	3,700.10	1.22
Sector C Composite MPE%							3.09

Table 3: T-MOBILE Emissions Levels

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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	3.09 %
Verizon Wireless	2.81 %
Sprint	2.24 %
MetroPCS	0.17 %
AT&T	3.11 %
Site Total MPE %:	11.42 %

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	3.09 %
T-MOBILE Sector B Total:	3.09 %
T-MOBILE Sector C Total:	3.09 %
Site Total:	11.42 %

Table 5: Site MPE Summary

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	4	1,538.37	150	10.67	1900 MHz (PCS)	1000	1.07%
T-Mobile 2100 MHz (AWS) LTE	2	2,307.55	150	8.00	2100 MHz (AWS)	1000	0.80%
T-Mobile 1900 MHz (PCS) UMTS	1	914.24	150	1.59	1900 MHz (PCS)	1000	0.16%
T-Mobile 1900 MHz (PCS) GSM	1	342.84	150	0.59	1900 MHz (PCS)	1000	0.06%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	150	2.74	600 MHz	400	0.68%
T-Mobile 700 MHz LTE	2	432.54	150	1.50	700 MHz	467	0.32%
						Total:	3.09%

Table 6: T-MOBILE Maximum Sector MPE Power Values

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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:	3.09 %
Sector B:	3.09 %
Sector C:	3.09 %
T-MOBILE Maximum Total (per sector):	3.09 %
Site Total:	11.42 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **11.42 %** 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.



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Transcom Engineering, Inc
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Sterling, MA 01564