Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

October 19, 2018

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

T-Mobile Northeast LLC – CTNH552A
Tower Share Application
438 North Street, Goshen, CT 06756
Latitude- 41.856325
Longitude- -73.241578

Dear Ms. Bachman,

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile plans to install antennas and related equipment at the tower site located at 438 North Street in Goshen, Connecticut. This tower was originally approved by the Connecticut Siting Council in Docket No. 337 dated December 13, 2007.

T-Mobile will install eight (8) 600/700/1900/2100 MHz panel antennas, one (1) microwave dish antenna, one (1) ODU, and eight (8) RRHs at the 138' level of the existing 150' monopole. Four (4) hybrid cables and one (1) coax cable will also be installed. T-Mobile's equipment cabinets will be placed on a new concrete pad within the existing ground facility. Included are plans by A.T. Engineering Service, PLLC, dated October 5, 2018, depicting the planned installation and attached as **Exhibit A**. Also included is a structural analysis prepared by Tower Engineering Professionals, dated August 16, 2018, confirming that the existing tower is structurally capable of supporting the proposed equipment. This is attached and detailed in **Exhibit B**.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Robert Valentine, First Selectmen of the Town of Goshen, Martin Connor, the Land Use Enforcement Office, the tower owner, American Tower Corporation, and the property owner, ARCA LLC. Please see the attached letter from American Tower Corporation authorizing the proposed shared use of this facility attached as **Exhibit C**.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the monopole is 150'; T-Mobile's proposed antennas will be located at a center line height of 138'.

2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. T-Mobile's plans include the installation of an emergency back-up generator; noise associated with this installation is exempt from State and local noise standards. The incremental effect of the proposed changes will be negligible.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 7.60%, as evidenced by **Exhibit D**.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, T-Mobile respectfully submits that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading. The structural analysis is included as **Exhibit B**.
B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Goshen. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as **Exhibit C**, authorizing T-Mobile to file this application for shared use.
C. Environmental Feasibility. The proposed shared use of this facility would have minimal environmental impact. The installation of T-Mobile equipment at the 138' level of the existing 150' tower would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed on a concrete pad within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by **Exhibit D**, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.
E. Public Safety Concerns. As discussed above, the monopole is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing tower. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Goshen and nearby the facility.

Sincerely,

Kyle Richers

Kyle Richers

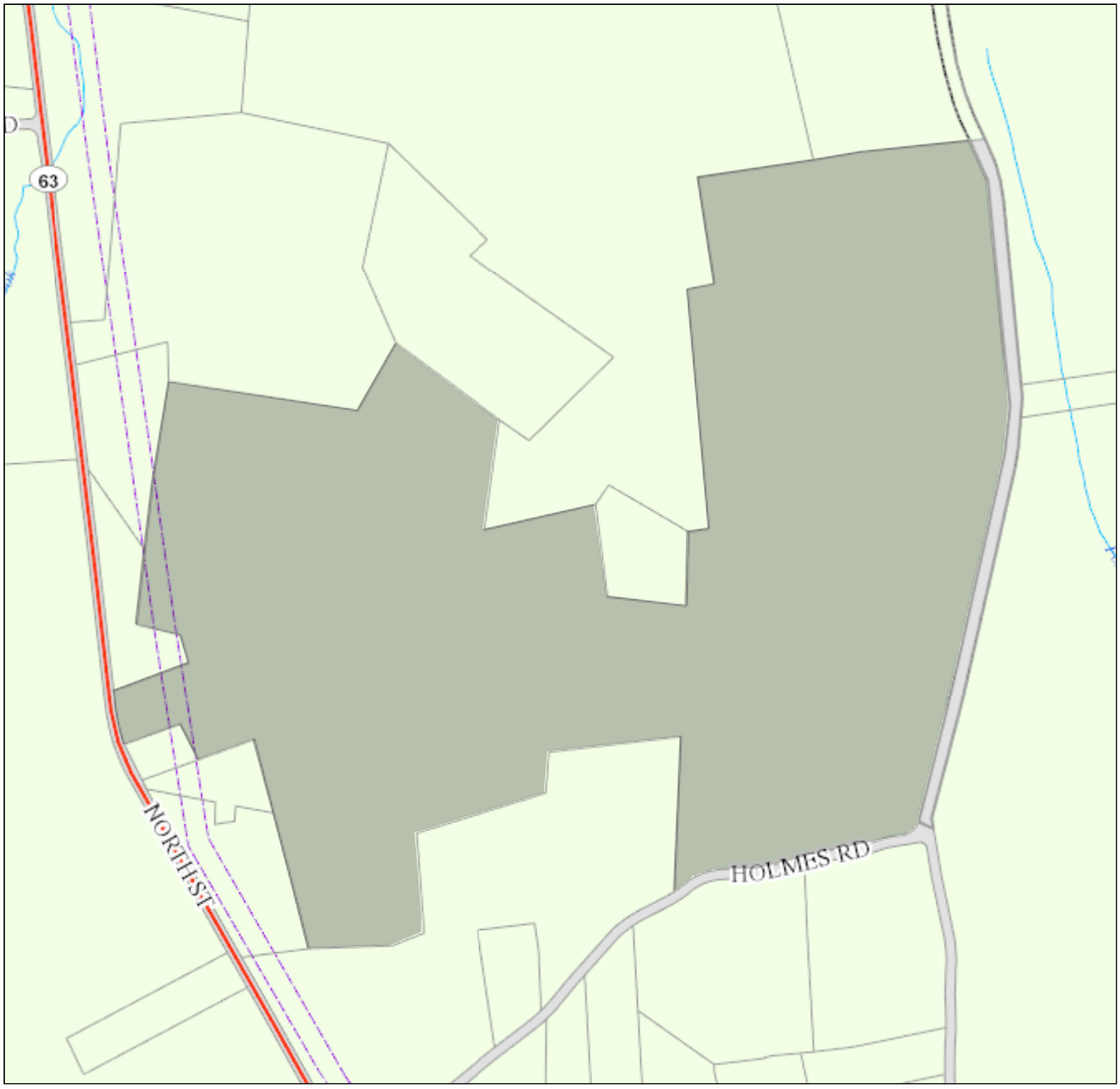
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey
krichers@transcendwireless.com
908-447-4716

CC: Robert Valentine- First Selectmen
American Tower Corporation- tower owner
ARCA LLC- owner
Martin Connor- Zoning Official

Town of Goshen

Geographic Information System (GIS)

Date Printed: 10/19/2018



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Goshen and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 800 feet

0 800 Feet

N W E S

442 NORTH STREET

Location	442 NORTH STREET	**Mblu**	06/012 / 008/00 /
Acct#	00084400	**Owner**	ARCA LLC
PBN		**Assessment**	$275,300
Appraisal	$932,630	**PID**	842
Building Count	1		

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$125,000	$807,630	$932,630
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$87,500	$187,800	$275,300

Owner of Record

Owner	ARCA LLC	**Sale Price**	$310,000
Co-Owner		**Certificate**	
Address	25 LARCHMONT CIRCLE STRATFORD, CT 06614-1336	**Book & Page**	114/ 441
		Sale Date	03/03/1997
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
ARCA LLC	$310,000		114/ 441	00	03/03/1997
KULESZA MARY	$0		110/ 88		

Building Information

Building 1 : Section 1

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

Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Total Xtra Fixtrs	
Total Rooms	
Bath Style:	
Kitchen Style:	
Whirlpool Tub	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
Hse Generator	

Building Photo

(http://images.vgsi.com/photos/GoshenCTPhotos//\00\00\29/44.

Building Layout

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	435	**Size (Acres)**	233.2
Description	Cell Site Vac Lnd	**Frontage**	0
Zone	RA5	**Depth**	0
Neighborhood		**Assessed Value**	$187,800
Alt Land Appr	No	**Appraised Value**	$807,630
Category			

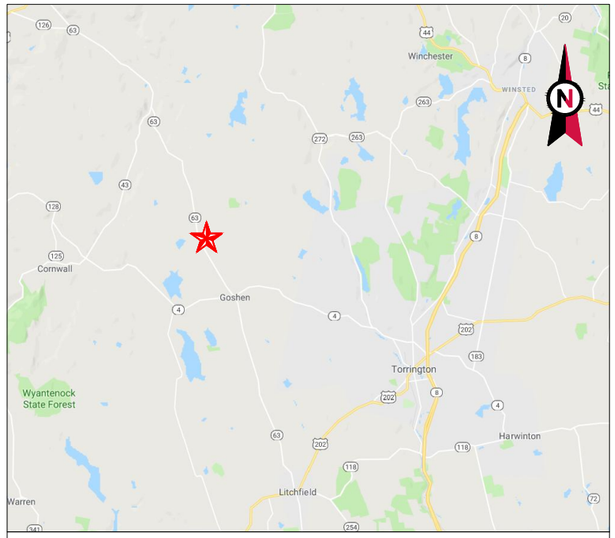
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CELL	Cell Tower			1 Units	$125,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$125,000	$807,630	$932,630
2016	$125,000	$1,007,010	$1,132,010
2015	$125,000	$1,007,010	$1,132,010

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$87,500	$187,800	$275,300
2016	$87,500	$172,940	$260,440
2015	$87,500	$172,940	$260,440



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: GOSHEN (BRASS MOUNTAIN) CT
ATC SITE NUMBER: 413850
T-MOBILE SITE ID: CTNH552A
SITE ADDRESS: 438 NORTH STREET GOSHEN, CT 06756

LOCATION MAP

T-MOBILE L600 NSD COLLOCATION PLAN
4SEC-67D97DB CONFIGURATION

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: CONNECTICUT LIGHT & POWER CO
PHONE: (888) 783-6617

TELEPHONE COMPANY: AT&T
PHONE: (800) 331-0500

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

PROJECT SUMMARY

SITE ADDRESS:

438 NORTH STREET
GOSHEN, CT 06756
COUNTY: LITCHFIELD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.856325

LONGITUDE: -73.241578

GROUND ELEVATION: 1599' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

ARCA LLC
25 LARCHMONT CIR
STRATFORD, CT 06614

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES PLACING EQUIPMENT CABINETS AND GENERATOR ON A PROPOSED CONCRETE PAD INSIDE A 10' X 15' GROUND SPACE WITHIN THE EXISTING COMPOUND, AND PLACING NEW ANTENNAS ON A PROPOSED PLATFORM MOUNTED TO THE EXISTING TOWER.

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

FROM TORRINGTON, CT:

HEAD NORTH ON LITCHFIELD ST/S MAIN ST TOWARD FRANKLIN ST. USE THE LEFT LANE TO TURN SLIGHTLY LEFT ONTO MAIN ST. TURN LEFT ONTO WATER ST. CONT. ONTO MIGEON AVE. TURN LEFT TO STAY ON MIGEON AVE. CONT. ONTO CT-4 W/GOSHEN RD. AT THE TRAFFIC CIRCLE TAKE EXIT ONTO CT-63. SITE LOCATION WILL BE ON THE RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	10/05/18	EB
G-002	GENERAL NOTES	0	09/21/18	EB
V-101	OVERALL SITE PLAN	0	09/21/18	EB
C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	10/05/18	EB
C-501	ANTENNA INFORMATION & SCHEDULE	0	09/21/18	EB
C-502	CONSTRUCTION DETAILS	0	09/21/18	EB
C-503	CONSTRUCTION DETAILS	1	10/05/18	EB
E-101	GROUNDING PLAN AND SCHEMATIC	0	09/21/18	EB
E-501	GROUNDING DETAILS	0	09/21/18	EB
E-601	PANEL SCHEDULE	0	09/21/18	EB
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	09/21/18
1	10' X 15' CON. PAD	EB	10/05/18

ATC SITE NUMBER:
413850

ATC SITE NAME:
GOSHEN (BRASS MOUNTAIN) CT

SITE ADDRESS:
438 NORTH STREET
GOSHEN, CT 06756

SEAL:

Authorized by "EOR"
Oct 9 2018 6:53 AM cosign

T-Mobile

DRAWN BY:	EB
APPROVED BY:	PPB
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH T-MOBILE WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY T-MOBILE WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE WIRELESS REP. ANY WORK FOUND BY THE T-MOBILE WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

CONCRETE AND REINFORCING STEEL NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
2. MIX DESIGN SHALL BE APPROVED BY T-MOBILE WIRELESS REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C150, TYPE 2
REINFORCEMENT:	ASTM A185, PLAIN STEEL WELDED WIRE FABRIC
REINFORCEMENT BARS:	ASTM A615, GRADE 60, DEFORMED
NORMAL WEIGHT AGGREGATE:	ASTM C33
WATER:	ASTM C 94/C 94M
ADMIXTURES:	
-WATER-REDUCING AGENT:	ASTM C 494/C 494M, TYPE A
-AIR-ENTERING AGENT:	ASTM C 260/C 260M
-SUPERPLASTICIZER:	ASTM C494, TYPE F OR TYPE G
-RETARDING:	ASTM C 494/C 494M, TYPE B

5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
6. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR T-MOBILE WIRELESS REP APPROVAL WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
11. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
12. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
13. DO NOT ALLOW REINFORCEMENT, CONCRETE OR SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 3 DAYS AFTER PLACEMENT.
14. FOR COLD-WEATHER(ACI 306) AND HOT-WEATHER(ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
15. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
16. UNLESS OTHERWISE NOTED:
    A. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615/A 615M/A-996, GRADE 60.
    B. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
17. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
18. REINFORCING BAR DEVELOPMENT LENGTHS, AS COMPUTED IN ACCORDANCE WITH ACI 318, FORM THE BASIS FOR BAR EMBEDMENT LENGTHS AND BAR SPLICED LENGTHS SHOWN IN THE DRAWINGS. APPLY APPROPRIATE MODIFICATION FACTORS FOR TOP STEEL, BAR SPACING, COVER AND THE LIKE.
19. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
20. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
21. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
22. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
23. BAR SUPPORTS SHALL BE ALL-GALVINIZED METAL WITH PLASTIC TIPS.
24. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.
25. SLAB ON GROUND:
    A. COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.
    B. PROVIDE VAPOR BARRIER BENEATH SLAB ON GROUND.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
    A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
    B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
    C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
    D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
    E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
    A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
    B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
    C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
    D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
    E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
    F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
    G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

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A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	09/21/18

ATC SITE NUMBER:
413850

ATC SITE NAME:
GOSHEN (BRASS MOUNTAIN) CT

SITE ADDRESS:
438 NORTH STREET
GOSHEN, CT 06756

SEAL:

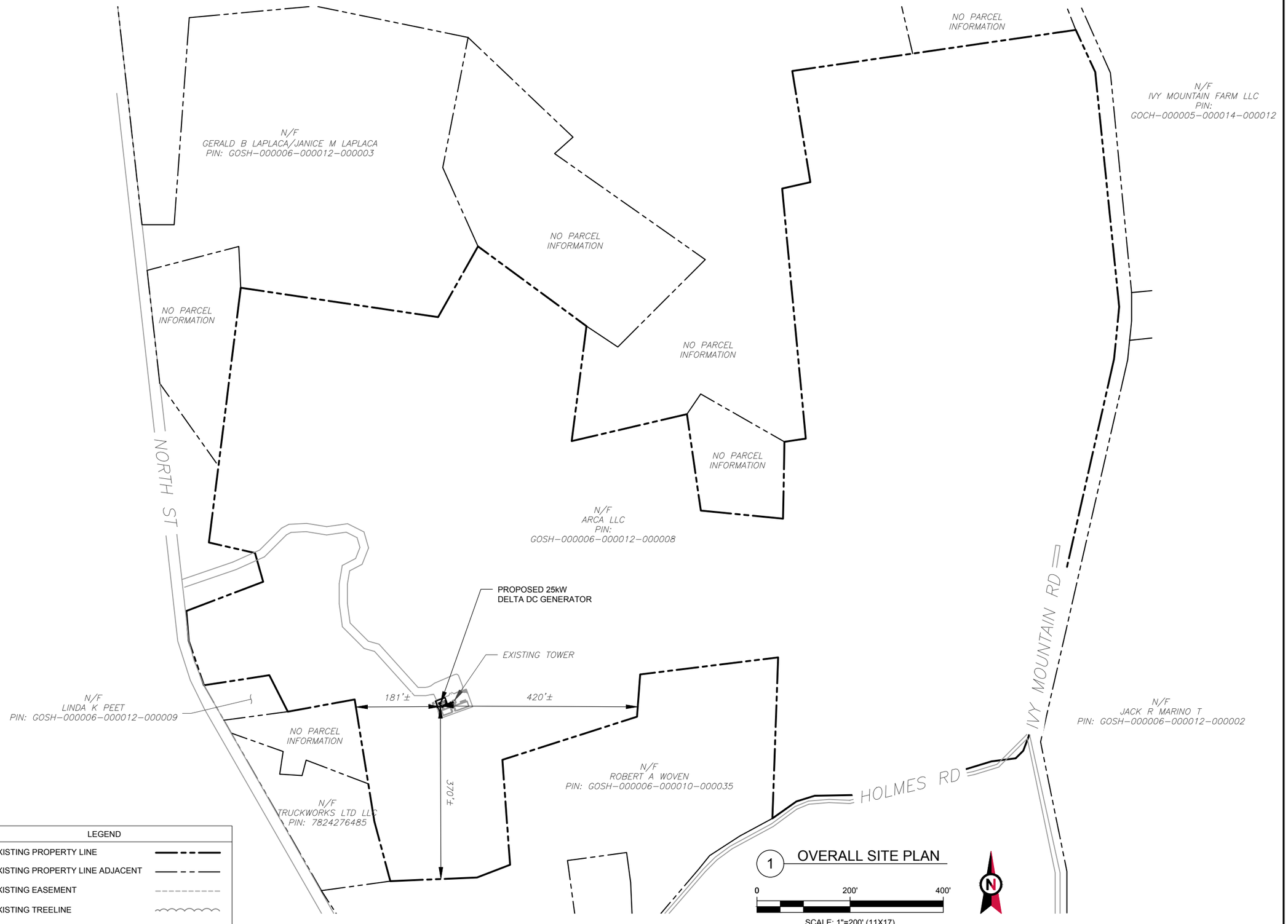
Authorized by "EOR"
Oct 9 2018 6:53 AM cosign

T-Mobile

DRAWN BY:	EB
APPROVED BY:	PPB
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0



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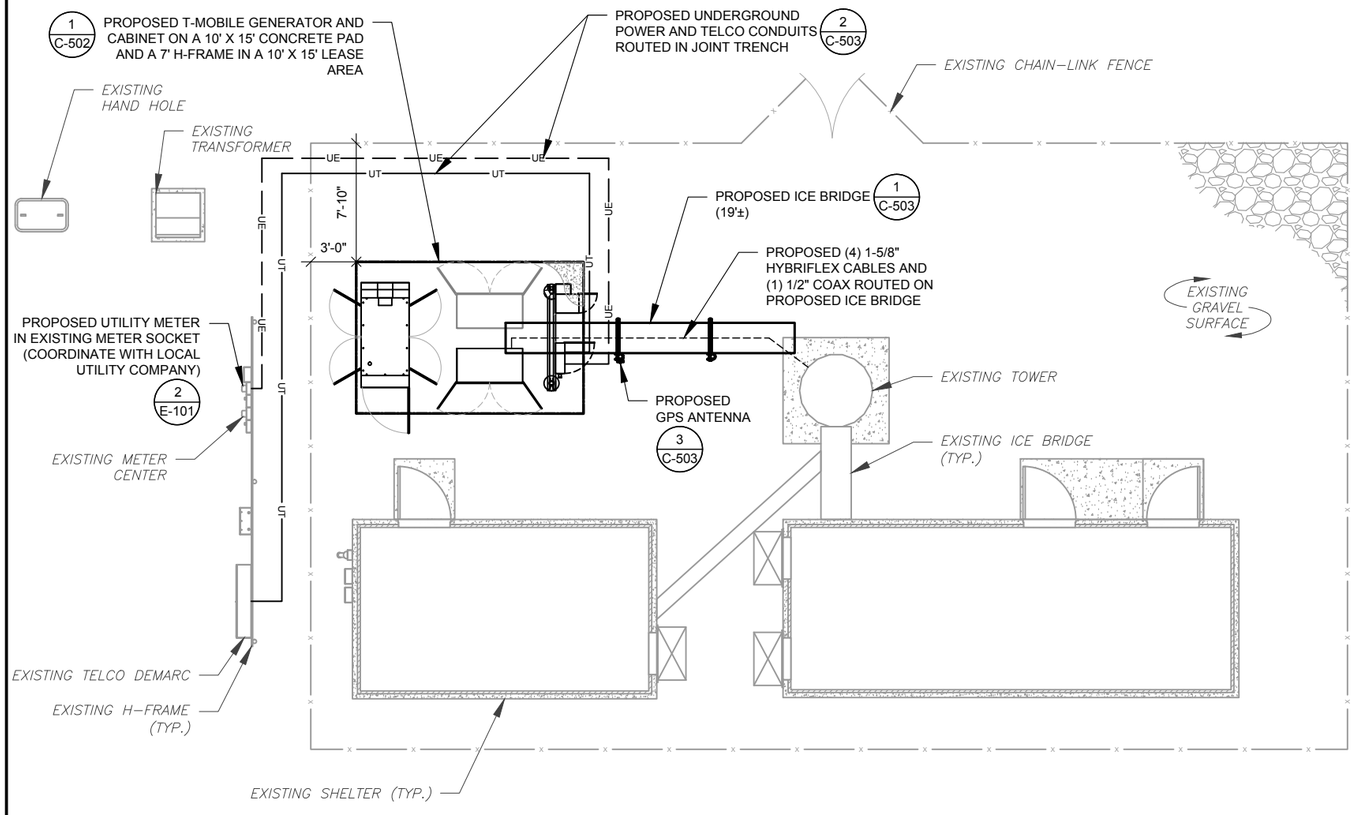
OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
V-101	0

SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

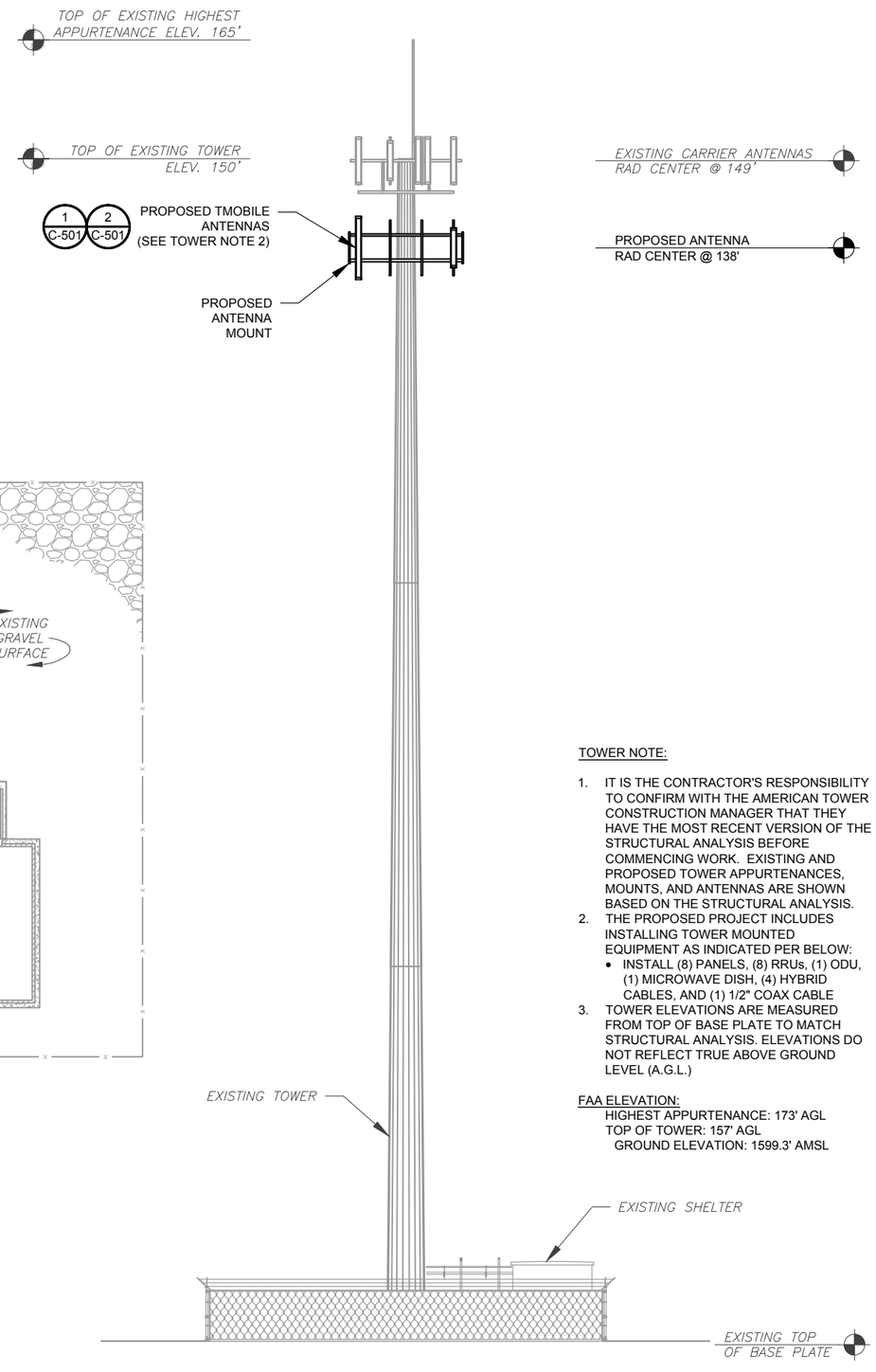
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.



1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)



2 TOWER ELEVATION

SCALE: NOT TO SCALE

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. THE PROPOSED PROJECT INCLUDES INSTALLING TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:
   - INSTALL (8) PANELS, (8) RRUs, (1) ODU, (1) MICROWAVE DISH, (4) HYBRID CABLES, AND (1) 1/2" COAX CABLE
3. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

FAA ELEVATION:
HIGHEST APPURTENANCE: 173' AGL
TOP OF TOWER: 157' AGL
GROUND ELEVATION: 1599.3' AMSL

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	09/21/18
1	10' X 15' CON. PAD	EB	10/05/18

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413850

ATC SITE NAME:
GOSHEN (BRASS MOUNTAIN) CT

SITE ADDRESS:
438 NORTH STREET
GOSHEN, CT 06756

SEAL:

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DATE DRAWN:	09/21/18
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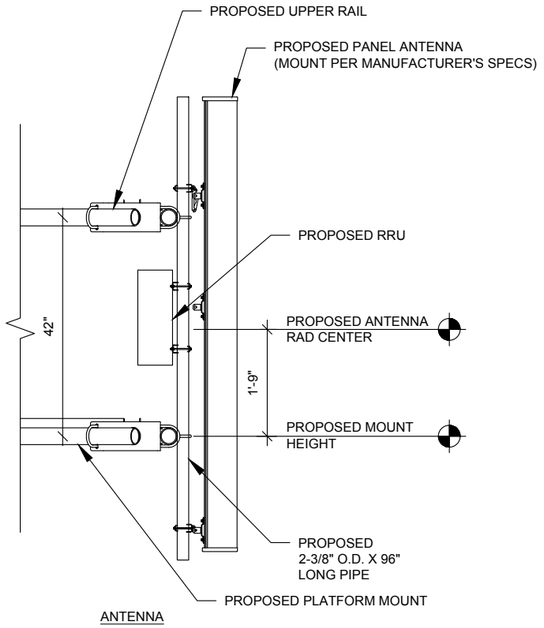
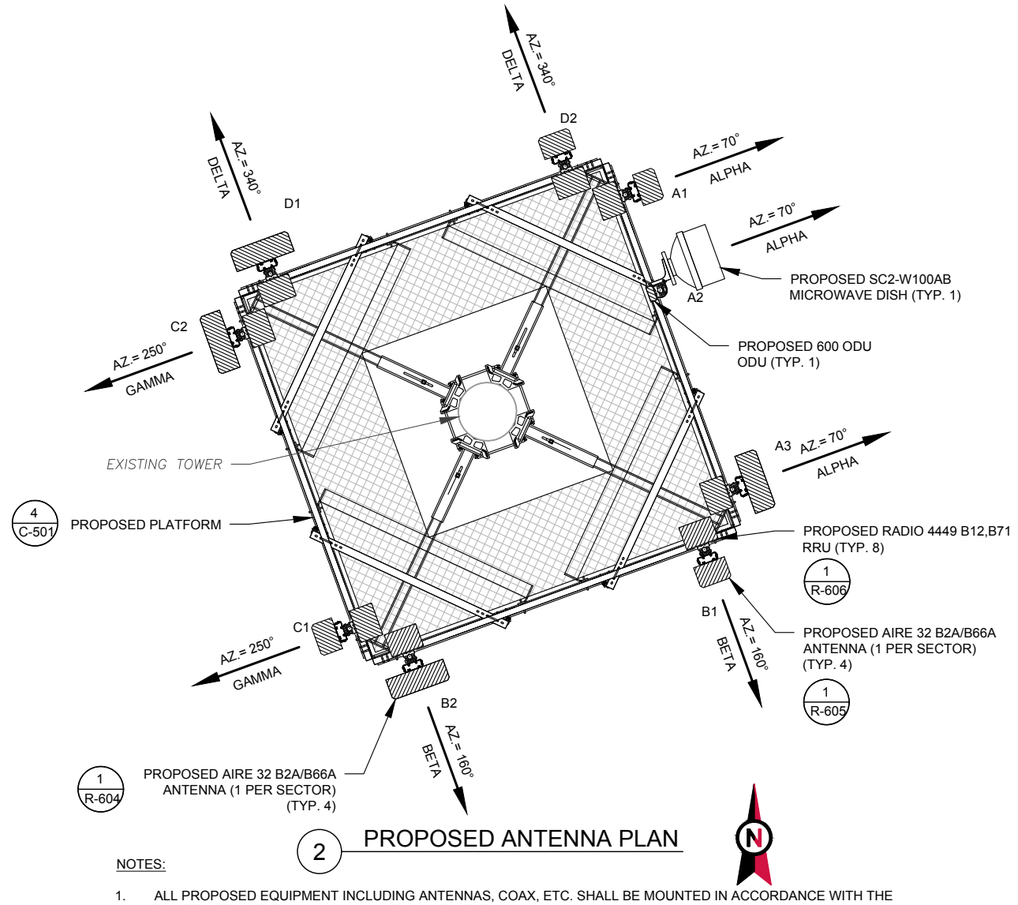
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	1



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: NOT TO SCALE



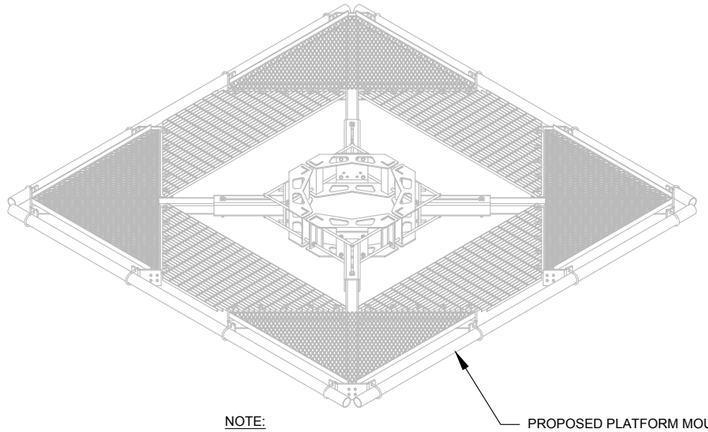
2 PROPOSED ANTENNA PLAN

NOTES:

1. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.
2. SPACING OF PROPOSED EQUIPMENT SHALL BE CONFIRMED FOR TOWER CONFLICTS AND PROPOSED MOUNTS SHALL NOT IMPEDE TOWER CLIMBING PEGS.

FINAL ANTENNA/ COAX SCHEDULE								
SECTOR	ANT.	PANEL MODEL #	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	ANTENNA COAX DESCRIPTION
ALPHA	A1	AIR 32 B2A/B66A	138'-0"	70°	-	2°	RADIO 4449 B12,B71	-
ALPHA	A2	SC2-W100AB	138'-0"	70°	-	-	600 ODU	1/2"
ALPHA	A3	APXVAARR24_43-U-NA20	138'-0"	70°	-	2°	RADIO 4449 B12,B71	-
BETA	B1	AIR32 B66AAB2A	138'-0"	160°	-	2°	RADIO 4449 B12,B71	-
BETA	B2	APXVAARR24_43-U-NA20	138'-0"	160°	-	2°	RADIO 4449 B12,B71	-
GAMMA	C1	AIR32 B66AAB2A	138'-0"	250°	-	2°	RADIO 4449 B12,B71	-
GAMMA	C2	APXVAARR24_43-U-NA20	138'-0"	250°	-	2°	RADIO 4449 B12,B71	-
DELTA	D1	AIR32 B66AAB2A	138'-0"	340°		2°	RADIO 4449 B12,B71	
DELTA	D2	APXVAARR24_43-U-NA20	138'-0"	340°		2°	RADIO 4449 B12,B71	
1. BASED ON APPROVED ATC APPLICATION 12600629, DATED 08-13-2018. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS. 2. (4) PROPOSED 1-1/4" HYBRID CABLE (180'±)								

3 ANTENNA SCHEDULE



NOTE:

HANDRAIL KIT NOT SHOWN FOR CLARITY

4 ISOMETRIC PLATFORM DETAIL

SCALE: N.T.S.

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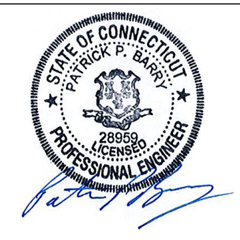
GOSHEN (BRASS MOUNTAIN) CT

SITE ADDRESS:
438 NORTH STREET
GOSHEN, CT 06756

SEAL:



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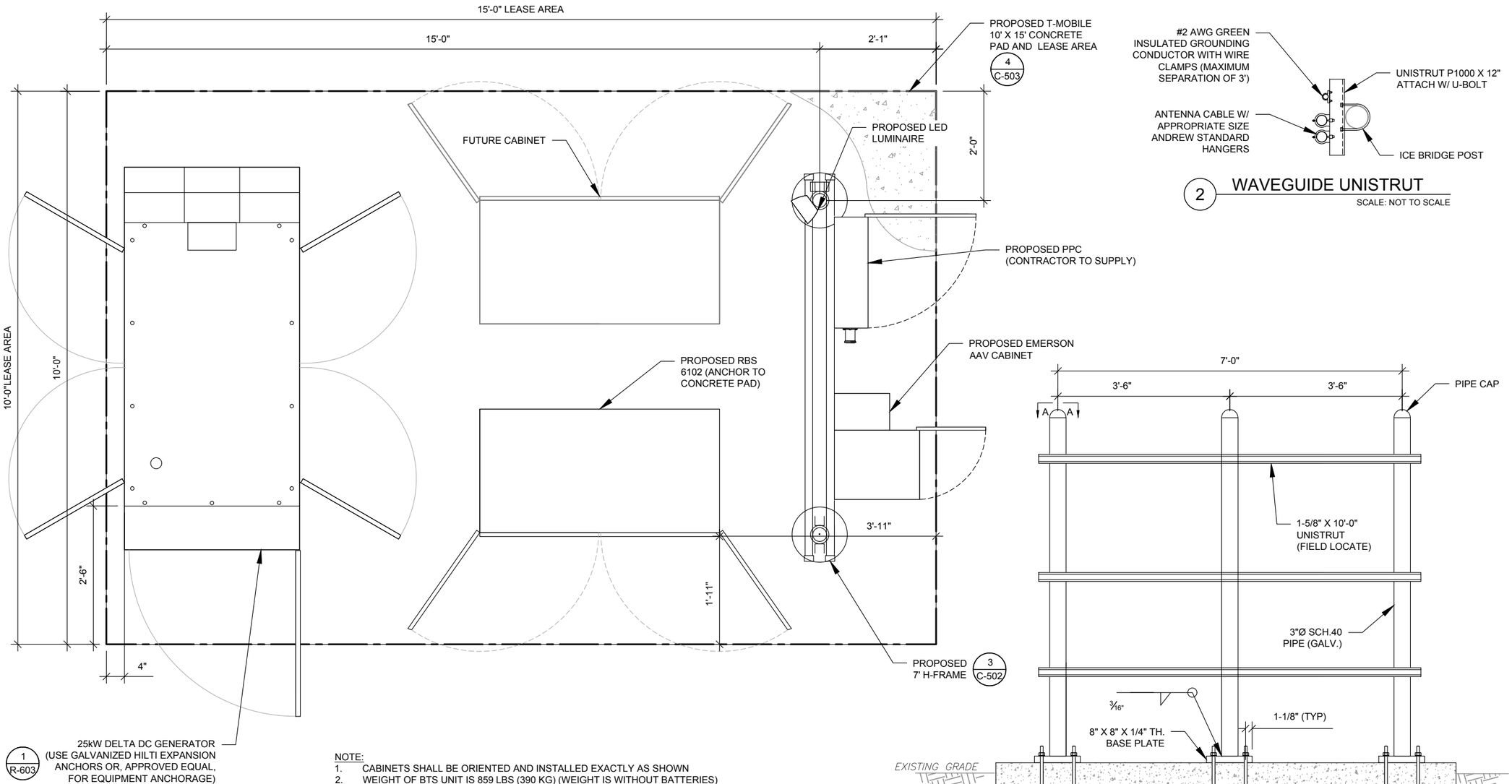
APPROVED BY:	PPB
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

ANTENNA INFORMATION & SCHEDULE

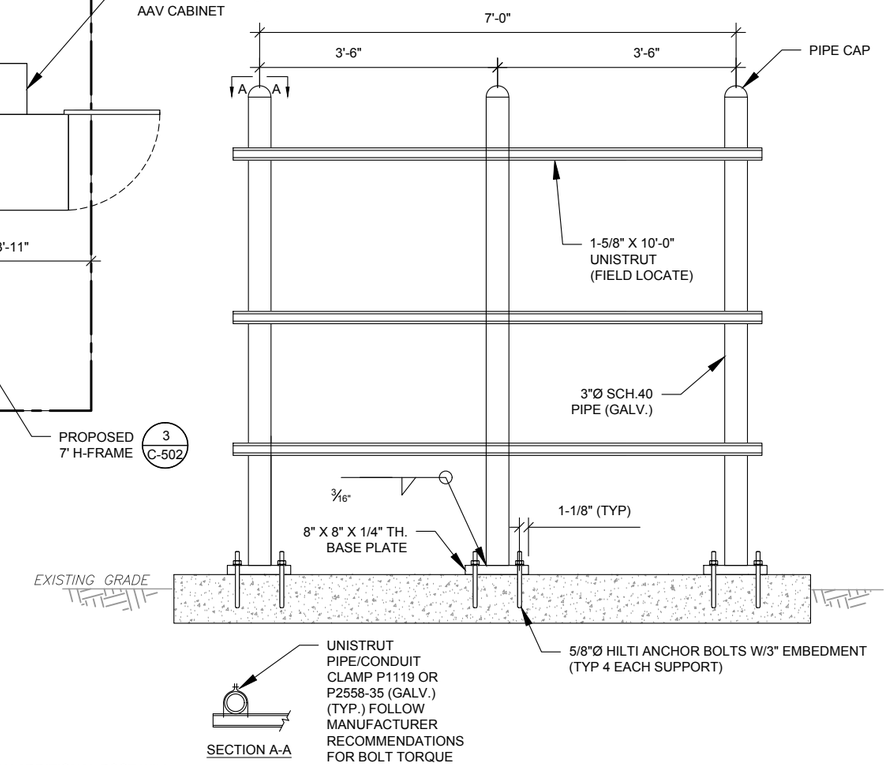
SHEET NUMBER:	REVISION:
C-501	0



NOTE:
1. CABINETS SHALL BE ORIENTED AND INSTALLED EXACTLY AS SHOWN
2. WEIGHT OF BTS UNIT IS 859 LBS (390 KG) (WEIGHT IS WITHOUT BATTERIES)

1 DETAILED EQUIPMENT LAYOUT
SCALE: NOT TO SCALE

2 WAVEGUIDE UNISTRUT
SCALE: NOT TO SCALE



H-FRAME NOTES:

1. IF IT IS NECESSARY TO EXTEND THE H-FRAME, AN ADDITIONAL POST WILL ALWAYS BE REQUIRED.
2. PROPOSED UNISTRUTS TO BE FIELD CUT AND SHOULD NOT EXTEND MORE THAN 6 INCHES BEYOND THE LAST POST.
3. SPRAY ENDS OF UNISTRUT WITH COLD GALVANIZING SPRAY PAINT, ALLOW TO DRY, THEN COVER WITH RUBBER PROTECTIVE CAPS FOR SAFETY.
4. UNISTRUT TO BE CUT FLUSH WITH NO SHARP OR JAGGED EDGES.
5. ALL PROPOSED HARDWARE TO BE MOUNTED PER MANUFACTURERS SPECS.

3 TYPICAL H-FRAME DETAIL
SCALE: NOT TO SCALE

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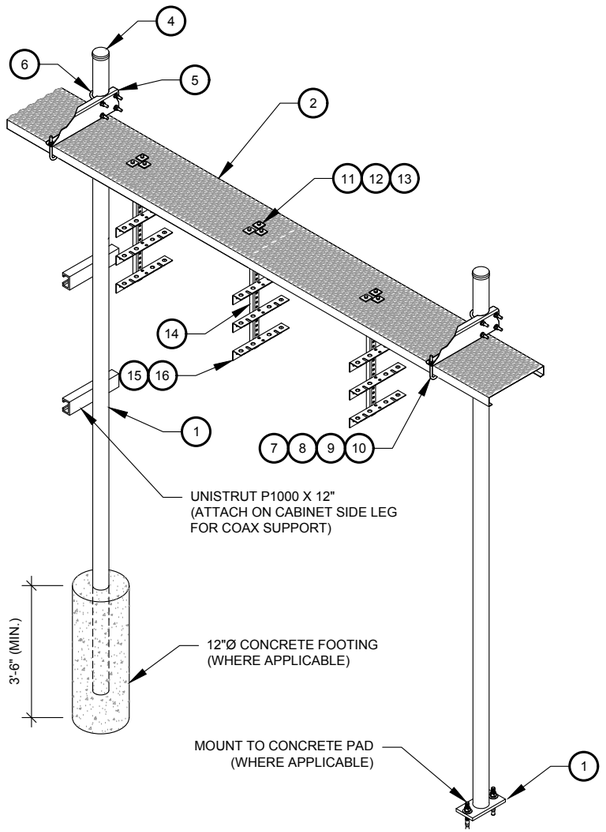
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	0

CONSTRUCTION NOTE:

1. INSTALL ICE BRIDGE TO ALLOW 7 FEET CLEARANCE ABOVE GRADE TO LOWEST APPURTENANCE.

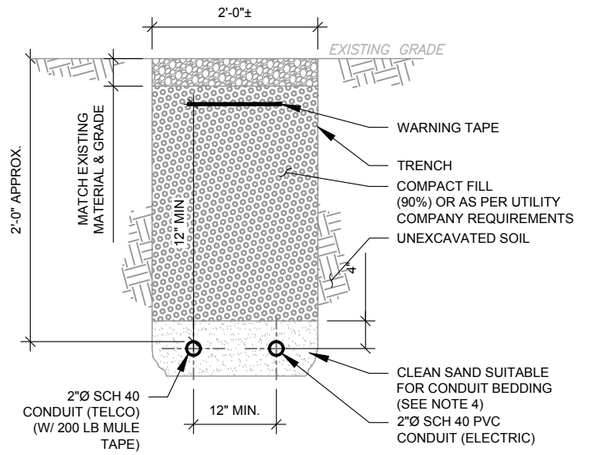


WB-K210-B WAVEGUIDE BRIDGE KIT - BILL OF MATERIALS (INCLUDED WITH KIT UNLESS NOTED OTHERWISE)					
ITEM	PART NUMBER	DESCRIPTION	ITEM	PART NUMBER	DESCRIPTION
1	MF126.01 MF-130	10'-4" COLUMN & BASE SHOE* 13'-4" PIPE COLUMN	9	GWL-04	1/2" GALV LOCK WASHER
2	WB-CY210	SAFETY GRATING 24" X 10'	10	GN-04	1/2" GALV HEX NUT
3	WBK110BHK	HARDWARE KIT (ITEMS 4-16)	11	GB-03205	3/8" X 2" GALV BOLT KIT
4	PC-034	PIPE CAP 3-1/2"	12	MT-387	SQUARE WASHER, 1-1/2" X 1-1/2" W/ 7/16" HOLE
5	WBLB243.08	24" WAVEGUIDE BRIDGE SUPPORT BRACKET	13	GWF-03	3/8" GALV FLAT WASHER
6	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT	14	WBT243.01	VERTICAL TRAPEZE SECTION
7	WB-JB-6	1/2" J-BOLT	15	GB-03105	3/8" X 1" GALV BOLT KIT
8	GWF-04	1/2" GALV FLAT WASHER	16	WBT243.02	HORIZONTAL TRAPEZE SECTION

CONTRACTOR SHALL USE PARTS MANUFACTURED BY COMMSCOPE OR APPROVED EQUIVALENT.
*BASE SHOE NOT INCLUDED IN WB-K210-B KIT, ORDER COLUMN SEPARATELY OR KIT WB-K210-S.

1 WAVEGUIDE BRIDGE KIT

SCALE: NOT TO SCALE

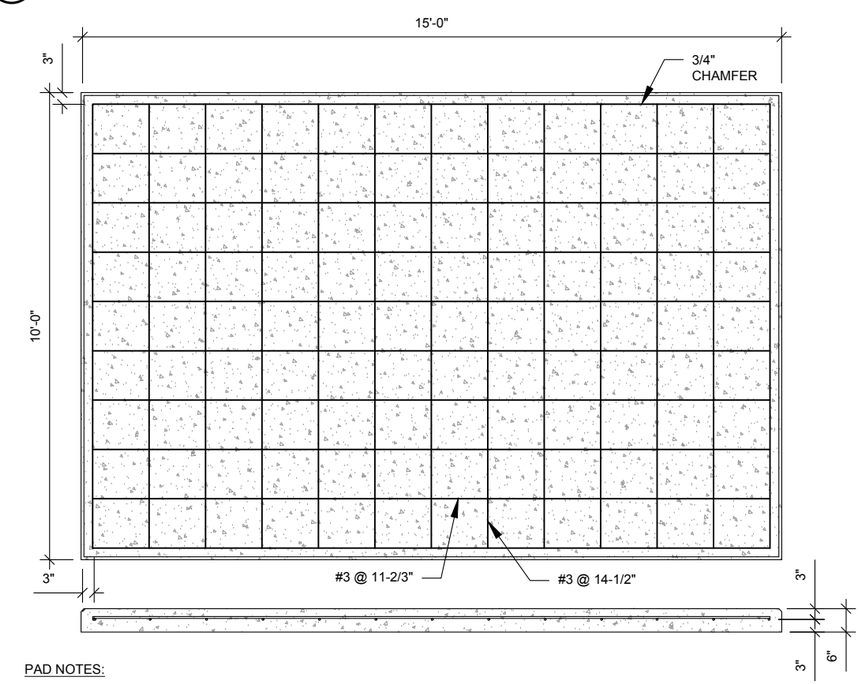


TRENCH NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
4. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

2 TELCO AND POWER CONDUIT JOINT TRENCH

SCALE: N.T.S.

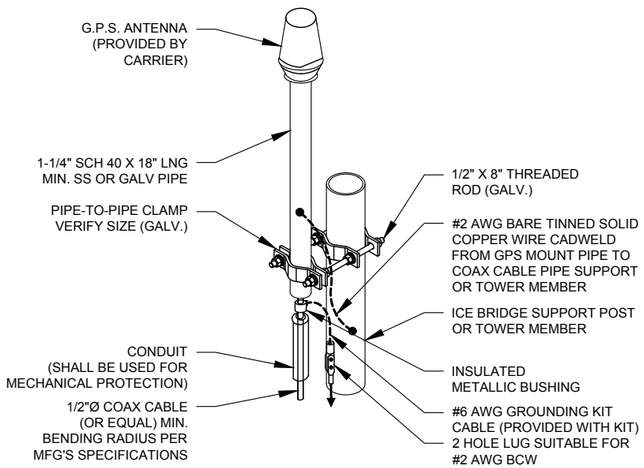


PAD NOTES:

1. PADS SHALL BE PRE-CAST MATCHING THIS DESIGN WHERE ALLOWED BY LOCAL JURISDICTION.
2. REFER TO CONCRETE & REINFORCED STEEL NOTES ON SHEET G-002 & ATC SPEC 033000 FOR CAST-IN-PLACE PADS.

4 REINFORCED PAD LAYOUT

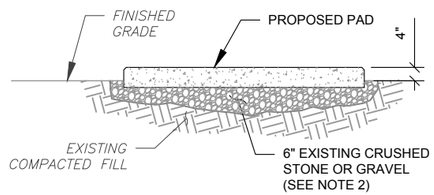
SCALE: N.T.S.



NOTE:
1. GPS SHALL BE PLACED WITH CLEAR SIGHT LINE TO THE SOUTHERN SKY.
2. CONTRACTOR TO SUPPLY COAX FOR GPS UNIT.

3 GPS ANTENNA ATTACHMENT DETAIL

SCALE: NOT TO SCALE



PAD NOTES:

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETRIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. MECHANICALLY COMPACT FOOTPRINT OF PAD PLUS 2' PERIMETER.
3. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

5 GRAVEL PREPARATION

SCALE: N.T.S.

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CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	1

GROUNDING NOTES:

1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS SHALL BE CONTINUOUS IN LENGTH AND SHALL BE BONDED TO EACH ENCLOSURE THEY PASS THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING CONDUCTOR.

2. GROUNDING CONDUCTORS SHALL:
   - A. BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
   - B. BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
   - C. AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.
   - D. NOT HAVE ANY U-SHAPED RUNS.
   - E. BE IN NON-METALLIC CONDUIT ONLY, IF IN CONDUIT.
   - F. BE PLACED THROUGH NON-METALLIC SLEEVES IN FLOORS, WALLS, CEILINGS, ETC.
   - G. PROTECTED IN NON-METALLIC CONDUIT WHERE EXPOSED ABOVE GRADE.

2. INSTALL ALL GROUNDING RINGS AND RADIALS WITH CONDUCTIVE CEMENT, SANKOSHA AS DISTRIBUTED BY ELECTRIC MOTION COMPANY, INC., WINSTED, CT 06098, OR AS SPECIFICALLY INDICATED. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

3. GROUND RINGS SHALL BE:
   - A. MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
   - B. MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
   - C. WITH MINIMUM 12" BEND RADII.
   - D. WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC WELDING.
   - E. BONDED TO A SINGLE POINT GROUND (SPG) WITH A SINGLE WIRE AS INDICATED ON DRAWINGS.

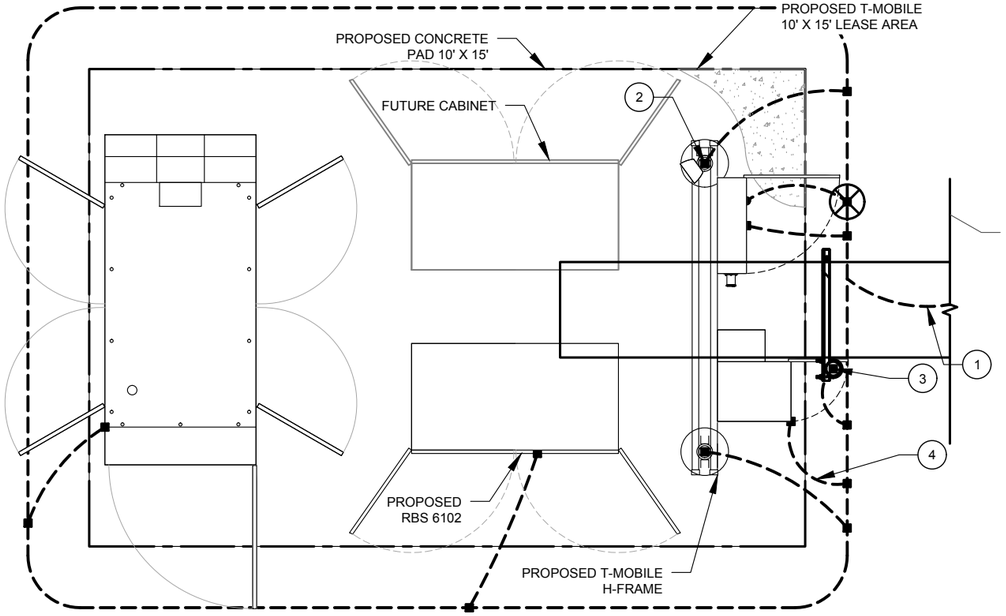
4. GROUND RODS SHALL BE:
   - A. MINIMUM 5/8" DIAMETER.
   - B. MINIMUM 10' LONG.
   - C. COPPER-CLAD GALVANIZED STEEL OR STAINLESS STEEL.
   - D. PLACED IN UNDISTURBED SOIL AND BELOW THE FROST LINE.
   - E. INSTALLED WITH MINIMUM SEPARATION DISTANCE OF TWICE THE DEPTH OF THE ROD(S), OR AS INDICATED ON DRAWINGS.
   - F. MINIMUM TWO (2) RODS ON THE TOWER RING OR ONE (1) PER LEG WHICHEVER IS LARGER, MINIMUM FOUR (4) RODS ON EVERY EQUIPMENT BUILDING RING WITH ONE AT EACH CORNER OR AS INDICATED, MINIMUM ONE (1) ROD FOR POWER SERVICE GROUNDING ELECTRODE, AND MINIMUM ONE (1) ROD AT END OF EACH RADIAL.

5. CONDUCTIVE OBJECTS, SUCH AS FENCES, SHALL BE BONDED TO THE GROUNDING SYSTEM IF WITHIN 20' OF THE TOWER GROUNDING SYSTEM, OR 5' OF ANY OTHER GROUNDED COMPONENT.

EQUIPMENT POWER NOTES:

1. 2" CONDUIT W/ 3-#3/0 CU, (1) #6 AWG G, PPC POWER
2. 2" CONDUIT FOR TELCO FEEDER SERVICE TO TELCO SOURCE PER UTILITY
3. 2-#12, 1 #12G IN 3/4" CONDUIT FROM RAC24 TO 6102
4. 3-#1, 1-#8 IN 2" CONDUIT
5. 2" CONDUIT, FOR CAT5

NOTE:
ALL EQUIPMENTS' SHORT-CIRCUIT CURRENT RATING SHALL EXCEED AVAILABLE FAULT CURRENT PER UTILITY



1 DETAILED GROUNDING PLAN

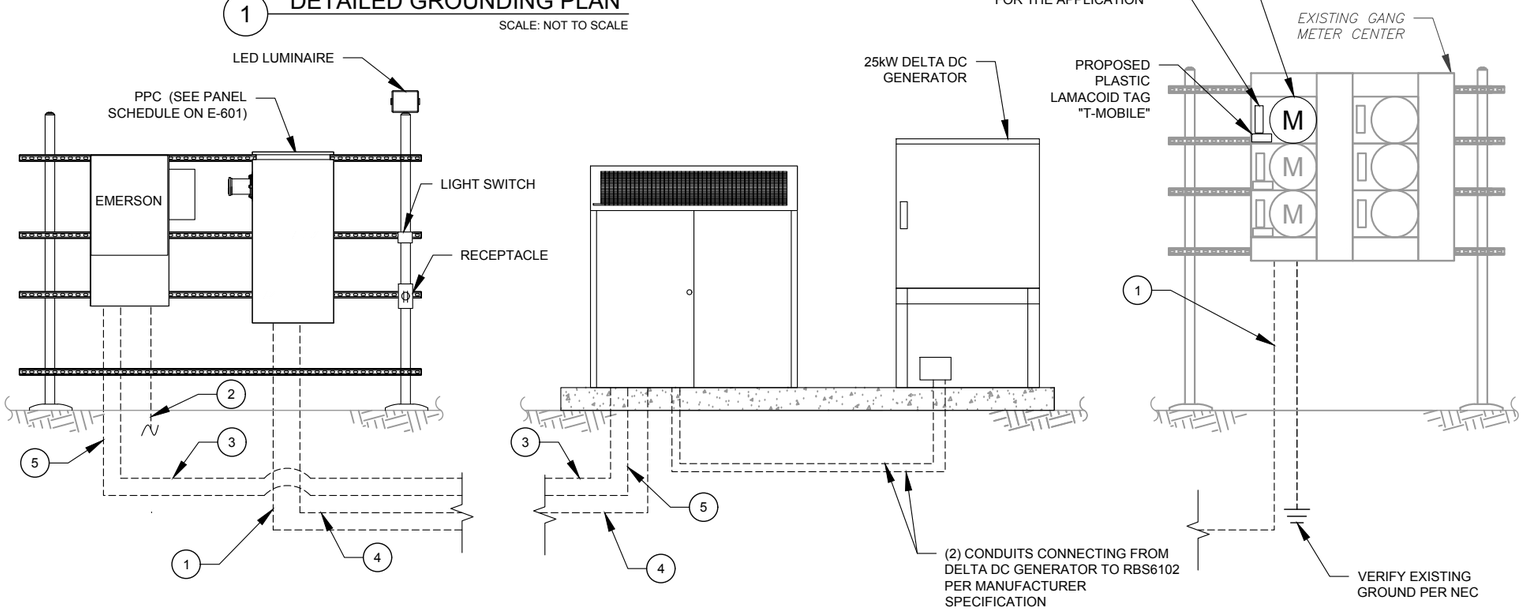
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

- EXISTING GROUND WIRE
- GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL WELD
- COPPER GROUND ROD
- TEST WELL

GROUNDING KEYED NOTES:

1. BOND TO TOWER GROUND RING
2. #2 AWG BOND FROM VERTICAL H-FRAME AND ICE BRIDGE POST TO EXTERNAL GROUND RING (TYP. EVERY POST).
3. #2 AWG SBTC BOND FROM TOWER GROUND RING TO EQUIPMENT.
4. EQUIPMENT BOND TO GROUND RING (TYP.)
5. 5/8Ø" X 10 FT GROUND ROD.



2 EQUIPMENT POWER AND TELCO SCHEMATIC

SCALE: N.T.S.

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	09/21/18

ATC SITE NUMBER:
413850

ATC SITE NAME:
GOSHEN (BRASS MOUNTAIN) CT

SITE ADDRESS:
438 NORTH STREET
GOSHEN, CT 06756

SEAL:

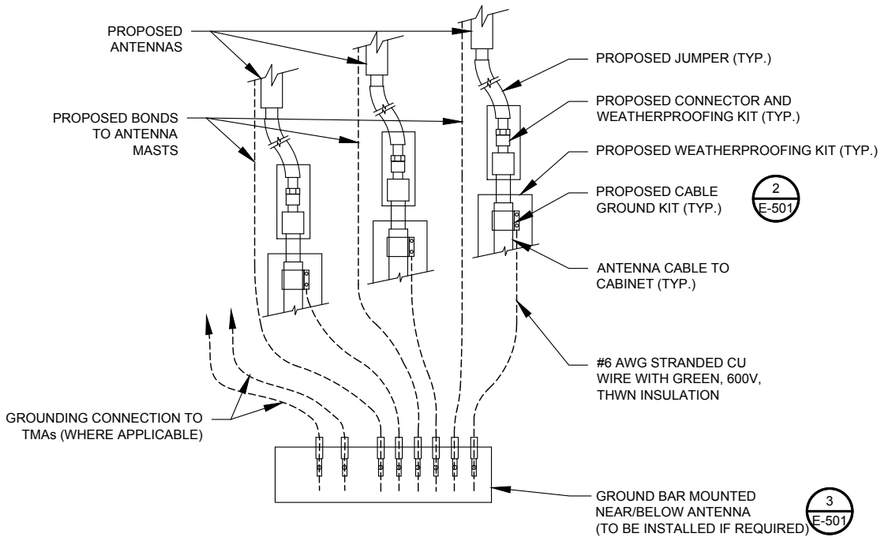
Authorized by "EOR"
Oct 9 2018 6:54 AM cosign

T-Mobile

DRAWN BY:	EB
APPROVED BY:	PPB
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

GROUNDING PLAN AND SCHEMATIC

SHEET NUMBER:	REVISION:
E-101	0

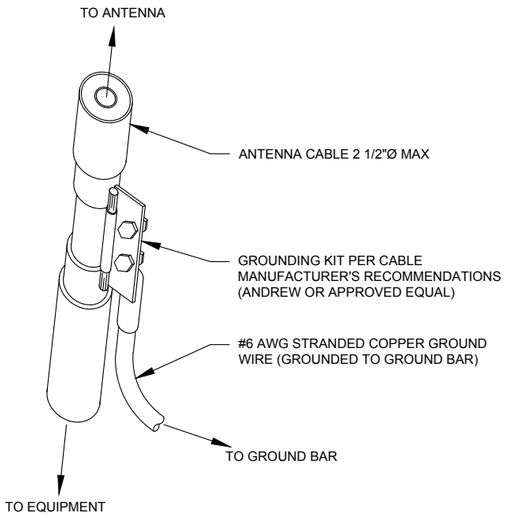


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

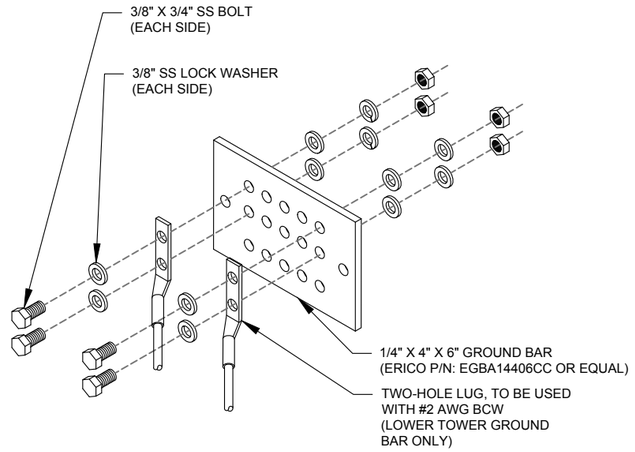


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE

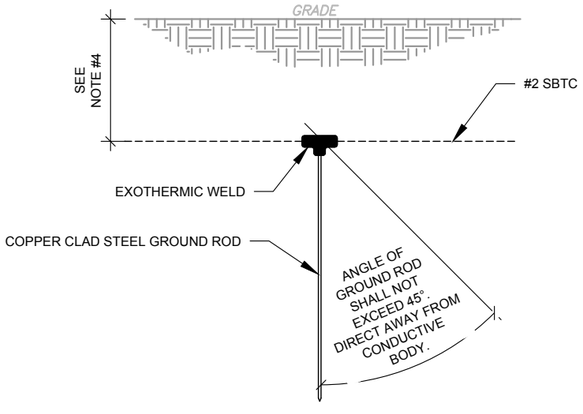


GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

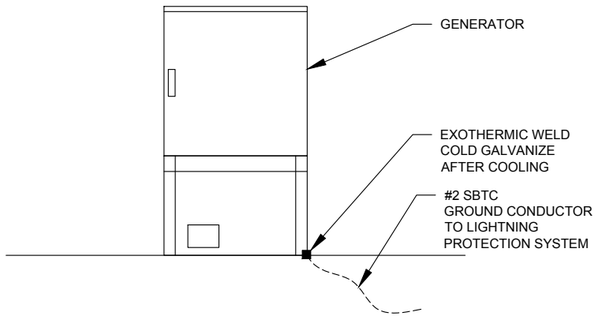


NOTES:

1. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.
2. COORDINATE UTILITY, LOCATE BEFORE DIGGING.
3. CONDUIT TRENCHING DEPTHS AT 36" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.
4. ALL RING AND RADIAL DEPTHS AT 30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.

4 GROUND ROD DETAIL

SCALE: NOT TO SCALE



GENERATOR INSTALLATION NOTE:

INSTALL GENERATOR WITH ALL SUPPLIED ACCESSORIES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SPECIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, ACCESSORIES FOR THE EXHAUST SYSTEM, FUEL SYSTEM, ENCLOSURE INTEGRITY (CAPS, PLUGS, COVERS, ETC.), ELECTRICAL CONNECTIONS, AND GROUNDING CONNECTIONS.

5 GENERATOR GROUNDING

SCALE: NOT TO SCALE

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	09/21/18

ATC SITE NUMBER:
413850

ATC SITE NAME:
GOSHEN (BRASS MOUNTAIN) CT

SITE ADDRESS:
438 NORTH STREET
GOSHEN, CT 06756

SEAL:

Authorized by "EOR"
Oct 9 2018 6:54 AM cosign

T-Mobile

DRAWN BY:	EB
APPROVED BY:	PPB
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

PANEL DESIGNATION:	***PPC***	TYPE:	LIGHTING & APPLIANCE	SYSTEM:	120/240V, 1Ø, 3W, 20 CKT	LOCATION:	T-MOBILE LEASE AREA
		MOUNTING:	SURFACE	MAIN BREAKER (MB):	200A MCB		
		ENCLOSURE:	NEMA 3R	MAIN BUS RATING:	200A	PANEL NOTES:	INTERGRATED COMMUNICATION
				MIN. A.I.C. RATING:	22KAIC		POWER PANEL (PPC)

CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT								FEEDER OR BRANCH CIRCUIT							BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
			BREAKER		CIRCUIT			POLE	CIRC. NOTES		CIRC. NOTES	POLE	CIRCUIT			BREAKER				
A	B		AMPS	POLES	WIRE	GND	COND.	NO.				NO.	COND.	GND	WIRE	POLES	AMPS		A	B
9.60		6102 Cabinet	100	2	3-#1	1-#8	2"	1				2	3/4"	1-#12	2-#12	1	15	RECEPTACLE	0.18	
	9.60							3				4	3/4"	1-#12	2-#12	1	15	LIGHT		0.50
0.00								5				6							0.00	
	0.00							7				8								0.00
0.00								9				10							0.00	
	0.00							11				12								0.00
0.00								13				14							0.00	
	0.00							15				16								0.00
0.00								17				18							0.00	
	0.00							19				20								0.00
9.6	9.6								**A**	**B**	**TOTAL**								0.2	0.5
									9.8	10.1	19.9	CONNECTED LOAD (kVA)								
									9.8	10.1	19.9	DEMAND LOAD (kVA)						*DERATING FACTOR (80%)*		
																		DEMANDLOAD SIZING:	*105 AMPS*	

1 PANEL SCHEDULE

SCALE: NOT TO SCALE

AMERICAN TOWER®

A.T. ENGINEERING SERVICE, PLLC

3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
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REV.	DESCRIPTION	BY	DATE
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Authorized by "EOR"
Oct 9 2018 6:54 AM

cosign

T-Mobile

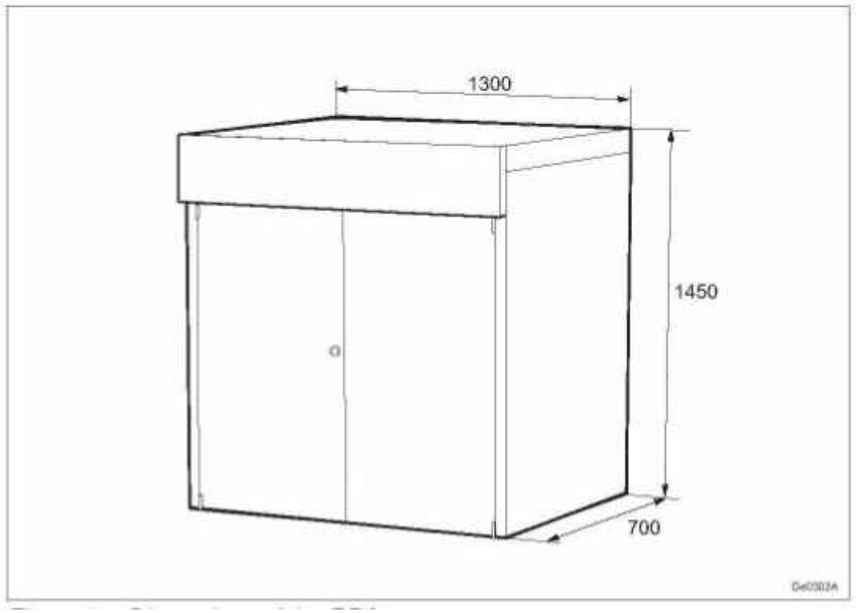
DRAWN BY:	EB
APPROVED BY:	PPB
DATE DRAWN:	09/21/18
ATC JOB NO:	12609407

PANEL SCHEDULE

SHEET NUMBER:	REVISION:
E-601	0

Table 1 Dimensions, Weight, and Color

Dimensions	
Height	1450 mm
Width	1300 mm
Depth	700 mm
Weight	
RBS (standard equipped) without backup batteries	390 kg
Color	
Gray	Reference number: RAL 7035, glossy



1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

Indoor and Outdoor Cell Site Solutions for T-Mobile

Technical Specifications

Electrical	Indoor Solution	Outdoor Solution
System Voltage, Nominal	120 VAC single phase	
Output Voltage	-42 VDC to -58 VDC	
System Capacity	19" 1 RU up to 10 A	19" 1 RU up to 8 A
Rectifier Capacity	0.5 kW @ 120 VAC	0.4 kW @ 120 VAC
DC Distribution	(1) wallmount 10 position GMT type fuse panel with (10) GMT fuses, up to 15 A	
Controller	SCU+ controller	

Physical Characteristics		
Framework Type	Relay rack	NetXtend™ Compact Enclosure
Available Space	1 RU 19" W	Up to 14 RU, 19" W
Dimensions (H x W x D)	DC power system: 1.7" x 19" x 12" Solution: 10.5" x 19" x 15.6"	Enclosure: 24" x 24" x 16" Battery tray: 22" W x 13" D
Mounting	Rack or wall mount	Wall or H-frame, pole mount (wall-mount kit included)
Weight, Equipped	System: 35.5 lb., w/out batteries Four (4) batteries: 36 lb. total	Enclosure: 64 lb., w/out batteries Four (4) batteries: 36 lb. total
Access	Front for batteries, control and distribution, rear for AC	Front

Environmental		
Climate System	Fan-cooled front to rear	Heat Exchanger
Operating Temp.	-40 °C to +75 °C *	-40 °C to +52 °C
Storage Temp.	-40 °C to +75 °C	-40 °C to +75 °C
Relative Humidity	0% to 95% non-condensing	100%
EMI/RFI	Conforms to FCC rules Part 15, Subpart B, Class B and EN55022 Class B, radiated and conducted	
Safety Compliance	cULus 60950 recognized NEBS Level 3 Compliance	cULus 60950 Recognized NEBS Level 3 Compliance Enclosure: cULus Listed GR-487

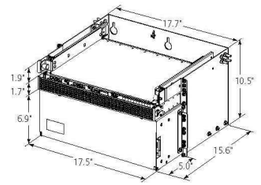
* See rectifier specification for any derating. Operating and storage temperatures for batteries installed in the battery cabinet are provided by the battery manufacturer.

Ordering Information

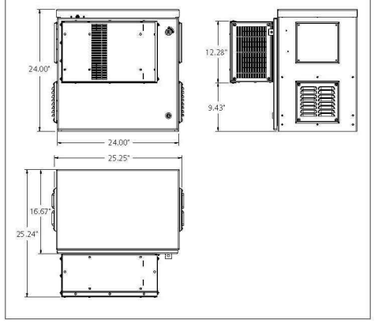
Indoor Solution		Outdoor Solution	
582136600SK010		F2013074	
Equipped with the following:		*Equipped with the following:*	
1 EA	NetSure™ 211 power system	1 EA	NetXtend™ Compact, NXC2416AAV1H05BB3
2 EA	500 W rectifiers	1 EA	NetSure™ 211 power system
1 EA	Wall mount bracket	2 EA	500 W rectifiers
1 EA	Battery cabinet	1 EA	19" rack-mount, slide-out tray
1 EA	19" rack-mount, slide-out tray	1 EA	AC outlet mounting bracket
		2 EA	20 A, 120 VAC outlets
		1 EA	Wall-mounting kit
Accessories			
547681	4 EA, Battery, EnerSys NP12-12, 12 AH bat mod	547681	4 EA, Battery, EnerSys NP12-12,12 AH bat mod

Diagrams

Indoor Solution



Outdoor Solution



EmersonNetworkPower.com/EnergySystems (North America)
EmersonNetworkPower.eu/EnergySystems (EMEA)

2 CABINET CONFIGURATION
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

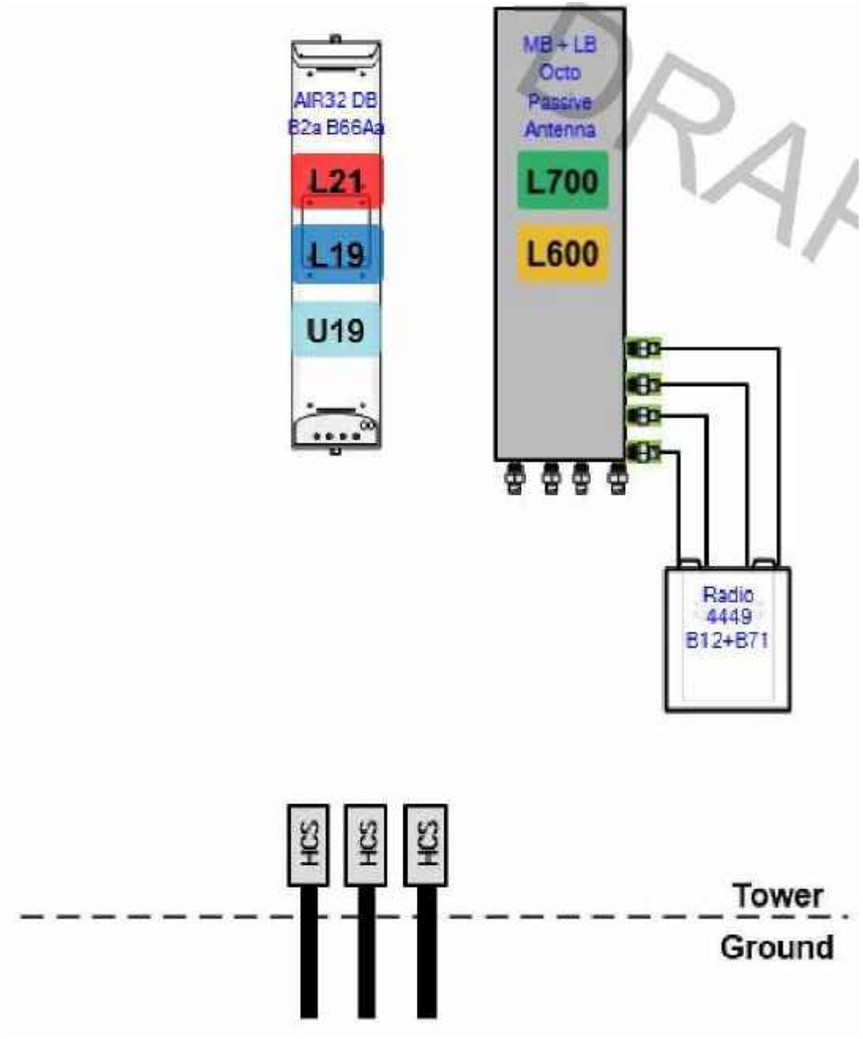
SHEET NUMBER: R-601

REVISION: 0

Existing RAN Equipment
----- This section is intentionally blank. -----

Proposed RAN Equipment		
Template: 4Sec-67D97DB		
Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Ancillary Equipment
Baseband	DUW30 U1900 / BB 5216 L2100 L1900 L700 L600	
Hybrid Cable System		Ericsson 6x12 HCS *Select Length & AWG* (x4)
Multiplexer	XMU (x2)	
RAN Scope of Work:		

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE



2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: 0

PowerGen 25000

DC Generator Product Features

- 25kW DC Standby Power with telcom HE rectifiers
- Direct connect to positive ground Site Support Cabinet -48V DC plant
- Site -48V DC bus powered battery charger of 12V engine battery.
- Telcom grade enclosure with noise reduction features
- Status/alarming via telcom standard dry contacts, WEB GUI/SNMP
- Easy access installation and maintenance.
- OBD2 Port for GEOTAB monitoring
- Maintance interval over 500hrs

www.deltaww.com

DELTA
Smarter. Greener. Together.

DELTA
Smarter. Greener. Together.

Specifications

Model	PowerGen 25000 DC Generator
1. General	
Rated Power	25 kW @ 52 V_{DC}
Dimensions (W x H x D)	83" x 76" x 38" (with standard 250 gallon tank)
Weight	3240 lbs.
Fuel consumption	1.29 gallons/hour (50% load) 1.61 gallons/hour (75% load) 2.19 gallons/hour (100% load)
Acoustics	65 dB(A) at 7 meters
Cooling Air Flow	5500 ft^3 / minute
Output Voltage	-52 V_{DC} (Positive Ground, Configurable -48 to -56 V_{DC})
Voltage Regulation	+/- 1%
Ripple Voltage	< 250 mVp-p
User Interfaces	LCD with LED Indicators, Form C Alarm Dry Contacts WEB GUI and SNMP
Features	Auto start based site battery voltage (-48V default) Local manual/Emergency mode Configurable cycling exercise self-test Alarm renaming with configurable severity Generator DC output energy meter Engine run hour meter Engine start counter.
Safety	UL LISTED including UL142 fuel tank
EMC	FCC Part 15 Class A
2. Engine	
Make	Perkins 404D-22TG (Turbocharged Diesel in-line 4 cyl.)
Power	30 kW @ fixed 1800 RPM
Exhaust Flow	265 ft^3 / minute (4.34 m^3 / minute)
Oil Capacity	10.6 liters
Coolant Capacity	9.3 liters
Engine Battery	Yuasa YBX9020 (12V , AGM type)
Engine Battery Charger	Delta 48V DC -to- 12V DC
3. Alternator	
Make	Stamford PI144H (4 poles, insulation class H)
Voltage Regulator	AS480 (± 1%, excited AVR)
4. Environment	
Operating temperature	-25°C to +45°C (-13°F to +113°F) Derate power 10% per 5°C above +45°C
Altitude	Derate power 3% per 1000 feet above 3000 feet
Humidity (relative)	95%, non-condensing (Max.)
5. PowerGen Part	
Stanard (250 gallon tank)	ESOG480-CCA02

*All specifications are subject to change without prior notice

Delta Group Website:
www.deltaww.com

Product Website:
www.deltapowersolutions.com

United States of America & Canada
Delta Greentech (USA) Corp.
2925 E. Plano Parkway
Plano (Texas) 75074
dgasales@deltaww.com
877-DELTA-08 (877-335-8208)

Central America
Delta Electronics International Mexico, S.A. de C.V.
Via Gustavo Baz No. 2160
Col. Industrial La Loma Tlainepartla
CP 54060, Edo de Mexico

South America
Delta Greentech (Brasil) S.A
Rua Itapeva, 26 - 3 andar - Bela Vista
01332-000 - São Paulo - SP - Brasil

1 PROPOSED GENERATOR
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	0

PRODUCT DATASHEET
APXVAARR24_43-U-NA20

RADIO FREQUENCY SYSTEMS
The Clear Choice®

Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

FEATURES / BENEFITS

This antenna provides a 8 Port multi-band flexible platform for advanced use for flexible use in deployment scenarios for encompassing 600MHz, 700MHz, AWS & PCS applications.

- **24 Inch Width For Easier Zoning**
- **Field Replaceable (Integrated) AISG RET platform for reduced environmental exposure and long lasting quality**
- **Superior elevation pattern performance across the entire electrical down tilt range**
- **Includes three AISG RET motors - Includes 0.5m AISG jumper for optional diasy chain of two high band RET motors for one single AISG point of high band tilt control.**
- **Low band arrays driven by a single RET motor**

Technical Features

LOW BAND LEFT ARRAY (617-746 MHZ) [R1]

Frequency Band	MHz	617-698	698-746
Gain	dBi	15.1	15.5
Horizontal Beamwidth @3dB	Deg	65	62
Vertical Beamwidth @3dB	Deg	11.4	10.4
Electrical Downtilt Range	Deg	0-12	0-12
Upper Side Lobe Suppression 0 to +20	dB	19	20
Front-to-Back, at +/-30°, Copolar	dB	25	24
Cross Polar Discrimination (XPD) @ Boresight	dB	19	19
Cross Polar Discrimination (XPD) @ +/-60	dB	5	3
3rd Order PIM 2 x 43dBm	dBc		-153
VSWR	-	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25
Maximum Effective Power per Port	Watt	250	250

LOW BAND RIGHT ARRAY (617-746 MHZ) [R2]

Frequency Band	MHz	617-698	698-746
Gain	dBi	14.8	15.1
Horizontal Beamwidth @3dB	Deg	65	62
Vertical Beamwidth @3dB	Deg	11.4	10.3
Electrical Downtilt Range	Deg	0-12	0-12
Upper Side Lobe Suppression 0 to +20	dB	19	20
Front-to-Back, at +/-30°, Copolar	dB	25	23
Cross Polar Discrimination (XPD) @ Boresight	dB	19	19
Cross Polar Discrimination (XPD) @ +/-60	dB	5	3
3rd Order PIM 2 x 43dBm	dBc		-153
VSWR	-	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25
Maximum Effective Power per Port	Watt	250	250

PRODUCT DATASHEET
APXVAARR24_43-U-NA20

RADIO FREQUENCY SYSTEMS
The Clear Choice®

Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

ELECTRICAL SPECIFICATIONS

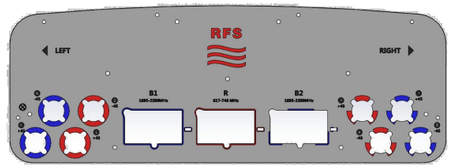
Impedance	Ohm	50.0
Polarization	Deg	±45°

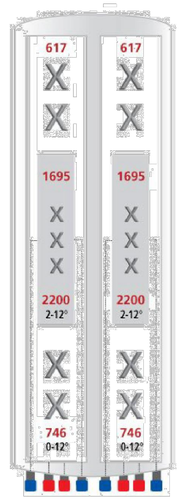
MECHANICAL SPECIFICATIONS

Dimensions - H x W x D	mm (in)	2436 x 609 x 222 (95.9 x 24 x 8.7)
Weight (Antenna Only)	kg (lb)	58 (128)
Weight (Mounting Hardware only)	kg (lb)	11.5 (25.3)
Shipping Weight	kg (lb)	80 (176)
Connector type		8 x 4.3-10 female at bottom + 6 AISG connectors (3 male, 3 female)
Adjustment mechanism		Integrated RET solution AISG compliant (Field Replaceable) + Manual Override + External Tilt Indicator
Mounting Hardware Material		Galvanized steel
Radome Material / Color		Fiber Glass / Light Grey RAL7035

TESTING AND ENVIRONMENTAL

Temperature Range	°C (°F)	-40 to 60 (-40 to 140)
Lightning protection		IEC 61000-4-5
Survival/Rated Wind Velocity	km/h	241 (150)
Environmental		ETSI 300-019-2-4 Class 4.1E





ORDERING INFORMATION

Order No.	Configuration	Mounting Hardware	Mounting pipe Diameter	Shipping Weight
APXVAARR24_43-U-NA20	Field Replace RET included (3)	APM40-5E Beam tilt kit (included)	60-120mm	80 Kg

1 ANTENNA SPEC SHEET
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

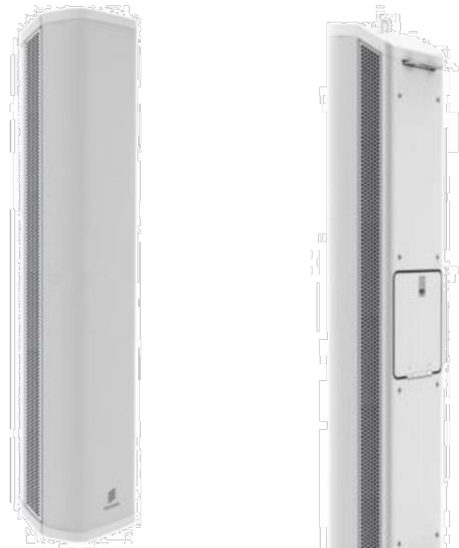
SHEET NUMBER: R-604

REVISION: 0

AIR 32
DUAL BAND, B2 AND B66A

- **B2 and B66A, 4x30W for each**
- IBW
  - B2: 40MHz
  - B66A: 70MHz
- **2x10 Gbps CPRI**
- Carrier capacity
  - 3 carriers, 60 MHZ OBW for B66A, 40 MHz for B2
- No Passive RF ports

AIR Unit Type	Height	Width	Depth with mounting points	Weight wo Installation Kit
AIR 32 (B2 Active / B66A Active, 1.4m)	59.26 In (1505 mm)	12.88 In (327 mm)	10.67 In (271 mm)	143.3 lbs (65 Kg)



1 ANTENNA SPEC SHEET
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-605	0

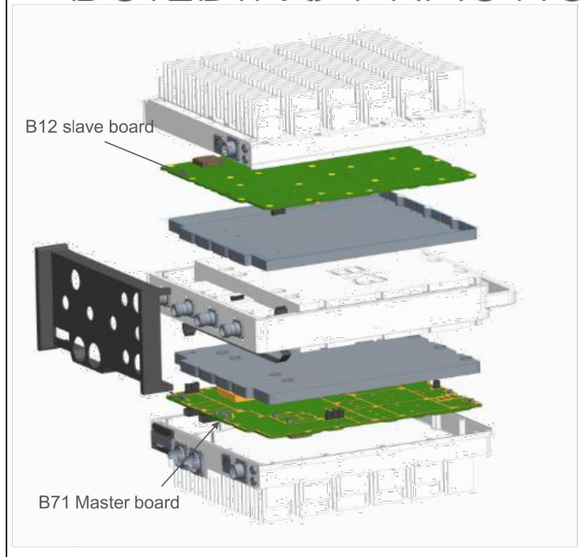
Dual Band Radio 4449 B12,B71

T-Mobile

Jadran Lokas

Sep. 29, 2017

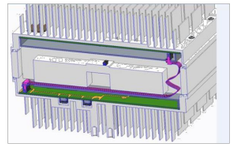
BUILDING PRACTICE CONCEPT



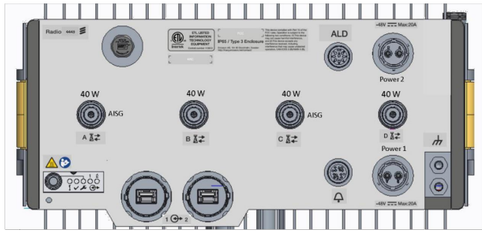
Optimized for dual band

Target size:

- Volume: 30+L
- 335mm width; 379.7mm height; 235+mm depth
- Weight: 74 lb +/- 4lb (33.6Kg +/- 1.8kg)
- 58+mm fin height



Filter double-sided chassis in-between B12 and B71 Radio boards



1 RRU SPEC SHEET

SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-606

REVISION: 0

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**149 ft Monopole**
ATC Site Name	:	**Goshen (Brass Mountain) CT, CT**
ATC Site Number	:	**413850**
Engineering Number	:	**12600629_C3_02**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTNH552A**
Carrier Site Number	:	**CTNH552A**
Site Location	:	**438 North Street** **Goshen, CT 06756-1206** **41.856300,-73.241600**
County	:	**Litchfield**
Date	:	**August 16, 2018**
Max Usage	:	**53%**
Result	:	**Pass**

Prepared By:
Kyle Brosius
TEP

Kyle Brosius

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS TUCKER
32608
LICENSED
PROFESSIONAL ENGINEER

08/16/2018

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EEI Project #15244, dated February 6, 2008
Foundation Drawing	EEI Project #15244, dated January 23, 2008
Geotechnical Report	JGI Project #J2075429, dated January 17, 2008

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	90 mph (3-Second Gust V_{ASD}) / 115 mph (3-Second Gust V_{ULT})
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
149.0	149.0	3	Alcatel-Lucent B13 RRH4x30-4R	T-Arm w/ Working Platforms	(18) 1 5/8" Coax	Verizon
		3	Alcatel-Lucent B66A RRH 4x45			
		1	RFS DB-C1-12C-24AB-0Z			
		6	Antel LPA-80080-6CF-EDIN-2			
		6	Commscope JAHH-65B-R3B			
		1	VZW Unused Reserve: 16,237 sq in			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
138.0	138.0	8	Ericsson Radio 4449 B12,B71	Platform w/ Handrails	(4) 1 1/4" Fiber (1) 1/2" Coax	T-Mobile
		1	RFS SC2-W100AB			
		4	Ericsson AIR 32 B2A/B66A			
		4	RFS APXVAARR24_43-U-NA20			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	31%	Pass
Shaft	53%	Pass
Base Plate	42%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,230.7	2,485.3	59%
Shear (Kips)	38.7	21.4	55%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
138.0	Ericsson Radio 4449 B12,B71	T-Mobile	1.369	1.159
	RFS SC2-W100AB			
	Ericsson AIR 32 B2A/B66A			
	RFS APXVAARR24_43-U-NA20			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

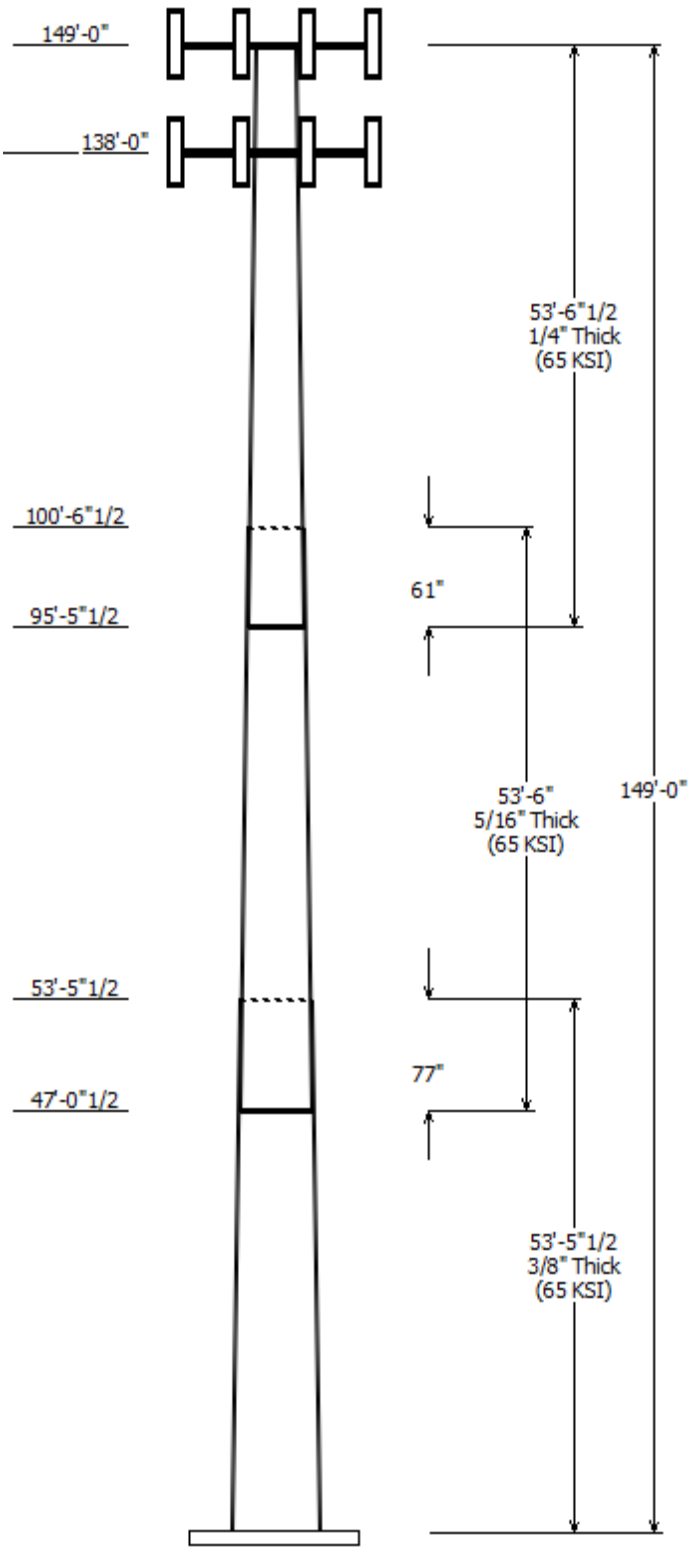
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

Pole :	413850	Code:	ANSI/TIA-222-G
Location :	Goshen (Brass Mountain) CT, CT		
Description :	149 ft EEI Monopole		
Client :	T-MOBILE	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	149.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.229027 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.460	44.75	57.00	0.375		0.000	18 Sides	65
2	53.500	34.59	46.85	0.313	Slip Joint	77.000	18 Sides	65
3	53.540	24.00	36.26	0.250	Slip Joint	61.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	149.000	1	VZW Unused Reserve: 16,237
149.000	149.000	6	Commscope JAHH-65B-R3B
149.000	149.000	1	RFS DB-C1-12C-24AB-0Z
149.000	149.000	3	Alcatel-Lucent B66A RRH 4x45
149.000	149.000	3	Alcatel-Lucent B13 RRH4x30-4R
149.000	149.000	3	Flat T-Arm w/ Working
149.000	149.000	6	Amphenol Antel LPA-80080-
138.000	138.000	4	RFS APXVAARR24_43-U-NA20
138.000	138.000	4	Ericsson AIR 32 B2A/B66A
138.000	138.000	1	RFS SC2-W100AB
138.000	138.000	8	Ericsson Radio 4449 B12,B71
138.000	138.000	1	Flat Platform w/ Handrails

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	138.0	1 1/4" Fiber	No
0.000	138.0	1/2" Coax	No
0.000	149.0	1 5/8" Coax	No

Load Cases

1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

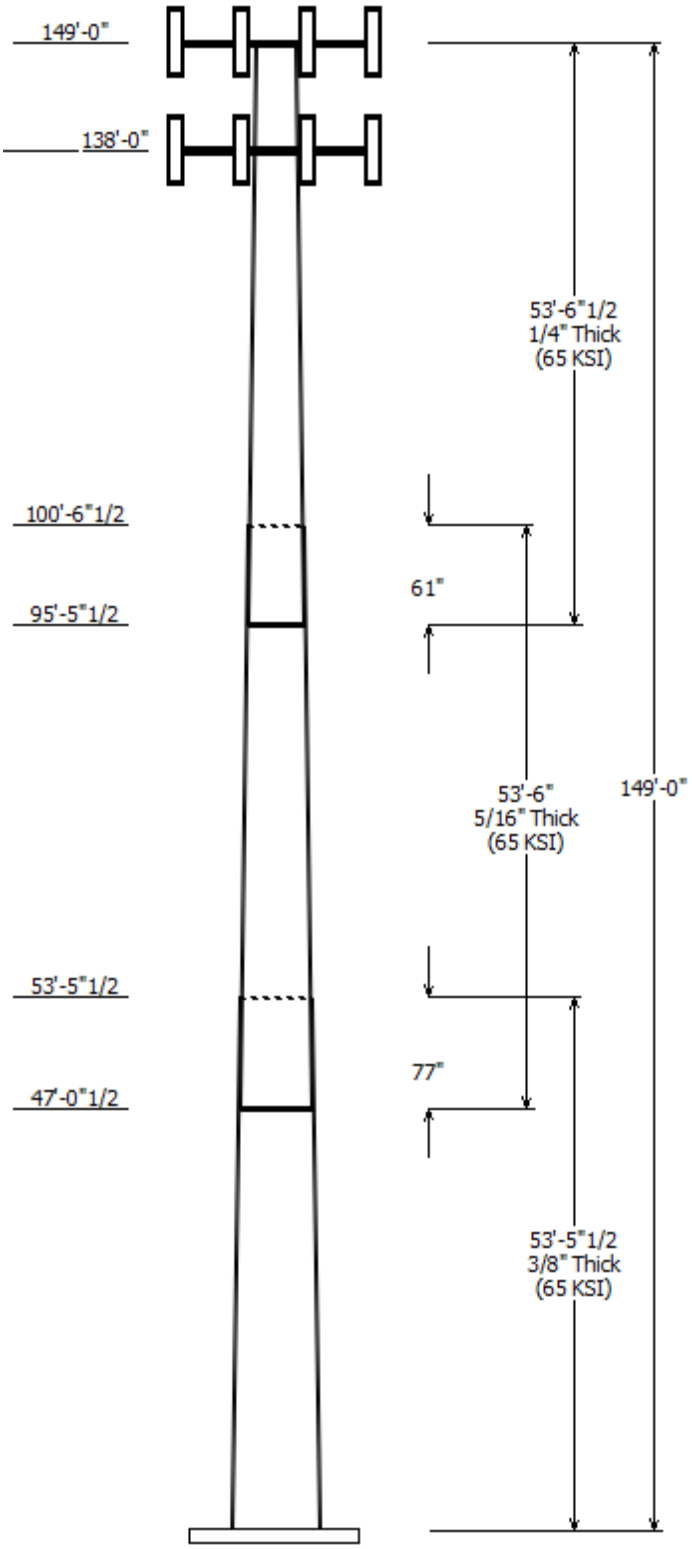
Reactions

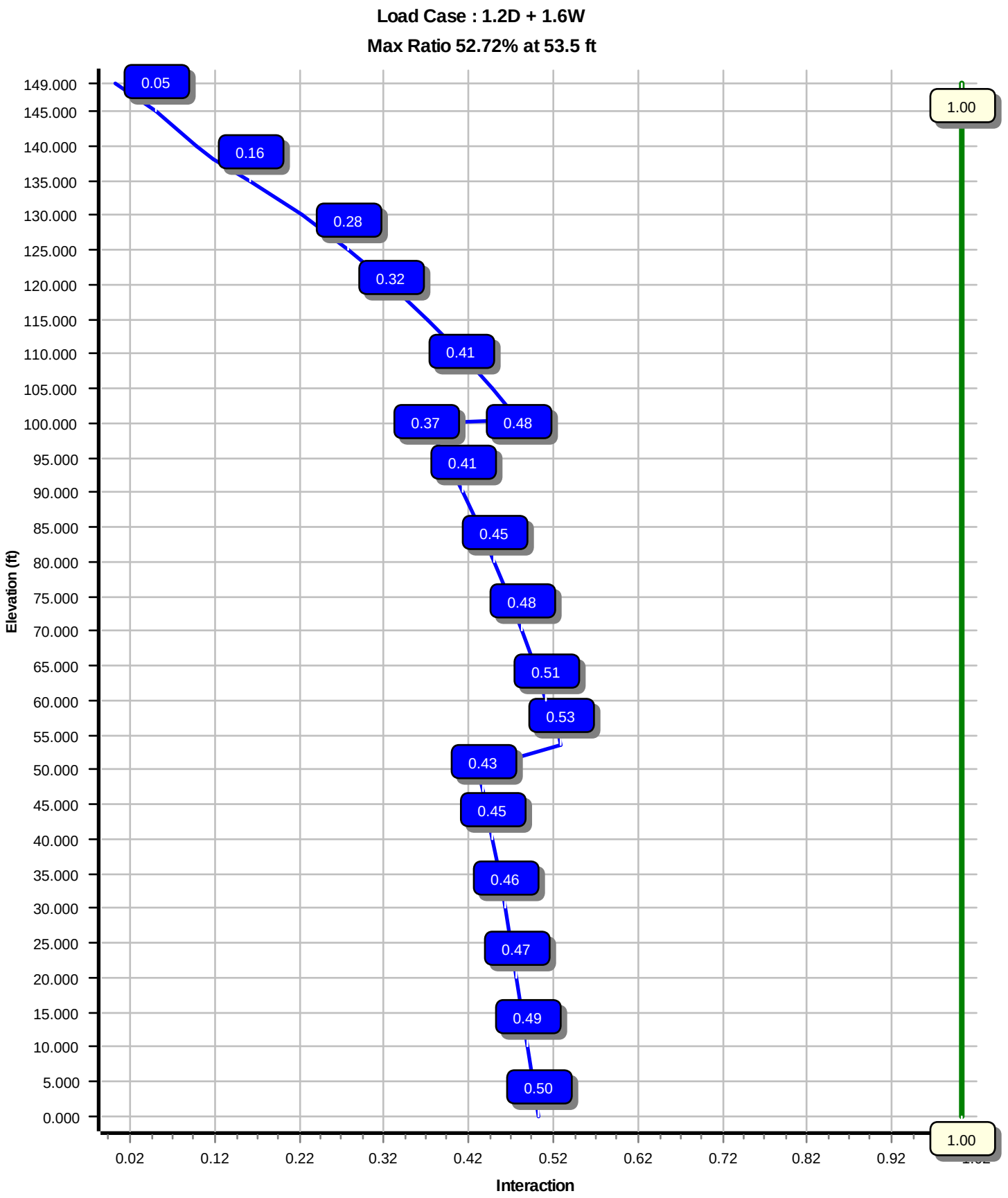
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2485.30	21.43	38.91
0.9D + 1.6W	2462.65	21.42	29.18
1.2D + 1.0Di + 1.0Wi	394.88	3.78	66.48
(1.2 + 0.2Sds) * DL + E ELFM	173.33	1.39	38.66
(1.2 + 0.2Sds) * DL + E EMAM	331.95	2.62	38.66
(0.9 - 0.2Sds) * DL + E ELFM	171.46	1.39	26.90

(0.9 - 0.2Sds) * DL + E EMAM	328.14	2.62	26.90
1.0D + 1.0W	686.60	5.95	32.45

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000




Load Case : 1.2D + 1.6W
Max Ratio 52.72% at 53.5 ft
Elevation (ft)
149.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.05
0.16
0.28
0.32
0.41
0.37
0.48
0.41
0.45
0.48
0.51
0.53
0.43
0.45
0.46
0.47
0.49
0.50
1.00
1.00
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 413850 Code: ANSI/TIA-222-G

Site Name: Goshen (Brass Mountain) CT, CT Engineering Number:12600629_C3_02 8/16/2018 3:11:48 PM

Customer: T-MOBILE

Analysis Parameters

Location :	LITCHFIELD County, CT	Height (ft) :	149
Code :	ANSI/TIA-222-G	Base Diameter (in) :	57.00
Shape :	18 Sides	Top Diameter (in) :	24.00
Pole Type :	Taper	Taper (in/ft) :	0.229
Pole Manfacturer :	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	90 mph
Exposure Category:	B	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.11				
T_L (sec):	6	p:	1.3	C_s:	0.033
S_s:	0.180	S_1:	0.065	C_s Max:	0.033
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.192	S_{d1}:	0.104		

Load Cases

1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.460	0.3750	65		0.00	10,935	57.00	0.00	67.40	27302.4	25.39	152.00	44.75	53.46	52.82	13145.4	19.63	119.35	0.229027
2-18	53.500	0.3125	65	Slip	77.00	7,297	46.85	47.04	46.16	12630.7	25.02	149.92	34.59	100.54	34.01	5050.3	18.11	110.71	0.229027
3-18	53.540	0.2500	65	Slip	61.00	4,320	36.26	95.46	28.57	4682.0	24.17	145.05	24.00	149.00	18.84	1343.0	15.52	96.00	0.229027
				Shaft Weight		22,551													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
149.00	Alcatel-Lucent B13 RRH4x30-4R	3	0.000	0.000	57.80	2.140	0.67
149.00	Alcatel-Lucent B66A RRH 4x45	3	0.000	0.000	67.00	2.580	0.67
149.00	Amphenol Antel LPA-80080-6CF-	6	0.000	0.000	21.00	8.630	0.65
149.00	Commscope JAHH-65B-R3B	6	0.000	0.000	60.60	9.110	0.69
149.00	Flat T-Arm w/ Working Platform	3	0.000	0.000	300.00	14.400	0.67
149.00	RFS DB-C1-12C-24AB-0Z	1	0.000	0.000	32.00	4.060	0.67
149.00	VZW Unused Reserve: 16,237 sq	1	0.000	0.000	1604.00	112.85	1.00
138.00	Ericsson AIR 32 B2A/B66A	4	0.000	0.000	143.30	6.870	0.75
138.00	Ericsson Radio 4449 B12,B71	8	0.000	0.000	74.00	1.640	0.50
138.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
138.00	RFS APXVAARR24_43-U-NA20	4	0.000	0.000	127.90	20.240	0.63
138.00	RFS SC2-W100AB	1	0.000	0.000	22.00	4.800	1.00
Totals	Num Loadings:12	41			7098.80		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	149.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	138.00	4	1 1/4" Fiber	1.25	1.05	N	0.00	N	T-Mobile
0.00	138.00	1	1/2" Coax	0.63	0.15	N	0.00	N	T-Mobile

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	57.000	67.395	27,302.4	25.39	152.00	71.5	943.4	0.0	0.0
5.00		0.3750	55.855	66.033	25,679.2	24.85	148.95	72.2	905.5	0.0	1,135.1
10.00		0.3750	54.710	64.670	24,121.7	24.31	145.89	72.8	868.4	0.0	1,111.9
15.00		0.3750	53.565	63.307	22,628.5	23.78	142.84	73.4	832.1	0.0	1,088.7
20.00		0.3750	52.419	61.944	21,198.2	23.24	139.79	74.1	796.5	0.0	1,065.5
25.00		0.3750	51.274	60.581	19,829.5	22.70	136.73	74.7	761.7	0.0	1,042.3
30.00		0.3750	50.129	59.218	18,521.0	22.16	133.68	75.3	727.7	0.0	1,019.1
35.00		0.3750	48.984	57.855	17,271.4	21.62	130.62	76.0	694.5	0.0	995.9
40.00		0.3750	47.839	56.492	16,079.3	21.08	127.57	76.6	662.0	0.0	972.7
45.00		0.3750	46.694	55.129	14,943.3	20.55	124.52	77.2	630.3	0.0	949.6
47.04	Bot - Section 2	0.3750	46.226	54.572	14,495.0	20.33	123.27	77.5	617.6	0.0	381.4
50.00		0.3750	45.549	53.766	13,862.2	20.01	121.46	77.9	599.4	0.0	1,006.0
53.46	Top - Section 1	0.3125	45.381	44.701	11,471.5	24.20	145.22	72.9	497.9	0.0	1,158.4
55.00		0.3125	45.029	44.351	11,204.3	24.00	144.09	73.2	490.1	0.0	233.3
60.00		0.3125	43.883	43.215	10,365.3	23.35	140.43	73.9	465.2	0.0	744.9
65.00		0.3125	42.738	42.080	9,569.4	22.70	136.76	74.7	441.0	0.0	725.6
70.00		0.3125	41.593	40.944	8,815.2	22.06	133.10	75.5	417.4	0.0	706.3
75.00		0.3125	40.448	39.808	8,101.8	21.41	129.43	76.2	394.5	0.0	687.0
80.00		0.3125	39.303	38.672	7,427.9	20.77	125.77	77.0	372.2	0.0	667.6
85.00		0.3125	38.158	37.536	6,792.5	20.12	122.10	77.7	350.6	0.0	648.3
90.00		0.3125	37.013	36.401	6,194.3	19.47	118.44	78.5	329.6	0.0	629.0
95.00		0.3125	35.867	35.265	5,632.4	18.83	114.78	79.3	309.3	0.0	609.7
95.46	Bot - Section 3	0.3125	35.762	35.160	5,582.5	18.77	114.44	79.3	307.5	0.0	55.1
100.0		0.3125	34.722	34.129	5,105.5	18.18	111.11	80.0	289.6	0.0	970.3
100.5	Top - Section 2	0.2500	35.098	27.651	4,242.4	23.34	140.39	73.9	238.1	0.0	114.2
105.0		0.2500	34.077	26.841	3,880.4	22.62	136.31	74.8	224.3	0.0	413.2
110.0		0.2500	32.932	25.932	3,499.6	21.82	131.73	75.7	209.3	0.0	448.9
115.0		0.2500	31.787	25.024	3,144.4	21.01	127.15	76.7	194.8	0.0	433.5
120.0		0.2500	30.642	24.115	2,814.2	20.20	122.57	77.6	180.9	0.0	418.0
125.0		0.2500	29.497	23.206	2,507.9	19.39	117.99	78.6	167.5	0.0	402.6
130.0		0.2500	28.352	22.298	2,224.7	18.59	113.41	79.5	154.6	0.0	387.1
135.0		0.2500	27.206	21.389	1,963.7	17.78	108.83	80.5	142.2	0.0	371.6
138.0		0.2500	26.519	20.844	1,817.3	17.29	106.08	81.1	135.0	0.0	215.6
140.0		0.2500	26.061	20.480	1,723.9	16.97	104.24	81.4	130.3	0.0	140.6
145.0		0.2500	24.916	19.572	1,504.5	16.16	99.66	82.4	118.9	0.0	340.7
149.0		0.2500	24.000	18.845	1,343.0	15.52	96.00	82.6	110.2	0.0	261.4
											22,551.0

Load Case: 1.2D + 1.6W 90 mph with No Ice 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		188.3	0.0					0.0	0.0	188.3	0.0	0.0	0.0
5.00		372.8	1,362.1					0.0	114.7	372.8	1,476.7	0.0	0.0
10.00		365.2	1,334.3					0.0	114.7	365.2	1,448.9	0.0	0.0
15.00		357.5	1,306.4					0.0	114.7	357.5	1,421.1	0.0	0.0
20.00		349.9	1,278.6					0.0	114.7	349.9	1,393.3	0.0	0.0
25.00		342.2	1,250.8					0.0	114.7	342.2	1,365.4	0.0	0.0
30.00		338.5	1,222.9					0.0	114.7	338.5	1,337.6	0.0	0.0
35.00		341.7	1,195.1					0.0	114.7	341.7	1,309.8	0.0	0.0
40.00		346.7	1,167.3					0.0	114.7	346.7	1,281.9	0.0	0.0
45.00		246.1	1,139.5					0.0	114.7	246.1	1,254.1	0.0	0.0
47.04	Bot - Section 2	177.1	457.7					0.0	46.9	177.1	504.5	0.0	0.0
50.00		229.0	1,207.2					0.0	67.8	229.0	1,275.0	0.0	0.0
53.46	Top - Section 1	178.7	1,390.1					0.0	79.3	178.7	1,469.4	0.0	0.0
55.00		233.9	280.0					0.0	35.3	233.9	315.3	0.0	0.0
60.00		357.2	893.9					0.0	114.7	357.2	1,008.6	0.0	0.0
65.00		356.0	870.7					0.0	114.7	356.0	985.4	0.0	0.0
70.00		353.8	847.5					0.0	114.7	353.8	962.2	0.0	0.0
75.00		351.0	824.3					0.0	114.7	351.0	939.0	0.0	0.0
80.00		347.4	801.2					0.0	114.7	347.4	915.8	0.0	0.0
85.00		343.2	778.0					0.0	114.7	343.2	892.6	0.0	0.0
90.00		338.3	754.8					0.0	114.7	338.3	869.4	0.0	0.0
95.00		183.2	731.6					0.0	114.7	183.2	846.2	0.0	0.0
95.46	Bot - Section 3	167.2	66.1					0.0	10.5	167.2	76.7	0.0	0.0
100.00		169.9	1,164.3					0.0	104.1	169.9	1,268.4	0.0	0.0
100.54	Top - Section 2	164.4	137.0					0.0	12.5	164.4	149.5	0.0	0.0
105.00		307.5	495.8					0.0	102.2	307.5	598.0	0.0	0.0
110.00		318.8	538.7					0.0	114.7	318.8	653.4	0.0	0.0
115.00		311.7	520.2					0.0	114.7	311.7	634.8	0.0	0.0
120.00		304.1	501.6					0.0	114.7	304.1	616.3	0.0	0.0
125.00		296.2	483.1					0.0	114.7	296.2	597.7	0.0	0.0
130.00		287.9	464.5					0.0	114.7	287.9	579.2	0.0	0.0
135.00		224.8	446.0					0.0	114.7	224.8	560.6	0.0	0.0
138.00	Appurtenance(s)	137.4	258.7	3,930.5	0.0	0.0	4,438.6	0.0	68.8	4,067.9	4,766.0	0.0	0.0
140.00		187.3	168.7					0.0	35.4	187.3	204.2	0.0	0.0
145.00		235.8	408.9					0.0	88.6	235.8	497.4	0.0	0.0
149.00	Appurtenance(s)	102.9	313.7	7,734.1	0.0	0.0	4,080.0	0.0	70.8	7,837.0	4,464.6	0.0	0.0
								Totals:		21,578.1	38,939.2	0.00	0.00

Load Case: 1.2D + 1.6W 90 mph with No Ice 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.91	-21.43	0.00	-2,485.30	0.00	2,485.30	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.500
5.00	-37.39	-21.14	0.00	-2,378.14	0.00	2,378.14	4,288.99	2,144.49	9,788.20	4,901.38	0.07	-0.13	0.494
10.00	-35.90	-20.85	0.00	-2,272.43	0.00	2,272.43	4,237.32	2,118.66	9,469.35	4,741.71	0.27	-0.26	0.488
15.00	-34.43	-20.57	0.00	-2,168.16	0.00	2,168.16	4,184.10	2,092.05	9,152.00	4,582.80	0.61	-0.39	0.481
20.00	-32.99	-20.28	0.00	-2,065.33	0.00	2,065.33	4,129.33	2,064.66	8,836.37	4,424.75	1.08	-0.52	0.475
25.00	-31.58	-20.00	0.00	-1,963.91	0.00	1,963.91	4,073.00	2,036.50	8,522.69	4,267.68	1.70	-0.65	0.468
30.00	-30.20	-19.72	0.00	-1,863.90	0.00	1,863.90	4,015.11	2,007.56	8,211.17	4,111.69	2.46	-0.79	0.461
35.00	-28.85	-19.43	0.00	-1,765.30	0.00	1,765.30	3,955.68	1,977.84	7,902.03	3,956.89	3.36	-0.93	0.454
40.00	-27.53	-19.13	0.00	-1,668.16	0.00	1,668.16	3,894.69	1,947.34	7,595.51	3,803.40	4.42	-1.07	0.446
45.00	-26.24	-18.90	0.00	-1,572.51	0.00	1,572.51	3,832.15	1,916.07	7,291.81	3,651.33	5.62	-1.22	0.438
47.04	-25.72	-18.75	0.00	-1,533.88	0.00	1,533.88	3,806.14	1,903.07	7,168.57	3,589.61	6.15	-1.28	0.434
50.00	-24.42	-18.53	0.00	-1,478.45	0.00	1,478.45	3,768.05	1,884.02	6,991.17	3,500.78	6.97	-1.36	0.429
53.46	-22.93	-18.35	0.00	-1,414.33	0.00	1,414.33	2,934.54	1,467.27	5,439.41	2,723.75	8.00	-1.47	0.527
55.00	-22.59	-18.15	0.00	-1,386.08	0.00	1,386.08	2,920.91	1,460.46	5,371.50	2,689.74	8.48	-1.51	0.523
60.00	-21.54	-17.83	0.00	-1,295.34	0.00	1,295.34	2,875.67	1,437.83	5,151.93	2,579.79	10.15	-1.68	0.510
65.00	-20.51	-17.50	0.00	-1,206.21	0.00	1,206.21	2,828.87	1,414.44	4,933.94	2,470.64	12.01	-1.86	0.496
70.00	-19.51	-17.18	0.00	-1,118.70	0.00	1,118.70	2,780.52	1,390.26	4,717.75	2,362.38	14.04	-2.03	0.481
75.00	-18.53	-16.85	0.00	-1,032.82	0.00	1,032.82	2,730.61	1,365.31	4,503.59	2,255.14	16.26	-2.20	0.465
80.00	-17.58	-16.52	0.00	-948.59	0.00	948.59	2,679.16	1,339.58	4,291.67	2,149.02	18.66	-2.38	0.448
85.00	-16.66	-16.19	0.00	-866.01	0.00	866.01	2,626.14	1,313.07	4,082.22	2,044.14	21.24	-2.55	0.430
90.00	-15.75	-15.85	0.00	-785.09	0.00	785.09	2,571.58	1,285.79	3,875.45	1,940.61	24.00	-2.72	0.411
95.00	-14.89	-15.65	0.00	-705.82	0.00	705.82	2,515.46	1,257.73	3,671.59	1,838.53	26.95	-2.89	0.390
95.46	-14.80	-15.51	0.00	-698.61	0.00	698.61	2,510.22	1,255.11	3,652.99	1,829.21	27.23	-2.91	0.388
100.00	-13.52	-15.29	0.00	-628.22	0.00	628.22	2,457.78	1,228.89	3,470.86	1,738.01	30.07	-3.06	0.367
100.54	-13.36	-15.14	0.00	-619.91	0.00	619.91	1,840.14	920.07	2,636.71	1,320.31	30.42	-3.08	0.477
105.00	-12.73	-14.84	0.00	-552.45	0.00	552.45	1,806.70	903.35	2,512.42	1,258.08	33.36	-3.23	0.446
110.00	-12.05	-14.52	0.00	-478.28	0.00	478.28	1,767.71	883.85	2,374.37	1,188.95	36.85	-3.42	0.409
115.00	-11.40	-14.20	0.00	-405.69	0.00	405.69	1,727.17	863.58	2,238.01	1,120.67	40.52	-3.60	0.369
120.00	-10.76	-13.89	0.00	-334.68	0.00	334.68	1,685.07	842.53	2,103.55	1,053.34	44.38	-3.77	0.324
125.00	-10.15	-13.58	0.00	-265.23	0.00	265.23	1,641.42	820.71	1,971.23	987.08	48.41	-3.92	0.275
130.00	-9.57	-13.27	0.00	-197.33	0.00	197.33	1,596.21	798.11	1,841.24	921.99	52.58	-4.05	0.220
135.00	-9.01	-13.02	0.00	-130.98	0.00	130.98	1,549.45	774.73	1,713.83	858.19	56.87	-4.15	0.159
138.00	-4.54	-8.62	0.00	-91.92	0.00	91.92	1,520.65	760.33	1,638.71	820.57	59.50	-4.20	0.115
140.00	-4.35	-8.42	0.00	-74.69	0.00	74.69	1,501.14	750.57	1,589.21	795.79	61.26	-4.23	0.097
145.00	-3.87	-8.15	0.00	-32.59	0.00	32.59	1,451.27	725.64	1,467.60	734.89	65.72	-4.27	0.047
149.00	0.00	-7.84	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	69.30	-4.28	0.000

Load Case: 0.9D + 1.6W — 90 mph with No Ice (Reduced DL) — 22 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		188.3	0.0					0.0	0.0	188.3	0.0	0.0	0.0
5.00		372.8	1,021.6					0.0	86.0	372.8	1,107.6	0.0	0.0
10.00		365.2	1,000.7					0.0	86.0	365.2	1,086.7	0.0	0.0
15.00		357.5	979.8					0.0	86.0	357.5	1,065.8	0.0	0.0
20.00		349.9	958.9					0.0	86.0	349.9	1,044.9	0.0	0.0
25.00		342.2	938.1					0.0	86.0	342.2	1,024.1	0.0	0.0
30.00		338.5	917.2					0.0	86.0	338.5	1,003.2	0.0	0.0
35.00		341.7	896.3					0.0	86.0	341.7	982.3	0.0	0.0
40.00		346.7	875.5					0.0	86.0	346.7	961.5	0.0	0.0
45.00		246.1	854.6					0.0	86.0	246.1	940.6	0.0	0.0
47.04	Bot - Section 2	177.1	343.2					0.0	35.1	177.1	378.4	0.0	0.0
50.00		229.0	905.4					0.0	50.9	229.0	956.3	0.0	0.0
53.46	Top - Section 1	178.7	1,042.5					0.0	59.5	178.7	1,102.1	0.0	0.0
55.00		233.9	210.0					0.0	26.5	233.9	236.5	0.0	0.0
60.00		357.2	670.4					0.0	86.0	357.2	756.4	0.0	0.0
65.00		356.0	653.0					0.0	86.0	356.0	739.0	0.0	0.0
70.00		353.8	635.6					0.0	86.0	353.8	721.6	0.0	0.0
75.00		351.0	618.3					0.0	86.0	351.0	704.3	0.0	0.0
80.00		347.4	600.9					0.0	86.0	347.4	686.9	0.0	0.0
85.00		343.2	583.5					0.0	86.0	343.2	669.5	0.0	0.0
90.00		338.3	566.1					0.0	86.0	338.3	652.1	0.0	0.0
95.00		183.2	548.7					0.0	86.0	183.2	634.7	0.0	0.0
95.46	Bot - Section 3	167.2	49.6					0.0	7.9	167.2	57.5	0.0	0.0
100.00		169.9	873.2					0.0	78.1	169.9	951.3	0.0	0.0
100.54	Top - Section 2	164.4	102.8					0.0	9.3	164.4	112.1	0.0	0.0
105.00		307.5	371.9					0.0	76.7	307.5	448.5	0.0	0.0
110.00		318.8	404.0					0.0	86.0	318.8	490.0	0.0	0.0
115.00		311.7	390.1					0.0	86.0	311.7	476.1	0.0	0.0
120.00		304.1	376.2					0.0	86.0	304.1	462.2	0.0	0.0
125.00		296.2	362.3					0.0	86.0	296.2	448.3	0.0	0.0
130.00		287.9	348.4					0.0	86.0	287.9	434.4	0.0	0.0
135.00		224.8	334.5					0.0	86.0	224.8	420.5	0.0	0.0
138.00	Appurtenance(s)	137.4	194.0	3,930.5	0.0	0.0	3,328.9	0.0	51.6	4,067.9	3,574.5	0.0	0.0
140.00		187.3	126.6					0.0	26.6	187.3	153.1	0.0	0.0
145.00		235.8	306.7					0.0	66.4	235.8	373.1	0.0	0.0
149.00	Appurtenance(s)	102.9	235.3	7,734.1	0.0	0.0	3,060.0	0.0	53.1	7,837.0	3,348.4	0.0	0.0
								Totals:		21,578.1	29,204.4	0.00	0.00

Site Number: 413850 Code: ANSI/TIA-222-G

Site Name: Goshen (Brass Mountain) CT, CT Engineering Number:12600629_C3_02 8/16/2018 3:11:51 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W 90 mph with No Ice (Reduced DL) 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-29.18	-21.42	0.00	-2,462.65	0.00	2,462.65	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.493
5.00	-28.03	-21.11	0.00	-2,355.54	0.00	2,355.54	4,288.99	2,144.49	9,788.20	4,901.38	0.07	-0.13	0.487
10.00	-26.89	-20.80	0.00	-2,249.99	0.00	2,249.99	4,237.32	2,118.66	9,469.35	4,741.71	0.27	-0.25	0.481
15.00	-25.78	-20.50	0.00	-2,145.99	0.00	2,145.99	4,184.10	2,092.05	9,152.00	4,582.80	0.60	-0.38	0.475
20.00	-24.70	-20.20	0.00	-2,043.50	0.00	2,043.50	4,129.33	2,064.66	8,836.37	4,424.75	1.07	-0.51	0.468
25.00	-23.63	-19.90	0.00	-1,942.53	0.00	1,942.53	4,073.00	2,036.50	8,522.69	4,267.68	1.68	-0.65	0.461
30.00	-22.58	-19.60	0.00	-1,843.03	0.00	1,843.03	4,015.11	2,007.56	8,211.17	4,111.69	2.44	-0.78	0.454
35.00	-21.56	-19.30	0.00	-1,745.02	0.00	1,745.02	3,955.68	1,977.84	7,902.03	3,956.89	3.33	-0.92	0.447
40.00	-20.56	-18.99	0.00	-1,648.54	0.00	1,648.54	3,894.69	1,947.34	7,595.51	3,803.40	4.37	-1.06	0.439
45.00	-19.59	-18.75	0.00	-1,553.61	0.00	1,553.61	3,832.15	1,916.07	7,291.81	3,651.33	5.56	-1.20	0.431
47.04	-19.19	-18.59	0.00	-1,515.29	0.00	1,515.29	3,806.14	1,903.07	7,168.57	3,589.61	6.09	-1.26	0.427
50.00	-18.21	-18.37	0.00	-1,460.31	0.00	1,460.31	3,768.05	1,884.02	6,991.17	3,500.78	6.90	-1.35	0.422
53.46	-17.09	-18.19	0.00	-1,396.74	0.00	1,396.74	2,934.54	1,467.27	5,439.41	2,723.75	7.91	-1.45	0.519
55.00	-16.82	-17.98	0.00	-1,368.73	0.00	1,368.73	2,920.91	1,460.46	5,371.50	2,689.74	8.39	-1.50	0.515
60.00	-16.03	-17.65	0.00	-1,278.83	0.00	1,278.83	2,875.67	1,437.83	5,151.93	2,579.79	10.05	-1.66	0.501
65.00	-15.25	-17.32	0.00	-1,190.57	0.00	1,190.57	2,828.87	1,414.44	4,933.94	2,470.64	11.88	-1.83	0.487
70.00	-14.49	-16.98	0.00	-1,103.98	0.00	1,103.98	2,780.52	1,390.26	4,717.75	2,362.38	13.89	-2.00	0.473
75.00	-13.75	-16.65	0.00	-1,019.07	0.00	1,019.07	2,730.61	1,365.31	4,503.59	2,255.14	16.08	-2.18	0.457
80.00	-13.02	-16.31	0.00	-935.83	0.00	935.83	2,679.16	1,339.58	4,291.67	2,149.02	18.46	-2.35	0.440
85.00	-12.32	-15.98	0.00	-854.27	0.00	854.27	2,626.14	1,313.07	4,082.22	2,044.14	21.01	-2.52	0.423
90.00	-11.64	-15.65	0.00	-774.38	0.00	774.38	2,571.58	1,285.79	3,875.45	1,940.61	23.74	-2.69	0.404
95.00	-10.99	-15.45	0.00	-696.15	0.00	696.15	2,515.46	1,257.73	3,671.59	1,838.53	26.64	-2.86	0.383
95.46	-10.92	-15.30	0.00	-689.04	0.00	689.04	2,510.22	1,255.11	3,652.99	1,829.21	26.92	-2.87	0.381
100.00	-9.96	-15.09	0.00	-619.60	0.00	619.60	2,457.78	1,228.89	3,470.86	1,738.01	29.73	-3.03	0.361
100.54	-9.83	-14.94	0.00	-611.40	0.00	611.40	1,840.14	920.07	2,636.71	1,320.31	30.07	-3.04	0.469
105.00	-9.36	-14.63	0.00	-544.84	0.00	544.84	1,806.70	903.35	2,512.42	1,258.08	32.98	-3.19	0.439
110.00	-8.84	-14.31	0.00	-471.68	0.00	471.68	1,767.71	883.85	2,374.37	1,188.95	36.42	-3.38	0.402
115.00	-8.34	-14.00	0.00	-400.12	0.00	400.12	1,727.17	863.58	2,238.01	1,120.67	40.05	-3.55	0.362
120.00	-7.86	-13.69	0.00	-330.13	0.00	330.13	1,685.07	842.53	2,103.55	1,053.34	43.86	-3.72	0.318
125.00	-7.40	-13.38	0.00	-261.69	0.00	261.69	1,641.42	820.71	1,971.23	987.08	47.84	-3.87	0.270
130.00	-6.96	-13.08	0.00	-194.79	0.00	194.79	1,596.21	798.11	1,841.24	921.99	51.96	-4.00	0.216
135.00	-6.54	-12.83	0.00	-129.40	0.00	129.40	1,549.45	774.73	1,713.83	858.19	56.20	-4.10	0.155
138.00	-3.26	-8.52	0.00	-90.91	0.00	90.91	1,520.65	760.33	1,638.71	820.57	58.79	-4.15	0.113
140.00	-3.12	-8.32	0.00	-73.87	0.00	73.87	1,501.14	750.57	1,589.21	795.79	60.54	-4.17	0.095
145.00	-2.76	-8.06	0.00	-32.25	0.00	32.25	1,451.27	725.64	1,467.60	734.89	64.93	-4.22	0.046
149.00	0.00	-7.84	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	68.47	-4.23	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 1.00 in Radial Ice 21 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		45.2	0.0					0.0	0.0	45.2	0.0	0.0	0.0
5.00		89.9	1,917.7					0.0	114.7	89.9	2,032.3	0.0	0.0
10.00		88.5	1,943.9					0.0	114.7	88.5	2,058.5	0.0	0.0
15.00		87.0	1,936.0					0.0	114.7	87.0	2,050.6	0.0	0.0
20.00		85.4	1,917.0					0.0	114.7	85.4	2,031.6	0.0	0.0
25.00		83.8	1,892.1					0.0	114.7	83.8	2,006.8	0.0	0.0
30.00		83.2	1,863.7					0.0	114.7	83.2	1,978.3	0.0	0.0
35.00		84.2	1,832.7					0.0	114.7	84.2	1,947.4	0.0	0.0
40.00		85.7	1,799.9					0.0	114.7	85.7	1,914.6	0.0	0.0
45.00		60.9	1,765.7					0.0	114.7	60.9	1,880.3	0.0	0.0
47.04	Bot - Section 2	43.9	713.2					0.0	46.9	43.9	760.1	0.0	0.0
50.00		56.8	1,578.6					0.0	67.8	56.8	1,646.4	0.0	0.0
53.46	Top - Section 1	44.4	1,820.4					0.0	79.3	44.4	1,899.8	0.0	0.0
55.00		58.3	471.1					0.0	35.3	58.3	506.4	0.0	0.0
60.00		89.2	1,502.9					0.0	114.7	89.2	1,617.6	0.0	0.0
65.00		89.1	1,469.7					0.0	114.7	89.1	1,584.4	0.0	0.0
70.00		88.9	1,436.0					0.0	114.7	88.9	1,550.6	0.0	0.0
75.00		88.4	1,401.7					0.0	114.7	88.4	1,516.4	0.0	0.0
80.00		87.8	1,366.9					0.0	114.7	87.8	1,481.6	0.0	0.0
85.00		87.1	1,331.7					0.0	114.7	87.1	1,446.4	0.0	0.0
90.00		86.2	1,296.2					0.0	114.7	86.2	1,410.8	0.0	0.0
95.00		46.8	1,260.3					0.0	114.7	46.8	1,374.9	0.0	0.0
95.46	Bot - Section 3	42.8	114.8					0.0	10.5	42.8	125.3	0.0	0.0
100.00		43.5	1,639.0					0.0	104.1	43.5	1,743.1	0.0	0.0
100.54	Top - Section 2	42.2	193.8					0.0	12.5	42.2	206.3	0.0	0.0
105.00		79.2	949.9					0.0	102.2	79.2	1,052.1	0.0	0.0
110.00		82.5	1,034.5					0.0	114.7	82.5	1,149.1	0.0	0.0
115.00		81.0	1,002.1					0.0	114.7	81.0	1,116.8	0.0	0.0
120.00		79.5	969.5					0.0	114.7	79.5	1,084.2	0.0	0.0
125.00		77.8	936.7					0.0	114.7	77.8	1,051.3	0.0	0.0
130.00		76.1	903.6					0.0	114.7	76.1	1,018.3	0.0	0.0
135.00		59.7	870.4					0.0	114.7	59.7	985.1	0.0	0.0
138.00	Appurtenance(s)	36.7	508.2	670.6	0.0	0.0	10,415.2	0.0	68.8	707.2	10,992.2	0.0	0.0
140.00		50.3	332.8					0.0	35.4	50.3	368.2	0.0	0.0
145.00		63.5	803.4					0.0	88.6	63.5	892.0	0.0	0.0
149.00	Appurtenance(s)	27.8	619.8	637.4	0.0	0.0	9,309.8	0.0	70.8	665.3	10,000.4	0.0	0.0
								Totals:		3,811.36	66,480.2	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 1.00 in Radial Ice 21 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.48	-3.78	0.00	-394.88	0.00	394.88	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.093
5.00	-64.45	-3.71	0.00	-375.99	0.00	375.99	4,288.99	2,144.49	9,788.20	4,901.38	0.01	-0.02	0.092
10.00	-62.39	-3.64	0.00	-357.45	0.00	357.45	4,237.32	2,118.66	9,469.35	4,741.71	0.04	-0.04	0.090
15.00	-60.33	-3.58	0.00	-339.23	0.00	339.23	4,184.10	2,092.05	9,152.00	4,582.80	0.10	-0.06	0.088
20.00	-58.30	-3.51	0.00	-321.36	0.00	321.36	4,129.33	2,064.66	8,836.37	4,424.75	0.17	-0.08	0.087
25.00	-56.29	-3.44	0.00	-303.81	0.00	303.81	4,073.00	2,036.50	8,522.69	4,267.68	0.27	-0.10	0.085
30.00	-54.31	-3.38	0.00	-286.60	0.00	286.60	4,015.11	2,007.56	8,211.17	4,111.69	0.39	-0.12	0.083
35.00	-52.37	-3.31	0.00	-269.73	0.00	269.73	3,955.68	1,977.84	7,902.03	3,956.89	0.53	-0.15	0.081
40.00	-50.45	-3.23	0.00	-253.20	0.00	253.20	3,894.69	1,947.34	7,595.51	3,803.40	0.69	-0.17	0.080
45.00	-48.57	-3.18	0.00	-237.02	0.00	237.02	3,832.15	1,916.07	7,291.81	3,651.33	0.88	-0.19	0.078
47.04	-47.81	-3.14	0.00	-230.52	0.00	230.52	3,806.14	1,903.07	7,168.57	3,589.61	0.96	-0.20	0.077
50.00	-46.16	-3.09	0.00	-221.23	0.00	221.23	3,768.05	1,884.02	6,991.17	3,500.78	1.09	-0.21	0.075
53.46	-44.26	-3.05	0.00	-210.53	0.00	210.53	2,934.54	1,467.27	5,439.41	2,723.75	1.25	-0.23	0.092
55.00	-43.75	-3.00	0.00	-205.84	0.00	205.84	2,920.91	1,460.46	5,371.50	2,689.74	1.32	-0.23	0.092
60.00	-42.14	-2.92	0.00	-190.83	0.00	190.83	2,875.67	1,437.83	5,151.93	2,579.79	1.58	-0.26	0.089
65.00	-40.55	-2.84	0.00	-176.21	0.00	176.21	2,828.87	1,414.44	4,933.94	2,470.64	1.86	-0.28	0.086
70.00	-39.00	-2.77	0.00	-161.99	0.00	161.99	2,780.52	1,390.26	4,717.75	2,362.38	2.17	-0.31	0.083
75.00	-37.48	-2.68	0.00	-148.16	0.00	148.16	2,730.61	1,365.31	4,503.59	2,255.14	2.51	-0.33	0.079
80.00	-36.00	-2.60	0.00	-134.74	0.00	134.74	2,679.16	1,339.58	4,291.67	2,149.02	2.87	-0.36	0.076
85.00	-34.55	-2.52	0.00	-121.73	0.00	121.73	2,626.14	1,313.07	4,082.22	2,044.14	3.26	-0.38	0.073
90.00	-33.14	-2.44	0.00	-109.12	0.00	109.12	2,571.58	1,285.79	3,875.45	1,940.61	3.67	-0.41	0.069
95.00	-31.77	-2.39	0.00	-96.92	0.00	96.92	2,515.46	1,257.73	3,671.59	1,838.53	4.11	-0.43	0.065
95.46	-31.64	-2.35	0.00	-95.82	0.00	95.82	2,510.22	1,255.11	3,652.99	1,829.21	4.15	-0.43	0.065
100.00	-29.90	-2.30	0.00	-85.14	0.00	85.14	2,457.78	1,228.89	3,470.86	1,738.01	4.58	-0.45	0.061
100.54	-29.69	-2.26	0.00	-83.89	0.00	83.89	1,840.14	920.07	2,636.71	1,320.31	4.63	-0.46	0.080
105.00	-28.64	-2.19	0.00	-73.81	0.00	73.81	1,806.70	903.35	2,512.42	1,258.08	5.06	-0.48	0.075
110.00	-27.49	-2.11	0.00	-62.87	0.00	62.87	1,767.71	883.85	2,374.37	1,188.95	5.58	-0.50	0.068
115.00	-26.37	-2.03	0.00	-52.34	0.00	52.34	1,727.17	863.58	2,238.01	1,120.67	6.11	-0.52	0.062
120.00	-25.29	-1.95	0.00	-42.21	0.00	42.21	1,685.07	842.53	2,103.55	1,053.34	6.68	-0.55	0.055
125.00	-24.24	-1.86	0.00	-32.49	0.00	32.49	1,641.42	820.71	1,971.23	987.08	7.26	-0.56	0.048
130.00	-23.22	-1.78	0.00	-23.16	0.00	23.16	1,596.21	798.11	1,841.24	921.99	7.86	-0.58	0.040
135.00	-22.24	-1.72	0.00	-14.24	0.00	14.24	1,549.45	774.73	1,713.83	858.19	8.47	-0.59	0.031
138.00	-11.25	-0.90	0.00	-9.09	0.00	9.09	1,520.65	760.33	1,638.71	820.57	8.85	-0.60	0.018
140.00	-10.88	-0.84	0.00	-7.30	0.00	7.30	1,501.14	750.57	1,589.21	795.79	9.10	-0.60	0.016
145.00	-9.99	-0.77	0.00	-3.08	0.00	3.08	1,451.27	725.64	1,467.60	734.89	9.73	-0.60	0.011
149.00	0.00	-0.67	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	10.24	-0.61	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		52.3	0.0					0.0	0.0	52.3	0.0	0.0	0.0
5.00		103.6	1,135.1					0.0	95.6	103.6	1,230.6	0.0	0.0
10.00		101.4	1,111.9					0.0	95.6	101.4	1,207.4	0.0	0.0
15.00		99.3	1,088.7					0.0	95.6	99.3	1,184.2	0.0	0.0
20.00		97.2	1,065.5					0.0	95.6	97.2	1,161.0	0.0	0.0
25.00		95.1	1,042.3					0.0	95.6	95.1	1,137.9	0.0	0.0
30.00		94.0	1,019.1					0.0	95.6	94.0	1,114.7	0.0	0.0
35.00		94.9	995.9					0.0	95.6	94.9	1,091.5	0.0	0.0
40.00		96.3	972.7					0.0	95.6	96.3	1,068.3	0.0	0.0
45.00		68.3	949.6					0.0	95.6	68.3	1,045.1	0.0	0.0
47.04	Bot - Section 2	49.2	381.4					0.0	39.0	49.2	420.4	0.0	0.0
50.00		63.6	1,006.0					0.0	56.5	63.6	1,062.5	0.0	0.0
53.46	Top - Section 1	49.6	1,158.4					0.0	66.1	49.6	1,224.5	0.0	0.0
55.00		65.0	233.3					0.0	29.4	65.0	262.8	0.0	0.0
60.00		99.2	744.9					0.0	95.6	99.2	840.5	0.0	0.0
65.00		98.9	725.6					0.0	95.6	98.9	821.1	0.0	0.0
70.00		98.3	706.3					0.0	95.6	98.3	801.8	0.0	0.0
75.00		97.5	687.0					0.0	95.6	97.5	782.5	0.0	0.0
80.00		96.5	667.6					0.0	95.6	96.5	763.2	0.0	0.0
85.00		95.3	648.3					0.0	95.6	95.3	743.9	0.0	0.0
90.00		94.0	629.0					0.0	95.6	94.0	724.5	0.0	0.0
95.00		50.9	609.7					0.0	95.6	50.9	705.2	0.0	0.0
95.46	Bot - Section 3	46.4	55.1					0.0	8.8	46.4	63.9	0.0	0.0
100.00		47.2	970.3					0.0	86.8	47.2	1,057.0	0.0	0.0
100.54	Top - Section 2	45.7	114.2					0.0	10.4	45.7	124.6	0.0	0.0
105.00		85.4	413.2					0.0	85.2	85.4	498.4	0.0	0.0
110.00		88.6	448.9					0.0	95.6	88.6	544.5	0.0	0.0
115.00		86.6	433.5					0.0	95.6	86.6	529.0	0.0	0.0
120.00		84.5	418.0					0.0	95.6	84.5	513.6	0.0	0.0
125.00		82.3	402.6					0.0	95.6	82.3	498.1	0.0	0.0
130.00		80.0	387.1					0.0	95.6	80.0	482.7	0.0	0.0
135.00		62.5	371.6					0.0	95.6	62.5	467.2	0.0	0.0
138.00	Appurtenance(s)	38.2	215.6	1,091.8	0.0	0.0	3,698.8	0.0	57.3	1,130.0	3,971.7	0.0	0.0
140.00		52.0	140.6					0.0	29.5	52.0	170.1	0.0	0.0
145.00		65.5	340.7					0.0	73.8	65.5	414.5	0.0	0.0
149.00	Appurtenance(s)	28.6	261.4	2,148.4	0.0	0.0	3,400.0	0.0	59.0	2,176.9	3,720.5	0.0	0.0
								Totals:		5,993.93	32,449.3	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-32.45	-5.95	0.00	-686.60	0.00	686.60	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.143
5.00	-31.21	-5.87	0.00	-656.85	0.00	656.85	4,288.99	2,144.49	9,788.20	4,901.38	0.02	-0.03	0.141
10.00	-30.00	-5.78	0.00	-627.52	0.00	627.52	4,237.32	2,118.66	9,469.35	4,741.71	0.07	-0.07	0.139
15.00	-28.81	-5.70	0.00	-598.61	0.00	598.61	4,184.10	2,092.05	9,152.00	4,582.80	0.17	-0.11	0.138
20.00	-27.65	-5.62	0.00	-570.11	0.00	570.11	4,129.33	2,064.66	8,836.37	4,424.75	0.30	-0.14	0.136
25.00	-26.51	-5.54	0.00	-542.02	0.00	542.02	4,073.00	2,036.50	8,522.69	4,267.68	0.47	-0.18	0.134
30.00	-25.39	-5.46	0.00	-514.34	0.00	514.34	4,015.11	2,007.56	8,211.17	4,111.69	0.68	-0.22	0.131
35.00	-24.30	-5.37	0.00	-487.06	0.00	487.06	3,955.68	1,977.84	7,902.03	3,956.89	0.93	-0.26	0.129
40.00	-23.22	-5.29	0.00	-460.20	0.00	460.20	3,894.69	1,947.34	7,595.51	3,803.40	1.22	-0.30	0.127
45.00	-22.18	-5.22	0.00	-433.76	0.00	433.76	3,832.15	1,916.07	7,291.81	3,651.33	1.55	-0.34	0.125
47.04	-21.76	-5.18	0.00	-423.09	0.00	423.09	3,806.14	1,903.07	7,168.57	3,589.61	1.70	-0.35	0.124
50.00	-20.69	-5.12	0.00	-407.77	0.00	407.77	3,768.05	1,884.02	6,991.17	3,500.78	1.92	-0.38	0.122
53.46	-19.47	-5.07	0.00	-390.06	0.00	390.06	2,934.54	1,467.27	5,439.41	2,723.75	2.21	-0.40	0.150
55.00	-19.20	-5.01	0.00	-382.25	0.00	382.25	2,920.91	1,460.46	5,371.50	2,689.74	2.34	-0.42	0.149
60.00	-18.36	-4.92	0.00	-357.20	0.00	357.20	2,875.67	1,437.83	5,151.93	2,579.79	2.80	-0.46	0.145
65.00	-17.53	-4.83	0.00	-332.59	0.00	332.59	2,828.87	1,414.44	4,933.94	2,470.64	3.32	-0.51	0.141
70.00	-16.73	-4.74	0.00	-308.45	0.00	308.45	2,780.52	1,390.26	4,717.75	2,362.38	3.88	-0.56	0.137
75.00	-15.94	-4.65	0.00	-284.76	0.00	284.76	2,730.61	1,365.31	4,503.59	2,255.14	4.49	-0.61	0.132
80.00	-15.18	-4.55	0.00	-261.53	0.00	261.53	2,679.16	1,339.58	4,291.67	2,149.02	5.15	-0.66	0.127
85.00	-14.43	-4.46	0.00	-238.77	0.00	238.77	2,626.14	1,313.07	4,082.22	2,044.14	5.86	-0.70	0.122
90.00	-13.70	-4.37	0.00	-216.46	0.00	216.46	2,571.58	1,285.79	3,875.45	1,940.61	6.63	-0.75	0.117
95.00	-13.00	-4.31	0.00	-194.61	0.00	194.61	2,515.46	1,257.73	3,671.59	1,838.53	7.44	-0.80	0.111
95.46	-12.93	-4.27	0.00	-192.63	0.00	192.63	2,510.22	1,255.11	3,652.99	1,829.21	7.51	-0.80	0.110
100.00	-11.87	-4.22	0.00	-173.23	0.00	173.23	2,457.78	1,228.89	3,470.86	1,738.01	8.30	-0.84	0.105
100.54	-11.75	-4.17	0.00	-170.94	0.00	170.94	1,840.14	920.07	2,636.71	1,320.31	8.40	-0.85	0.136
105.00	-11.25	-4.09	0.00	-152.35	0.00	152.35	1,806.70	903.35	2,512.42	1,258.08	9.21	-0.89	0.127
110.00	-10.70	-4.00	0.00	-131.90	0.00	131.90	1,767.71	883.85	2,374.37	1,188.95	10.17	-0.94	0.117
115.00	-10.17	-3.91	0.00	-111.90	0.00	111.90	1,727.17	863.58	2,238.01	1,120.67	11.18	-0.99	0.106
120.00	-9.66	-3.83	0.00	-92.33	0.00	92.33	1,685.07	842.53	2,103.55	1,053.34	12.25	-1.04	0.093
125.00	-9.16	-3.74	0.00	-73.18	0.00	73.18	1,641.42	820.71	1,971.23	987.08	13.36	-1.08	0.080
130.00	-8.67	-3.66	0.00	-54.47	0.00	54.47	1,596.21	798.11	1,841.24	921.99	14.51	-1.12	0.065
135.00	-8.21	-3.59	0.00	-36.18	0.00	36.18	1,549.45	774.73	1,713.83	858.19	15.70	-1.15	0.047
138.00	-4.26	-2.38	0.00	-25.41	0.00	25.41	1,520.65	760.33	1,638.71	820.57	16.42	-1.16	0.034
140.00	-4.09	-2.33	0.00	-20.64	0.00	20.64	1,501.14	750.57	1,589.21	795.79	16.91	-1.17	0.029
145.00	-3.67	-2.25	0.00	-9.01	0.00	9.01	1,451.27	725.64	1,467.60	734.89	18.14	-1.18	0.015
149.00	0.00	-2.18	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	19.13	-1.18	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.11	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.80	
Total Unfactored Dead Load:	32.45	k
Seismic Base Shear (E):	1.39	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
35	147.00	320	2,602	0.024	33	397
34	142.50	415	3,182	0.029	40	513
33	139.00	170	1,249	0.011	16	211
32	136.50	273	1,938	0.018	25	338
31	132.50	467	3,145	0.029	40	579
30	127.50	483	3,031	0.028	38	598
29	122.50	498	2,910	0.027	37	617
28	117.50	514	2,784	0.025	35	636
27	112.50	529	2,651	0.024	34	655
26	107.50	544	2,514	0.023	32	674
25	102.77	498	2,121	0.019	27	617
24	100.27	125	507	0.005	6	154
23	97.73	1,057	4,109	0.037	52	1,309
22	95.23	64	237	0.002	3	79
21	92.50	705	2,483	0.023	31	873
20	87.50	725	2,307	0.021	29	897
19	82.50	744	2,130	0.019	27	921
18	77.50	763	1,953	0.018	25	945
17	72.50	783	1,775	0.016	22	969
16	67.50	802	1,599	0.015	20	993
15	62.50	821	1,425	0.013	18	1,017
14	57.50	840	1,255	0.011	16	1,041
13	54.23	263	353	0.003	4	325

12	51.73	1,225	1,511	0.014	19	1,516
11	48.52	1,063	1,168	0.011	15	1,316
10	46.02	420	420	0.004	5	521
9	42.50	1,045	905	0.008	11	1,294
8	37.50	1,068	738	0.007	9	1,323
7	32.50	1,091	582	0.005	7	1,352
6	27.50	1,115	440	0.004	6	1,380
5	22.50	1,138	313	0.003	4	1,409
4	17.50	1,161	203	0.002	3	1,438
3	12.50	1,184	113	0.001	1	1,467
2	7.50	1,207	46	0.000	1	1,495
1	2.50	1,231	6	0.000	0	1,524
Alcatel-Lucent B13 R	149.00	173	1,442	0.013	18	215
Alcatel-Lucent B66A	149.00	201	1,672	0.015	21	249
RFS DB-C1-12C-24AB-0	149.00	32	266	0.002	3	40
Amphenol Antel LPA-8	149.00	126	1,048	0.010	13	156
Commscope JAHH-65B-R	149.00	364	3,025	0.028	38	450
Flat T-Arm w/ Workin	149.00	900	7,487	0.068	95	1,115
VZW Unused Reserve:	149.00	1,604	13,343	0.122	169	1,986
Ericsson Radio 4449	138.00	592	4,288	0.039	54	733
RFS SC2-W100AB	138.00	22	159	0.001	2	27
Ericsson AIR 32 B2A/	138.00	573	4,152	0.038	52	710
RFS APXVAARR24_43-U-	138.00	512	3,706	0.034	47	634
Flat Platform w/ Han	138.00	2,000	14,488	0.132	183	2,477
		32,449	109,782	1.000	1,388	40,185

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
35	147.00	320	2,602	0.024	33	276
34	142.50	415	3,182	0.029	40	357
33	139.00	170	1,249	0.011	16	147
32	136.50	273	1,938	0.018	25	235
31	132.50	467	3,145	0.029	40	403
30	127.50	483	3,031	0.028	38	416
29	122.50	498	2,910	0.027	37	429
28	117.50	514	2,784	0.025	35	442
27	112.50	529	2,651	0.024	34	456
26	107.50	544	2,514	0.023	32	469
25	102.77	498	2,121	0.019	27	429
24	100.27	125	507	0.005	6	107
23	97.73	1,057	4,109	0.037	52	911
22	95.23	64	237	0.002	3	55
21	92.50	705	2,483	0.023	31	608
20	87.50	725	2,307	0.021	29	624
19	82.50	744	2,130	0.019	27	641
18	77.50	763	1,953	0.018	25	658
17	72.50	783	1,775	0.016	22	674
16	67.50	802	1,599	0.015	20	691
15	62.50	821	1,425	0.013	18	708
14	57.50	840	1,255	0.011	16	724
13	54.23	263	353	0.003	4	226
12	51.73	1,225	1,511	0.014	19	1,055
11	48.52	1,063	1,168	0.011	15	915
10	46.02	420	420	0.004	5	362
9	42.50	1,045	905	0.008	11	900
8	37.50	1,068	738	0.007	9	920
7	32.50	1,091	582	0.005	7	940
6	27.50	1,115	440	0.004	6	960

5	22.50	1,138	313	0.003	4	980
4	17.50	1,161	203	0.002	3	1,000
3	12.50	1,184	113	0.001	1	1,020
2	7.50	1,207	46	0.000	1	1,040
1	2.50	1,231	6	0.000	0	1,060
Alcatel-Lucent B13 R	149.00	173	1,442	0.013	18	149
Alcatel-Lucent B66A	149.00	201	1,672	0.015	21	173
RFS DB-C1-12C-24AB-0	149.00	32	266	0.002	3	28
Amphenol Antel LPA-8	149.00	126	1,048	0.010	13	109
Commscope JAHH-65B-R	149.00	364	3,025	0.028	38	313
Flat T-Arm w/ Workin	149.00	900	7,487	0.068	95	775
VZW Unused Reserve:	149.00	1,604	13,343	0.122	169	1,382
Ericsson Radio 4449	138.00	592	4,288	0.039	54	510
RFS SC2-W100AB	138.00	22	159	0.001	2	19
Ericsson AIR 32 B2A/	138.00	573	4,152	0.038	52	494
RFS APXVAARR24_43-U-	138.00	512	3,706	0.034	47	441
Flat Platform w/ Han	138.00	2,000	14,488	0.132	183	1,723
		32,449	109,782	1.000	1,388	27,958

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.66	-1.39	0.00	-173.33	0.00	173.33	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.043
5.00	-37.17	-1.39	0.00	-166.38	0.00	166.38	4,288.99	2,144.49	9,788.20	4,901.38	0.00	-0.01	0.043
10.00	-35.70	-1.40	0.00	-159.41	0.00	159.41	4,237.32	2,118.66	9,469.35	4,741.71	0.02	-0.02	0.042
15.00	-34.26	-1.40	0.00	-152.41	0.00	152.41	4,184.10	2,092.05	9,152.00	4,582.80	0.04	-0.03	0.041
20.00	-32.85	-1.40	0.00	-145.41	0.00	145.41	4,129.33	2,064.66	8,836.37	4,424.75	0.08	-0.04	0.041
25.00	-31.47	-1.40	0.00	-138.40	0.00	138.40	4,073.00	2,036.50	8,522.69	4,267.68	0.12	-0.05	0.040
30.00	-30.12	-1.40	0.00	-131.40	0.00	131.40	4,015.11	2,007.56	8,211.17	4,111.69	0.17	-0.06	0.039
35.00	-28.80	-1.39	0.00	-124.41	0.00	124.41	3,955.68	1,977.84	7,902.03	3,956.89	0.24	-0.07	0.039
40.00	-27.50	-1.38	0.00	-117.45	0.00	117.45	3,894.69	1,947.34	7,595.51	3,803.40	0.31	-0.08	0.038
45.00	-26.98	-1.38	0.00	-110.54	0.00	110.54	3,832.15	1,916.07	7,291.81	3,651.33	0.39	-0.09	0.037
47.04	-25.66	-1.37	0.00	-107.72	0.00	107.72	3,806.14	1,903.07	7,168.57	3,589.61	0.43	-0.09	0.037
50.00	-24.15	-1.35	0.00	-103.68	0.00	103.68	3,768.05	1,884.02	6,991.17	3,500.78	0.49	-0.10	0.036
53.46	-23.82	-1.34	0.00	-99.02	0.00	99.02	2,934.54	1,467.27	5,439.41	2,723.75	0.56	-0.10	0.044
55.00	-22.78	-1.33	0.00	-96.94	0.00	96.94	2,920.91	1,460.46	5,371.50	2,689.74	0.60	-0.11	0.044
60.00	-21.76	-1.31	0.00	-90.30	0.00	90.30	2,875.67	1,437.83	5,151.93	2,579.79	0.71	-0.12	0.043
65.00	-20.77	-1.30	0.00	-83.72	0.00	83.72	2,828.87	1,414.44	4,933.94	2,470.64	0.84	-0.13	0.041
70.00	-19.80	-1.28	0.00	-77.24	0.00	77.24	2,780.52	1,390.26	4,717.75	2,362.38	0.99	-0.14	0.040
75.00	-18.86	-1.25	0.00	-70.86	0.00	70.86	2,730.61	1,365.31	4,503.59	2,255.14	1.14	-0.15	0.038
80.00	-17.94	-1.23	0.00	-64.60	0.00	64.60	2,679.16	1,339.58	4,291.67	2,149.02	1.31	-0.17	0.037
85.00	-17.04	-1.20	0.00	-58.47	0.00	58.47	2,626.14	1,313.07	4,082.22	2,044.14	1.49	-0.18	0.035
90.00	-16.16	-1.17	0.00	-52.48	0.00	52.48	2,571.58	1,285.79	3,875.45	1,940.61	1.68	-0.19	0.033
95.00	-16.09	-1.17	0.00	-46.64	0.00	46.64	2,515.46	1,257.73	3,671.59	1,838.53	1.89	-0.20	0.032
95.46	-14.78	-1.11	0.00	-46.10	0.00	46.10	2,510.22	1,255.11	3,652.99	1,829.21	1.91	-0.20	0.031
100.00	-14.62	-1.11	0.00	-41.06	0.00	41.06	2,457.78	1,228.89	3,470.86	1,738.01	2.10	-0.21	0.030
100.54	-14.00	-1.08	0.00	-40.46	0.00	40.46	1,840.14	920.07	2,636.71	1,320.31	2.13	-0.21	0.038
105.00	-13.33	-1.05	0.00	-35.66	0.00	35.66	1,806.70	903.35	2,512.42	1,258.08	2.33	-0.22	0.036
110.00	-12.68	-1.01	0.00	-30.43	0.00	30.43	1,767.71	883.85	2,374.37	1,188.95	2.57	-0.23	0.033
115.00	-12.04	-0.98	0.00	-25.37	0.00	25.37	1,727.17	863.58	2,238.01	1,120.67	2.82	-0.25	0.030
120.00	-11.42	-0.94	0.00	-20.48	0.00	20.48	1,685.07	842.53	2,103.55	1,053.34	3.09	-0.26	0.026
125.00	-10.82	-0.90	0.00	-15.78	0.00	15.78	1,641.42	820.71	1,971.23	987.08	3.36	-0.27	0.023
130.00	-10.25	-0.86	0.00	-11.28	0.00	11.28	1,596.21	798.11	1,841.24	921.99	3.64	-0.27	0.019
135.00	-9.91	-0.83	0.00	-6.99	0.00	6.99	1,549.45	774.73	1,713.83	858.19	3.93	-0.28	0.015
138.00	-5.12	-0.46	0.00	-4.49	0.00	4.49	1,520.65	760.33	1,638.71	820.57	4.11	-0.28	0.009
140.00	-4.61	-0.41	0.00	-3.58	0.00	3.58	1,501.14	750.57	1,589.21	795.79	4.23	-0.28	0.008
145.00	-4.21	-0.38	0.00	-1.51	0.00	1.51	1,451.27	725.64	1,467.60	734.89	4.52	-0.29	0.005
149.00	0.00	-0.36	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	4.76	-0.29	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-26.90	-1.39	0.00	-171.46	0.00	171.46	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.040
5.00	-25.86	-1.39	0.00	-164.52	0.00	164.52	4,288.99	2,144.49	9,788.20	4,901.38	0.00	-0.01	0.040
10.00	-24.84	-1.39	0.00	-157.56	0.00	157.56	4,237.32	2,118.66	9,469.35	4,741.71	0.02	-0.02	0.039
15.00	-23.84	-1.40	0.00	-150.59	0.00	150.59	4,184.10	2,092.05	9,152.00	4,582.80	0.04	-0.03	0.039
20.00	-22.86	-1.39	0.00	-143.61	0.00	143.61	4,129.33	2,064.66	8,836.37	4,424.75	0.08	-0.04	0.038
25.00	-21.90	-1.39	0.00	-136.64	0.00	136.64	4,073.00	2,036.50	8,522.69	4,267.68	0.12	-0.05	0.037
30.00	-20.95	-1.39	0.00	-129.68	0.00	129.68	4,015.11	2,007.56	8,211.17	4,111.69	0.17	-0.05	0.037
35.00	-20.03	-1.38	0.00	-122.74	0.00	122.74	3,955.68	1,977.84	7,902.03	3,956.89	0.23	-0.06	0.036
40.00	-19.13	-1.37	0.00	-115.84	0.00	115.84	3,894.69	1,947.34	7,595.51	3,803.40	0.31	-0.07	0.035
45.00	-18.77	-1.37	0.00	-108.98	0.00	108.98	3,832.15	1,916.07	7,291.81	3,651.33	0.39	-0.08	0.035
47.04	-17.86	-1.35	0.00	-106.19	0.00	106.19	3,806.14	1,903.07	7,168.57	3,589.61	0.43	-0.09	0.034
50.00	-16.80	-1.33	0.00	-102.19	0.00	102.19	3,768.05	1,884.02	6,991.17	3,500.78	0.48	-0.09	0.034
53.46	-16.57	-1.33	0.00	-97.57	0.00	97.57	2,934.54	1,467.27	5,439.41	2,723.75	0.55	-0.10	0.041
55.00	-15.85	-1.32	0.00	-95.52	0.00	95.52	2,920.91	1,460.46	5,371.50	2,689.74	0.59	-0.10	0.041
60.00	-15.14	-1.30	0.00	-88.94	0.00	88.94	2,875.67	1,437.83	5,151.93	2,579.79	0.70	-0.12	0.040
65.00	-14.45	-1.28	0.00	-82.45	0.00	82.45	2,828.87	1,414.44	4,933.94	2,470.64	0.83	-0.13	0.038
70.00	-13.78	-1.26	0.00	-76.04	0.00	76.04	2,780.52	1,390.26	4,717.75	2,362.38	0.97	-0.14	0.037
75.00	-13.12	-1.24	0.00	-69.74	0.00	69.74	2,730.61	1,365.31	4,503.59	2,255.14	1.13	-0.15	0.036
80.00	-12.48	-1.21	0.00	-63.56	0.00	63.56	2,679.16	1,339.58	4,291.67	2,149.02	1.29	-0.16	0.034
85.00	-11.85	-1.18	0.00	-57.52	0.00	57.52	2,626.14	1,313.07	4,082.22	2,044.14	1.47	-0.18	0.033
90.00	-11.25	-1.15	0.00	-51.61	0.00	51.61	2,571.58	1,285.79	3,875.45	1,940.61	1.66	-0.19	0.031
95.00	-11.19	-1.15	0.00	-45.86	0.00	45.86	2,515.46	1,257.73	3,671.59	1,838.53	1.86	-0.20	0.029
95.46	-10.28	-1.09	0.00	-45.33	0.00	45.33	2,510.22	1,255.11	3,652.99	1,829.21	1.88	-0.20	0.029
100.00	-10.17	-1.09	0.00	-40.36	0.00	40.36	2,457.78	1,228.89	3,470.86	1,738.01	2.07	-0.21	0.027
100.54	-9.74	-1.06	0.00	-39.77	0.00	39.77	1,840.14	920.07	2,636.71	1,320.31	2.10	-0.21	0.035
105.00	-9.27	-1.03	0.00	-35.04	0.00	35.04	1,806.70	903.35	2,512.42	1,258.08	2.30	-0.22	0.033
110.00	-8.82	-1.00	0.00	-29.90	0.00	29.90	1,767.71	883.85	2,374.37	1,188.95	2.54	-0.23	0.030
115.00	-8.37	-0.96	0.00	-24.92	0.00	24.92	1,727.17	863.58	2,238.01	1,120.67	2.78	-0.24	0.027
120.00	-7.95	-0.92	0.00	-20.12	0.00	20.12	1,685.07	842.53	2,103.55	1,053.34	3.04	-0.25	0.024
125.00	-7.53	-0.88	0.00	-15.50	0.00	15.50	1,641.42	820.71	1,971.23	987.08	3.31	-0.26	0.020
130.00	-7.13	-0.84	0.00	-11.08	0.00	11.08	1,596.21	798.11	1,841.24	921.99	3.59	-0.27	0.016
135.00	-6.89	-0.82	0.00	-6.87	0.00	6.87	1,549.45	774.73	1,713.83	858.19	3.88	-0.27	0.012
138.00	-3.56	-0.45	0.00	-4.41	0.00	4.41	1,520.65	760.33	1,638.71	820.57	4.05	-0.28	0.008
140.00	-3.20	-0.41	0.00	-3.52	0.00	3.52	1,501.14	750.57	1,589.21	795.79	4.17	-0.28	0.007
145.00	-2.93	-0.37	0.00	-1.49	0.00	1.49	1,451.27	725.64	1,467.60	734.89	4.46	-0.28	0.004
149.00	0.00	-0.36	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	4.70	-0.28	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.11
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
35	147.00	320	1.840	1.725	1.047	0.336	93	397
34	142.50	415	1.729	1.234	0.859	0.269	97	513
33	139.00	170	1.645	0.924	0.733	0.222	33	211
32	136.50	273	1.586	0.736	0.651	0.191	45	338
31	132.50	467	1.495	0.488	0.536	0.145	59	579
30	127.50	483	1.384	0.254	0.415	0.096	40	598
29	122.50	498	1.278	0.091	0.317	0.054	23	617
28	117.50	514	1.175	-0.017	0.237	0.021	9	636
27	112.50	529	1.077	-0.082	0.173	-0.004	-2	655
26	107.50	544	0.984	-0.114	0.123	-0.021	-10	674
25	102.77	498	0.899	-0.122	0.087	-0.031	-13	617
24	100.27	125	0.856	-0.120	0.071	-0.033	-4	154
23	97.73	1,057	0.813	-0.114	0.058	-0.033	-30	1,309
22	95.23	64	0.772	-0.106	0.046	-0.032	-2	79
21	92.50	705	0.728	-0.095	0.036	-0.028	-17	873
20	87.50	725	0.652	-0.071	0.021	-0.018	-11	897
19	82.50	744	0.579	-0.045	0.012	-0.005	-3	921
18	77.50	763	0.511	-0.020	0.008	0.010	6	945
17	72.50	783	0.447	0.002	0.006	0.023	16	969
16	67.50	802	0.388	0.022	0.007	0.034	23	993
15	62.50	821	0.333	0.037	0.010	0.041	29	1,017
14	57.50	840	0.281	0.049	0.014	0.046	34	1,041
13	54.23	263	0.250	0.055	0.017	0.048	11	325
12	51.73	1,225	0.228	0.059	0.020	0.049	51	1,516
11	48.52	1,063	0.200	0.063	0.023	0.049	45	1,316
10	46.02	420	0.180	0.065	0.026	0.049	18	521
9	42.50	1,045	0.154	0.068	0.030	0.048	44	1,294
8	37.50	1,068	0.120	0.070	0.034	0.047	44	1,323
7	32.50	1,091	0.090	0.071	0.038	0.046	43	1,352
6	27.50	1,115	0.064	0.072	0.041	0.045	43	1,380
5	22.50	1,138	0.043	0.071	0.042	0.043	42	1,409
4	17.50	1,161	0.026	0.067	0.040	0.040	41	1,438
3	12.50	1,184	0.013	0.059	0.034	0.036	37	1,467
2	7.50	1,207	0.005	0.044	0.025	0.028	30	1,495

1	2.50	1,231	0.001	0.018	0.010	0.013	14	1,524
Alcatel-Lucent B13 R	149.00	173	1.890	1.980	1.140	0.368	55	215
Alcatel-Lucent B66A	149.00	201	1.890	1.980	1.140	0.368	64	249
RFS DB-C1-12C-24AB-0	149.00	32	1.890	1.980	1.140	0.368	10	40
Amphenol Antel LPA-8	149.00	126	1.890	1.980	1.140	0.368	40	156
Commscope JAHH-65B-	149.00	364	1.890	1.980	1.140	0.368	116	450
Flat T-Arm w/ Workin	149.00	900	1.890	1.980	1.140	0.368	287	1,115
VZW Unused Reserve:	149.00	1,604	1.890	1.980	1.140	0.368	512	1,986
Ericsson Radio 4449	138.00	592	1.621	0.846	0.699	0.209	107	733
RFS SC2-W100AB	138.00	22	1.621	0.846	0.699	0.209	4	27
Ericsson AIR 32 B2A/	138.00	573	1.621	0.846	0.699	0.209	104	710
RFS APXVAARR24_43-U-	138.00	512	1.621	0.846	0.699	0.209	93	634
Flat Platform w/ Han	138.00	2,000	1.621	0.846	0.699	0.209	362	2,477
		32,449	44.163	23.526	17.324	5.444	2,632	40,185

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
35	147.00	320	1.840	1.725	1.047	0.336	93	276
34	142.50	415	1.729	1.234	0.859	0.269	97	357
33	139.00	170	1.645	0.924	0.733	0.222	33	147
32	136.50	273	1.586	0.736	0.651	0.191	45	235
31	132.50	467	1.495	0.488	0.536	0.145	59	403
30	127.50	483	1.384	0.254	0.415	0.096	40	416
29	122.50	498	1.278	0.091	0.317	0.054	23	429
28	117.50	514	1.175	-0.017	0.237	0.021	9	442
27	112.50	529	1.077	-0.082	0.173	-0.004	-2	456
26	107.50	544	0.984	-0.114	0.123	-0.021	-10	469
25	102.77	498	0.899	-0.122	0.087	-0.031	-13	429
24	100.27	125	0.856	-0.120	0.071	-0.033	-4	107
23	97.73	1,057	0.813	-0.114	0.058	-0.033	-30	911
22	95.23	64	0.772	-0.106	0.046	-0.032	-2	55
21	92.50	705	0.728	-0.095	0.036	-0.028	-17	608
20	87.50	725	0.652	-0.071	0.021	-0.018	-11	624
19	82.50	744	0.579	-0.045	0.012	-0.005	-3	641
18	77.50	763	0.511	-0.020	0.008	0.010	6	658
17	72.50	783	0.447	0.002	0.006	0.023	16	674
16	67.50	802	0.388	0.022	0.007	0.034	23	691
15	62.50	821	0.333	0.037	0.010	0.041	29	708
14	57.50	840	0.281	0.049	0.014	0.046	34	724
13	54.23	263	0.250	0.055	0.017	0.048	11	226
12	51.73	1,225	0.228	0.059	0.020	0.049	51	1,055
11	48.52	1,063	0.200	0.063	0.023	0.049	45	915
10	46.02	420	0.180	0.065	0.026	0.049	18	362
9	42.50	1,045	0.154	0.068	0.030	0.048	44	900
8	37.50	1,068	0.120	0.070	0.034	0.047	44	920
7	32.50	1,091	0.090	0.071	0.038	0.046	43	940
6	27.50	1,115	0.064	0.072	0.041	0.045	43	960
5	22.50	1,138	0.043	0.071	0.042	0.043	42	980
4	17.50	1,161	0.026	0.067	0.040	0.040	41	1,000
3	12.50	1,184	0.013	0.059	0.034	0.036	37	1,020
2	7.50	1,207	0.005	0.044	0.025	0.028	30	1,040
1	2.50	1,231	0.001	0.018	0.010	0.013	14	1,060
Alcatel-Lucent B13 R	149.00	173	1.890	1.980	1.140	0.368	55	149
Alcatel-Lucent B66A	149.00	201	1.890	1.980	1.140	0.368	64	173
RFS DB-C1-12C-24AB-0	149.00	32	1.890	1.980	1.140	0.368	10	28
Amphenol Antel LPA-8	149.00	126	1.890	1.980	1.140	0.368	40	109
Commscope JAHH-65B-	149.00	364	1.890	1.980	1.140	0.368	116	313

Flat T-Arm w/ Workin	149.00	900	1.890	1.980	1.140	0.368	287	775
VZW Unused Reserve:	149.00	1,604	1.890	1.980	1.140	0.368	512	1,382
Ericsson Radio 4449	138.00	592	1.621	0.846	0.699	0.209	107	510
RFS SC2-W100AB	138.00	22	1.621	0.846	0.699	0.209	4	19
Ericsson AIR 32 B2A/	138.00	573	1.621	0.846	0.699	0.209	104	494
RFS APXVAARR24_43-U-	138.00	512	1.621	0.846	0.699	0.209	93	441
Flat Platform w/ Han	138.00	2,000	1.621	0.846	0.699	0.209	362	1,723
		32,449	44.163	23.526	17.324	5.444	2,632	27,958

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.66	-2.62	0.00	-331.95	0.00	331.95	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.074
5.00	-37.16	-2.61	0.00	-318.83	0.00	318.83	4,288.99	2,144.49	9,788.20	4,901.38	0.01	-0.02	0.074
10.00	-35.70	-2.58	0.00	-305.80	0.00	305.80	4,237.32	2,118.66	9,469.35	4,741.71	0.04	-0.03	0.073
15.00	-34.26	-2.55	0.00	-292.91	0.00	292.91	4,184.10	2,092.05	9,152.00	4,582.80	0.08	-0.05	0.072
20.00	-32.85	-2.51	0.00	-280.18	0.00	280.18	4,129.33	2,064.66	8,836.37	4,424.75	0.15	-0.07	0.071
25.00	-31.47	-2.48	0.00	-267.61	0.00	267.61	4,073.00	2,036.50	8,522.69	4,267.68	0.23	-0.09	0.070
30.00	-30.12	-2.44	0.00	-255.22	0.00	255.22	4,015.11	2,007.56	8,211.17	4,111.69	0.33	-0.11	0.070
35.00	-28.79	-2.41	0.00	-243.00	0.00	243.00	3,955.68	1,977.84	7,902.03	3,956.89	0.45	-0.13	0.069
40.00	-27.50	-2.37	0.00	-230.97	0.00	230.97	3,894.69	1,947.34	7,595.51	3,803.40	0.60	-0.15	0.068
45.00	-26.98	-2.36	0.00	-219.12	0.00	219.12	3,832.15	1,916.07	7,291.81	3,651.33	0.76	-0.17	0.067
47.04	-25.66	-2.31	0.00	-214.31	0.00	214.31	3,806.14	1,903.07	7,168.57	3,589.61	0.83	-0.17	0.066
50.00	-24.14	-2.26	0.00	-207.47	0.00	207.47	3,768.05	1,884.02	6,991.17	3,500.78	0.94	-0.19	0.066
53.46	-23.82	-2.25	0.00	-199.65	0.00	199.65	2,934.54	1,467.27	5,439.41	2,723.75	1.08	-0.20	0.081
55.00	-22.78	-2.22	0.00	-196.18	0.00	196.18	2,920.91	1,460.46	5,371.50	2,689.74	1.15	-0.21	0.081
60.00	-21.76	-2.20	0.00	-185.06	0.00	185.06	2,875.67	1,437.83	5,151.93	2,579.79	1.38	-0.23	0.079
65.00	-20.76	-2.18	0.00	-174.07	0.00	174.07	2,828.87	1,414.44	4,933.94	2,470.64	1.64	-0.26	0.078
70.00	-19.79	-2.17	0.00	-163.17	0.00	163.17	2,780.52	1,390.26	4,717.75	2,362.38	1.92	-0.28	0.076
75.00	-18.85	-2.17	0.00	-152.32	0.00	152.32	2,730.61	1,365.31	4,503.59	2,255.14	2.23	-0.31	0.074
80.00	-17.93	-2.17	0.00	-141.49	0.00	141.49	2,679.16	1,339.58	4,291.67	2,149.02	2.56	-0.33	0.073
85.00	-17.03	-2.19	0.00	-130.63	0.00	130.63	2,626.14	1,313.07	4,082.22	2,044.14	2.92	-0.36	0.070
90.00	-16.15	-2.21	0.00	-119.70	0.00	119.70	2,571.58	1,285.79	3,875.45	1,940.61	3.31	-0.38	0.068
95.00	-16.07	-2.21	0.00	-108.67	0.00	108.67	2,515.46	1,257.73	3,671.59	1,838.53	3.73	-0.41	0.066
95.46	-14.76	-2.23	0.00	-107.66	0.00	107.66	2,510.22	1,255.11	3,652.99	1,829.21	3.77	-0.41	0.065
100.00	-14.61	-2.24	0.00	-97.51	0.00	97.51	2,457.78	1,228.89	3,470.86	1,738.01	4.17	-0.44	0.062
100.54	-13.99	-2.25	0.00	-96.29	0.00	96.29	1,840.14	920.07	2,636.71	1,320.31	4.22	-0.44	0.081
105.00	-13.32	-2.26	0.00	-86.26	0.00	86.26	1,806.70	903.35	2,512.42	1,258.08	4.65	-0.46	0.076
110.00	-12.66	-2.27	0.00	-74.94	0.00	74.94	1,767.71	883.85	2,374.37	1,188.95	5.15	-0.49	0.070
115.00	-12.02	-2.26	0.00	-63.61	0.00	63.61	1,727.17	863.58	2,238.01	1,120.67	5.68	-0.52	0.064
120.00	-11.41	-2.23	0.00	-52.33	0.00	52.33	1,685.07	842.53	2,103.55	1,053.34	6.24	-0.55	0.056
125.00	-10.81	-2.19	0.00	-41.17	0.00	41.17	1,641.42	820.71	1,971.23	987.08	6.82	-0.57	0.048
130.00	-10.23	-2.13	0.00	-30.21	0.00	30.21	1,596.21	798.11	1,841.24	921.99	7.43	-0.59	0.039
135.00	-9.89	-2.08	0.00	-19.56	0.00	19.56	1,549.45	774.73	1,713.83	858.19	8.06	-0.61	0.029
138.00	-5.11	-1.33	0.00	-13.32	0.00	13.32	1,520.65	760.33	1,638.71	820.57	8.45	-0.61	0.020
140.00	-4.59	-1.23	0.00	-10.66	0.00	10.66	1,501.14	750.57	1,589.21	795.79	8.70	-0.62	0.016
145.00	-4.20	-1.13	0.00	-4.52	0.00	4.52	1,451.27	725.64	1,467.60	734.89	9.35	-0.62	0.009
149.00	0.00	-1.08	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	9.88	-0.63	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-26.90	-2.62	0.00	-328.14	0.00	328.14	4,339.10	2,169.55	10,108.3	5,061.68	0.00	0.00	0.071
5.00	-25.86	-2.60	0.00	-315.03	0.00	315.03	4,288.99	2,144.49	9,788.20	4,901.38	0.01	-0.02	0.070
10.00	-24.84	-2.57	0.00	-302.03	0.00	302.03	4,237.32	2,118.66	9,469.35	4,741.71	0.04	-0.03	0.070
15.00	-23.83	-2.54	0.00	-289.18	0.00	289.18	4,184.10	2,092.05	9,152.00	4,582.80	0.08	-0.05	0.069
20.00	-22.85	-2.50	0.00	-276.51	0.00	276.51	4,129.33	2,064.66	8,836.37	4,424.75	0.14	-0.07	0.068
25.00	-21.89	-2.46	0.00	-264.01	0.00	264.01	4,073.00	2,036.50	8,522.69	4,267.68	0.23	-0.09	0.067
30.00	-20.95	-2.42	0.00	-251.70	0.00	251.70	4,015.11	2,007.56	8,211.17	4,111.69	0.33	-0.11	0.066
35.00	-20.03	-2.39	0.00	-239.58	0.00	239.58	3,955.68	1,977.84	7,902.03	3,956.89	0.45	-0.12	0.066
40.00	-19.13	-2.35	0.00	-227.66	0.00	227.66	3,894.69	1,947.34	7,595.51	3,803.40	0.59	-0.14	0.065
45.00	-18.77	-2.33	0.00	-215.93	0.00	215.93	3,832.15	1,916.07	7,291.81	3,651.33	0.75	-0.16	0.064
47.04	-17.85	-2.29	0.00	-211.16	0.00	211.16	3,806.14	1,903.07	7,168.57	3,589.61	0.82	-0.17	0.064
50.00	-16.79	-2.24	0.00	-204.40	0.00	204.40	3,768.05	1,884.02	6,991.17	3,500.78	0.93	-0.18	0.063
53.46	-16.57	-2.23	0.00	-196.66	0.00	196.66	2,934.54	1,467.27	5,439.41	2,723.75	1.07	-0.20	0.078
55.00	-15.84	-2.20	0.00	-193.23	0.00	193.23	2,920.91	1,460.46	5,371.50	2,689.74	1.14	-0.20	0.077
60.00	-15.14	-2.17	0.00	-182.26	0.00	182.26	2,875.67	1,437.83	5,151.93	2,579.79	1.36	-0.23	0.076
65.00	-14.44	-2.15	0.00	-171.41	0.00	171.41	2,828.87	1,414.44	4,933.94	2,470.64	1.61	-0.25	0.074
70.00	-13.77	-2.14	0.00	-160.66	0.00	160.66	2,780.52	1,390.26	4,717.75	2,362.38	1.89	-0.28	0.073
75.00	-13.11	-2.13	0.00	-149.97	0.00	149.97	2,730.61	1,365.31	4,503.59	2,255.14	2.20	-0.30	0.071
80.00	-12.47	-2.14	0.00	-139.31	0.00	139.31	2,679.16	1,339.58	4,291.67	2,149.02	2.53	-0.33	0.069
85.00	-11.84	-2.15	0.00	-128.62	0.00	128.62	2,626.14	1,313.07	4,082.22	2,044.14	2.88	-0.35	0.067
90.00	-11.23	-2.17	0.00	-117.86	0.00	117.86	2,571.58	1,285.79	3,875.45	1,940.61	3.27	-0.38	0.065
95.00	-11.18	-2.17	0.00	-107.01	0.00	107.01	2,515.46	1,257.73	3,671.59	1,838.53	3.68	-0.41	0.063
95.46	-10.27	-2.20	0.00	-106.01	0.00	106.01	2,510.22	1,255.11	3,652.99	1,829.21	3.72	-0.41	0.062
100.00	-10.16	-2.21	0.00	-96.02	0.00	96.02	2,457.78	1,228.89	3,470.86	1,738.01	4.12	-0.43	0.059
100.54	-9.73	-2.22	0.00	-94.82	0.00	94.82	1,840.14	920.07	2,636.71	1,320.31	4.17	-0.43	0.077
105.00	-9.26	-2.23	0.00	-84.94	0.00	84.94	1,806.70	903.35	2,512.42	1,258.08	4.58	-0.46	0.073
110.00	-8.80	-2.23	0.00	-73.80	0.00	73.80	1,767.71	883.85	2,374.37	1,188.95	5.08	-0.49	0.067
115.00	-8.36	-2.22	0.00	-62.65	0.00	62.65	1,727.17	863.58	2,238.01	1,120.67	5.60	-0.51	0.061
120.00	-7.93	-2.20	0.00	-51.54	0.00	51.54	1,685.07	842.53	2,103.55	1,053.34	6.15	-0.54	0.054
125.00	-7.51	-2.16	0.00	-40.55	0.00	40.55	1,641.42	820.71	1,971.23	987.08	6.73	-0.56	0.046
130.00	-7.11	-2.10	0.00	-29.77	0.00	29.77	1,596.21	798.11	1,841.24	921.99	7.33	-0.58	0.037
135.00	-6.88	-2.05	0.00	-19.29	0.00	19.29	1,549.45	774.73	1,713.83	858.19	7.95	-0.60	0.027
138.00	-3.55	-1.31	0.00	-13.15	0.00	13.15	1,520.65	760.33	1,638.71	820.57	8.33	-0.60	0.018
140.00	-3.19	-1.21	0.00	-10.52	0.00	10.52	1,501.14	750.57	1,589.21	795.79	8.58	-0.61	0.015
145.00	-2.92	-1.12	0.00	-4.46	0.00	4.46	1,451.27	725.64	1,467.60	734.89	9.22	-0.61	0.008
149.00	0.00	-1.08	0.00	0.00	0.00	0.00	1,400.09	700.04	1,362.73	682.38	9.74	-0.62	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	21.43	0.00	38.91	0.00	0.00	2485.30	53.46	0.53
0.9D + 1.6W	21.42	0.00	29.18	0.00	0.00	2462.65	53.46	0.52
1.2D + 1.0Di + 1.0Wi	3.78	0.00	66.48	0.00	0.00	394.88	0.00	0.09
(1.2 + 0.2Sds) * DL + E ELFM	1.39	0.00	38.66	0.00	0.00	173.33	53.46	0.04
(1.2 + 0.2Sds) * DL + E EMAM	2.62	0.00	38.66	0.00	0.00	331.95	53.46	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.39	0.00	26.90	0.00	0.00	171.46	53.46	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.62	0.00	26.90	0.00	0.00	328.14	53.46	0.08
1.0D + 1.0W	5.95	0.00	32.45	0.00	0.00	686.60	53.46	0.15

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
4,230.70	28.90	38.70	2,485.30	66.48	21.43	58.74

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	3.000	71.000	Round	0	0.00	7.538	316.96	763.22	0.42

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
65.00	24	2.25" A615-	2.25	75.00	100.00	Radial	0.00	0.0	79.24	260.00	0.31	73.70	260.00	0.29

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

SITE NO: 413850 **SITE NAME: Goshen (Brass Mountain) CT**

ADDRESS: 438 North Street, Litchfield CT

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, operator of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize Transcend Wireless, its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit Transcend Wireless to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (Tower Facility owner and/or operator), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 18 day of October, 2018.

NOTARY SEAL

MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public _____
My Commission Expires: March 14, 2025

* American Tower as used herein is defined as American Tower Corporation and any of its affiliates or subsidiaries.

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH552A

ATC Goshen (Brass Mtn)
406 North Street
Goshen, CT 06756

September 4, 2018

EBI Project Number: 6218006020

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.60 %

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

EBI Consulting
environmental | engineering | due diligence

September 4, 2018

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

Emissions Analysis for Site: **CTNH552A – ATC Goshen (Brass Mtn)**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **406 North Street, Goshen, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **406 North Street, Goshen, 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 and 20 dB for highly focused parabolic microwave dishes minus 10 dB for directional panel antennas for broadcast and microwave backhaul, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 1 UMTS channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

2) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) 1 microwave backhaul channel (11 GHz) was considered for the proposed facility on Sector A. This channel has a transmit power of 1 Watt.

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

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

9) The antennas used in this modeling are the **Ericsson AIR32 B2A/B66A** for 1900 MHz (PCS) and 2100 MHz (AWS) channels, the **RFS APXVAARR24_43-U-NA20** for 600 MHz and 700 MHz channels as well as the **Commscope SC2-W100AB** for the proposed 11 GHz microwave backhaul. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes minus 10 dB for directional panel antennas for broadcast and microwave backhaul, 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.

10) The antenna mounting height centerline of the proposed antennas (both panel antennas and microwave dish) is **138 feet** above ground level (AGL).

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

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B2A/B66A	Make / Model:	Ericsson AIR32 B2A/B66A	Make / Model:	Ericsson AIR32 B2A/B66A	Make / Model:	Ericsson AIR32 B2A/B66A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	5	Channel Count	5	Channel Count	5	Channel Count	5
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	**1.93**	Antenna B1 MPE%	**1.93**	Antenna C1 MPE%	**1.93**	Antenna D1 MPE%	**1.93**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd
Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03
Antenna A2 MPE%	**1.20**	Antenna B2 MPE%	**1.20**	Antenna C2 MPE%	**1.20**	Antenna D2 MPE%	**1.20**

Microwave Backhaul Data

Make / Model:	Gain	Height (AGL):	Frequency Bands	Channel Count	Total TX Power(W)	ERP (W)	MPE %	Sector
Commscope SC2-W100AB	32.35 dBd	138	11 GHz	1	1	1717.91	**0.03**	A

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Sector A)	**3.16 %**
Verizon Wireless	**3.54** %
AT&T	**0.90** %
Site Total MPE %:	**7.60 %**

T-Mobile Sector A Total:	3.16 %
T-Mobile Sector B Total:	3.13 %
T-Mobile Sector C Total:	3.13 %
T-Mobile Sector D Total:	3.13 %
Site Total:	7.60 %

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile _Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,556.18	138	6.42	PCS - 1900 MHz	1000.00	0.64%
T-Mobile PCS - 1900 MHz UMTS	1	1,556.18	138	3.21	PCS - 1900 MHz	1000.00	0.32%
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	138	9.65	AWS - 2100 MHz	1000.00	0.97%
T-Mobile 600 MHz LTE	2	788.97	138	3.29	600 MHz	400.00	0.82%
T-Mobile 700 MHz LTE	2	432.54	138	1.78	700 MHz	467.00	0.38%
T-Mobile 11 GHz Microwave	1	1,717.91	138	0.35	11 GHz	1000.00	0.03%
						Total:	**3.16%**

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:	3.16 %
Sector B:	3.13 %
Sector C:	3.13 %
Sector D:	3.13 %
T-Mobile Maximum MPE % (Sector A):	3.16 %
Site Total:	7.60 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.60%** 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.

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, October 22, 2018 12:05 PM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CTNH552A FS

You have a package coming.

Scheduled Delivery Date: Tuesday, 10/23/2018

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424296883215
Ship To:	Bob Valentine Town of Goshen 42A North Street GOSHEN, CT 067561543 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	10/23/2018
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CTNH552A FS

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Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, October 22, 2018 12:06 PM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CTNH552A TO

You have a package coming.

Scheduled Delivery Date: Tuesday, 10/23/2018

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Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424298333225
Ship To:	American Tower Corporation 10 Presidential Way WOBURN, MA 018011053 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	10/23/2018
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CTNH552A TO

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Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, October 22, 2018 12:08 PM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CTNH552A ZO

You have a package coming.

Scheduled Delivery Date: Tuesday, 10/23/2018

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424299803233
Ship To:	Martin Connor Town of Goshen 42A North Street GOSHEN, CT 067561543 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	10/23/2018
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CTNH552A ZO

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Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, October 22, 2018 12:09 PM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CTNH552A PO

A signature is required for package delivery

You have a package coming.

Scheduled Delivery Date: Tuesday, 10/23/2018

Sign Now

Change Delivery | Manage Preferences | View Delivery Planner

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424296293246
Ship To:	Arca LLC 25 Larchmont Circle STRATFORD, CT 066141336 US