Filed by:
G. Scott Shepherd, Property Development Specialist II- SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - gshepherd@sbasite.com

August 3, 2021

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

Notice of Exempt Modification
113 Broadway Extension (aka 7 Broadway Extension), Mystic, CT
Latitude: 41.349536
Longitude: 71.963644
T-Mobile #: CT11166A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 117-foot of the existing 155-foot Water Tank at 113 Broadway Extension (aka 7 Broadway Extension) in Mystic, CT. The water tank is owned by Planeta Properties and is managed by SBA Site Management (recently acquired from Message Center Management.) T-Mobile now intends to remove six (6) antennas and replace six (6) new L600/700/1900/2100MHz antennas.

- **The antennas would support 5G services and would be installed at the 117-foot level of the Water Tank**

Planned Modifications:

TOWER

Remove:
- N/A

Remove and Replace:
- (3) Ericsson Air21 B2A/B4P antennas (remove) – (3) Ericsson AIR6449 B41 2500MHz antennas (replace)
- (3) Ericsson Air21 B4A/B2P antennas (remove) – (3) RFS APXVAALL24-43-U-NA20 600/700/1900MHz antennas (replace)
- (3) Commscope LNX-6515DS-VTM antennas (remove) – (3) RFS APX16DWV-16DWVS-E-A20 2100MHz antennas (replace)
- (3) Ericsson S11B12 RRUs (replace) – (3) Ericsson 4449 B71 + B85 RRUs

Install New:

- (3) Ericsson 4415 B66A RRUs
- (6) 2" HCS Fiber
- (3) Ericsson 4415 RRHS

Existing Equipment to Remain:

- (3) Ericsson KRY 112/71 TMAs

Entitlements):

- (3) Twin TMAs
- (12) 1-5/8" coax
- (3) 1-1/4" fiber

GROUND

Remove:

- Nortel S8000 Equipment cabinet

Remove and Replace:

- Existing power panel (remove) – Telco panel (replace) as required

Install New:

- 100A AC Service to be upgraded
- Purcell RAC24 cabinet to proposed Unistrut
- (8) 2" RGS conduit
- (1) 1" RGS conduit
- 200A AC serice to existing Unistrut
- Slackbox
- Ericsson B160 Battery cabinet
- Ericsson 6161 Equipment cabinet

Existing Equipment to Remain:

- (1) 1/2" coax (for GPS)
- (1) 10' x 8' Concrete Pad
- Ice Shield
- (1) RBS6131 Equipment cabinet

This facility was originally approved prior to the Council's jurisdiction. On September 2, 1999, the Town of Stonington's Planning and Zoning Commission approved application #PZ9954SPA under Site Plan Approval for the installation of antennas on an existing water tank and the placement of equipment shelter. The only stipulation set was that noise be measured after installation of the tower to assure town zoning compliance. There were no other post construction stipulations set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Stonington's First Selectman, Robert Simmons, and Zoning Enforcement Officer, Candace Palmer, as well as to the property owner, Planeta Properties. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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

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

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

Sincerely,

G. Scott Shepherd
Property Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
gshepherd@sbasite.com

Attachments

cc: Danielle Chesebrough, First Selectman / with attachments
Town of Stonington, 152 Elm Street, Stonington, CT 06378
Keith Brynes, Planning & Zoning Commission / with attachments
Town of Stonington, 152 Elm Street, Stonington, CT 06378
Planeta Properties c/o Edward Planeta / with attachments
4343 Corso Venetia Blvd., Venice FL 34293 (SBA Address on File)
7 Broadway Avenue Extension, Mystic, CT 06355 (Town Address on File)

EXHIBIT LIST

Exhibit 1	Check Copy	x
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Stonington P&Z 9/2/99
Exhibit 6	Construction Drawings	Chappell Engineering 5/20/21
Exhibit 7	Structural Analysis	All Points Technology 5/10/21
Exhibit 8	EME Report	EBI Consulting 6/9/21

EXHIBIT 1

EXHIBIT 2

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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

FedEx

TRACK ANOTHER SHIPMENT

774430873171

ADD NICKNAME

Scheduled delivery:
Thursday, August 5, 2021 before 10:30 am

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council
Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Wednesday, August 4, 2021

12:37 PM	FRAMINGHAM, MA	Picked up

Tuesday, August 3, 2021

10:48 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774430873171

SERVICE
FedEx Priority Overnight

WEIGHT
2 lbs / 0.91 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Pak

SPECIAL HANDLING SECTION
Deliver Weekday

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FedEx

TRACK ANOTHER SHIPMENT

774430936456

ADD NICKNAME

Scheduled delivery:
Thursday, August 5, 2021 before 12:00 pm

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Danielle Chesebrough, First Selectm
Town of Stonington
152 Elm St
STONINGTON, CT US 06378
508-251-0720

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Wednesday, August 4, 2021

12:37 PM	FRAMINGHAM, MA	Picked up

Tuesday, August 3, 2021

10:51 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774430936456

SERVICE
FedEx Priority Overnight

WEIGHT
0.5 lbs / 0.23 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

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FedEx

TRACK ANOTHER SHIPMENT

774430975361

ADD NICKNAME

Scheduled delivery:
Thursday, August 5, 2021 before 12:00 pm

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Kieth Brynes, Plann & Zoning Comm.
Town of Stonington
152 Elm St
STONINGTON, CT US 06378
508-251-0720

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Wednesday, August 4, 2021

12:37 PM	FRAMINGHAM, MA	Picked up

Tuesday, August 3, 2021

10:54 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774430975361

SERVICE
FedEx Priority Overnight

WEIGHT
0.5 lbs / 0.23 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

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FedEx

TRACK ANOTHER SHIPMENT

774431018128

ADD NICKNAME

Scheduled delivery:
Thursday, August 5, 2021 before 12:00 pm

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Edward Planeta
Planeta Properties
4343 Corso Venetia Blvd
VENICE, FL US 34293
508-251-0720

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Wednesday, August 4, 2021

12:37 PM	FRAMINGHAM, MA	Picked up

Tuesday, August 3, 2021

10:56 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774431018128

SERVICE
FedEx Priority Overnight

WEIGHT
0.5 lbs / 0.23 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

EXHIBIT 3

Town of Stonington, CT

Property Listing Report

Map Block Lot	174-22-1	Building #	1	Section #	1	Account	00664600

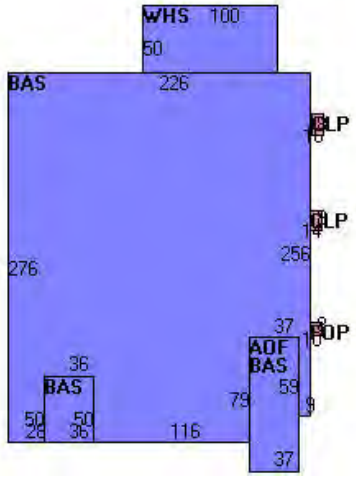
Property Information

Property Location	7 BROADWAY AVE EXT
Owner	PLANETA PROPERTIES
Co-Owner	
Mailing Address	7 BROADWAY AVENUE EXT MYSTIC CT 06355-2847
Land Use	4000 INDUSTRIAL M-96
Land Class	I
Zoning Code	M-1
Census Tract	7053

Street Index	3500
Acreage	4.3
Utilities	
Lot Setting/Desc	Suburban
Survey Map #	NA
School District	
Fire District	Mystic
Trash Day	M TH
Polling Place (District)	4

Photo

Sketch



Primary Construction Details

Year Built	1950
Stories	1
Building Style	Industrial
Building Use	Ind/Comm
Building Condition	AV
Occupancy	1
Extra Fixtures	
Bath Style	NA
Kitchen Style	NA
AC Type	None
Heating Type	Steam
Heating Fuel	Oil

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Total Rooms	0
Roof Style	Flat
Roof Cover	Tar & Gravel
Interior Floors 1	Concr Abv Grad
Interior Floors 2	Carpet
Exterior Walls	Brick/Masonry
Exterior Walls 2	Pre-finsh Metl
Interior Walls	Minim/Masonry
Interior Walls 2	Drywall/Sheet

(*Industrial / Commercial Details)

Building Desc.	INDUSTRIAL M-96
Building Grade	Ave/Good
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & MIN WL
Rooms / Prtns	AVERAGE
Wall Height	14
First Floor Use	4000

Report Created On 5/10/2019

Town of Stonington, CT

Property Listing Report | Map Block Lot 174-22-1 | Building # 1 | Section # 1 | Account 00664600

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	2529700	1770800
Extras	49900	35000
Improvements		
Outbuildings	259000	181200
Land	740300	518200
Total	3578900	2505200

Outbuilding and Extra Features

Type	Description
PAVING-ASPHALT	48000.00 S.F.
ELEVATED TANK	75000.00 GALS
FENCE-8' CHAIN	218.00 L.F.
W/LIGHTS ETC	64.00 S.F.
FENCE-6' CHAIN	288.00 L.F.
SHED FRAME	42.00 S.F.
SPRINKLERS-WET	64683.00 S.F.
WET/CONCEALED	6786.00 S.F.
DRY	777.00 S.F.
LOAD LEVELERS	2.00 UNITS

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Office, (Average)	3700	3700
First Floor	62973	62973
Loading Platform, Finished	240	0
Porch, Open	80	0
Warehouse	5000	3250
Total Area	71993	69923

Sales History

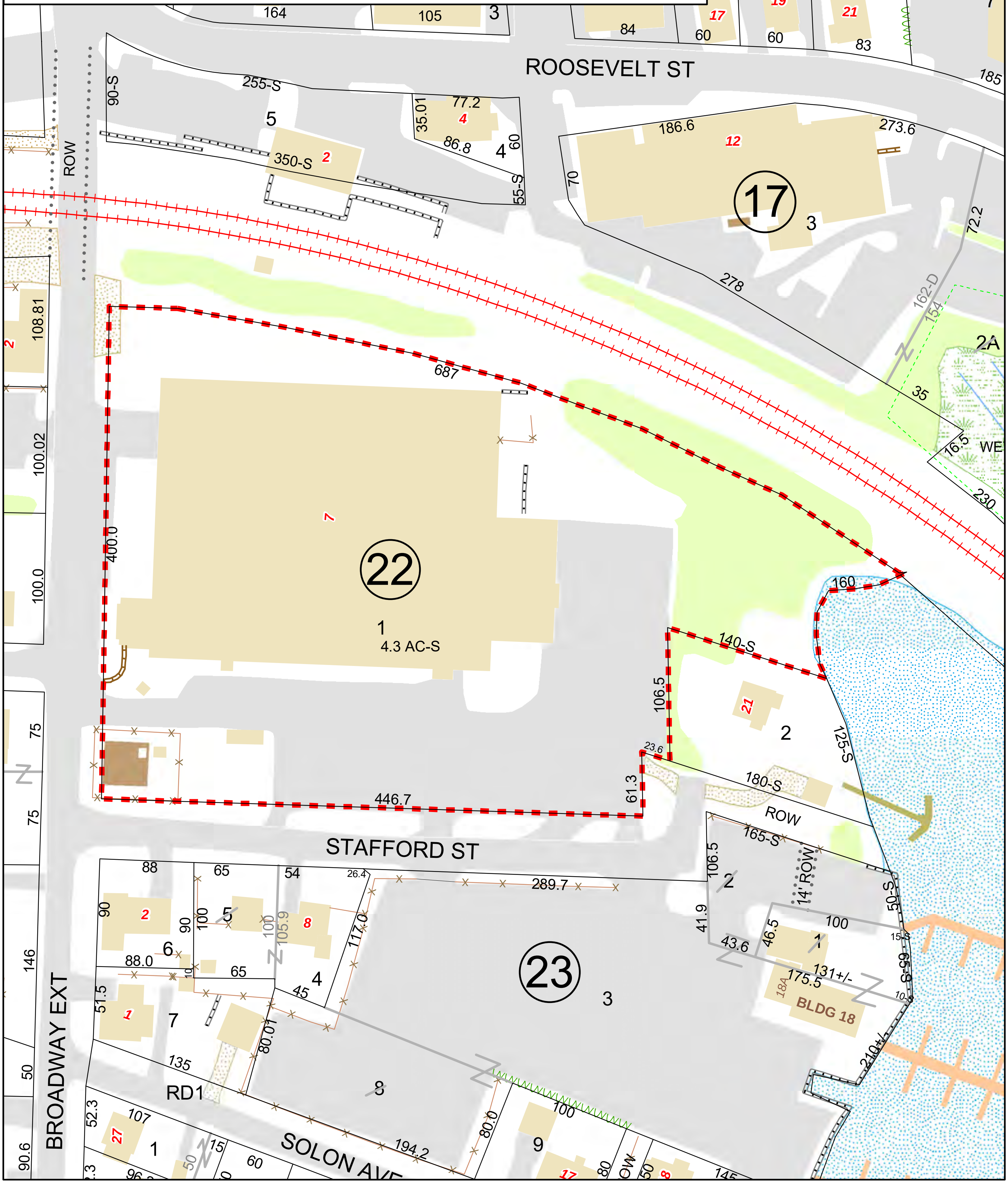
Owner of Record	Book/ Page	Sale Date	Sale Price
PLANETA PROPERTIES	0409/0933	10/20/1997	0
PLANETA EDWARD J	0221/0680	12/29/1978	0

Report Created On 5/10/2019

EXHIBIT 4

Town of Stonington, Connecticut - Assessment Parcel Map

Parcel: 174-22-1 Address: 7 BROADWAY AVE EXT



Approximate Scale:

1 inch = 100 feet

0 60 120 180 240 Feet

Revised To: October 2018 **Map Produced: April 2019**

Google Maps 113 Broadway Ave Ext

Imagery ©2021 Maxar Technologies, USDA Farm Service Agency, Map data ©2021 200 ft

113 Broadway Ave Ext

Mystic, CT 06355

Directions Save Nearby Send to your phone Share

Photos

EXHIBIT 5

The Planning and Zoning Commission
152 Elm Street, P.O. Box 352
Stonington, Connecticut 06378
(860) 535-5095

September 7, 1999

Sue Bellion
Nextell Communications
100 Corporate Place
Rocky Hill, CT 06067

Dear Ms. Bellion:

The Planning and Zoning Commission at their meeting of September 2, 1999 voted to APPROVE your application - **#PZ9954SPA NEXTEL COMM., applicant; EDWARD PLANETA, owner** - Application for Site Plan Approval for the installation of antennas on existing water tank and placement of equipment shelter. Property located at 7 Broadway Extension, Mystic. Assessor's Map 174 Block 22 Lot 1 Zone M-1. Your application was approved with the following stipulation:

1. The noise shall be measured after the equipment has been installed to assure compliance with the town zoning regulations.

Please schedule an appointment with the Planning Office to review the final plans which have incorporated all the above stipulations and/or changes and have been listed on the site plan. Please bring to the Planning and Zoning Office for the Chairman's signature one (1) set of bluelines. If you require a signed copy of the site plan for your files, please provide the Planning office with the additional copy.

If you have any questions, please feel free to contact the Planning Office.

Sincerely,

Edward C. Donnelly

Edward Donnelly, AICP
Planning Director

THE TOWN OF STONINGTON
Planning and Zoning Commission
152 Elm Street, P.O. Box 352
Stonington, Connecticut 06378

RECORD OF DECISION

APPLICATION:

#PZ9954SPA NEXTEL COMM., applicant; EDWARD PLANETA, owner - Application for Site Plan Approval for the installation of antennas on existing water tank and placement of equipment shelter. Property located at 7 Broadway Extension, Mystic. Assessor's Map 174 Block 22 Lot 1 Zone M-1.

MEETING DATE:

SIGNATURES	APPROVED/DENIED
Chairman	APPROVED
	Approved
	Approved
	APPROVED
	APPROVED

THIS APPLICATION WAS APPROVED/~~DENIED~~ ON THIS DATE 9/2/99

STIPULATIONS/~~REASONS~~:

1) The noise shall be measured after the equipment has been installed to assure compliance with the town zoning regulations.

EXHIBIT 6

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

MYSTIC/DOWNTOWN_1

7 BROADWAY AVENUE EXT.
MYSTIC, CT 06355
NEW LONDON COUNTY

SITE NO.: CT11166A

RF DESIGN GUIDELINE: 67D5A998C OUTDOOR

SCOPE OF WORK

REMOVE:
- 9 ANTENNAS
- 3 RRUs
- 12 COAX CABLES
- 3 HYBRID CABLE
- 1 NORTEL CABINET
- 1 100A AC SERVICE

INSTALL:
- 9 ANTENNAS
- 9 RRUs
- 1 B160 BATTERY CABINET
- 1 6160 CABINET
- 1 SLACKBOX
- 1 PURCELL CABINET
- 6 HYBRID CABLES
- 1 200A AC SERVICE

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

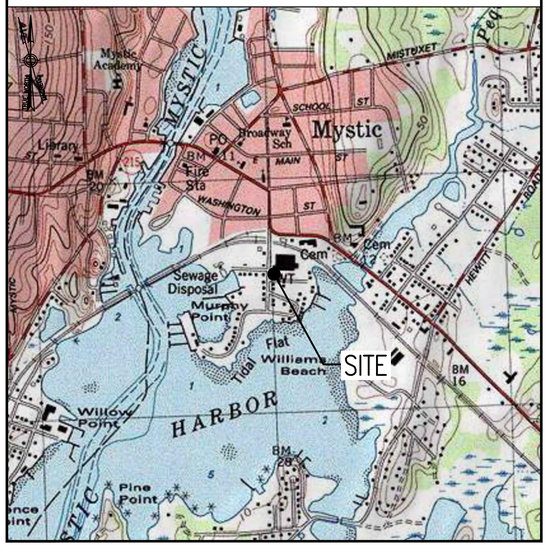
GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOINT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

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

VICINITY MAP

SCALE: 1" = 1000'-0"



DIRECTIONS

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 13B TO MERGE ONTO I-95 SOUTH TOWARD PROVIDENCE RI. TAKE EXIT 91 TOWARD MYSTIC. TURN LEFT ONTO TAUGWONK ROAD. TURN LEFT ONTO FARMHOLME ROAD. TURN LEFT. SITE WILL BE ON THE RIGHT.

SHEET INDEX

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DO NOT SCALE DRAWINGS

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

PROJECT SUMMARY

SITE NUMBER:	CT11166A
SBA SITE NUMBER:	CT95630-L
SBA SITE NAME:	MYSTIC (BROADWAY)
SITE ADDRESS:	7 BROADWAY AVENUE EXTENSION MYSTIC, CT 06355
PROPERTY OWNER:	PLANETA PROPERTIES C/O EDWARD PLANETA 7 BROADWAY AVENUE EXTENSION MYSTIC, CT 06355
TOWER OWNER:	MCM ACQUISITION 2017, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	M-1 (MANUFACTURING)
STRUCTURE TYPE:	WATER TOWER
STRUCTURE HEIGHT:	150'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.349536° N41°20'58.33" LONGITUDE W.71.963644° W71°57'49.12"

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

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
5/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	05/20/21	ISSUED FOR CONSTRUCTION	JRV
0	05/06/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11166A

SITE ADDRESS:
7 BROADWAY AVENUE EXTENSION
MYSTIC, CT 06355

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.055

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – T–MOBILE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T–MOBILE
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER
   OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....¾ IN.
   BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.

7. CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.

5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUN, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
5/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	05/20/21	ISSUED FOR CONSTRUCTION	JRV
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SITE NUMBER:
CT11166A

SITE ADDRESS:
7 BROADWAY AVENUE EXTENSION
MYSTIC, CT 06355

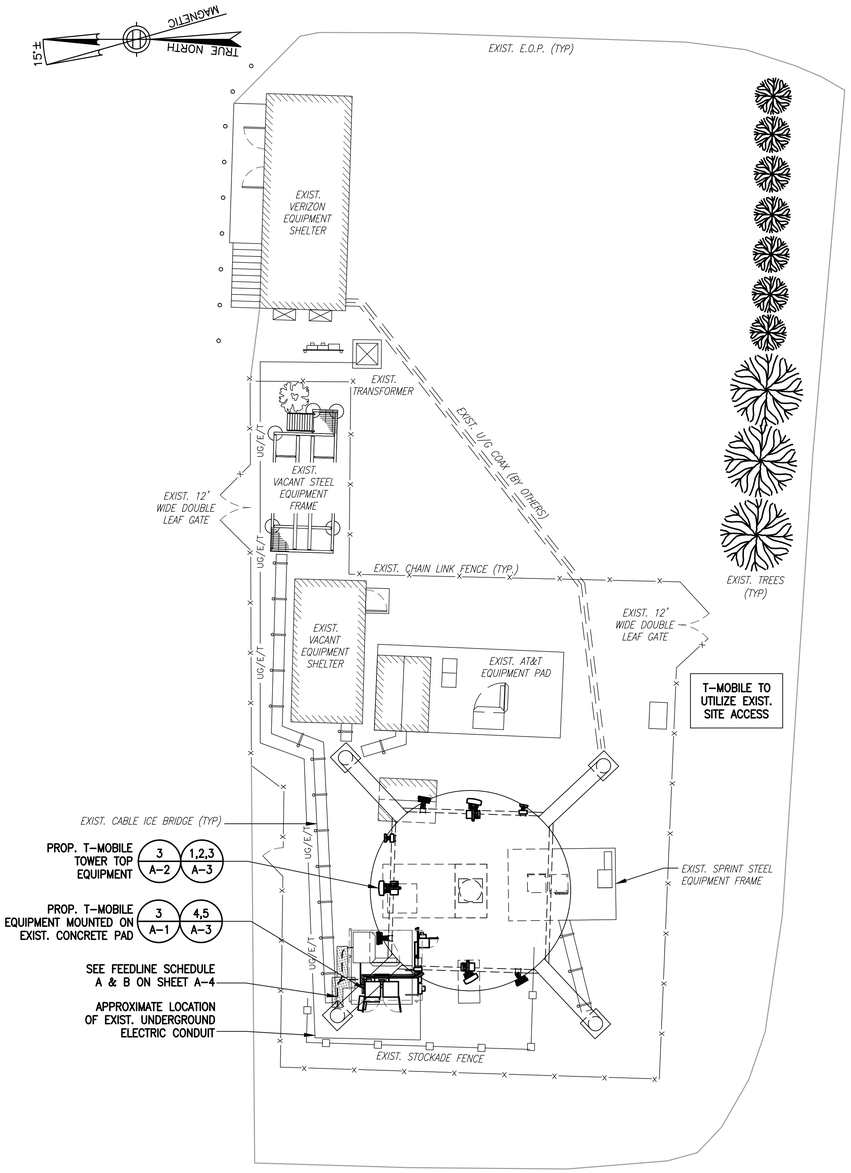
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

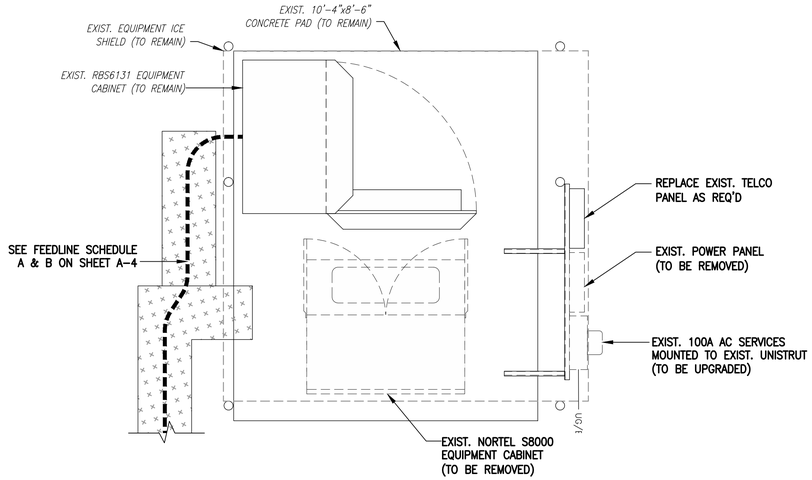
1815.055

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

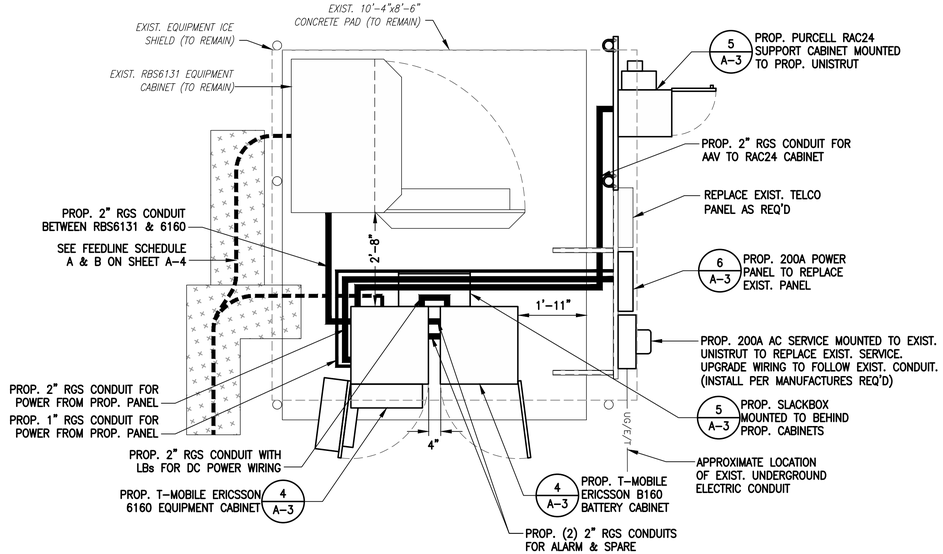
SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).



COMPOUND PLAN (1 / A-1)
SCALE: 1" = 10'-0"
0 10'-0" 20'-0 30'-0"



EXISTING EQUIPMENT PLAN (2 / A-1)
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 8'-0"



PROPOSED EQUIPMENT PLAN (3 / A-1)
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 6'-0"

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MYSTIC, CT 06355

SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

1815.055

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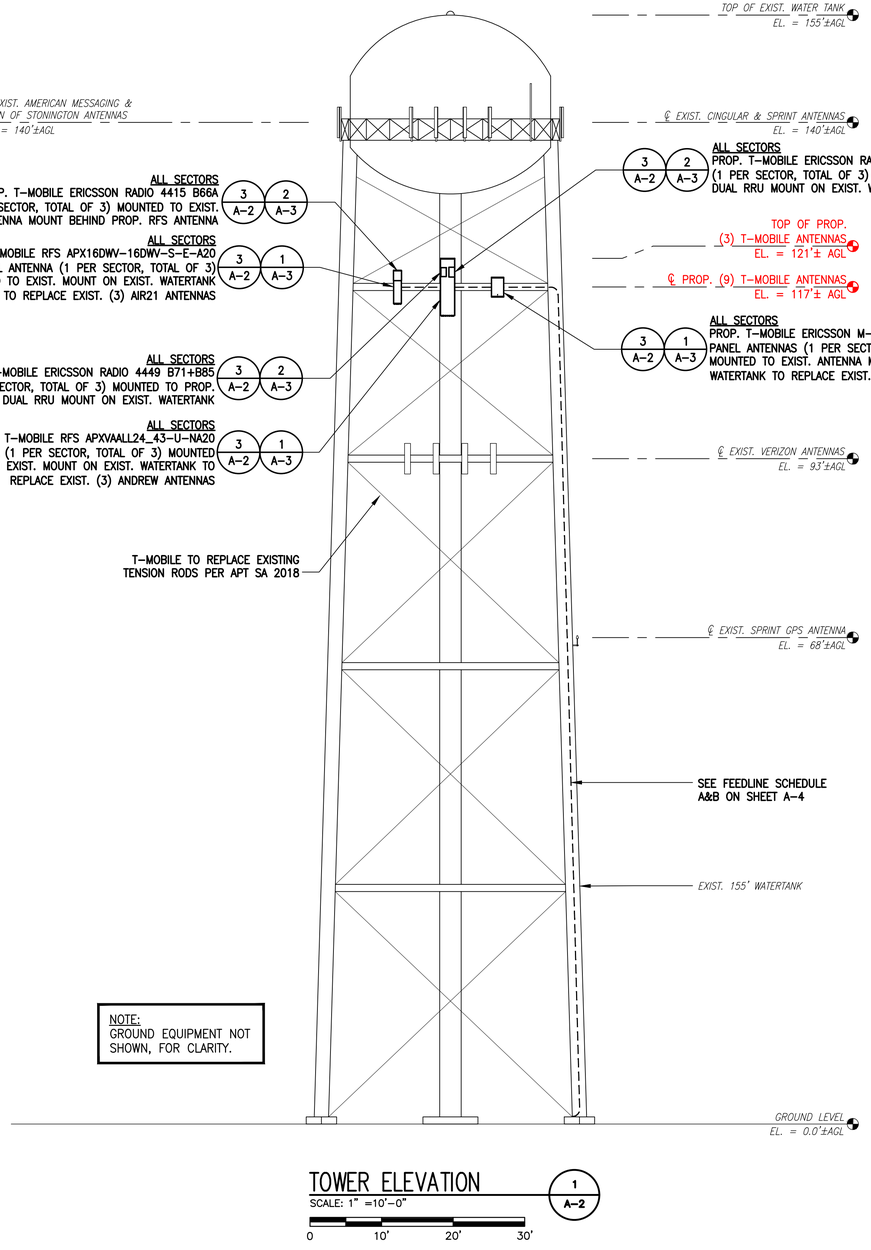
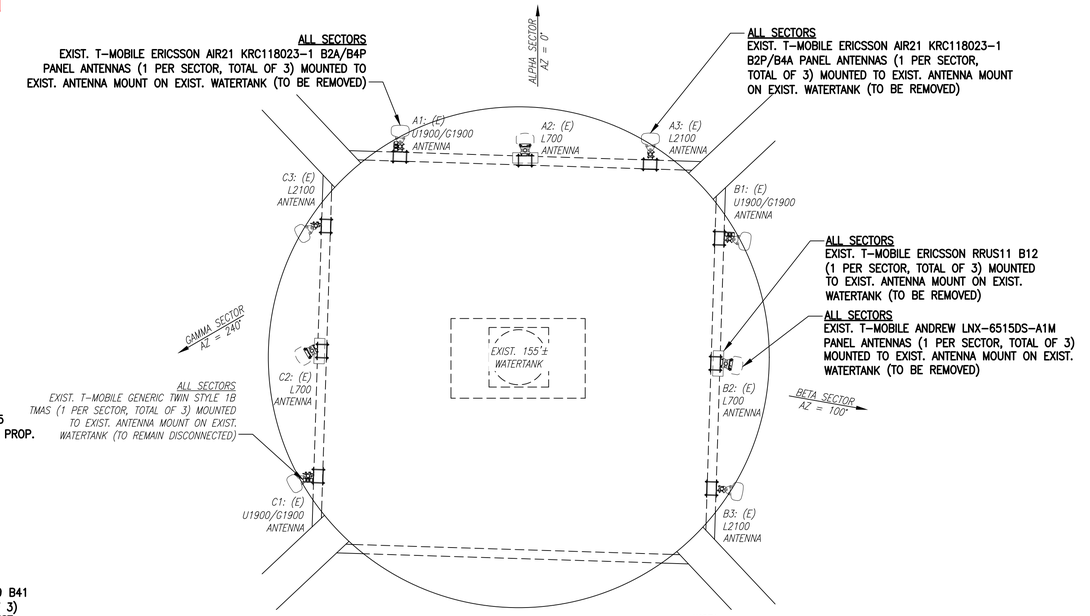
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

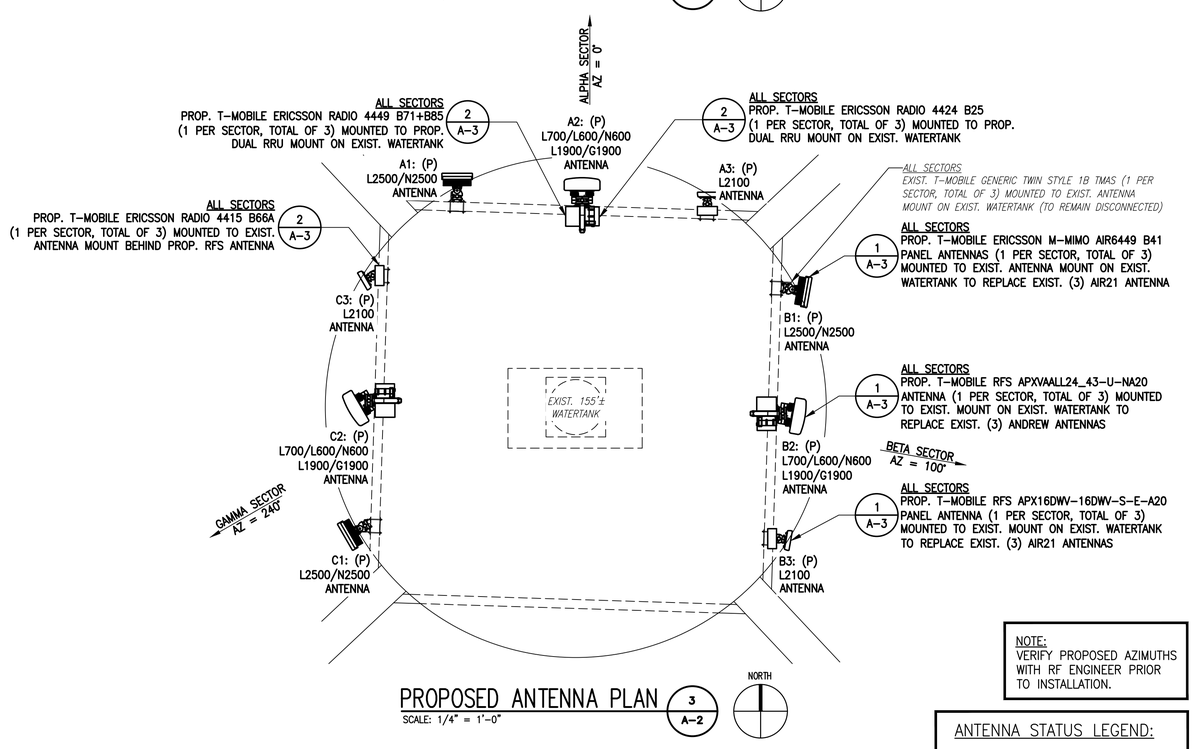


NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION 1 A-2
SCALE: 1" =10'-0"
0 10' 20' 30'



EXISTING ANTENNA PLAN 2 A-2
SCALE: 1/4" = 1'-0"



PROPOSED ANTENNA PLAN 3 A-2
SCALE: 1/4" = 1'-0"

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

ANTENNA STATUS LEGEND:

EMPTY - EMPTY PIPE

(E) - EXISTING
(P) - INSTALL
(F) - FUTURE

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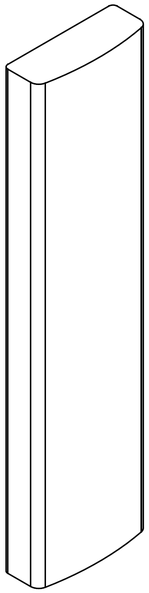
SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLANS

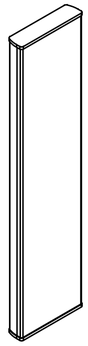
SHEET NUMBER
A-2

1815.055



RFS APXVAALL24_43-U-NA20 ANTENNA

DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
WEIGHT: 128.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3



RFS APX16DWV-16DWV-S-E-A20 ANTENNA

DIMENSIONS: 55.9"H x 13.0"W x 3.15"D
WEIGHT: 40.7 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON M-MIMO AIR6449 B41 ANTENNA

DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS (1 / A-3)
SCALE: N.T.S.

ERICSSON RADIO 4415 B66A

DIMENSIONS: 16.5"H x 13.4"W x 5.9"D
WEIGHT: 46.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

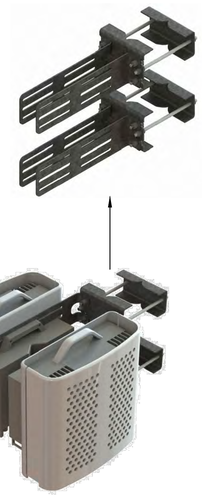
ERICSSON RADIO 4449 B71+B85

DIMENSIONS: 14.9"H x 13.2"W x 9.3"D
WEIGHT: 74.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4424 B25

DIMENSIONS: 16.5"H x 13.5"W x 9.6"D
WEIGHT: 88.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

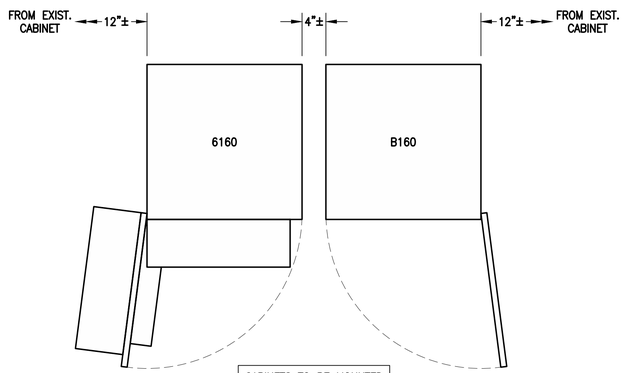
RADIO DETAILS (2 / A-3)
SCALE: N.T.S.



COMMSCOPE RR-FA2 FAST ACCESS DUAL RRU MOUNT KIT

DIMENSIONS: 16.4"H x 8.6"W x 18"L
WEIGHT: 36.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

RADIO MOUNT DETAIL (3 / A-3)
SCALE: N.T.S.



CABINETS TO BE MOUNTED PER MANUFACTURER'S SPECIFICATIONS

ERICSSON 6160 SITE SUPPORT CABINET

DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET

DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
QUANTITY: TOTAL OF 1

EQUIPMENT DETAIL (4 / A-3)
SCALE: N.T.S.

SLACKBOX

MODEL: 32FH91 OR EQUAL
QUANTITY: TOTAL OF 1

PURCELL SITE SUPPORT CABINET RAC24

DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
QUANTITY: TOTAL OF 1

SSC DETAILS (5 / A-3)
SCALE: N.T.S.

GC TO SUPPLY & INSTALL 30A RELIANCE GENERATOR PLUG WITH INTERLOCK KIT (INSTALL ON PANEL COVER OF THE SQUARE-D PANEL)

SQUARE-D QO12040M200RB125 POWER PANEL

DIMENSIONS: 26.0"H x 14.76"W x 6.0"D
QUANTITY: TOTAL OF 1

PPC DETAIL (6 / A-3)
SCALE: N.T.S.

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LICENSED PROFESSIONAL CIVIL ENGINEER

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SUBMITTALS

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CT11166A

SITE ADDRESS:
7 BROADWAY AVENUE EXTENSION
MYSTIC, CT 06355

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.055

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 ERICSSON M-MIMO AIR6449 B41	117'± AGL	0°	0°	2°	L2500/N2500	–	(6) 2" (6x24) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	117'± AGL	0°	0°	2°	L700/L600/N600	RADIO 4449 B71+B85	
						L1900/G1900	RADIO 4424 B25	
	A3 RFS APX16DWV-16DWV-S-E-A20	117'± AGL	0°	0°	2°	L2100	RADIO 4415 B66A	
BETA	B1 ERICSSON M-MIMO AIR6449 B41	117'± AGL	100°	0°	2°	L2500/N2500	–	
	B2 RFS APXVAALL24_43-U-NA20	117'± AGL	100°	0°	2°	L700/L600/N600	RADIO 4449 B71+B85	
						L1900/G1900	RADIO 4424 B25	
	B3 RFS APX16DWV-16DWV-S-E-A20	117'± AGL	100°	0°	2°	L2100	RADIO 4415 B66A	
GAMMA	C1 ERICSSON M-MIMO AIR6449 B41	117'± AGL	240°	0°	2°	L2500/N2500	–	
	C2 RFS APXVAALL24_43-U-NA20	117'± AGL	240°	0°	2°	L700/L600/N600	RADIO 4449 B71+B85	
						L1900/G1900	RADIO 4424 B25	
	C3 RFS APX16DWV-16DWV-S-E-A20	117'± AGL	240°	0°	2°	L2100	RADIO 4415 B66A	

CABLE NOTE: EXISTING (12) 1-⅝" COAX CABLES & (3) 1-¼" (3x6) HCS FIBER CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.
ANCILLARY NOTE: EXISTING (3) GENERIC TWIN STYLE TMAS TO REMAIN DISCONNECTED.

NOTE: RFDS REV5 – 02/12/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	*EXISTING TO REMAIN:* *(1) ½" COAX CABLE FOR GPS ANTENNA*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED: *(12) 1-⅝" COAX CABLES* *(3) 1-¼" (3x6) HCS FIBER CABLES*	
B	PROPOSED: (6) 2" (6x24) HCS FIBER CABLES	

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

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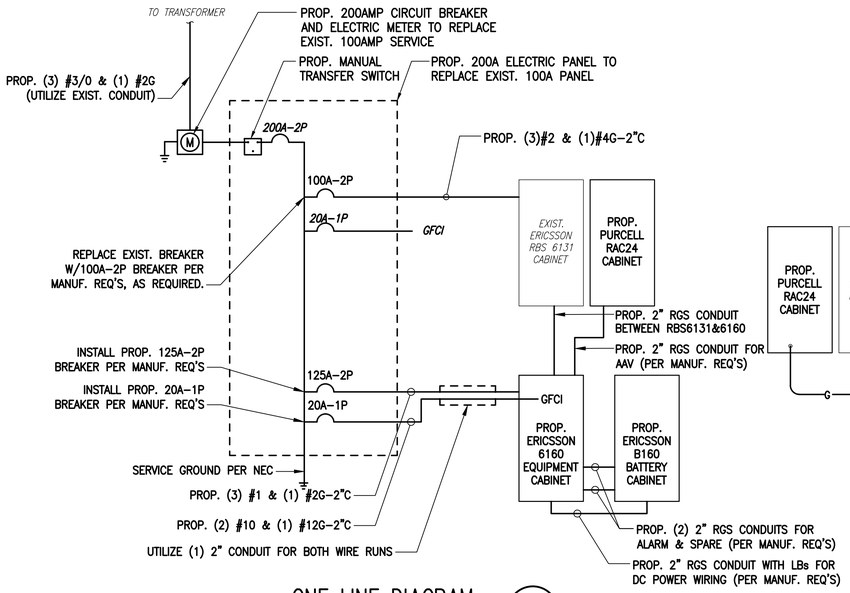
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

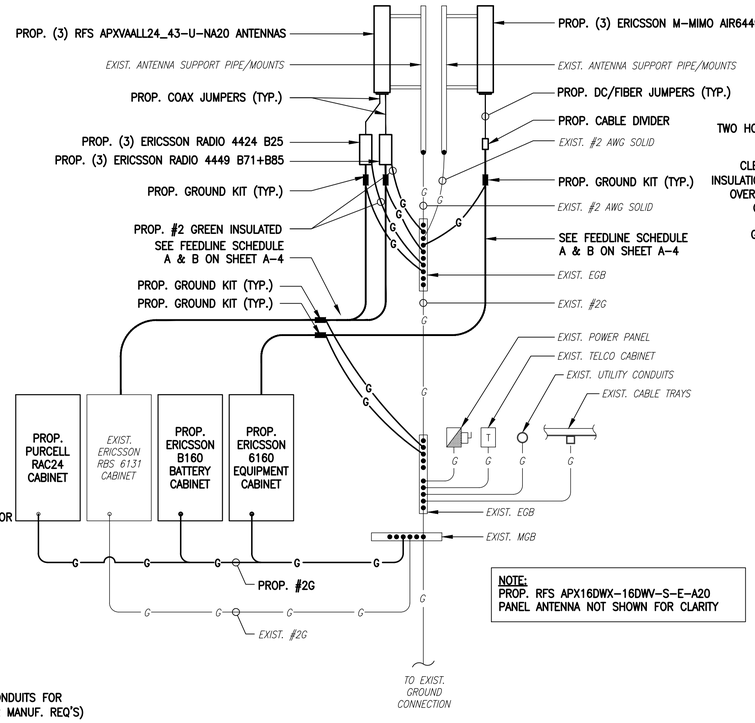
1815.055



ONE LINE DIAGRAM

SCALE: NOT TO SCALE

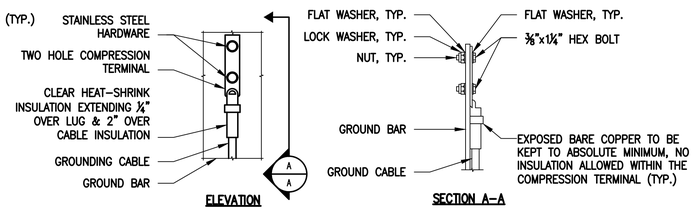
1 / E-1



GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

2 / E-1



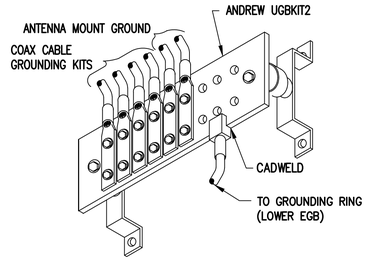
NOTES:

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

TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: NOT TO SCALE

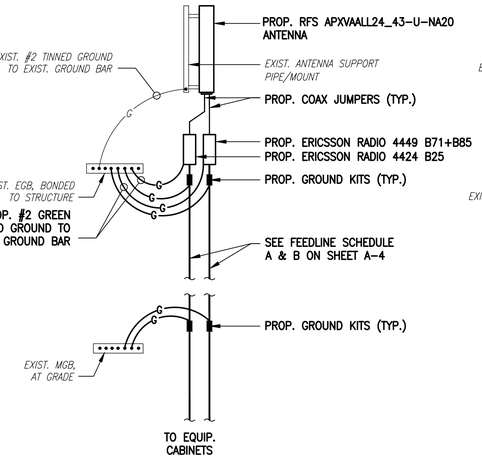
3 / E-1



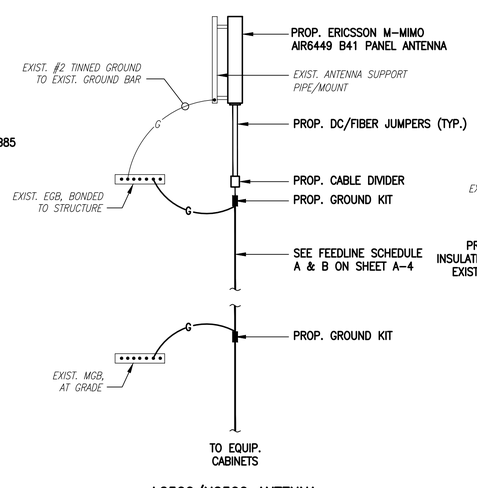
GROUND BAR (EGB)

SCALE: NOT TO SCALE

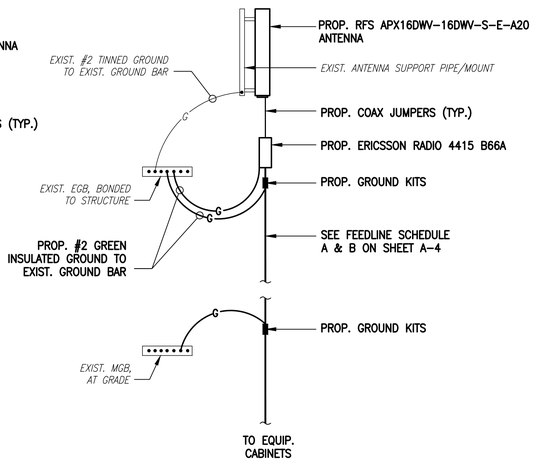
5 / E-1



L700/L600/N600/L1900/G1900 ANTENNA



L2500/N2500 ANTENNA



L2100 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE

4 / E-1

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHNINSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25937 LICENSED PROFESSIONAL CIVIL ENGINEER

5/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	05/20/21	ISSUED FOR CONSTRUCTION	JRV
0	05/06/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11166A

SITE ADDRESS:
7 BROADWAY AVENUE EXTENSION
MYSTIC, CT 06355

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.055

EXHIBIT 7

STRUCTURAL ANALYSIS REPORT
155' ± WATER TOWER
MYSTIC, CONNECTICUT

Prepared for
Chappell Engineering Associates, LLC

T-Mobile Site Ref:
CT11166A; Mystic/Downtown

Site Address: 7 Broadway Avenue Extension Mystic, Connecticut 06355
APT Filing No. CT278251

May 10, 2021

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
567 VAUXHALL STREET EXTENSION · SUITE 311 · WATERFORD, CT 06385 · PHONE 860-663-1697

STRUCTURAL ANALYSIS REPORT
155' ± WATER TOWER
MYSTIC, CONNECTICUT
prepared for
Chappell Engineering Associates, LLC.

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of this existing 155-ft ± water tower. The analysis was performed for T-Mobile's proposed removal of nine existing panel antennas and three existing remote radio heads (RRHs), and installation of nine new panel antennas and nine new RRHs as detailed below. The equipment is to be fed by three new hybrid cables. All other existing equipment, mounts and feed lines on the water tower are to remain. It should be noted that this analysis assumes tank bracing modifications as previously designed by APT (APT project #CT329620) dated August 3, 2018, have been properly installed to the referenced drawings.

Our analysis indicates the subject tower structure meets the requirements of the 2018 Connecticut State Building Code, International Building Code 2015 (IBC 2015) and TIA-222-G with the proposed equipment changes. Without the bracing upgrades referenced above, the tower is overstressed.

Evaluation of the existing base foundation could not be performed, as information on its design or construction was not available to APT.

INTRODUCTION:

A structural analysis was performed on the above-mentioned water tower by APT for Chappell Engineering Associates, LLC. The subject tower is located at 7 Broadway Avenue Extension in Mystic, Connecticut.

The following information was utilized in the preparation of this analysis:

- Field notes & photos from APT's site visit on June 30, 2016.
- Structural Analysis prepared by Infinigy Engineering dated July 15, 2015.
- Structural Analysis prepared by Armor Tower dated February 2018.
- Water Tower Reinforcement prepared by APT (APT Project #CT329620) dated August 3, 2018.
- Structural Analysis prepared by APT (APT Project #CT278250) dated August 13, 2019.
- RFDS prepared by T-Mobile dated February 22, 2021.
- Construction Drawings prepared by SBA Communications Corp dated May 6, 2021.

The structure is a 155'± painted steel, four-legged water tower. A schematic drawing with a listing of existing and proposed equipment is provided in Appendix A. The analysis was conducted using T-Mobile's equipment inventory (proposed equipment shown in **bold** text):

Carrier	Antenna and Appurtenance Make/Model	Elevation (AGL)	Status	Mount Type	Coax/Feed-Line
T-Mobile	**(3) Ericsson AIR 6449 B41,** **(3) RFS APXVAALL_24_43-U-NA20,** **(3) RFS APX16DWV-16DWV-S-E-A20 panels,** **(3) Ericsson 4449 RRHs,** **(3) Ericsson 4424 RRHs,** **(3) Ericsson 4415 RRHs,** (3) Twin TMAs (inactive)	117'	**P** E	On Bracing	**(3) 6x24 hybrid**

Notes:

1. E = Existing; P = Proposed.

STRUCTURAL ANALYSIS:

Methodology:

This structural analysis has been prepared in accordance with the ANSI TIA-222-G standard entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures," the American Institute of Steel Construction (AISC) Manual of Steel Construction, the 2018 Connecticut State Building Code and IBC 2015.

Antenna, appurtenance and mount assembly loads were evaluated utilizing the ANSI TIA-222-G standard.

- Load Case 1: 140 mph (3-second gust), 0" ice
- Load Case 2: 50 mph (3-second gust) w/ 3/4" ice thickness
- Load Case 3: 60 mph (3-second gust) (Service Load)
- Structure Class II
- Exposure Category C
- Topographic Category 1

ANALYSIS RESULTS:

The analysis was conducted in accordance with the criteria outlined above with the aforementioned existing and proposed equipment loading. The following table summarizes the results of the analysis:

Elevation	Legs	Bracing
117'-138'	7%	67%
92'-117'	15%	77%
65'-92'	25%	69%
35'-65'	37%	65%
0'-35'	54%	63%

Bracing and Splice Connections:

Connection bolts and rivets were evaluated under the proposed loading. All connections appear to be adequately sized.

Base Foundation:

Evaluation of the existing base foundation could not be performed, as information on their design or construction was not available to APT. Factored base reactions imposed with the additional antennas were calculated as follows:

Load Effect	Calculated Reaction
Compression	190.8 kips
Uplift	-138.4 kips
Shear	16.3 kips
Overturning Moment	8207 ft-kips

CONCLUSIONS AND RECOMMENDATIONS:

In conclusion, APT's analysis indicates the existing 155-ft ± water tower structure, located at 7 Broadway Avenue Extension in Mystic, Connecticut meets the requirements of the 2018 Connecticut State Building Code, IBC 2015, and TIA-222-G with T-Mobile's proposed equipment changes. It should be noted that this analysis assumes all reinforcements have been properly installed per the documents referenced above. APT has not verified their completion. Without the above-referenced bracing modifications, the tower is overstressed.

Evaluation of the existing base foundation could not be performed, as information on its design or construction was not available to APT.

Sincerely,
All-Points Technology Corporation, P.C.

Robert E. Adair, P.E.
Principal

Prepared By:
All-Points Technology Corporation, P.C.

Michael T. Larson, P.E.
Project Engineer

LIMITATIONS:

This report is based on the following:

1. Water tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Water tower is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corporation, P.C. (APT) is not responsible for modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating torque arms or guys.
4. Installing antenna mounting gates or side arms.

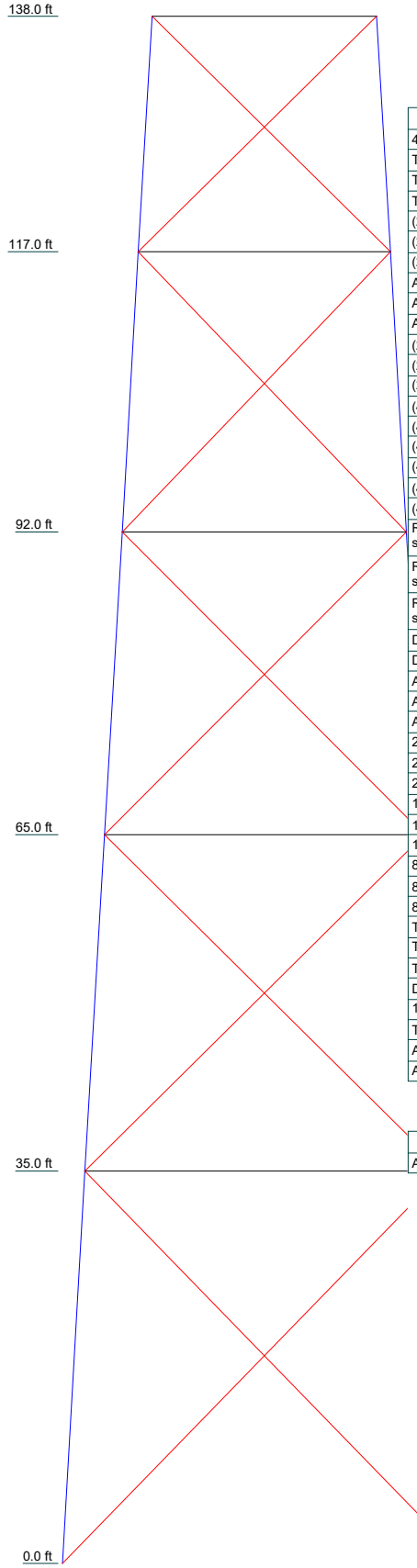
APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Appendix A

Tower Schematic

Section	T1	T2	T3	T4	T5
Legs	P18x.25				
Leg Grade	A36				
Diagonals	SR 1	SR 1 1/8	SR 1 3/8	SR 1 1/2	SR 1 5/8
Diagonal Grade	A36				
Top Girts	W8x35			W10x68	
Face Width (ft)	20	22.4348	25.3333	28.4638	31.942
# Panels @ (ft)	1 @ 21	1 @ 25	1 @ 27	1 @ 30	1 @ 35
Weight (lb)	7440.8	8841.3	10233.9	15509.7	18115.0

36 60140.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' HP dish	140	APXVAALL24_43-U-NA20 (T-Mobile)	117
Tank bowl	138	APXVAALL24_43-U-NA20 (T-Mobile)	117
Tank bowl	138	APXVAALL24_43-U-NA20 (T-Mobile)	117
Tank bowl	138	APX16DWV-16DWVS (T-Mobile)	117
(2) 7770.00	138	APX16DWV-16DWVS (T-Mobile)	117
(2) 7770.00	138	APX16DWV-16DWVS (T-Mobile)	117
(2) 7770.00	138	RFS twin TMA (T-Mobile)	117
AM-X-CD-14-65	138	RFS twin TMA (T-Mobile)	117
AM-X-CD-14-65	138	RFS twin TMA (T-Mobile)	117
AM-X-CD-14-65	138	Ericsson Radio 4449 B85 B71 (T-Mobile)	117
(2) Ericsson RRUS-11	138		
(2) Ericsson RRUS-11	138	Ericsson Radio 4449 B85 B71 (T-Mobile)	117
(2) Ericsson RRUS-11	138		
(4) LGP2140X TMA	138	Ericsson Radio 4449 B85 B71 (T-Mobile)	117
(4) LGP2140X TMA	138		
(4) LGP2140X TMA	138	Ericsson Radio 4424 B25 (T-Mobile)	117
(4) LGP13519 Diplexer	138	Ericsson Radio 4424 B25 (T-Mobile)	117
(4) LGP13519 Diplexer	138	Ericsson Radio 4424 B25 (T-Mobile)	117
(4) LGP13519 Diplexer	138	Ericsson Radio 4415 (T-Mobile)	117
Raycap DC6-48-60-18-8F surge suppressor	138	Ericsson Radio 4415 (T-Mobile)	117
		Ericsson Radio 4415 (T-Mobile)	117
Raycap DC6-48-60-18-8F surge suppressor	138	AIR 6449 B41 (T-Mobile)	117
		(2) SBNHH-1D65A	93
Raycap DC6-48-60-18-8F surge suppressor	138	(2) SBNHH-1D65A	93
		LNX-6514DS-VTM	93
DragonWave Horizon Compact+ ODU	138	LNX-6514DS-VTM	93
DragonWave Horizon Compact+ ODU	138	LNX-6514DS-VTM	93
APXVSPP18-C-A20 (Sprint)	138	BXA-80080/4	93
APXVSPP18-C-A20 (Sprint)	138	BXA-80080/4	93
APXVSPP18-C-A20 (Sprint)	138	BXA-80080/4	93
2.5G MAA-AAHC (64T64R) (Sprint)	138	ALU RRH2x60-PCS w/bracket	93
2.5G MAA-AAHC (64T64R) (Sprint)	138	ALU RRH2x60-PCS w/bracket	93
2.5G MAA-AAHC (64T64R) (Sprint)	138	ALU RRH2x60-PCS w/bracket	93
1900 MHz RRH (Sprint)	138	ALU B66a RRH4x45w/bracket	93
1900 MHz RRH (Sprint)	138	ALU B66a RRH4x45w/bracket	93
1900 MHz RRH (Sprint)	138	ALU B66a RRH4x45w/bracket	93
800 MHz RRH (Sprint)	138	ALU RRH2x60-700 w/bracket	93
800 MHz RRH (Sprint)	138	ALU RRH2x60-700 w/bracket	93
800 MHz RRH (Sprint)	138	ALU RRH2x60-700 w/bracket	93
TD-RRH8x20-25	138	RFS DB-B1-6C-12AB-0Z D-box	93
TD-RRH8x20-25	138	RFS DB-B1-6C-12AB-0Z D-box	93
TD-RRH8x20-25	138	RFS DB-B1-6C-12AB-0Z D-box	93
DB809DK-Y	138	(2) RFS FD9R6004_2C-3L diplexer	93
10' 2-bay dipole	138	(2) RFS FD9R6004_2C-3L diplexer	93
Tank bowl	138	(2) RFS FD9R6004_2C-3L diplexer	93
AIR 6449 B41 (T-Mobile)	117	(2) SBNHH-1D65A	93
AIR 6449 B41 (T-Mobile)	117	GPS on 3' standoff	68

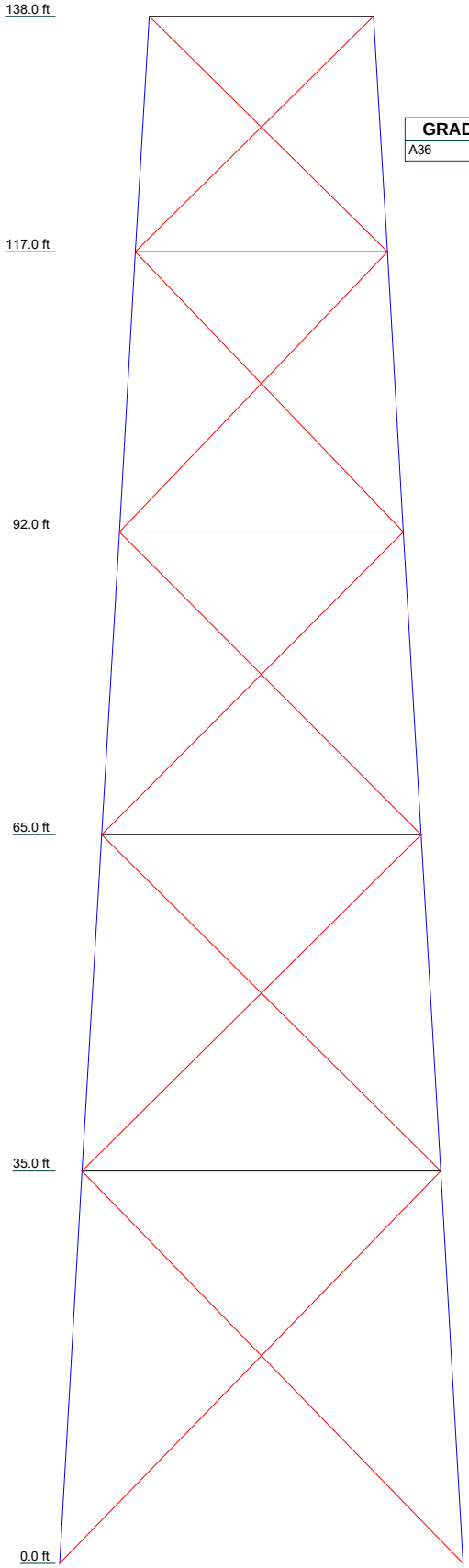
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

All-Points Technology Corp.
567 Vauxhall St. Ext. Suite 311
Waterford, CT 06385
Phone: (860) 663-1697
FAX: (860) 663-0935

Job: ***155' Water Tank***			
Project: ***CT278251 Mystic***			
Client: Chappell; T-Mobile Site #CT11166A	Drawn by: M. Larson	App'd:	
Code: TIA-222-G	Date: 05/08/21	Scale: NTS	
Path: C:\Users\APT User\Desktop\Work\Jobs\T-Mobile\CT278251 Mystic CT11166\CT278251 Mystic - Refined.eri		Dwg No. E-1	

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Face Width (ft)	# Panels @ (ft)	Weight (lb)
T1	P18x.25	A36	SR 1	A36	W8x35	20	1 @ 21	7440.8
T2			SR 1 1/8			22.4348	1 @ 25	8841.3
T3			SR 1 3/8			25.3333	1 @ 27	10233.9
T4			SR 1 1/2		W10x68	28.4638	1 @ 30	15509.7
T5			SR 1 5/8			31.942	1 @ 35	18115.0
						36		60140.6



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 190818 lb
SHEAR: 16315 lb

UPLIFT: -138403 lb
SHEAR: 40940 lb

AXIAL 209576 lb
SHEAR 16876 lb
MOMENT 1812953 lb-ft
TORQUE 33314 lb-ft
50 mph WIND - 0.7500 in ICE

AXIAL 118402 lb
SHEAR 86953 lb
MOMENT 8206624 lb-ft
TORQUE 133246 lb-ft
REACTIONS - 108 mph WIND

All-Points Technology Corp.
567 Vauxhall St. Ext. Suite 311
Waterford, CT 06385
Phone: (860) 663-1697
FAX: (860) 663-0935

Job:	***155' Water Tank***		
Project:	***CT278251 Mystic***		
Client: Chappell; T-Mobile Site #CT11166A		Drawn by: M. Larson	App'd:
Code: TIA-222-G		Date: 05/08/21	Scale: NTS
Path: C:\Users\APT User\Desktop\Work\Jobs\T-Mobile\CT278251 Mystic CT11166\CT278251 Mystic - Refined.eri			Dwg No. E-1

Appendix B

Calculations

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 138.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 20.00 ft at the top and 36.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 108 mph.
Ultimate wind speed of 140 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tension only take-up is 0.0313 in.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances

Description	*Face or Leg*	*Allow Shield*	*Exclude From Torque Calculation*	*Component Type*	*Placement ft*	*Face Offset in*	*Lateral Offset (Frac FW)*	*#*	*# Per Row*	*Clear Spacing in*	*Width or Diameter in*	*Perimeter in*	*Weight plf*
1 5/8	C	No	No	Ar (CaAa)	138.00 - 8.00	0.0000	0.5	18	6	0.5000	1.9800		1.04
7/8	D	No	No	Ar (CaAa)	138.00 - 8.00	0.0000	0.5	2	2	1.1100	1.1100		0.54
1-1/4" Hybrid fiber-power cable	C	No	No	Ar (CaAa)	138.00 - 8.00	0.0000	0.5	3	3	0.7500	1.2500		1.30
1/2	C	No	No	Ar (CaAa)	138.00 - 8.00	0.0000	0.5	2	2	0.5800	0.5800		0.25
6x24 fiber cable (T-Mobile)	B	No	No	Ar (CaAa)	117.00 - 8.00	0.0000	0.5	3	3	0.5000	1.6730		2.22
2" conduit	C	No	No	Ar (CaAa)	138.00 - 8.00	0.0000	0.5	1	1	2.0000	2.0000		2.00
1 5/8	D	No	No	Ar (CaAa)	93.00 - 8.00	0.0000	0.5	12	6	0.5000	1.9800		1.04
1.57" Hybrid fiber-power cable	D	No	No	Ar (CaAa)	93.00 - 8.00	0.0000	0.5	3	3	0.7500	1.5700		1.50
Feedline Ladder (Af)	C	No	No	Ar (CaAa)	138.00 - 10.00	0.0000	0.5	1	1	3.0000	3.0000		8.40
36" standpipe	A	No	No	Ar (CaAa)	130.00 - 65.00	-120.0000	0	1	1	36.0000	36.0000		47.44

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Tank bowl	A	None		0.0000	138.00	No Ice	75.66	75.66	5844.00
						1/2" Ice	76.96	76.96	6893.00
						1" Ice	78.26	78.26	7942.00
Tank bowl	B	None		0.0000	138.00	No Ice	75.66	75.66	5844.00
						1/2" Ice	76.96	76.96	6893.00
						1" Ice	78.26	78.26	7942.00
Tank bowl	C	None		0.0000	138.00	No Ice	75.66	75.66	5844.00
						1/2" Ice	76.96	76.96	6893.00
						1" Ice	78.26	78.26	7942.00
Tank bowl	D	None		0.0000	138.00	No Ice	75.66	75.66	5844.00
						1/2" Ice	76.96	76.96	6893.00
						1" Ice	78.26	78.26	7942.00
(2) 7770.00	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	35.00 67.63 105.06
(2) 7770.00	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	35.00 67.63 105.06
(2) 7770.00	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	35.00 67.63 105.06
AM-X-CD-14-65	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.99 5.32 5.65	2.83 3.14 3.45	40.00 71.95 108.36
AM-X-CD-14-65	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.99 5.32 5.65	2.83 3.14 3.45	40.00 71.95 108.36
AM-X-CD-14-65	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.99 5.32 5.65	2.83 3.14 3.45	40.00 71.95 108.36
(2) Ericsson RRUS-11	A	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.02 1.16 1.30	55.00 75.86 99.77
(2) Ericsson RRUS-11	B	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.02 1.16 1.30	55.00 75.86 99.77
(2) Ericsson RRUS-11	C	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.02 1.16 1.30	55.00 75.86 99.77
(4) LGP2140X TMA	A	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	0.36 0.45 0.56	20.00 27.13 36.14
(4) LGP2140X TMA	B	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	0.36 0.45 0.56	20.00 27.13 36.14
(4) LGP2140X TMA	C	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	0.36 0.45 0.56	20.00 27.13 36.14
(4) LGP13519 Diplexer	A	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.23 0.29 0.36	0.11 0.15 0.21	6.00 8.41 11.91
(4) LGP13519 Diplexer	B	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.23 0.29 0.36	0.11 0.15 0.21	6.00 8.41 11.91

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(4) LGP13519 Diplexer	C	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.23 0.29 0.36	0.11 0.15 0.21	6.00 8.41 11.91
Raycap DC6-48-60-18-8F surge suppressor	A	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.74 1.20 1.37	0.74 1.20 1.37	30.00 44.34 60.93
Raycap DC6-48-60-18-8F surge suppressor	B	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.74 1.20 1.37	0.74 1.20 1.37	30.00 44.34 60.93
Raycap DC6-48-60-18-8F surge suppressor	C	From Leg	2.50 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.74 1.20 1.37	0.74 1.20 1.37	30.00 44.34 60.93
DragonWave Horizon Compact+ ODU	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.69 0.80 0.91	0.32 0.40 0.48	10.00 15.82 23.28
DragonWave Horizon Compact+ ODU	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.69 0.80 0.91	0.32 0.40 0.48	10.00 15.82 23.28
APXVSPP18-C-A20 (Sprint)	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.02 8.48 8.94	5.28 5.74 6.20	107.00 156.52 212.12
APXVSPP18-C-A20 (Sprint)	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.02 8.48 8.94	5.28 5.74 6.20	107.00 156.52 212.12
APXVSPP18-C-A20 (Sprint)	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	8.02 8.48 8.94	5.28 5.74 6.20	107.00 156.52 212.12
2.5G MAA-AAHC (64T64R) (Sprint)	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.20 4.46 4.72	2.06 2.25 2.45	104.00 136.25 172.25
2.5G MAA-AAHC (64T64R) (Sprint)	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.20 4.46 4.72	2.06 2.25 2.45	104.00 136.25 172.25
2.5G MAA-AAHC (64T64R) (Sprint)	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.20 4.46 4.72	2.06 2.25 2.45	104.00 136.25 172.25
1900 MHz RRH (Sprint)	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.26 3.48 3.72	2.49 2.70 2.91	144.00 175.27 210.18
1900 MHz RRH (Sprint)	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.26 3.48 3.72	2.49 2.70 2.91	144.00 175.27 210.18
1900 MHz RRH (Sprint)	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	3.26 3.48 3.72	2.49 2.70 2.91	144.00 175.27 210.18
800 MHz RRH (Sprint)	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.43 2.62 2.83	2.95 3.17 3.39	82.00 112.15 145.84
800 MHz RRH (Sprint)	B	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.43 2.62 2.83	2.95 3.17 3.39	82.00 112.15 145.84
800 MHz RRH (Sprint)	C	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	2.43 2.62 2.83	2.95 3.17 3.39	82.00 112.15 145.84
TD-RRH8x20-25	A	From Leg	3.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	75.00 102.14 132.80

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
TD-RRH8x20-25	B	From Leg	3.00	0.0000	138.00	No Ice	4.05	1.53	75.00
			0.00			1/2" Ice	4.30	1.71	102.14
			2.00			1" Ice	4.56	1.90	132.80
TD-RRH8x20-25	C	From Leg	3.00	0.0000	138.00	No Ice	4.05	1.53	75.00
			0.00			1/2" Ice	4.30	1.71	102.14
			2.00			1" Ice	4.56	1.90	132.80
DB809DK-Y	C	From Leg	3.00	0.0000	138.00	No Ice	3.39	3.39	32.00
			0.00			1/2" Ice	4.55	4.55	56.57
			2.00			1" Ice	5.73	5.73	88.49
10' 2-bay dipole	C	From Leg	3.00	0.0000	138.00	No Ice	2.50	2.50	75.00
			0.00			1/2" Ice	3.53	3.53	93.64
			2.00			1" Ice	4.58	4.58	118.79
AIR 6449 B41 (T-Mobile)	A	From Leg	1.00	0.0000	117.00	No Ice	5.68	2.49	128.00
			0.00			1/2" Ice	5.98	2.72	167.12
			0.00			1" Ice	6.29	2.95	210.46
AIR 6449 B41 (T-Mobile)	B	From Leg	1.00	0.0000	117.00	No Ice	5.68	2.49	128.00
			0.00			1/2" Ice	5.98	2.72	167.12
			0.00			1" Ice	6.29	2.95	210.46
AIR 6449 B41 (T-Mobile)	C	From Leg	1.00	0.0000	117.00	No Ice	5.68	2.49	128.00
			0.00			1/2" Ice	5.98	2.72	167.12
			0.00			1" Ice	6.29	2.95	210.46
APXVAALL24_43-U-NA20 (T-Mobile)	A	From Leg	1.00	0.0000	117.00	No Ice	20.24	8.73	65.00
			0.00			1/2" Ice	20.89	9.33	176.81
			0.00			1" Ice	21.54	9.93	297.14
APXVAALL24_43-U-NA20 (T-Mobile)	B	From Leg	1.00	0.0000	117.00	No Ice	20.24	8.73	65.00
			0.00			1/2" Ice	20.89	9.33	176.81
			0.00			1" Ice	21.54	9.93	297.14
APXVAALL24_43-U-NA20 (T-Mobile)	C	From Leg	1.00	0.0000	117.00	No Ice	20.24	8.73	65.00
			0.00			1/2" Ice	20.89	9.33	176.81
			0.00			1" Ice	21.54	9.93	297.14
APX16DWV-16DWVS (T-Mobile)	A	From Leg	1.00	0.0000	117.00	No Ice	6.08	2.00	25.00
			0.00			1/2" Ice	6.44	2.33	56.34
			0.00			1" Ice	6.80	2.66	92.36
APX16DWV-16DWVS (T-Mobile)	B	From Leg	1.00	0.0000	117.00	No Ice	6.08	2.00	25.00
			0.00			1/2" Ice	6.44	2.33	56.34
			0.00			1" Ice	6.80	2.66	92.36
APX16DWV-16DWVS (T-Mobile)	C	From Leg	1.00	0.0000	117.00	No Ice	6.08	2.00	25.00
			0.00			1/2" Ice	6.44	2.33	56.34
			0.00			1" Ice	6.80	2.66	92.36
RFS twin TMA (T-Mobile)	A	From Leg	0.50	0.0000	117.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
RFS twin TMA (T-Mobile)	B	From Leg	0.50	0.0000	117.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
RFS twin TMA (T-Mobile)	C	From Leg	0.50	0.0000	117.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
Ericsson Radio 4449 B85 B71 (T-Mobile)	A	From Leg	0.50	0.0000	117.00	No Ice	1.97	1.58	85.00
			0.00			1/2" Ice	2.15	1.74	104.72
			0.00			1" Ice	2.33	1.91	127.35
Ericsson Radio 4449 B85 B71 (T-Mobile)	B	From Leg	0.50	0.0000	117.00	No Ice	1.97	1.58	85.00
			0.00			1/2" Ice	2.15	1.74	104.72
			0.00			1" Ice	2.33	1.91	127.35
Ericsson Radio 4449 B85 B71 (T-Mobile)	C	From Leg	0.50	0.0000	117.00	No Ice	1.97	1.58	85.00
			0.00			1/2" Ice	2.15	1.74	104.72
			0.00			1" Ice	2.33	1.91	127.35

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Ericsson Radio 4424 B25 (T-Mobile)	A	From Leg	0.50	0.00	0.0000	117.00	No Ice	1.86	1.32	90.00
				0.00			1/2" Ice	2.03	1.47	107.87
				0.00			1" Ice	2.20	1.62	128.50
Ericsson Radio 4424 B25 (T-Mobile)	B	From Leg	0.50	0.00	0.0000	117.00	No Ice	1.86	1.32	90.00
				0.00			1/2" Ice	2.03	1.47	107.87
				0.00			1" Ice	2.20	1.62	128.50
Ericsson Radio 4424 B25 (T-Mobile)	C	From Leg	0.50	0.00	0.0000	117.00	No Ice	1.86	1.32	90.00
				0.00			1/2" Ice	2.03	1.47	107.87
				0.00			1" Ice	2.20	1.62	128.50
Ericsson Radio 4415 (T-Mobile)	A	From Leg	0.50	0.00	0.0000	117.00	No Ice	1.64	0.68	50.00
				0.00			1/2" Ice	1.80	0.79	62.41
				0.00			1" Ice	1.97	0.91	77.18
Ericsson Radio 4415 (T-Mobile)	B	From Leg	0.50	0.00	0.0000	117.00	No Ice	1.64	0.68	50.00
				0.00			1/2" Ice	1.80	0.79	62.41
				0.00			1" Ice	1.97	0.91	77.18
Ericsson Radio 4415 (T-Mobile)	C	From Leg	0.50	0.00	0.0000	117.00	No Ice	1.64	0.68	50.00
				0.00			1/2" Ice	1.80	0.79	62.41
				0.00			1" Ice	1.97	0.91	77.18
(2) SBNHH-1D65A	A	From Leg	1.00	0.00	0.0000	93.00	No Ice	5.88	3.86	44.00
				0.00			1/2" Ice	6.25	4.22	83.03
				0.00			1" Ice	6.62	4.57	127.06
(2) SBNHH-1D65A	B	From Leg	1.00	0.00	0.0000	93.00	No Ice	5.88	3.86	44.00
				0.00			1/2" Ice	6.25	4.22	83.03
				0.00			1" Ice	6.62	4.57	127.06
(2) SBNHH-1D65A	C	From Leg	1.00	0.00	0.0000	93.00	No Ice	5.88	3.86	44.00
				0.00			1/2" Ice	6.25	4.22	83.03
				0.00			1" Ice	6.62	4.57	127.06
LNX-6514DS-VTM	A	From Leg	1.00	0.00	0.0000	93.00	No Ice	8.17	4.17	30.00
				0.00			1/2" Ice	8.63	4.61	74.68
				0.00			1" Ice	9.10	5.07	125.36
LNX-6514DS-VTM	B	From Leg	1.00	0.00	0.0000	93.00	No Ice	8.17	4.17	30.00
				0.00			1/2" Ice	8.63	4.61	74.68
				0.00			1" Ice	9.10	5.07	125.36
LNX-6514DS-VTM	C	From Leg	1.00	0.00	0.0000	93.00	No Ice	8.17	4.17	30.00
				0.00			1/2" Ice	8.63	4.61	74.68
				0.00			1" Ice	9.10	5.07	125.36
BXA-80080/4	A	From Leg	1.00	0.00	0.0000	93.00	No Ice	4.80	2.84	20.00
				0.00			1/2" Ice	5.12	3.15	51.00
				0.00			1" Ice	5.45	3.47	86.43
BXA-80080/4	B	From Leg	1.00	0.00	0.0000	93.00	No Ice	4.80	2.84	20.00
				0.00			1/2" Ice	5.12	3.15	51.00
				0.00			1" Ice	5.45	3.47	86.43
BXA-80080/4	C	From Leg	1.00	0.00	0.0000	93.00	No Ice	4.80	2.84	20.00
				0.00			1/2" Ice	5.12	3.15	51.00
				0.00			1" Ice	5.45	3.47	86.43
ALU RRH2x60-PCS w/bracket	A	None			0.0000	93.00	No Ice	2.14	1.36	60.00
							1/2" Ice	2.33	1.51	77.80
							1" Ice	2.53	1.68	98.44
ALU RRH2x60-PCS w/bracket	B	None			0.0000	93.00	No Ice	2.14	1.36	60.00
							1/2" Ice	2.33	1.51	77.80
							1" Ice	2.53	1.68	98.44
ALU RRH2x60-PCS w/bracket	C	None			0.0000	93.00	No Ice	2.14	1.36	60.00
							1/2" Ice	2.33	1.51	77.80
							1" Ice	2.53	1.68	98.44
ALU B66a RRH4x45w/bracket	A	None			0.0000	93.00	No Ice	2.58	1.63	80.00
							1/2" Ice	2.79	1.81	100.47
							1" Ice	3.01	2.00	124.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
ALU B66a RRH4x45w/bracket	B	None		0.0000	93.00	No Ice	2.58	1.63	80.00
						1/2" Ice	2.79	1.81	100.47
						1" Ice	3.01	2.00	124.06
ALU B66a RRH4x45w/bracket	C	None		0.0000	93.00	No Ice	2.58	1.63	80.00
						1/2" Ice	2.79	1.81	100.47
						1" Ice	3.01	2.00	124.06
ALU RRH2x60-700 w/bracket	A	None		0.0000	93.00	No Ice	3.35	2.02	60.00
						1/2" Ice	3.60	2.25	83.19
						1" Ice	3.87	2.49	110.02
ALU RRH2x60-700 w/bracket	B	None		0.0000	93.00	No Ice	3.35	2.02	60.00
						1/2" Ice	3.60	2.25	83.19
						1" Ice	3.87	2.49	110.02
ALU RRH2x60-700 w/bracket	C	None		0.0000	93.00	No Ice	3.35	2.02	60.00
						1/2" Ice	3.60	2.25	83.19
						1" Ice	3.87	2.49	110.02
RFS DB-B1-6C-12AB-0Z D-box	A	None		0.0000	93.00	No Ice	2.52	1.64	27.00
						1/2" Ice	2.71	1.81	49.89
						1" Ice	2.92	1.98	75.90
RFS DB-B1-6C-12AB-0Z D-box	B	None		0.0000	93.00	No Ice	2.52	1.64	27.00
						1/2" Ice	2.71	1.81	49.89
						1" Ice	2.92	1.98	75.90
RFS DB-B1-6C-12AB-0Z D-box	C	None		0.0000	93.00	No Ice	2.52	1.64	27.00
						1/2" Ice	2.71	1.81	49.89
						1" Ice	2.92	1.98	75.90
(2) RFS FD9R6004_2C-3L diplexer	A	None		0.0000	93.00	No Ice	0.31	0.08	5.00
						1/2" Ice	0.39	0.12	7.30
						1" Ice	0.47	0.17	10.69
(2) RFS FD9R6004_2C-3L diplexer	B	None		0.0000	93.00	No Ice	0.31	0.08	5.00
						1/2" Ice	0.39	0.12	7.30
						1" Ice	0.47	0.17	10.69
(2) RFS FD9R6004_2C-3L diplexer	C	None		0.0000	93.00	No Ice	0.31	0.08	5.00
						1/2" Ice	0.39	0.12	7.30
						1" Ice	0.47	0.17	10.69
GPS on 3' standoff	C	From Leg	1.00 0.00 0.00	0.0000	68.00	No Ice 1/2" Ice 1" Ice	0.60 0.79 0.99	0.60 0.79 0.99	50.00 55.81 63.86

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
4' HP dish	A	Paraboloid w/Shroud (HP)	From Leg	3.00 0.00 0.00	0.0000		140.00	4.00	No Ice 1/2" Ice 1" Ice	12.57 13.10 13.62	150.00 217.33 284.66

Solution Summary

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	138 - 117	0.489	30	0.0080	0.0078
T2	117 - 92	0.417	30	0.0086	0.0076
T3	92 - 65	0.316	30	0.0085	0.0061
T4	65 - 35	0.215	34	0.0071	0.0043
T5	35 - 0	0.112	34	0.0044	0.0023

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	4' HP dish	30	0.489	0.0080	0.0078	636919
138.00	Tank bowl	30	0.489	0.0080	0.0078	636919
117.00	AIR 6449 B41	30	0.417	0.0086	0.0076	165806
93.00	(2) SBNHH-1D65A	30	0.320	0.0085	0.0062	489652
68.00	GPS on 3' standoff	30	0.226	0.0073	0.0045	Inf

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	138 - 117	3.151	9	0.0215	0.0421
T2	117 - 92	2.707	9	0.0278	0.0379
T3	92 - 65	2.047	9	0.0324	0.0298
T4	65 - 35	1.374	9	0.0297	0.0229
T5	35 - 0	0.687	17	0.0194	0.0140

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	4' HP dish	9	3.151	0.0215	0.0421	125453
138.00	Tank bowl	9	3.151	0.0215	0.0421	125453
117.00	AIR 6449 B41	9	2.707	0.0278	0.0379	32713
93.00	(2) SBNHH-1D65A	9	2.073	0.0323	0.0301	86076
68.00	GPS on 3' standoff	9	1.445	0.0304	0.0235	243468

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	138	Diagonal	A325N	2.0000	2	8559.04	53831.30	0.159 ✔	1	Gusset Bearing
T2	117	Diagonal	A325N	2.0000	2	12437.40	53831.30	0.231 ✔	1	Gusset Bearing
T3	92	Diagonal	A325N	2.0000	2	16473.90	53831.30	0.306 ✔	1	Gusset Bearing
T4	65	Diagonal	A325N	2.0000	2	18511.20	53831.30	0.344 ✔	1	Gusset Bearing
T5	35	Leg	A307	1.2500	4	24142.80	41417.50	0.583 ✔	1	Bolt Tension
		Diagonal	A325N	2.0000	2	21069.30	53831.30	0.391 ✔	1	Gusset Bearing

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	**138 - 117**	**Leg**	**P18x.25**	**2**	**-28362.80**	**414693.00**	**6.8**	**Pass**
		Diagonal	1	12	17118.10	25446.90	67.3	Pass
		Top Girt	W8x35	6	-6981.10	245132.00	2.8	Pass
T2	**117 - 92**	**Leg**	**P18x.25**	**18**	**-58808.20**	**400170.00**	**14.7**	**Pass**
		Diagonal	1 1/8	28	24874.90	32206.20	77.2	Pass
		Top Girt	W8x35	22	-15029.10	224809.00	6.7	Pass
T3	**92 - 65**	**Leg**	**P18x.25**	**34**	**-96969.10**	**392187.00**	**24.7**	**Pass**
		Diagonal	1 3/8	44	32947.80	48110.50	68.5	Pass
		Top Girt	W8x35	38	-20521.60	199993.00	10.3	Pass
T4	**65 - 35**	**Leg**	**P18x.25**	**50**	**-140819.00**	**379407.00**	**37.1**	**Pass**
		Diagonal	1 1/2	58	37022.30	57255.50	64.7	Pass
		Top Girt	W10x68	53	-24996.50	433240.00	5.8	Pass
T5	**35 - 0**	**Leg**	**P18x.25**	**66**	**-190815.00**	**356253.00**	**53.6** **58.3 (b)**	**Pass**
		Diagonal	1 5/8	74	42138.50	67195.70	62.7	Pass
		Top Girt	W10x68	69	-28168.60	387891.00	7.3	Pass
							Summary	
							Leg (T5) 58.3	Pass
							Diagonal (T2) 77.2	Pass
							Top Girt (T3) 10.3	Pass
							Bolt Checks 58.3	Pass
							RATING = 77.2	**Pass**

EXHIBIT 8

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: CT11166A

Mystic/Downtown_1
7 Broadway Avenue Ext.
Mystic, Connecticut 06355

June 9, 2021

EBI Project Number: 6221002930

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**30.11%**

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

June 9, 2021

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

Emissions Analysis for Site: CT11166A - Mystic/Downtown_1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **7 Broadway Avenue Ext.** in **Mystic, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 7 Broadway Avenue Ext. in Mystic, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 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.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) 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.

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

13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values

and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 117 feet above ground level (AGL).

15) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	**10.61%**	Antenna B1 MPE %:	**10.61%**	Antenna C1 MPE %:	**10.61%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,569.87	ERP (W):	12,569.87	ERP (W):	12,569.87
Antenna A2 MPE %:	**5.34%**	Antenna B2 MPE %:	**5.34%**	Antenna C2 MPE %:	**5.34%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A3 MPE %:	**1.36%**	Antenna B3 MPE %:	**1.36%**	Antenna C3 MPE %:	**1.36%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	17.31%
American Messaging	0.03%
Sprint	3.1%
Verizon	6.65%
AT&T	3.02%
Site Total MPE % :	30.11%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	17.31%
T-Mobile Sector B Total:	17.31%
T-Mobile Sector C Total:	17.31%
Site Total MPE % :	30.11%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	117.0	32.23	2500 MHz LTE 1C & 2C Traffic	1000	3.22%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	117.0	3.13	2500 MHz LTE 1C & 2C Broadcast	1000	0.31%
T-Mobile 2500 MHz NR Traffic	1	22089.26	117.0	64.45	2500 MHz NR Traffic	1000	6.45%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	117.0	6.27	2500 MHz NR Broadcast	1000	0.63%
T-Mobile 600 MHz LTE	2	591.73	117.0	3.45	600 MHz LTE	400	0.86%
T-Mobile 600 MHz NR	1	1577.94	117.0	4.60	600 MHz NR	400	1.15%
T-Mobile 700 MHz LTE	2	695.22	117.0	4.06	700 MHz LTE	467	0.87%
T-Mobile 1900 MHz GSM	4	1052.26	117.0	12.28	1900 MHz GSM	1000	1.23%
T-Mobile 1900 MHz LTE	2	2104.51	117.0	12.28	1900 MHz LTE	1000	1.23%
T-Mobile 2100 MHz LTE	2	2334.27	117.0	13.62	2100 MHz LTE	1000	1.36%
						Total:	**17.31%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

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

T-Mobile Sector	Power Density Value (%)
Sector A:	17.31%
Sector B:	17.31%
Sector C:	17.31%
T-Mobile Maximum MPE % (Sector A):	17.31%
Site Total:	30.11%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **30.11%** 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.