NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
199 Brickyard Rd Farmington, CT 06032
860-209-4690
denise@northeastsitesolutions.com

November 10, 2016

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

RE: Notice of Exempt Modification
103 East Street AKA- 0 Clark Street, Naugatuck CT 06770
Latitude: 41.51780
Longitude: -73.01890
T-Mobile Site#: CTNH305B_L700

Dear Ms. Bachman:

T-Mobile currently maintains three (3) antennas at the 236-foot level of the existing 276-foot guyed tower at 103 East Street AKA- 0 Clark Street, Naugatuck CT 06770. The tower is owned by WTIC/WCCT-TV. The property is owned by Channel 20 Inc. c/o WTIC TV. T-Mobile now intends to install three (3) new 700 MHz antennas and three (3) new L1900/2100 MHz antenna. The new antennas would be installed at the 236-foot level of the tower. T-Mobile also intends to make the following modifications.

Planned Modifications:

Remove: (6) 1-5/8ò Coax

Remove and Replace:
(3) APX16DWV-16DWVS-E-A20 antenna (Remove) - (3) DBXNH-6565A-A2M Antenna (Replace)

Install New:
(3) AIR32 B66 Aa/B2a Antenna
(1) 1-5/8ò Hybrid line
(3) RRUS 11 B12

Existing to Remain:
(6) 1-5/8ò Coax
(6)AWS/PCS TMA with Diplexer (Relocated from tower to ground on New H-Frame)

NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

This facility was approved by the Borough of Naugatuck. Approval was granted on July 17, 1991 to erect a transmission and communication tower with an overall height of 281-feet with supporting anchors and guy wires. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State AgenciesÄ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. Ä16-50j-72(b)(2). In accordance with R.C.SA. Ä16-SOj-73, a copy of this letter is being sent to Mayor N. Warren ñPeteò Hess III, Elected Official for the Town of Naugatuck, as well as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. Ä16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site. Ł

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. Ä16-50j-72(b)(2).

Sincerely,

Denise Sabo
Mobile: 860-209-4690
Fax: 413-521-0558
Office: 199 Brickyard Rd, Farmington, CT 06032
Email: denise@northeastsitesolutions.com

Attachments
cc: N. Warren ñPeteò Hess III- Mayor - as elected official
Channel 20 Inc. c/o WTIC TV - as tower owner & property owner

Exhibit A

BOROUGH OF NAUGATUCK

INLAND WETLANDS COMMISSION
PLANNING COMMISSION
ZONING BOARD OF APPEALS
ZONING COMMISSION

LAND USE OFFICE
213 CHURCH STREET
NAUGATUCK, CT 06770
203/729-4571

I HEREBY CERTIFY THAT Channel 20, Inc. owner of record (owners address) 414 Meadow Street, Waterbury CT 06702, filed an application pursuant to Section 32 of the Zoning Regulations of the Borough of Naugatuck for a SPECIAL PERMIT for property at described in the attached Schedule A, which was APPROVED AT THE MEETING OF THE ZONING COMMISSION HELD ON:

Wednesday (DAY), July 17, 1991 (DATE).

FOR THE PURPOSE OF: Erecting and operating a transmission and communication tower with an overall height of 281 feet, with supporting anchors and guy wires.

SIGNED: Robert Wagner (c/h) Zoning Commission Chairman

Michael Monnile Zoning Enforcement Officer

This action shall be filed with the Town Clerk on the Land Records of the Town as required by Section 8-3c(b) of the State Statutes.

SCHEDULE A

All that certain piece or parcel of land situated on the southerly side of East Side Boulevard in the City of Waterbury and in the Borough of Naugatuck, County of New Haven and State of Connecticut, bounded and described as follows:

Beginning at a point in the southerly line of East Side Boulevard in the City of Waterbury, Connecticut at the north-easterly corner of a parcel designated as a 50' R.O.W. on a map entitled "Subdivision of Peach Orchard Estates, Section Four, Waterbury, Conn., August, 1972, Scale: 1"=50'", recorded in Map Drawer IV, Page 386 of Waterbury Land Records, said 50' R.O.W. being located easterly of Lot #107 as shown on said Map, thence running easterly in the southerly line of East Side Boulevard and in a line curving to the left having a radius of 110.26 feet, a distance of 50.00 feet to land now or formerly of L & M Builders, Incorporated, thence running in line of land now or formerly of L & M Builder, Incorporated S 2°43'42W and crossing the Waterbury-Naugatuck Town Line from Waterbury 15.17feet into Naugatuck S 1° 19' 46" E, 125.00 feet, thence continuing in line of land now or formerly of L & M Builders, Incorporated S 87° 32' 18" E, 100.22 feet to The Naugatuck-Prospect Town Line and land now or formerly of George and Jennie Nardozza, thence running in line of land now or formerly of George and Jennie Nardozza, land now or formerly of Mary F. Raynor, land now or formerly of Grace M. Perun, land now or formerly of Thomas Bros., Inc., and land now or formerly of Philip J. Langdo S 1° 19' 46" E, 821.13 feet to land now or formerly of Estate of Stanley J. Lucas, the last described line being the Naugatuck-Prospect Town Line, thence running in line of land now or formerly of Estate of Stanley J. Lucas N 73° 32' 16" W, 181.07 feet, N 70° 15' 58" W, 117.30 feet, and N 69° 28' 34" W, 130.68 feet, N 57° 19' 46" W, 94.73 feet, N 71° 30' 34" W, 73.64 feet, and N 80° 52' 16" W, 45.91 feet to a point, thence running in line of remaining land of Francis M. McWeeney, Jr., N 1° 19' 46" W, 200.00 feet, N 88° 40' 14" E, 266.87 feet, N 1° 19' 46" W, 516.79 feet to Lot #107 as shown on a map entitled "Subdivision of Peach Orchard Estates Section Four", thence running in line of said lot #107 and a 50' wide Right of Way S 87° 32' 18" E, 165.00 feet, the last described line being the Naugatuck-Waterbury Town Line, thence running in the easterly line of a 50' wide Right of Way N 30° 36' 32" E, 31.53 feet to East Side Boulevard and the point of beginning. Bounded:

Northerly - by Lot #107 "Peach Orchard Estates Section Four", a 50' wide Right of Way, East Side Boulevard, and land now or formerly of L & M Builders, Incorporated;

Easterly - by land now or formerly of George & Jennie Nardozza, land now or formerly of Mary F. Raynor, land now or formerly of Grace M. Perun, land now or formerly of Thomas Bros. Inc., and land now or formerly of Philip J. Langdo;

Southerly - by land now or formerly of Estate of Stanley J. Lucas;

Westerly - by land now or formerly of Francis M. McWeeney, Jr.

Being a portion of the premises conveyed to Francis M. McWeeney, Jr., by L & M Builders, Incorporated a/k/a L & M Builders, Inc. by Quit-Claim Deed dated and recorded December 11, 1973 in Volume 1122, Page 152 of the Waterbury Land Records and in Volume 180, Page 27 of the Naugatuck Land Records.

SCHEDULE A
(continued)

Together with a right of way over area designated at 50' R.O.W. on map of "Subdivision of Peach Orchard Estates Section Four, Waterbury, Conn., August, 1972, Scale: 1"=50'", recorded in Drawer IV, Page 386, Waterbury Land Records, said right of way being located easterly of Lot #107 as shown on said Map and running southerly from East Side Boulevard to the Waterbury-Naugatuck Town Line as described in Volume 1121, Pages 011 and 012 of Waterbury Land Records.

Together with an easement and right of way through, over, under and across (a) the remaining land owned by Francis M. McWeeney, Jr. located northerly of the Waterbury town line and lying between said town line and the southerly line of East Side Boulevard, as shown on a map entitled "Map of Land of Thomas Bros., Inc. Prospect, Conn. The A. J. Patton Co., Surveyor, Waterbury, Conn. June 15, 1979 Scale: 1" = 40' Additions Oct. 21, 1980" (the "Map"), and (b) the remaining land of Francis M. McWeeney, Jr. located in the Town of Naugatuck, bounded northerly by the Waterbury town line, westerly and southerly by the Premises and easterly by land N/F of Grace M. Franco, as shown on said Map, to use said lands for all purposes customarily made of a public highway, including, without limiting the generality of the foregoing, the right to pass and repass on foot or in vehicles, to enter upon, travel and transport materials over and upon said lands and, if necessary or convenient, in connection therewith, the right to grade, excavate, fill or otherwise improve said lands, said easement and right of way to terminate upon the completion of the construction of a television tower and station upon the Premises.

Together with a permanent easement and right of way sufficient in width to satisfy town road specifications for the zone district in which the remaining land of Francis M. McWeeney, Jr. (as defined herein and hereinafter referred to as the "Remaining Property") is located, said easement to begin at a point in the westerly boundary of the Premises and running therefrom generally westerly through, over, under and across the Remaining Property to any future public highway constructed on or which adjoins or benefits the Remaining Property, to use said land for all purposes customarily made of a public highway, including without limiting the generality of the foregoing, the right to lay, install and maintain sewer, water and storm water lines therein, the right to pass and repass on foot or in vehicles, and, if necessary or convenient, in connection therewith, the right to grade, excavate, fill or otherwise improve said right of way. Said easement and right of way shall be located in such area as Francis M. McWeeney, Jr. or his successor shall determine; provided, however, that said easement and right shall be subject to the approval of the Naugatuck Economic Development Commission.

Exhibit 8

BOROUGH OF NAUGATUCK

ZONING PERMIT

PERMIT NO. DATE June 18 19 91

PERMISSION TO: (BUILD) (~~MAKE ALTERATIONS~~) ~~BUILD ON ADDITION~~

A _____ ~~FAMILY DWELLING OR OTHER~~ transmission tower 281 feet high

DESCRIPTION OF PREMISES: ZONING PDD-8/ICC VALUE $70,000

Northeast corner of Naugatuck, at rear of William C. Rado Sr. Drive and Industrial Park, bordering Town of Prospect and City of Waterbury;

Tax Map 354 C, Block 20E138, Lot A.

FEE 35.00

☐ ZONING

☐ PLANNING

☐ WETLAND---FLOOD PLAIN

☐ ZONING BOARD OF APPEALS

☐ HEALTH-LIQUID WASTE

☐ SEPTIC TANK

Granted, DATE _____

ZONING ENFORCEMENT OFFICER

APPLICANT: I hereby certify that the information contained herein is accurate.

Robert H. Hall

Signature of Applicant

Robert H. Hall, Attorney for Channel 20, Inc.

Name of Applicant (Print)

43 Main St.,P.O. Box 395, Newtown,CT 06470

Address

426-8177

Telephone No.

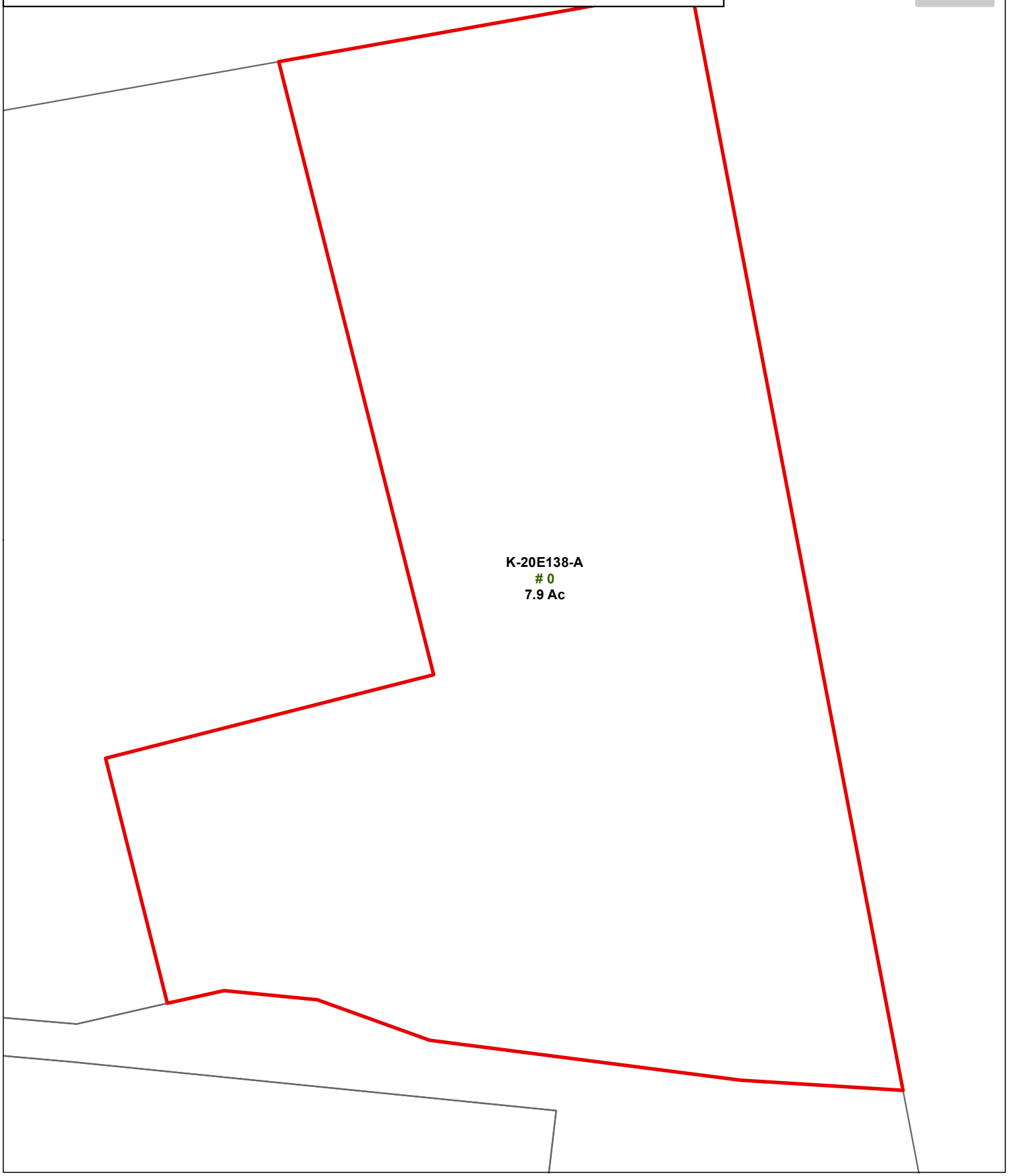
THIS APPROVAL IS SUBJECT TO COMPLIANCE (PRIOR TO OCCUPANCY) WITH THE PROVISIONS OF THE ZONING REGULATIONS AND THE SUBDIVISION REGULATIONS OF THE BOROUGH OF NAUGATUCK (WHERE APPLICABLE) AND AS AUTHORIZED UNDER SECTION 8 OF THE CONNECTICUT GENERAL STATUTES, AS AMENDED. THIS PERMIT IS BASED UPON THE PLOT PLAN SUBMITTED. FALSIFICATION BY MISREPRESENTATION OR OMISSION SHALL CONSTITUTE A VIOLATION OF THE BOROUGH ZONING REGULATIONS.

Exhibit B

Borough of Naugatuck, Connecticut - Assessment Parcel Map

Parcel Account Number: 011-3060

Address: 0 CLARK HILL RD



0 25 50 75 100 Feet

Disclaimer: This map is for informational purposes only.
All information is subject to verification by any user.
The Borough of Naugatuck and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced Sept 2015

Borough of Naugatuck, CT

Property Listing Report

Map Block Lot: K-20E138-A

Account: 011-3060

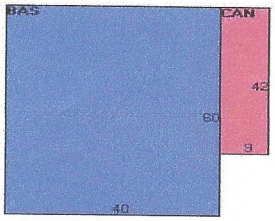
Property Information

Property Location	0 CLARK HILL RD
Owner	CHANNEL 20 INC C/O WTIC TV
Co-Owner	
Mailing Address	C/O EQUITY PROPERTY TAX GROUP CHICAGO IL 60606-6115
Land Use	4330 RAD/TV TR
Land Class	I
Zoning Code	
Census Tract	
Sub Lot	

Neighborhood	D
Acreage	7.9
Utilities	
Lot Setting/Desc	
Survey Map	
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1980
Stories	1
Building Style	Transmit Bldg
Building Use	Ind/Comm
Building Condition	C
Floors	Concrete
Total Rooms	

Bedrooms	
Full Bathrooms	1
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable
Roof Cover	Metal/Tin

Exterior Walls	Pre-finsh Metl
Interior Walls	Drywall
Heating Type	Forced Hot Air
Heating Fuel	Electric
AC Type	Central
Gross Bldg Area	2778
Total Living Area	2400

Report Created On 11/2/2016

Borough of Naugatuck, CT

Property Listing Report | **Map Block Lot** K-20E138-A | **Account** 011-3060

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	279060	195340
Extras	0	0
Outbuildings	375690	262990
Land	219000	153300
Total	873750	611630

Outbuilding and Extra Items

Type	Description
CELL BLDG	170 S.F.
CELL BLDG	360 S.F.
Fence 6 ft	500 L.F.
CELL BLDG	140 S.F.
CELL BLDG	264 S.F.
TV TOWER	280 HEIGHT
TV TOWER	980 HEIGHT

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2400	2400
Canopy	378	0
Total Area	2778	2400

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
CHANNEL 20 INC C/O WTIC TV	328/ 466	3/3/1989	1800000

Report Created On 11/2/2016

Exhibit C

T-MOBILE NORTHEAST LLC

SITE #: CTNH305B

SITE NAME: NH305/CHANNEL 20_ET

SITE ADDRESS:

103 EAST SIDE BLVD AKA CLARK HILL ROAD

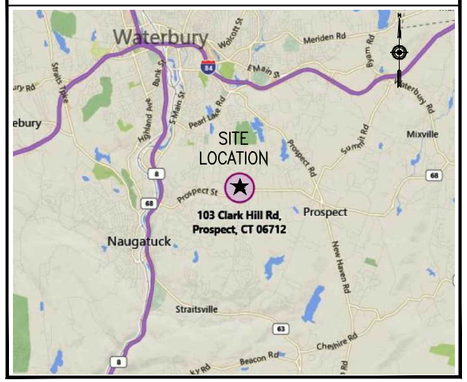
NAUGATUCK, CT 06770

WIRELESS BROADBAND FACILITY

CONSTRUCTION DRAWINGS

(794DB CONFIGURATION)

VICINITY MAP



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL BEFORE YOU DIG:

WWW.CBYD.COM

CALL 800 922 4455, OR 811

CALL THREE WORKING DAYS PRIOR TO DIGGING

SAFETY PRECAUTIONS SHALL BE IMPLEMENTED BY CONTRACTOR(S) AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS.

COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC	– RED	SEWER	– GREEN
GAS/OIL	– YELLOW	SURVEY	– PINK
TEL/CATV	– ORANGE	PROPOSED EXCAVATION	– WHITE
WATER	– BLUE	RECLAIMED WATER	– PURPLE

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 CONSTRUCT 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 T–MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF 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 ADDENDUM 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 CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. 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.
12. 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 PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T–MOBILE 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 T–MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.
17. ATLANTIS DESIGN GROUP, INC. HAS NOT CONDUCTED A STRUCTURAL ANALYSIS FOR THIS PROJECT AND DOES NOT ASSUME ANY LIABILITY FOR THE ADEQUACY OF THE STRUCTURE AND COMPONENTS.
18. REFER TO " RIGOROUS STRUCTURAL ANALYSIS – FOR A 276' STAINLESS G–48 GUYED TOWER – WATERBURY, CT PREPARED BY STAINLESS – A BUSINESS OF FDH VELOCITEL, REPORT NUMBER 350810" DATED OCTOBER 21, 2016, AND DESIGN DRAWINGS, EXISTING G48 TOWER, WATERBURY CT PREPARED BY STAINLESS. PROJECT NO. 350810 DATED 10/14/2016. T–MOBILE SITE ID CTNH305B.

SITE INFORMATION

SITE NUMBER:	CTNH305B
SITE NAME:	NH305/CHANNEL 20_ET
SITE ADDRESS:	103 EAST SIDE BLVD AKA CLARK HILL ROAD NAUGATUCK, CT 06770
LAT./LONG.:	N 41.51780 / W –73.01890
JURISDICTION:	TOWN OF NAUGATUCK , CT
PROPERTY OWNER:	WTIC/WCCT–TV ATTN: NANDO CIALFI 12 RIDGEVIEW DR. FARMINGTON, CT 06032

CODE COMPLIANCE

CONNECTICUT STATE BUILDING CODE

2016 CONNECTICUT STATE BUILDING CODE
2012 INTERNATIONAL BUILDING CODE
2012 INTERNATIONAL EXISTING BUILDING CODE
2012 INTERNATIONAL PLUMBING CODE
2012 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL RESIDENTIAL CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2014 NATIONAL ELECTRICAL CODE (NFPA 70)

CONSTRUCTION TYPE: 2B USE GROUP: N/A

PROJECT SUB–CONTRACTORS

APPLICANT:	T–MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (860) 692–7100
PROJECT MANAGER	LISA LIN ALLEN NORTHEAST SITE SOLUTIONS 54 MAIN STREET STURBRIDGE, MA 01566 (508) 434–5237
A&E:	ATLANTIS DESIGN GROUP INC. 3210 MAIN CAMPUS DRIVE LEXINGTON, MA 02421 (617)–852–3611

SHEET INDEX

SHEET	DESCRIPTION
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A–3	DETAILS
E–1	GROUNDING AND COAX/FIBER DIAGRAM
E–2	GROUNDING DETAILS

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX:(860) 692-7159

ATLANTIS DESIGN GROUP, INC.
3210 MAIN CAMPUS DRIVE
LEXINGTON, MA 02421
Phone number: 617–852–3611
Fax Number : 781–742–2247

SUBMITTALS

DATE	DESCRIPTION	REVISION
07/28/16	ISSUED FOR REVIEW	A
08/09/16	FINAL CD	0
10/25/16	NEW CONFIGURATION	1
11/08/16	REVISION	2

DEPT.	DATE	APP'D	REVISIONS
RFE.			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CTNH305B
DRAWN BY:	FG
CHECKED BY:	KM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NUMBER
CTNH305B
SITE NAME
NH305/CHANNEL 20_ET
SITE ADDRESS
103 EAST SIDE BLVD
AKA CLARK HILL ROAD
NAUGATUCK, CT 06770

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

ELECTRICAL NOTES:

WORK INCLUDED

1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
   B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
   C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
   D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
   E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
   F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
   B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
   A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
   B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
   D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
   E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

GUARANTEE

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
   D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
   I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
   A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
   A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

INSURANCE AND BONDS

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

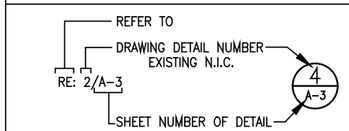
ARCHITECTURAL SYMBOLS

STORAGE

38

3

DETAIL REFERENCE KEY



ABBREVIATIONS

ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
(P)	PROPOSED
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TYP	TYPICAL
VIF	VERIFY IN FIELD
UON	UNLESS OTHERWISE NOTED
WWF	WELDED WIRE FABRIC
W/	WITH

T-MOBILE NORTHEAST, LLC
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3210 MAIN CAMPUS DRIVE
LEXINGTON, MA 02421
Phone number: 617-852-3611
Fax Number : 781-742-2247

SUBMITTALS

DATE	DESCRIPTION	REVISION
07/28/16	ISSUED FOR REVIEW	A
08/09/16	FINAL CD	0
10/25/16	NEW CONFIGURATION	1
11/08/16	REVISION	2

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CTNH305B
DRAWN BY:	FG
CHECKED BY:	KM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NUMBER
CTNH305B
SITE NAME
NH305/CHANNEL 20_ET
SITE ADDRESS
103 EAST SIDE BLVD
AKA CLARK HILL ROAD
NAUGATUCK, CT 06770

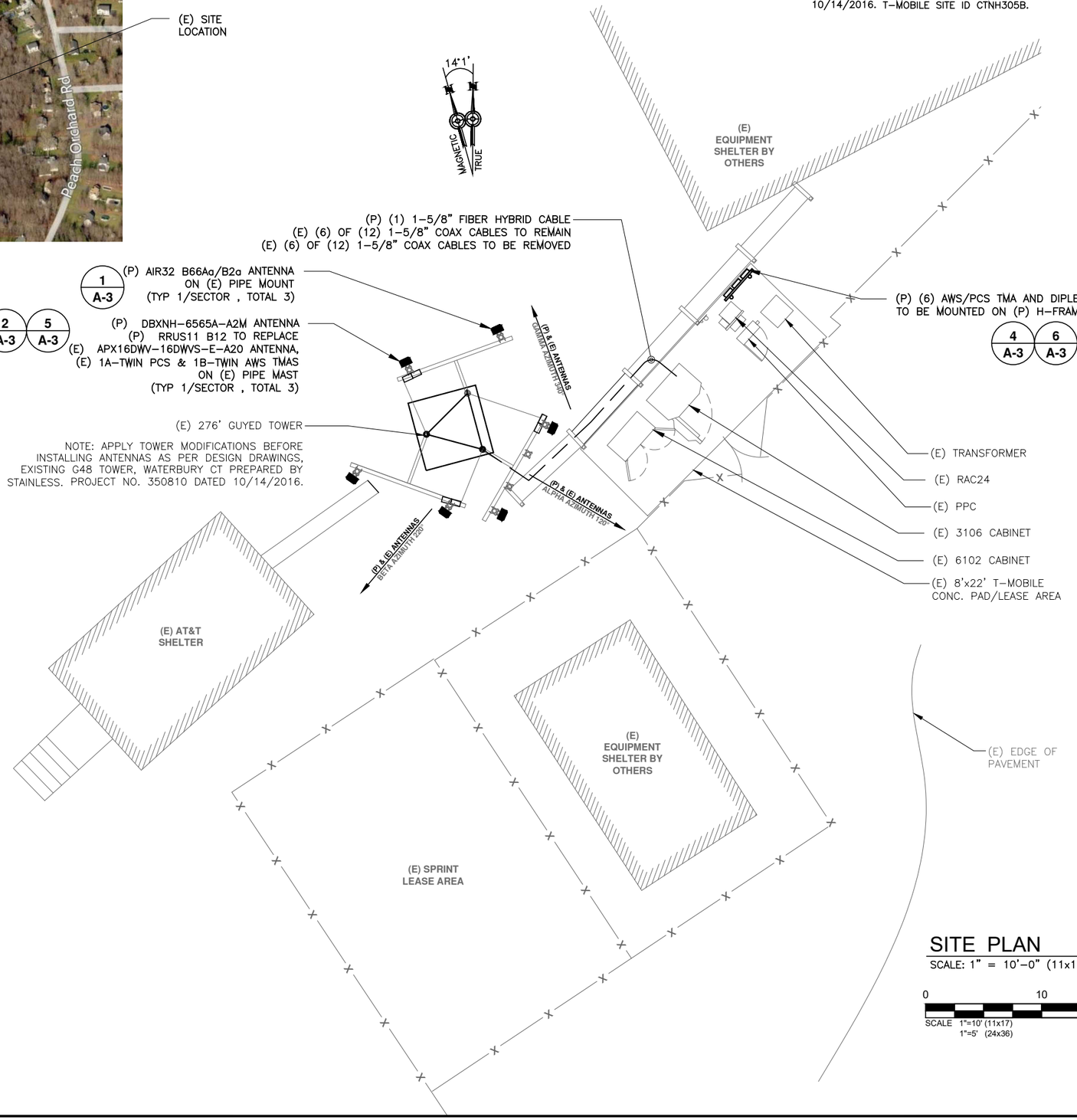
SHEET TITLE
GENERAL AND ELECTRICAL NOTES

SHEET NUMBER
N-1

(E) SITE LOCATION

KEY PLAN — 1 / A-1
SCALE: N.T.S.

REFER TO " RIGOROUS STRUCTURAL ANALYSIS – FOR A 276' STAINLESS G-48 GUYED TOWER – WATERBURY, CT PREPARED BY STAINLESS – A BUSINESS OF FDH VELOCITEL, REPORT NUMBER 350810" DATED OCTOBER 21, 2016, AND DESIGN DRAWINGS, EXISTING G48 TOWER, WATERBURY CT PREPARED BY STAINLESS. PROJECT NO. 350810 DATED 10/14/2016. T-MOBILE SITE ID CTNH305B.



SITE PLAN — 2 / A-1
SCALE: 1" = 10'-0" (11x17)

0 10 20 30
SCALE 1"=10' (11x17)
1"=5' (24x36)

GENERAL SITE NOTES

1. SITE INFORMATION WAS OBTAINED FROM A FIELD INVESTIGATION PERFORMED BY ATLANTIS DESIGN GROUP, INC. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.

2. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.

3. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.

4. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.

5. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.

6. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT CALL BEFORE YOU DIG THREE WORKING DAYS PRIOR TO COMMENCING WORK.

7. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- CHAIN LINK FENCE
- OPAQUE WOODEN FENCE
- BOARD ON BOARD FENCE
- DECIDUOUS TREES/SHRUBS
- EVERGREEN TREES/SHRUBS
- TREE LINE
- UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE
- PROP. LTE ANTENNA
- PROP. UMTS/GSM ANTENNA
- EX. GSM ANTENNA
- EX. UMTS ANTENNA

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Fax Number : 781-742-2247

SUBMITTALS		
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08/09/16	FINAL CD	0
10/25/16	NEW CONFIGURATION	1
11/08/16	REVISION	2

DEPT.	DATE	APP'D	REVISIONS
RFE.			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CTNH305B
DRAWN BY:	FG
CHECKED BY:	KM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT

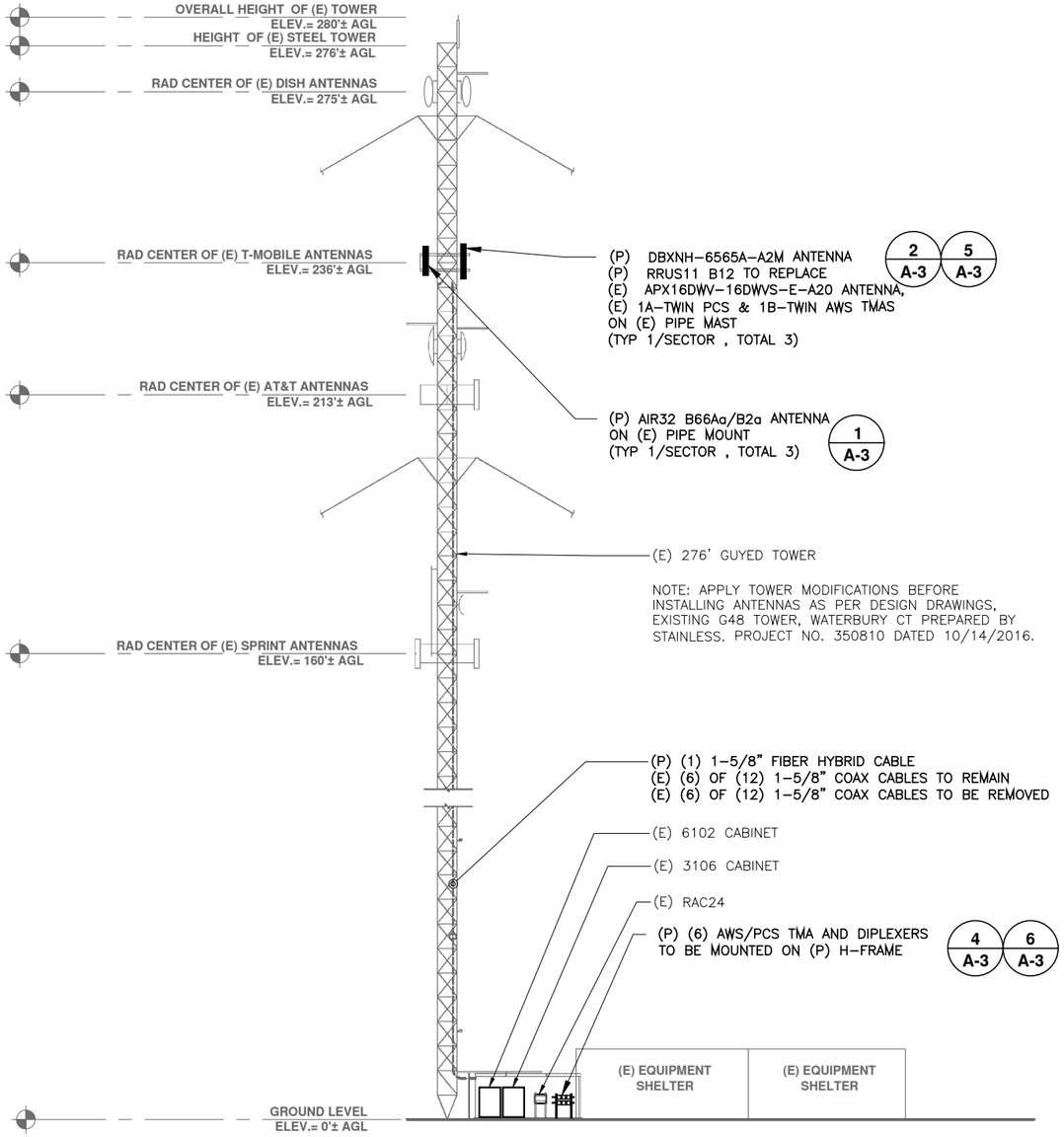
PROFESSIONAL SEAL

SITE NUMBER
CTNH305B
SITE NAME
NH305/CHANNEL 20_ET
SITE ADDRESS
103 EAST SIDE BLVD
AKA CLARK HILL ROAD
NAUGATUCK, CT 06770

SHEET TITLE
SITE PLAN

SHEET NUMBER
A-1

REFER TO " RIGOROUS STRUCTURAL ANALYSIS – FOR A 276' STAINLESS G–48 GUYED TOWER – WATERBURY, CT PREPARED BY STAINLESS – A BUSINESS OF FDH VELOCITEL, REPORT NUMBER 350810" DATED OCTOBER 21, 2016, AND DESIGN DRAWINGS, EXISTING G48 TOWER, WATERBURY CT PREPARED BY STAINLESS. PROJECT NO. 350810 DATED 10/14/2016. T–MOBILE SITE ID CTNH305B.



ELEVATION 1 / A-2

SCALE: **1"= 30'-0"**

0 30 60 90

SCALE 1"=30' (11x17)
1"=15' (24x36)

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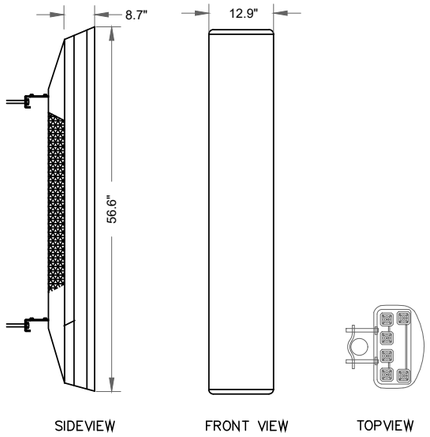
SHEET TITLE
ELEVATION

SHEET NUMBER
A-2

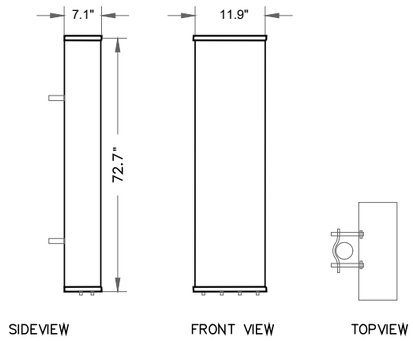


MANUFACTURER: ERICSSON
MODEL NO.:ERICSSON AIR32 AIR32 B66Aa/B2a
DIMENSIONS – HxWxD, (IN) 56.6"x12.9"x8.7"

ERICSSON AIR32 B66Aa/B2a ANTENNA DETAILS

SCALE: N.T.S

1 A-3



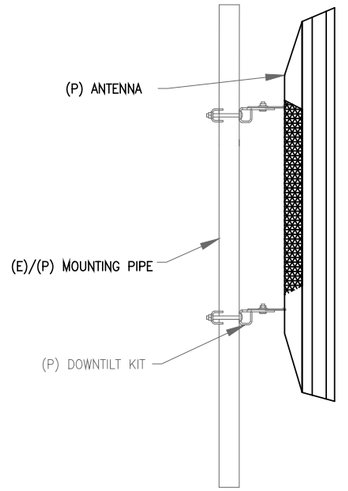
MANUFACTURE: COMMSCOPE
MODEL NO. DBXNH-6565B-VTM / DBXNH-6565B-A2M
DIMENSIONS – HxWxD, (IN) 72.7x11.9x7.1
WEIGHT – 33.5 LB

COMMSCOPE DBXNH-6565B-A2M ANTENNA DETAILS

SCALE: N.T.S

2 A-3

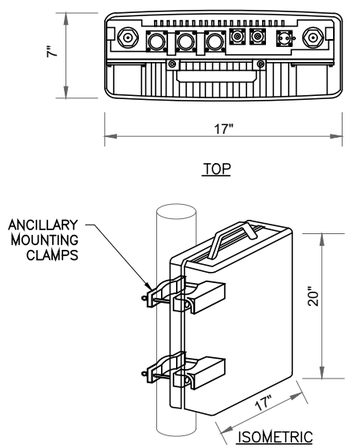
REFER TO " RIGOROUS STRUCTURAL ANALYSIS – FOR A 276' STAINLESS G-48 GUYED TOWER – WATERBURY, CT PREPARED BY STAINLESS – A BUSINESS OF FDH VELOCITEL, REPORT NUMBER 350810" DATED OCTOBER 21, 2016, AND DESIGN DRAWINGS, EXISTING G48 TOWER, WATERBURY CT PREPARED BY STAINLESS. PROJECT NO. 350810 DATED 10/14/2016. T-MOBILE SITE ID CTNH305B.



ANTENNA MOUNT DETAILS

SCALE: N.T.S

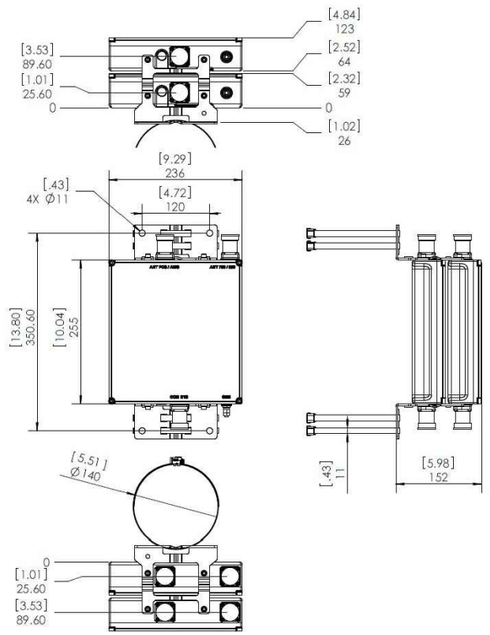
3 A-3



RRUS 11 B12 DETAILS

SCALE: N.T.S

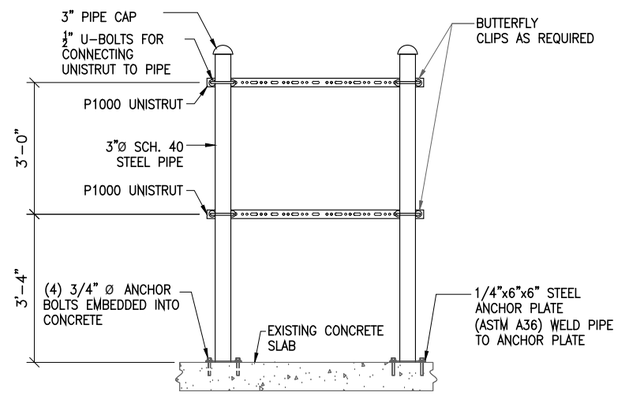
5 A-3



DUAL DIPLEXED PCS/AWS TMA DETAILS

SCALE: N.T.S

4 A-3



H-FRAME DETAILS

SCALE: N.T.S

6 A-3

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SITE NAME
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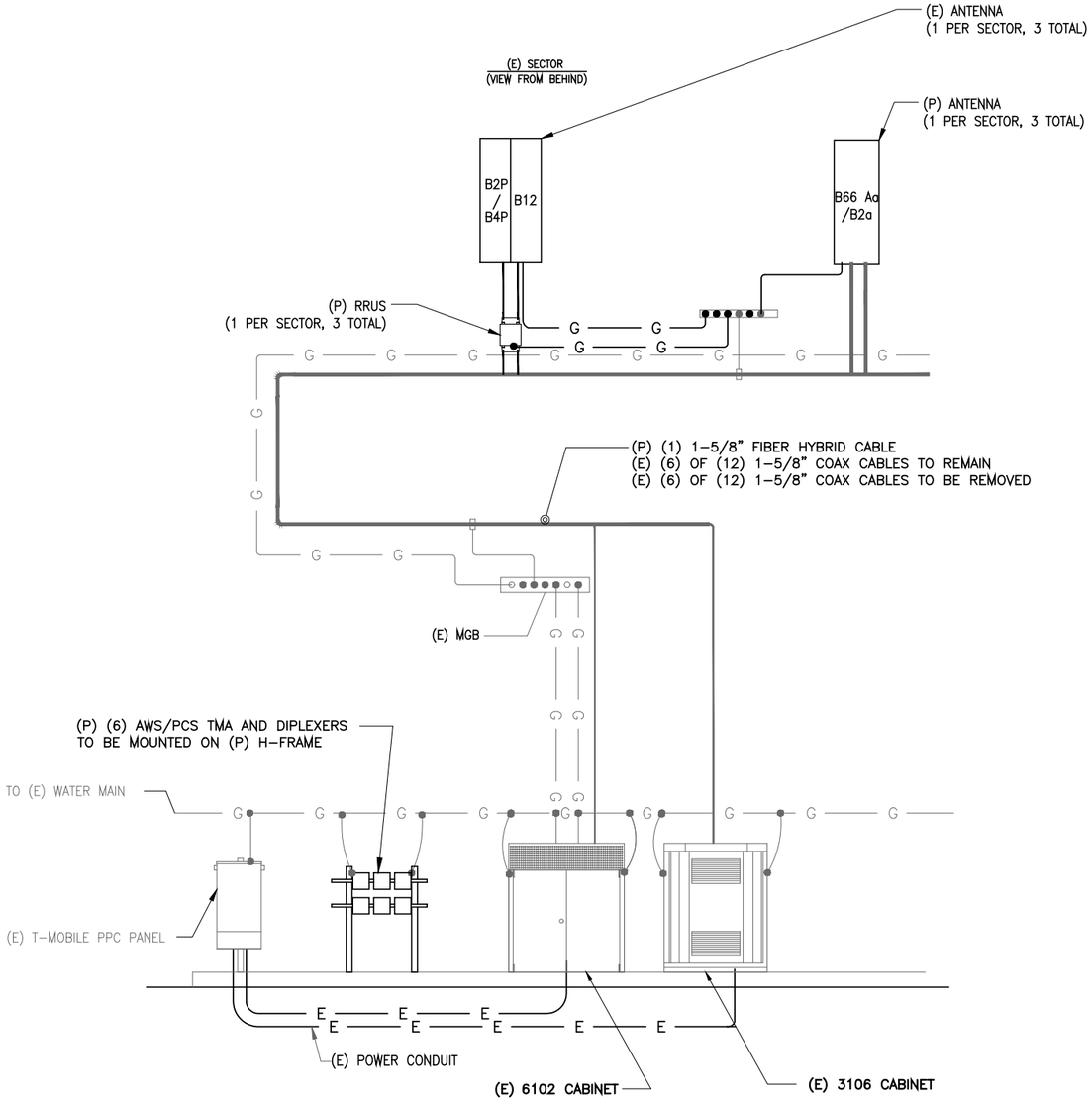
103 EAST SIDE BLVD
AKA CLARK HILL ROAD
NAUGATUCK, CT 06770

SHEET TITLE
DETAILS

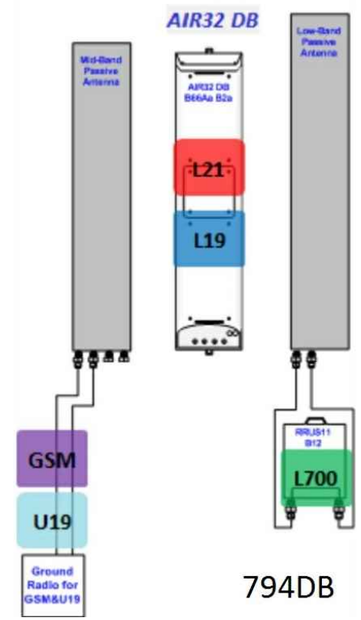
SHEET NUMBER
A-3



GROUNDING AND ONE LINE DIAGRAM

1
E-1

SCALE: N.T.S



TRUNK FIBER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO ⅞" COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL CABLES ARE INDIVIDUALLY SERIALIZED, BE SURE TO WRITE DOWN THE CABLE SERIAL NUMBER FOR FUTURE REFERENCE.
2. THE TERMINATED FIBER ENDS (THE BROKEN OUT FIBERS PLUS CONNECTORS) HOWEVER ARE FRAGILE, AND THESE MUST BE PROTECTED DURING THE INSTALLATION PROCESS.
3. LEAVE THE PROTECTIVE TUBE AND SOCK AROUND THE FIBER TAILS AND CONNECTORS IN PLACE DURING HOISTING AND SECURING THE CABLE. REMOVE THIS ONLY JUST PRIOR TO MAKING THE FINAL CONNECTIONS TO THE OVP BOX.
4. DO NOT BEND THE FIBER ENDS (IN THE ORANGE FURCATION TUBES) TIGHTER THAN ¾" (19MM) BEND RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS FIBERS.
5. BE SURE THAT THE LACE UP ENDS AND FIBER CONNECTORS ARE NOT DAMAGED BY ATTACHMENT OF A HOISTING GRIP OR DURING THE HOISTING PROCESS. ATTACH A HOISTING GRIP ON THE JACKETED CABLE NO LESS THAN 6 INCHES BELOW THE FIBER BREAKOUT POINT. IF A HOISTING GRIP IS NOT EASILY ATTACHED, USE A SIMPLE LINE ATTACHED BELOW THE FIBER BREAK-OUT POINT (I.E. AT THE CABLE OUTER JACKET). PREVENT THE FIBER TAILS (IN PROTECTIVE TUBE) AT THE CABLE END FROM UNDUE MOVEMENT DURING HOISTING BY SECURING THE PROTECTIVE TUBE (WITH OUTER SOCK) TO THE HOISTING LINE.
6. DURING HOISTING ENSURE THAT THERE IS A FREE PATH AND THAT THE CABLE, AND ESPECIALLY THE FIBER ENDS, WILL NOT BE SNAGGED ON TOWER MEMBERS OR OTHER OBSTACLES.
7. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO +70C).
8. MINIMUM CABLE BEND RADII ARE 22.2" (565MM) LOADED (WITH TENSION ON THE CABLE) AND 11.1" (280MM) UNLOADED.
9. MAXIMUM CABLE TENSILE LOAD IS 3560 N (800 LB) SHORT TERM (DURING INSTALLATION) AND 1070 N (240 LB) LONG TERM.
10. COMMSCOPE NON LACE UP GRIP RECOMMENDED FOR MONOPOLE INSTALLATIONS.
11. MAXIMUM HANGER SPACING 3FT (0.9 M).

HYBRID FIBER/POWER JUMPER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A ⅜" COAXIAL CABLE.
2. THE TERMINATED FIBER ENDS HOWEVER ARE FRAGILE AND MUST BE PROTECTED DURING INSTALLATION. LEAVE THE PACKAGING AROUND THE FIBER ENDS IN PLACE UNTIL READY TO CONNECT THE JUMPER BETWEEN OVP AND RRU OR BBU.
3. DO NOT BEND THE FIBER BREAKOUT CABLE (BETWEEN THE MAIN CABLE AND THE FIBER CONNECTOR) TIGHTER THAN ¾" (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS.
4. ATTACH THE MAIN CABLE SECURELY TO THE STRUCTURE OR EQUIPMENT USING HANGERS AND/OR CABLE TIES TO PREVENT STRAIN ON CONNECTIONS FROM MOVEMENT IN WIND OR SNOW/ICE CONDITIONS.
5. ENSURE THE LC FIBER CONNECTORS ARE SEATED FIRMLY IN PANEL IN OVP OR IN EQUIPMENT.
6. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO 70C).
7. MINIMUM CABLE BEND RADII ARE 10.3 INCH (265MM) LOADED (WITH TENSION ON THE CABLE) AND 5.2 INCH (130MM) UNLOADED.
8. MAXIMUM CABLE TENSILE LOAD IS 350 LB (1560N) SHORT TERM (DURING INSTALLATION) AND 105 LB (470N) LONG TERM.
9. STANDARD LENGTHS AVAILABLE ARE 6 FEET, 15 FEET AND 20 FEET

794DB CONFIGURATION
COAX/FIBER PLUMBING DIAGRAM

2
E-1

SCALE: N.T.S

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RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CTNH305B
DRAWN BY:	FG
CHECKED BY:	KM

STATE OF CONNECTICUT
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LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NUMBER
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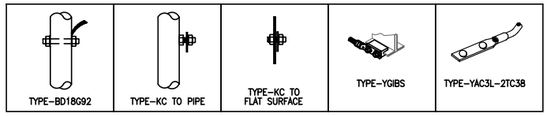
SITE NAME
NH305/CHANNEL 20_ET

SITE ADDRESS
103 EAST SIDE BLVD
AKA CLARK HILL ROAD
NAUGATUCK, CT 06770

SHEET TITLE
GROUNDING AND ONE LINE DIAGRAM
COAX/FIBER DIAGRAM

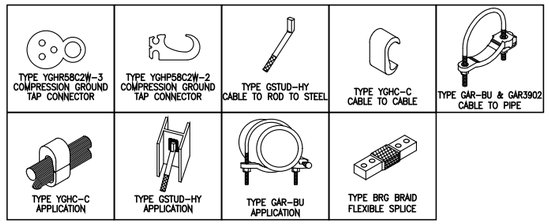
SHEET NUMBER
E-1



BURNDY GROUNDING DETAILS

SCALE: N.T.S

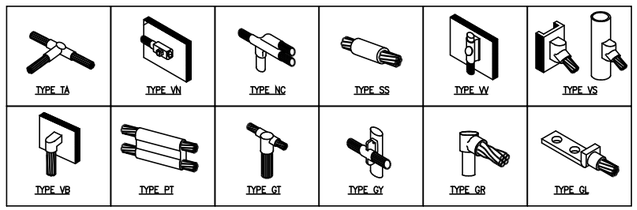
1 E-2



BURNDY GROUNDING PRODUCTS

SCALE: N.T.S

2 E-2



CADWELD GROUNDING CONNECTION PRODUCTS

SCALE: N.T.S

3 E-2

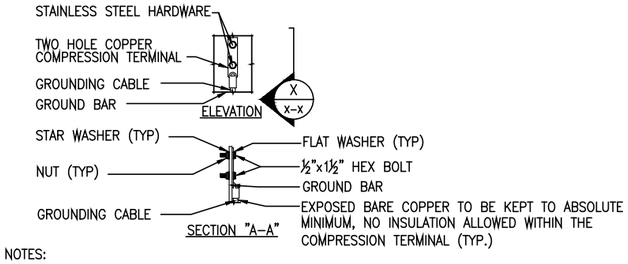
TERMINATION TYPES:
A. MECHANICAL COMPRESSION LUG
B. DOUBLE BARRELL COMPRESSION CONNECTOR
C. EXOTHERMIC TERMINATION
D. BEAM CLAMP

	SOLID #2 TINNED COPPER	#6 GROUND LEAD	#2/0 STRANDED MAIN DOWN CONDUCTOR	MASTER GRND BAR	STRUCTURAL OR TOWER STEEL	BLDG SERVICE ENTR OR GRND RING	GROUND ROD
SOLID #2 TINNED COPPER	B OR C	B OR C		C	A, C, OR D		C
#6 GROUND LEAD	B OR C			A	A, C, OR D		
#2/0 STRANDED GRNDG ELECTRODE CONDUCTOR				A	A, C, OR D	A	
MASTER GROUND BAR	C	A	A				
STRUCTURAL OR TOWER STEEL	A, C, OR D	A, C, OR D	A, C, OR D				
GROUND RING	C		C				C

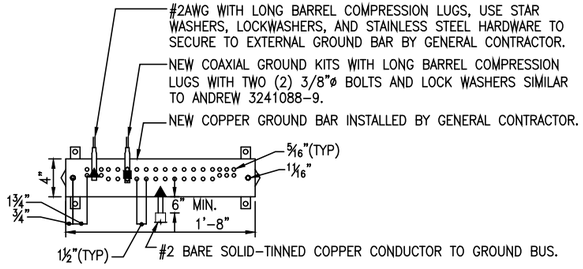
GROUNDING TERMINATION MATRIX

SCALE: N.T.S

7 E-2



NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

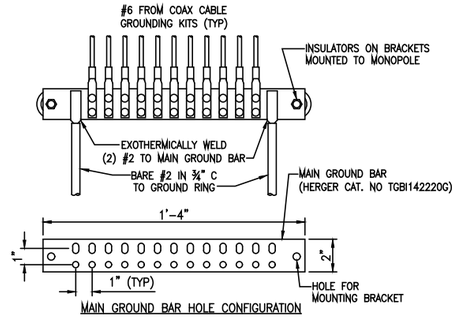


NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: N.T.S

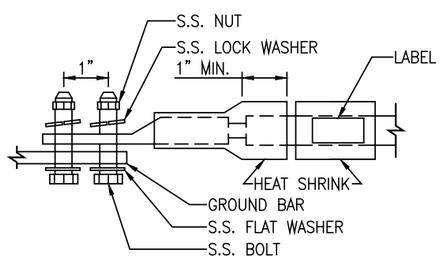
4 E-2



GROUND BAR DETAIL

SCALE: N.T.S

5 E-2



LUG NOTES:
1. ALL HARDWARE IS 18-8 STAINLESS STEEL, INCLUDING LOCK WASHERS.
2. ALL HARDWARE SHALL BE S.S. ⅜"ø OR LARGER.
3. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH ANTI-OXIDIZATION COMPOUND PRIOR TO MATING.

GROUND BAR DETAIL

SCALE: N.T.S

6 E-2

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SITE AC.			

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CHECKED BY:	KM

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SITE NAME
NH305/CHANNEL 20_ET
SITE ADDRESS
103 EAST SIDE BLVD
AKA CLARK HILL ROAD
NAUGATUCK, CT 06770

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-2

Exhibit D

STAINLESS

A BUSINESS OF FDH VELOCITEL

REPORT 350810

DATE: 10/21/2016

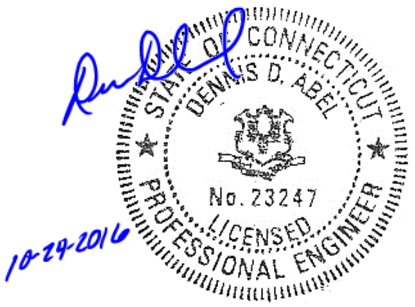
RIGOROUS STRUCTURAL ANALYSIS

FOR A 276ô STAINLESS G-48 GUYED TOWER

WATERBURY, CT

PREPARED BY: AP APPROVED: DDA

CHECKED BY: PCC



Date	Pages	Remarks

Rev.	Date	Description

SECTION PAGE

A. AUTHORIZATION/PURPOSE 1

B. TOWER HISTORY 1

C. CONDITIONS INVESTIGATED 3

D. LOADS AND STRESSES 4

E. METHOD OF ANALYSIS 5

F. RESULTS 5

G. CONCLUSIONS AND RECOMMENDATIONS 6

H. PROVISIONS OF ANALYSIS 6

APPENDIX

GENERAL ARRANGEMENT E-1

LINEAR APPURTENANCES A-2

Rev.	Date	Description

A. AUTHORIZATION/PURPOSE

As authorized by Sheldon Freincle of Northeast Site Solutions LLC, a structural analysis was performed to investigate the adequacy of a 276ô guyed tower in Waterbury, CT to support specified equipment.

B. TOWER HISTORY

The tower was originally designed and furnished in 1991 by Stainless, Inc. It was designed in accordance with ANSI/EIA-222-D for a basic wind speed of 80 mph with no ice and 69.3 mph with 1/2ò of uniform radial ice while supporting the following equipment:

1. Sixty (60) square feet of flat wind area at the 271ôlevel and 20ò width of linear wind area to the 276ôlevel.
2. Two (2) Andrew HMD16HD TV antennas, top mounted, fed by one (1) 1-5/8ò line to each antenna.
3. Four (4) 8ô parabolic antennas with radomes at the 271ô level, fed by one (1) EW 77 waveguide to each antenna (future).
4. Two (2) 8ô parabolic antennas with radomes at the 221ô level, fed by one (1) EW 77 waveguide to each antenna.
5. Two (2) 6ô parabolic antennas with radomes at the 216ô level, fed by one (1) EW 77 waveguide to each antenna.
6. Two (2) 6ôMark grid dishes at the 121ôlevel, fed by one (1) 7/8ò line to each antenna.
7. Two (2) 4ô parabolic antennas with radomes at the 106ô level, fed by one (1) EW 127 waveguide to each antenna.
8. Two (2) 18ò dishes at the 111ôlevel, fed by one (1) RG59 line to each antenna.
9. Two (2) 24ò dishes at the 106ôlevel, fed by one (1) RG59 line to each antenna.
10. Four (4) 4ô parabolic antennas with radomes at the 101ô level, fed by one (1) EW 127 waveguide to each antenna.
11. Two (2) 4ô parabolic antennas with radomes at the 96ô level, fed by one (1) EW 127 waveguide to each antenna.
12. One (1) inside climbing ladder with cable type safety device for the full height of the tower.

In 2005, the tower was modified by Paul J. Ford and Company. The scope of the modifications was obtained from:

- Dewberry drawing titled ôModified 276ôGuyed Tower, Sheet S-1ôdated 06/14/2005.
- Stainless LLC Report No. 350802 dated 11/2005, providing connection assembly material for the Level 3 guy replacement.

Rev.	Date	Description

The modifications were as follows:

a. Replaced existing 1/2" EHS guys at Level 3 with new 9/16" EHS guy wires.
b. Adjusted initial guy tensions in all guy levels.
c. Replaced existing diagonal braces with new higher capacity members at the following bays:

Location	No. of bays
141.0' – 193.0'	13

The tower was modified per Stainless LLC Report 350804 dated 04/05/2013, and the modifications were as follows:

a. Replaced existing 9/16" EHS guys at Level 2 with new 5/8" EHS guy wires.
b. Installed concrete thrust blocks in front of each anchor and connected the blocks to the anchor arms to resist anchor arm bending.
c. Adjusted initial guy tensions in all guy levels.

The tower was analyzed per Stainless Report 350806 dated 6/25/2016, and tower modification design drawings prepared per Stainless Design Drawings Report 350807 dated 7/18/2016. The modifications consisted of the following. These modifications have not been installed.

a. Replace existing guy wires at Levels 1 (bottom) and 2 with new higher capacity guy wires.
b. Adjust initial tensions in all guy levels.
c. Install additional horizontal sub-bracing members at the midpoints of the following bays:

Location	No. of bays
153.0' – 185.0'	8
5.0' – 133.0'	32

d. Replace or reinforce existing diagonal braces with new higher capacity members at the following bays:

Location	No. of bays
129.0' – 149.0'	5
45.0' – 77.0'	8

The tower was analyzed per Stainless Report 350809 dated 10/3/2016 and tower modifications were recommended. These modifications are assumed to have been installed for the purpose of this analysis and consist of the following:

a. Replace existing guy wires at Levels 1 (bottom) and 2 with new higher capacity guy wires.
b. Adjust initial tensions in all guy levels.
c. Install additional horizontal sub-bracing members at the midpoints of the following bays:

Rev.	Date	Description

Location	No. of bays
125.0' – 129.0'	1
5.0' – 105.0'	25

d. Replace or reinforce existing diagonal braces with new higher capacity members at the following bays:

Location	No. of bays
129.0' – 145.0'	4
45.0' – 73.0'	7

C. CONDITIONS INVESTIGATED

The analysis was performed for the tower supporting equipment based upon the following sources:

- Stainless Proposal P16_350809_001 dated 10/18/2016.
- Stainless Report 350809 dated 10/3/2016.
- CTNH305B-L700-RFDS 9-16-16
- Email from Sheldon Freincle dated 10/2/2016 with details of proposed equipment.

1. One (1) 6' x 6' ice shield at the 274' level.
2. One (1) 6' x 6' ice shield at the 270' level.
3. Two (2) 6' diameter MW dish antennas with radome at the 264' level, fed by two (2) EW63 to each.
4. One (1) 12' torque triangle at the 261' level.
5. One (1) Scala grid dish antenna at the 254' level, fed by one (1) 7/8" line.
6. Three (3) DBXNH-6565A-A2M antennas, three (3) KRD901146/1AIR32 B66Aa/B2a antennas, three (3) RRUS11 B12 on three (3) frame mounts at the 236' level, fed by six (6) 1-5/8" lines and one (1) 1-5/8" hybrid cable. **(Proposed)**
7. Three (3) RFS APXVSPP18-C-A20 antennas, four (4) EMS FS65-17-DP antennas, six (6) 1900 MHz RRH units, three (3) 1900 RRH combiners and three (3) 800 MHz RRH with notch fillers on three (3) frame mounts at the 208' level, fed by twelve (12) 1-5/8" lines and three (3) 1-1/4" hybrid cables.
8. One (1) 12' torque triangle at the 201' level.
9. One (1) 18" x 24" dish antenna at the 196' level, fed by one (1) 1/2" fiber optic cable.
10. One (1) 6' x 6' ice shield at the 172' level.
11. One (1) Mark 4' diameter grid dish antenna at the 164' level, fed by one (1) RG-6 cable.
12. One (1) 4-bay dipole antenna at the 162' level, fed by one (1) 7/8" line.
13. Six (6) Powerwave 7770.00 panel antennas, two (2) KMW AM-X-CD-16-65 panel antennas, one (1) SBNH-1D6565C antenna, six (6) Ericsson RRUS-11 remote radio units, six (6) KRY 112 units, six (6) Powerwave LGP13519 units and one (1) RA YCAP DC6-48-60-18-8F surge arrestor on three (3) frame mounts at the 152' level, fed by

Rev.	Date	Description

twelve (12) existing 1-5/8" lines and two (2) 5/8" DC conductor cables and one (1) 3/8" fiber cable.

14. One (1) DB222-A antenna on a side arm mount at the 115' level, fed by one (1) 7/8" line. **(Future)**
15. One (1) 1-1/2" conduit to the top of the tower with 12" x12" x 6" junction boxes at the 10', 94', 188' and 276' levels. **(Future)**
16. One (1) wind gage and weather device at the 56' level, fed by one (1) 1/8" cable.
17. One (1) temperature sensor at the 20' level, fed by one (1) 1/8" cable.
18. One (1) 3/8" grounding cable to the 236' level.
19. One (1) inside climbing ladder with safety cable for the full height of the tower.

The locations of the transmission lines are based on the tower cross section shown in Stainless Report 350809 dated 10/3/2016. The locations of all the transmission lines are shown on page A-2 of this report. Deviating from this appurtenance arrangement may invalidate the results presented in this report.

D. LOADS AND STRESSES

The analysis was performed using the following design parameters in accordance with the 2012 IBC and ANSI/TIA 222-G-2005, Structural Standard for Antenna Supporting Structures and Antennas, including addenda 1 and 2 dated 2007 and 2009 respectively:

- Structure Classification II
- 121 mph ultimate design wind speed with no ice
- 50 mph nominal design wind speed with 3/4" design ice thickness
- Exposure Category B
- Topographic Category 5 (H=360', 2Lh=2880' and x=370')
- 0.25 earthquake spectral response acceleration at short periods (S_s)
- Earthquake Site Class D

The ultimate design wind speed is converted to a nominal design wind speed for use in ANSI/TIA 222-G based upon the following formula:

$$V_{asd} = V_{ult} * (0.6)^{1/2}$$
$$= 121 * (0.6)^{1/2}$$
$$= 93.7 \text{ mph, use } 94 \text{ mph}$$

The tower is located near the top of an escarpment and subject to speed-up in the wind speed. In accordance with Section 2.6.6.1 of ANSI/TIA 222-G, wind speed-up effects at isolated hills, ridges and escarpments shall be taken into account in analyzing towers located on such topographic features. A topographic category of 5 was used in this analysis and the enhanced wind speeds were calculated using RSM-03 by the Structural Engineers Association of Washington (SEAW). The increase in the basic wind speed will be most pronounced at the lower portion of the tower and decreases along the height of the tower.

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Seismic effects need not be considered as the value of Ss is less than 1.0 per Section 2.7.3 of ANSI/TIA 222-G. Load and resistance factors used to evaluate the adequacy of the structure were in accordance with ANSI/TIA 222-G.

E. METHOD OF ANALYSIS

The analysis was performed using tnxTower, a computerized program which idealizes the tower as a structure consisting of finite elements, and subjected to simultaneous transverse and axial loads.

F. RESULTS

The results of the analysis show the following ratings:

LOCATION	SPAN	RATING %
Leg compression	Cantilever	13
	4	95
	3	98
	2	100
	1	74
Leg tension	Cantilever	6
	4	22
	3	15
	2	--
	1	--
Diagonals	Cantilever	23
	4	65
	3	99
	2	100
	1	81
Horizontals	Cantilever	14
	4	28
	3	51
	2	38
	1	26
Guys	4	66
	3	85
	2	89
	1	84
Foundations	Tower base	95
	Guy anchors	85

The maximum acceptable rating for the tower and foundations is 100%.

Rev.	Date	Description

G. CONCLUSIONS AND RECOMMENDATIONS

Based on the preceding results, the following conclusions may be drawn:

1. The tower, supporting equipment as specified in Section C above and with all the proposed modifications of Stainless Report 350809 dated 10/3/2016 installed, is adequate to achieve an ultimate design wind speed of 121 mph with no ice, and a nominal design wind speed of 50 mph with 3/4" design ice thickness in accordance with the 2012 IBC, and ANSI/TIA 222-G with the analysis parameters of Section D.

2. After the modifications are completed, the tower twist and sway at the elevations of the proposed dish under a service wind speed of 60 mph are as follows:

Dish	Elevation, ft.	Twist, degrees	Sway, degrees
6' MW Dish	264	0.07	0.11
4' Grid Dish	164	0.15	0.08

H. PROVISIONS OF ANALYSIS

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

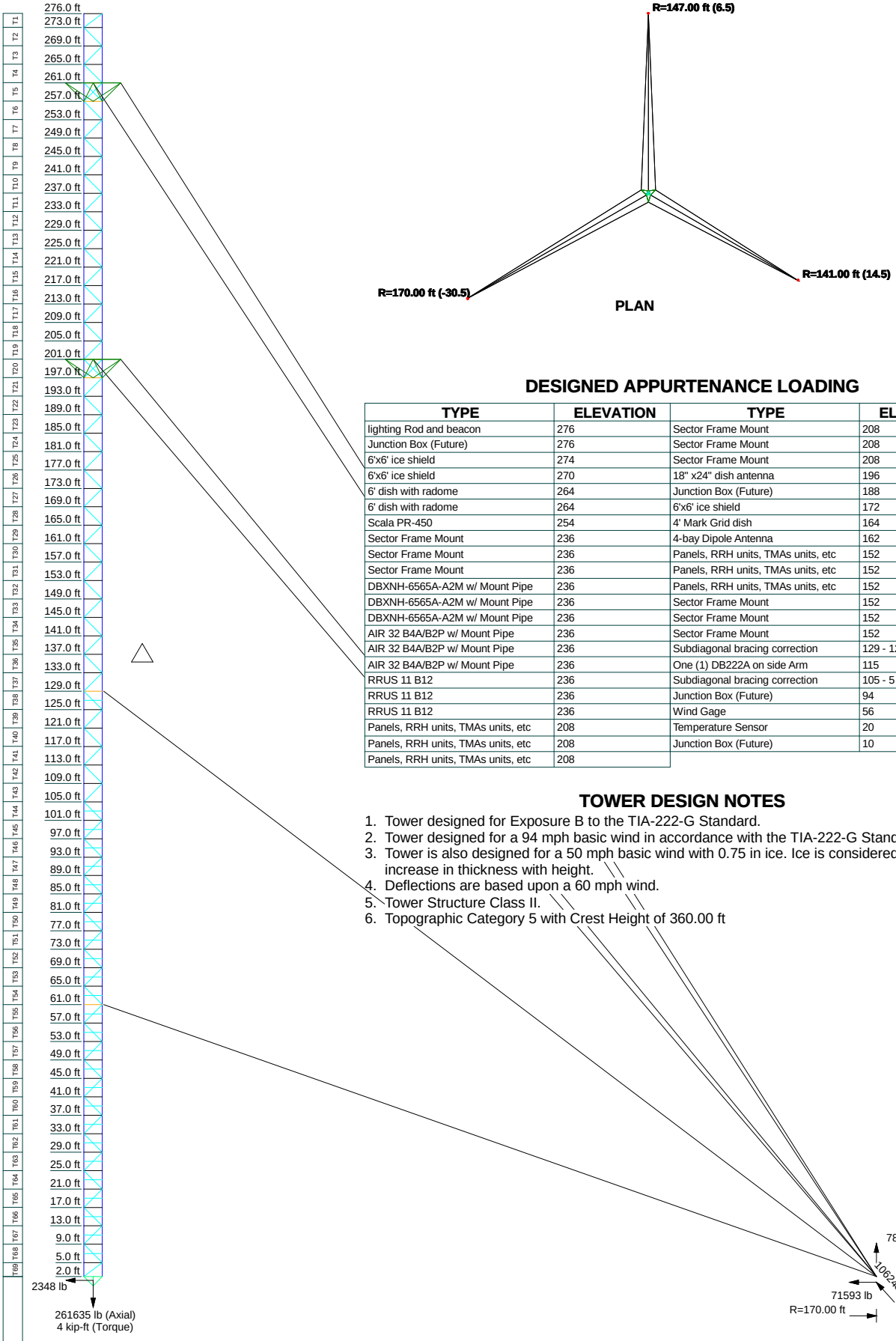
1. Proper alignment and plumbness.
2. Correct guy tensions.
3. Correct bolt tightness.
4. No significant deterioration or damage to any component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-arts" engineering and analysis procedures and formulae, and Stainless assumes no obligations to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will Stainless have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of Stainless, if any, pursuant to this Report shall be limited to the total funds actually received by Stainless for preparation of this Report.

Customer has requested Stainless to prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested Stainless to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of Stainless, Customer has informed Stainless that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by Stainless and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice.

Rev.	Date	Description

Customer hereby agrees and acknowledges that Stainless shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Stainless in connection with the implementation of any structural changes or modifications recommended by Stainless including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that Stainless shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor.



PLAN

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
lighting Rod and beacon	276	Sector Frame Mount	208
Junction Box (Future)	276	Sector Frame Mount	208
6'x6' ice shield	274	Sector Frame Mount	208
6'x6' ice shield	270	18" x24" dish antenna	196
6' dish with radome	264	Junction Box (Future)	188
6' dish with radome	264	6'x6' ice shield	172
Scala PR-450	254	4' Mark Grid dish	164
Sector Frame Mount	236	4-bay Dipole Antenna	162
Sector Frame Mount	236	Panels, RRH units, TMAs units, etc	152
Sector Frame Mount	236	Panels, RRH units, TMAs units, etc	152
DBXNH-6565A-A2M w/ Mount Pipe	236	Panels, RRH units, TMAs units, etc	152
DBXNH-6565A-A2M w/ Mount Pipe	236	Sector Frame Mount	152
DBXNH-6565A-A2M w/ Mount Pipe	236	Sector Frame Mount	152
AIR 32 B4A/B2P w/ Mount Pipe	236	Sector Frame Mount	152
AIR 32 B4A/B2P w/ Mount Pipe	236	Subdiagonal bracing correction	129 - 125
AIR 32 B4A/B2P w/ Mount Pipe	236	One (1) DB222A on side Arm	115
RRUS 11 B12	236	Subdiagonal bracing correction	105 - 5
RRUS 11 B12	236	Junction Box (Future)	94
RRUS 11 B12	236	Wind Gage	56
Panels, RRH units, TMAs units, etc	208	Temperature Sensor	20
Panels, RRH units, TMAs units, etc	208	Junction Box (Future)	10
Panels, RRH units, TMAs units, etc	208		

TOWER DESIGN NOTES

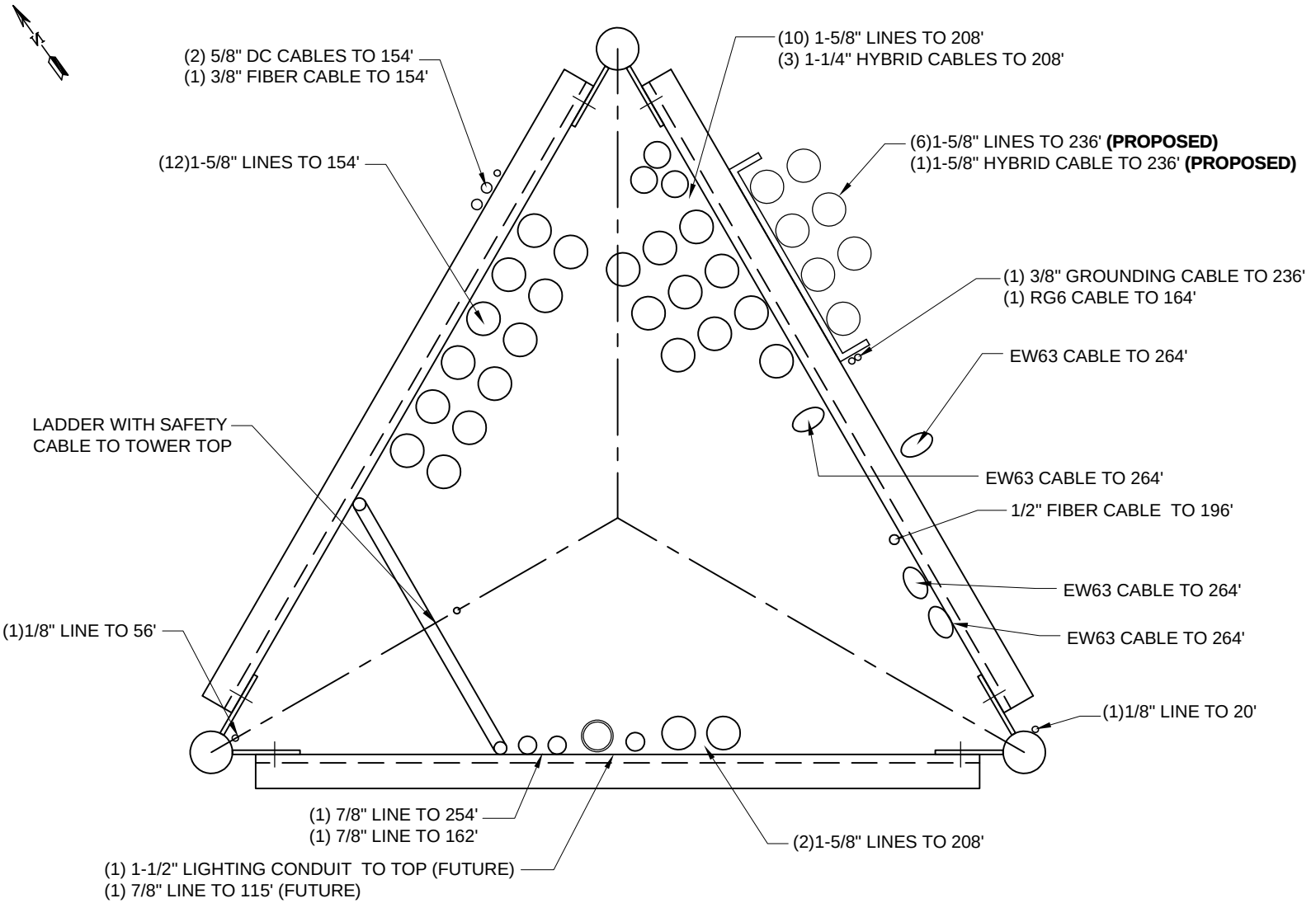
1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 94 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 5 with Crest Height of 360.00 ft

ALL REACTIONS ARE FACTORED

STAINLESS
Tower Analysis

FDH Velocitel
6521 Meridien Drive, Suite 107
Raleigh, North Carolina 27616
Phone: 9197551012
FAX: 9197551031

Job:	***350810 Waterbury CT***		
Project:	***276' Stainless G-48 guyed tower***		
Client:	Northeast Site Solutions LLC	Drawn by: APang	App'd:
Code:	TIA-222-G	Date: 10/21/16	Scale: NTS
Path:	K:\350810\eng\tnxTower\350810.eri		Dwg No. E-1



PREPARED BY	AP	10/21/16
CHECKED BY		
ENGINEER REVIEW		
PROJECT NUMBER	350810	
DRAWING NUMBER	A-2	

REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE
*							
*							
*							
*							
*							

STAINLESS

A BUSINESS OF FDH VELOCITEL
100 West Main Street, Suite 400
Lansdale, PA 19446

LINEAR APPURTENANCES
WATERBURY, CT

Exhibit E

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: CTNH305B

NH305/Channel 20_ET
103 East Blvd AKA Clark Hill Road
Naugatuck, CT 06770

October 27, 2016

EBI Project Number: 6216004903

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	2.54 %

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

EBI Consulting
environmental | engineering | due diligence

October 27, 2016

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

Emissions Analysis for Site: **CTNH305B – NH305/Channel 20_ET**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **103 East Blvd AKA Clark Hill Road, Naugatuck, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general public 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 public 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 limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$, and the general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **103 East Blvd AKA Clark Hill Road, Naugatuck, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 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.

2) 2 UMTS 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.

3) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 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.

5) 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

6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

7) Since all 1900 MHz radios are ground mounted there are additional cabling losses accounted for in the calculations. For each ground mounted 1900 MHz RF path an additional 2.83 dB of cable loss was factored into the calculations for these paths. This is based on manufacturers Specifications for 275 feet of 1-5/8" coax cable on each path.

8) 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.

9) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB 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.

10) The antennas used in this modeling are the **Ericsson AIR32 B66Aa/B2A** & **Commscope DBXNH-6565A-VTM** for 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS). This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B66Aa/B2A** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope DBXNH-6565A-VTM** has a maximum gain of **15.5 dBd** at its main lobe at 1900 MHz and 2100 MHz and a maximum gain of **11.3 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, 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.

11) The antenna mounting height centerline of the proposed antennas is **236 feet** above ground level (AGL).

12) 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.

13) All calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	236	Height (AGL):	236	Height (AGL):	236
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	0.63	Antenna B1 MPE%	0.63	Antenna C1 MPE%	0.63
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DBXNH-6565A-VTM	Make / Model:	Commscope DBXNH-6565A-VTM	Make / Model:	Commscope DBXNH-6565A-VTM
Gain:	15.5 / 11.3 dBd	Gain:	15.5 / 11.3 dBd	Gain:	15.5 / 11.3 dBd
Height (AGL):	236	Height (AGL):	236	Height (AGL):	236
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS) / 700 MHz	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS) / 700 MHz	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS) / 700 MHz
Channel Count	7	Channel Count	7	Channel Count	7
Total TX Power(W):	210	Total TX Power(W):	210	Total TX Power(W):	210
ERP (W):	4,752.69	ERP (W):	4,752.69	ERP (W):	4,752.69
Antenna A2 MPE%	0.36	Antenna B2 MPE%	0.36	Antenna C2 MPE%	0.36

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**0.99 %**
Prospect Police	0.03 %
AT&T	1.45 %
Sprint	0.07 %
Site Total MPE %:	**2.54 %**

T-Mobile Sector A Total:	0.99 %
T-Mobile Sector B Total:	0.99 %
T-Mobile Sector C Total:	0.99 %
Site Total:	2.54 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	236	3.17	AWS - 2100 MHz	1000	0.32%
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	236	3.17	PCS - 1900 MHz	1000	0.32%
T-Mobile AWS - 2100 MHz UMTS	2	1,064.44	236	1.45	AWS - 2100 MHz	1000	0.14%
T-Mobile PCS - 1950 MHz UMTS	2	554.78	236	0.75	PCS - 1950 MHz	1000	0.08%
T-Mobile PCS - 1950 MHz GSM	2	554.78	236	0.75	PCS - 1950 MHz	1000	0.08%
T-Mobile 700 MHz LTE	1	404.69	236	0.28	700 MHz	467	0.06%
						Total:	**0.99%**

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public 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 public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	0.99 %
Sector B:	0.99 %
Sector C:	0.99 %
T-Mobile Per Sector Maximum:	0.99 %
Site Total:	2.54 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **2.54%** of the allowable FCC established general public 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.