NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

October 4, 2017

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

RE: Exempt Modification Application

41 Beckwith Road, Montville CT 06370
Latitude: 41.43546
Longitude: -72.22085
T-Mobile Site#: CTNH032H-MWAAV

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing 180-foot monopole located at 41 Beckwith Road, Montville CT 06370. T-Mobile currently has six (6) antennas at the 175-foot level of the existing 180-foot tower. The property is owned by Bond Gladys J Trustee and the monopole is owned by Crown Castle. T-Mobile now intends to install one (1) IBR1300 Dish. The new dish would be installed at the 175-foot and level of the tower.

Planned Modifications:
Remove:
NONE

Remove and Replace:
NONE

Install New:
(1)IBR1300 Dish
(1)Fiber line
(2)CAT6 Cables

Existing to Remain:
(1) 1-5/8" coax
(9) RRU
(3) APX16 Antenna – 1900/2100 Mhz
(3) LNX6515 Antenna – 700 Mhz

This facility was approved by the City of Montville PZC. The PZ approval file attached- note: the file attached is the document they have on file for approval.

NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent Mayor Ronald K McDaniel, Elected Official and Marcia A. Vlaun, Town PLanner for the City of Montville, 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. § 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 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. ·

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. § 16-50j-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: Mayor Ronald K McDaniel- as elected official
Marcia A. Vlaun, Town Planner
Crown Castle - as tower owner
Bond Gladys J Trustee - property owner

Exhibit A

e. mailed
May 10, '00
MC

L E G A L N O T I C E

The Montville Planning and Zoning Commission at its meeting held on, May 9, 2000, took the following action:

Sprint PCS/Bond: An application for a special permit for telecommunucations tower located on the property located at 41 Beckwith Road, Montville, Ct. Shown on Assessor's Map 12, Lot 1. GRANTED with CONDITIONS.

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

Dated at Montville, Ct. this 10th day of May, 2000.

MONTVILLE PLANNING AND ZONING COMMISSION

Gregory Majewski, Chairman

PUBLISH IN THE NEW LONDON DAY MAY ~~11~~ 12, 2000

PLEASE REFERENCE PURCHASE ORDER 6100 I 1 ON INVOICE.

Note must be 48 hours in advance - per Judy @ the Day.

TEL: 848-8549
FAX: 848-2354

TOWN OF MONTVILLE
PLANNING & ZONING COMMISSION

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

CERTIFICATE OF NOTICE OF DECISION

APPROVAL: APPROVED W/CONDITIONS

LOCATION/DESCRIPTION: 41 BECKWITH ROAD

NATURE OF PROJECT: TELECOMMUNICATIONS TOWER

APPLICABLE ZONING REGULATION: REGULATION

OWNER OF RECORD: SPRINT PCS/BOND

PLANNING DIRECTOR

CLERICAL ASSISTANT

REMARKS:

Exhibit B

Property Location 41 BECKWITH RD | Map ID 012/ 001/ 000/ / | Bldg Name SFR & TOWER SITE | State Use 1010
Vision ID 507 | Account # B0046400 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 12/27/2016 2:45:15 P

CURRENT OWNER

BOND GLADYS J TRUSTEE

41 BECKWITH RD

OAKDALE CT 06370

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	7 Electric	1 Paved	S Murphy Schl
	Well		F Chesterfield
	Septic		

SUPPLEMENTAL DATA

Alt Parcel ID	012/001-000		
Census	695202		
Dev Lot			
Subdiv			
Map #		Callback	
Zoning Notes	WRP-160		
Gis ID	012/001-000	ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Res Land	1-1	60,800	42,560
Res Exces	1-2	155,830	109,080
Dwelling	1-3	172,740	120,920
Res OB	1-4	185,590	129,910
Util Land	4-1	185,400	129,780
Farm Land	6-1	22,500	880
Forest	6-2	377,500	25,370
	Total	1,160,360	558,500

6086

MONTVILLE, CT

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
BOND GLADYS J TRUSTEE	0606	806	06-29-2015	U	I	0	10
BOND LOUIS HEALY EST	0576	0614	10-10-2012	U	I	0	29
BOND LOUIS HEALY	0101	0472	08-01-1968		I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2016	1-1	42,560	2016	1-1	42,560	2016	1-1	42,560
	1-2	109,080		1-2	109,080		1-2	109,080
	1-3	120,920		1-3	120,920		1-3	117,950
	1-4	129,910		1-4	129,910		1-4	5,670
	Total	558,500		Total	558,500		Total	419,350

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Street Index Name	Tracing	Batch
0001				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	172,740
Appraised XF (B) Value (Bldg)	0
Appraised OB (B) Value (Bldg)	185,590
Appraised Land Value (Bldg)	802,030
Special Land Value	26,250
Total Appraised Parcel Value	1,160,360
Valuation Method	C
Exemption	0
Adjustment	
Total Appraised Parcel Value	1,160,360

NOTES

CELL SITE
$2000 MONTH X 12 = $24,000
15% EXP CAP 11% = $185,400
VC12: NEW FORESTRY REPORT, FOREST ACRES
FROM 187 AC TO 151 AC. OVERALL ACREAGE
CORRECTION FROM 237 AC. TO 226 AC.
V580 P1 1/29/13 EASEMENT SALE/ASSIGN OF
LEASE V580 P1 10,000 EASEMENT W/20' ROW
$405,000
VC15: SHEDS & BARNS REMOVED
2016 ADDED CELL TOWER FROM PID 101337

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
W/O	05-22-2015	79	Misc		08-20-2015	100		OUTBLDNGS REM
M2013-014	09-06-2013	13	AG tank New	500		100		TANK & LINES
E2013-0205	08-28-2013	00	Electrical	6,000		100		STANDBY GENERA
E2002-260	09-12-2002	00	ELECTRICAL FOR	7,000		100		ELECTRICAL FOR
B2002-510	09-12-2002		ADD ANTENNAE &	32,000		100	01-06-2003	CO ISSUED-ADD A

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result
08-20-2015			LB	06	Permit Inspection
04-13-2011			KN	00	Interior + Exterior Inspe

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Fronta	Depth	Units		Unit Price	I. Fact	S.A.	Ac Di	C. Fact	St. Idx	Adj	Notes	Special Pricing Spec Use		Special Pricing Spec Calc		S Adj	Adj Unit Pric	Land Value
1	1010	Single Family	WRP				160,000	SF	0.38	1.000	5	1.000	1.00	016	1.00			0			1.000		60,800
1	1010	Single Family	WRP				62	AC	2,500.00	1.000	0	1.000	1.00	016	1.00			0			0.000		155,830
1	4340	Cell Tower	WRP				1	WF	185,400.0	1.000	0	1.000	1.00		1.00			0			0.000		185,400
1	605	Perm Pasture	WRP				9	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		490	140			0.000		22,500
1	700	Forest	WRP				151	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		490	240			0.000		377,500
						Total Card Land Units	226.003	AC	Parcel Total Land Area:			226.0031									Total Land Value		802,030

Property Location	41 BECKWITH RD		Map ID	012/ 001/ 000/ /	Bldg Name	SFR & TOWER SITE	State Use 1010
Vision ID 507		Account # B0046400		Bldg # 1	Sec # 1 of 1	Card # 1 of 1	Print Date 12/27/2016 2:45:17 P

CONSTRUCTION DETAIL

Element	Cd	Description
Style	02	Split Level
Model	01	Residential
Grade:	09	C+
Stories:	1	
Occupancy	1	
Exterior Wall A	26	Aluminum Sidng
Exterior Wall B		
Roof Structure:	03	Gable
Roof Cover	03	Asphalt
Interior Wall A	05	Drywall
Interior Wall B		
Interior Flr A	12	Hardwood
Interior Flr B		
Heat Fuel	02	Oil
Heat Type:	04	Forced Air
AC Type:	01	None
Total Bedrooms	03	3 Bedrooms
Total Bthrms:	2	
Total Half Baths	1	1
Total Xtra Fixtrs	0	
Total Rooms:	6	
Bath Style:	02	Average
Kitchen Style:	02	Average
Whirlpool Tub		
Fireplaces	2	
Fin Bsmnt	700	
Fin Bsmnt Qual	R	Rec Room 4
Attic Access	04	Scuttle
Basement Gara	0	
MH Basement		

CONSTRUCTION DETAIL (CONTINUED)

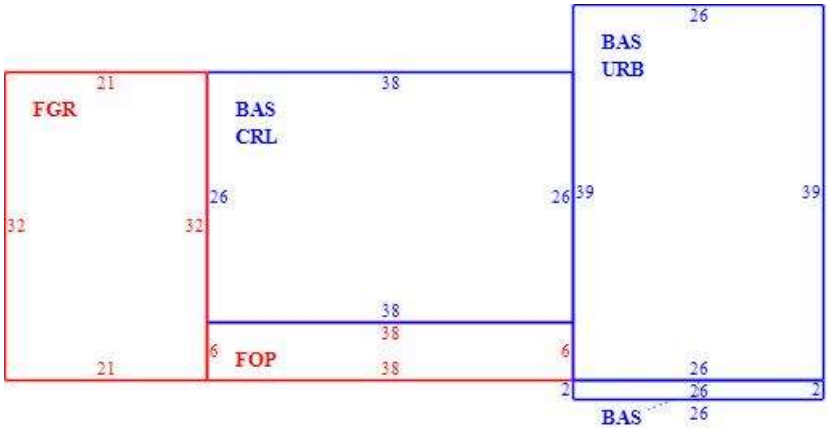
Element	Cd	Description
MHP/Complex		

MIXED USE

Code	Description	Percentage
1010	Single Family	100
		0
		0

COST / MARKET VALUATION

Base Rate	100.00
RCN	
Net Other Adj	
Year Built	1963
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	36
Functional Obsol	
Economic Obsol	
Cost Trend Factor	1
Condition	
% Complete	
	64
RCNLD	172,740
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	Lan	Units	Unit Price	Year	Pct	Depre	Conditio	Qu		Apprais Va
SPL2	Pool- Ingroun			B	1,00	23.00	1963	30	0.00	F	A	1.00	6,900
PAT1	Patio-Ave			B	600	4.00	2011	30	0.00	F	08	1.00	720
SHD1	Shed			B	80	12.00	2011	50	0.00	AV	08	1.00	480
IMP	Implement S			B	2,40	6.00	1977	10	0.00	P	07	1.00	0
CELL	Cell Tower			L	1	163600.0		100	0.00	AV	08	0.00	163,600
CELS	Cell Shed			L	160	100.00		75	0.00	G	08	1.00	12,000
FN8	6' Top Rail Fe			L	360	7.00		75	0.00	G	08	1.00	1,890

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Living	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	2,054	2,054		102.05	209,604
CRL	Crawl Space	0	988		0.00	0
FGR	Garage	0	672		30.67	20,613
FOP	Open Porch	0	228		15.22	3,470
URB	Raised Basement	0	1,014		35.73	36,227
	Ttl Gross Liv / Lease Area	2,054	4,956			

Exhibit C

SITE NAME: CTNH032H

41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

T-MOBILE SITE NUMBER: CTNH032H

CROWN BU NUMBER: 876370

RF DESIGN GUIDELINE: 707C TOWER

GENERAL NOTES

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T–MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T–MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES

CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE–BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS AND GLOBAL STRUCTURAL STABILITY ANALYSIS COMPLETED ON BEHALF OF T–MOBILE ARE INCLUSIVE OF THE ENTIRE SUPPORT STRUCTURE, EXISTING ANTENNA MOUNTS AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE T–MOBILE G700 EQUIPMENT DEPLOYMENT AS DEPICTED HEREIN.

HUDSON DESIGN ASSUMES THAT THE EQUIPMENT IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTION ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR B: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR C: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
GPS/LMU:	CAUTION: OSHA–APPROVED PORTABLE 8' STEP–LADDER REQUIRED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

PROJECT SUMMARY

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY T–MOBILE EQUIPMENT MODERNIZATION
ZONING JURISDICTION: (TOWN OF MONTVILLE)	BASED ON INFORMATION PROVIDED BY T–MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE–EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).
SITE ADDRESS:	41 BECKWITH ROAD MONTVILLE, CT 06370
LATITUDE:	41° 26' 7.66" N
LONGITUDE:	72° 13' 15.07" W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
CROWN CASTLE SITE NAME:	**MAYBROOK/BOND**
CROWN CASTLE SITE ID:	**876370**

APPROVALS

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

CALL
BEFORE YOU DIG
CALL TOLL FREE 1–888–DIG–SAFE
OR CALL 811

UNDERGROUND SERVICE ALERT

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
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G–2	GROUNDING DETAILS AND NOTES	5

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
OFFICE: (508) 286-2700
FAX: (508) 286-2893

CROWN CASTLE
CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

Hudson Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25571
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
5	09/27/17	FINAL – MW ADD	DJM
4	09/26/17	REVISED – MW ADD	DJM
3	10/04/16	CONSTRUCTION REVISED	FM
2	08/25/16	CONSTRUCTION FINAL	DJM
1	08/02/16	CONSTRUCTION REVISED	FM
0	07/22/16	ISSUED FOR CONSTRUCTION	FM

SITE NUMBER:
CTNH032H
CROWN CASTLE SITE ID:
876370
SITE NAME:
CTNH032H
SITE ADDRESS:
41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – CROWN CASTLE INTERNATIONAL
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T-MOBILE

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

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

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

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

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 SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, 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.

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 OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH G700 SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."

17. 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.

18. THE EXISTING CELL SITE IS 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.

19. SINCE THE 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 ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: IBC 2012 W/ 2016 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

    EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 23557
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
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SITE NUMBER:
CTNH032H
CROWN CASTLE SITE ID:
876370
SITE NAME:
CTNH032H
SITE ADDRESS:
41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

STRUCTURAL NOTES:
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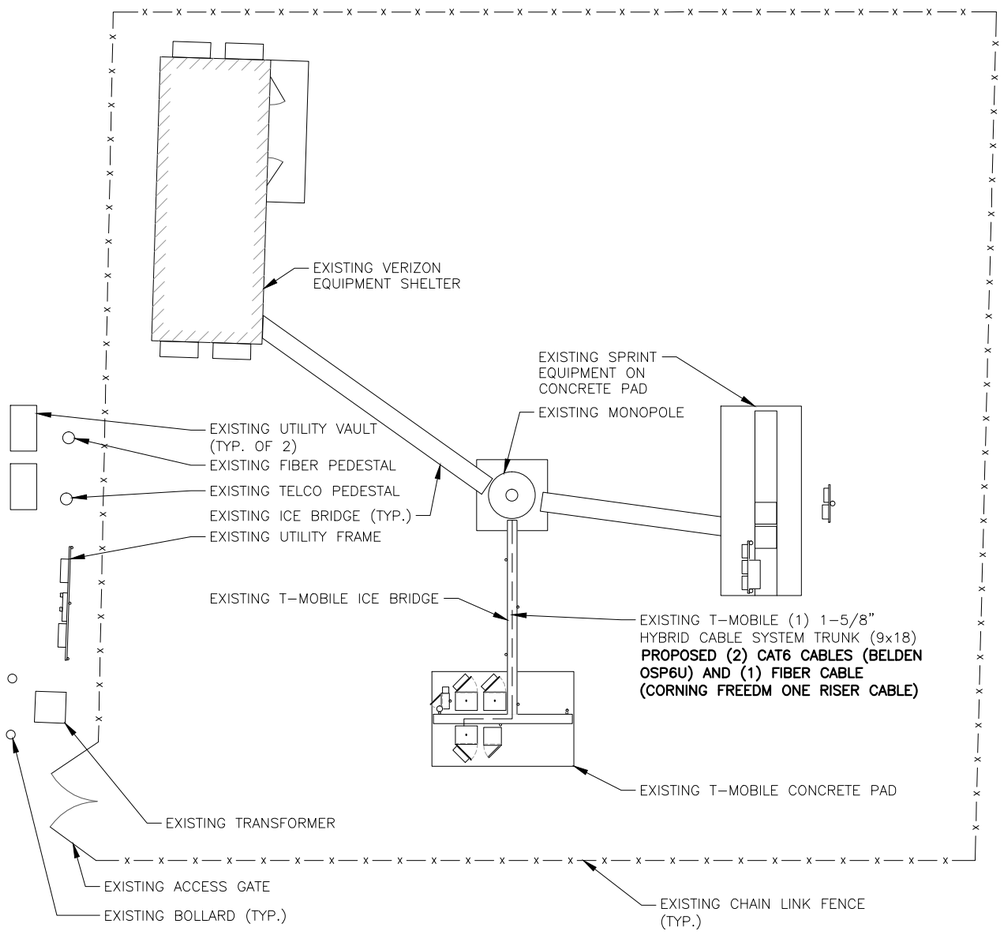
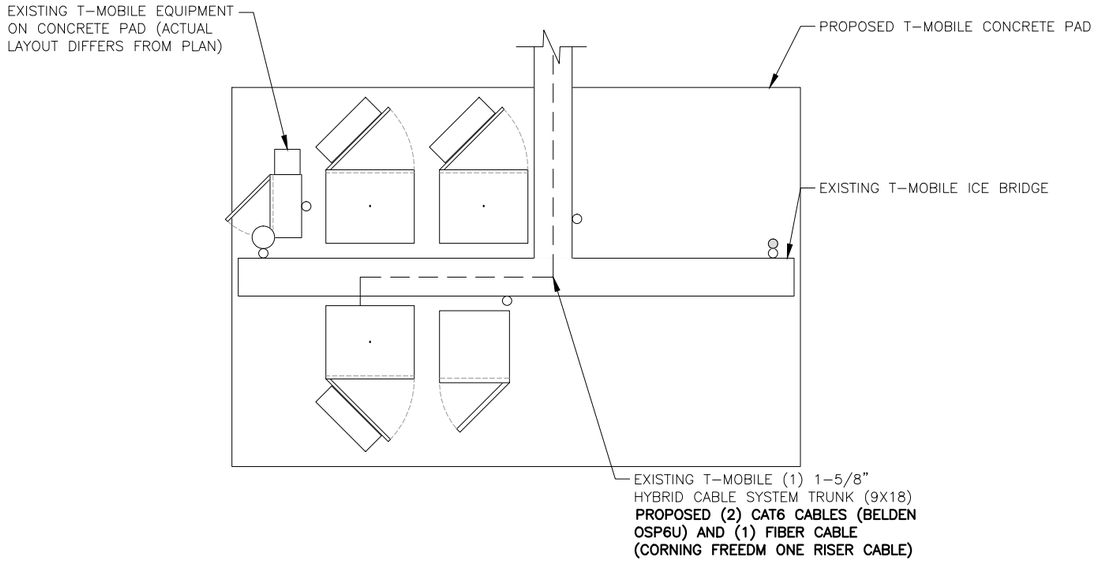
NOTE:
REFER TO FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS



13°59'
TRUE NORTH
MAGNETIC NORTH

COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"



13°59'
TRUE NORTH
MAGNETIC NORTH

EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 25571
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DJC

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SITE NAME:
CTNH032H
SITE ADDRESS:
41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
COMPOUND PLAN, EQUIPMENT LAYOUT

SHEET NUMBER
A-1

STRUCTURAL NOTES:
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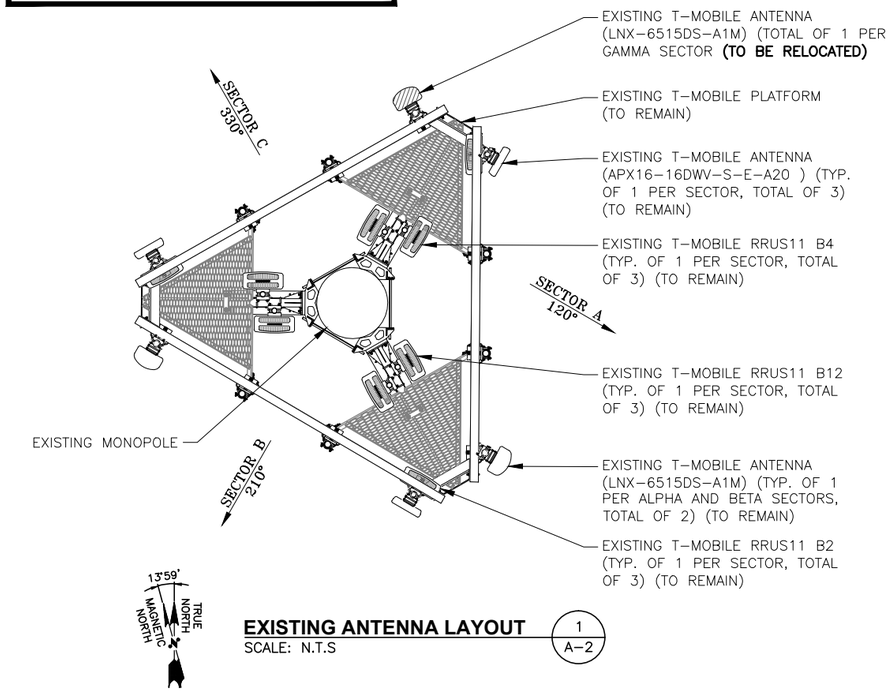
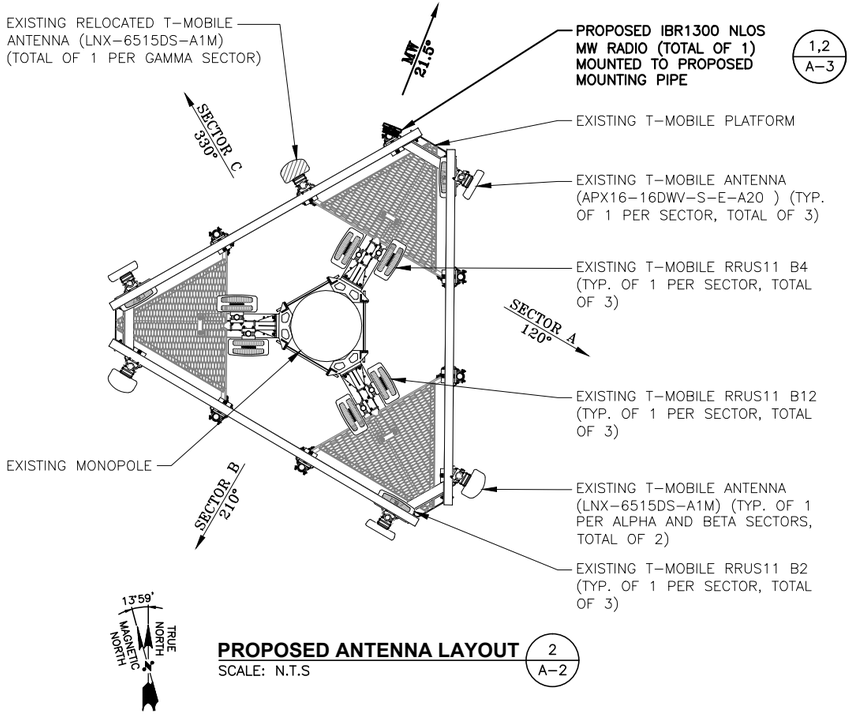
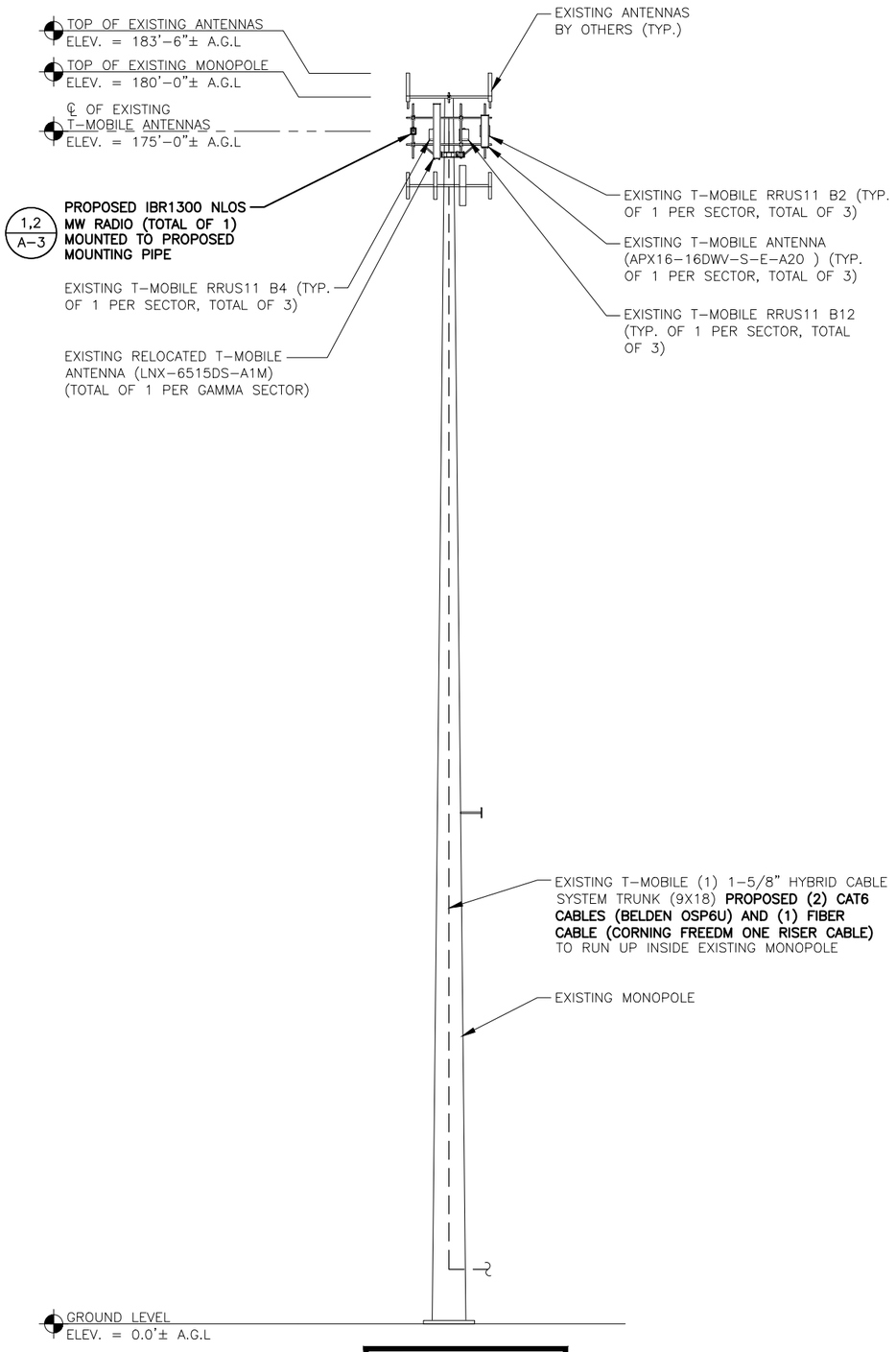
NOTE:
REFER TO FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS



EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT (2 / A-2)
SCALE: N.T.S



NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

TOWER ELEVATION (3 / A-2)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 25551
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

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41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

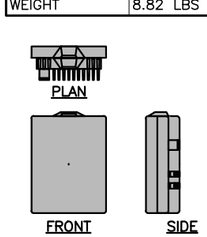
SHEET TITLE
ANTENNA LAYOUT & ELEVATION

SHEET NUMBER
A-2

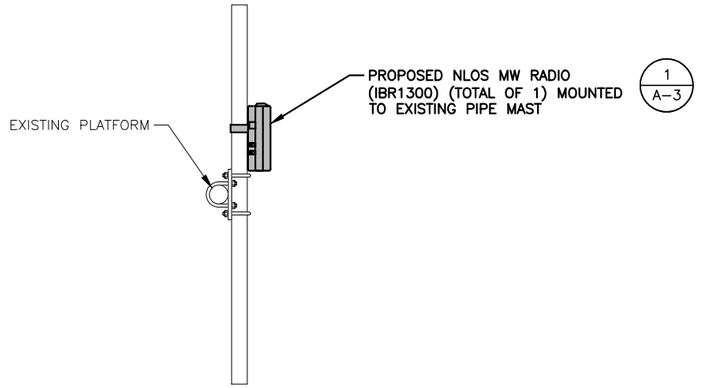
STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY TOWER OWNER TO DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS, OR RELOCATION ARRANGEMENTS.

NOTE:
REFER TO FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS

MW RADIO DIMENSIONS	
MODEL #	**IBR1300_DS**
MANUF.	FASTBACK
WIDTH	7.87"
DEPTH	10.24"
HEIGHT	3.54"
WEIGHT	8.82 LBS



PROPOSED MW RADIO DETAIL 1/A-3
SCALE: N.T.S



PROPOSED MW RADIO MOUNTING DETAIL 2/A-3
SCALE: N.T.S

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 25557
LICENSED PROFESSIONAL ENGINEER

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APPROVED BY: DJC

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41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
TOWER EQUIPMENT DETAILS

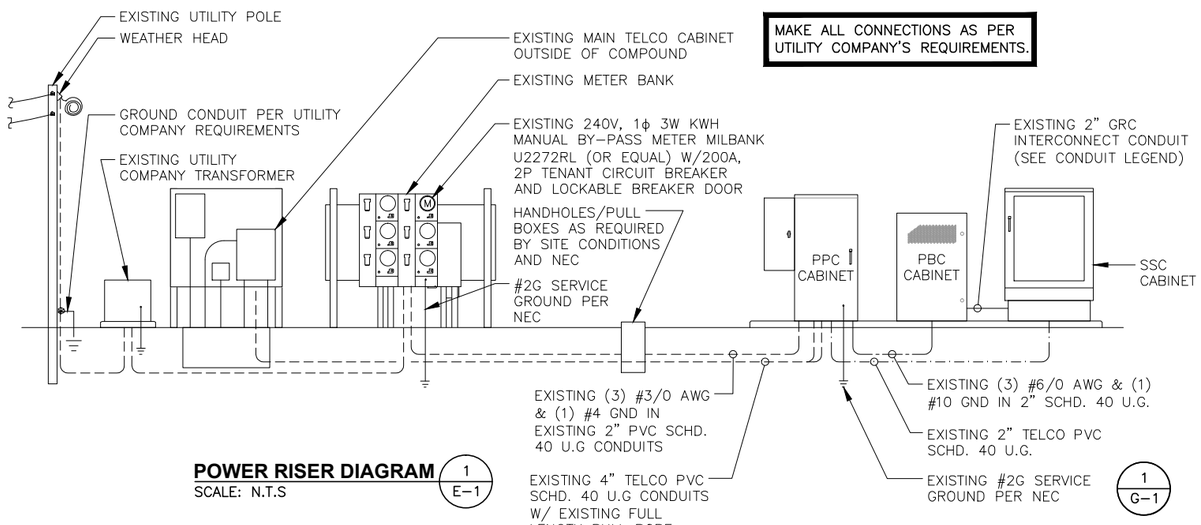
SHEET NUMBER
A-3

ELECTRICAL 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 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. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL METER BANK AND EXISTING CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND EXISTING CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A–3. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

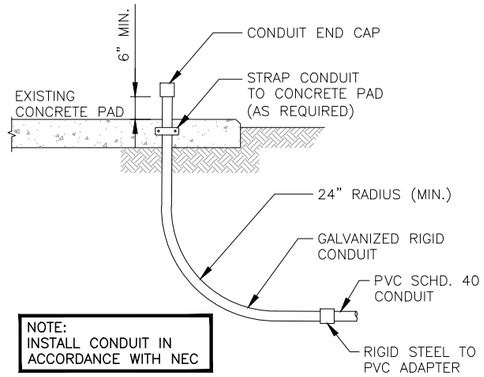
LEGEND

A	AMPERE
V	VOLT
KWH	KILOWATT – HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⏚	GROUND
MGB	MASTER GROUND BAR
	O MECHANICAL CONNECTION
	● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
———	EXPOSED WIRING
———	#6G AWG INSULATED STRANDED
———	COAXIAL CABLE/HYBRID CABLE
⊙	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
⊛	GROUND ROD WITH TEST WELL
●—●—	● EXOTHERMIC (CAD WELD) OR
	O MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI–DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL



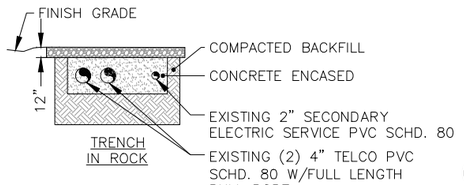
MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.

POWER RISER DIAGRAM 1 / E–1
SCALE: N.T.S



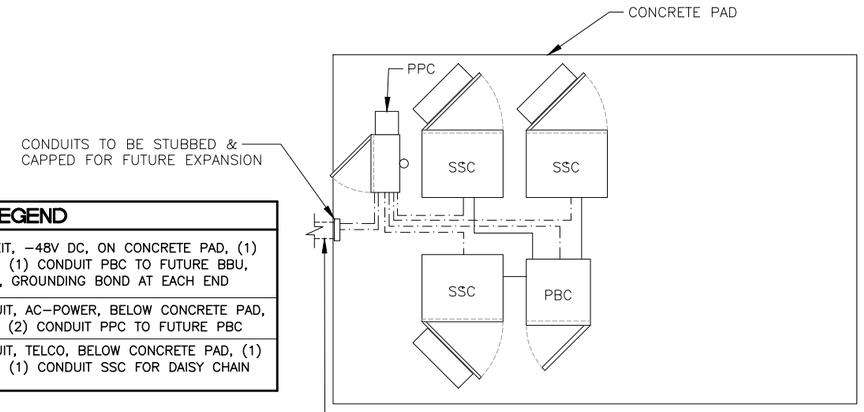
NOTE:
INSTALL CONDUIT IN ACCORDANCE WITH NEC

CONDUIT SWEEP DETAIL 2 / E–1
SCALE: N.T.S



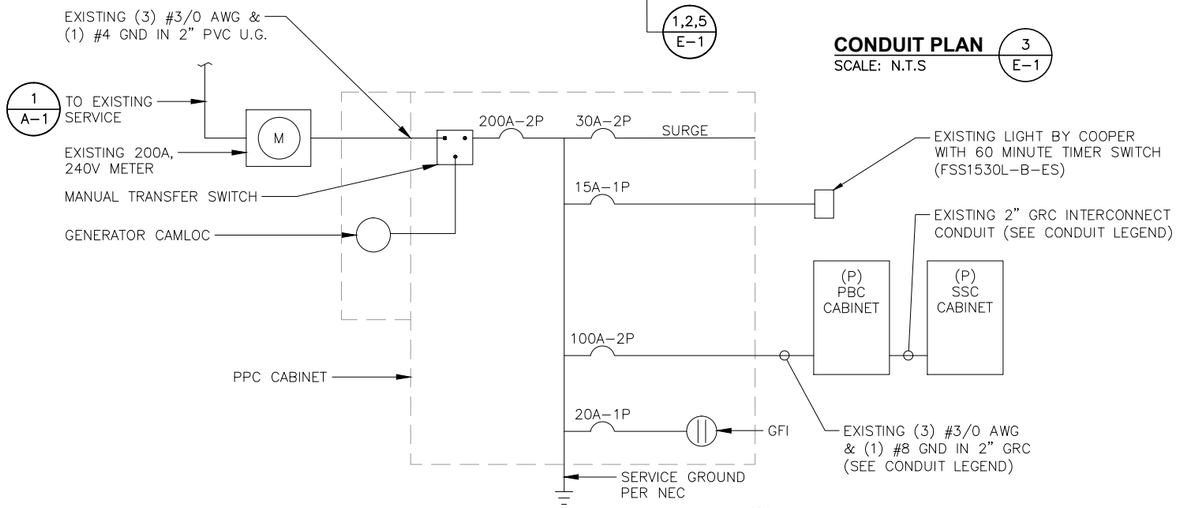
CONDUIT LEGEND

———	2"ø GRC INTERCONNECT KIT, –48V DC, ON CONCRETE PAD, (1) CONDUIT PBC TO SSC AND (1) CONDUIT PBC TO FUTURE BBU, ANCHOR AT 3' INTERVALS , GROUNDING BOND AT EACH END
— — — —	2"ø PVC SCHD. 40 CONDUIT, AC–POWER, BELOW CONCRETE PAD, (1) CONDUIT PPC TO PBC, (2) CONDUIT PPC TO FUTURE PBC
—·—·—	2"ø PVC SCHD. 40 CONDUIT, TELCO, BELOW CONCRETE PAD, (1) CONDUIT PPC TO SSC AND (1) CONDUIT SSC FOR DAISY CHAIN TO FUTURE SSC

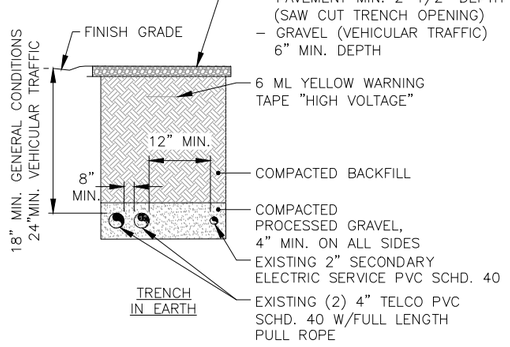


1,2,5 / E–1

CONDUIT PLAN 3 / E–1
SCALE: N.T.S



EQUIPMENT ONE LINE DIAGRAM 4 / E–1
SCALE: N.T.S



SPECIAL WORK NOTE:
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. WHERE DIRECTED OR REQUIRED, HAND–EXCAVATE EXISTING UTILITY TRENCHING

BURIED CONDUIT DETAIL 5 / E–1
SCALE: N.T.S

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STATE OF CONNECTICUT · DEREK J. CREASER · No. 23557 · LICENSED PROFESSIONAL ENGINEER

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41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
ELECTRICAL DETAILS AND NOTES

SHEET NUMBER
E-1

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LEGEND

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V	VOLT
KWH	KILOWATT – HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⏚	GROUND
MGB	MASTER GROUND BAR ○ MECHANICAL CONNECTION ● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
———	EXPOSED WIRING
———	#6G AWG INSULATED STRANDED
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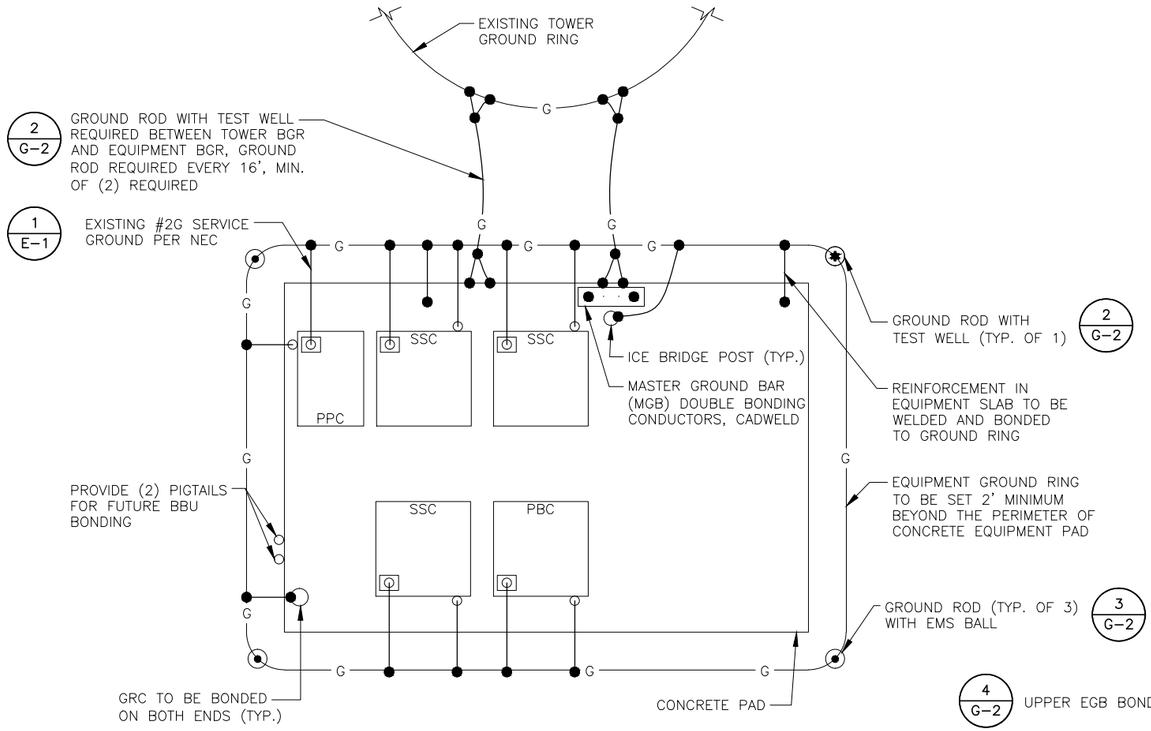
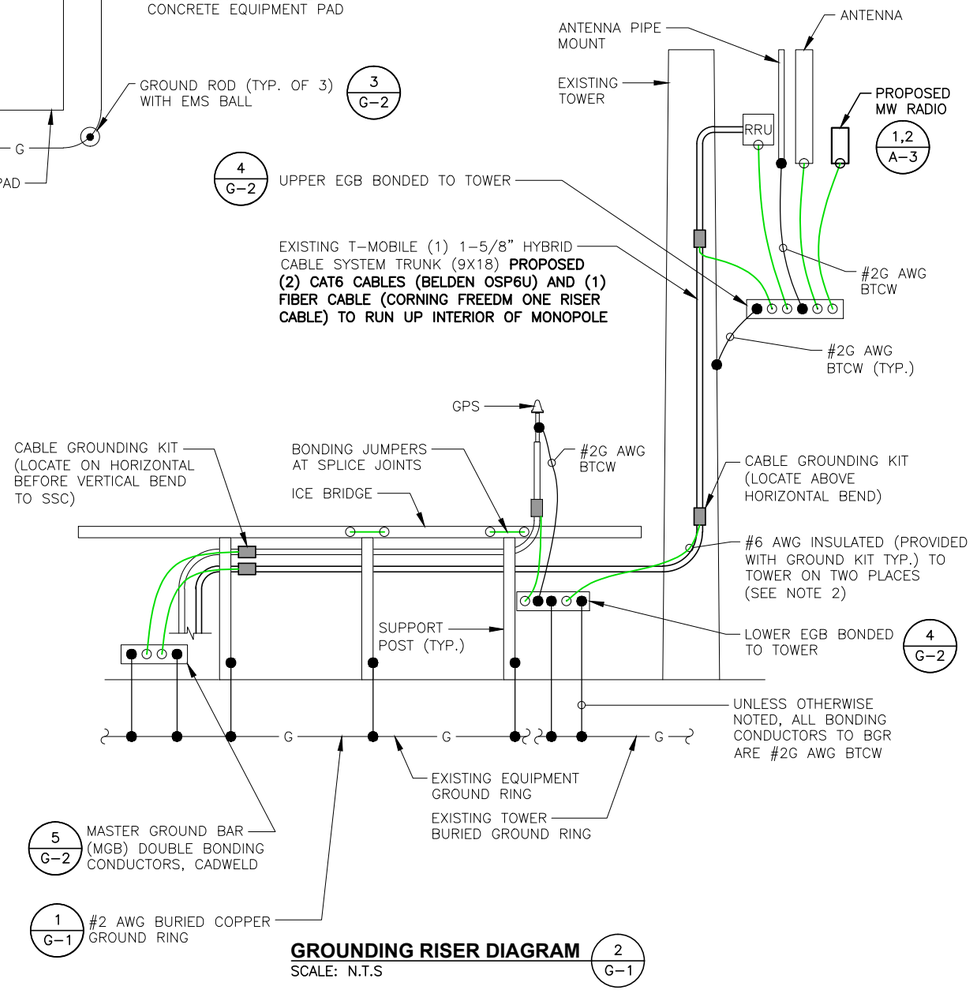


EQUIPMENT PLAN GROUNDING RING SCHEMATIC 1 G-1
SCALE: N.T.S

NOTE:
1. BASE BID TO INCLUDE INSTALLATION OF A BURIED GROUND RING AND (6) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY FIELD CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
2. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.
3. ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S GUIDELINES.
4. ALL ABOVE-GRADE DOWNLEADS TO BGR SHALL BE INSTALLED IN 1" NON-METALLIC CONDUIT SECURED EVERY 2' WITH NON-METALLIC CLIPS.



GROUNDING RISER DIAGRAM 2 G-1
SCALE: N.T.S

T-MOBILE NORTHEAST LLC
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FAX: (978) 336-5586

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23557
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
5	09/27/17	FINAL – MW ADD	DJM
4	09/26/17	REVISED – MW ADD	DJM
3	10/04/16	CONSTRUCTION REVISED	FM
2	08/25/16	CONSTRUCTION FINAL	DJM
1	08/02/16	CONSTRUCTION REVISED	FM
0	07/22/16	ISSUED FOR CONSTRUCTION	FM

SITE NUMBER:
CTNH032H
CROWN CASTLE SITE ID:
876370
SITE NAME:
CTNH032H
SITE ADDRESS:
41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
GROUNDING SCHEMATIC AND RISER DIAGRAM

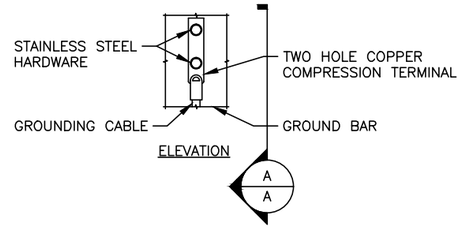
SHEET NUMBER
G-1

ELECTRICAL 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 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. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL METER BANK AND EXISTING CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND EXISTING CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A–3. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

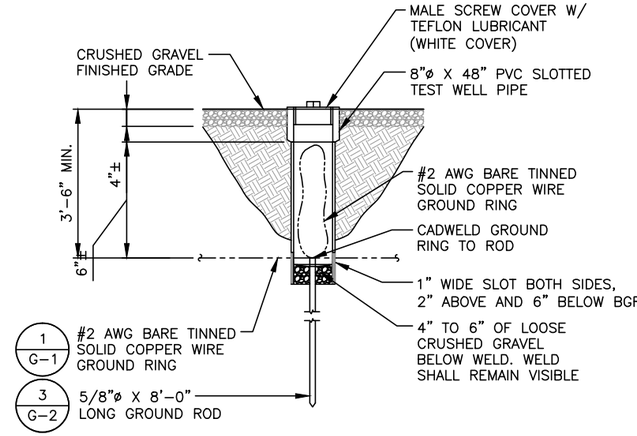
LEGEND

A	AMPERE
V	VOLT
KWH	KILOWATT – HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⏚	GROUND
MGB	MASTER GROUND BAR
	○ MECHANICAL CONNECTION
	● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
———	EXPOSED WIRING
———	#6G AWG INSULATED STRANDED
———	COAXIAL CABLE/HYBRID CABLE
⊙	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
✱	GROUND ROD WITH TEST WELL
●—●—	● EXOTHERMIC (CAD WELD) OR
	○ MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI–DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL



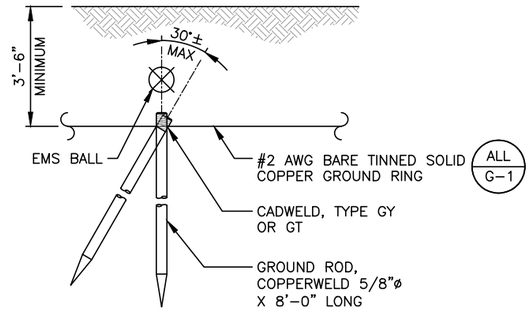
NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL (1 / G–2)
SCALE: N.T.S



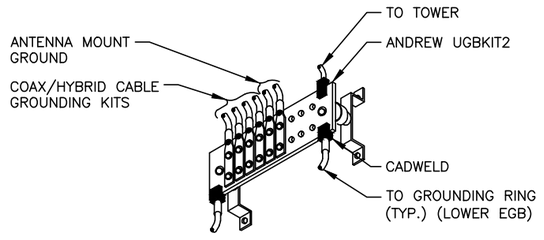
NOTE:
1. EXISTING BGR TO BE INSTALLED 3'–6" MIN. BELOW GRADE OR BELOW LOCAL FROST DEPTH, WHICHEVER IS GREATER.
2. ONE TEST WELL SHALL BE PROVIDED BETWEEN THE TOWER GROUND LOOP AND TWO ON THE EQUIPMENT GROUND LOOP

GROUND ROD TEST WELL DETAIL (2 / G–2)
SCALE: N.T.S

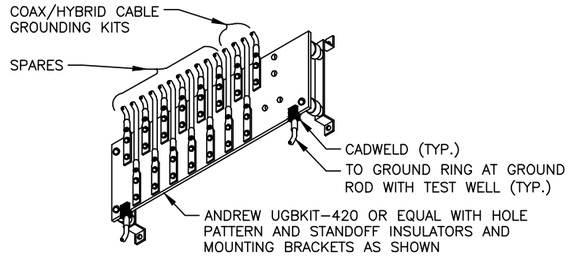


NOTE:
1. EXISTING BGR TO BE INSTALLED 3'–6" MIN. BELOW GRADE OR BELOW LOCAL FROST DEPTH, WHICHEVER IS GREATER.
2. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 30 DEGREES FROM THE VERTICAL.

GROUND ROD DETAIL (3 / G–2)
SCALE: N.T.S



EQUIPMENT GROUND BAR (EGB) (4 / G–2)
SCALE: N.T.S



MASTER GROUND BAR (MGB) (5 / G–2)
SCALE: N.T.S

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CHECKED BY: BB

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SUBMITTALS

REV.	DATE	DESCRIPTION	BY
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SITE NUMBER:
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41 BECKWITH ROAD
MONTVILLE, CT 06370
NEW LONDON COUNTY

SHEET TITLE
GROUNDING DETAILS AND NOTES

SHEET NUMBER
G-2

Exhibit D

Date: **September 25, 2017**

Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Crown Castle
2000 Corporate Dr
Canonsburg, PA 15317
(724) 416 - 9056

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CTNH032H
	Carrier Site Name:	CTNH032H
Crown Castle Designation:	**Crown Castle BU Number:**	876370
	Crown Castle Site Name:	MAYBROOK / BOND
	Crown Castle JDE Job Number:	460273
	Crown Castle Work Order Number:	1462836
	Crown Castle Application Number:	406407 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	1462836
Site Data:	**41 Beckwith Rd., MONTVILLE, New London County, CT** **Latitude *41° 26' 7.66"*, Longitude *-72° 13' 15.07"*** **180 Foot - Monopole Tower**	

Dear Charles McGuirt,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1462836, in accordance with application 406407, revision 0.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second gust wind speed of 105 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *Crown Castle* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Tyler Ho / VDL

Respectfully submitted by:

STATE OF CONNECTICUT
TERRY P. STYRAN
31522
LICENSED
PROFESSIONAL ENGINEER

9/26/2017

Terry P. Styran, P.E.
Senior Project Engineer
tnxTower Report - version 7.0.5.1

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 180 ft Monopole tower designed by Engineered Endeavors, INC. in September of 2000. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 105 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category B.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
175.0	175.0	1	fastback networks	IBR 1300	3	1/4	-

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
180.0	181.0	6	decibel	DB980H90E-M w/ Mount Pipe	6	1-5/8	1
	180.0	1	tower mounts	Platform Mount [LP 601-1]			
175.0	175.0	3	commscope	LNX-6515DS-A1M	1	1-5/8	1
		3	ericsson	RRUS 11 B12			
		6	ericsson	RRUS 11 B4			
		3	rfs celwave	APX16DWV-16DWV-S-E-A20			
		1	tower mounts	Platform Mount [LP 301-1]			
167.0	167.0	3	alcatel lucent	B66A RRH4X45-4R	2	1-5/8	2
		3	alcatel lucent	RRH2x60-700			
		6	commscope	JAHH-65B-R3B w/ Mount Pipe			
		3	nokia	B5 4T4R RRH4X40 AIRSCALE			
		2	raycap	RC3DC-3315-PF-48			
		6	antel	LPA-80080/4CF w/ Mount Pipe	10	1-5/8	1
		1	tower mounts	Side Arm Mount [SO 202-3]			
		1	tower mounts	T-Arm Mount [TA 602-3]			
75.0	76.0	1	lucent	KS24019-L112A	1	1/2	1

Notes:
1) Existing Equipment
2) Reserved Equipment; Considered in this Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180	180	12	dapa	48000	-	-
170	170	12	dapa	48000	-	-

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
160	160	12	dapa	48000	-	-
150	150	12	dapa	48000	-	-
140	140	12	dapa	48000	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	1532099	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	180 - 133	Pole	TP27.51x15.5x0.25	1	-9.27	1527.84	68.0	Pass
L2	133 - 87.3333	Pole	TP38.56x25.9879x0.375	2	-17.72	3257.30	56.3	Pass
L3	87.3333 - 42.6667	Pole	TP49.1x36.46x0.4375	3	-30.33	4757.64	51.7	Pass
L4	42.6667 - 0	Pole	TP59x46.5397x0.4375	4	-48.43	5529.76	55.7	Pass
							Summary	
						Pole (L1)	68.0	Pass
						Rating =	68.0	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	51.6	Pass
1	Base Plate	0	71.2	Pass
2	Base Foundation (Compared w/ Design Loads)	0	62.7	Pass

Structure Rating (max from all components) =	71.2%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

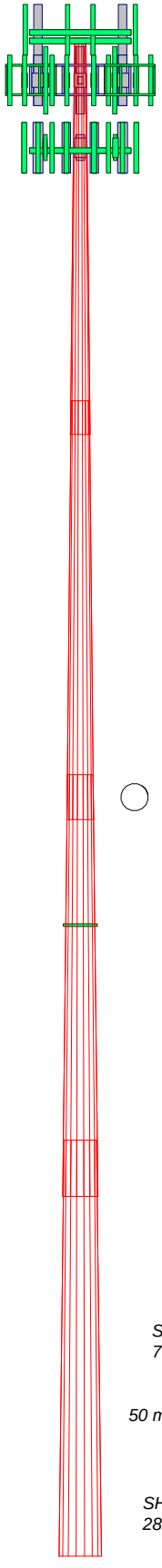
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	47.00	18	0.2500	4.00	15.5000	27.5100		2.7
2	49.67	18	0.3750	5.33	25.9879	38.5600		6.4
3	50.00	18	0.4375	6.67	36.4600	49.1000		10.0
4	49.33	18	0.4375		46.5397	59.0000		12.2
							A572-65	31.3



ALL REACTIONS ARE FACTORED

AXIAL 75 K
SHEAR 7 K
MOMENT 972 kip-ft
TORQUE 1 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL 48 K
SHEAR 28 K
MOMENT 3651 kip-ft
TORQUE 1 kip-ft
REACTIONS - 105 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) DB980H90E-M w/ Mount Pipe	180	(2) LPA-80080/4CF w/ Mount Pipe	167
(2) DB980H90E-M w/ Mount Pipe	180	(2) LPA-80080/4CF w/ Mount Pipe	167
(2) DB980H90E-M w/ Mount Pipe	180	(2) JAHH-65B-R3B w/ Mount Pipe	167
10' Climbing Ladder (Flat)	180	(2) JAHH-65B-R3B w/ Mount Pipe	167
6' x 2" Mount Pipe	180	(2) JAHH-65B-R3B w/ Mount Pipe	167
Platform Mount [LP 601-1]	180	B5 4T4R RRH4X40 AIRSCALE	167
APX16DWV-16DWV-S-E-A20	175	B5 4T4R RRH4X40 AIRSCALE	167
APX16DWV-16DWV-S-E-A20	175	B5 4T4R RRH4X40 AIRSCALE	167
APX16DWV-16DWV-S-E-A20	175	B66A RRH4X45-4R	167
LNX-6515DS-A1M	175	B66A RRH4X45-4R	167
LNX-6515DS-A1M	175	B66A RRH4X45-4R	167
LNX-6515DS-A1M	175	RRH2x60-700	167
(2) RRUS 11 B4	175	RRH2x60-700	167
(2) RRUS 11 B4	175	RRH2x60-700	167
(2) RRUS 11 B4	175	RC3DC-3315-PF-48	167
RRUS 11 B12	175	RC3DC-3315-PF-48	167
RRUS 11 B12	175	Side Arm Mount [SO 202-3]	167
RRUS 11 B12	175	T-Arm Mount [TA 602-3]	167
IBR 1300	175	KS24019-L112A	75
Platform Mount [LP 301-1]	175	Side Arm Mount [SO 701-1]	75
(2) LPA-80080/4CF w/ Mount Pipe	167		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 68%

CROWN CASTLE
The Foundation for a Wireless World

Crown Castle
2000 Corporate Dr
Canonsburg, PA 15317
Phone: (724) 416 - 9056
FAX: (724) 416 - 2254

Job: *BU 876370*			
Project: *WO 1462836*			
Client: Crown Castle	Drawn by: THo	App'd:	
Code: TIA-222-G	Date: 09/25/17	Scale: NTS	
Path: R:\SA Models - Letters\Work Area\THo\WIP\876370 WO1462836\876370.eri		Dwg No. E-1	

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

1) Tower is located in New London County, Connecticut.
2) Basic wind speed of 105 mph.
3) Structure Class II.
4) Exposure Category B.
5) Topographic Category 1.
6) Crest Height 0.00 ft.
7) Nominal ice thickness of 0.7500 in.
8) Ice thickness is considered to increase with height.
9) Ice density of 56.00 pcf.
10) A wind speed of 50 mph is used in combination with ice.
11) Temperature drop of 50 °F.
12) Deflections calculated using a wind speed of 60 mph.
13) A non-linear (P-delta) analysis was used.
14) Pressures are calculated at each section.
15) Stress ratio used in pole design is 1.
16) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	180.00-133.00	47.00	4.00	18	15.5000	27.5100	0.2500	1.0000	A572-65 (65 ksi)
L2	133.00-87.33	49.67	5.33	18	25.9879	38.5600	0.3750	1.5000	A572-65 (65 ksi)
L3	87.33-42.67	50.00	6.67	18	36.4600	49.1000	0.4375	1.7500	A572-65 (65 ksi)
L4	42.67-0.00	49.33		18	46.5397	59.0000	0.4375	1.7500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	15.7391	12.1009	355.5445	5.4138	7.8740	45.1542	711.5567	6.0516	2.2880	9.152
	27.9344	21.6308	2030.7756	9.6773	13.9751	145.3141	4064.2233	10.8175	4.4018	17.607
L2	27.4169	30.4857	2526.6815	9.0926	13.2018	191.3886	5056.6876	15.2458	3.9139	10.437
	39.1549	45.4497	8372.4782	13.5557	19.5885	427.4185	16755.9731	22.7292	6.1266	16.337
L3	38.3915	50.0217	8200.5504	12.7880	18.5217	442.7545	16411.8913	25.0156	5.6470	12.907
	49.8574	67.5740	20216.4865	17.2752	24.9428	810.5139	40459.5744	33.7934	7.8716	17.992
L4	48.9674	64.0186	17190.4140	16.3663	23.6421	727.1088	34403.4475	32.0154	7.4210	16.962
	59.9102	81.3214	35235.5662	20.7897	29.9720	1175.6161	70517.4963	40.6684	9.6140	21.975

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 180.00-133.00				1	1	1			
L2 133.00-87.33				1	1	1			
L3 87.33-42.67				1	1	1			
L4 42.67-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
****										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
180'								
LDF7-50A(1-5/8")	B	No	Inside Pole	180.00 - 0.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
175'								
MLE Hybrid 9Power/18Fiber RL 2(1-5/8")	B	No	Inside Pole	175.00 - 0.00	1	No Ice	0.00	1.07
						1/2" Ice	0.00	1.07
						1" Ice	0.00	1.07
012E8P-31131-29(1/4")	B	No	Inside Pole	175.00 - 0.00	3	No Ice	0.00	0.03
						1/2" Ice	0.00	0.03
						1" Ice	0.00	0.03
167'								
LDF7-50A(1-5/8")	A	No	Inside Pole	167.00 - 0.00	10	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
HB158-1-08U8-S8J18(1-5/8)	A	No	Inside Pole	167.00 - 0.00	2	No Ice	0.00	1.30
						1/2" Ice	0.00	1.30
						1" Ice	0.00	1.30
75'								
LDF4-50A(1/2")	A	No	Inside Pole	75.00 - 0.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
****						1" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	180.00-133.00	A	0.000	0.000	0.000	0.000	0.37
		B	0.000	0.000	0.000	0.000	0.28
		C	0.000	0.000	0.000	0.000	0.00
L2	133.00-87.33	A	0.000	0.000	0.000	0.000	0.49
		B	0.000	0.000	0.000	0.000	0.28
		C	0.000	0.000	0.000	0.000	0.00
L3	87.33-42.67	A	0.000	0.000	0.000	0.000	0.49
		B	0.000	0.000	0.000	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
L4	42.67-0.00	A	0.000	0.000	0.000	0.000	0.47
		B	0.000	0.000	0.000	0.000	0.26
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	180.00-133.00	A	1.750	0.000	0.000	0.000	0.000	0.37
		B		0.000	0.000	0.000	0.000	0.28
		C		0.000	0.000	0.000	0.000	0.00
L2	133.00-87.33	A	1.691	0.000	0.000	0.000	0.000	0.49
		B		0.000	0.000	0.000	0.000	0.28
		C		0.000	0.000	0.000	0.000	0.00
L3	87.33-42.67	A	1.604	0.000	0.000	0.000	0.000	0.49
		B		0.000	0.000	0.000	0.000	0.27
		C		0.000	0.000	0.000	0.000	0.00
L4	42.67-0.00	A	1.432	0.000	0.000	0.000	0.000	0.47
		B		0.000	0.000	0.000	0.000	0.26
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	180.00-133.00	0.0000	0.0000	0.0000	0.0000
L2	133.00-87.33	0.0000	0.0000	0.0000	0.0000
L3	87.33-42.67	0.0000	0.0000	0.0000	0.0000
L4	42.67-0.00	0.0000	0.0000	0.0000	0.0000

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

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 K
****									
*** 180' I***									
(2) DB980H90E-M w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.000	180.00	No Ice 1/2" Ice 1" Ice	4.04 4.50 4.95	3.62 4.48 5.22	0.03 0.07 0.11
(2) DB980H90E-M w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.000	180.00	No Ice 1/2" Ice 1" Ice	4.04 4.50 4.95	3.62 4.48 5.22	0.03 0.07 0.11
(2) DB980H90E-M w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.000	180.00	No Ice 1/2" Ice 1" Ice	4.04 4.50 4.95	3.62 4.48 5.22	0.03 0.07 0.11
10' Climbing Ladder (Flat)	B	From Leg	2.00 0.00 -5.00	0.000	180.00	No Ice 1/2" Ice 1" Ice	5.84 10.30 14.76	5.84 10.30 14.76	0.05 0.07 0.09
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 1.00	0.000	180.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
Platform Mount [LP 601-1]	C	None		0.000	180.00	No Ice 1/2" Ice 1" Ice	28.47 33.59 38.71	28.47 33.59 38.71	1.12 1.51 1.91
175' P									
APX16DWV-16DWV-S-E-A20	A	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	6.59 6.96 7.34	2.15 2.49 2.84	0.04 0.07 0.11
APX16DWV-16DWV-S-E-A20	B	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	6.59 6.96 7.34	2.15 2.49 2.84	0.04 0.07 0.11
APX16DWV-16DWV-S-E-A20	C	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	6.59 6.96 7.34	2.15 2.49 2.84	0.04 0.07 0.11
LNX-6515DS-A1M	A	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
LNX-6515DS-A1M	B	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
LNX-6515DS-A1M	C	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
(2) RRUS 11 B4	A	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	0.05 0.07 0.10
(2) RRUS 11 B4	B	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	0.05 0.07 0.10
(2) RRUS 11 B4	C	From Leg	4.00 0.00 0.00	0.000	175.00	No Ice 1/2" Ice	2.83 3.04 3.26	1.18 1.33 1.48	0.05 0.07 0.10

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* K
						1" Ice			
RRUS 11 B12	A	From Leg	4.00	0.000	175.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	B	From Leg	4.00	0.000	175.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	C	From Leg	4.00	0.000	175.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
IBR 1300	A	From Leg	4.00	0.000	175.00	No Ice	0.67	0.31	0.01
			0.00			1/2"	0.78	0.38	0.01
			0.00			Ice	0.89	0.47	0.02
						1" Ice			
Platform Mount [LP 301-1]	C	None		0.000	175.00	No Ice	30.10	30.10	1.59
						1/2"	40.80	40.80	2.03
						Ice	51.50	51.50	2.47
						1" Ice			
167' R									
(2) LPA-80080/4CF w/ Mount Pipe	A	From Leg	4.00	0.000	167.00	No Ice	2.86	6.57	0.03
			0.00			1/2"	3.22	7.19	0.08
			0.00			Ice	3.59	7.84	0.13
						1" Ice			
(2) LPA-80080/4CF w/ Mount Pipe	B	From Leg	4.00	0.000	167.00	No Ice	2.86	6.57	0.03
			0.00			1/2"	3.22	7.19	0.08
			0.00			Ice	3.59	7.84	0.13
						1" Ice			
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	4.00	0.000	167.00	No Ice	2.86	6.57	0.03
			0.00			1/2"	3.22	7.19	0.08
			0.00			Ice	3.59	7.84	0.13
						1" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.000	167.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			0.00			Ice	10.46	9.73	0.25
						1" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.000	167.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			0.00			Ice	10.46	9.73	0.25
						1" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.000	167.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			0.00			Ice	10.46	9.73	0.25
						1" Ice			
B5 4T4R RRH4X40 AIRSCALE	A	From Leg	4.00	0.000	167.00	No Ice	1.32	0.75	0.05
			0.00			1/2"	1.47	0.86	0.06
			0.00			Ice	1.62	0.98	0.07
						1" Ice			
B5 4T4R RRH4X40 AIRSCALE	B	From Leg	4.00	0.000	167.00	No Ice	1.32	0.75	0.05
			0.00			1/2"	1.47	0.86	0.06
			0.00			Ice	1.62	0.98	0.07
						1" Ice			
B5 4T4R RRH4X40 AIRSCALE	C	From Leg	4.00	0.000	167.00	No Ice	1.32	0.75	0.05
			0.00			1/2"	1.47	0.86	0.06
			0.00			Ice	1.62	0.98	0.07
						1" Ice			
B66A RRH4X45-4R	A	From Leg	4.00	0.000	167.00	No Ice	2.54	1.61	0.06
			0.00			1/2"	2.75	1.79	0.08
			0.00			Ice	2.97	1.98	0.10
						1" Ice			
B66A RRH4X45-4R	B	From Leg	4.00	0.000	167.00	No Ice	2.54	1.61	0.06
			0.00			1/2"	2.75	1.79	0.08
			0.00			Ice	2.97	1.98	0.10

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 K
						1" Ice			
B66A RRH4X45-4R	C	From Leg	4.00	0.000	167.00	No Ice	2.54	1.61	0.06
			0.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
RRH2x60-700	A	From Leg	4.00	0.000	167.00	No Ice	3.50	1.82	0.06
			0.00			1/2" Ice	3.76	2.05	0.08
			0.00			1" Ice	4.03	2.29	0.11
RRH2x60-700	B	From Leg	4.00	0.000	167.00	No Ice	3.50	1.82	0.06
			0.00			1/2" Ice	3.76	2.05	0.08
			0.00			1" Ice	4.03	2.29	0.11
RRH2x60-700	C	From Leg	4.00	0.000	167.00	No Ice	3.50	1.82	0.06
			0.00			1/2" Ice	3.76	2.05	0.08
			0.00			1" Ice	4.03	2.29	0.11
RC3DC-3315-PF-48	A	From Leg	4.00	0.000	167.00	No Ice	3.79	2.51	0.03
			0.00			1/2" Ice	4.04	2.72	0.06
			0.00			1" Ice	4.30	2.94	0.10
RC3DC-3315-PF-48	B	From Leg	4.00	0.000	167.00	No Ice	3.79	2.51	0.03
			0.00			1/2" Ice	4.04	2.72	0.06
			0.00			1" Ice	4.30	2.94	0.10
Side Arm Mount [SO 202-3]	C	None		0.000	167.00	No Ice	6.18	6.18	0.33
						1/2" Ice	8.56	8.56	0.40
						1" Ice	10.94	10.94	0.47
T-Arm Mount [TA 602-3]	C	None		0.000	167.00	No Ice	11.59	11.59	0.77
						1/2" Ice	15.44	15.44	0.99
						1" Ice	19.29	19.29	1.21
75' I									
KS24019-L112A	A	From Leg	3.00	0.000	75.00	No Ice	0.10	0.10	0.01
			0.00			1/2" Ice	0.18	0.18	0.01
			1.00			1" Ice	0.26	0.26	0.01
Side Arm Mount [SO 701-1]	A	None		0.000	75.00	No Ice	0.85	1.67	0.07
						1/2" Ice	1.14	2.34	0.08
						1" Ice	1.43	3.01	0.09
*									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice

Comb. No.	Description
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	180 - 133	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.20	-1.53	0.22
			Max. Mx	8	-9.28	-552.82	-0.75
			Max. My	2	-9.27	0.46	553.95
			Max. Vy	8	16.56	-552.82	-0.75
			Max. Vx	2	-16.60	0.46	553.95
			Max. Torque	14			1.51
L2	133 - 87.3333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.55	-1.54	0.23
			Max. Mx	8	-17.72	-1368.24	-1.88
			Max. My	2	-17.72	1.52	1371.40
			Max. Vy	8	20.31	-1368.24	-1.88
			Max. Vx	2	-20.35	1.52	1371.40
			Max. Torque	14			1.50
L3	87.3333 - 42.6667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.98	-1.54	0.28
			Max. Mx	8	-30.33	-2337.84	-2.95
			Max. My	2	-30.33	2.59	2343.01
			Max. Vy	8	24.38	-2337.84	-2.95
			Max. Vx	2	-24.42	2.59	2343.01
			Max. Torque	14			1.50
L4	42.6667 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.83	-1.54	0.28

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-48.43	-3642.23	-4.16
			Max. My	2	-48.43	3.80	3649.61
			Max. Vy	8	28.44	-3642.23	-4.16
			Max. Vx	2	-28.48	3.80	3649.61
			Max. Torque	14			1.49

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	74.83	-7.44	-0.00
	Max. H_x	20	48.44	28.41	0.02
	Max. H_z	3	36.33	0.02	28.45
	Max. M_x	2	3649.61	0.02	28.45
	Max. M_z	8	3642.23	-28.41	-0.02
	Max. Torsion	14	1.49	-0.02	-28.45
	Min. Vert	7	36.33	-24.59	14.21
	Min. H_x	8	48.44	-28.41	-0.02
	Min. H_z	15	36.33	-0.02	-28.45
	Min. M_x	14	-3649.55	-0.02	-28.45
	Min. M_z	20	-3641.40	28.41	0.02
	Min. Torsion	2	-1.49	0.02	28.45

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	40.37	0.00	0.00	-0.03	-0.31	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	48.44	-0.02	-28.45	-3649.61	3.80	1.49
0.9 Dead+1.6 Wind 0 deg - No Ice	36.33	-0.02	-28.45	-3607.88	3.86	1.48
1.2 Dead+1.6 Wind 30 deg - No Ice	48.44	14.18	-24.63	-3158.60	-1817.68	1.43
0.9 Dead+1.6 Wind 30 deg - No Ice	36.33	14.18	-24.63	-3122.48	-1796.80	1.42
1.2 Dead+1.6 Wind 60 deg - No Ice	48.44	24.59	-14.21	-1821.23	-3152.24	0.98
0.9 Dead+1.6 Wind 60 deg - No Ice	36.33	24.59	-14.21	-1800.40	-3116.11	0.98
1.2 Dead+1.6 Wind 90 deg - No Ice	48.44	28.41	0.02	4.16	-3642.23	0.28
0.9 Dead+1.6 Wind 90 deg - No Ice	36.33	28.41	0.02	4.11	-3600.51	0.27
1.2 Dead+1.6 Wind 120 deg - No Ice	48.44	24.61	14.25	1828.40	-3156.41	-0.51
0.9 Dead+1.6 Wind 120 deg - No Ice	36.33	24.61	14.25	1807.50	-3120.22	-0.51
1.2 Dead+1.6 Wind 150 deg - No Ice	48.44	14.22	24.65	3162.70	-1824.93	-1.15
0.9 Dead+1.6 Wind 150 deg - No Ice	36.33	14.22	24.65	3126.54	-1803.96	-1.15
1.2 Dead+1.6 Wind 180 deg - No Ice	48.44	0.02	28.45	3649.55	-4.59	-1.49
0.9 Dead+1.6 Wind 180 deg - No Ice	36.33	0.02	28.45	3607.83	-4.43	-1.49
1.2 Dead+1.6 Wind 210 deg - No Ice	48.44	-14.18	24.63	3158.52	1816.89	-1.43
0.9 Dead+1.6 Wind 210 deg	36.33	-14.18	24.63	3122.42	1796.23	-1.42

Load Combination	*Vertical*	*Shear$_x$*	*Shear$_z$*	*Overturning Moment, M$_x$*	*Overturning Moment, M$_z$*	*Torque*
	K	*K*	*K*	*kip-ft*	*kip-ft*	*kip-ft*
- No Ice 1.2 Dead+1.6 Wind 240 deg	48.44	-24.59	14.21	1821.14	3151.43	-0.98
- No Ice 0.9 Dead+1.6 Wind 240 deg	36.33	-24.59	14.21	1800.33	3115.52	-0.98
- No Ice 1.2 Dead+1.6 Wind 270 deg	48.44	-28.41	-0.02	-4.23	3641.40	-0.27
- No Ice 0.9 Dead+1.6 Wind 270 deg	36.33	-28.41	-0.02	-4.17	3599.91	-0.27
- No Ice 1.2 Dead+1.6 Wind 300 deg	48.44	-24.61	-14.25	-1828.46	3155.59	0.51
- No Ice 0.9 Dead+1.6 Wind 300 deg	36.33	-24.61	-14.25	-1807.54	3119.62	0.51
- No Ice 1.2 Dead+1.6 Wind 330 deg	48.44	-14.22	-24.65	-3162.75	1824.13	1.15
- No Ice 0.9 Dead+1.6 Wind 330 deg	36.33	-14.22	-24.65	-3126.58	1803.38	1.15
- No Ice 1.2 Dead+1.0 Ice+1.0 Temp	74.83	0.00	-0.00	-0.28	-1.54	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	74.83	-0.00	-7.44	-971.27	-1.00	0.58
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	74.83	3.71	-6.44	-840.84	-485.90	0.61
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	74.83	6.44	-3.72	-485.19	-841.06	0.48
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	74.83	7.44	0.00	0.39	-971.31	0.21
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	74.83	6.44	3.72	485.78	-841.76	-0.10
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	74.83	3.72	6.45	840.93	-487.10	-0.40
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	74.83	0.00	7.44	970.66	-2.39	-0.58
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	74.83	-3.71	6.44	840.23	482.51	-0.61
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	74.83	-6.44	3.72	484.58	837.67	-0.48
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	74.83	-7.44	-0.00	-1.00	967.91	-0.21
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	74.83	-6.44	-3.72	-486.39	838.36	0.11
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	74.83	-3.72	-6.45	-841.53	483.71	0.40
Dead+Wind 0 deg - Service	40.37	-0.00	-5.20	-662.71	0.42	0.28
Dead+Wind 30 deg - Service	40.37	2.59	-4.50	-573.55	-330.32	0.27
Dead+Wind 60 deg - Service	40.37	4.49	-2.59	-330.71	-572.64	0.18
Dead+Wind 90 deg - Service	40.37	5.19	0.00	0.73	-661.61	0.05
Dead+Wind 120 deg - Service	40.37	4.49	2.60	331.97	-573.40	-0.09
Dead+Wind 150 deg - Service	40.37	2.60	4.50	574.25	-331.64	-0.22
Dead+Wind 180 deg - Service	40.37	0.00	5.20	662.65	-1.10	-0.28
Dead+Wind 210 deg - Service	40.37	-2.59	4.50	573.49	329.63	-0.27
Dead+Wind 240 deg - Service	40.37	-4.49	2.59	330.65	571.95	-0.18
Dead+Wind 270 deg - Service	40.37	-5.19	-0.00	-0.79	660.93	-0.05
Dead+Wind 300 deg - Service	40.37	-4.49	-2.60	-332.03	572.71	0.09
Dead+Wind 330 deg - Service	40.37	-2.60	-4.50	-574.31	330.95	0.22

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-40.37	0.00	0.00	40.37	0.00	0.000%
2	-0.02	-48.44	-28.45	0.02	48.44	28.45	0.000%
3	-0.02	-36.33	-28.45	0.02	36.33	28.45	0.000%
4	14.18	-48.44	-24.63	-14.18	48.44	24.63	0.000%
5	14.18	-36.33	-24.63	-14.18	36.33	24.63	0.000%
6	24.59	-48.44	-14.21	-24.59	48.44	14.21	0.000%
7	24.59	-36.33	-14.21	-24.59	36.33	14.21	0.000%
8	28.41	-48.44	0.02	-28.41	48.44	-0.02	0.000%
9	28.41	-36.33	0.02	-28.41	36.33	-0.02	0.000%
10	24.61	-48.44	14.25	-24.61	48.44	-14.25	0.000%
11	24.61	-36.33	14.25	-24.61	36.33	-14.25	0.000%
12	14.22	-48.44	24.65	-14.22	48.44	-24.65	0.000%
13	14.22	-36.33	24.65	-14.22	36.33	-24.65	0.000%
14	0.02	-48.44	28.45	-0.02	48.44	-28.45	0.000%
15	0.02	-36.33	28.45	-0.02	36.33	-28.45	0.000%
16	-14.18	-48.44	24.63	14.18	48.44	-24.63	0.000%
17	-14.18	-36.33	24.63	14.18	36.33	-24.63	0.000%
18	-24.59	-48.44	14.21	24.59	48.44	-14.21	0.000%
19	-24.59	-36.33	14.21	24.59	36.33	-14.21	0.000%
20	-28.41	-48.44	-0.02	28.41	48.44	0.02	0.000%
21	-28.41	-36.33	-0.02	28.41	36.33	0.02	0.000%
22	-24.61	-48.44	-14.25	24.61	48.44	14.25	0.000%
23	-24.61	-36.33	-14.25	24.61	36.33	14.25	0.000%
24	-14.22	-48.44	-24.65	14.22	48.44	24.65	0.000%
25	-14.22	-36.33	-24.65	14.22	36.33	24.65	0.000%
26	0.00	-74.83	0.00	-0.00	74.83	0.00	0.000%
27	-0.00	-74.83	-7.44	0.00	74.83	7.44	0.000%
28	3.71	-74.83	-6.44	-3.71	74.83	6.44	0.000%
29	6.44	-74.83	-3.72	-6.44	74.83	3.72	0.000%
30	7.44	-74.83	0.00	-7.44	74.83	-0.00	0.000%
31	6.44	-74.83	3.72	-6.44	74.83	-3.72	0.000%
32	3.72	-74.83	6.45	-3.72	74.83	-6.45	0.000%
33	0.00	-74.83	7.44	-0.00	74.83	-7.44	0.000%
34	-3.71	-74.83	6.44	3.71	74.83	-6.44	0.000%
35	-6.44	-74.83	3.72	6.44	74.83	-3.72	0.000%
36	-7.44	-74.83	-0.00	7.44	74.83	0.00	0.000%
37	-6.44	-74.83	-3.72	6.44	74.83	3.72	0.000%
38	-3.72	-74.83	-6.45	3.72	74.83	6.45	0.000%
39	-0.00	-40.37	-5.20	0.00	40.37	5.20	0.000%
40	2.59	-40.37	-4.50	-2.59	40.37	4.50	0.000%
41	4.49	-40.37	-2.59	-4.49	40.37	2.59	0.000%
42	5.19	-40.37	0.00	-5.19	40.37	-0.00	0.000%
43	4.49	-40.37	2.60	-4.49	40.37	-2.60	0.000%
44	2.60	-40.37	4.50	-2.60	40.37	-4.50	0.000%
45	0.00	-40.37	5.20	-0.00	40.37	-5.20	0.000%
46	-2.59	-40.37	4.50	2.59	40.37	-4.50	0.000%
47	-4.49	-40.37	2.59	4.49	40.37	-2.59	0.000%
48	-5.19	-40.37	-0.00	5.19	40.37	0.00	0.000%
49	-4.49	-40.37	-2.60	4.49	40.37	2.60	0.000%
50	-2.60	-40.37	-4.50	2.60	40.37	4.50	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00005022
3	Yes	4	0.00000001	0.00062531
4	Yes	6	0.00000001	0.00006189
5	Yes	5	0.00000001	0.00051631
6	Yes	6	0.00000001	0.00005896
7	Yes	5	0.00000001	0.00049172
8	Yes	4	0.00000001	0.00074153

9	Yes	4	0.00000001	0.00026778
10	Yes	6	0.00000001	0.00005977
11	Yes	5	0.00000001	0.00049840
12	Yes	6	0.00000001	0.00006174
13	Yes	5	0.00000001	0.00051501
14	Yes	5	0.00000001	0.00005815
15	Yes	4	0.00000001	0.00071353
16	Yes	6	0.00000001	0.00005846
17	Yes	5	0.00000001	0.00048754
18	Yes	6	0.00000001	0.00006129
19	Yes	5	0.00000001	0.00051129
20	Yes	4	0.00000001	0.00069918
21	Yes	4	0.00000001	0.00022070
22	Yes	6	0.00000001	0.00006086
23	Yes	5	0.00000001	0.00050774
24	Yes	6	0.00000001	0.00005900
25	Yes	5	0.00000001	0.00049199
26	Yes	4	0.00000001	0.00001789
27	Yes	5	0.00000001	0.00052798
28	Yes	5	0.00000001	0.00069641
29	Yes	5	0.00000001	0.00068057
30	Yes	5	0.00000001	0.00052745
31	Yes	5	0.00000001	0.00068532
32	Yes	5	0.00000001	0.00069294
33	Yes	5	0.00000001	0.00052731
34	Yes	5	0.00000001	0.00067145
35	Yes	5	0.00000001	0.00068493
36	Yes	5	0.00000001	0.00052197
37	Yes	5	0.00000001	0.00068153
38	Yes	5	0.00000001	0.00067603
39	Yes	4	0.00000001	0.00005454
40	Yes	4	0.00000001	0.00022495
41	Yes	4	0.00000001	0.00019173
42	Yes	4	0.00000001	0.00003614
43	Yes	4	0.00000001	0.00019868
44	Yes	4	0.00000001	0.00022157
45	Yes	4	0.00000001	0.00005540
46	Yes	4	0.00000001	0.00018664
47	Yes	4	0.00000001	0.00021614
48	Yes	4	0.00000001	0.00003572
49	Yes	4	0.00000001	0.00021001
50	Yes	4	0.00000001	0.00019080

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load*	*Tilt*	*Twist*
	ft	*in*	*Comb.*	*°*	*°*
L1	180 - 133	24.859	44	1.484	0.006
L2	137 - 87.3333	12.962	44	1.035	0.002
L3	92.6667 - 42.6667	5.424	44	0.586	0.001
L4	49.3333 - 0	1.477	44	0.279	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation	*Appurtenance*	*Gov. Load*	*Deflection*	*Tilt*	*Twist*	*Radius of Curvature*
ft		*Comb.*	*in*	*°*	*°*	*ft*
180.00	(2) DB980H90E-M w/ Mount Pipe	44	24.859	1.484	0.006	31360
175.00	APX16DWV-16DWV-S-E-A20	44	23.359	1.432	0.006	31360
167.00	(2) LPA-80080/4CF w/ Mount Pipe	44	20.983	1.350	0.005	12061
75.00	KS24019-L112A	44	3.464	0.446	0.000	7820

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180 - 133	136.621	2	8.162	0.035
L2	137 - 87.3333	71.340	12	5.705	0.008
L3	92.6667 - 42.6667	29.878	12	3.230	0.003
L4	49.3333 - 0	8.134	12	1.538	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	(2) DB980H90E-M w/ Mount Pipe	2	136.621	8.162	0.035	5904
175.00	APX16DWV-16DWV-S-E-A20	2	128.395	7.880	0.031	5904
167.00	(2) LPA-80080/4CF w/ Mount Pipe	2	115.363	7.428	0.025	2268
75.00	KS24019-L112A	12	19.082	2.459	0.002	1423

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	180 - 133 (1)	TP27.51x15.5x0.25	47.00	0.00	0.0	20.8198	-9.27	1527.84	0.006
L2	133 - 87.3333 (2)	TP38.56x25.9879x0.375	49.67	0.00	0.0	43.8428	-17.72	3257.30	0.005
L3	87.3333 - 42.6667 (3)	TP49.1x36.46x0.4375	50.00	0.00	0.0	65.2337	-30.33	4757.64	0.006
L4	42.6667 - 0 (4)	TP59x46.5397x0.4375	49.33	0.00	0.0	81.3214	-48.43	5529.76	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	180 - 133 (1)	TP27.51x15.5x0.25	554.41	822.96	0.674	0.00	822.96	0.000
L2	133 - 87.3333 (2)	TP38.56x25.9879x0.375	1372.33	2461.57	0.558	0.00	2461.57	0.000
L3	87.3333 - 42.6667 (3)	TP49.1x36.46x0.4375	2344.34	4589.28	0.511	0.00	4589.28	0.000
L4	42.6667 - 0 (4)	TP59x46.5397x0.4375	3651.44	6661.72	0.548	0.00	6661.72	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	180 - 133 (1)	TP27.51x15.5x0.25	16.61	763.92	0.022	1.15	1647.94	0.001
L2	133 - 87.3333 (2)	TP38.56x25.9879x0.375	20.36	1628.65	0.013	1.15	4929.16	0.000
L3	87.3333 - 42.6667 (3)	TP49.1x36.46x0.4375	24.43	2378.82	0.010	1.15	9189.83	0.000
L4	42.6667 - 0 (4)	TP59x46.5397x0.4375	28.49	2764.88	0.010	1.15	13339.75	0.000

Pole Interaction Design Data

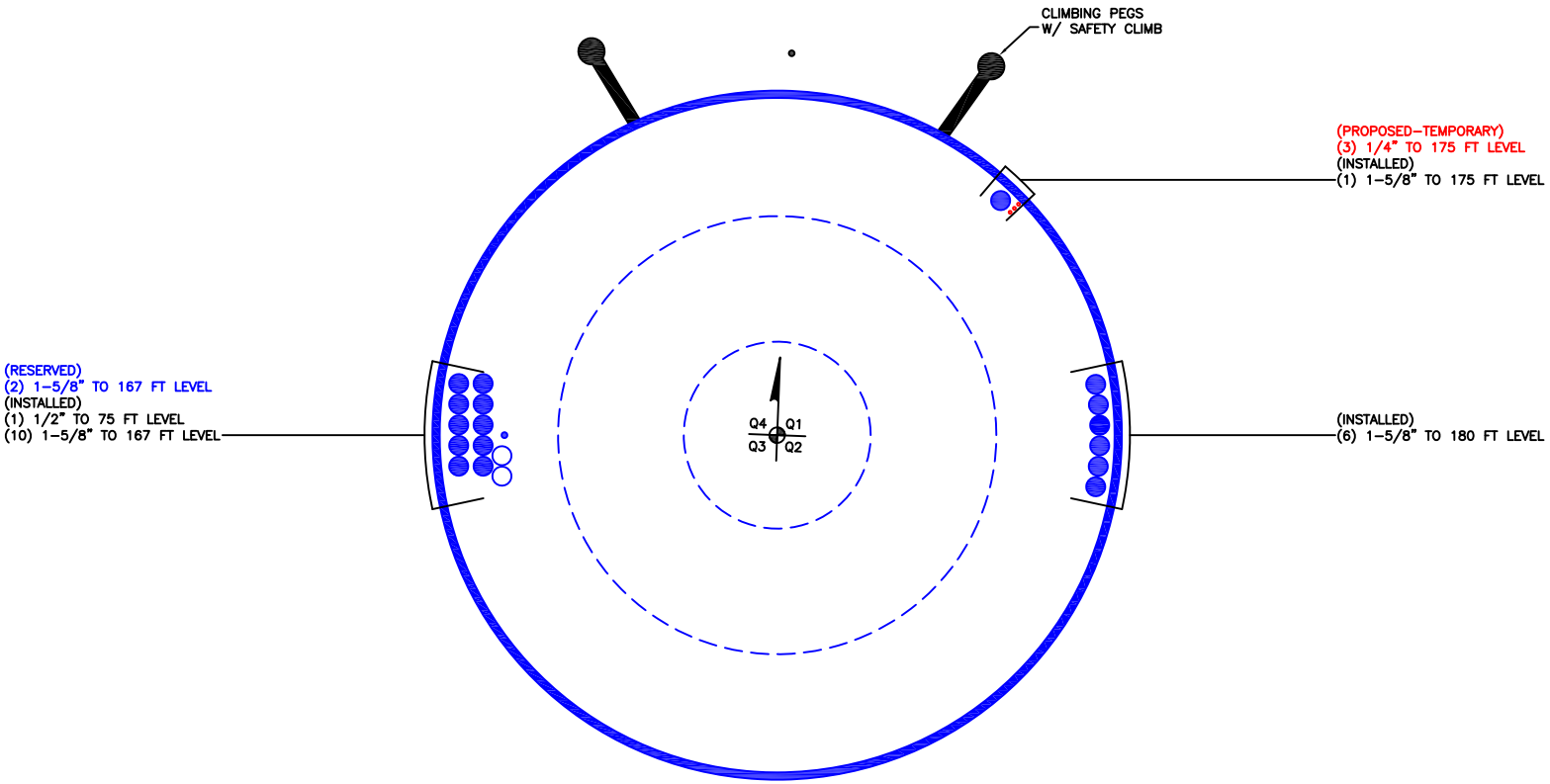
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	180 - 133 (1)	0.006	0.674	0.000	0.022	0.001	0.680	1.000	4.8.2
L2	133 - 87.3333 (2)	0.005	0.558	0.000	0.013	0.000	0.563	1.000	4.8.2
L3	87.3333 - 42.6667 (3)	0.006	0.511	0.000	0.010	0.000	0.517	1.000	4.8.2
L4	42.6667 - 0 (4)	0.009	0.548	0.000	0.010	0.000	0.557	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	180 - 133	Pole	TP27.51x15.5x0.25	1	-9.27	1527.84	68.0	Pass
L2	133 - 87.3333	Pole	TP38.56x25.9879x0.375	2	-17.72	3257.30	56.3	Pass
L3	87.3333 - 42.6667	Pole	TP49.1x36.46x0.4375	3	-30.33	4757.64	51.7	Pass
L4	42.6667 - 0	Pole	TP59x46.5397x0.4375	4	-48.43	5529.76	55.7	Pass
							Summary	
							Pole (L1) 68.0	Pass
							RATING = **68.0**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876370 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *876370*
Site Name: *MAYBROOK / BOND*
App #: *406407 Rev. 0*

Pole Manufacturer:	*Other*

Anchor Rod Data		
Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	68	in

Plate Data		
Diam:	74	in
Thick:	2	in
Grade:	60	ksi
Single-Rod B-eff:	9.36	in

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	59	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Reactions		
Mu:	3651	ft-kips
Axial, Pu:	48	kips
Shear, Vu:	28	kips
Eta Factor, ɳ	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria:	AISC LRFD	<-Only Applcable to Unstiffened Cases

Anchor Rod Results

		Rigid
Max Rod (Cu+ Vu/ɱ):	134.1 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	φ*Tn
Anchor Rod Stress Ratio:	51.6% **Pass**	

Base Plate Results Flexural Check

		Rigid
Base Plate Stress:	38.4 ksi	AISC LRFD
Allowable Plate Stress:	54.0 ksi	φ*Fy
Base Plate Stress Ratio:	71.2% **Pass**	Y.L. Length: 33.81

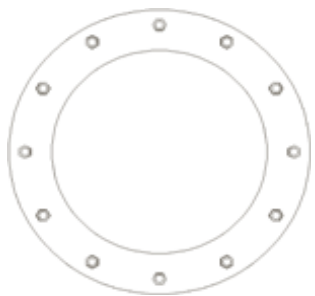
n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

FOUNDATION REACTION COMPARISON

BU# 876370
WO# 1462836

REACTIONS	DESIGN REACTIONS	*MODIFIED DESIGN REACTIONS	CURRENT REACTIONS	% CAPACITY
MOMENT (kip-ft)	4315.6	5826.1	3651.0	62.7%
SHEAR (kips)	33.3	45.0	28.0	62.3%

Design loads from: CCIsites Doc #1532099

* Design loads were multiplied by 1.35 for comparison as allowed by TIA-222-G, Section 15.5.

Although the shear capacity is 62.3% the moment reaction is the governing criteria for a monopole drilled pier foundation. Therefore, the overall capacity for this foundation is 62.7%.

USGS Design Maps Summary Report

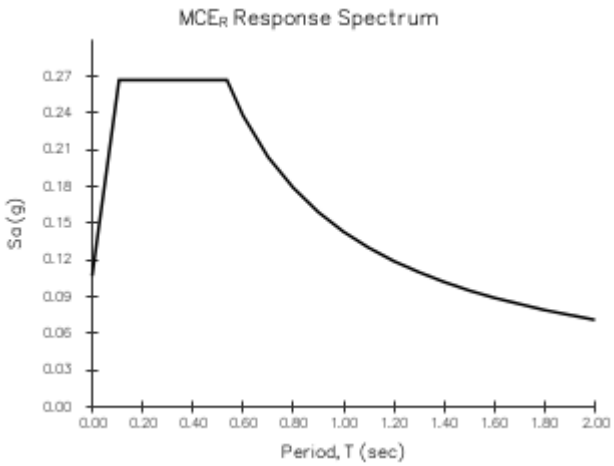
User–Specified Input

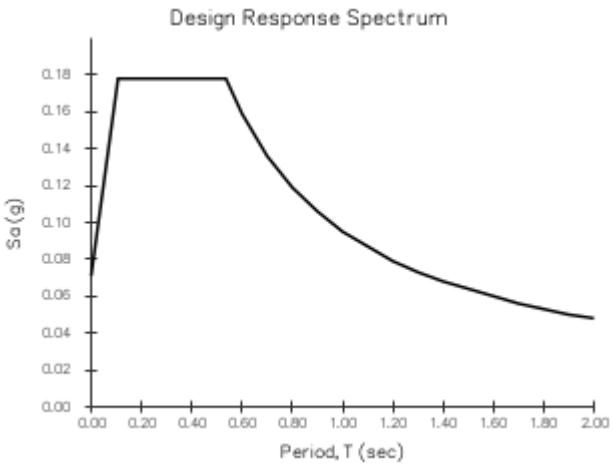
Report Title	876370 Mon September 25, 2017 15:20:25 UTC
Building Code Reference Document	2012/2015 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	41.43546°N, 72.22085°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

USGS–Provided Output

S_S =	0.167 g	S_{MS} =	0.267 g	S_{DS} =	0.178 g
S_1 =	0.060 g	S_{M1} =	0.143 g	S_{D1} =	0.095 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





CCISeismic - Design Category

Per *2012/2015 IBC*

Site BU:	876370
Work Order:	1462836
Application:	406407 Rev. 0

	Degrees	Minutes	Seconds		
Site Latitude =	41	26	7.65	41.4355	degrees
Site Longitude =	-72	13	15.07	-72.2209	degrees
Ground Supported Structure =	Yes				
Structure Class =	II				*(Table 2-1)*
Site Class =	D - Stiff Soil				*(Table 2-11)*

Spectral response acceleration short periods, S_S =	0.165	USGS Seismic Tool
Spectral response acceleration 1 s period, S_1 =	0.059	

Importance Factor, I =	1.0	*(Table 2-3)*
Acceleration-based site coefficient, F_a =	1.6	*(Table 2-12)*
Velocity-based site coefficient, F_v =	2.4	*(Table 2-13)*

Design spectral response acceleration short period, S_{DS} =	0.176	*(2.7.6)*
Design spectral response acceleration 1 s period, S_{D1} =	0.094	*(2.7.6)*

Seismic Design Category - Short Period Response =	B	*ASCE 7-05 Table 11.6-1*
Seismic Design Category - 1s Period Response =	B	*ASCE 7-05 Table 11.6-2*

Worst Case Seismic Design Category =	B	*ASCE 7-05 Tables 11.6-1 and 6-2*

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: CTNH032H (MW Add)

CTNH032H - Oakdale_Beckwith Road
41 Beckwith Road
Oakdale, CT 06370

September 29, 2017

EBI Project Number: 6217004239

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	2.591%

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

EBI Consulting
environmental | engineering | due diligence

September 29, 2017

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

Emissions Analysis for Site: **CTNH032H – CTNH032H - Oakdale_Beckwith Road**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **41 Beckwith Road, Oakdale, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Population 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), 2100 MHz (AWS) and 5 GHz microwave 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 **41 Beckwith Road, Oakdale, 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 and microwave 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 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.

2) 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.

3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

4) 1 microwave backhaul channel (5 GHz) was considered for the microwave Link. This channel has a transmit power of 1 Watt.

5) 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.

6) 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.

7) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels, the **Commscope LNX-6515DS-A1M** for 700 MHz channels and the **Fastback Networks IBR 1300** for 5 GHz microwave backhaul. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-A1M** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. the **Fastback Networks IBR 1300 antenna** has a maximum gain of **10 dBd** at 5 GHz**.** 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.

8) The antenna mounting height centerline of the proposed antennas is **175 feet** above ground level (AGL) for all standard panel antennas and 5 GHz microwave radio / antenna.

9) 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.

10) 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:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	175	Height (AGL):	175	Height (AGL):	175
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):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	7,678.43	ERP (W):	7,678.43	ERP (W):	7,678.43
Antenna A1 MPE%	0.967	Antenna B1 MPE%	0.967	Antenna C1 MPE%	0.967
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	175	Height (AGL):	175	Height (AGL):	175
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.233	Antenna B3 MPE%	0.233	Antenna C3 MPE%	0.233

Antenna #:	**4 (Microwave)**
Make / Model:	Fastback Networks IBR 1300
Gain:	10.0 dBd
Height (AGL):	175
Frequency Bands	5.0 GHz
Channel Count	1
Total TX Power(W):	1
ERP (W):	10 W
Antenna A3 MPE%	0.001

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**1.201%**
Verizon Wireless	1.220%
Sprint	0.170%
Site Total MPE %:	**2.591%**

T-Mobile Sector A Total:	1.201%
T-Mobile Sector B Total:	1.200%
T-Mobile Sector C Total:	1.200%
Site Total:	2.591%

T-Mobile Per Sector Maximum Power Values

T-Mobile _Max Values per sector (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz UMTS	2	1,279.74	175	3.22	PCS - 1900 MHz	1000	0.323%
T-Mobile PCS - 1900 MHz LTE	2	2,559.48	175	6.44	PCS - 1900 MHz	1000	0.644%
T-Mobile 700 MHz LTE	1	865.21	175	1.09	700 MHz	467	0.233%
T-Mobile 5 GHz Microwave	1	10	175	0.01	5 GHz Microwave	1000	0.001%
						Total:	**1.201%**

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:	1.201%
Sector B:	1.200%
Sector C:	1.200%
T-Mobile Per Sector Maximum:	1.201%
Site Total:	2.591%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is 2.591**%** 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.