NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

November 15, 2016

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

RE: Tower Share Application
38 MAPLE STREET, KENT, CT 06757
Latitude: 41.721903
Longitude: -73.474964
T-Mobile Site#: CTNH542A-NSD-ROB

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile plans to install antennas and related equipment at the tower site located at 38 Maple Street in Kent, Connecticut.

T-Mobile will install three (3) 700MHz antenna, three (3) 1900/2100 MHz antennas and nine (9) RRUs at the 110-foot level of the existing 150-foot monopole. Two (2) hybrid cables will also be installed. T-Mobile's equipment cabinets will be placed on a new 6x8 equipment pad within 10x12 lease area. Included are plans by SMW Engineering, dated November 4, 2016. **Exhibit C**. Also included is a structural analysis prepared by American Tower Corporation, dated October 21, 2016, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as **Exhibit D.**

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Bruce K. Adams, First Selectman of the Town of Kent, as well as the tower owner (ATC) and property owner (Town of Kent).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the monopole is 150-feet; T-Mobile's proposed antennas will be located at a center line height of 110-feet.

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

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 9.92% as evidenced by **Exhibit E.**

NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

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

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading. The structural analysis is included as Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Kent. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as **Exhibit F**, authorizing T-Mobile to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of T-Mobile equipment at the 110-foot level of the existing 150-foot tower would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit E, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.

E. Public Safety Concerns. As discussed above, the guyed tower is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing guyed tower. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Kent.

Sincerely,

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

Attachments

cc: Bruce K. Adams, First Selectman, as elected official and property owner
American Tower Corporation - as tower owner

Exhibit A

DOCKET NO. 353 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 38 Maple Street, Kent, Connecticut.	}	Connecticut Siting Council April 24, 2008

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless (Cellco), hereinafter referred to as the Certificate Holder, for a telecommunications facility at 38 Maple Street, Kent, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Cellco and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level. The height at the top of the Certificate Holder's antennas shall not exceed 153 above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Kent for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping;
    b) antenna mounting configuration; and
    c) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Kent public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Kent. Any proposed modifications to this Decision and Order shall likewise be so served.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Republican-American and The Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant	**Representative**
Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP

Exhibit B

38 MAPLE ST

Location	38 MAPLE ST	**Mblu**	4/ 12/ 4/ /
Acct#	00129900	**Owner**	KENT TOWN OF
Assessment	$429,500	**Appraisal**	$613,600
PID	246	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$270,000	$343,600	$613,600
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$189,000	$240,500	$429,500

Owner of Record

Owner	KENT TOWN OF	**Sale Price**	$0
Co-Owner	(TOWN GARAGE)	**Certificate**	
		Book & Page	61/ 346
		Sale Date	01/15/1973

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
KENT TOWN OF	$0		61/ 346	01/15/1973

Building Information

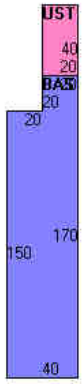
Building 1 : Section 1

Year Built: 1974
Living Area: 6,400
Replacement Cost: $230,209
Replacement Cost Less Depreciation: $188,800

Building Attributes	
Field	**Description**
STYLE	Warehouse
MODEL	Commercial
Grade	Average
Stories:	1

Building Layout

Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	Com/Res MDL96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	2-1I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	14
% Comn Wall	0



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	6,400	6,400
UST	Utility, Storage, Unfinished	800	0
		7,200	6,400

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 920C
Description Town MDL94
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 10.19
Frontage 0
Depth 0
Assessed Value $240,500
Appraised Value $343,600

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD3	SHED METAL			3360 S.F.	$25,200	1
TEN	TENNIS COURT			2 UNITS	$45,000	1

IMP	IMPLEMENT SHED			800 S.F.	$3,600	1
IMP	IMPLEMENT SHED			1650 S.F.	$7,400	1

Return to Town Map

Parcel Information

MAP 3

NEW YORK

MAP 10

MAP 5

38 Maple - MBLU 4/12/4

Thayer Brook

Chapel Pond

Macedonia Rd

Schaghticoke Rd

Skiff Mountain Rd

Housatonic River

Johnson Rd

Lane St

N Main St

Elizabeth St

Bridge St

Bluff Rd

Railroad St

Green Ward Way

Kent Green Blvd

Landmark Ln

Library St

Locust Ln

Judd Ave

Meadow St

N Main St

Maple St

Maple St Exd

Maple St Ext

S Kent Rd

S Main St

S Common Rd

Segar Mountain Rd

Segar Mountain Rd

Womenshenuk Brook

Kent Rd

Schaghticoke Rd

Saddle Ridge Farm Rd

Lee Cir

Cowboy Hts Dr

Angel Vista Dr

S Kent Rd

RAIL

Leonard Pond

Isl*

0 1,900 Feet

0 0.35 Miles

1 inch = 949 feet

Map 4

Revised October 1, 2015

For assessment purposes only.
Not to be used for conveyance.

Prepared by
Housatonic Valley Association
PO Box 28, 150 Kent Road
Cornwall Bridge, CT 06754
860-672-6678
maps@hvatoday.org

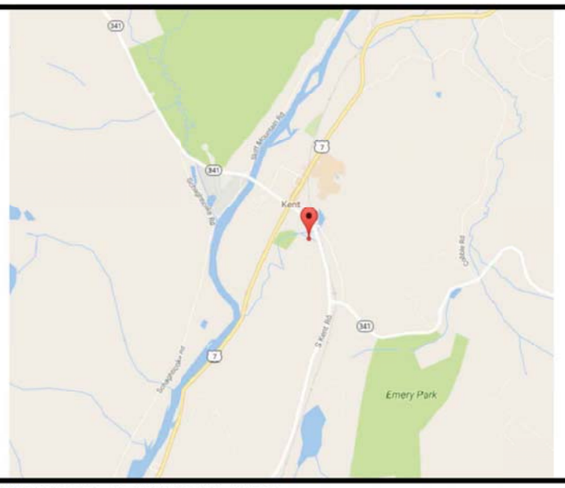
MAP	BLOCK	LOT	ST #	STREET NAME	ACREAGE
4	3	1	0	Schaghticoke Rd	52.00
4	3	2	0	Schaghticoke Rd	267.17
4	3	3	0	Schaghticoke Rd	297.83
4	3	4	0	Schaghticoke Rd	50.00
4	3	5	50	Schaghticoke Rd	81.00
4	10	1	1	Macedonia Rd	37.00
4	10	2	0	Schaghticoke Rd	21.50
4	10	3	125	Schaghticoke Rd	4.00
4	10	4	0	Kent Rd	0.34
4	10	5	0	Kent Rd	0.42
4	10	6	0	Kent Rd	0.50
4	12	1	23	South Main St	0.25
4	12	2	25	South Main St	0.61
4	12	3	31	South Main St	0.18
4	12	4	38	Maple St	10.19
4	12	5	0	South Main St	62.17
4	12	6	46	Maple St	11.52
4	12	7	0	Maple St	1.50
4	12	8	0	Maple St	1.40
4	12	9	64	Maple St	1.35
4	12	10	70	Maple St	0.98
4	12	11	76	Maple St	1.41
4	12	12	0	South Kent Rd	118.08
4	12	13	73	South Main St	0.50
4	12	14	77	South Main St	0.50
4	12	15	27	Kent Rd	0.52
4	12	16	39	Kent Rd	1.55
4	12	17	0	Kent Rd	25.46
4	12	18	57	Kent Rd	0.70
4	12	19	0	South Kent Rd	30.50
4	12	20	0	Maple St	4.59
4	12	21	22	South Commons	3.90
4	12	22	0	South Main St	0.61
4	13	1	9	Judd Ave	5.50
4	13	2	0	South Main St	12.00
4	13	5	0	South Main St	0.73
4	13	6	30	South Main St	3.96
4	13	7	0	South Main St	6.50
4	13	23	0	South Main St	29.00
4	42	1	0	Maple St Ext	8.64
4	42	2	9	Maple St Ext	2.00
4	42	4	15	Maple St Ext	2.02
4	42	5	19	Maple St Ext	1.00
4	44	1	16	Maple St Ext	1.93
4	44	2	20	Maple St Ext	1.00
4	44	3	0	Maple St Ext	1.00
4	44	4	0	Maple St Ext	1.00
4	44	5	3	Segar Mtn Rd	5.12

Exhibit C

GENERAL NOTES

1. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTORS 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.
2. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
3. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
5. 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.
6. THE 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.
7. THE SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
8. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWING MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. ALL SAFETY PRECAUTIONS MUCH 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.

LOCATION MAP



HANDICAP REQUIREMENTS

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED.

PLUMBING REQUIREMENTS

FACILITY HAS NO SANITARY OR POTABLE WATER

T-Mobile

2016 INFILL/ROB/GREENFIELD

T-MOBILE SITE NUMBER

CTNH542A

150' MONOPOLE

ATC SITE NUMBER

413783

SITE ADDRESS

38 MAPLE STREET

KENT, CT 06757

CONFIGURATION 707C

SITE SUMMARY

SITE TYPE:	PROPOSED EQUIPMENT INSTALLATION
TECHNOLOGY TYPE:	U1900/L2100/L700
SITE ADDRESS:	38 MAPLE STREET KENT, CT 06757
SITE LATITUDE:	41° 43' 18.85"
SITE LONGITUDE:	-73° 28' 29.87"
JURISDICTION:	TOWN OF KENT
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	AT&T
TOWER OWNER:	AMERICAN TOWER 116 HUNTINGTON AVE, 11TH FLOOR BOSTON, MA 02116 CONTACT: CUSTOMER SERVICE PHONE: 877-518-6937
TOWER MANAGER:	NORTHEAST SITE SOLUTIONS. LLC 199 BRICKYARD ROAD FARMINGTON, CT 06032 SHELDON FREINCLE (201) 776-8521
WIRELESS CARRIER:	T-MOBILE 35 GRIFFIN RD S BLOOMFIELD, CT 06002 OFFICE: 860-692-7100 FAX: 860-692-7159
ENGINEER:	SMW ENGINEERING 158 BUSINESS CENTER DRIVE BIRMINGHAM, AL 35244 PHONE: 205-252-6985 ALVIN A. KRAFT, PE

BUILDING CODES

ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE (AS ADOPTED BY LOCAL JURISDICTION):

- 2016 CONNECTICUT BUILDING CODE
- 2012 INTERNATIONAL BUILDING CODE W/AMENDMENTS
- 2009 ICC/ANSI A117.1 W/AMENDMENTS
- 2012 INTERNATIONAL EXISTING BUILDING CODE W/AMENDMENTS
- 2012 INTERNATIONAL PLUMBING CODE WITH AMENDMENTS
- 2012 INTERNATIONAL MECHANICAL CODE W/AMENDMENTS
- 2012 INTERNATIONAL ENERGY CONSERVATION CODE W/AMENDMENTS
- 2014 NFPA 70, NATIONAL ELECTRICAL CODE W/AMENDMENTS
- 2012 INTERNATIONAL RESIDENTIAL CODE W/AMENDMENTS

APPROVALS

DEPARTMENT	NAME/SIGNATURE	DATE
DEVELOPMENT MANAGER		
PROPERTY/TOWER OWNER		
SITE ACQUISITION MANAGER		
CONSTRUCTION MANAGER		
RF ENGINEER		
OPERATIONS MANAGER		

PROJECT SCOPE

THE PROPOSED PROJECT SCOPE WILL CONSIST OF CONSTRUCTING A NEW TELECOMMUNICATIONS BASE STATION INSTALLATION ON AN EXISTING TOWER SITE. THE PROPOSED CONSTRUCTION WILL INCLUDE THE INSTALLATION OF ANTENNA, RADIOS, CABLES AND RELATED EQUIPMENT ON THE TOWER AS WELL AS THE RADIOS, CABINETS, UTILITIES AND ANCILLARY EQUIPMENT ON THE GROUND.

SHEET INDEX

T-1	TITLE SHEET
C-1	OVERALL SITE PLAN
C-2	TOWER ELEVATION & ANTENNA PLAN
C-3	TOWER TOP EQUIPMENT SCHEDULE
C-4	GROUND EQUIPMENT DETAIL
C-5	ICE BRIDGE DETAILS
C-6	FOUNDATION DETAILS & NOTES
E-1	ONE-LINE DIAGRAM
E-2	ELECTRICAL UTILITY PLAN
E-3	GROUNDING PLAN
E-4	EQUIPMENT SCHEMATIC
E-5	ELECTRICAL & GROUNDING DETAILS
--	ATTACHMENTS

CALL BEFORE YOU DIG

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

CONNECTICUT CALL BEFORE YOU DIG
STATE WIDE
1-800-922-4455 OR 811
HTTP://WWW.CBYD.COM/#

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
NORTHEAST SITE SOLUTIONS, LLC
199 BRICKYARD ROAD
FARMINGTON CT 06032
(860) 677-1999

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT · ALVIN A. KRAFT · No. 20787 · LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

#	DATE	DESCRIPTION:
0	10/07/16	ISSUED FOR CLIENT REV.
1	10/25/16	REISSUED FOR CLIENT REV.
2	11/04/16	ISSUED FOR CONSTRUCTION

T-MOBILE SITE ID:	ATC SITE ID:
CTNH542A	413783

SHEET NAME:
TITLE SHEET

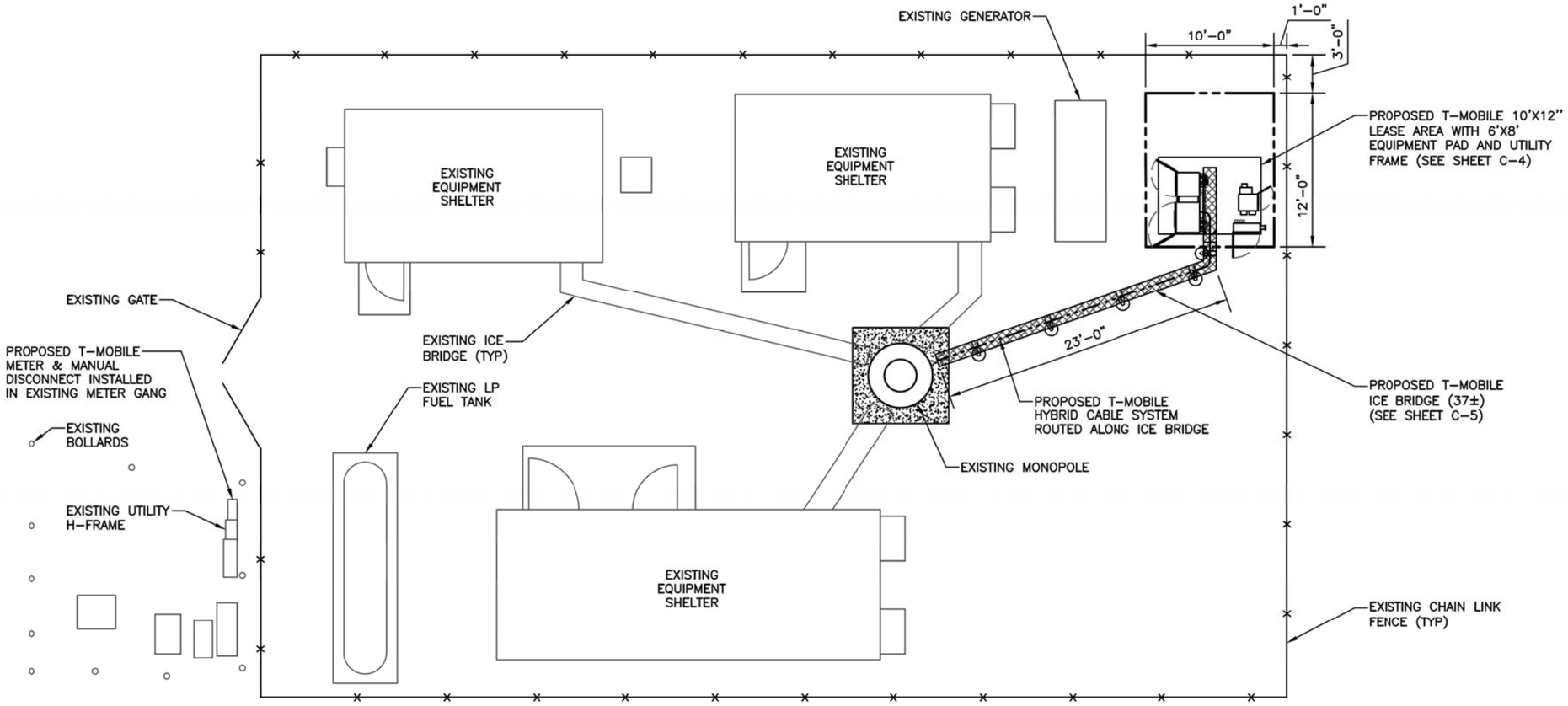
SMW #:	16-2557
DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: T-1

NOTE TO CONTRACTORS:
DIGGING AND/OR TRENCHING INSIDE COMPOUND, MUST BE DONE BY HAND.

SUBJECT PROPERTY IS LOCATED IN PANEL # 0901860007B, DATED (MARCH 4, 1980) AND IS IN THE BASE FLOOD ZONE "C" AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

UTILITY NOTE:
THERE ARE NOT ANY EXISTING STORM OR SANITARY SEWER LINES OR BURIED UTILITIES ON THE PARENT TRACK WITHIN THE VICINITY OF THE PROPOSED CONSTRUCTION.



N

1 C-1 OVERALL SITE PLAN

0' 10' 20' 30'
1" = 10' (11"x17")

0' 5' 10' 15'
1" = 5' (24"x36")

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
NORTHEAST SITE SOLUTIONS, LLC
199 BRICKYARD ROAD
FARMINGTON CT 06032
(860) 677-1999

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT KEVIN A. KRAFT No. 20757 LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

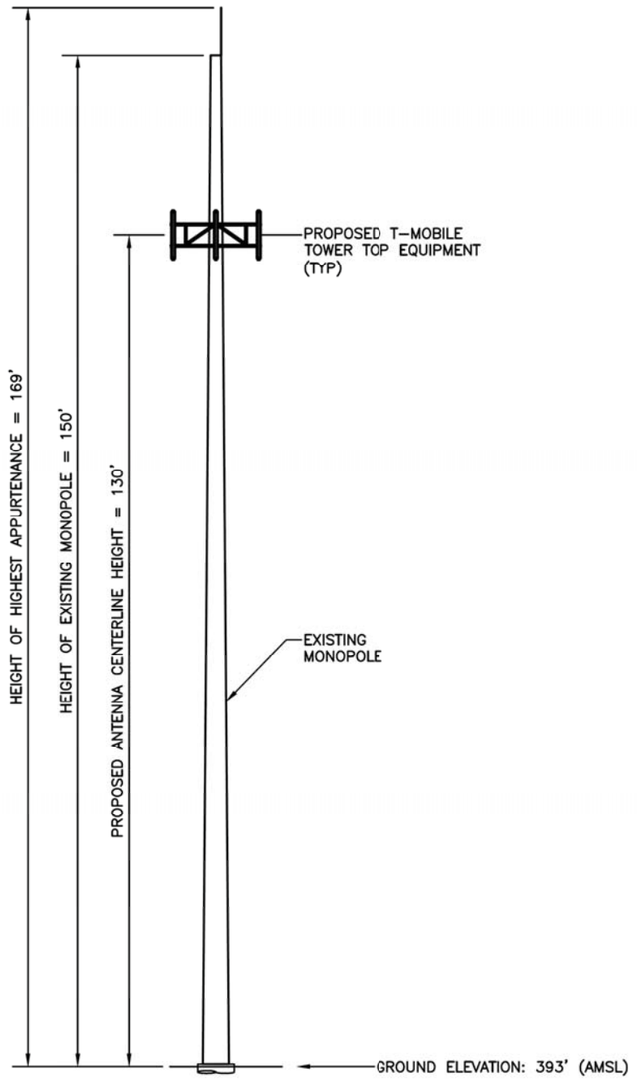
#	DATE	DESCRIPTION:
0	10/07/16	ISSUED FOR CLIENT REV.
1	10/25/16	REISSUED FOR CLIENT REV.
2	11/04/16	ISSUED FOR CONSTRUCTION

T-MOBILE SITE ID:	ATC SITE ID:
CTNH542A	413783

SHEET NAME:
OVERALL SITE PLAN

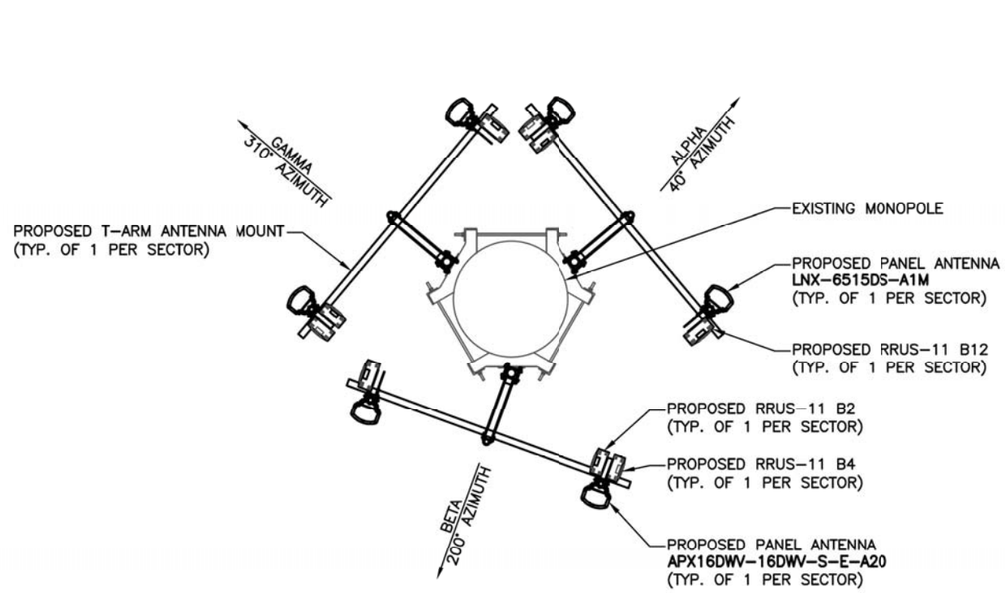
SMW #:	SHEET NUMBER:
16-2557	C-1

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

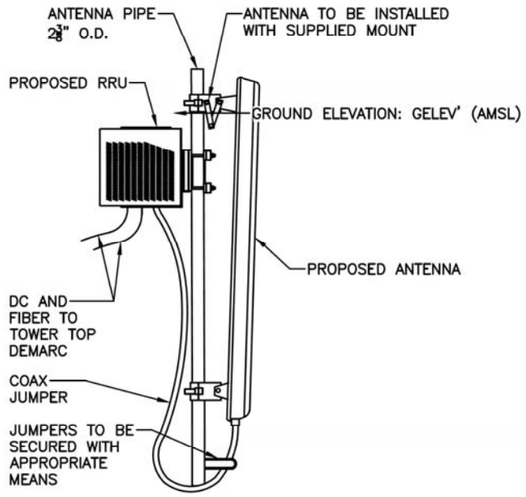


NOTES:
1. SMW HAS NOT PERFORMED A STRUCTURAL ANALYSIS OF THE EXISTING TOWER OR PROPOSED ANTENNA MOUNT. REFER TO STRUCTURAL ANALYSIS OR STRUCTURAL LETTER BY OTHERS FOR ADDITIONAL INFORMATION.
2. IF THE TOWER STRUCTURAL ANALYSIS SHOWS THE NEED FOR TOWER REINFORCEMENT REFER TO TOWER REINFORCEMENT DESIGN PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT.
3. REFER TO TOWER STRUCTURAL ANALYSIS FOR PROPOSED CABLE ROUTING AND ATTACHMENT DETAILS.
4. TOWER ELEVATION SHOWN IS NOT DRAWN TO SCALE AND IS INTENDED ONLY FOR REFERENCE PURPOSES. REFER TO ORIGINAL TOWER DESIGN FOR ADDITIONAL INFORMATION.

1 / C-2 TOWER ELEVATION
NOT TO SCALE



2 / C-2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE



3 / C-2 ANTENNA MOUNT DETAIL
NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
NORTHEAST SITE SOLUTIONS, LLC
199 BRICKYARD ROAD
FARMINGTON CT 06032
(860) 677-1999

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT JOHN A. KRAFT No. 25787 LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

#	DATE	DESCRIPTION:
0	10/07/16	ISSUED FOR CLIENT REV.
1	10/25/16	REISSUED FOR CLIENT REV.
2	11/04/16	ISSUED FOR CONSTRUCTION

T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
TOWER ELEVATION
& ANTENNA PLAN

SMW #: 16-2557

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: C-2

707C_TOWER_1QP_1DP / U1900/L2100/L700 – TOWER TOP EQUIPMENT SCHEDULE							
ANTENNA SECTOR	ANTENNA MARK	ANTENNA AZIMUTH	ANTENNA MODEL	RRU MODEL	TMA MODEL	TOWER TOP COVP MODEL	ANTENNA CABLE DESCRIPTION
ALPHA	A1	40°	APX16DWV-16DWV-S-E-A20 (QUAD)	(1) RRUS-11 B2 (P) (1) RRUS-11 B4 (P)	--	--	(1) 1 5/8" HYBRID CABLE SYSTEM (P)
	A2	40°	--	--	--	--	--
	A3	40°	LNX-6515DS-A1M (DUAL)	(1) RRUS-11 B12 (P)	--	--	--
BETA	B1	200°	APX16DWV-16DWV-S-E-A20 (QUAD)	(1) RRUS-11 B2 (P) (1) RRUS-11 B4 (P)	--	--	(1) 1 5/8" HYBRID CABLE SYSTEM (R)
	B2	200°	--	--	--	--	--
	B3	200°	LNX-6515DS-A1M (DUAL)	(1) RRUS-11 B12 (P)	--	--	--
GAMMA	C1	310°	APX16DWV-16DWV-S-E-A20 (QUAD)	(1) RRUS-11 B2 (P) (1) RRUS-11 B4 (P)	--	--	--
	C2	310°	--	--	--	--	--
	C3	310°	LNX-6515DS-A1M (DUAL)	(1) RRUS-11 B12 (P)	--	--	--

NOTE:
(P) DENOTES PROPOSED EQUIPMENT
(R) DENOTES RESERVED EQUIPMENT
(E) DENOTES EXISTING EQUIPMENT

NOTE:
1. THE HYBRID CABLE LENGTH SHOWN IS ONLY AN ESTIMATE AND SHOULD NOT BE USED FOR ORDERING MATERIALS. CONFIRM THE REQUIRED HYBRID CABLE LENGTH WITH T-MOBILE PRIOR TO ORDERING OR INSTALLATION.
2. THE CONTRACTOR SHALL TEST THE OPTICAL FIBER AFTER INSTALLATION IN ACCORDANCE WITH T-MOBILE STANDARDS AND SUPPLY THE RESULTS TO T-MOBILE.
3. THE CONTRACTOR SHALL CONFIRM THE TOWER TOP EQUIPMENT LIST ABOVE WITH THE FINAL T-MOBILE RFDS PRIOR TO INSTALLATION.
4. ALL EXISTING AND PROPOSED ANTENNA CABLES SHALL BE COLOR CODED PER T-MOBILE MARKET STANDARDS.
5. REFER TO MANUFACTURERS INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION.
6. REFER TO EQUIPMENT MANUFACTURER'S SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION NOT LISTED ABOVE.

TOWER LOADING SUMMARY		
EQUIPMENT TYPE	ADD QUANITY	TOTAL QUANITY
PANEL ANTENNA	6	6
COAX CABLE	0	0
RRUS	9	9
HYBRID CABLE	2	2
COVP	0	0

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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT
JOHN A. KRAFT
No. 20702
LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

#	DATE	DESCRIPTION:
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1	10/25/16	REISSUED FOR CLIENT REV.
2	11/04/16	ISSUED FOR CONSTRUCTION

T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
TOWER TOP EQUIPMENT SCHEDULE

SMW #: 16-2557
SHEET NUMBER: C-3

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

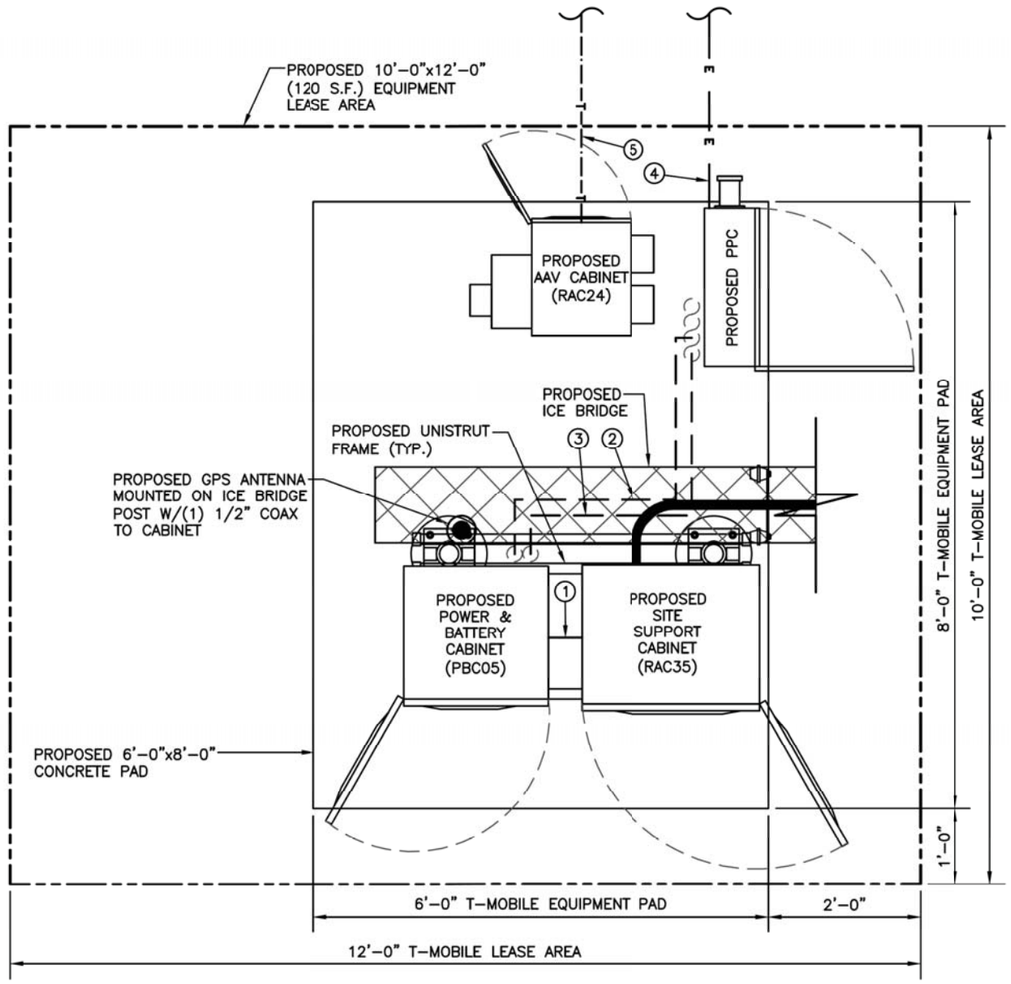
① 2"ø CONDUIT (ABOVE SLAB)

② 2"ø U/G CONDUIT (UNDER CONCRETE) FROM PROPOSED PPC TO PROPOSED PBC CABINETS

③ 2"ø U/G CONDUIT (UNDER CONCRETE) FROM PROPOSED PPC DAISY-CHAINING SSC CAGINETS

④ 2"ø PVC CONDUIT WITH (3) 3/0 + #4G FROM PROPOSED METER TO PPC CABINET. COORDINATE WITH THE LOCAL UTILITY COMPANY REGARDING FINAL SERVICE CONNECTION.

⑤ 2"ø PVC CONDUIT WITH PULLSTRING FOR TELCO FROM PROPOSED AAV CABINET TO EXISTING TELCO SERVICE. COORDINATE WITH THE LOCAL UTILITY COMPANY REGARDING FINAL SERVICE CONNECTION.



1/C-4 GROUND EQUIPMENT DETAIL

0' 2' 4' 6'
1" = 2' (11"x17")

0' 1' 2' 3'
1" = 1' (24"x36")

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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT · KEVIN A. KRATT · No. 32707 · LICENSED PROFESSIONAL ENGINEER

11/04/16

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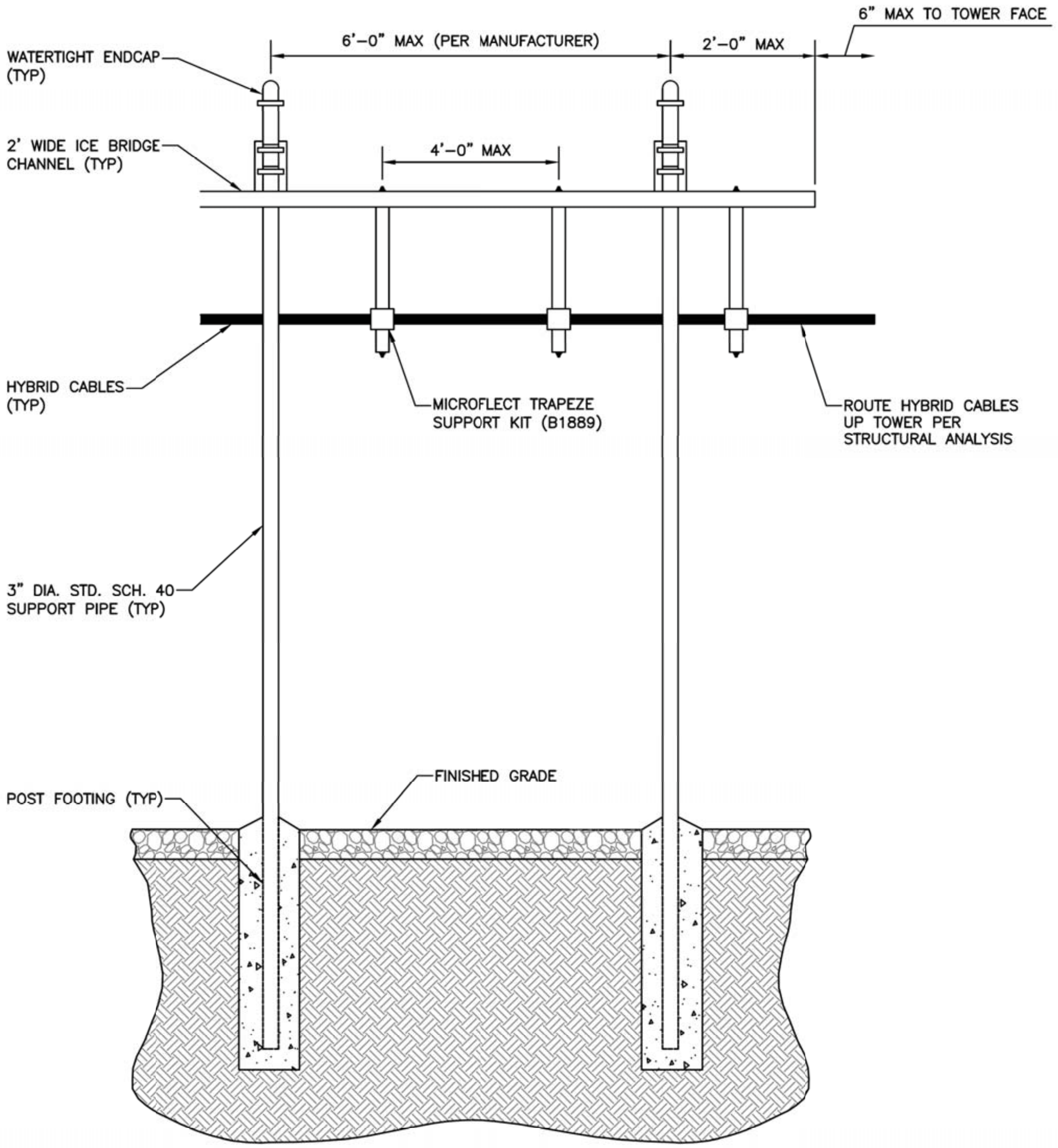
T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME: GROUND EQUIPMENT DETAIL

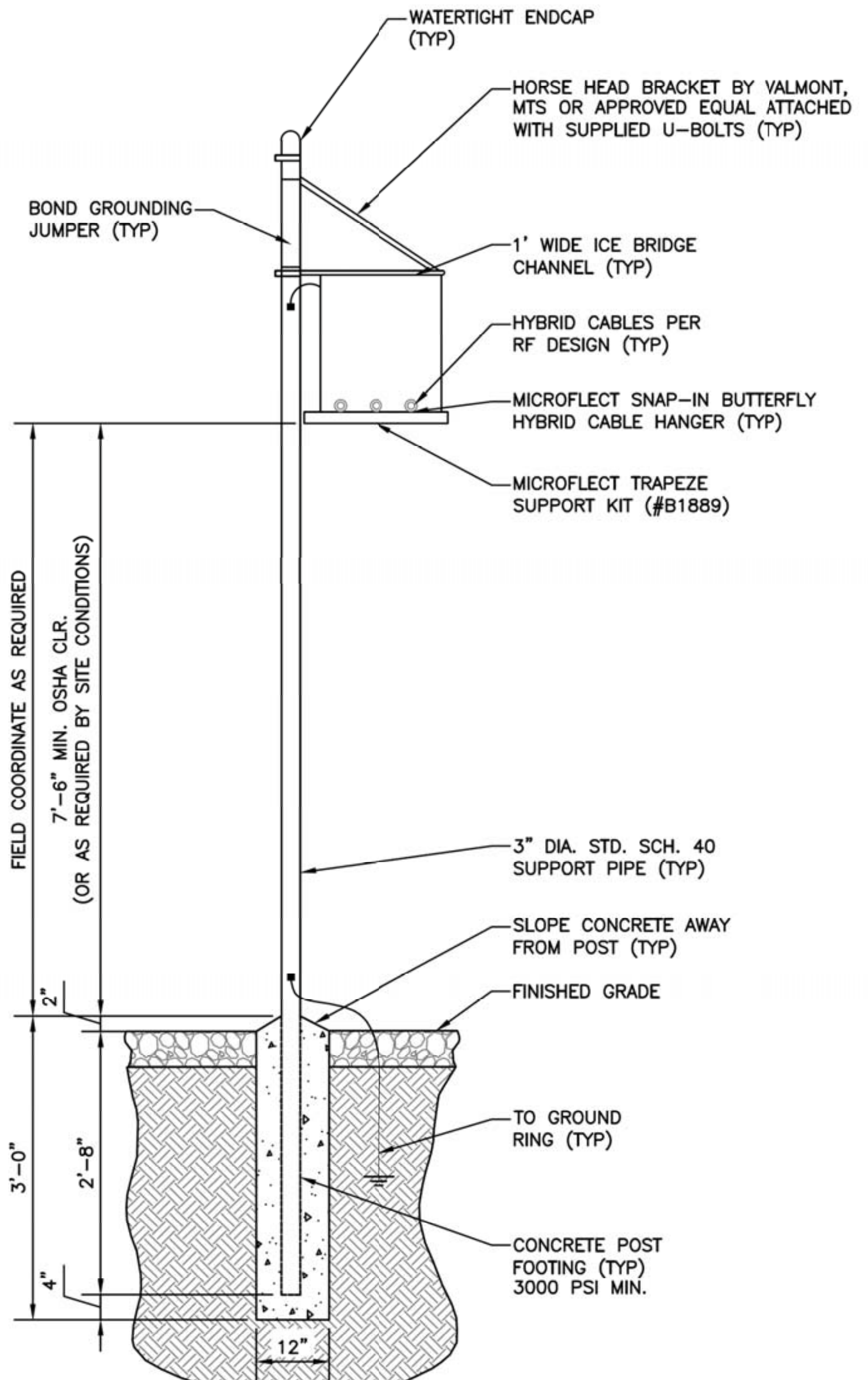
SMW #: 16-2557

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: C-4



1 / C-5 ICE BRIDGE ELEVATION
NOT TO SCALE



2 / C-5 ICE BRIDGE SECTION (WITH 1 SUPPORT POST)
NOT TO SCALE

T · · Mobile ·

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BLOOMFIELD, CT 06002
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FAX: 860-692-7159

PLANS PREPARED BY:

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
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FARMINGTON CT 06032
(860) 677-1999

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

11/04/16

SITE INFORMATION:

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KENT, CT 06757

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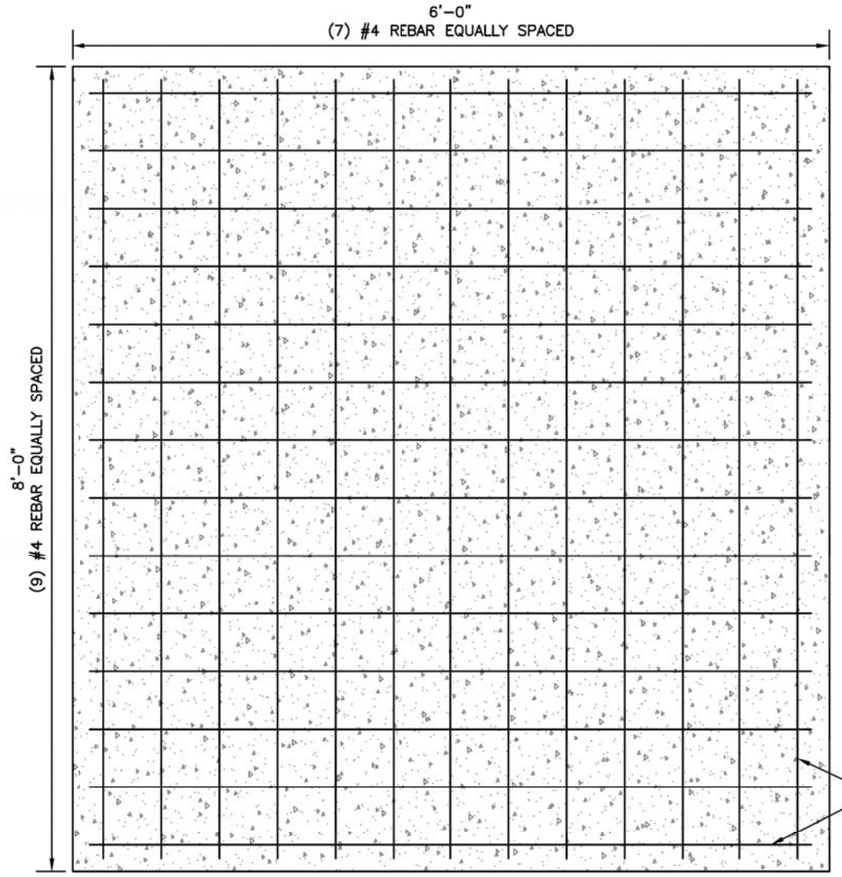
T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

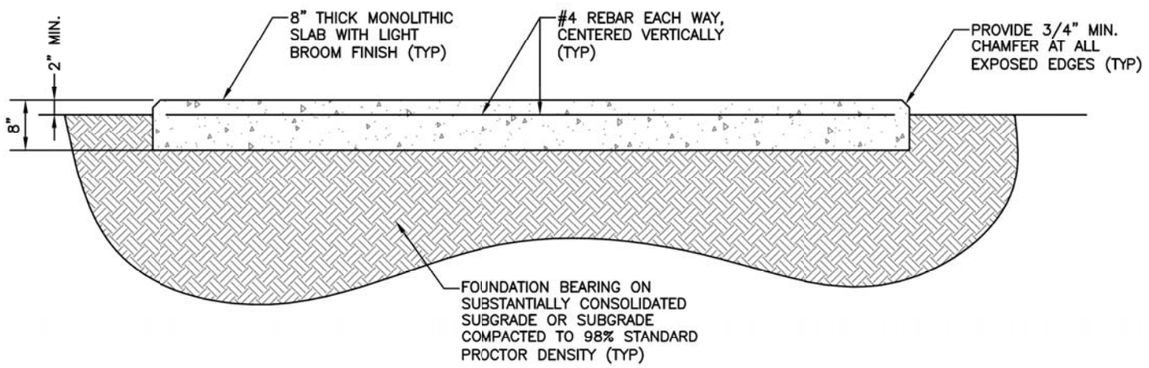
SHEET NAME:
ICE BRIDGE DETAILS

SMW #: 16-2557

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: C-5





1 / C-6 MONOLITHIC EQUIPMENT SLAB DETAIL
NOT TO SCALE

REINFORCED CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI SPECIFICATIONS FOR THE DESIGN & CONSTRUCTION OF CAST-IN-PLACE CONCRETE, AND WHERE CODES CONFLICT THE MORE STRINGENT NATIONAL OR LOCAL CODE SHALL GOVERN.

2. SITECAST CONCRETE FOR SLABS AND POST FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE TESTING IS NOT REQUIRED FOR SLABS AND POST FOOTINGS UNLESS NOTED OTHERWISE.

   SLUMP – 4" MIN. / 6" MAX.
   AIR ENTRAINMENT – 2% TO 3% BY VOLUME

CLASSES OF CONCRETE				
CLASS	28 DAY STRENGTH (PSI)	MAX WATER/CEMENT RATIO	PLACEMENT LOCATION	NOTES
TYPE I	3000	0.55	SLABS & POST FOOTINGS	NORMAL WEIGHT
TYPE II*	5000	0.45	SLABS & POST FOOTINGS	HIGH EARLY STRENGTH

*IF REQUIRED BY THE CONSTRUCTION SCHEDULE THE CONTRACTOR MAY SUBSTITUTE TYPE III HIGH EARLY STRENGTH CONCRETE WITH THE APPROVAL OF THE CONSTRUCTION MANAGER.

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES FOR REBAR SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO. LAPS FOR WELDED WIRE FABRIC SHALL BE AST LEAST 8", UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3"
   CONCRETE EXPOSED TO EARTH OR WEATHER
   #6 AND LARGER.....2"
   #5 AND SMALLER & W.W.F.....1-1/2"

5. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 3/4"

6. INSTALLATION OF CONCRETE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO THE ANCHOR MANUFACTURER'S SPECIFICATIONS FOR MATERIAL STRENGTH, EMBEDMENT DEPTH, SPACING, AND EDGE DISTANCE OR AS DETAILED ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI, OR APPROVED EQUAL. IF THE MANUFACTURER'S SPECIFICATIONS AND DETAILS ARE FOUND TO CONFLICT WITH THAT SHOWN HEREIN, THE ENGINEER SHAL LBE NOTIFIED IMMEDIATELY.

7. THE CONTRACTOR SHALL VERIFY FROST LINE AND FOOTING DEPTH REQUIREMENTS WITH THE JURISDICTION HAVING AUTHORITY PRIOR TO CONSTRUCTION AND CONSULT THE ENGINEER ACCORDINGLY.

8. THE CONTRACTOR SHALL VERIFY ALL ELECTRICAL CONDUIT SIZES AND PENETRATION LOCATIONS PRIOR TO POURING THE SLAB.

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OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
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Turnkey Wireless Development
NORTHEAST SITE SOLUTIONS, LLC
199 BRICKYARD ROAD
FARMINGTON CT 06032
(860) 677-1999

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT · JOSEPH A. KRAFT · No. 32782 · LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

#	DATE	DESCRIPTION:
0	10/07/16	ISSUED FOR CLIENT REV.
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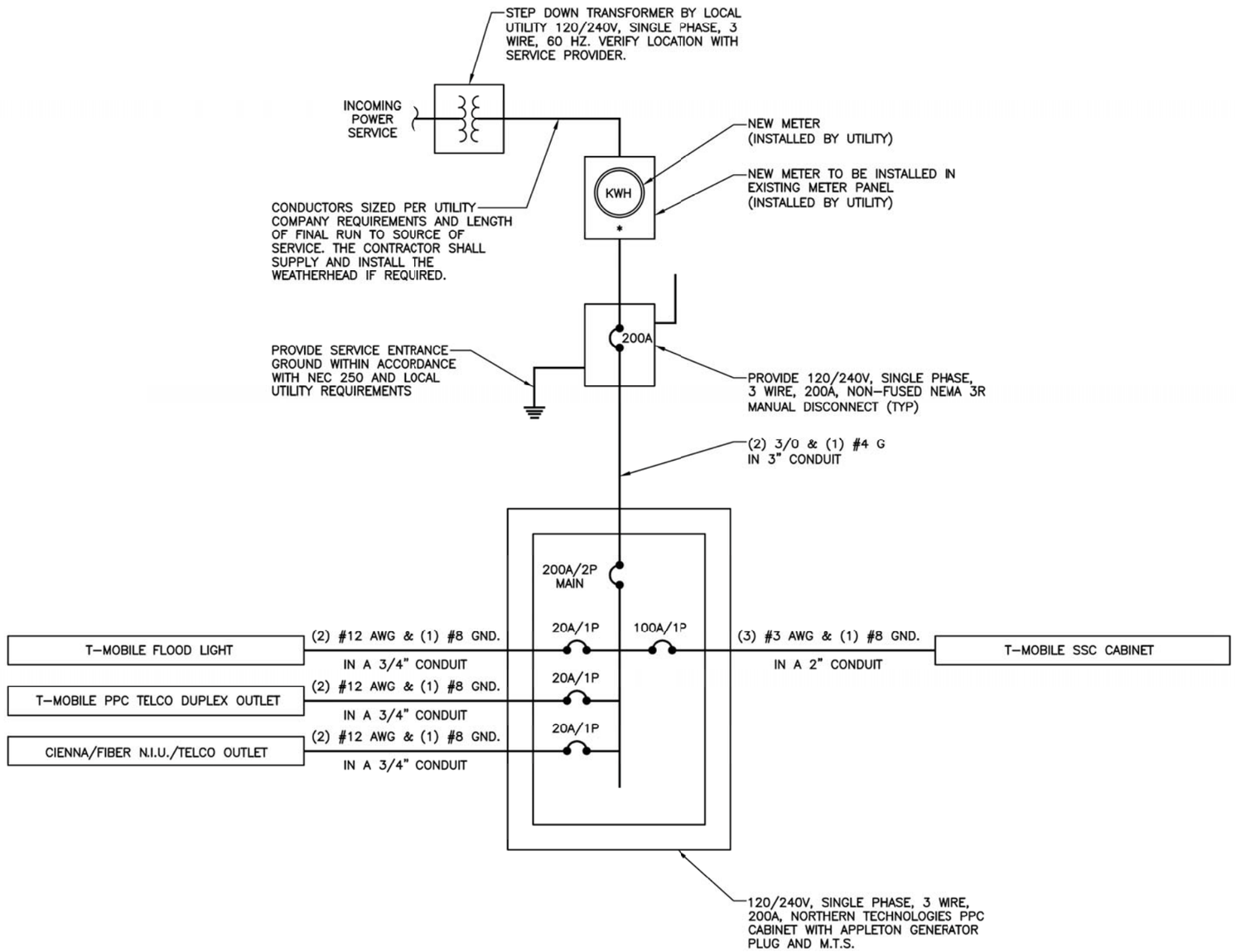
T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
FOUNDATION DETAILS & NOTES

SMW #: 16-2557

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: C-6



1/E-1 ONE-LINE DIAGRAM
NOT TO SCALE

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FAX: 860-692-7159

PLANS PREPARED BY:
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Turnkey Wireless Development
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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT · MICHAEL A. KRAFT · No. 20757 · LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

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T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
ONE-LINE DIAGRAM

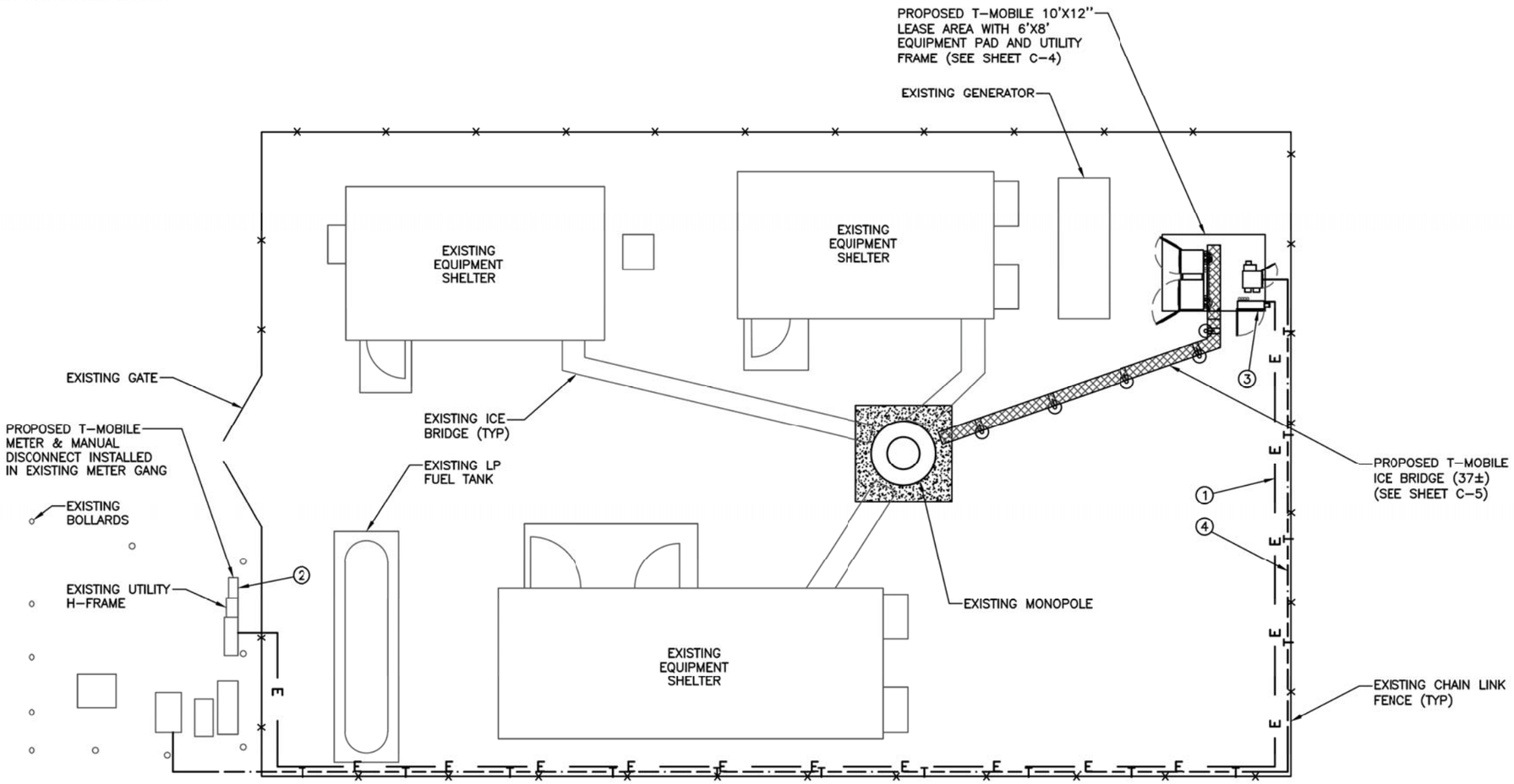
SMW #: 16-2557

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: E-1

ELECTRICAL KEY NOTES:

1. PROPOSED 2" PVC CONDUIT WITH (3) 3/0 + #4G FROM PROPOSED METER TO PPC CABINET. COORDINATE WITH THE LOCAL UTILITY COMPANY REGARDING FINAL SERVICE CONNECTION.
2. PROPOSED METER & 200A MANUAL DISCONNECT. COORDINATE WITH LOCAL UTILITY COMPANY REGARDING FINAL SERVICE CONNECTION.
3. PROPOSED 200A NORTHERN TECHNOLOGIES PPC CABINET WITH INTEGRATED 200A APPLETON GENERATOR BACKUP PLUG.
4. PROPOSED 2" PVC CONDUIT WITH PULLSTRING FOR TELCO FROM PROPOSED AAV CABINET TO EXISTING TELCO SERVICE. COORDINATE WITH THE LOCAL UTILITY COMPANY REGARDING FINAL SERVICE CONNECTION.



1 / E-2 ELECTRICAL UTILITY PLAN

0' 10' 20' 30'
1" = 10' (11"x17")

0' 5' 10' 15'
1" = 5' (24"x36")

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FAX: 860-692-7159

PLANS PREPARED BY:
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Turnkey Wireless Development
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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT — JOHN A. KNAPP — No. 20787 — LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

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T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
ELECTRICAL UTILITY PLAN

SMW #: 16-2557

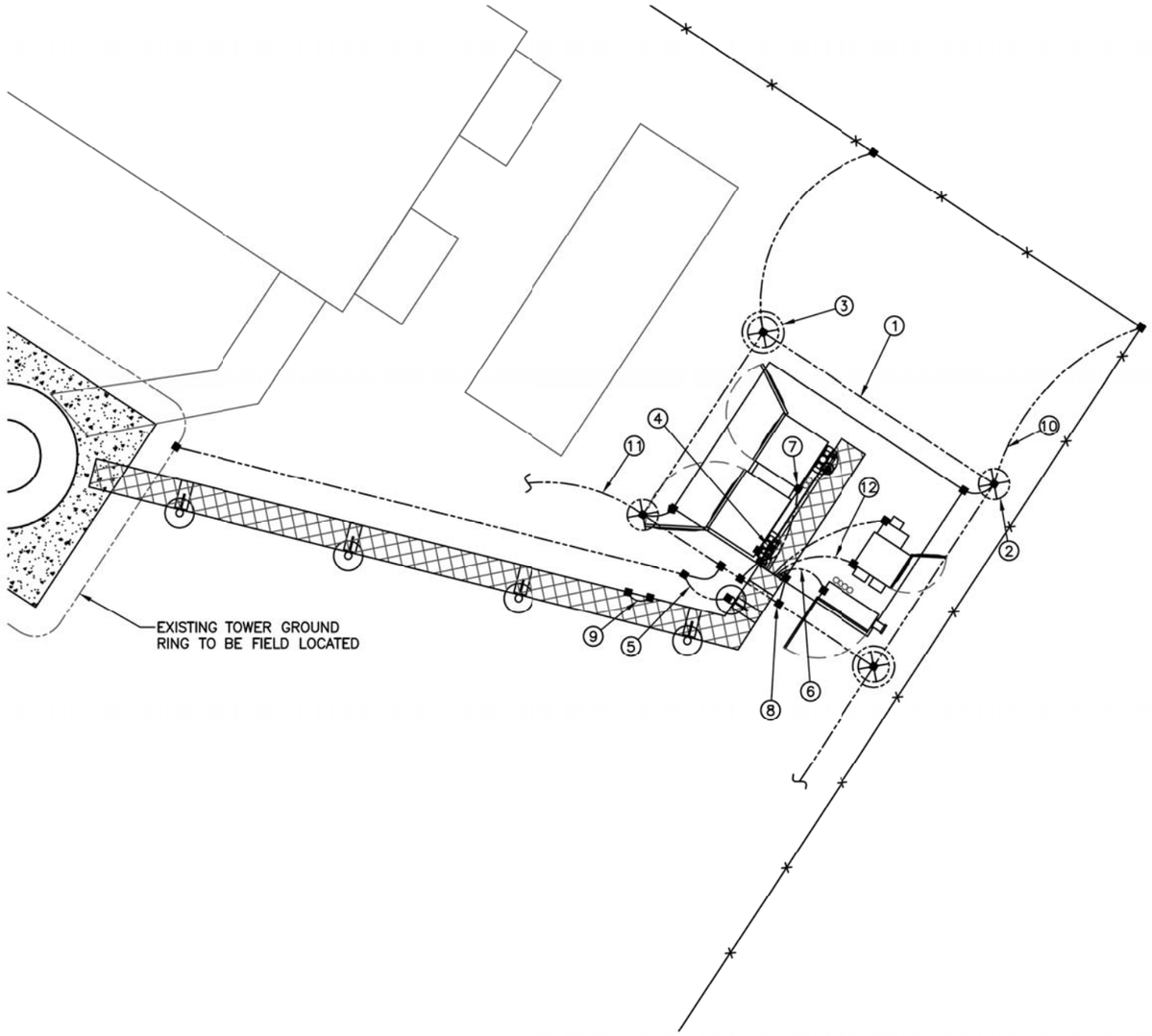
DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: E-2

GROUNDING KEY NOTES:

1. PROPOSED #2 BARE TINNED SOLID COPPER GROUND RING (TYP)
2. PROPOSED 5/8" DIA. X 8' LONG STEEL SHAFT COPPER CLAD GROUND ROD (TYP)
3. PROPOSED GROUND ROD WITH COVERED PVC TEST WELL (TYP)
4. GROUND PROPOSED UTILITY FRAME POST WITH CADWELD CONNECTION TO BASE PLATE (TYP)
5. GROUND PROPOSED ICE BRIDGE POST WITH CADWELD CONNECTION TO BASE (TYP)
6. GROUND PROPOSED PPC POWER PANEL PER NEC 250 AND LOCAL UTILITY REQUIREMENTS (TYP)
7. GROUND PROPOSED SSC CABINET MAIN GROUND BAR WITH 2-HOLE LUG CONNECTION (TYP)
8. PROVIDE 12 POSITION MAIN EQUIPMENT COLLECTOR GROUND BAR ATTACHED TO UNISTRUT FRAME WITH STANDOFF INSULATORS, GROUND WITH (2) CADWELDED CONNECTIONS, 1 PER SITE (TYP)
9. GROUND ICE BRIDGE CHANNEL SECTIONS WITH 2-HOLE LUG CONNECTION. BOND ADJOINING CHANNEL SECTIONS TOGETHER WITH 2-HOLE LUG JUMPERS (TYP)
10. GROUND TO ALL METALLIC OBJECTS WITHIN 6' OF THE PROPOSED EQUIPMENT AND BURIED GROUND RING (TYP)
11. GROUND PROPOSED T-MOBILE BURIED EQUIPMENT GROUND RING TO EXISTING SITE GROUND RING. CONDUCT GROUNDING SYSTEM TEST AND INCLUDE IN THE CLOSEOUT PACKAGE TO T-MOBILE. ADDITIONAL GROUNDING MAY BE REQUIRED PENDING THE RESULTS OF THE GROUNDING SYSTEM TEST (TYP x2)'
12. CADWELD CONNECTION (SEE SHEET E-6)

NOTE TO CONTRACTORS:
DIGGING AND/OR TRENCHING INSIDE COMPOUND, MUST BE DONE BY HAND.



N

1/E-3 GROUNDING PLAN
NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTION
JOHN A. VRANY
No. 20782
LICENSED PROFESSIONAL ENGINEER

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

#	DATE	DESCRIPTION:
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1	10/25/16	REISSUED FOR CLIENT REV.
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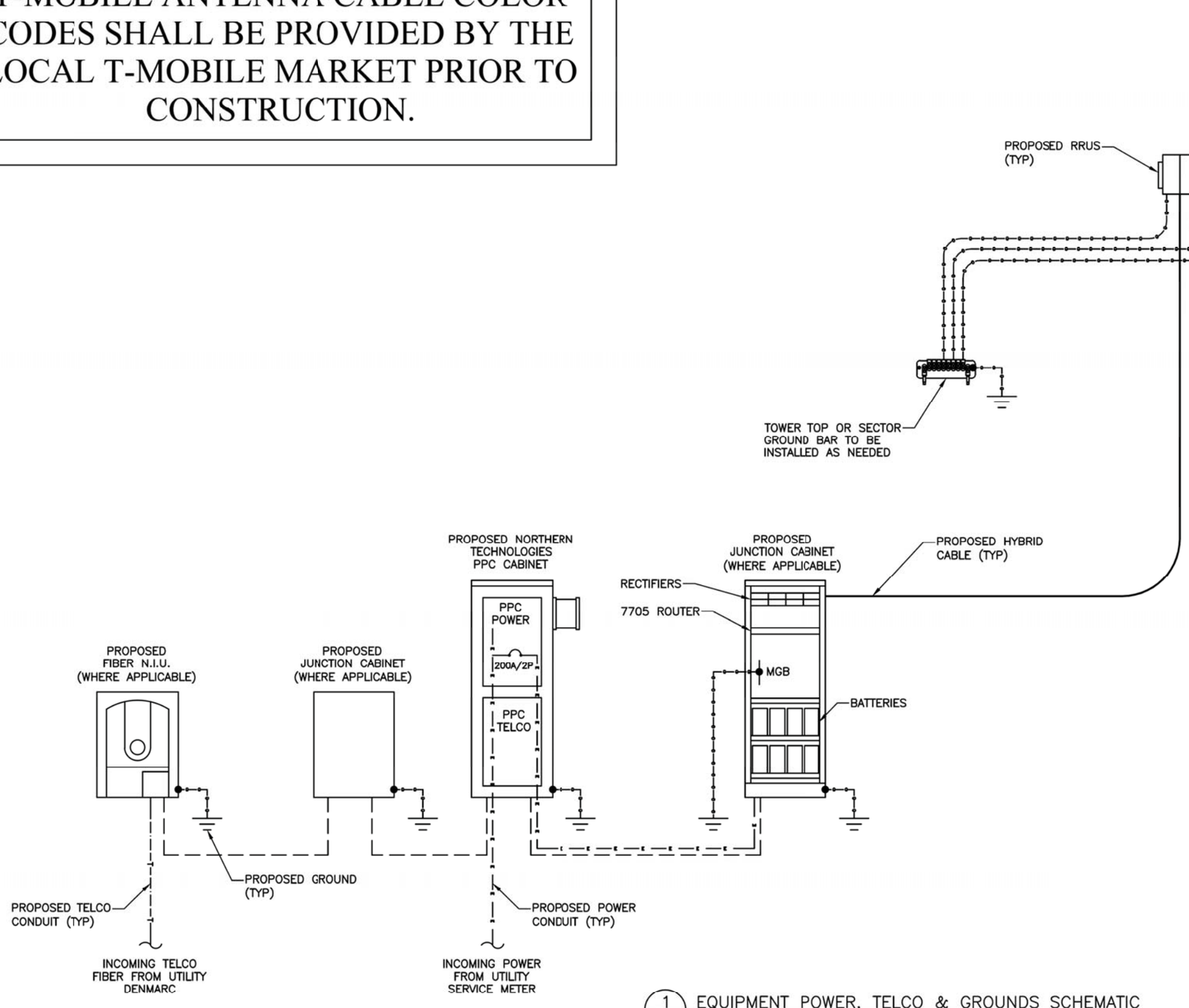
T-MOBILE SITE ID:	ATC SITE ID:
CTNH542A	413783

SHEET NAME:
GROUNDING PLAN

SMW #:	SHEET NUMBER:
16-2557	E-3
DESIGNER: BMD	
CHECKED BY: RTB	
ENGINEER: JDS	

T-MOBILE ANTENNA CABLE COLOR CODES SHALL BE PROVIDED BY THE LOCAL T-MOBILE MARKET PRIOR TO CONSTRUCTION.



1/E-4 EQUIPMENT POWER, TELCO & GROUNDS SCHEMATIC
NOT TO SCALE

T-Mobile
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OFFICE: 860-692-7100
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PLANS PREPARED BY:
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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT JOHN A. KNAPP No. 20797 LICENSED PROFESSIONAL ENGINEER

11/04/16

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T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
EQUIPMENT SCHEMATIC

SMW #: 16-2557
SHEET NUMBER: E-4

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

1. ALL WORK IS TO COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AND ANY LOCAL ORDINANCES, CODES, AND ALL OTHER ADMINISTRATIVE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL FURNISH AND PAY FOR ALL PERMITS AND RELATED FEES.

2. ALL EQUIPMENT AND MATERIAL FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE UNDERWRITERS LABORATORIES (U.L.) LISTED, NEW, FREE FROM DEFECTS, AND SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER OR HIS REPRESENTATIVE. SHOULD ANY TROUBLE DEVELOP DURING THIS PERIOD DUE TO FAULTY WORKMANSHIP, MATERIAL, OR EQUIPMENT, THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS AND LABOR TO CORRECT THE TROUBLE WITHOUT COST TO THE OWNER.

3. ALL WORK SHALL BE EXECUTED IN A WORKMAN LIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED. CONTRACTOR SHOULD AVOID DAMAGE TO EXISTING UTILITIES WHEREVER POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO ELECTRICAL WORK, AND SHALL RESTORE ALL EXISTING LANDSCAPING, SPRINKLER SYSTEMS, CONDUITS, WIRING, PIPING, ETC. DAMAGED BY THE ELECTRICAL WORK TO MATCH EXISTING CONDITIONS.

4. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEMS, TELEPHONE AND COMMUNICATION SYSTEMS, PANELBOARDS, CONDUIT, CONTROL WIRING, GROUNDING, ETC. AS INDICATED ON ELECTRICAL DRAWINGS AND/OR AS REQUIRED BY GOVERNING CODES.

5. PRIOR TO INSTALLING ANY ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY EXISTING SITE LOCATIONS AND CONDITIONS AND UTILITY SERVICE REQUIREMENTS OF THE JOB, AND BY REFERENCE TO ENGINEERING AND EQUIPMENT SUPPLIERS' DRAWINGS. SHOULD THERE BE ANY QUESTION OR PROBLEM CONCERNING THE NECESSARY PROVISIONS TO BE MADE. PROPER DIRECTIONS SHALL BE OBTAINED BEFORE PROCEEDING WITH ANY WORK.

6. PROVIDE POWER AND TELEPHONE TO SERVICE POINTS PER UTILITY COMPANY REQUIREMENTS. CONTRACTOR SHALL CONTACT UTILITY SERVICE PLANNERS AND OBTAIN ALL SERVICE REQUIREMENTS AND INCLUDE COSTS FOR SUCH IN THEIR BID.

7. SERVICE EQUIPMENT SHALL HAVE A SHORT CIRCUIT WITHSTAND RATING EXCEEDING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SUPPLY TERMINAL ON THE UTILITY TRANSFORMER SECONDARY, THE INSULATION SHALL BE FREE FROM ANY SHORT CIRCUITS AND GROUNDS. CONTRACTOR TO OBTAIN THE AVAILABLE SHORT CIRCUIT CURRENT FROM THE ELECTRICAL SERVICE PROVIDER.

8. ALL WIRES SHALL BE STRANDED COPPER WITH THHN/THWN AND 600 VOLTS INSULATION. ALL GROUND CONDUCTORS TO BE PROPERLY SIZED COPPER. (STRANDED OR SOLID)

9. IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY BETWEEN ITEMS SHOWN ON THE PLANS AND/OR SPECIFICATIONS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE HIGHEST STANDARD OF PERFORMANCE SHALL PREVAIL.

10. SERVICE CONDUITS SHALL HAVE NO MORE THAN (4) –50° BENDS IN ANY SINGLE RUN. THE CONTRACTOR SHALL PROVIDE PULL BOXES AS NEEDED WHERE CONDUIT REQUIREMENTS EXCEED THESE CONDITIONS. PULL WIRES AND CAPS SHALL BE PROVIDED AT ALL SPARE CONDUITS FOR FUTURE USE.

11. ALL ELECTRICAL EQUIPMENT SHALL BE ANCHORED TO WITHSTAND LOCAL WIND SPEED REQUIREMENTS AND DESIGNED FOR OUTDOOR EXPOSURE.

12. ALL COAX, POWER AND TELEPHONE SYSTEM CONDUITS SHALL HAVE A MINIMUM 24" SCH. 80 PVC RADIUS SWEEPS TO EQUIPMENT, PULLBOXES, GUY, ETC., UNLESS OTHERWISE NOTED, OR AS REQUIRED BY UTILITY COMPANIES.

13. FUSE TYPE SHALL BE BUSSMAN RKI LOW PEAK FUSE (LPN–RK–140).

14. UPON COMPLETION OF THE JOB, THE CONTRACTOR SHALL FURNISH AS–BUILT DRAWINGS TO THE OWNER.

15. GENERAL GROUNDING CRITERIA
    1ST STEP: GROUND TO EXISTING BUILDING STRUCTURAL STEEL AND TO THE EXISTING COLD WATER METAL PIPE LINE. (WHERE APPLICABLE) THEN TEST GROUNDING RESISTANCE FOR 5 OHMS OR LESS OVERALL GROUND RESISTANCE. WHERE THE EFFECTIVE RESISTANCE DOES NOT MEET THIS CRITERIA, PROVIDE SUPPLEMENTAL GROUNDING AND RE–TEST UNTIL GROUND RESISTANCE FALLS BELOW THIS LEVEL.

16. SUPPLEMENTAL GROUND MAY CONSIST OF ONE OR MORE OF THE FOLLOWING:
    COUNTERPOISE, USER GROUND, GROUND ROD AND/OR GROUND WELL IN EXTREMELY ADVERSE SOIL CONDITIONS. WHERE THE EXISTING BUILDING STEEL DOES NOT PROVIDE AN EFFECTIVE GROUND RESISTANCE, THEN THE CONTRACTOR SHALL PROVIDE A SEPARATE GROUND CONDUCTOR FROM ROOF MOUNTED BTS EQUIPMENT LOCATIONS EITHER DOWN THROUGH THE INSIDE OF THE BUILDING OR DOWN THE OUTSIDE OF THE BUILDING, DEPENDING UPON OWNER PREFERENCE. WHERE THE GROUND CONDUCTOR FROM THE ROOF MOUNTED EQUIPMENT IS ROUTED IN CONDUIT, THE CONDUIT SHALL BE EFFECTIVELY GROUNDED TO THE GROUND CONDUCTOR AT BOTH ENDS OF THE CONDUIT. (GUY INSTALLATIONS):

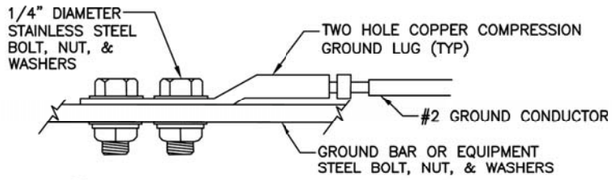
    FOR INSTALLATIONS WHERE WOODEN STRUCTURES, TOWERS, CONCRETE SILOS ETC. ARE ENCOUNTERED A PARATE DOWNLEAD SHALL BE PROVIDED FROM THE 3 ANTENNAS SEPARATED BY A MINIMUM OF 12 INCHES FROM THE COAXIAL CABLES. THE GROUND CONDUCTOR SHALL BE SECURELY FASTENED TO THE EXTERIOR OF OUTSIDE STRUCTURES WITH NONMETALLIC GROUND STRAPS EVERY 10 FEET. AGAIN, AS FOR TENANT IMPROVEMENT PROJECTS, TEST THE GROUND RESISTANCE FOR GUY INSTALLATIONS AND PROCEED PER THE ABOVE STEPS.

17. CONTRACTOR TO COLOR PHASE CONDUCTORS BLACK (B PHASE), RED (A PHASE), WHITE (NEUTRAL), AND GREEN (GROUND).

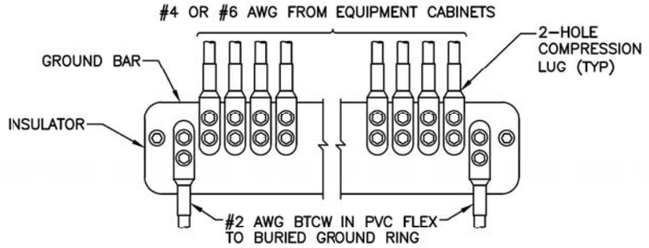
18. CONTRACTOR TO PROVIDE GUTTER TAP.

19. THERE SHALL BE A MINIMUM CLEARANCE OF 48" BETWEEN FRONT OF ELECTRICAL EQUIPMENT AND ANY WALL OR OBSTRUCTION.

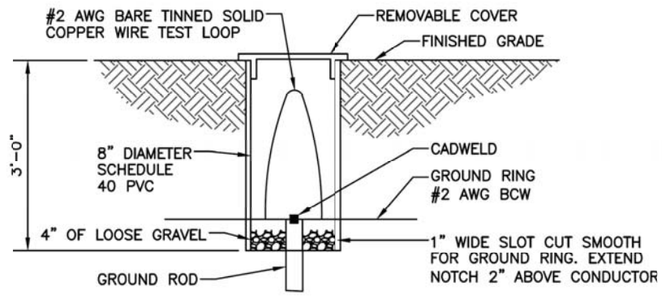
CADWELD CONNECTIONS OR APPROVED EQUAL			BURNDY CONNECTIONS OR APPROVED EQUAL
 PARALLEL HORIZONTAL CONDUCTORS PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES TYPE PT	 HORIZONTAL STEEL SURFACE TO FLAT STEEL SURFACE OR HORIZONTAL PIPE TYPE HS	 VERTICAL PIPE CABLE DOWN AT 45° TO RANGE OF VERTICAL PIPES TYPE VS	 BOND JUMPER FIELD FABRICATED GREEN STRANDED INSULATED TYPE 2–YA–2
 THROUGH CABLE TO GROUND ROD THROUGH CABLE TO TOP OF GROUND ROD TYPE GT	 VERTICAL STEEL SURFACE CABLE DOWN AT 45° TO VERTICAL STEEL SURFACE INCLUDING PIPE TYPE VS		 COPPER LUGS TWO HOLE – LONG BARREL LENGTH TYPE YA–2



1/E-5 TWO HOLE LUG CONNECTION DETAIL
NOT TO SCALE



2/E-5 GROUND BAR DETAIL
NOT TO SCALE



3/E-5 TEST WELL DETAIL
NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860–692–7100
FAX: 860–692–7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
NORTHEAST SITE SOLUTIONS, LLC
199 BRICKYARD ROAD
FARMINGTON CT 06032
(860) 677–1999

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

11/04/16

SITE INFORMATION:
CTNH542A
38 MAPLE STREET
KENT, CT 06757

#	DATE	DESCRIPTION:
0	10/07/16	ISSUED FOR CLIENT REV.
1	10/25/16	REISSUED FOR CLIENT REV.
2	11/04/16	ISSUED FOR CONSTRUCTION

T-MOBILE SITE ID: CTNH542A
ATC SITE ID: 413783

SHEET NAME:
ELECTRICAL & GROUNDING DETAILS

SMW #: 16–2557

DESIGNER:	BMD
CHECKED BY:	RTB
ENGINEER:	JDS

SHEET NUMBER: E-5

Exhibit D

AMERICAN TOWER®
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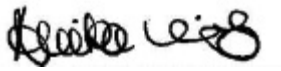
Structural Analysis Report

Structure	:	**149 ft Monopole**
ATC Site Name	:	**Kent Pcs CT, CT**
ATC Site Number	:	**413783**
Engineering Number	:	**OAA686761_C3_01**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**ROB2**
Carrier Site Number	:	**CTNH542A**
Site Location	:	**S Kent Rd** **Kent, CT 06757-1709** **41.721903,-73.474964**
County	:	**Litchfield**
Date	:	**October 21, 2016**
Max Usage	:	**70%**
Result	:	**Pass**

Prepared By:
Annika A. Venning, E.I.
Structural Engineer I



Reviewed By:

COA: PEC.0001553

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CORPORATION

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Calculations ..... Attached

Introduction

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

Supporting Documents

Tower Drawings	EEI Project #15320, dated March 18, 2008
Foundation Drawing	EEI Project #15320, dated March 14, 2008
Geotechnical Report	Dr. Clarence Welti Report #15320, dated Janury 22, 2007

Analysis

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

Basic Wind Speed:	90 mph (3-Second Gust, Vasd) / 115 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
149.0	159.0	2	RFS Celwave PD220	Low Profile Platform	(3) 7/8" Coax	Other
	152.0	1	3' Yagi			
		3	Antel LPA-185080/12CF		(18) 1 5/8" Coax	Verizon
		3	Antel BXA-70063/6CF_			
		6	Antel LPA-80080/6CF ___			
		1	VZW Unused Reserve: 20,741 sq in			
140.0	141.0	6	Ericsson RRUS-11	Low Profile Platform	(18) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk	AT&T Mobility
		2	KMW AM-X-CD-14-65-00T-RET			
		6	Powerwave 7770.00			
		2	Kathrein 800 10764 K			
		2	KMW AM-X-CD-16-65-00T-RET			
	140.0	9	Powerwave TT08-19DB111-001			
	139.0	1	Andrew ABT-DFDM-ADB			
		1	Raycap DC6-48-60-18			
122.0	124.0	2	Decibel DB222	Stand Offs	(3) 7/8" Coax	Other
	123.0	1	3' Yagi			

Equipment to be Removed

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

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
110.0	110.0	1	Symmetricom 58532A	T-Arms	(2) 1 5/8" Fiber (1) 1/2" Coax	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson RRUS 11 B2			
		3	Ericsson RRUS 11 B4			
		3	RFS APX16DWV-16DWVS-E-A20			
		3	Commscope LNX-6515DS-A1M (50.3 lb)			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	45%	Pass
Shaft	70%	Pass
Base Plate	51%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,897.9	3,801.9	78%
Shear (Kips)	39.5	32.6	83%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
110.0	Symmetricom 58532A	T-Mobile	1.022	1.078
	Ericsson RRUS 11 B12			
	Ericsson RRUS 11 B4			
	Ericsson RRUS 11 B2			
	RFS APX16DWV-16DWVS-E-A20			
	Commscope LNX-6515DS-A1M (50.3 lb)			

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

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Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

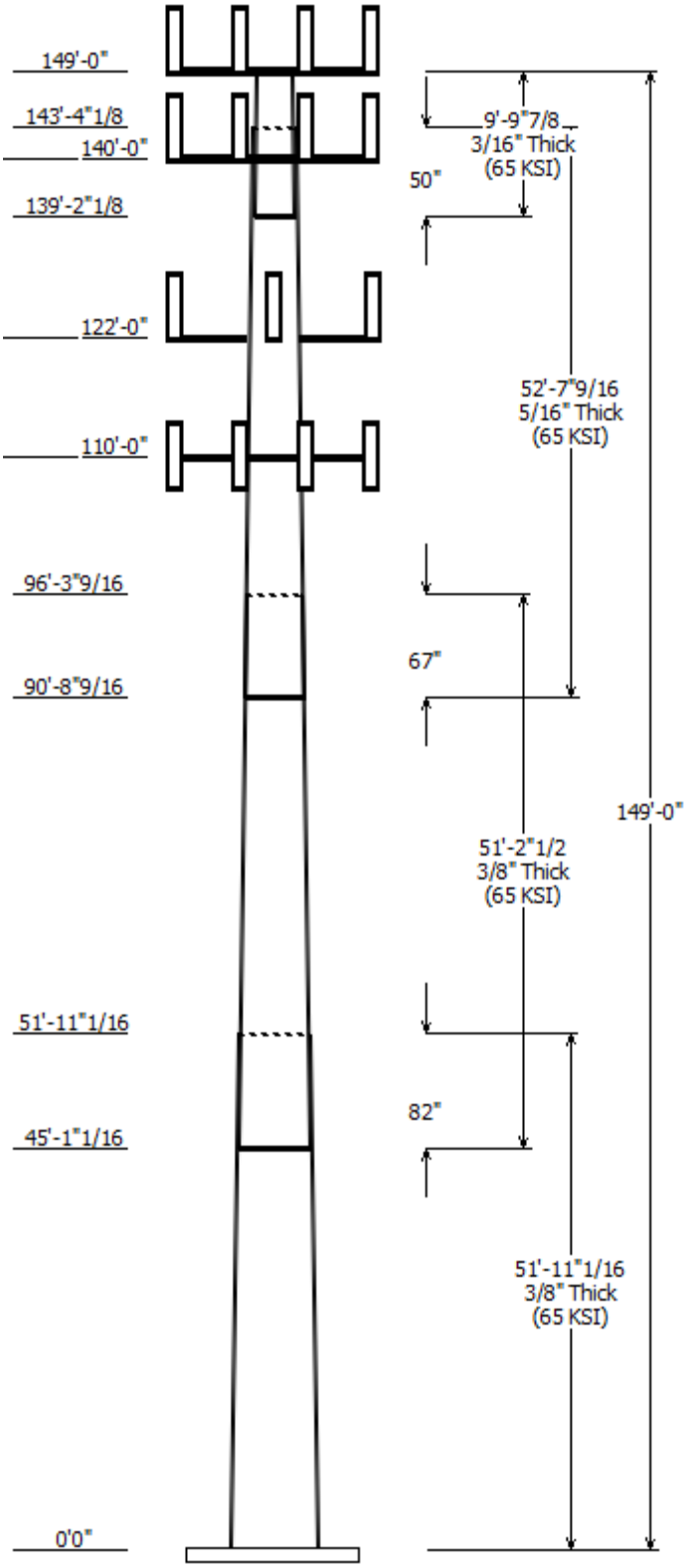
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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



Job Information

Pole :	413783	Code:	ANSI/TIA-222-G
Description :	ATC413783		
Client :	T- Mobile	Struct Class :	II
Location :	Kent Pcs CT, CT		
Shape :	18 Sides	Exposure :	C
Height :	149.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.241124 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	51.920	47.98	60.50	0.375		0.000	0.241100	65
2	51.210	38.03	50.37	0.375	Slip Joint	82.000	0.241100	65
3	52.630	27.31	40.00	0.313	Slip Joint	67.000	0.241100	65
4	9.823	26.32	28.69	0.188	Slip Joint	50.000	0.241100	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	152.000	1	VZW Unused Reserve: 20,741
149.000	159.000	2	RFS Celwave PD220
149.000	152.000	3	Amphenol Antel LPA-
149.000	152.000	1	3' Yagi
149.000	152.000	6	Antel LPA-80080/6CF ___
149.000	152.000	3	Antel BXA-70063/6CF_
149.000	149.000	1	Flat Low Profile Platform
140.000	140.000	1	Round Low Profile Platform
140.000	141.000	2	Kathrein Scala 800 10764 K
140.000	141.000	2	KMW AM-X-CD-16-65-00T-RET
140.000	141.000	6	Powerwave Allgon 7770.00
140.000	141.000	2	KMW AM-X-CD-14-65-00T-RET
140.000	141.000	6	Ericsson RRUS-11
140.000	140.000	9	Powerwave Allgon TT08-
140.000	139.000	1	Andrew ABT-DFDM-ADB
140.000	139.000	1	Raycap DC6-48-60-18
122.000	122.000	2	Stand Off
122.000	123.000	1	3' Yagi
122.000	124.000	2	Decibel DB222
110.000	110.000	3	Flat T-Arm
110.000	110.000	3	Commscope LNX-6515DS-A1M
110.000	110.000	3	RFS APX16DWV-16DWVS-E-A20
110.000	110.000	3	Ericsson RRUS 11 B2
110.000	110.000	3	Ericsson RRUS 11 B4
110.000	110.000	3	Ericsson RRUS 11 B12
110.000	110.000	1	Symmetricom 58532A

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	110.0	1 5/8" Fiber	No
0.000	110.0	1/2" Coax	No
0.000	122.0	7/8" Coax	No
0.000	140.0	0.39" Fiber Trunk	No
0.000	140.0	0.78" 8 AWG 6	No
0.000	140.0	1 5/8" Coax	No
0.000	149.0	1 5/8" Coax	No
0.000	149.0	7/8" Coax	No

Load Cases

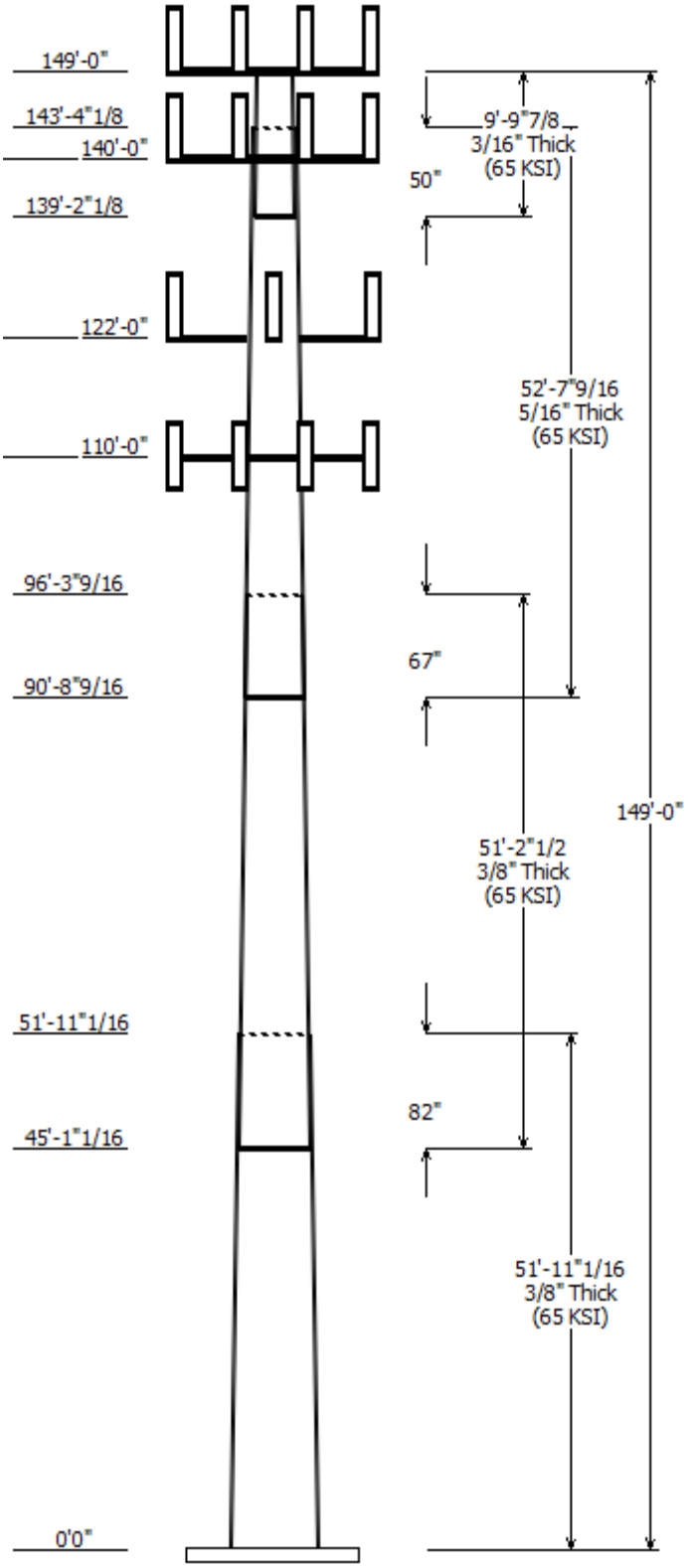
1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL)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

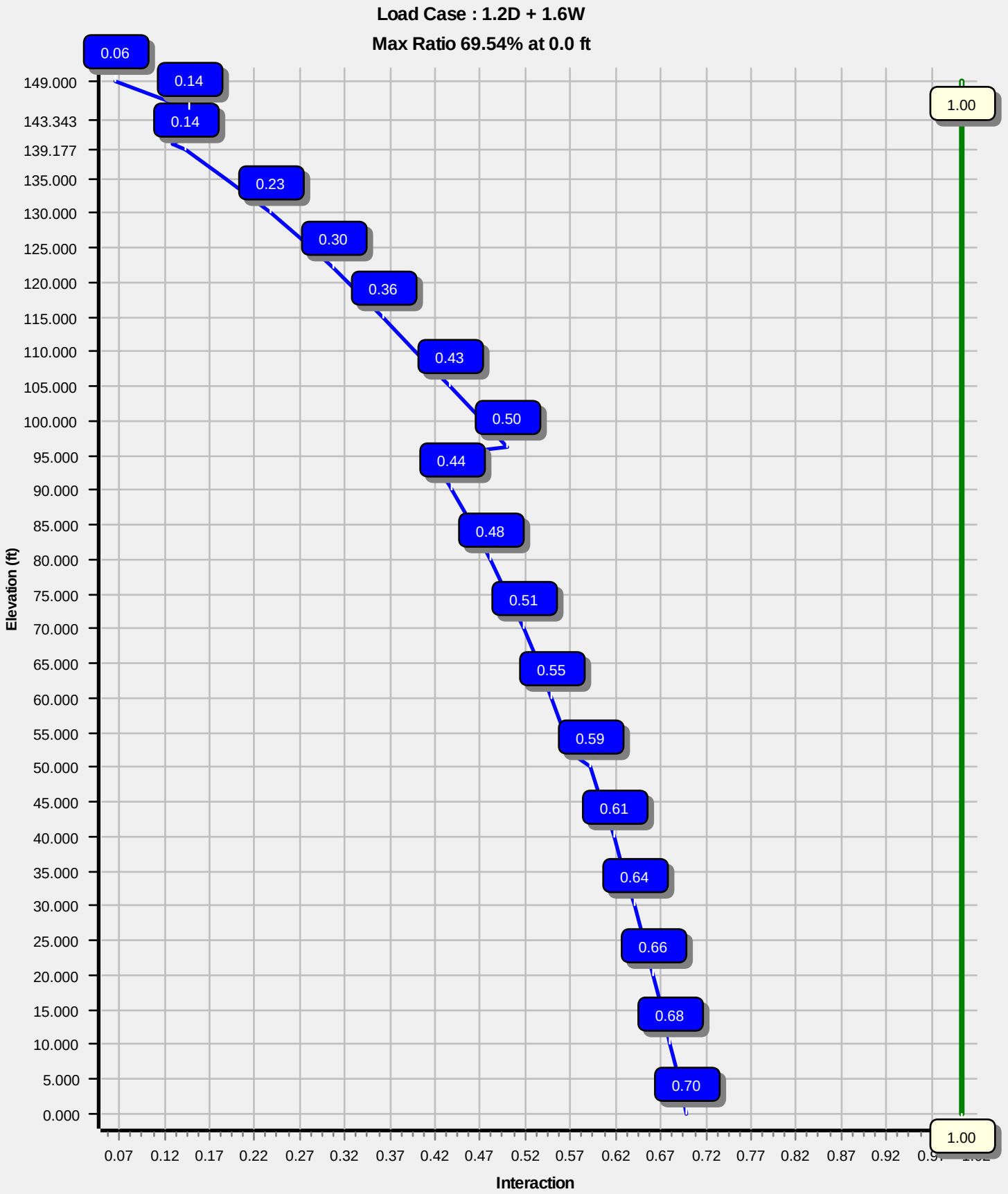
Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3801.88	32.61	48.21
0.9D + 1.6W	3769.03	32.59	36.15
1.2D + 1.0Di + 1.0Wi	889.22	7.46	81.44
(1.2 + 0.2Sds) * DL + E ELFM	201.52	1.67	48.16
(1.2 + 0.2Sds) * DL + E EMAM	373.94	2.99	48.16
(0.9 - 0.2Sds) * DL + E ELFM	199.47	1.67	33.38
(0.9 - 0.2Sds) * DL + E EMAM	369.85	2.99	33.38
1.0D + 1.0W	1050.95	9.05	40.21

Dish Deflections

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




Load Case : 1.2D + 1.6W
Max Ratio 69.54% at 0.0 ft
0.06
0.14
0.14
0.23
0.30
0.36
0.43
0.50
0.44
0.48
0.51
0.55
0.59
0.61
0.64
0.66
0.68
0.70
1.00
1.00
149.000
143.343
139.177
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.07
0.12
0.17
0.22
0.27
0.32
0.37
0.42
0.47
0.52
0.57
0.62
0.67
0.72
0.77
0.82
0.87
0.92
Interaction

Site Number:	413783	Code: ANSI/TIA-222-G	
Site Name:	Kent Pcs CT, CT	Engineering Number:OAA686761_C3_01	10/21/2016 5:36:40 PM
Customer:	T- Mobile		

Analysis Parameters

Location:	LITCHFIELD County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	149
Shape:	18 Sides	Base Diameter (in):	60.50
Pole Type:	Taper	Top Diameter (in):	26.32
Pole Manfacturer:		Taper (in/ft) :	0.241

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	90 mph
Exposure Category:	C	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.01				
T_L (sec):	6	p:	1.3	C_s:	0.032
S_s:	0.189	S_1:	0.060	C_s Max:	0.032
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.202	S_{d1}:	0.096		

Load Cases

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

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:40 PM

Customer: T- Mobile

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	51.920	0.3750	65		0.00	11,327	60.50	0.00	71.56	32684.4	27.04	161.33	47.98	51.92	56.66	16223.9	21.15	127.95	0.241124
2-18	51.210	0.3750	65	Slip	82.00	9,090	50.37	45.09	59.51	18800.8	22.28	134.34	38.03	96.30	44.82	8029.0	16.47	101.41	0.241124
3-18	52.630	0.3125	65	Slip	67.00	5,923	40.00	90.71	39.37	7834.6	21.16	128.01	27.31	143.34	26.78	2466.2	14.00	87.40	0.241124
4-18	9.823	0.1875	65	Slip	50.00	543	28.69	139.18	16.96	1741.2	25.57	153.02	26.32	149.00	15.55	1342.2	23.34	140.39	0.241124
				Shaft Weight		26,883													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
149.00	3' Yagi	1	10.00	2.980	1.00	293.26	12.530	1.00	0.000	3.000
149.00	Amphenol Antel LPA-	3	10.50	4.570	0.89	133.52	7.660	0.89	0.000	3.000
149.00	Antel BXA-70063/6CF_	3	17.00	7.570	0.75	205.56	11.248	0.75	0.000	3.000
149.00	Antel LPA-80080/6CF___	6	21.00	8.630	0.75	297.37	5.949	0.75	0.000	3.000
149.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,363.88	51.557	1.00	0.000	0.000
149.00	RFS Celwave PD220	2	25.00	5.500	1.00	395.97	18.573	1.00	0.000	10.000
149.00	VZW Unused Reserve:	1	2291.50	144.15	1.00	4,420.08	278.051	1.00	0.000	3.000
140.00	Andrew ABT-DFDM-ADB	1	1.10	0.050	0.50	4.05	0.305	0.50	0.000	-1.000
140.00	Ericsson RRUS-11	6	55.00	3.790	0.67	174.09	5.492	0.67	0.000	1.000
140.00	Kathrein Scala 800 10764 K	2	40.80	5.870	0.79	209.60	8.702	0.79	0.000	1.000
140.00	KMW AM-X-CD-14-65-00T-	2	36.40	4.990	0.78	184.04	7.466	0.78	0.000	1.000
140.00	KMW AM-X-CD-16-65-00T-	2	48.50	8.020	0.79	263.32	11.718	0.79	0.000	1.000
140.00	Powerwave Allgon 7770.00	6	35.00	5.510	0.77	227.33	6.940	0.77	0.000	1.000
140.00	Powerwave Allgon TT08-	9	22.00	0.920	0.50	57.23	1.899	0.50	0.000	0.000
140.00	Raycap DC6-48-60-18	1	30.00	3.810	0.67	142.42	5.546	0.67	0.000	-1.000
140.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,359.42	47.167	1.00	0.000	0.000
122.00	3' Yagi	1	10.00	2.980	1.00	19.11	5.695	1.00	0.000	1.000
122.00	Decibel DB222	2	16.00	2.250	1.00	30.58	4.300	1.00	0.000	2.000
122.00	Stand Off	2	75.00	2.500	0.90	143.32	4.778	0.90	0.000	0.000
110.00	Commscope LNX-6515DS-	3	50.30	11.450	0.84	408.42	13.601	0.84	0.000	0.000
110.00	Ericsson RRUS 11 B12	3	50.70	2.790	0.67	169.80	3.689	0.67	0.000	0.000
110.00	Ericsson RRUS 11 B2	3	50.70	2.790	0.67	169.80	3.689	0.67	0.000	0.000
110.00	Ericsson RRUS 11 B4	3	50.70	2.790	0.67	169.80	3.689	0.67	0.000	0.000
110.00	Flat T-Arm	3	250.00	12.900	0.67	520.09	23.468	0.67	0.000	0.000
110.00	RFS APX16DWV-16DWVS-E-	3	40.70	6.590	0.66	230.94	8.062	0.66	0.000	0.000
110.00	Symmetricom 58532A	1	0.40	0.220	0.50	20.41	0.500	0.50	0.000	0.000
	Totals	71	8252.20			22,807.87			Number of Loadings :	26

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	149.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	149.00	3	7/8" Coax	1.09	0.33	N	0.00	N	Other
0.00	140.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	140.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	140.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	122.00	3	7/8" Coax	1.09	0.33	N	0.00	N	Other
0.00	110.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	T-Mobile
0.00	110.00	1	1/2" Coax	0.63	0.15	N	0.00	N	T-Mobile

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	60.500	71.561	32,684.4	27.04	161.33	69.6	1064.	0.0	0.0
5.00		0.3750	59.294	70.126	30,757.4	26.47	158.12	70.3	1021.	0.0	1,205.3
10.00		0.3750	58.089	68.691	28,907.7	25.90	154.90	70.9	980.2	0.0	1,180.9
15.00		0.3750	56.883	67.256	27,133.7	25.34	151.69	71.6	939.5	0.0	1,156.5
20.00		0.3750	55.678	65.821	25,433.7	24.77	148.47	72.3	899.7	0.0	1,132.1
25.00		0.3750	54.472	64.387	23,806.3	24.20	145.26	72.9	860.8	0.0	1,107.7
30.00		0.3750	53.266	62.952	22,249.9	23.64	142.04	73.6	822.7	0.0	1,083.3
35.00		0.3750	52.061	61.517	20,762.8	23.07	138.83	74.3	785.5	0.0	1,058.8
40.00		0.3750	50.855	60.082	19,343.5	22.50	135.61	74.9	749.2	0.0	1,034.4
45.00		0.3750	49.649	58.647	17,990.4	21.93	132.40	75.6	713.7	0.0	1,010.0
45.09	Bot - Section 2	0.3750	49.629	58.622	17,967.5	21.92	132.34	75.6	713.1	0.0	17.3
50.00		0.3750	48.444	57.212	16,701.9	21.37	129.18	76.3	679.1	0.0	1,951.5
51.92	Top - Section 1	0.3750	48.731	57.553	17,002.9	21.50	129.95	76.1	687.2	0.0	749.8
55.00		0.3750	47.988	56.670	16,231.4	21.15	127.97	76.5	666.2	0.0	598.6
60.00		0.3750	46.783	55.235	15,029.4	20.59	124.75	77.2	632.8	0.0	952.0
65.00		0.3750	45.577	53.800	13,888.2	20.02	121.54	77.9	600.2	0.0	927.5
70.00		0.3750	44.371	52.365	12,806.3	19.45	118.32	78.5	568.5	0.0	903.1
75.00		0.3750	43.166	50.930	11,782.1	18.89	115.11	79.2	537.6	0.0	878.7
80.00		0.3750	41.960	49.495	10,814.0	18.32	111.89	79.9	507.6	0.0	854.3
85.00		0.3750	40.754	48.060	9,900.5	17.75	108.68	80.5	478.5	0.0	829.9
90.00		0.3750	39.549	46.625	9,039.9	17.19	105.46	81.2	450.2	0.0	805.5
90.71	Bot - Section 3	0.3750	39.377	46.420	8,921.3	17.10	105.00	81.3	446.2	0.0	112.9
95.00		0.3750	38.343	45.190	8,230.7	16.62	102.25	81.9	422.8	0.0	1,234.9
96.30	Top - Section 2	0.3125	38.656	38.030	7,064.1	20.40	123.70	77.4	359.9	0.0	367.1
100.0		0.3125	37.763	37.144	6,581.9	19.90	120.84	78.0	343.3	0.0	473.7
105.0		0.3125	36.557	35.949	5,966.5	19.22	116.98	78.8	321.5	0.0	621.8
110.0		0.3125	35.351	34.753	5,390.7	18.54	113.12	79.6	300.3	0.0	601.5
115.0		0.3125	34.146	33.557	4,853.2	17.86	109.27	80.4	279.9	0.0	581.1
120.0		0.3125	32.940	32.361	4,352.6	17.18	105.41	81.2	260.3	0.0	560.8
122.0		0.3125	32.458	31.883	4,162.4	16.90	103.87	81.5	252.6	0.0	218.6
125.0		0.3125	31.734	31.166	3,887.7	16.50	101.55	82.0	241.3	0.0	321.8
130.0		0.3125	30.529	29.970	3,457.2	15.82	97.69	82.6	223.0	0.0	520.1
135.0		0.3125	29.323	28.774	3,059.6	15.13	93.83	82.6	205.5	0.0	499.7
139.1	Bot - Section 4	0.3125	28.316	27.775	2,751.9	14.57	90.61	82.6	191.4	0.0	401.8
140.0		0.3125	28.118	27.578	2,693.8	14.45	89.98	82.6	188.7	0.0	124.9
143.3	Top - Section 3	0.1875	27.686	16.365	1,563.5	24.63	147.66	72.4	111.2	0.0	498.1
145.0		0.1875	27.287	16.127	1,496.3	24.25	145.53	72.9	108.0	0.0	91.6
149.0		0.1875	26.322	15.553	1,342.2	23.34	140.39	73.9	100.4	0.0	215.6
											26,883.2

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:40 PM

Customer: T- Mobile

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

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		242.7	0.0					0.0	0.0	242.7	0.0	0.0	0.0
5.00		480.6	1,446.4					0.0	216.7	480.6	1,663.1	0.0	0.0
10.00		470.8	1,417.1					0.0	216.7	470.8	1,633.8	0.0	0.0
15.00		468.2	1,387.8					0.0	216.7	468.2	1,604.5	0.0	0.0
20.00		478.0	1,358.5					0.0	216.7	478.0	1,575.2	0.0	0.0
25.00		490.4	1,329.2					0.0	216.7	490.4	1,545.9	0.0	0.0
30.00		498.5	1,299.9					0.0	216.7	498.5	1,516.6	0.0	0.0
35.00		503.4	1,270.6					0.0	216.7	503.4	1,487.3	0.0	0.0
40.00		505.8	1,241.3					0.0	216.7	505.8	1,458.0	0.0	0.0
45.00		257.6	1,212.0					0.0	216.7	257.6	1,428.7	0.0	0.0
45.09	Bot - Section 2	256.8	20.7					0.0	3.8	256.8	24.5	0.0	0.0
50.00		350.9	2,341.9					0.0	212.9	350.9	2,554.8	0.0	0.0
51.92	Top - Section 1	256.0	899.8					0.0	83.2	256.0	983.0	0.0	0.0
55.00		412.0	718.3					0.0	133.5	412.0	851.7	0.0	0.0
60.00		506.9	1,142.4					0.0	216.7	506.9	1,359.0	0.0	0.0
65.00		502.2	1,113.1					0.0	216.7	502.2	1,329.7	0.0	0.0
70.00		496.6	1,083.8					0.0	216.7	496.6	1,300.4	0.0	0.0
75.00		490.2	1,054.5					0.0	216.7	490.2	1,271.1	0.0	0.0
80.00		483.0	1,025.2					0.0	216.7	483.0	1,241.8	0.0	0.0
85.00		475.2	995.9					0.0	216.7	475.2	1,212.5	0.0	0.0
90.00		268.8	966.6					0.0	216.7	268.8	1,183.2	0.0	0.0
90.71	Bot - Section 3	234.3	135.5					0.0	30.9	234.3	166.4	0.0	0.0
95.00		261.3	1,481.8					0.0	185.8	261.3	1,667.6	0.0	0.0
96.30	Top - Section 2	230.2	440.5					0.0	56.2	230.2	496.6	0.0	0.0
100.00		395.5	568.4					0.0	160.5	395.5	728.9	0.0	0.0
105.00		445.6	746.2					0.0	216.7	445.6	962.8	0.0	0.0
110.00	Appertunance(s)	435.2	721.7	3,129.5	0.0	0.0	1,775.6	0.0	216.7	3,564.7	2,714.0	0.0	0.0
115.00		424.3	697.3					0.0	196.4	424.3	893.8	0.0	0.0
120.00		291.5	672.9					0.0	196.4	291.5	869.4	0.0	0.0
122.00	Appertunance(s)	203.6	262.3	549.1	0.0	549.8	230.4	0.0	78.6	752.7	571.3	0.0	0.0
125.00		319.2	386.2					0.0	114.3	319.2	500.5	0.0	0.0
130.00		389.3	624.1					0.0	190.5	389.3	814.6	0.0	0.0
135.00		346.8	599.7					0.0	190.5	346.8	790.2	0.0	0.0
139.18	Bot - Section 4	185.7	482.2					0.0	159.1	185.7	641.3	0.0	0.0
140.00	Appertunance(s)	152.4	149.9	3,932.6	0.0	2,560.6	3,024.6	0.0	31.4	4,085.0	3,205.8	0.0	0.0
143.34	Top - Section 3	181.3	597.7					0.0	63.2	181.3	660.9	0.0	0.0
145.00		199.7	109.9					0.0	31.3	199.7	141.2	0.0	0.0
149.00	Appertunance(s)	140.3	258.7	11,438.4	0.0	34,303.7	4,872.0	0.0	75.6	11,578.7	5,206.3	0.0	0.0
								Totals:		32,780.3	48,256.3	0.00	0.00

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:42 PM

Customer: T- Mobile

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

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-48.21	-32.61	0.00	-3,801.88	0.00	3,801.88	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.695
5.00	-46.45	-32.26	0.00	-3,638.85	0.00	3,638.85	4,434.84	2,217.42	10,752.7	5,384.36	0.09	-0.16	0.687
10.00	-44.73	-31.91	0.00	-3,477.57	0.00	3,477.57	4,385.31	2,192.65	10,413.7	5,214.59	0.35	-0.33	0.677
15.00	-43.04	-31.56	0.00	-3,318.03	0.00	3,318.03	4,334.06	2,167.03	10,075.6	5,045.30	0.78	-0.49	0.668
20.00	-41.37	-31.19	0.00	-3,160.26	0.00	3,160.26	4,281.09	2,140.54	9,738.73	4,876.60	1.39	-0.66	0.658
25.00	-39.74	-30.80	0.00	-3,004.34	0.00	3,004.34	4,226.40	2,113.20	9,403.31	4,708.64	2.17	-0.84	0.648
30.00	-38.14	-30.39	0.00	-2,850.37	0.00	2,850.37	4,169.98	2,084.99	9,069.60	4,541.54	3.14	-1.01	0.637
35.00	-36.57	-29.97	0.00	-2,698.42	0.00	2,698.42	4,111.84	2,055.92	8,737.86	4,375.42	4.30	-1.19	0.626
40.00	-35.03	-29.54	0.00	-2,548.56	0.00	2,548.56	4,051.98	2,025.99	8,408.36	4,210.43	5.64	-1.37	0.614
45.00	-33.56	-29.30	0.00	-2,400.85	0.00	2,400.85	3,990.40	1,995.20	8,081.34	4,046.68	7.17	-1.55	0.602
45.09	-33.50	-29.10	0.00	-2,398.31	0.00	2,398.31	3,989.32	1,994.66	8,075.70	4,043.85	7.20	-1.55	0.602
50.00	-30.89	-28.75	0.00	-2,255.32	0.00	2,255.32	3,927.10	1,963.55	7,757.08	3,884.30	8.89	-1.73	0.589
51.92	-29.87	-28.51	0.00	-2,200.13	0.00	2,200.13	3,942.33	1,971.16	7,834.02	3,922.83	9.60	-1.81	0.569
55.00	-28.96	-28.14	0.00	-2,112.33	0.00	2,112.33	3,902.73	1,951.36	7,635.30	3,823.33	10.81	-1.92	0.560
60.00	-27.53	-27.68	0.00	-1,971.61	0.00	1,971.61	3,837.05	1,918.52	7,315.25	3,663.06	12.92	-2.10	0.546
65.00	-26.14	-27.21	0.00	-1,833.23	0.00	1,833.23	3,769.65	1,884.82	6,998.55	3,504.48	15.22	-2.28	0.530
70.00	-24.77	-26.73	0.00	-1,697.21	0.00	1,697.21	3,700.53	1,850.26	6,685.47	3,347.71	17.71	-2.46	0.514
75.00	-23.44	-26.26	0.00	-1,563.54	0.00	1,563.54	3,629.69	1,814.84	6,376.27	3,192.88	20.38	-2.64	0.496
80.00	-22.14	-25.79	0.00	-1,432.23	0.00	1,432.23	3,557.12	1,778.56	6,071.21	3,040.12	23.25	-2.83	0.478
85.00	-20.88	-25.32	0.00	-1,303.28	0.00	1,303.28	3,482.83	1,741.42	5,770.54	2,889.56	26.30	-3.01	0.457
90.00	-19.67	-25.02	0.00	-1,176.69	0.00	1,176.69	3,406.82	1,703.41	5,474.52	2,741.33	29.55	-3.18	0.435
90.71	-19.47	-24.81	0.00	-1,158.84	0.00	1,158.84	3,395.84	1,697.92	5,432.68	2,720.38	30.02	-3.21	0.432
95.00	-17.78	-24.48	0.00	-1,052.49	0.00	1,052.49	3,329.09	1,664.55	5,183.41	2,595.56	32.98	-3.36	0.411
96.30	-17.26	-24.25	0.00	-1,020.75	0.00	1,020.75	2,649.38	1,324.69	4,172.95	2,089.58	33.89	-3.41	0.495
100.00	-16.49	-23.86	0.00	-930.94	0.00	930.94	2,607.49	1,303.74	4,010.55	2,008.26	36.59	-3.54	0.470
105.00	-15.49	-23.40	0.00	-811.66	0.00	811.66	2,549.43	1,274.72	3,793.98	1,899.81	40.39	-3.72	0.434
110.00	-12.95	-19.70	0.00	-694.65	0.00	694.65	2,489.65	1,244.83	3,580.72	1,793.02	44.39	-3.90	0.393
115.00	-12.04	-19.25	0.00	-596.13	0.00	596.13	2,428.15	1,214.08	3,371.05	1,688.03	48.56	-4.07	0.358
120.00	-11.15	-18.92	0.00	-499.87	0.00	499.87	2,364.93	1,182.47	3,165.21	1,584.96	52.91	-4.23	0.320
122.00	-10.62	-18.14	0.00	-461.48	0.00	461.48	2,339.16	1,169.58	3,084.00	1,544.29	54.70	-4.30	0.304
125.00	-10.11	-17.81	0.00	-407.05	0.00	407.05	2,299.99	1,149.99	2,963.46	1,483.93	57.43	-4.39	0.279
130.00	-9.29	-17.37	0.00	-318.03	0.00	318.03	2,226.60	1,113.30	2,757.75	1,380.92	62.09	-4.52	0.235
135.00	-8.50	-16.98	0.00	-231.16	0.00	231.16	2,137.76	1,068.88	2,540.99	1,272.38	66.88	-4.63	0.186
139.18	-7.86	-16.75	0.00	-160.24	0.00	160.24	2,063.55	1,031.78	2,366.73	1,185.12	70.97	-4.71	0.139
140.00	-5.00	-12.42	0.00	-143.89	0.00	143.89	2,048.92	1,024.46	2,333.10	1,168.29	71.78	-4.72	0.126
143.34	-4.35	-12.18	0.00	-102.38	0.00	102.38	1,066.86	533.43	1,206.73	604.26	75.10	-4.76	0.174
145.00	-4.22	-11.97	0.00	-82.20	0.00	82.20	1,057.77	528.89	1,178.96	590.35	76.75	-4.78	0.144
149.00	0.00	-11.58	0.00	-34.30	0.00	34.30	1,035.06	517.53	1,112.30	556.98	80.78	-4.83	0.062

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:42 PM

Customer: T- Mobile

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

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		242.7	0.0					0.0	0.0	242.7	0.0	0.0	0.0
5.00		480.6	1,084.8					0.0	162.5	480.6	1,247.3	0.0	0.0
10.00		470.8	1,062.8					0.0	162.5	470.8	1,225.3	0.0	0.0
15.00		468.2	1,040.8					0.0	162.5	468.2	1,203.3	0.0	0.0
20.00		478.0	1,018.9					0.0	162.5	478.0	1,181.4	0.0	0.0
25.00		490.4	996.9					0.0	162.5	490.4	1,159.4	0.0	0.0
30.00		498.5	974.9					0.0	162.5	498.5	1,137.4	0.0	0.0
35.00		503.4	953.0					0.0	162.5	503.4	1,115.5	0.0	0.0
40.00		505.8	931.0					0.0	162.5	505.8	1,093.5	0.0	0.0
45.00		257.6	909.0					0.0	162.5	257.6	1,071.5	0.0	0.0
45.09	Bot - Section 2	256.8	15.6					0.0	2.8	256.8	18.4	0.0	0.0
50.00		350.9	1,756.4					0.0	159.7	350.9	1,916.1	0.0	0.0
51.92	Top - Section 1	256.0	674.8					0.0	62.4	256.0	737.2	0.0	0.0
55.00		412.0	538.7					0.0	100.1	412.0	638.8	0.0	0.0
60.00		506.9	856.8					0.0	162.5	506.9	1,019.3	0.0	0.0
65.00		502.2	834.8					0.0	162.5	502.2	997.3	0.0	0.0
70.00		496.6	812.8					0.0	162.5	496.6	975.3	0.0	0.0
75.00		490.2	790.8					0.0	162.5	490.2	953.3	0.0	0.0
80.00		483.0	768.9					0.0	162.5	483.0	931.4	0.0	0.0
85.00		475.2	746.9					0.0	162.5	475.2	909.4	0.0	0.0
90.00		268.8	724.9					0.0	162.5	268.8	887.4	0.0	0.0
90.71	Bot - Section 3	234.3	101.6					0.0	23.2	234.3	124.8	0.0	0.0
95.00		261.3	1,111.4					0.0	139.3	261.3	1,250.7	0.0	0.0
96.30	Top - Section 2	230.2	330.3					0.0	42.1	230.2	372.5	0.0	0.0
100.00		395.5	426.3					0.0	120.4	395.5	546.7	0.0	0.0
105.00		445.6	559.6					0.0	162.5	445.6	722.1	0.0	0.0
110.00	Appertunance(s)	435.2	541.3	3,129.5	0.0	0.0	1,331.7	0.0	162.5	3,564.7	2,035.5	0.0	0.0
115.00		424.3	523.0					0.0	147.3	424.3	670.3	0.0	0.0
120.00		291.5	504.7					0.0	147.3	291.5	652.0	0.0	0.0
122.00	Appertunance(s)	203.6	196.7	549.1	0.0	549.8	172.8	0.0	58.9	752.7	428.5	0.0	0.0
125.00		319.2	289.6					0.0	85.7	319.2	375.4	0.0	0.0
130.00		389.3	468.1					0.0	142.9	389.3	610.9	0.0	0.0
135.00		346.8	449.8					0.0	142.9	346.8	592.6	0.0	0.0
139.18	Bot - Section 4	185.7	361.7					0.0	119.3	185.7	481.0	0.0	0.0
140.00	Appertunance(s)	152.4	112.4	3,932.6	0.0	2,560.6	2,268.4	0.0	23.5	4,085.0	2,404.4	0.0	0.0
143.34	Top - Section 3	181.3	448.3					0.0	47.4	181.3	495.7	0.0	0.0
145.00		199.7	82.4					0.0	23.5	199.7	105.9	0.0	0.0
149.00	Appertunance(s)	140.3	194.0	11,438.4	0.0	34,303.7	3,654.0	0.0	56.7	11,578.7	3,904.7	0.0	0.0
								Totals:		32,780.3	36,192.2	0.00	0.00

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:43 PM

Customer: T- Mobile

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

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.15	-32.59	0.00	-3,769.03	0.00	3,769.03	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.687
5.00	-34.81	-32.21	0.00	-3,606.09	0.00	3,606.09	4,434.84	2,217.42	10,752.7	5,384.36	0.09	-0.16	0.678
10.00	-33.49	-31.83	0.00	-3,445.07	0.00	3,445.07	4,385.31	2,192.65	10,413.7	5,214.59	0.34	-0.32	0.669
15.00	-32.20	-31.44	0.00	-3,285.94	0.00	3,285.94	4,334.06	2,167.03	10,075.6	5,045.30	0.77	-0.49	0.659
20.00	-30.93	-31.04	0.00	-3,128.73	0.00	3,128.73	4,281.09	2,140.54	9,738.73	4,876.60	1.37	-0.66	0.649
25.00	-29.69	-30.63	0.00	-2,973.51	0.00	2,973.51	4,226.40	2,113.20	9,403.31	4,708.64	2.15	-0.83	0.639
30.00	-28.47	-30.20	0.00	-2,820.38	0.00	2,820.38	4,169.98	2,084.99	9,069.60	4,541.54	3.11	-1.00	0.628
35.00	-27.27	-29.76	0.00	-2,669.39	0.00	2,669.39	4,111.84	2,055.92	8,737.86	4,375.42	4.26	-1.18	0.617
40.00	-26.10	-29.31	0.00	-2,520.60	0.00	2,520.60	4,051.98	2,025.99	8,408.36	4,210.43	5.59	-1.35	0.605
45.00	-24.99	-29.06	0.00	-2,374.06	0.00	2,374.06	3,990.40	1,995.20	8,081.34	4,046.68	7.10	-1.53	0.593
45.09	-24.93	-28.85	0.00	-2,371.54	0.00	2,371.54	3,989.32	1,994.66	8,075.70	4,043.85	7.13	-1.54	0.593
50.00	-22.96	-28.49	0.00	-2,229.80	0.00	2,229.80	3,927.10	1,963.55	7,757.08	3,884.30	8.81	-1.72	0.580
51.92	-22.19	-28.25	0.00	-2,175.10	0.00	2,175.10	3,942.33	1,971.16	7,834.02	3,922.83	9.51	-1.79	0.560
55.00	-21.49	-27.87	0.00	-2,088.09	0.00	2,088.09	3,902.73	1,951.36	7,635.30	3,823.33	10.70	-1.90	0.552
60.00	-20.40	-27.39	0.00	-1,948.72	0.00	1,948.72	3,837.05	1,918.52	7,315.25	3,663.06	12.79	-2.08	0.538
65.00	-19.34	-26.92	0.00	-1,811.75	0.00	1,811.75	3,769.65	1,884.82	6,998.55	3,504.48	15.07	-2.26	0.522
70.00	-18.31	-26.44	0.00	-1,677.18	0.00	1,677.18	3,700.53	1,850.26	6,685.47	3,347.71	17.53	-2.44	0.506
75.00	-17.29	-25.96	0.00	-1,545.00	0.00	1,545.00	3,629.69	1,814.84	6,376.27	3,192.88	20.18	-2.62	0.489
80.00	-16.31	-25.48	0.00	-1,415.21	0.00	1,415.21	3,557.12	1,778.56	6,071.21	3,040.12	23.01	-2.79	0.470
85.00	-15.35	-25.01	0.00	-1,287.79	0.00	1,287.79	3,482.83	1,741.42	5,770.54	2,889.56	26.03	-2.97	0.450
90.00	-14.43	-24.72	0.00	-1,162.75	0.00	1,162.75	3,406.82	1,703.41	5,474.52	2,741.33	29.24	-3.15	0.429
90.71	-14.28	-24.50	0.00	-1,145.11	0.00	1,145.11	3,395.84	1,697.92	5,432.68	2,720.38	29.71	-3.17	0.425
95.00	-13.01	-24.19	0.00	-1,040.09	0.00	1,040.09	3,329.09	1,664.55	5,183.41	2,595.56	32.63	-3.32	0.405
96.30	-12.61	-23.96	0.00	-1,008.72	0.00	1,008.72	2,649.38	1,324.69	4,172.95	2,089.58	33.54	-3.37	0.488
100.00	-12.03	-23.56	0.00	-919.99	0.00	919.99	2,607.49	1,303.74	4,010.55	2,008.26	36.21	-3.50	0.463
105.00	-11.26	-23.11	0.00	-802.17	0.00	802.17	2,549.43	1,274.72	3,793.98	1,899.81	39.97	-3.68	0.427
110.00	-9.40	-19.45	0.00	-686.62	0.00	686.62	2,489.65	1,244.83	3,580.72	1,793.02	43.92	-3.86	0.387
115.00	-8.71	-19.00	0.00	-589.39	0.00	589.39	2,428.15	1,214.08	3,371.05	1,688.03	48.05	-4.03	0.353
120.00	-8.05	-18.68	0.00	-494.37	0.00	494.37	2,364.93	1,182.47	3,165.21	1,584.96	52.35	-4.19	0.316
122.00	-7.65	-17.91	0.00	-456.46	0.00	456.46	2,339.16	1,169.58	3,084.00	1,544.29	54.12	-4.25	0.299
125.00	-7.27	-17.58	0.00	-402.74	0.00	402.74	2,299.99	1,149.99	2,963.46	1,483.93	56.82	-4.34	0.275
130.00	-6.65	-17.16	0.00	-314.85	0.00	314.85	2,226.60	1,113.30	2,757.75	1,380.92	61.43	-4.47	0.231
135.00	-6.06	-16.77	0.00	-229.08	0.00	229.08	2,137.76	1,068.88	2,540.99	1,272.38	66.17	-4.58	0.183
139.18	-5.58	-16.55	0.00	-159.02	0.00	159.02	2,063.55	1,031.78	2,366.73	1,185.12	70.21	-4.66	0.137
140.00	-3.51	-12.29	0.00	-142.83	0.00	142.83	2,048.92	1,024.46	2,333.10	1,168.29	71.01	-4.67	0.124
143.34	-3.03	-12.07	0.00	-101.75	0.00	101.75	1,066.86	533.43	1,206.73	604.26	74.29	-4.71	0.172
145.00	-2.93	-11.86	0.00	-81.75	0.00	81.75	1,057.77	528.89	1,178.96	590.35	75.93	-4.73	0.142
149.00	0.00	-11.58	0.00	-34.30	0.00	34.30	1,035.06	517.53	1,112.30	556.98	79.91	-4.77	0.062

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:43 PM

Customer: T- Mobile

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

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

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		58.1	0.0					0.0	0.0	58.1	0.0	0.0	0.0
5.00		115.5	2,035.3					0.0	216.7	115.5	2,251.9	0.0	0.0
10.00		113.7	2,063.2					0.0	216.7	113.7	2,279.9	0.0	0.0
15.00		113.5	2,055.1					0.0	216.7	113.5	2,271.8	0.0	0.0
20.00		116.3	2,035.2					0.0	216.7	116.3	2,251.8	0.0	0.0
25.00		119.6	2,009.1					0.0	216.7	119.6	2,225.8	0.0	0.0
30.00		121.9	1,979.3					0.0	216.7	121.9	2,195.9	0.0	0.0
35.00		123.5	1,946.7					0.0	216.7	123.5	2,163.4	0.0	0.0
40.00		124.4	1,912.2					0.0	216.7	124.4	2,128.9	0.0	0.0
45.00		63.4	1,876.2					0.0	216.7	63.4	2,092.9	0.0	0.0
45.09	Bot - Section 2	63.3	32.3					0.0	3.8	63.3	36.1	0.0	0.0
50.00		86.6	2,996.4					0.0	212.9	86.6	3,209.3	0.0	0.0
51.92	Top - Section 1	63.3	1,155.0					0.0	83.2	63.3	1,238.2	0.0	0.0
55.00		102.1	1,123.8					0.0	133.5	102.1	1,257.3	0.0	0.0
60.00		125.8	1,789.8					0.0	216.7	125.8	2,006.4	0.0	0.0
65.00		125.0	1,750.0					0.0	216.7	125.0	1,966.7	0.0	0.0
70.00		124.0	1,709.6					0.0	216.7	124.0	1,926.3	0.0	0.0
75.00		122.8	1,668.7					0.0	216.7	122.8	1,885.3	0.0	0.0
80.00		121.4	1,627.2					0.0	216.7	121.4	1,843.9	0.0	0.0
85.00		119.8	1,585.3					0.0	216.7	119.8	1,802.0	0.0	0.0
90.00		67.9	1,543.0					0.0	216.7	67.9	1,759.7	0.0	0.0
90.71	Bot - Section 3	59.3	217.7					0.0	30.9	59.3	248.6	0.0	0.0
95.00		66.2	1,972.2					0.0	185.8	66.2	2,158.0	0.0	0.0
96.30	Top - Section 2	58.5	588.1					0.0	56.2	58.5	644.3	0.0	0.0
100.00		100.7	982.1					0.0	160.5	100.7	1,142.5	0.0	0.0
105.00		113.9	1,290.3					0.0	216.7	113.9	1,506.9	0.0	0.0
110.00	Appertunance(s)	111.7	1,251.6	542.0	0.0	0.0	5,130.9	0.0	216.7	653.7	6,599.2	0.0	0.0
115.00		109.3	1,212.7					0.0	196.4	109.3	1,409.1	0.0	0.0
120.00		75.4	1,173.5					0.0	196.4	75.4	1,369.9	0.0	0.0
122.00	Appertunance(s)	52.9	460.4	129.5	0.0	129.7	597.3	0.0	78.6	182.4	1,136.3	0.0	0.0
125.00		83.1	677.8					0.0	114.3	83.1	792.1	0.0	0.0
130.00		101.9	1,094.4					0.0	190.5	101.9	1,284.9	0.0	0.0
135.00		91.2	1,054.6					0.0	190.5	91.2	1,245.1	0.0	0.0
139.18	Bot - Section 4	49.0	851.5					0.0	159.1	49.0	1,010.6	0.0	0.0
140.00	Appertunance(s)	40.4	223.2	788.8	0.0	438.8	6,570.1	0.0	31.4	829.2	6,824.7	0.0	0.0
143.34	Top - Section 3	48.1	888.2					0.0	63.2	48.1	951.4	0.0	0.0
145.00		53.2	252.2					0.0	31.3	53.2	283.5	0.0	0.0
149.00	Appertunance(s)	37.4	591.8	2,588.1	0.0	8,406.2	13,372.8	0.0	75.6	2,625.6	14,040.2	0.0	0.0
								Totals:		7,492.68	81,440.8	0.00	0.00

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

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-81.44	-7.46	0.00	-889.22	0.00	889.22	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.178
5.00	-79.18	-7.40	0.00	-851.92	0.00	851.92	4,434.84	2,217.42	10,752.7	5,384.36	0.02	-0.04	0.176
10.00	-76.90	-7.33	0.00	-814.93	0.00	814.93	4,385.31	2,192.65	10,413.7	5,214.59	0.08	-0.08	0.174
15.00	-74.62	-7.27	0.00	-778.26	0.00	778.26	4,334.06	2,167.03	10,075.6	5,045.30	0.18	-0.12	0.171
20.00	-72.36	-7.20	0.00	-741.92	0.00	741.92	4,281.09	2,140.54	9,738.73	4,876.60	0.32	-0.16	0.169
25.00	-70.13	-7.12	0.00	-705.93	0.00	705.93	4,226.40	2,113.20	9,403.31	4,708.64	0.51	-0.20	0.167
30.00	-67.93	-7.04	0.00	-670.33	0.00	670.33	4,169.98	2,084.99	9,069.60	4,541.54	0.74	-0.24	0.164
35.00	-65.76	-6.95	0.00	-635.14	0.00	635.14	4,111.84	2,055.92	8,737.86	4,375.42	1.01	-0.28	0.161
40.00	-63.63	-6.87	0.00	-600.36	0.00	600.36	4,051.98	2,025.99	8,408.36	4,210.43	1.32	-0.32	0.158
45.00	-61.54	-6.81	0.00	-566.03	0.00	566.03	3,990.40	1,995.20	8,081.34	4,046.68	1.68	-0.36	0.155
45.09	-61.50	-6.77	0.00	-565.44	0.00	565.44	3,989.32	1,994.66	8,075.70	4,043.85	1.69	-0.36	0.155
50.00	-58.29	-6.70	0.00	-532.16	0.00	532.16	3,927.10	1,963.55	7,757.08	3,884.30	2.09	-0.41	0.152
51.92	-57.05	-6.65	0.00	-519.30	0.00	519.30	3,942.33	1,971.16	7,834.02	3,922.83	2.25	-0.42	0.147
55.00	-55.79	-6.57	0.00	-498.84	0.00	498.84	3,902.73	1,951.36	7,635.30	3,823.33	2.54	-0.45	0.145
60.00	-53.78	-6.47	0.00	-466.00	0.00	466.00	3,837.05	1,918.52	7,315.25	3,663.06	3.03	-0.49	0.141
65.00	-51.80	-6.36	0.00	-433.67	0.00	433.67	3,769.65	1,884.82	6,998.55	3,504.48	3.57	-0.54	0.138
70.00	-49.88	-6.26	0.00	-401.86	0.00	401.86	3,700.53	1,850.26	6,685.47	3,347.71	4.16	-0.58	0.134
75.00	-47.99	-6.15	0.00	-370.58	0.00	370.58	3,629.69	1,814.84	6,376.27	3,192.88	4.79	-0.62	0.129
80.00	-46.14	-6.04	0.00	-339.84	0.00	339.84	3,557.12	1,778.56	6,071.21	3,040.12	5.47	-0.67	0.125
85.00	-44.34	-5.93	0.00	-309.63	0.00	309.63	3,482.83	1,741.42	5,770.54	2,889.56	6.19	-0.71	0.120
90.00	-42.57	-5.86	0.00	-279.96	0.00	279.96	3,406.82	1,703.41	5,474.52	2,741.33	6.95	-0.75	0.115
90.71	-42.32	-5.81	0.00	-275.78	0.00	275.78	3,395.84	1,697.92	5,432.68	2,720.38	7.06	-0.76	0.114
95.00	-40.16	-5.74	0.00	-250.86	0.00	250.86	3,329.09	1,664.55	5,183.41	2,595.56	7.76	-0.79	0.109
96.30	-39.52	-5.68	0.00	-243.42	0.00	243.42	2,649.38	1,324.69	4,172.95	2,089.58	7.98	-0.80	0.131
100.00	-38.37	-5.59	0.00	-222.38	0.00	222.38	2,607.49	1,303.74	4,010.55	2,008.26	8.61	-0.83	0.125
105.00	-36.87	-5.48	0.00	-194.43	0.00	194.43	2,549.43	1,274.72	3,793.98	1,899.81	9.51	-0.88	0.117
110.00	-30.27	-4.75	0.00	-167.02	0.00	167.02	2,489.65	1,244.83	3,580.72	1,793.02	10.46	-0.92	0.105
115.00	-28.86	-4.63	0.00	-143.28	0.00	143.28	2,428.15	1,214.08	3,371.05	1,688.03	11.44	-0.96	0.097
120.00	-27.49	-4.55	0.00	-120.11	0.00	120.11	2,364.93	1,182.47	3,165.21	1,584.96	12.48	-1.00	0.087
122.00	-26.36	-4.35	0.00	-110.88	0.00	110.88	2,339.16	1,169.58	3,084.00	1,544.29	12.90	-1.02	0.083
125.00	-25.57	-4.27	0.00	-97.82	0.00	97.82	2,299.99	1,149.99	2,963.46	1,483.93	13.54	-1.04	0.077
130.00	-24.28	-4.16	0.00	-76.47	0.00	76.47	2,226.60	1,113.30	2,757.75	1,380.92	14.65	-1.07	0.066
135.00	-23.04	-4.05	0.00	-55.69	0.00	55.69	2,137.76	1,068.88	2,540.99	1,272.38	15.79	-1.10	0.055
139.18	-22.03	-3.99	0.00	-38.77	0.00	38.77	2,063.55	1,031.78	2,366.73	1,185.12	16.76	-1.12	0.043
140.00	-15.22	-3.03	0.00	-35.05	0.00	35.05	2,048.92	1,024.46	2,333.10	1,168.29	16.95	-1.12	0.037
143.34	-14.27	-2.96	0.00	-24.93	0.00	24.93	1,066.86	533.43	1,206.73	604.26	17.74	-1.13	0.055
145.00	-13.99	-2.90	0.00	-20.02	0.00	20.02	1,057.77	528.89	1,178.96	590.35	18.13	-1.13	0.047
149.00	0.00	-2.63	0.00	-8.41	0.00	8.41	1,035.06	517.53	1,112.30	556.98	19.09	-1.15	0.015

Site Number: 413783 Code: ANSI/TIA-222-G

Site Name: Kent Pcs CT, CT Engineering Number:OAA686761_C3_01 10/21/2016 5:36:44 PM

Customer: T- Mobile

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

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		67.4	0.0					0.0	0.0	67.4	0.0	0.0	0.0
5.00		133.5	1,205.3					0.0	180.6	133.5	1,385.9	0.0	0.0
10.00		130.8	1,180.9					0.0	180.6	130.8	1,361.5	0.0	0.0
15.00		130.1	1,156.5					0.0	180.6	130.1	1,337.0	0.0	0.0
20.00		132.8	1,132.1					0.0	180.6	132.8	1,312.6	0.0	0.0
25.00		136.2	1,107.7					0.0	180.6	136.2	1,288.2	0.0	0.0
30.00		138.5	1,083.3					0.0	180.6	138.5	1,263.8	0.0	0.0
35.00		139.8	1,058.8					0.0	180.6	139.8	1,239.4	0.0	0.0
40.00		140.5	1,034.4					0.0	180.6	140.5	1,215.0	0.0	0.0
45.00		71.6	1,010.0					0.0	180.6	71.6	1,190.6	0.0	0.0
45.09	Bot - Section 2	71.3	17.3					0.0	3.1	71.3	20.4	0.0	0.0
50.00		97.5	1,951.5					0.0	177.4	97.5	2,129.0	0.0	0.0
51.92	Top - Section 1	71.1	749.8					0.0	69.3	71.1	819.1	0.0	0.0
55.00		114.4	598.6					0.0	111.2	114.4	709.8	0.0	0.0
60.00		140.8	952.0					0.0	180.6	140.8	1,132.5	0.0	0.0
65.00		139.5	927.5					0.0	180.6	139.5	1,108.1	0.0	0.0
70.00		137.9	903.1					0.0	180.6	137.9	1,083.7	0.0	0.0
75.00		136.2	878.7					0.0	180.6	136.2	1,059.3	0.0	0.0
80.00		134.2	854.3					0.0	180.6	134.2	1,034.9	0.0	0.0
85.00		132.0	829.9					0.0	180.6	132.0	1,010.4	0.0	0.0
90.00		74.7	805.5					0.0	180.6	74.7	986.0	0.0	0.0
90.71	Bot - Section 3	65.1	112.9					0.0	25.8	65.1	138.7	0.0	0.0
95.00		72.6	1,234.9					0.0	154.8	72.6	1,389.7	0.0	0.0
96.30	Top - Section 2	64.0	367.1					0.0	46.8	64.0	413.9	0.0	0.0
100.00		109.9	473.7					0.0	133.7	109.9	607.4	0.0	0.0
105.00		123.8	621.8					0.0	180.6	123.8	802.3	0.0	0.0
110.00	Appertunance(s)	120.9	601.5	869.3	0.0	0.0	1,479.7	0.0	180.6	990.2	2,261.7	0.0	0.0
115.00		117.9	581.1					0.0	163.7	117.9	744.8	0.0	0.0
120.00		81.0	560.8					0.0	163.7	81.0	724.5	0.0	0.0
122.00	Appertunance(s)	56.6	218.6	152.5	0.0	152.7	192.0	0.0	65.5	209.1	476.1	0.0	0.0
125.00		88.7	321.8					0.0	95.2	88.7	417.1	0.0	0.0
130.00		108.1	520.1					0.0	158.8	108.1	678.8	0.0	0.0
135.00		96.3	499.7					0.0	158.8	96.3	658.5	0.0	0.0
139.18	Bot - Section 4	51.6	401.8					0.0	132.6	51.6	534.5	0.0	0.0
140.00	Appertunance(s)	42.3	124.9	1,092.4	0.0	711.3	2,520.5	0.0	26.1	1,134.7	2,671.5	0.0	0.0
143.34	Top - Section 3	50.4	498.1					0.0	52.7	50.4	550.8	0.0	0.0
145.00		55.5	91.6					0.0	26.1	55.5	117.7	0.0	0.0
149.00	Appertunance(s)	39.0	215.6	3,177.3	0.0	9,528.8	4,060.0	0.0	63.0	3,216.3	4,338.6	0.0	0.0
								Totals:		9,105.64	40,213.6	0.00	0.00

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

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.21	-9.05	0.00	-1,050.95	0.00	1,050.95	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.198
5.00	-38.82	-8.95	0.00	-1,005.69	0.00	1,005.69	4,434.84	2,217.42	10,752.7	5,384.36	0.02	-0.04	0.196
10.00	-37.45	-8.85	0.00	-960.94	0.00	960.94	4,385.31	2,192.65	10,413.7	5,214.59	0.10	-0.09	0.193
15.00	-36.10	-8.74	0.00	-916.70	0.00	916.70	4,334.06	2,167.03	10,075.6	5,045.30	0.21	-0.14	0.190
20.00	-34.79	-8.64	0.00	-872.98	0.00	872.98	4,281.09	2,140.54	9,738.73	4,876.60	0.38	-0.18	0.187
25.00	-33.49	-8.52	0.00	-829.80	0.00	829.80	4,226.40	2,113.20	9,403.31	4,708.64	0.60	-0.23	0.184
30.00	-32.22	-8.41	0.00	-787.18	0.00	787.18	4,169.98	2,084.99	9,069.60	4,541.54	0.87	-0.28	0.181
35.00	-30.97	-8.29	0.00	-745.14	0.00	745.14	4,111.84	2,055.92	8,737.86	4,375.42	1.19	-0.33	0.178
40.00	-29.75	-8.17	0.00	-703.71	0.00	703.71	4,051.98	2,025.99	8,408.36	4,210.43	1.56	-0.38	0.174
45.00	-28.56	-8.10	0.00	-662.88	0.00	662.88	3,990.40	1,995.20	8,081.34	4,046.68	1.98	-0.43	0.171
45.09	-28.54	-8.04	0.00	-662.18	0.00	662.18	3,989.32	1,994.66	8,075.70	4,043.85	1.99	-0.43	0.171
50.00	-26.40	-7.94	0.00	-622.68	0.00	622.68	3,927.10	1,963.55	7,757.08	3,884.30	2.46	-0.48	0.167
51.92	-25.58	-7.87	0.00	-607.44	0.00	607.44	3,942.33	1,971.16	7,834.02	3,922.83	2.65	-0.50	0.161
55.00	-24.87	-7.77	0.00	-583.18	0.00	583.18	3,902.73	1,951.36	7,635.30	3,823.33	2.99	-0.53	0.159
60.00	-23.73	-7.64	0.00	-544.33	0.00	544.33	3,837.05	1,918.52	7,315.25	3,663.06	3.57	-0.58	0.155
65.00	-22.62	-7.51	0.00	-506.13	0.00	506.13	3,769.65	1,884.82	6,998.55	3,504.48	4.20	-0.63	0.150
70.00	-21.53	-7.38	0.00	-468.58	0.00	468.58	3,700.53	1,850.26	6,685.47	3,347.71	4.89	-0.68	0.146
75.00	-20.46	-7.25	0.00	-431.70	0.00	431.70	3,629.69	1,814.84	6,376.27	3,192.88	5.63	-0.73	0.141
80.00	-19.42	-7.11	0.00	-395.47	0.00	395.47	3,557.12	1,778.56	6,071.21	3,040.12	6.42	-0.78	0.136
85.00	-18.41	-6.98	0.00	-359.90	0.00	359.90	3,482.83	1,741.42	5,770.54	2,889.56	7.27	-0.83	0.130
90.00	-17.42	-6.90	0.00	-324.97	0.00	324.97	3,406.82	1,703.41	5,474.52	2,741.33	8.16	-0.88	0.124
90.71	-17.28	-6.84	0.00	-320.05	0.00	320.05	3,395.84	1,697.92	5,432.68	2,720.38	8.30	-0.89	0.123
95.00	-15.89	-6.76	0.00	-290.71	0.00	290.71	3,329.09	1,664.55	5,183.41	2,595.56	9.11	-0.93	0.117
96.30	-15.47	-6.69	0.00	-281.95	0.00	281.95	2,649.38	1,324.69	4,172.95	2,089.58	9.36	-0.94	0.141
100.00	-14.86	-6.58	0.00	-257.17	0.00	257.17	2,607.49	1,303.74	4,010.55	2,008.26	10.11	-0.98	0.134
105.00	-14.06	-6.46	0.00	-224.24	0.00	224.24	2,549.43	1,274.72	3,793.98	1,899.81	11.16	-1.03	0.124
110.00	-11.81	-5.44	0.00	-191.95	0.00	191.95	2,489.65	1,244.83	3,580.72	1,793.02	12.26	-1.08	0.112
115.00	-11.06	-5.31	0.00	-164.76	0.00	164.76	2,428.15	1,214.08	3,371.05	1,688.03	13.42	-1.13	0.102
120.00	-10.34	-5.22	0.00	-138.19	0.00	138.19	2,364.93	1,182.47	3,165.21	1,584.96	14.62	-1.17	0.092
122.00	-9.86	-5.01	0.00	-127.59	0.00	127.59	2,339.16	1,169.58	3,084.00	1,544.29	15.11	-1.19	0.087
125.00	-9.45	-4.92	0.00	-112.57	0.00	112.57	2,299.99	1,149.99	2,963.46	1,483.93	15.87	-1.21	0.080
130.00	-8.77	-4.80	0.00	-87.98	0.00	87.98	2,226.60	1,113.30	2,757.75	1,380.92	17.16	-1.25	0.068
135.00	-8.11	-4.69	0.00	-63.99	0.00	63.99	2,137.76	1,068.88	2,540.99	1,272.38	18.48	-1.28	0.054
139.18	-7.58	-4.63	0.00	-44.39	0.00	44.39	2,063.55	1,031.78	2,366.73	1,185.12	19.61	-1.30	0.041
140.00	-4.93	-3.44	0.00	-39.87	0.00	39.87	2,048.92	1,024.46	2,333.10	1,168.29	19.84	-1.30	0.037
143.34	-4.38	-3.37	0.00	-28.38	0.00	28.38	1,066.86	533.43	1,206.73	604.26	20.75	-1.32	0.051
145.00	-4.26	-3.32	0.00	-22.79	0.00	22.79	1,057.77	528.89	1,178.96	590.35	21.21	-1.32	0.043
149.00	0.00	-3.22	0.00	-9.53	0.00	9.53	1,035.06	517.53	1,112.30	556.98	22.33	-1.33	0.017

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.01	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.76	
Total Unfactored Dead Load:	40.21	k
Seismic Base Shear (E):	1.66	k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	279	1,780	0.017	28	346
36	144.17	118	727	0.007	11	146
35	141.67	551	3,298	0.031	51	683
34	139.59	151	881	0.008	14	187
33	137.09	534	3,021	0.028	47	663
32	132.50	658	3,506	0.033	54	817
31	127.50	679	3,378	0.031	52	842
30	123.50	417	1,963	0.018	30	517
29	121.00	284	1,290	0.012	20	352
28	117.50	724	3,124	0.029	48	899
27	112.50	745	2,975	0.028	46	924
26	107.50	782	2,884	0.027	45	970
25	102.50	802	2,722	0.025	42	995
24	98.15	607	1,909	0.018	30	753
23	95.65	414	1,243	0.012	19	513
22	92.86	1,390	3,963	0.037	61	1,724
21	90.36	139	377	0.004	6	172
20	87.50	986	2,534	0.024	39	1,223
19	82.50	1,010	2,341	0.022	36	1,253
18	77.50	1,035	2,149	0.020	33	1,284
17	72.50	1,059	1,956	0.018	30	1,314
16	67.50	1,084	1,765	0.016	27	1,344
15	62.50	1,108	1,577	0.015	24	1,374

14	57.50	1,133	1,392	0.013	22	1,405
13	53.46	710	768	0.007	12	880
12	50.96	819	815	0.008	13	1,016
11	47.54	2,129	1,874	0.017	29	2,641
10	45.04	20	16	0.000	0	25
9	42.50	1,191	861	0.008	13	1,477
8	37.50	1,215	705	0.007	11	1,507
7	32.50	1,239	560	0.005	9	1,537
6	27.50	1,264	426	0.004	7	1,568
5	22.50	1,288	305	0.003	5	1,598
4	17.50	1,313	200	0.002	3	1,628
3	12.50	1,337	113	0.001	2	1,658
2	7.50	1,361	47	0.000	1	1,689
1	2.50	1,386	7	0.000	0	1,719
3' Yagi	149.00	10	65	0.001	1	12
Amphenol Antel LPA-1	149.00	32	206	0.002	3	39
RFS Celwave PD220	149.00	50	327	0.003	5	62
Antel BXA-70063/6CF_	149.00	51	334	0.003	5	63
Antel LPA-80080/6CF	149.00	126	824	0.008	13	156
Flat Low Profile Pla	149.00	1,500	9,814	0.091	152	1,860
VZW Unused Reserve:	149.00	2,292	14,993	0.140	232	2,842
Andrew ABT-DFDM-ADB	140.00	1	6	0.000	0	1
Powerwave Allgon TT0	140.00	198	1,161	0.011	18	246
Ericsson RRUS-11	140.00	330	1,935	0.018	30	409
Raycap DC6-48-60-18	140.00	30	176	0.002	3	37
KMW AM-X-CD-14-65-00	140.00	73	427	0.004	7	90
Powerwave Allgon 777	140.00	210	1,232	0.011	19	260
Kathrein Scala 800 1	140.00	82	479	0.004	7	101
KMW AM-X-CD-16-65-00	140.00	97	569	0.005	9	120
Round Low Profile Pl	140.00	1,500	8,797	0.082	136	1,860
Decibel DB222	122.00	32	147	0.001	2	40
Stand Off	122.00	150	691	0.006	11	186
3' Yagi	122.00	10	46	0.000	1	12
Symmetricom 58532A	110.00	0	2	0.000	0	0
Ericsson RRUS 11 B12	110.00	152	584	0.005	9	189
Ericsson RRUS 11 B4	110.00	152	584	0.005	9	189
Ericsson RRUS 11 B2	110.00	152	584	0.005	9	189
RFS APX16DWV-16DWVS-	110.00	122	469	0.004	7	151
Commscope LNX-6515DS	110.00	151	579	0.005	9	187
Flat T-Arm	110.00	750	2,880	0.027	45	930
		40,214	107,365	1.000	1,663	49,878

Load Case (0.9 - 0.2Sds) * DL + E ELFM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	279	1,780	0.017	28	240
36	144.17	118	727	0.007	11	101
35	141.67	551	3,298	0.031	51	473
34	139.59	151	881	0.008	14	130
33	137.09	534	3,021	0.028	47	459
32	132.50	658	3,506	0.033	54	566
31	127.50	679	3,378	0.031	52	584
30	123.50	417	1,963	0.018	30	359
29	121.00	284	1,290	0.012	20	244
28	117.50	724	3,124	0.029	48	623
27	112.50	745	2,975	0.028	46	640
26	107.50	782	2,884	0.027	45	672
25	102.50	802	2,722	0.025	42	690
24	98.15	607	1,909	0.018	30	522

23	95.65	414	1,243	0.012	19	356
22	92.86	1,390	3,963	0.037	61	1,195
21	90.36	139	377	0.004	6	119
20	87.50	986	2,534	0.024	39	848
19	82.50	1,010	2,341	0.022	36	869
18	77.50	1,035	2,149	0.020	33	890
17	72.50	1,059	1,956	0.018	30	911
16	67.50	1,084	1,765	0.016	27	932
15	62.50	1,108	1,577	0.015	24	953
14	57.50	1,133	1,392	0.013	22	974
13	53.46	710	768	0.007	12	610
12	50.96	819	815	0.008	13	704
11	47.54	2,129	1,874	0.017	29	1,830
10	45.04	20	16	0.000	0	18
9	42.50	1,191	861	0.008	13	1,024
8	37.50	1,215	705	0.007	11	1,044
7	32.50	1,239	560	0.005	9	1,065
6	27.50	1,264	426	0.004	7	1,086
5	22.50	1,288	305	0.003	5	1,107
4	17.50	1,313	200	0.002	3	1,128
3	12.50	1,337	113	0.001	2	1,149
2	7.50	1,361	47	0.000	1	1,170
1	2.50	1,386	7	0.000	0	1,191
3' Yagi	149.00	10	65	0.001	1	9
Amphenol Antel LPA-1	149.00	32	206	0.002	3	27
RFS Celwave PD220	149.00	50	327	0.003	5	43
Antel BXA-70063/6CF_	149.00	51	334	0.003	5	44
Antel LPA-80080/6CF	149.00	126	824	0.008	13	108
Flat Low Profile Pla	149.00	1,500	9,814	0.091	152	1,290
VZW Unused Reserve:	149.00	2,292	14,993	0.140	232	1,970
Andrew ABT-DFDM-ADB	140.00	1	6	0.000	0	1
Powerwave Allgon TT0	140.00	198	1,161	0.011	18	170
Ericsson RRUS-11	140.00	330	1,935	0.018	30	284
Raycap DC6-48-60-18	140.00	30	176	0.002	3	26
KMW AM-X-CD-14-65-00	140.00	73	427	0.004	7	63
Powerwave Allgon 777	140.00	210	1,232	0.011	19	181
Kathrein Scala 800 1	140.00	82	479	0.004	7	70
KMW AM-X-CD-16-65-00	140.00	97	569	0.005	9	83
Round Low Profile Pl	140.00	1,500	8,797	0.082	136	1,290
Decibel DB222	122.00	32	147	0.001	2	28
Stand Off	122.00	150	691	0.006	11	129
3' Yagi	122.00	10	46	0.000	1	9
Symmetricom 58532A	110.00	0	2	0.000	0	0
Ericsson RRUS 11 B12	110.00	152	584	0.005	9	131
Ericsson RRUS 11 B4	110.00	152	584	0.005	9	131
Ericsson RRUS 11 B2	110.00	152	584	0.005	9	131
RFS APX16DWV-16DWVS-	110.00	122	469	0.004	7	105
Commscope LNX-6515DS	110.00	151	579	0.005	9	130
Flat T-Arm	110.00	750	2,880	0.027	45	645
		40,214	107,365	1.000	1,663	34,571

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-48.16	-1.67	0.00	-201.52	0.00	201.52	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.047
5.00	-46.47	-1.67	0.00	-193.19	0.00	193.19	4,434.84	2,217.42	10,752.7	5,384.36	0.00	-0.01	0.046
10.00	-44.81	-1.68	0.00	-184.83	0.00	184.83	4,385.31	2,192.65	10,413.7	5,214.59	0.02	-0.02	0.046
15.00	-43.18	-1.68	0.00	-176.44	0.00	176.44	4,334.06	2,167.03	10,075.6	5,045.30	0.04	-0.03	0.045
20.00	-41.58	-1.68	0.00	-168.04	0.00	168.04	4,281.09	2,140.54	9,738.73	4,876.60	0.07	-0.04	0.044
25.00	-40.02	-1.68	0.00	-159.64	0.00	159.64	4,226.40	2,113.20	9,403.31	4,708.64	0.12	-0.04	0.043
30.00	-38.48	-1.68	0.00	-151.24	0.00	151.24	4,169.98	2,084.99	9,069.60	4,541.54	0.17	-0.05	0.043
35.00	-36.97	-1.67	0.00	-142.86	0.00	142.86	4,111.84	2,055.92	8,737.86	4,375.42	0.23	-0.06	0.042
40.00	-35.50	-1.66	0.00	-134.51	0.00	134.51	4,051.98	2,025.99	8,408.36	4,210.43	0.30	-0.07	0.041
45.00	-35.47	-1.66	0.00	-126.20	0.00	126.20	3,990.40	1,995.20	8,081.34	4,046.68	0.38	-0.08	0.040
45.09	-32.83	-1.63	0.00	-126.06	0.00	126.06	3,989.32	1,994.66	8,075.70	4,043.85	0.38	-0.08	0.039
50.00	-31.81	-1.62	0.00	-118.03	0.00	118.03	3,927.10	1,963.55	7,757.08	3,884.30	0.47	-0.09	0.038
51.92	-30.93	-1.61	0.00	-114.92	0.00	114.92	3,942.33	1,971.16	7,834.02	3,922.83	0.51	-0.10	0.037
55.00	-29.53	-1.59	0.00	-109.95	0.00	109.95	3,902.73	1,951.36	7,635.30	3,823.33	0.57	-0.10	0.036
60.00	-28.15	-1.57	0.00	-101.99	0.00	101.99	3,837.05	1,918.52	7,315.25	3,663.06	0.69	-0.11	0.035
65.00	-26.81	-1.54	0.00	-94.14	0.00	94.14	3,769.65	1,884.82	6,998.55	3,504.48	0.81	-0.12	0.034
70.00	-25.49	-1.52	0.00	-86.42	0.00	86.42	3,700.53	1,850.26	6,685.47	3,347.71	0.94	-0.13	0.033
75.00	-24.21	-1.48	0.00	-78.85	0.00	78.85	3,629.69	1,814.84	6,376.27	3,192.88	1.08	-0.14	0.031
80.00	-22.96	-1.45	0.00	-71.43	0.00	71.43	3,557.12	1,778.56	6,071.21	3,040.12	1.23	-0.15	0.030
85.00	-21.73	-1.41	0.00	-64.20	0.00	64.20	3,482.83	1,741.42	5,770.54	2,889.56	1.39	-0.16	0.028
90.00	-21.56	-1.40	0.00	-57.16	0.00	57.16	3,406.82	1,703.41	5,474.52	2,741.33	1.56	-0.17	0.027
90.71	-19.84	-1.34	0.00	-56.16	0.00	56.16	3,395.84	1,697.92	5,432.68	2,720.38	1.58	-0.17	0.026
95.00	-19.33	-1.32	0.00	-50.42	0.00	50.42	3,329.09	1,664.55	5,183.41	2,595.56	1.73	-0.17	0.025
96.30	-18.57	-1.29	0.00	-48.71	0.00	48.71	2,649.38	1,324.69	4,172.95	2,089.58	1.78	-0.18	0.030
100.00	-17.58	-1.25	0.00	-43.94	0.00	43.94	2,607.49	1,303.74	4,010.55	2,008.26	1.92	-0.18	0.029
105.00	-16.61	-1.20	0.00	-37.71	0.00	37.71	2,549.43	1,274.72	3,793.98	1,899.81	2.12	-0.19	0.026
110.00	-13.85	-1.06	0.00	-31.71	0.00	31.71	2,489.65	1,244.83	3,580.72	1,793.02	2.32	-0.20	0.023
115.00	-12.95	-1.01	0.00	-26.42	0.00	26.42	2,428.15	1,214.08	3,371.05	1,688.03	2.54	-0.21	0.021
120.00	-12.60	-0.99	0.00	-21.37	0.00	21.37	2,364.93	1,182.47	3,165.21	1,584.96	2.76	-0.21	0.019
122.00	-11.84	-0.94	0.00	-19.39	0.00	19.39	2,339.16	1,169.58	3,084.00	1,544.29	2.85	-0.22	0.018
125.00	-11.00	-0.89	0.00	-16.57	0.00	16.57	2,299.99	1,149.99	2,963.46	1,483.93	2.98	-0.22	0.016
130.00	-10.18	-0.83	0.00	-12.13	0.00	12.13	2,226.60	1,113.30	2,757.75	1,380.92	3.22	-0.23	0.013
135.00	-9.52	-0.78	0.00	-7.97	0.00	7.97	2,137.76	1,068.88	2,540.99	1,272.38	3.46	-0.23	0.011
139.18	-9.33	-0.77	0.00	-4.70	0.00	4.70	2,063.55	1,031.78	2,366.73	1,185.12	3.66	-0.23	0.008
140.00	-5.53	-0.47	0.00	-4.07	0.00	4.07	2,048.92	1,024.46	2,333.10	1,168.29	3.70	-0.23	0.006
143.34	-5.38	-0.46	0.00	-2.49	0.00	2.49	1,066.86	533.43	1,206.73	604.26	3.86	-0.23	0.009
145.00	-5.03	-0.43	0.00	-1.73	0.00	1.73	1,057.77	528.89	1,178.96	590.35	3.94	-0.23	0.008
149.00	0.00	-0.41	0.00	0.00	0.00	0.00	1,035.06	517.53	1,112.30	556.98	4.14	-0.23	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.38	-1.67	0.00	-199.47	0.00	199.47	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.043
5.00	-32.21	-1.67	0.00	-191.15	0.00	191.15	4,434.84	2,217.42	10,752.7	5,384.36	0.00	-0.01	0.043
10.00	-31.06	-1.67	0.00	-182.80	0.00	182.80	4,385.31	2,192.65	10,413.7	5,214.59	0.02	-0.02	0.042
15.00	-29.93	-1.67	0.00	-174.44	0.00	174.44	4,334.06	2,167.03	10,075.6	5,045.30	0.04	-0.03	0.041
20.00	-28.82	-1.67	0.00	-166.08	0.00	166.08	4,281.09	2,140.54	9,738.73	4,876.60	0.07	-0.03	0.041
25.00	-27.74	-1.67	0.00	-157.72	0.00	157.72	4,226.40	2,113.20	9,403.31	4,708.64	0.11	-0.04	0.040
30.00	-26.67	-1.66	0.00	-149.37	0.00	149.37	4,169.98	2,084.99	9,069.60	4,541.54	0.17	-0.05	0.039
35.00	-25.63	-1.66	0.00	-141.05	0.00	141.05	4,111.84	2,055.92	8,737.86	4,375.42	0.23	-0.06	0.038
40.00	-24.60	-1.65	0.00	-132.77	0.00	132.77	4,051.98	2,025.99	8,408.36	4,210.43	0.30	-0.07	0.038
45.00	-24.58	-1.65	0.00	-124.55	0.00	124.55	3,990.40	1,995.20	8,081.34	4,046.68	0.38	-0.08	0.037
45.09	-22.75	-1.62	0.00	-124.40	0.00	124.40	3,989.32	1,994.66	8,075.70	4,043.85	0.38	-0.08	0.036
50.00	-22.05	-1.61	0.00	-116.45	0.00	116.45	3,927.10	1,963.55	7,757.08	3,884.30	0.47	-0.09	0.036
51.92	-21.44	-1.60	0.00	-113.37	0.00	113.37	3,942.33	1,971.16	7,834.02	3,922.83	0.50	-0.09	0.034
55.00	-20.47	-1.57	0.00	-108.46	0.00	108.46	3,902.73	1,951.36	7,635.30	3,823.33	0.57	-0.10	0.034
60.00	-19.51	-1.55	0.00	-100.58	0.00	100.58	3,837.05	1,918.52	7,315.25	3,663.06	0.68	-0.11	0.033
65.00	-18.58	-1.53	0.00	-92.82	0.00	92.82	3,769.65	1,884.82	6,998.55	3,504.48	0.80	-0.12	0.031
70.00	-17.67	-1.50	0.00	-85.19	0.00	85.19	3,700.53	1,850.26	6,685.47	3,347.71	0.93	-0.13	0.030
75.00	-16.78	-1.46	0.00	-77.71	0.00	77.71	3,629.69	1,814.84	6,376.27	3,192.88	1.07	-0.14	0.029
80.00	-15.91	-1.43	0.00	-70.39	0.00	70.39	3,557.12	1,778.56	6,071.21	3,040.12	1.21	-0.15	0.028
85.00	-15.06	-1.39	0.00	-63.26	0.00	63.26	3,482.83	1,741.42	5,770.54	2,889.56	1.37	-0.15	0.026
90.00	-14.94	-1.38	0.00	-56.32	0.00	56.32	3,406.82	1,703.41	5,474.52	2,741.33	1.54	-0.16	0.025
90.71	-13.75	-1.32	0.00	-55.33	0.00	55.33	3,395.84	1,697.92	5,432.68	2,720.38	1.56	-0.16	0.024
95.00	-13.39	-1.30	0.00	-49.67	0.00	49.67	3,329.09	1,664.55	5,183.41	2,595.56	1.71	-0.17	0.023
96.30	-12.87	-1.27	0.00	-47.98	0.00	47.98	2,649.38	1,324.69	4,172.95	2,089.58	1.76	-0.17	0.028
100.00	-12.18	-1.23	0.00	-43.28	0.00	43.28	2,607.49	1,303.74	4,010.55	2,008.26	1.90	-0.18	0.026
105.00	-11.51	-1.18	0.00	-37.14	0.00	37.14	2,549.43	1,274.72	3,793.98	1,899.81	2.09	-0.19	0.024
110.00	-9.60	-1.04	0.00	-31.23	0.00	31.23	2,489.65	1,244.83	3,580.72	1,793.02	2.29	-0.20	0.021
115.00	-8.97	-0.99	0.00	-26.01	0.00	26.01	2,428.15	1,214.08	3,371.05	1,688.03	2.50	-0.20	0.019
120.00	-8.73	-0.97	0.00	-21.04	0.00	21.04	2,364.93	1,182.47	3,165.21	1,584.96	2.72	-0.21	0.017
122.00	-8.21	-0.93	0.00	-19.10	0.00	19.10	2,339.16	1,169.58	3,084.00	1,544.29	2.81	-0.21	0.016
125.00	-7.62	-0.87	0.00	-16.31	0.00	16.31	2,299.99	1,149.99	2,963.46	1,483.93	2.95	-0.22	0.014
130.00	-7.06	-0.82	0.00	-11.94	0.00	11.94	2,226.60	1,113.30	2,757.75	1,380.92	3.18	-0.22	0.012
135.00	-6.60	-0.77	0.00	-7.85	0.00	7.85	2,137.76	1,068.88	2,540.99	1,272.38	3.41	-0.23	0.009
139.18	-6.47	-0.76	0.00	-4.63	0.00	4.63	2,063.55	1,031.78	2,366.73	1,185.12	3.61	-0.23	0.007
140.00	-3.83	-0.47	0.00	-4.01	0.00	4.01	2,048.92	1,024.46	2,333.10	1,168.29	3.65	-0.23	0.005
143.34	-3.73	-0.45	0.00	-2.45	0.00	2.45	1,066.86	533.43	1,206.73	604.26	3.81	-0.23	0.008
145.00	-3.49	-0.43	0.00	-1.70	0.00	1.70	1,057.77	528.89	1,178.96	590.35	3.89	-0.23	0.006
149.00	0.00	-0.41	0.00	0.00	0.00	0.00	1,035.06	517.53	1,112.30	556.98	4.09	-0.23	0.000

Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.01
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	279	1.840	1.725	1.047	0.351	85	346
36	144.17	118	1.769	1.403	0.926	0.306	31	146
35	141.67	551	1.709	1.155	0.828	0.268	128	683
34	139.59	151	1.659	0.972	0.753	0.239	31	187
33	137.09	534	1.600	0.778	0.670	0.205	95	663
32	132.50	658	1.495	0.488	0.536	0.150	85	817
31	127.50	679	1.384	0.254	0.415	0.097	57	842
30	123.50	417	1.298	0.118	0.335	0.062	22	517
29	121.00	284	1.246	0.053	0.291	0.042	10	352
28	117.50	724	1.175	-0.017	0.237	0.018	11	899
27	112.50	745	1.077	-0.082	0.173	-0.009	-6	924
26	107.50	782	0.984	-0.114	0.123	-0.028	-19	970
25	102.50	802	0.894	-0.122	0.085	-0.038	-27	995
24	98.15	607	0.820	-0.115	0.060	-0.041	-22	753
23	95.65	414	0.779	-0.108	0.048	-0.040	-14	513
22	92.86	1,390	0.734	-0.097	0.037	-0.037	-44	1,724
21	90.36	139	0.695	-0.085	0.029	-0.032	-4	172
20	87.50	986	0.652	-0.071	0.021	-0.025	-21	1,223
19	82.50	1,010	0.579	-0.045	0.012	-0.010	-9	1,253
18	77.50	1,035	0.511	-0.020	0.008	0.007	6	1,284
17	72.50	1,059	0.447	0.002	0.006	0.022	20	1,314
16	67.50	1,084	0.388	0.022	0.007	0.035	33	1,344
15	62.50	1,108	0.333	0.037	0.010	0.044	42	1,374
14	57.50	1,133	0.281	0.049	0.014	0.050	49	1,405
13	53.46	710	0.243	0.056	0.018	0.052	32	880
12	50.96	819	0.221	0.060	0.021	0.053	37	1,016
11	47.54	2,129	0.192	0.064	0.024	0.053	98	2,641
10	45.04	20	0.173	0.066	0.027	0.053	1	25
9	42.50	1,191	0.154	0.068	0.030	0.053	54	1,477
8	37.50	1,215	0.120	0.070	0.034	0.051	54	1,507
7	32.50	1,239	0.090	0.071	0.038	0.050	54	1,537
6	27.50	1,264	0.064	0.072	0.041	0.049	53	1,568
5	22.50	1,288	0.043	0.071	0.042	0.047	53	1,598
4	17.50	1,313	0.026	0.067	0.040	0.045	51	1,628

3	12.50	1,337	0.013	0.059	0.034	0.040	46	1,658
2	7.50	1,361	0.005	0.044	0.025	0.031	37	1,689
1	2.50	1,386	0.001	0.018	0.010	0.014	17	1,719
3' Yagi	149.00	10	1.890	1.980	1.140	0.385	3	12
Amphenol Antel LPA-1	149.00	32	1.890	1.980	1.140	0.385	10	39
RFS Celwave PD220	149.00	50	1.890	1.980	1.140	0.385	17	62
Antel BXA-70063/6CF_	149.00	51	1.890	1.980	1.140	0.385	17	63
Antel LPA-80080/6CF	149.00	126	1.890	1.980	1.140	0.385	42	156
Flat Low Profile Pla	149.00	1,500	1.890	1.980	1.140	0.385	500	1,860
VZW Unused Reserve:	149.00	2,292	1.890	1.980	1.140	0.385	764	2,842
Andrew ABT-DFDM-ADB	140.00	1	1.669	1.007	0.767	0.244	0	1
Powerwave Allgon TT0	140.00	198	1.669	1.007	0.767	0.244	42	246
Ericsson RRUS-11	140.00	330	1.669	1.007	0.767	0.244	70	409
Raycap DC6-48-60-18	140.00	30	1.669	1.007	0.767	0.244	6	37
KMW AM-X-CD-14-65-00	140.00	73	1.669	1.007	0.767	0.244	15	90
Powerwave Allgon 777	140.00	210	1.669	1.007	0.767	0.244	44	260
Kathrein Scala 800 1	140.00	82	1.669	1.007	0.767	0.244	17	101
KMW AM-X-CD-16-65-00	140.00	97	1.669	1.007	0.767	0.244	21	120
Round Low Profile Pl	140.00	1,500	1.669	1.007	0.767	0.244	318	1,860
Decibel DB222	122.00	32	1.267	0.077	0.308	0.050	1	40
Stand Off	122.00	150	1.267	0.077	0.308	0.050	6	186
3' Yagi	122.00	10	1.267	0.077	0.308	0.050	0	12
Symmetricom 58532A	110.00	0	1.030	-0.101	0.147	-0.019	0	0
Ericsson RRUS 11 B12	110.00	152	1.030	-0.101	0.147	-0.019	-3	189
Ericsson RRUS 11 B4	110.00	152	1.030	-0.101	0.147	-0.019	-3	189
Ericsson RRUS 11 B2	110.00	152	1.030	-0.101	0.147	-0.019	-3	189
RFS APX16DWV-	110.00	122	1.030	-0.101	0.147	-0.019	-2	151
Commscope LNX-	110.00	151	1.030	-0.101	0.147	-0.019	-3	187
Flat T-Arm	110.00	750	1.030	-0.101	0.147	-0.019	-13	930
		40,214	64.955	29.411	23.890	7.130	2,999	49,878

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
37	147.00	279	1.840	1.725	1.047	0.351	85	240
36	144.17	118	1.769	1.403	0.926	0.306	31	101
35	141.67	551	1.709	1.155	0.828	0.268	128	473
34	139.59	151	1.659	0.972	0.753	0.239	31	130
33	137.09	534	1.600	0.778	0.670	0.205	95	459
32	132.50	658	1.495	0.488	0.536	0.150	85	566
31	127.50	679	1.384	0.254	0.415	0.097	57	584
30	123.50	417	1.298	0.118	0.335	0.062	22	359
29	121.00	284	1.246	0.053	0.291	0.042	10	244
28	117.50	724	1.175	-0.017	0.237	0.018	11	623
27	112.50	745	1.077	-0.082	0.173	-0.009	-6	640
26	107.50	782	0.984	-0.114	0.123	-0.028	-19	672
25	102.50	802	0.894	-0.122	0.085	-0.038	-27	690
24	98.15	607	0.820	-0.115	0.060	-0.041	-22	522
23	95.65	414	0.779	-0.108	0.048	-0.040	-14	356
22	92.86	1,390	0.734	-0.097	0.037	-0.037	-44	1,195
21	90.36	139	0.695	-0.085	0.029	-0.032	-4	119
20	87.50	986	0.652	-0.071	0.021	-0.025	-21	848
19	82.50	1,010	0.579	-0.045	0.012	-0.010	-9	869
18	77.50	1,035	0.511	-0.020	0.008	0.007	6	890
17	72.50	1,059	0.447	0.002	0.006	0.022	20	911
16	67.50	1,084	0.388	0.022	0.007	0.035	33	932
15	62.50	1,108	0.333	0.037	0.010	0.044	42	953
14	57.50	1,133	0.281	0.049	0.014	0.050	49	974

13	53.46	710	0.243	0.056	0.018	0.052	32	610
12	50.96	819	0.221	0.060	0.021	0.053	37	704
11	47.54	2,129	0.192	0.064	0.024	0.053	98	1,830
10	45.04	20	0.173	0.066	0.027	0.053	1	18
9	42.50	1,191	0.154	0.068	0.030	0.053	54	1,024
8	37.50	1,215	0.120	0.070	0.034	0.051	54	1,044
7	32.50	1,239	0.090	0.071	0.038	0.050	54	1,065
6	27.50	1,264	0.064	0.072	0.041	0.049	53	1,086
5	22.50	1,288	0.043	0.071	0.042	0.047	53	1,107
4	17.50	1,313	0.026	0.067	0.040	0.045	51	1,128
3	12.50	1,337	0.013	0.059	0.034	0.040	46	1,149
2	7.50	1,361	0.005	0.044	0.025	0.031	37	1,170
1	2.50	1,386	0.001	0.018	0.010	0.014	17	1,191
3' Yagi	149.00	10	1.890	1.980	1.140	0.385	3	9
Amphenol Antel LPA-1	149.00	32	1.890	1.980	1.140	0.385	10	27
RFS Celwave PD220	149.00	50	1.890	1.980	1.140	0.385	17	43
Antel BXA-70063/6CF_	149.00	51	1.890	1.980	1.140	0.385	17	44
Antel LPA-80080/6CF	149.00	126	1.890	1.980	1.140	0.385	42	108
Flat Low Profile Pla	149.00	1,500	1.890	1.980	1.140	0.385	500	1,290
VZW Unused Reserve:	149.00	2,292	1.890	1.980	1.140	0.385	764	1,970
Andrew ABT-DFDM-ADB	140.00	1	1.669	1.007	0.767	0.244	0	1
Powerwave Allgon TT0	140.00	198	1.669	1.007	0.767	0.244	42	170
Ericsson RRUS-11	140.00	330	1.669	1.007	0.767	0.244	70	284
Raycap DC6-48-60-18	140.00	30	1.669	1.007	0.767	0.244	6	26
KMW AM-X-CD-14-65-00	140.00	73	1.669	1.007	0.767	0.244	15	63
Powerwave Allgon 777	140.00	210	1.669	1.007	0.767	0.244	44	181
Kathrein Scala 800 1	140.00	82	1.669	1.007	0.767	0.244	17	70
KMW AM-X-CD-16-65-00	140.00	97	1.669	1.007	0.767	0.244	21	83
Round Low Profile Pl	140.00	1,500	1.669	1.007	0.767	0.244	318	1,290
Decibel DB222	122.00	32	1.267	0.077	0.308	0.050	1	28
Stand Off	122.00	150	1.267	0.077	0.308	0.050	6	129
3' Yagi	122.00	10	1.267	0.077	0.308	0.050	0	9
Symmetricom 58532A	110.00	0	1.030	-0.101	0.147	-0.019	0	0
Ericsson RRUS 11 B12	110.00	152	1.030	-0.101	0.147	-0.019	-3	131
Ericsson RRUS 11 B4	110.00	152	1.030	-0.101	0.147	-0.019	-3	131
Ericsson RRUS 11 B2	110.00	152	1.030	-0.101	0.147	-0.019	-3	131
RFS APX16DWV-	110.00	122	1.030	-0.101	0.147	-0.019	-2	105
Commscope LNX-	110.00	151	1.030	-0.101	0.147	-0.019	-3	130
Flat T-Arm	110.00	750	1.030	-0.101	0.147	-0.019	-13	645
		40,214	64.955	29.411	23.890	7.130	2,999	34,571

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-48.16	-2.99	0.00	-373.94	0.00	373.94	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.078
5.00	-46.47	-2.96	0.00	-359.00	0.00	359.00	4,434.84	2,217.42	10,752.7	5,384.36	0.01	-0.02	0.077
10.00	-44.81	-2.93	0.00	-344.19	0.00	344.19	4,385.31	2,192.65	10,413.7	5,214.59	0.03	-0.03	0.076
15.00	-43.18	-2.89	0.00	-329.54	0.00	329.54	4,334.06	2,167.03	10,075.6	5,045.30	0.08	-0.05	0.075
20.00	-41.58	-2.85	0.00	-315.09	0.00	315.09	4,281.09	2,140.54	9,738.73	4,876.60	0.14	-0.07	0.074
25.00	-40.01	-2.81	0.00	-300.85	0.00	300.85	4,226.40	2,113.20	9,403.31	4,708.64	0.21	-0.08	0.073
30.00	-38.48	-2.76	0.00	-286.82	0.00	286.82	4,169.98	2,084.99	9,069.60	4,541.54	0.31	-0.10	0.072
35.00	-36.97	-2.72	0.00	-273.02	0.00	273.02	4,111.84	2,055.92	8,737.86	4,375.42	0.43	-0.12	0.071
40.00	-35.49	-2.67	0.00	-259.44	0.00	259.44	4,051.98	2,025.99	8,408.36	4,210.43	0.56	-0.14	0.070
45.00	-35.47	-2.67	0.00	-246.09	0.00	246.09	3,990.40	1,995.20	8,081.34	4,046.68	0.71	-0.16	0.070
45.09	-32.82	-2.57	0.00	-245.86	0.00	245.86	3,989.32	1,994.66	8,075.70	4,043.85	0.72	-0.16	0.069
50.00	-31.81	-2.54	0.00	-233.21	0.00	233.21	3,927.10	1,963.55	7,757.08	3,884.30	0.89	-0.17	0.068
51.92	-30.93	-2.51	0.00	-228.33	0.00	228.33	3,942.33	1,971.16	7,834.02	3,922.83	0.96	-0.18	0.066
55.00	-29.52	-2.47	0.00	-220.59	0.00	220.59	3,902.73	1,951.36	7,635.30	3,823.33	1.08	-0.19	0.065
60.00	-28.15	-2.43	0.00	-208.25	0.00	208.25	3,837.05	1,918.52	7,315.25	3,663.06	1.29	-0.21	0.064
65.00	-26.80	-2.40	0.00	-196.11	0.00	196.11	3,769.65	1,884.82	6,998.55	3,504.48	1.52	-0.23	0.063
70.00	-25.49	-2.38	0.00	-184.11	0.00	184.11	3,700.53	1,850.26	6,685.47	3,347.71	1.78	-0.25	0.062
75.00	-24.20	-2.38	0.00	-172.19	0.00	172.19	3,629.69	1,814.84	6,376.27	3,192.88	2.05	-0.27	0.061
80.00	-22.95	-2.39	0.00	-160.30	0.00	160.30	3,557.12	1,778.56	6,071.21	3,040.12	2.35	-0.29	0.059
85.00	-21.73	-2.41	0.00	-148.35	0.00	148.35	3,482.83	1,741.42	5,770.54	2,889.56	2.66	-0.31	0.058
90.00	-21.55	-2.42	0.00	-136.28	0.00	136.28	3,406.82	1,703.41	5,474.52	2,741.33	3.00	-0.33	0.056
90.71	-19.83	-2.46	0.00	-134.55	0.00	134.55	3,395.84	1,697.92	5,432.68	2,720.38	3.05	-0.33	0.055
95.00	-19.31	-2.47	0.00	-124.02	0.00	124.02	3,329.09	1,664.55	5,183.41	2,595.56	3.36	-0.35	0.054
96.30	-18.56	-2.49	0.00	-120.81	0.00	120.81	2,649.38	1,324.69	4,172.95	2,089.58	3.45	-0.36	0.065
100.00	-17.56	-2.52	0.00	-111.58	0.00	111.58	2,607.49	1,303.74	4,010.55	2,008.26	3.74	-0.37	0.062
105.00	-16.59	-2.54	0.00	-98.98	0.00	98.98	2,549.43	1,274.72	3,793.98	1,899.81	4.14	-0.40	0.059
110.00	-13.83	-2.56	0.00	-86.28	0.00	86.28	2,489.65	1,244.83	3,580.72	1,793.02	4.57	-0.42	0.054
115.00	-12.93	-2.54	0.00	-73.51	0.00	73.51	2,428.15	1,214.08	3,371.05	1,688.03	5.02	-0.44	0.049
120.00	-12.58	-2.53	0.00	-60.80	0.00	60.80	2,364.93	1,182.47	3,165.21	1,584.96	5.49	-0.46	0.044
122.00	-11.83	-2.50	0.00	-55.73	0.00	55.73	2,339.16	1,169.58	3,084.00	1,544.29	5.68	-0.47	0.041
125.00	-10.98	-2.44	0.00	-48.24	0.00	48.24	2,299.99	1,149.99	2,963.46	1,483.93	5.98	-0.48	0.037
130.00	-10.17	-2.35	0.00	-36.07	0.00	36.07	2,226.60	1,113.30	2,757.75	1,380.92	6.49	-0.49	0.031
135.00	-9.50	-2.25	0.00	-24.34	0.00	24.34	2,137.76	1,068.88	2,540.99	1,272.38	7.01	-0.51	0.024
139.18	-9.32	-2.21	0.00	-14.96	0.00	14.96	2,063.55	1,031.78	2,366.73	1,185.12	7.46	-0.51	0.017
140.00	-5.51	-1.52	0.00	-13.13	0.00	13.13	2,048.92	1,024.46	2,333.10	1,168.29	7.55	-0.51	0.014
143.34	-5.37	-1.49	0.00	-8.06	0.00	8.06	1,066.86	533.43	1,206.73	604.26	7.91	-0.52	0.018
145.00	-5.02	-1.40	0.00	-5.59	0.00	5.59	1,057.77	528.89	1,178.96	590.35	8.09	-0.52	0.014
149.00	0.00	-1.35	0.00	0.00	0.00	0.00	1,035.06	517.53	1,112.30	556.98	8.52	-0.52	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.38	-2.99	0.00	-369.85	0.00	369.85	4,482.64	2,241.32	11,092.4	5,554.46	0.00	0.00	0.074
5.00	-32.21	-2.96	0.00	-354.92	0.00	354.92	4,434.84	2,217.42	10,752.7	5,384.36	0.01	-0.02	0.073
10.00	-31.06	-2.92	0.00	-340.13	0.00	340.13	4,385.31	2,192.65	10,413.7	5,214.59	0.03	-0.03	0.072
15.00	-29.93	-2.88	0.00	-325.54	0.00	325.54	4,334.06	2,167.03	10,075.6	5,045.30	0.08	-0.05	0.071
20.00	-28.82	-2.83	0.00	-311.15	0.00	311.15	4,281.09	2,140.54	9,738.73	4,876.60	0.14	-0.06	0.071
25.00	-27.73	-2.79	0.00	-296.99	0.00	296.99	4,226.40	2,113.20	9,403.31	4,708.64	0.21	-0.08	0.070
30.00	-26.67	-2.74	0.00	-283.07	0.00	283.07	4,169.98	2,084.99	9,069.60	4,541.54	0.31	-0.10	0.069
35.00	-25.62	-2.69	0.00	-269.38	0.00	269.38	4,111.84	2,055.92	8,737.86	4,375.42	0.42	-0.12	0.068
40.00	-24.60	-2.64	0.00	-255.93	0.00	255.93	4,051.98	2,025.99	8,408.36	4,210.43	0.55	-0.13	0.067
45.00	-24.58	-2.64	0.00	-242.73	0.00	242.73	3,990.40	1,995.20	8,081.34	4,046.68	0.70	-0.15	0.066
45.09	-22.75	-2.55	0.00	-242.50	0.00	242.50	3,989.32	1,994.66	8,075.70	4,043.85	0.71	-0.15	0.066
50.00	-22.04	-2.51	0.00	-229.99	0.00	229.99	3,927.10	1,963.55	7,757.08	3,884.30	0.87	-0.17	0.065
51.92	-21.43	-2.48	0.00	-225.17	0.00	225.17	3,942.33	1,971.16	7,834.02	3,922.83	0.95	-0.18	0.063
55.00	-20.46	-2.43	0.00	-217.53	0.00	217.53	3,902.73	1,951.36	7,635.30	3,823.33	1.07	-0.19	0.062
60.00	-19.51	-2.39	0.00	-205.36	0.00	205.36	3,837.05	1,918.52	7,315.25	3,663.06	1.28	-0.21	0.061
65.00	-18.57	-2.36	0.00	-193.39	0.00	193.39	3,769.65	1,884.82	6,998.55	3,504.48	1.51	-0.23	0.060
70.00	-17.66	-2.35	0.00	-181.57	0.00	181.57	3,700.53	1,850.26	6,685.47	3,347.71	1.76	-0.25	0.059
75.00	-16.77	-2.34	0.00	-169.84	0.00	169.84	3,629.69	1,814.84	6,376.27	3,192.88	2.03	-0.27	0.058
80.00	-15.90	-2.35	0.00	-158.13	0.00	158.13	3,557.12	1,778.56	6,071.21	3,040.12	2.32	-0.29	0.056
85.00	-15.05	-2.37	0.00	-146.37	0.00	146.37	3,482.83	1,741.42	5,770.54	2,889.56	2.63	-0.31	0.055
90.00	-14.93	-2.38	0.00	-134.49	0.00	134.49	3,406.82	1,703.41	5,474.52	2,741.33	2.96	-0.33	0.053
90.71	-13.74	-2.42	0.00	-132.80	0.00	132.80	3,395.84	1,697.92	5,432.68	2,720.38	3.01	-0.33	0.053
95.00	-13.38	-2.44	0.00	-122.42	0.00	122.42	3,329.09	1,664.55	5,183.41	2,595.56	3.31	-0.35	0.051
96.30	-12.86	-2.46	0.00	-119.26	0.00	119.26	2,649.38	1,324.69	4,172.95	2,089.58	3.41	-0.35	0.062
100.00	-12.17	-2.48	0.00	-110.17	0.00	110.17	2,607.49	1,303.74	4,010.55	2,008.26	3.69	-0.37	0.060
105.00	-11.50	-2.50	0.00	-97.75	0.00	97.75	2,549.43	1,274.72	3,793.98	1,899.81	4.09	-0.39	0.056
110.00	-9.58	-2.52	0.00	-85.24	0.00	85.24	2,489.65	1,244.83	3,580.72	1,793.02	4.51	-0.41	0.051
115.00	-8.96	-2.51	0.00	-72.63	0.00	72.63	2,428.15	1,214.08	3,371.05	1,688.03	4.95	-0.43	0.047
120.00	-8.71	-2.50	0.00	-60.08	0.00	60.08	2,364.93	1,182.47	3,165.21	1,584.96	5.42	-0.45	0.042
122.00	-8.19	-2.47	0.00	-55.08	0.00	55.08	2,339.16	1,169.58	3,084.00	1,544.29	5.61	-0.46	0.039
125.00	-7.61	-2.41	0.00	-47.69	0.00	47.69	2,299.99	1,149.99	2,963.46	1,483.93	5.90	-0.47	0.035
130.00	-7.04	-2.32	0.00	-35.66	0.00	35.66	2,226.60	1,113.30	2,757.75	1,380.92	6.40	-0.49	0.029
135.00	-6.58	-2.22	0.00	-24.07	0.00	24.07	2,137.76	1,068.88	2,540.99	1,272.38	6.92	-0.50	0.022
139.18	-6.45	-2.19	0.00	-14.80	0.00	14.80	2,063.55	1,031.78	2,366.73	1,185.12	7.36	-0.51	0.016
140.00	-3.82	-1.50	0.00	-13.00	0.00	13.00	2,048.92	1,024.46	2,333.10	1,168.29	7.45	-0.51	0.013
143.34	-3.72	-1.47	0.00	-7.97	0.00	7.97	1,066.86	533.43	1,206.73	604.26	7.80	-0.51	0.017
145.00	-3.48	-1.38	0.00	-5.54	0.00	5.54	1,057.77	528.89	1,178.96	590.35	7.98	-0.51	0.013
149.00	0.00	-1.35	0.00	0.00	0.00	0.00	1,035.06	517.53	1,112.30	556.98	8.41	-0.51	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	32.61	0.00	48.21	0.00	0.00	3801.88	0.00	0.70
0.9D + 1.6W	32.59	0.00	36.15	0.00	0.00	3769.03	0.00	0.69
1.2D + 1.0Di + 1.0Wi	7.46	0.00	81.44	0.00	0.00	889.22	0.00	0.18
(1.2 + 0.2Sds) * DL + E ELFM	1.67	0.00	48.16	0.00	0.00	201.52	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.99	0.00	48.16	0.00	0.00	373.94	0.00	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.67	0.00	33.38	0.00	0.00	199.47	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.99	0.00	33.38	0.00	0.00	369.85	0.00	0.07
1.0D + 1.0W	9.05	0.00	40.21	0.00	0.00	1050.95	0.00	0.20

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
4,897.90	42.70	39.50	3,801.88	81.44	32.61	77.62

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	3.250	75.000	Round	0	0.00	8.001	482.77	950.72	0.51

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
69.00	24	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	113.59	260.00	0.45	106.81	260.00	0.42

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: CTNH542A

ROB_KENT_ATC 413783
38 Maple Street
Kent, CT 06757

October 25, 2016

EBI Project Number: 6216004850

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	9.92 %

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

EBI Consulting
environmental | engineering | due diligence

October 25, 2016

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

Emissions Analysis for Site: **CTNH542A – ROB_KENT_ATC 413783**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **38 Maple Street, Kent, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **38 Maple Street, Kent, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

4) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

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

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

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

9) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. 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-VTM** has a maximum gain of **14.6 dBd** at its main lobe. 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.

10) The antenna mounting height centerline of the proposed antennas is **110 feet** above ground level (AGL).

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

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

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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):	110	Height (AGL):	110	Height (AGL):	110
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	10	Channel Count	10	Channel Count	10
Total TX Power(W):	420	Total TX Power(W):	420	Total TX Power(W):	420
ERP (W):	17,916.34	ERP (W):	17,916.34	ERP (W):	17,916.34
Antenna A1 MPE%	5.96	Antenna B1 MPE%	5.96	Antenna C1 MPE%	5.96
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	110	Height (AGL):	110	Height (AGL):	110
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 A2 MPE%	0.62	Antenna B2 MPE%	0.62	Antenna C2 MPE%	0.62

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**6.57 %**
AT&T	0.86 %
Verizon Wireless	2.49 %
Site Total MPE %:	**9.92 %**

T-Mobile Sector A Total:	6.57 %
T-Mobile Sector B Total:	6.57 %
T-Mobile Sector C Total:	6.57 %
Site Total:	9.92 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,559.48	110	17.01	AWS - 2100 MHz	1000	1.70%
T-Mobile PCS - 1900 MHz LTE	2	2,559.48	110	17.01	PCS - 1900 MHz	1000	1.70%
T-Mobile AWS - 2100 MHz UMTS	2	1,279.74	110	8.51	AWS - 2100 MHz	1000	0.85%
T-Mobile PCS - 1950 MHz UMTS	2	1,279.74	110	8.51	PCS - 1950 MHz	1000	0.85%
T-Mobile PCS - 1950 MHz GSM	2	1,279.74	110	8.51	PCS - 1950 MHz	1000	0.85%
T-Mobile 700 MHz LTE	1	865.21	110	2.88	700 MHz	467	0.62%
						Total*:	**6.57%**

***NOTE: Totals may vary by 0.01% due to summing of remainders**

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	6.57 %
Sector B:	6.57 %
Sector C:	6.57 %
T-Mobile Per Sector Maximum:	6.57 %
Site Total:	9.92 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.92%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Exhibit F

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

ATC SITE # / NAME: 413783 / Kent Pcs CT
SITE ADDRESS: S Kent Road, Kent, CT
LICENSEE: T-Mobile Northeast LLC d/b/a T-Mobile

I, Margaret Robinson, Senior Counsel for American Tower*, operator of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **T-Mobile Northeast LLC d/b/a T-Mobile**, its successors and assigns, and/or its agent, (collectively, the "Licensee") to act as American Tower's non-exclusive agent for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for Licensee's telecommunications' installation.

We understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee's installation and any such conditions of approval or modifications will be Licensee's sole responsibility.

Signature:

Print Name: Margaret Robinson
Senior Counsel
American Tower*

NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

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

WITNESS my hand and official seal, this 9 day of November, 2016.

NOTARY SEAL

ANGELICA R. LEMOS-BARTHELEMY
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
April 10, 2020

Notary Public
My Commission Expires: April 10, 2020

*American Tower includes all affiliates and subsidiaries of American Tower Corporation.