



Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

October 29, 2018

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

RE: Request of T-Mobile for an Order to Approve the Shared Use of an Existing Tower at 151 Young Street, East Hampton, CT 06424

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes (“C.G.S.”) §16-50aa, as amended, T-Mobile Northeast LLC (“T-Mobile”) hereby requests an order from the Connecticut Siting Council (“Council”) to approve the shared use by T-Mobile of an existing telecommunication tower at 151 Young Street, East Hampton, Connecticut (the “Property”). The existing 140-foot monopole is owned by Crown Castle International Corp. (“Crown Castle”), the underlying property is owned by Kevin and Kim Kiely. T-Mobile requests that the Council find that the proposed shared use of the Crown Castle tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. A copy of this filing is being mailed to Town Manager Michael Maniscalco and Planning & Zoning Official Jeremy DeCarli.

Background

The existing Crown Castle facility consists of a 140-foot monopole tower on a 10,000 square foot parcel along the northwest side of Young Street. AT&T maintains antennas at the 118-foot level. Equipment associated with the AT&T antennas is located south of the tower. Verizon maintains antennas at the 139-foot level. Equipment associated with the Verizon antennas is located north of the tower.

T-Mobile is licensed by the Federal Communications Commission (“FCC”) to provide wireless services throughout the State of Connecticut. T-Mobile and Crown Castle have agreed to the proposed shared use of the Young Street tower pursuant to mutually acceptable terms and conditions. Likewise, T-Mobile and Crown Castle have agreed to the proposed installation of equipment cabinets on the ground on the southeast side of the tower. Crown Castle has authorized T-Mobile to apply for all necessary permits and approvals that may be required to share the existing tower. (See Owner’s authorization letter).

T-Mobile proposes to install nine (9) antennas at a height of 130 feet above ground level. T-Mobile will also install four (3) hybrid fiber cables and six (6) RRHs. Propose equipment on the ground: four cabinets, one (1) APU generator that will go on a proposed 10' x 20' pad.

Included in the Construction Drawings are T-Mobile's project specifications for locations of all proposed site improvements.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." T-Mobile respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing Crown Castle tower is structurally capable of supporting T-Mobile's proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support T-Mobile's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the Crown Castle tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue an order approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the Crown Castle tower would have a minimal environmental effect for the following reasons:

1. The proposed installation of nine (9) antennas and six (6) RRHs at a height of 130 feet above ground level, would have no visual impact on the area of the tower. T-Mobile's cabinets, and generator will be installed within the facility compound. T-Mobile's shared use of this tower therefore, does not cause any significant change or alteration in the physical or environmental characteristics of the existing site.
2. Operation of T-Mobile's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that T-Mobile's proposed facility will operate well within the FCC RF emissions safety standards.
3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or

discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the Crown Castle facility other than periodic maintenance. The proposed shared use of the Crown Castle tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

- D. Economic Feasibility.** As previously mentioned, T-Mobile has entered into an agreement with Crown Castle for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible. (Please see included authorization.)
- E. Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting T-Mobile's full array of nine (9) antennas, six (6) RRHs and all related equipment. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing Crown Castle tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing Crown Castle tower at 151 Young Street satisfies the criteria state in C.G.S. §16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the proposed shared use.

Sincerely,

William Stone
Real Estate Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
518-373-3543
William.stone@crowncastle.com

Attachments:

- Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table report (RF Emissions Analysis Report)

Melanie A. Bachman

October 29, 2018

Page 4

Copies to:

Michael Maniscalca-Town Manager
20 East High Street
East Hampton, CT 06424

Jeremy DeCarli- Planning & Zoning
Official 20 East High Street
East Hampton, CT 06424

Crown Castle (Tower Owner)
12 Gill Street, Suite 5800
Worburn, MA 01801

Kevin and Kim Kiely
151 Young Street
East Hampton, CT 06424

ORIGIN D:GFLA (518) 373-3523
ALLISON J. SQUIRES
CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

SHIP DATE: 02NOV18
ACTWTG: 1.00 LB
CAD: 104924194IN/ET4040
BILL SENDER

TO KEVIN AND KIM FIELY

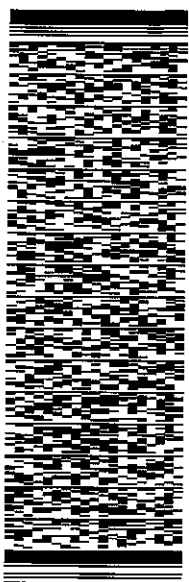
151 YOUNG ST

EAST HAMPTON CT 06424

(860) 267-2742

REF: 1734,7690

PO: DEPT:



552J1/38E7/DCA5

TRK# 7736 3564 2650
0201

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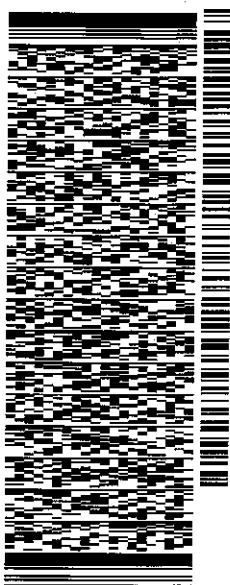
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ALLISON J. SQUIRES
CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

SHIP DATE: 02NOV18
ACTWGT: 1.00 LB
CAD: 104924194/NET/4040
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TO TOWN OF EAST HAMPTON
PLANNING AND ZONING
20 EAST HIGH STREET

EAST HAMPTON CT 06424
(860) 267-9601 REF: 1734/790
NY DEPT:
PO

552J138E7DC/5

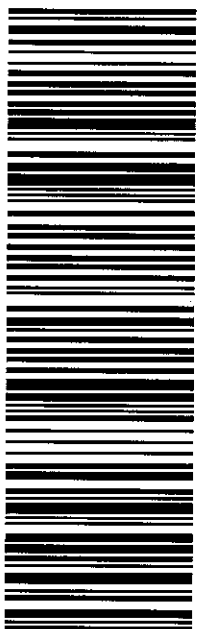


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CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

SHIP DATE: 02NOV18
ACTWGT: 1.00 LB
CAD: 104924794/N/ET/4040

BILL SENDER

TO TOWN OF EAST HAMPTON
TOWN MANAGER
20 EAST HIGH STREET

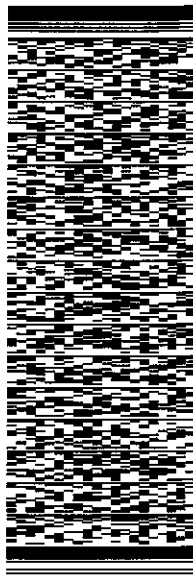
EAST HAMPTON CT 06424

(800) 267-9601

REF: 17347890

PO

DEPT



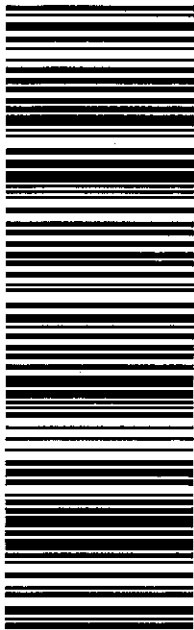
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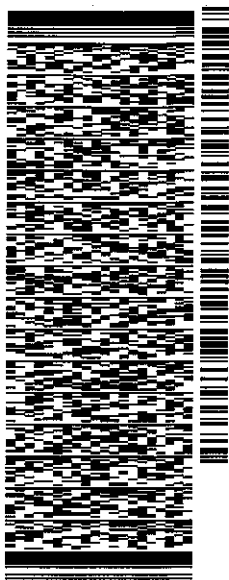
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CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

SHIP DATE: 02NOV18
ACTWT/GT: 6.00 LB
CAD: 104924794IN/ET4040
BILL SENDER

TO **MELANIE BACHMAN**
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE

NEW BRITAIN CT 06051
(860) 827-2951 REF: 1765 6890
NY/ DEPT:
PO/



552J1G8E7/DCA5

TRK# 7736 3557 0094
0201

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CT-US
BDL 06051



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DOCKET NO. 253 - AT&T Wireless PCS, LLC d/b/a AT&T	}	Connecticut
Wireless application for a Certificate of Environmental	}	Siting
Compatibility and Public Need for the construction, maintenance	}	Council
and operation of a wireless telecommunications facility at 151	}	
Young Street or 162 Young Street, East Hampton, Connecticut.	}	October 29, 2003

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 AT&T Wireless PCS d/b/a AT&T Wireless for the construction, maintenance and operation of a wireless telecommunications facility at Site A, 151 Young Street, East Hampton, Connecticut. The Council denies certification of Site B, 162 Young Street, East Hampton, 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 AT&T Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 120 feet above ground level.
2. The tower foundation shall be of sufficient capacity to support a monopole extension to 150 feet above ground level.
3. Panel antennas shall be installed on the monopole using a flush mount or T-arm mount design.
4. 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 submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a detailed site development plan that depicts the location of the access road, compound, tower, utility line, erosion and sedimentation control features, and landscaping;
 - b) specifications for the tower, tower foundation, antennas, equipment building, and security fence; and
 - c) construction plans for site clearing, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
 - d) visual simulations of the monopole and appropriate monopole stealth options including a flagpole and tree tower design.

5. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of 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 electromagnetic radio frequency power density is 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.
6. 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.
7. 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. The Certificate Holder shall provide space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
8. If the facility does not initially provide wireless services within one year of completion of construction or 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.
9. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.
10. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct 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 Hartford Courant, and the Middletown Press.

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

AT&T Wireless PCS, LLC
d/b/a AT&T Wireless

Its Representative

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601
(914) 761-1300

151 YOUNG ST

Location 151 YOUNG ST

Mblu 13/ 32/ 7/ 1/

Acct# R02394

Owner KIELY KEVIN G + KIM S

Assessment \$353,910

Appraisal \$505,570

PID 2270

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$414,610	\$90,960	\$505,570

Assessment			
Valuation Year	Improvements	Land	Total
2015	\$290,230	\$63,680	\$353,910

Owner of Record

Owner KIELY KEVIN G + KIM S

Sale Price \$0

Co-Owner

Certificate

Address 151 YOUNG ST

Book & Page 150/ 331

EAST HAMPTON, CT 06424

Sale Date 08/27/1980

Instrument 29

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
KIELY KEVIN G + KIM S	\$0		150/ 331	29	08/27/1980

Building Information

Building 1 : Section 1

Year Built: 1710

Living Area: 3,704

Replacement Cost: \$376,914

Building Percent 84

Good:

Replacement Cost

Less Depreciation: \$316,610

Building Attributes	
Field	Description

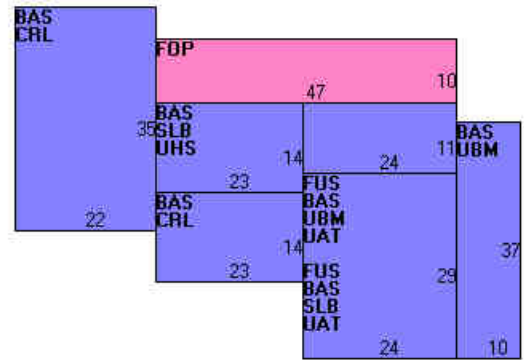
Style	Family Duplex
Model	Residential
Grade:	B+
Story Height	2 Stories
Foundation	Stone
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure:	Gable
Roof Cover	Wood Shingle
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Pine/Soft Wood
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	5 Bedrooms
Total Bthrms:	3
Total Half Baths:	0
# Extra Fixtures	1
Total Rooms:	9
Bath Style:	Average
Kitchen Style:	Average
Fireplace	0
Fin Basement	0
Fin Bsmt Qual	
Bsmt. Garages	0
Gas Fireplace	Gas

Building Photo



(http://images.vgsi.com/photos/EastHamptonCTPhotos//\00\00\00\

Building Layout



Building Sub-Areas (sq ft)			<u>Legend</u>	
Code	Description	Gross Area	Living Area	
BAS	First Floor	2,744	2,744	
FUS	Finished Upper Story	960	960	
CRL	Crawl Space	1,092	0	
FOP	Framed Open Porch	470	0	
SLB	Slab	586	0	
UAT	Unfinished Attic	960	0	
UBM	Unfin Basement	1,066	0	
UHS	Unfinished Half Story	322	0	
		8,200	3,704	

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Land

Land Use

Use Code 101
Description Single Family
Zone R-4
Neighborhood 200
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 2
Frontage
Depth
Assessed Value \$63,680
Appraised Value \$90,960

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
BRN1	Barn 1 Story	FR	Frame	1672 S.F.	\$49,660	1
SPL1	InGround Pool			512 S.F.	\$13,820	1
GAR1	Garage	FR	Frame	950 S.F.	\$21,380	1
SHD1	Shed	FR	Frame	100 S.F.	\$1,500	1
BRN8	Pole Barn	FR	Frame	529 S.F.	\$11,640	1


Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$414,610	\$90,960	\$505,570
2014	\$477,290	\$100,510	\$577,800
2012	\$477,290	\$100,510	\$577,800

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$290,230	\$63,680	\$353,910
2014	\$334,100	\$70,360	\$404,460
2012	\$334,100	\$70,360	\$404,460

151 Young St



Imagery ©2018 Google, Map data ©2018 Google 100 ft 



151 Young St
East Hampton, CT 06424





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

Crown Castle, does hereby authorize T-Mobile and its authorized contractors/agents to act as “Applicant” in the processing of all applications, permits, research and other related activities associated with the processing, planning, design review, permitting, entitlement and construction of additional equipment, antennas and site improvements for the Crown Castle existing wireless communications facility described as follows:

Customer Site Name:	CTHA602A	Crown Castle Site ID Number:	845994
Site Address:	151 YOUNG STREET EAST HAMPTON, CT 06424	Crown Castle Site Name:	EAST HAMPTON - YOUNG STREET

This authorization is fully contingent upon T-Mobile authorized contractors/agents’ compliance with the following conditions:

1. Crown Castle must review the application prior to submittal. Crown Castle must be provided all applications, narratives, drawings and attachments at least 72 hours in advance of their submittal to the locality. Use of email and electronic attachments is encouraged. A Crown Castle Zoning Subject Matter Expert (SME) will review and provide written comment to the customer within 48 hours of receipt of a complete set of application materials. If Crown Castle indicates that changes are required, submissions shall be altered in accordance with Crown Castle comments prior to submission to the locality. Verification of corrections should also be accomplished via emails and attachments.
2. In no event may T-Mobile encourage, suggest, participate in, or permit the imposition of any restrictions or additional obligations whatsoever on the tower site or Crown Castle’s current or future use or ability to license space at the tower site as part of or in exchange for obtaining any approval, permit, exception or variance.
3. A copy of the final permit and/or a written summary of the zoning/entitlement decision rendered by the locality and any/all conditions placed on that decision shall be communicated in detail to Crown Castle well within the appeal period provided by the locality (typically 10-15 days).
4. All conditions of approval pertinent to the construction of the proposed project must be included in the construction drawings for the project. The conditions of approval pertinent to the construction of the project shall be copied verbatim from the zoning permit approval language, and shall be present in the drawings prior to submission for building permits and contractor bidding. Crown Castle shall verify the inclusion of appropriate conditions of approval in the construction drawing redline process.
5. Crown Castle will provide a Notice To Proceed (NTP) to construction to the customer upon receipt of the final approved zoning permit and the approved Building Permit.

By Crown Castle:

Signature:

Amanda Cornwall

Printed Name: Amanda Cornwall

Title: Real Estate Specialist – East Area

Date: February 22, 2018



T-MOBILE SITE NUMBER: CTHA602A
T-MOBILE SITE NAME: UCTHA602A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 140'-0"

BUSINESS UNIT #: 845994
SITE ADDRESS: 151 YOUNG STREET
EAST HAMPTON, CT 06424
COUNTY: MIDDLESEX
JURISDICTION: TOWN OF EAST HAMPTON

T-MOBILE 2018 NSD



12920 SE 38TH STREET
 BELLEVUE, WA 98006



3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A

BU #: **845994**
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
 EAST HAMPTON, CT 06424
 EXISTING 140'-0" MONOPOLE

SITE INFORMATION

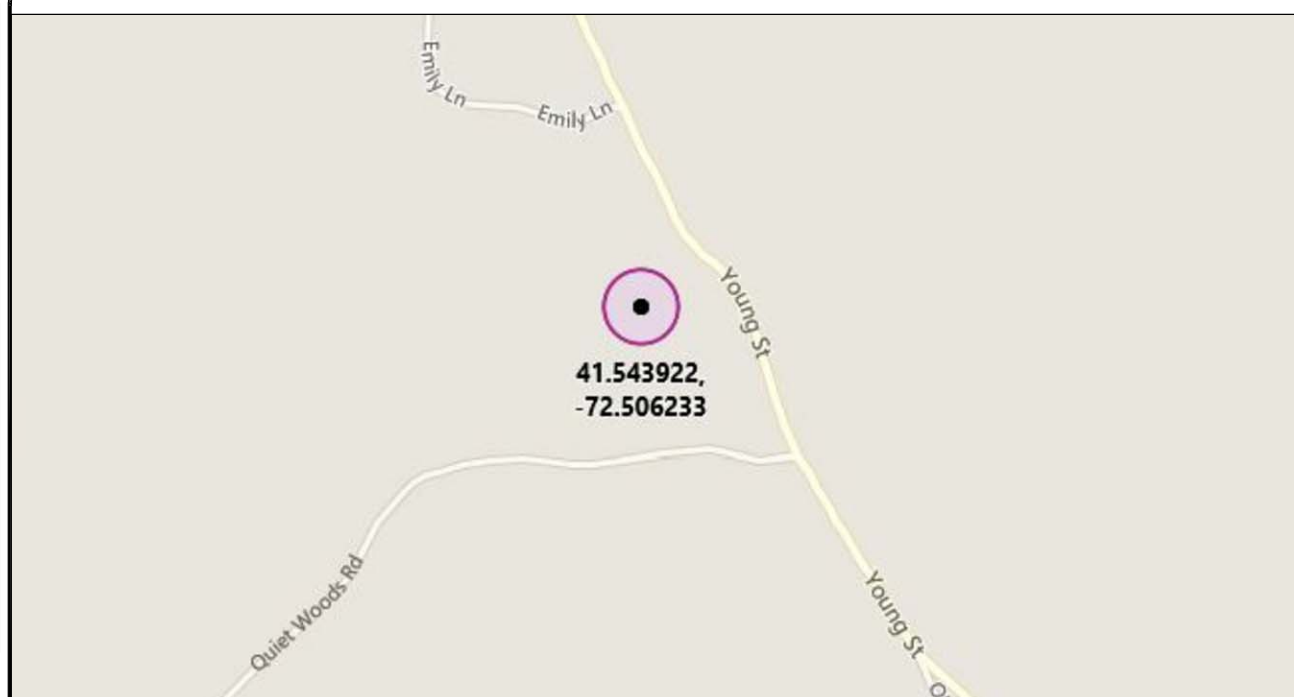
CROWN CASTLE SITE NAME: EAST HAMPTON - YOUNG STREET
 SITE ADDRESS: 151 YOUNG STREET
 EAST HAMPTON, CT 06424
 COUNTY: MIDDLESEX
 MAP/PARCEL #: 17/32/7
 AREA OF CONSTRUCTION: EXISTING
 LATITUDE: 41° 31' 38.10"
 LONGITUDE: -72° 30' 22.46"
 LAT/LONG TYPE: NAD83
 GROUND ELEVATION: 482 FT.
 CURRENT ZONING: R-4
 JURISDICTION: TOWN OF EAST HAMPTON
 OCCUPANCY CLASSIFICATION: U
 TYPE OF CONSTRUCTION: IIB
 A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
 PROPERTY OWNER: KEVIN G & KIM S KIELY
 151 YOUNG STREET
 EAST HAMPTON, CT 06424
 TOWER OWNER: CCATT LLC
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
 CARRIER/APPLICANT: T-MOBILE
 12920 SE 38TH STREET
 BELLEVUE, WA 98006
 CROWN CASTLE USA INC. APPLICATION ID: 448692
 ELECTRIC PROVIDER: NORTHEAST UTILITIES
 (800) 286-2000
 TELCO PROVIDER: AT&T
 (866) 620-6900

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	FINAL SITE PLAN
C-2	EQUIPMENT PLAN
C-3	EQUIPMENT ELEVATIONS & DETAILS
C-4	TOWER ELEVATION & ANTENNA PLAN
C-5	EQUIPMENT DETAILS
C-6	EQUIPMENT DETAILS
C-7	EQUIPMENT DETAILS
C-8	EQUIPMENT DETAILS
E-1	ELECTRICAL SITE PLAN
E-2	UTILITY FRAME AND WIRING DETAILS
E-3	POWER DIAGRAM & ONE-LINE DIAGRAM
G-1	EQUIPMENT & ANTENNA GROUNDING PLANS
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

LOCATION MAP



ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/02/18	BWT	PRELIMINARY	ZTK
0	02/22/18	BWT	CONSTRUCTION	AJF
1	06/19/18	JAS	CONSTRUCTION	AJF
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4	09/21/18	ZTK	CONSTRUCTION	JPL
5	10/05/2018	AMC	CONSTRUCTION	JPL
6	10/17/2018	DAB	CONSTRUCTION	JPL

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.	_____	_____
LAND USE PLANNER	_____	_____
T-MOBILE	APPROVED	_____
OPERATIONS	_____	_____
RF	_____	_____
NETWORK	_____	_____
BACKHAUL	_____	_____
CONSTRUCTION MANAGER	APPROVED By Keith J. Balsewicz at 2:26 pm, Oct 22, 2018	_____

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2016 CT STATE BUILDING CODE/2012 IBC W/ CT AMENDMENTS
MECHANICAL	2016 CT STATE BUILDING CODE/2012 IMC W/ CT AMENDMENTS
ELECTRICAL	2016 CT STATE BUILDING CODE/2014 NEC W/ CT AMENDMENTS

REFERENCE DOCUMENTS:
 STRUCTURAL ANALYSIS: BY OTHERS

MOUNT ANALYSIS: BY OTHERS



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 CALL 3 WORKING DAYS BEFORE YOU DIG!



PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO PROPOSE AN ANTENNA MODIFICATION ON AN EXISTING WIRELESS SITE.

TOWER SCOPE OF WORK:

- INSTALL (9) PANEL ANTENNAS ON NEW ANTENNA MOUNT
- INSTALL (6) RRU's
- INSTALL (3) NEW PORT HOLES
- INSTALL (3) 1-1/4" HYBRID CABLE LINES

GROUND SCOPE OF WORK:

- INSTALLATION OF NEW 10'-0"x120'-0" CONCRETE EQUIPMENT PAD WITHIN A NEW 10'-0"x26'-0" LEASE AREA WITHIN THE EXISTING FENCED COMPOUND
- INSTALLATION OF NEW ELECTRICAL SERVICE TO T-MOBILE EQUIPMENT
- INSTALLATION OF NEW FIBER SERVICE TO T-MOBILE EQUIPMENT
- INSTALLATION OF NEW DIESEL GENERATOR

DESIGN PACKAGE BASED ON THE RFDS
 REVISION: R.0.2
 DATE: 7/16/18

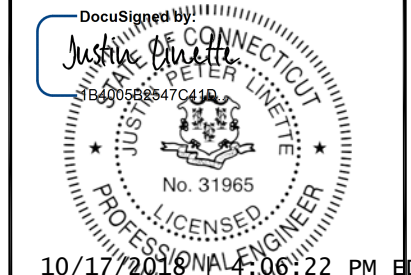
DESIGN PACKAGE BASED ON THE APPLICATION
 ID: 448692
 REVISION: 2

INSTALLER NOTE:

PORT HOLE DESIGN AND INSTALLATION AT 124'-0" REQUIRED. CROWN CASTLE CONSTRUCTION MANAGER & MODIFICATION PROJECT MANAGER TO COORDINATE.

PROJECT TEAM

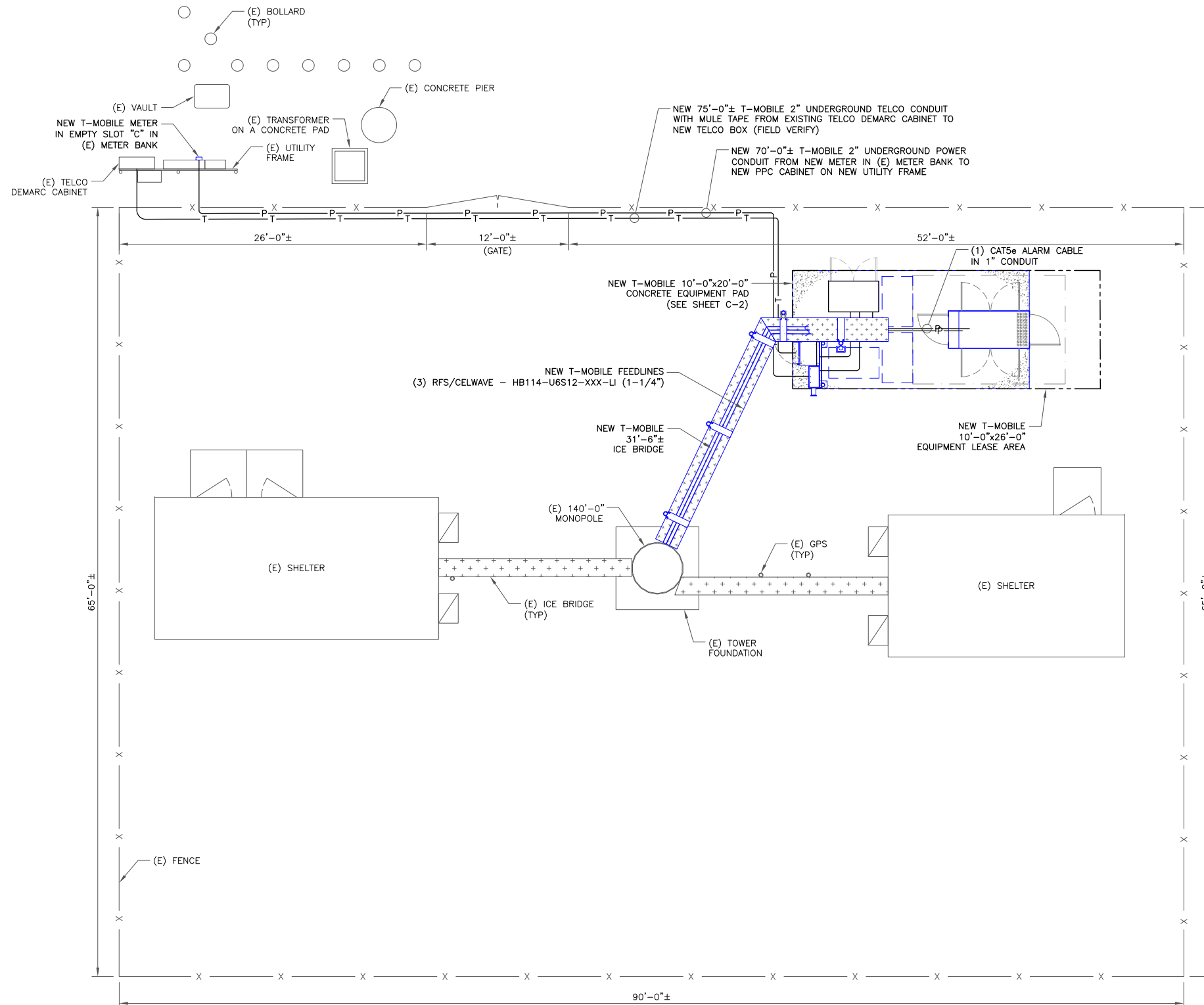
A&E FIRM:
 CROWN CASTLE USA INC.
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
 CROWN.AE.APPROVAL@CROWNCastle.COM
 CROWN CASTLE USA INC. DISTRICT CONTACTS:
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065
 CHRISTINE TROTTA - PROJECT MANAGER
 (518) 373-3511
 JASON D'AMICO - CONSTRUCTION MANAGER
 (860) 209-0104
 DASHANNA HANLON - A&E PROJECT MANAGER
 DASHANNA.HANLON@CROWNCastle.COM
 (781) 970-0067
 DAN VADNEY - MODIFICATION PROJECT MANAGER
 DAN.VADNEY@CROWNCastle.COM
 (518) 373-3510



10/17/2018 4:06:22 PM EDT
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SHEET NUMBER: **T-1** REVISION: **6**



1 FINAL SITE PLAN
 SCALE: 3/16"=1'-0" (FULL SIZE)
 3/32"=1'-0" (11x17)



T-Mobile
 12920 SE 38TH STREET
 BELLEVUE, WA 98006

CROWN CASTLE
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A
 BU #: 845994
EAST HAMPTON - YOUNG STREET
 151 YOUNG STREET
 EAST HAMPTON, CT 06424
 EXISTING 140'-0" MONOPOLE

ISSUED FOR:

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6	10/17/2018	DAB	CONSTRUCTION	JPL

DocuSigned by:
Justin Dineen
 18400582547C41A
 JUSTIN PETER LINETTE
 No. 31965
 LICENSED PROFESSIONAL ENGINEER
 10/17/2018 4:06:22 PM EDT
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 Registration #PEC.0001101

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CTHA602A

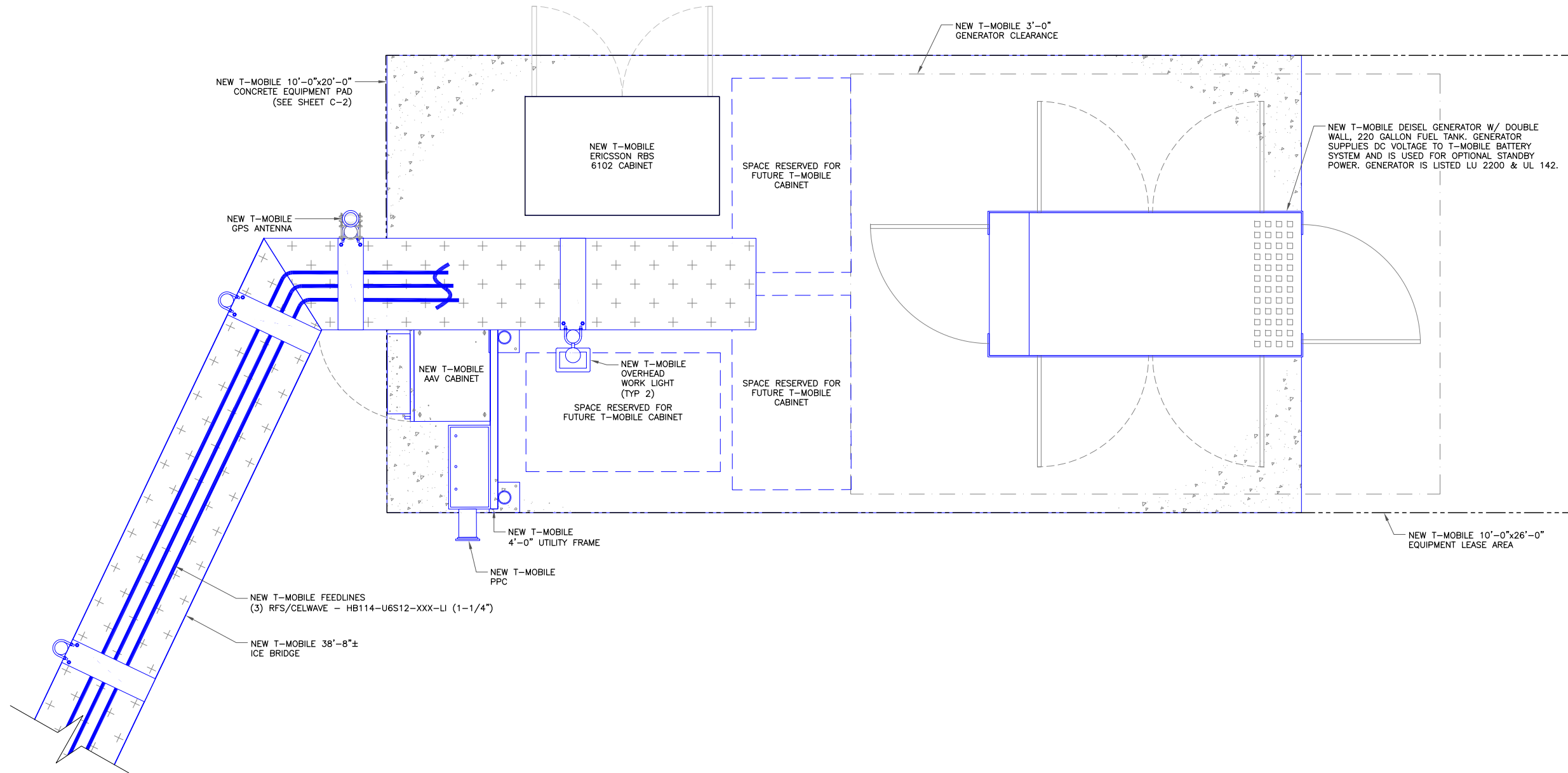
BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
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DocuSigned by:
 Justin Linette
 1B400582547C41A

STATE OF CONNECTICUT
 JUSTIN PETER LINETTE
 No. 31965
 LICENSED PROFESSIONAL ENGINEER

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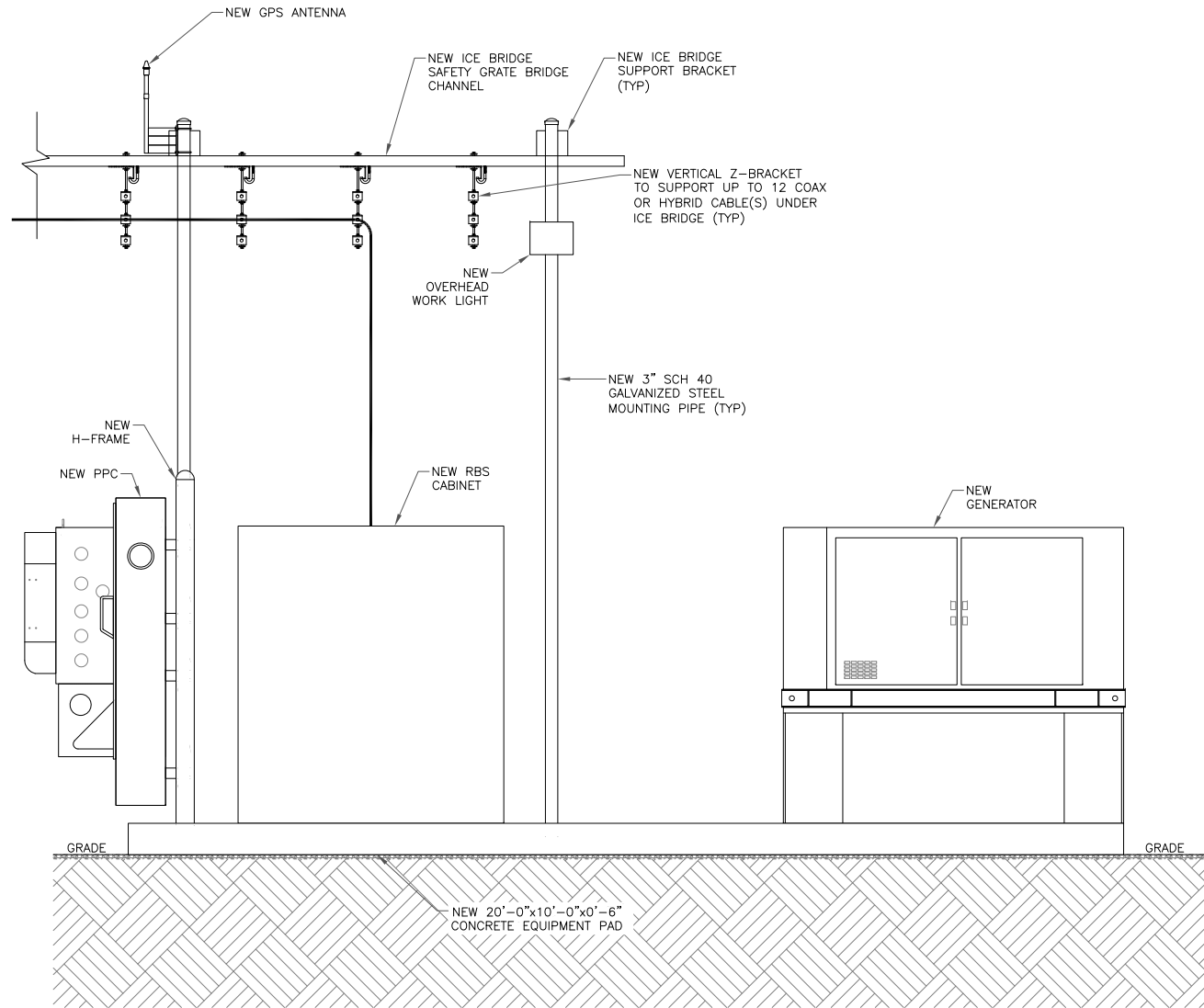
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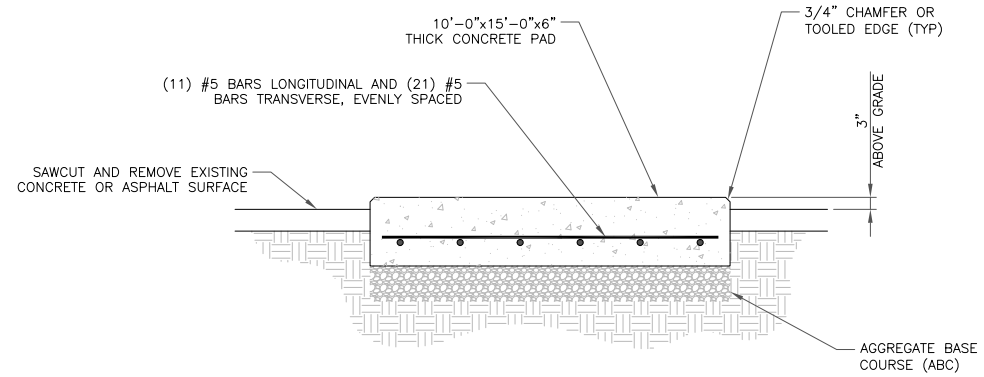
SHEET NUMBER: **C-2** REVISION: **6**

1 EQUIPMENT PLAN
 SCALE: 3/4"=1'-0" (FULL SIZE)
 3/8"=1'-0" (11x17)





1 EQUIPMENT ELEVATION - GROUND LEVEL
SCALE: NOT TO SCALE



NOTES:

- 1) MINIMUM CONCRETE STRENGTH (f'c) TO BE 4,500 psi UNLESS NOTED OTHERWISE. CONCRETE MIX SHALL BE DESIGNED BY A CERTIFIED LABORATORY. CONCRETE EXPOSED TO FREEZE-THAW CYCLES TO CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A WATER-TO-CEMENT RATIO (W/C) NOT TO EXCEED 0.45.
- 2) CONCRETE PAD SHALL BEAR ON A MINIMUM OF 8" OF AGGREGATE BASE COURSE (ABC) MATERIAL COMPACTED TO 98% OF MAXIMUM DENSITY DETERMINED BY ASTM D1557 (MODIFIED PROCTOR). MATERIAL SHOULD BE WITHIN 3% OF OPTIMUM MOISTURE AT TIME OF COMPACTION.
- 3) ALL REINFORCING TO MAINTAIN 3" COVER WHEN CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.

2 CONCRETE PAD DETAIL
SCALE: NOT TO SCALE

T-Mobile
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BELLEVUE, WA 98006

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A

BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
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DocuSigned by
Justin Dineen

18400582547C41A

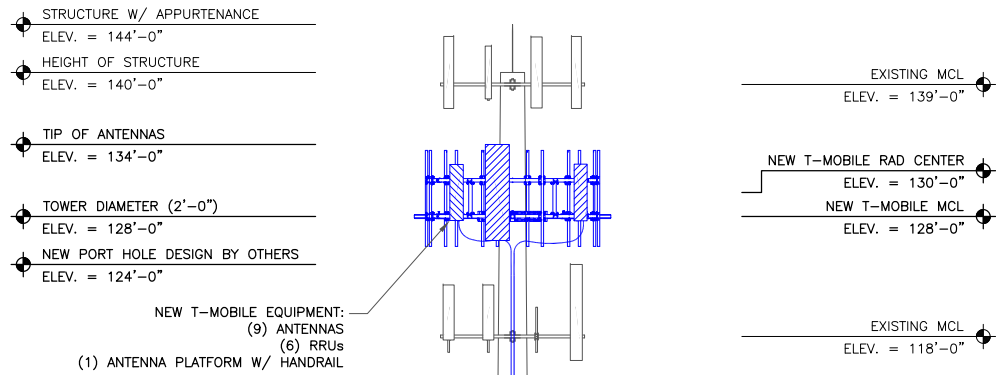
STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
LICENSED PROFESSIONAL ENGINEER

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SHEET NUMBER: **C-3** REVISION: **6**



T-MOBILE EQUIPMENT
 ANTENNA CL: 130'-0"
 MOUNT CL: 128'-0"

(E) 140'-0" MONOPOLE
 NEW T-MOBILE FEEDLINES
 (3) RFS/CELWAVE - HB114-U6S12-XXX-LI (1-1/4")
 ROUTED EXTERNALLY

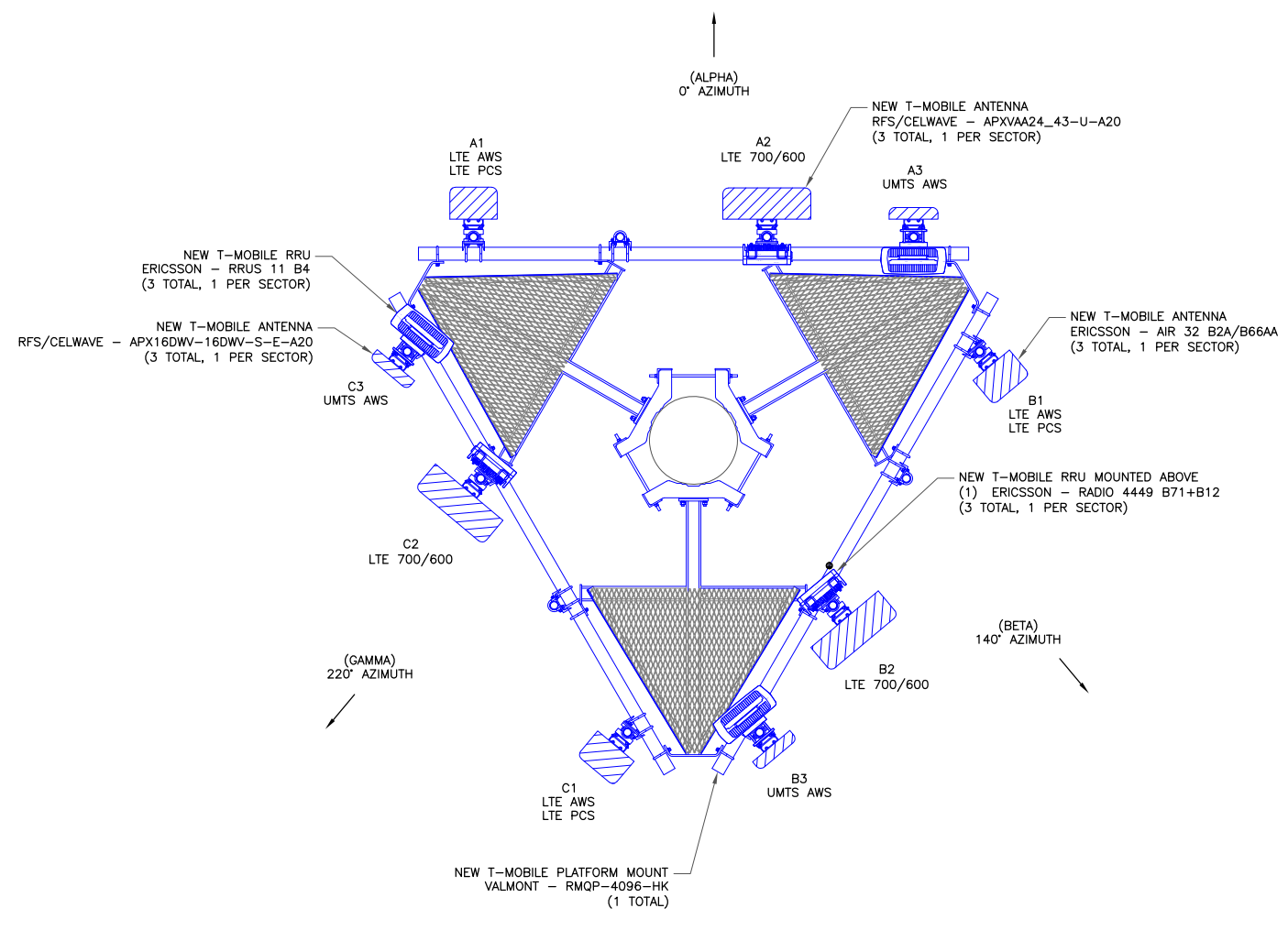
INSTALLER NOTE:

- DIRECT TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB.
- PORT HOLE DESIGN AND INSTALLATION AT 124'-0" REQUIRED. CROWN CASTLE CONSTRUCTION MANAGER & MODIFICATION PROJECT MANAGER TO COORDINATE.

1 FINAL ELEVATION
 SCALE: NOT TO SCALE

ANTENNA SCHEDULE										
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	LTE AWS LTE PCS	130'-0"	0°	ERICSSON	AIR 32 B2A/B66AA	-	-	-	HYBRID (180'-0")
ALPHA	A2	LTE 700/600	130'-0"	0°	RFS/CELWAVE	APXVAA24_43-U-A20	-	-	(1) ERICSSON - RADIO 4449 B71+B12	SHARE
ALPHA	A3	UMTS AWS	130'-0"	0°	RFS/CELWAVE	APX16DW-16DW-S-E-A20	-	-	(1) ERICSSON - RRUS 11 B4	SHARE
BETA	B1	LTE AWS LTE PCS	130'-0"	140°	ERICSSON	AIR 32 B2A/B66AA	-	-	-	HYBRID (180'-0")
BETA	B2	LTE 700/600	130'-0"	140°	RFS/CELWAVE	APXVAA24_43-U-A20	-	-	(1) ERICSSON - RADIO 4449 B71+B12	SHARE
BETA	B3	UMTS AWS	130'-0"	140°	RFS/CELWAVE	APX16DW-16DW-S-E-A20	-	-	(1) ERICSSON - RRUS 11 B4 (1) GPS	SHARE
GAMMA	C1	LTE AWS LTE PCS	130'-0"	220°	ERICSSON	AIR 32 B2A/B66AA	-	-	-	HYBRID (180'-0")
GAMMA	C2	LTE 700/600	130'-0"	220°	RFS/CELWAVE	APXVAA24_43-U-A20	-	-	(1) ERICSSON - RADIO 4449 B71+B12	SHARE
GAMMA	C3	UMTS AWS	130'-0"	220°	RFS/CELWAVE	APX16DW-16DW-S-E-A20	-	-	(1) ERICSSON - RRUS 11 B4	SHARE

2 ANTENNA SCHEDULE
 SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
 SCALE: NOT TO SCALE

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 BELLEVUE, WA 98006

CROWN CASTLE
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A

BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
 EAST HAMPTON, CT 06424

EXISTING 140'-0" MONOPOLE

ISSUED FOR:

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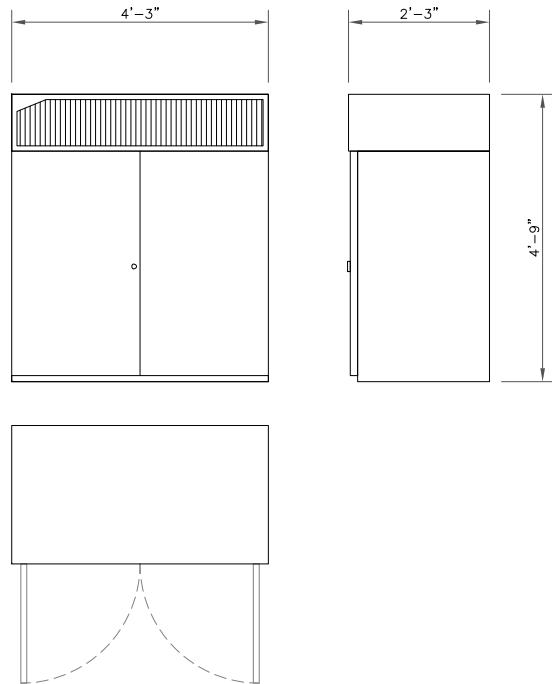
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 Justin Dineen
 JUSTIN DINEEN
 18400582547C410
 No. 31965
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SHEET NUMBER: **C-4** REVISION: **6**

EQUIPMENT NOTES:

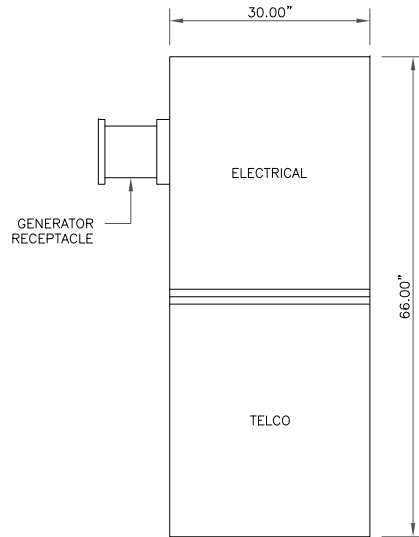
HEIGHTxWIDTHxDEPTH: 57.08" x 51.00" x 27.55"
(1450.0mm x 1300.0mm x 700.0mm)
APPROX. MAX. WEIGHT: 859 LBS (390 kg)



1 ERICSSON - RBS 6102
SCALE: NOT TO SCALE

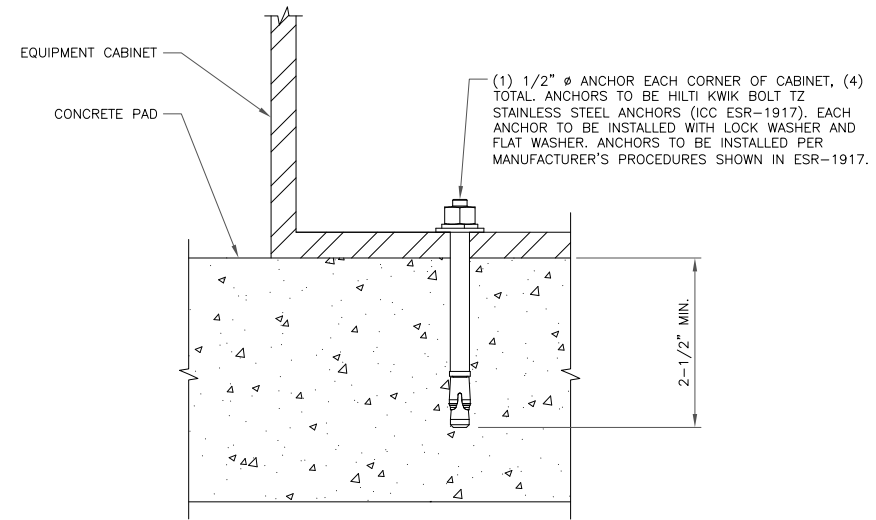
EMERSON SPECIFICATIONS (CS2S2-W736 PPC)

DIMENSIONS (HxWxD): 66.00" x 30.00" x 10.00"
WEIGHT: APPROXIMATELY 150 LBS
VOLTAGE: 240/120 VAC, SINGLE PHASE
AMPERAGE: 200A
FAULT CURRENT RATING: 65kAIC
MAIN BREAKERS: 200A SQUARE D, QG TYPE
TRANSFER TYPE: SLIDE BAR MECHANICAL INTERLOCK
DISTRIBUTION: 24 POSITION, 200A LOAD CENTER
BRANCH BREAKERS: 60A, 240VAC, SQUARE D (TVSS)
20A, 120VAC, SQUARE D (CONVENIENCE OUTLETS)
10A, 120VAC, SQUARE D (COOLING FAN)
GENERATOR RECEPTACLE: 200A APPLETON (LEFT OR RIGHT MOUNT)

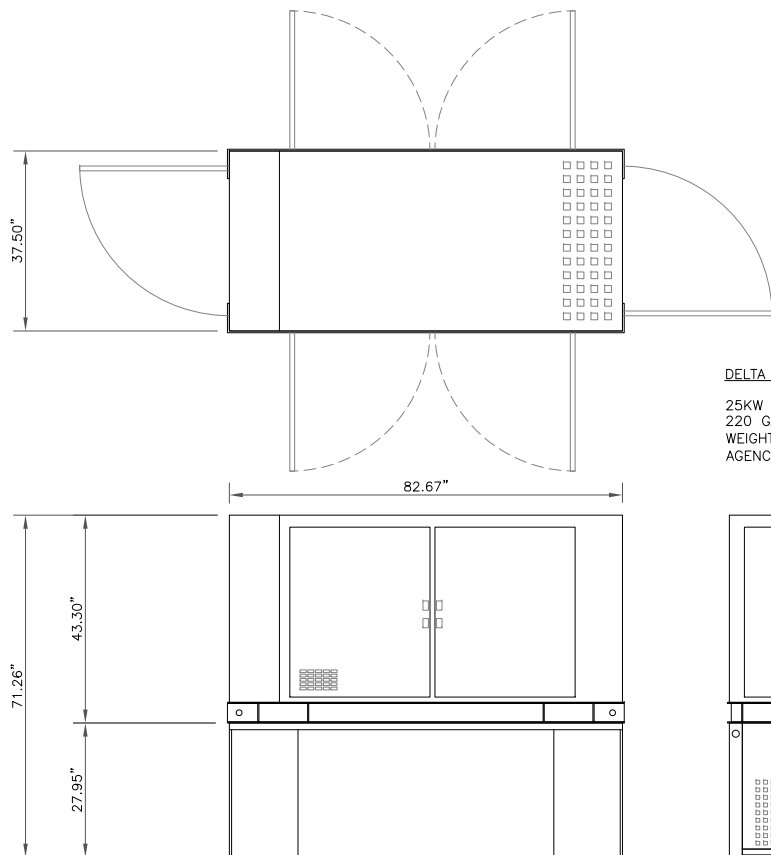


EQUIPMENT NOTES:
THE PPC CAN BE ORDERED WITH THE GENERATOR RECEPTACLE ON EITHER SIDE. SEE PLANS FOR SIDE NEEDED PRIOR TO ORDERING THE PPC.

2 EMERSON - CS2S2-W736
SCALE: NOT TO SCALE



3 CABINET ANCHOR DETAIL
SCALE: NOT TO SCALE



DELTA - ESOG15-PCA01:
25KW DIESEL DC GENERATOR
220 GALLON FUEL TANK
WEIGHT: 5,000 LBS MAX (APPROXIMATE)
AGENCY LISTINGS: UL 2200/UL 142

220 GALLON FUEL TANK

4 DIESEL DC GENSET 25 KW (ESOG15-PCA01)
SCALE: NOT TO SCALE

NEPA 704 HAZARD IDENTIFICATION SYSTEM 15" DIAMOND



DIESEL FUEL
COMBUSTIBLE
NO SMOKING
NO OPEN FLAMES
FUEL TANK CAPACITY 110 GALS

DIESEL (WHITE LETTERING W/ RED BACKGROUND)
COMBUSTIBLE (BLACK LETTERING W/ WHITE BACKGROUND)
FLAMMABLE (BLACK LETTERING W/ WHITE BACKGROUND)
NO SMOKING (BLACK LETTERING W/ WHITE BACKGROUND)

- NOTE:**
- SIGNS MUST BE MADE OF DURABLE MATERIAL.
 - LETTERS SHALL NOT BE LESS THAN 3" (76.2mm) MIN. IN HEIGHT & 1/2" (12.7mm) IN STROKE.
 - SIGNS SHALL NOT BE OBLSCURED OR REMOVED & SHALL BE IN ENGLISH AS A PRIMARY LANGUAGE.
 - SIGNS TO BE PLACED ON GENERATOR/FUEL TANK PER NEPA 704.
 - CONTRACTOR TO PROVIDE ALL REQUIRED SIGNAGE.

HAZARD RATINGS:
NINE O'CLOCK - HEALTH (BLUE BACKGROUND, BLACK LETTERING)
TWELVE O'CLOCK - FLAMMABILITY (RED BACKGROUND, BLACK LETTERING)
THREE O'CLOCK - INSTABILITY (YELLOW BACKGROUND, BLACK LETTERING)
SIX O'CLOCK - SPECIAL (WHITE BACKGROUND, BLACK LETTERING)

5 GENERATOR SIGN DETAIL
SCALE: NOT TO SCALE

T-Mobile
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CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
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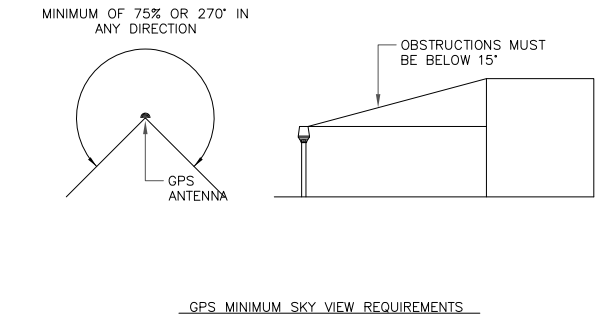
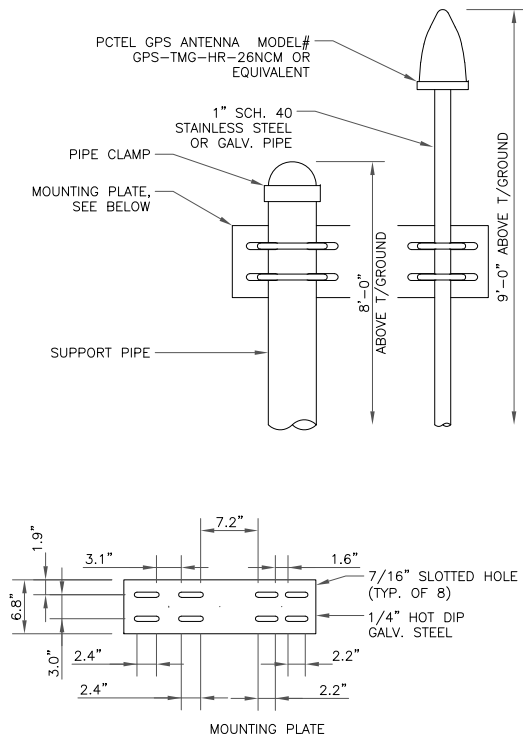
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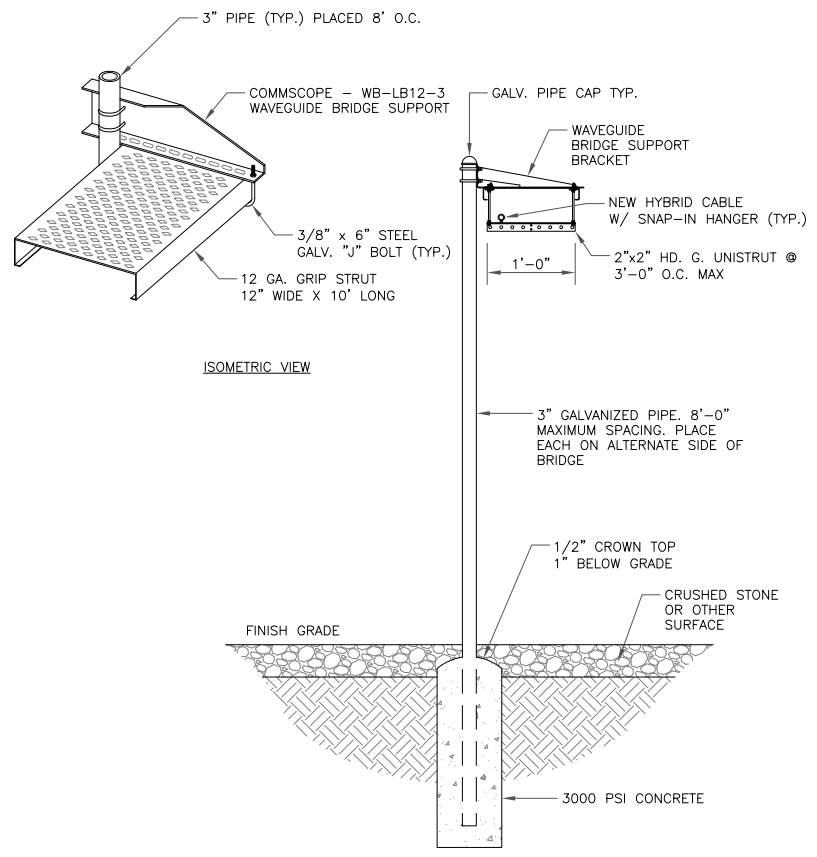
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SHEET NUMBER: **C-5** REVISION: **6**

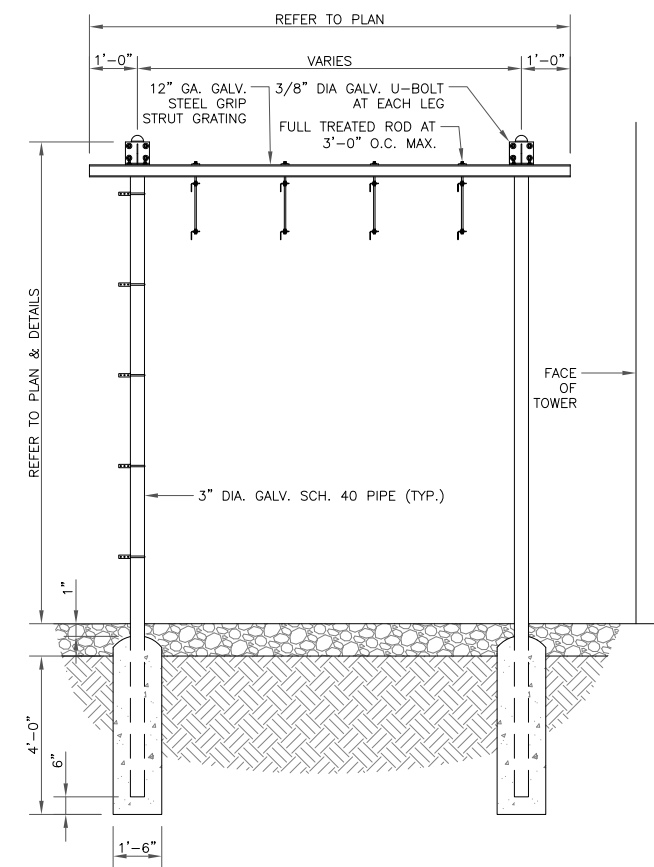


- NOTES:**
1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
 2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1-1/4" O.D., SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 18 INCHES) USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBARRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
 3. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF VERTICAL AND THE BASE OF THE ANTENNA IS WITHIN 2 DEGREES OF LEVEL.
 4. DO NOT SWEEP TEST GPS ANTENNA.

1 GPS ANTENNA DETAIL
SCALE: NOT TO SCALE



2 ICE BRIDGE DETAIL
SCALE: NOT TO SCALE



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4	09/21/18	ZTK	CONSTRUCTION	JPL
5	10/05/2018	AMC	CONSTRUCTION	JPL
6	10/17/2018	DAB	CONSTRUCTION	JPL

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Justin Dineen
184005825470410

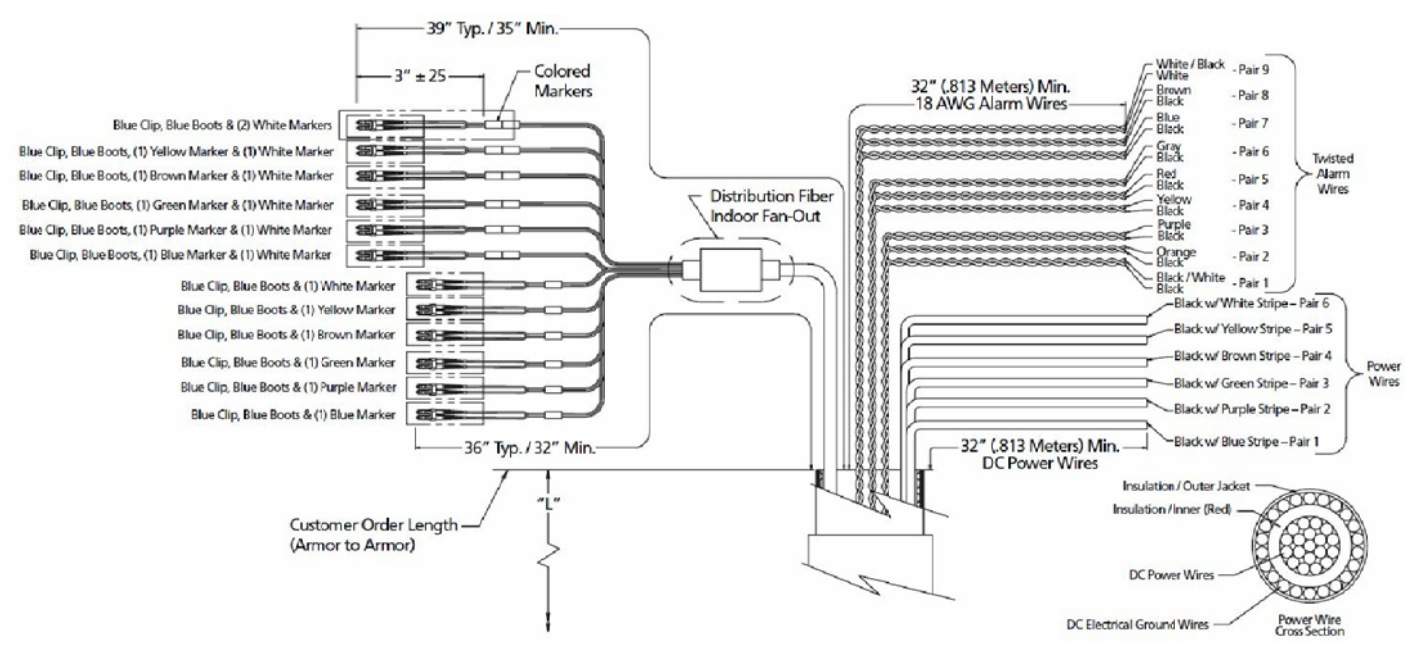
STATE OF CONNECTICUT
JUSTIN PETER LINETTE
No. 31965
PROFESSIONAL ENGINEER

10/17/2018 4:06:22 PM EDT

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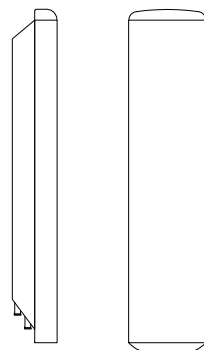
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SHEET NUMBER: **C-6** REVISION: **6**



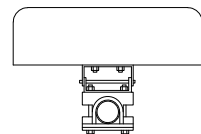
4 HYBRID CABLE SPECIFICATIONS
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE



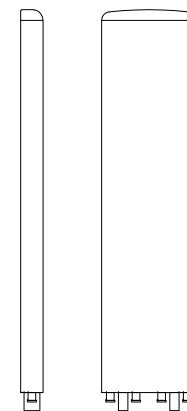
ERICSSON - AIR 32 B2A/B66AA
 WEIGHT (WITHOUT MOUNTING HARDWARE): 132.2 LBS
 SIZE (HxWxD): 56.6x12.9x8.7 IN.
 RATED WIND VELOCITY: 150.0 MPH

1 ERICSSON - AIR 32 B2A/B66AA
 SCALE: NOT TO SCALE



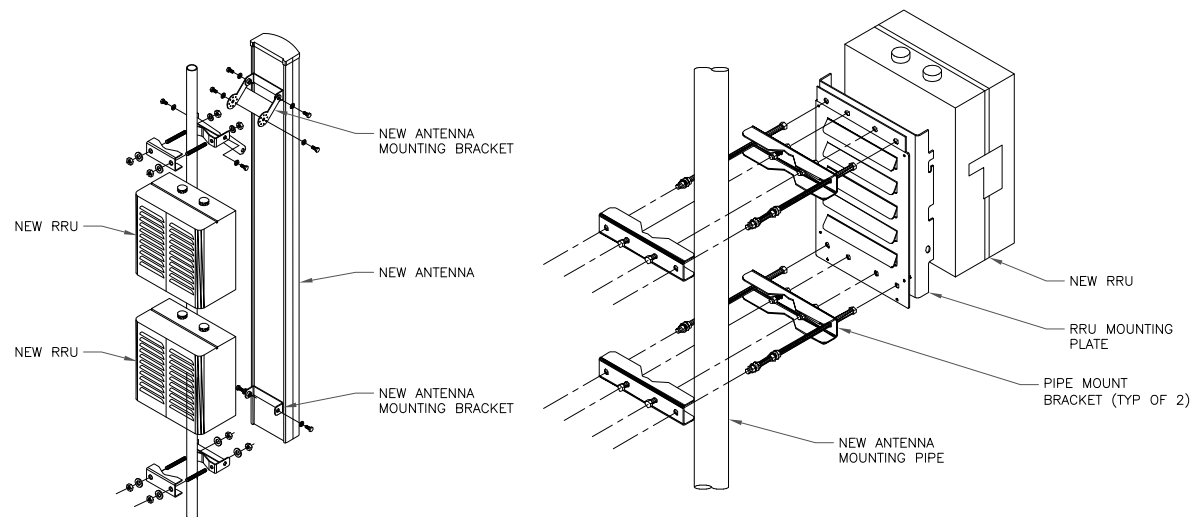
RFS/CELWAVE - APXVAA24_43-U-A20
 WEIGHT (WITHOUT MOUNTING HARDWARE): 101.4 LBS
 SIZE (HxWxD): 96.0x24.0x8.5 IN.

2 RFS/CELWAVE - APXVAA24_43-U-A20
 SCALE: NOT TO SCALE



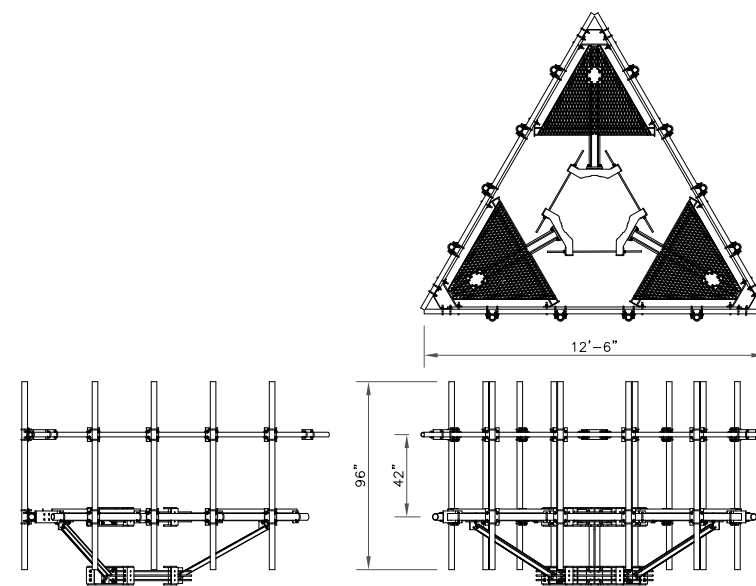
RFS/CELWAVE - APX16DWV-16DWV-S-E-A20
 WEIGHT (WITHOUT MOUNTING HARDWARE): 40.7 LBS
 SIZE (HxWxD): 55.9x13.3x3.15 IN.
 MOUNTING HARDWARE P/N: APM40-2 + APM40-E2
 RATED WIND VELOCITY: 160 MPH

3 RFS/CELWAVE - APX16DWV-16DWV-S-E-A20
 SCALE: NOT TO SCALE



NOTE:
 ALL PIPES BRACKETS AND MISCELLANEOUS
 HARDWARE TO BE GALVANIZED UNLESS
 NOTED OTHERWISE

4 ANTENNA & RRU MOUNTING DETAIL
 SCALE: NOT TO SCALE



5 VALMONT - RMQP-4096-HK
 SCALE: NOT TO SCALE

T-Mobile
 12920 SE 38TH STREET
 BELLEVUE, WA 98006

CROWN CASTLE
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A

BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
 EAST HAMPTON, CT 06424

EXISTING 140'-0" MONOPOLE

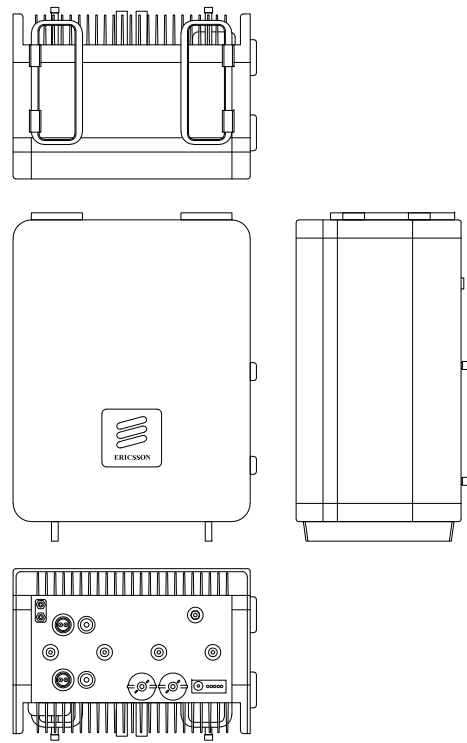
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4	09/21/18	ZTK	CONSTRUCTION	JPL
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Justin Linette
 JUSTIN LINETTE
 No. 31965
 LICENSED PROFESSIONAL ENGINEER
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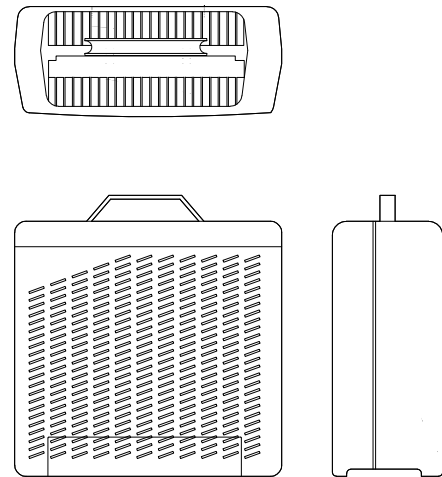
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ERICSSON - RADIO 4449 B71+B12
 WEIGHT: 70.0 LBS
 SIZE (HxWxD): 18.0x13.2x9.4 IN.

1 ERICSSON - RADIO 4449 B71+B12
 SCALE: NOT TO SCALE



ERICSSON - RRUS 11 B4
 WEIGHT (FULLY EQUIPPED): 50.7 LBS
 SIZE (HxWxD): 19.7x17.0x7.2 IN.

2 ERICSSON - RRUS 11 B4
 SCALE: NOT TO SCALE

3 NOT USED
 SCALE: NOT TO SCALE

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 12920 SE 38TH STREET
 BELLEVUE, WA 98006

CROWN CASTLE
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
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BU #: **845994**
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
 EAST HAMPTON, CT 06424

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DocuSigned by:
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 1B400582547C41A

STATE OF CONNECTICUT
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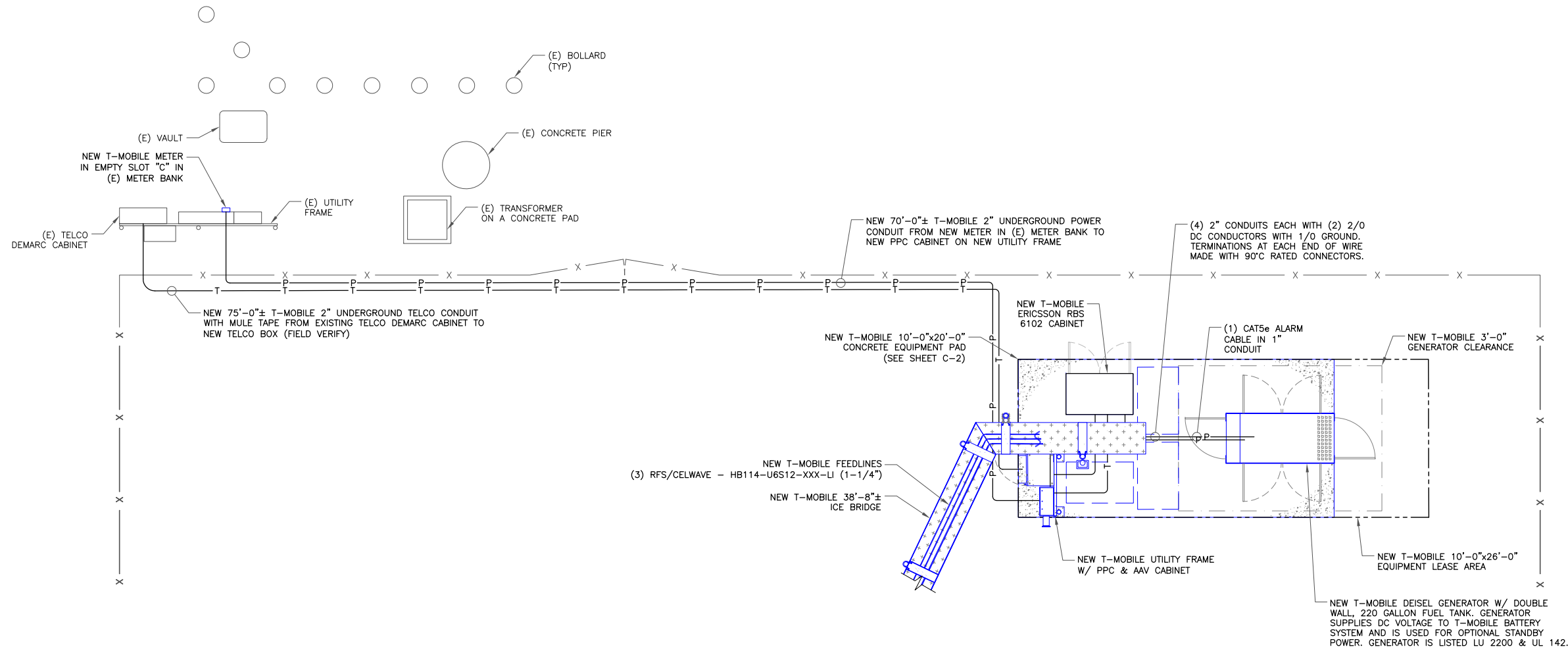
4 NOT USED
 SCALE: NOT TO SCALE

5 NOT USED
 SCALE: NOT TO SCALE

6 NOT USED
 SCALE: NOT TO SCALE

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHOULD PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING AT EXPOSED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC OR RIGID SCHEDULE 80 PVC FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) (AS PERMITTED BY CODE).
6. ELECTRICAL AND TELCO WIRING AT CONCEALED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING, ELECTRICAL NONMETALLIC TUBING OR RIGID MONOMETALLIC TUBING (RIGID SCHEDULE 40 PVC (AS PERMITTED BY CODE).
7. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING, ABOVE GRADE AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUCTS (RGS) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUCTS.
8. BURIED CONDUIT SHALL BE RIGID NONMETALLIC CONDUIT (RIGID SCHEDULE 40 PVC); DIRECT BURIED IN AREAS OF OCCASIONAL LIGHT TRAFFIC, ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY TRAFFIC.
9. LIQUIDTIGHT FLEXIBLE METAL LMFC CONDUIT SHALL BE USED INDOORS AND OUTDOORS IN AREAS WHERE VIBRATION OCCURS AND FLEXIBILITY IS NEEDED.
10. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE THHN, THWN-2, OR THIN INSULATION.
11. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
12. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT (AT UTILITY POLE) AND CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
13. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
14. PPC SUPPLIED BY PROJECT OWNER.
15. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING, AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH METRO MOD CELL SITE GROUNDING STANDARDS.
16. GROUND CABLE SHIELD MINIMUM AT BOTH ENDS USING MANUFACTURERS CABLE GROUNDING KITS SUPPLIED BY T-MOBILE.
17. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
18. ALL POWER AND GROUND CONNECTIONS TO BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY HARGER (OR APPROVED EQUAL) RATED FOR OPERATION AT NO LESS THAN 75°C OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
19. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
20. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
21. APPLY OXIDE INHIBITING COMPOUND TO ALL MECHANICAL GROUND CONNECTIONS.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, CABLE, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE-OUT.
24. THE T-MOBILE ELECTRICAL EQUIPMENT INCLUDING PANEL, SWITCH GEAR AND DISCONNECT ARE TO BE LABELED WITH ENGRAVED BAKELITE LABELS.



1 ELECTRICAL SITE PLAN
 SCALE: 1/4" = 1'-0" (FULL SIZE)
 1/8" = 1'-0" (11x17)



T-MOBILE SITE NUMBER:
CTHA602A

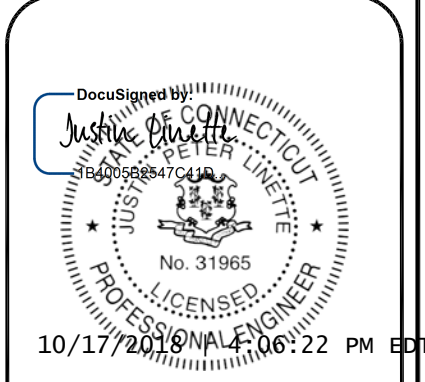
BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
 EAST HAMPTON, CT 06424

EXISTING 140'-0" MONOPOLE

ISSUED FOR:

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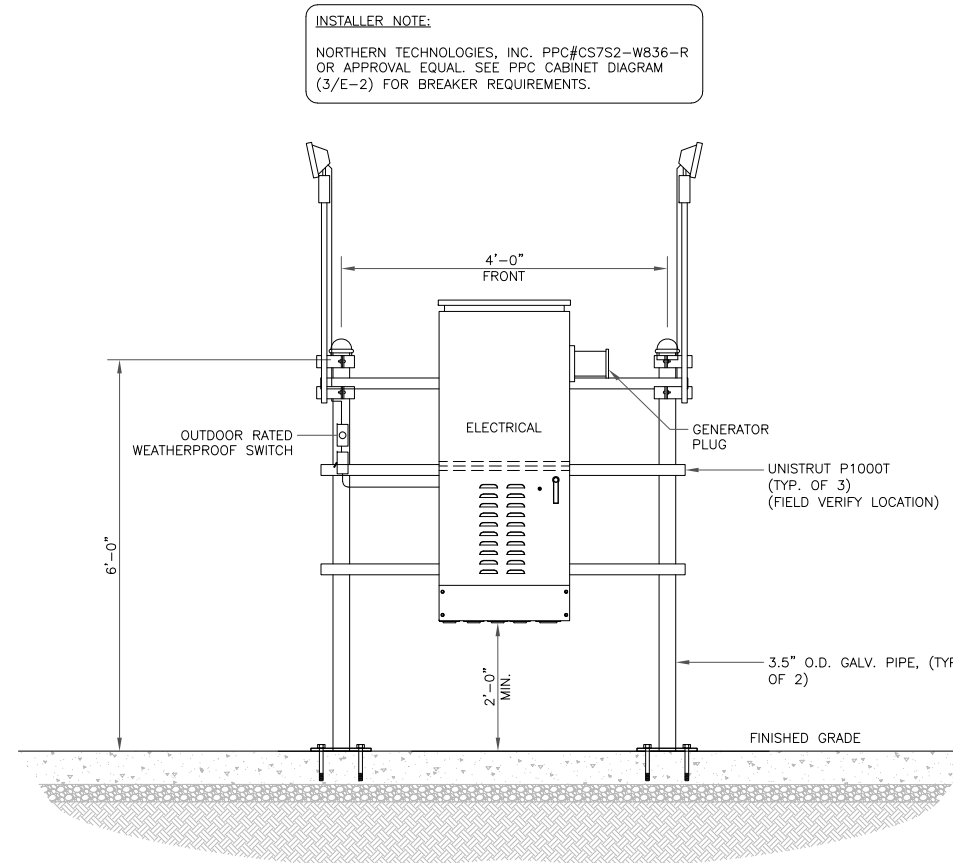
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SHEET NUMBER: E-1
REVISION: 6

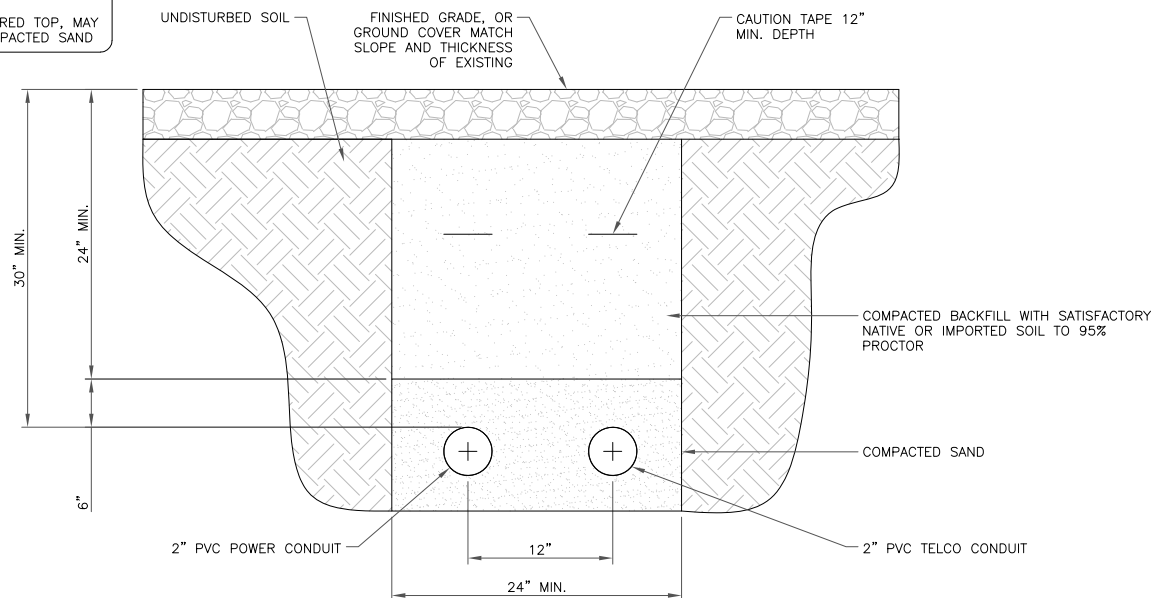
PANEL A											
VOLTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE											
MAIN: 200 AMP MAIN BREAKER											
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	LOAD (VA)		CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
					A-PHASE	B-PHASE					
SURGE ARRESTOR	0	NC	60/2	1	435		2	20	NC	435	GFI RECEPTACLE/FLOOD LIGHT
	0	NC		3		0	4				SPACE
T-MOBILE EQUIPMENT CABINET (RBS 6102)	2800	C	60/2	5	2800		6				SPACE
	2800	C		7		2800	8				SPACE
SPACE				9	0		10				SPACE
SPACE				11	0		12				SPACE
SPACE				13	0		14				SPACE
SPACE				15	0		16				SPACE
SPACE				17	0		18				SPACE
SPACE				19	0		20				SPACE
SPACE				21	0		22	30/2	C		AAV
SPACE				23	0		24		C		AAV
BASE LOAD (VA) =					3235	2800					
25% OF CONTINUOUS LOAD (VA) =					700	700	"C" DESIGNATION IDENTIFIES CONTINUOUS LOADS AND MOTOR LOADS AS REQUIRED BY SECTIONS 230.42 AND 430.24 OF THE NEC				
TOTAL LOAD (VA) =					3935	3500					
TOTAL LOAD (A) =					33	30					

1 ELECTRICAL PANEL
SCALE: NOT TO SCALE

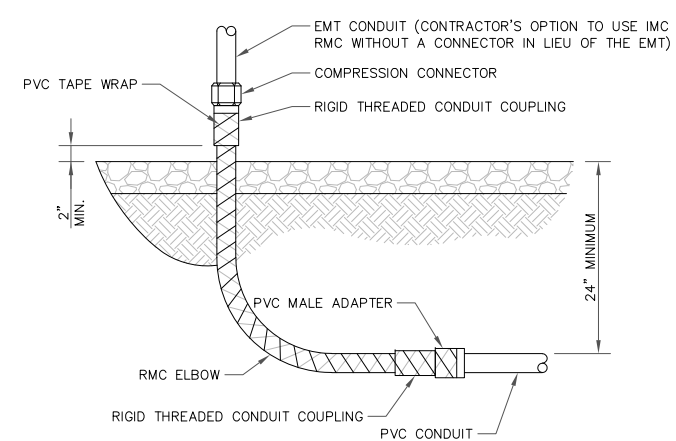


2 H-FRAME DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTE:
LEAN CONCRETE, RED-COLORED TOP, MAY BE USED IN PLACE OF COMPACTED SAND



3 TYPICAL ELECTRIC & TELCO TRENCH DETAIL
SCALE: NOT TO SCALE



ALL METAL CONDUIT INSTALLED IN DIRECT CONTACT WITH THE EARTH SHALL BE CONSIDERED TO BE INSTALLED IN A SEVERELY CORROSIVE ENVIRONMENT AND IS REQUIRED TO HAVE SUPPLEMENTAL PROTECTION AGAINST CORROSION (NEC ARTICLE 342.10(B) & 344.10(B)(1)). THIS PROTECTION SHALL EITHER BE AN APPROVED MANUFACTURER INSTALLED PROTECTIVE COATING ON THE CONDUIT OR SHALL BE (2) LAYERS OF 10 MIL PVC PIPE WRAP TAPE INSTALLED USING OPPOSING SPIRAL WRAPS. ON VERTICAL PIPE THE OUTSIDE LAYER OF TAPE SHALL BE WRAPPED SO AS TO PROVIDE SHEDDING OF WATER (i.e. TAPE SHOULD WRAP IN AN UPWARD DIRECTION WITH LOWER WRAP BEING BENEATH THE WRAP ABOVE). SPIRAL WRAPS SHALL HAVE A MINIMUM OF 1/4" OVERLAP WITH THE PRECEDING TAPE WRAP. ANY OTHER METHODS OF CORROSION PROTECTION SHALL REQUIRE APPROVAL BY THE ENGINEER OF RECORD PRIOR TO BEING USED.

4 UNDERGROUND CONDUIT STUB UP
SCALE: NOT TO SCALE

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A

BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
EAST HAMPTON, CT 06424

EXISTING 140'-0" MONOPOLE

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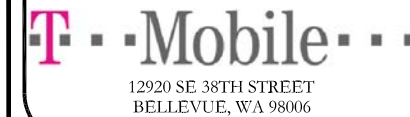
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SHEET NUMBER: **E-2** REVISION: **6**



T-MOBILE SITE NUMBER:
CTHA602A

BU #: **845994**

EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
EAST HAMPTON, CT 06424

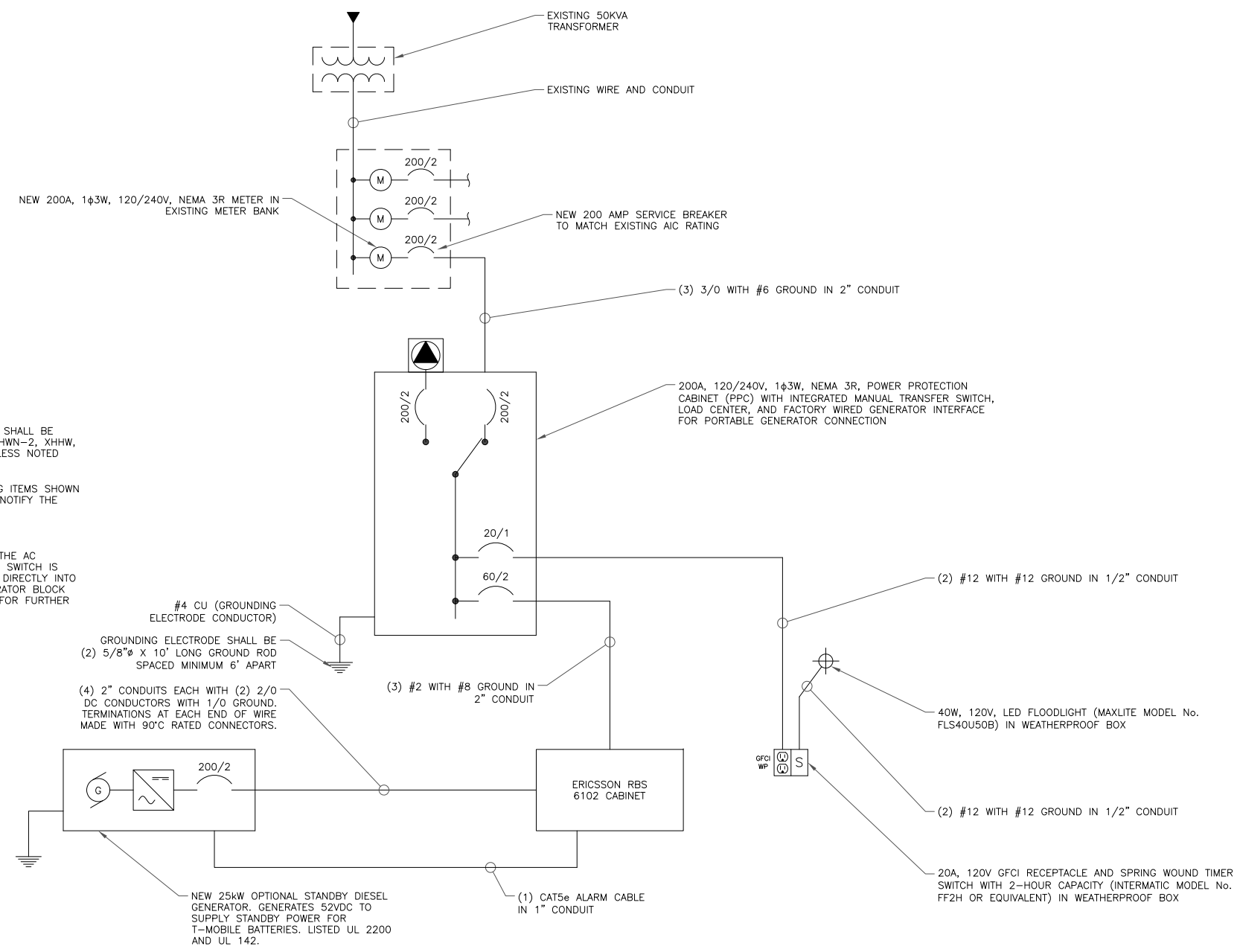
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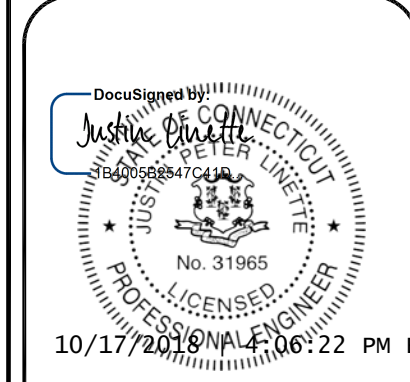
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NOTES:

1. ALL NEW CONDUCTOR WIRE TO BE INSTALLED SHALL BE COPPER. ALL WIRE SHALL BE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.
4. THE GENERATOR SHOWN DOES NOT TIE INTO THE AC ELECTRICAL SYSTEM THEREFORE NO TRANSFER SWITCH IS REQUIRED. GENERATOR IS DC ONLY AND TIES DIRECTLY INTO THE DC BUS FOR THE BATTERIES. SEE GENERATOR BLOCK DIAGRAM AND GENERATOR OPERATING MODES FOR FURTHER INFORMATION.



1 ONE-LINE DIAGRAM
SCALE: NOT TO SCALE

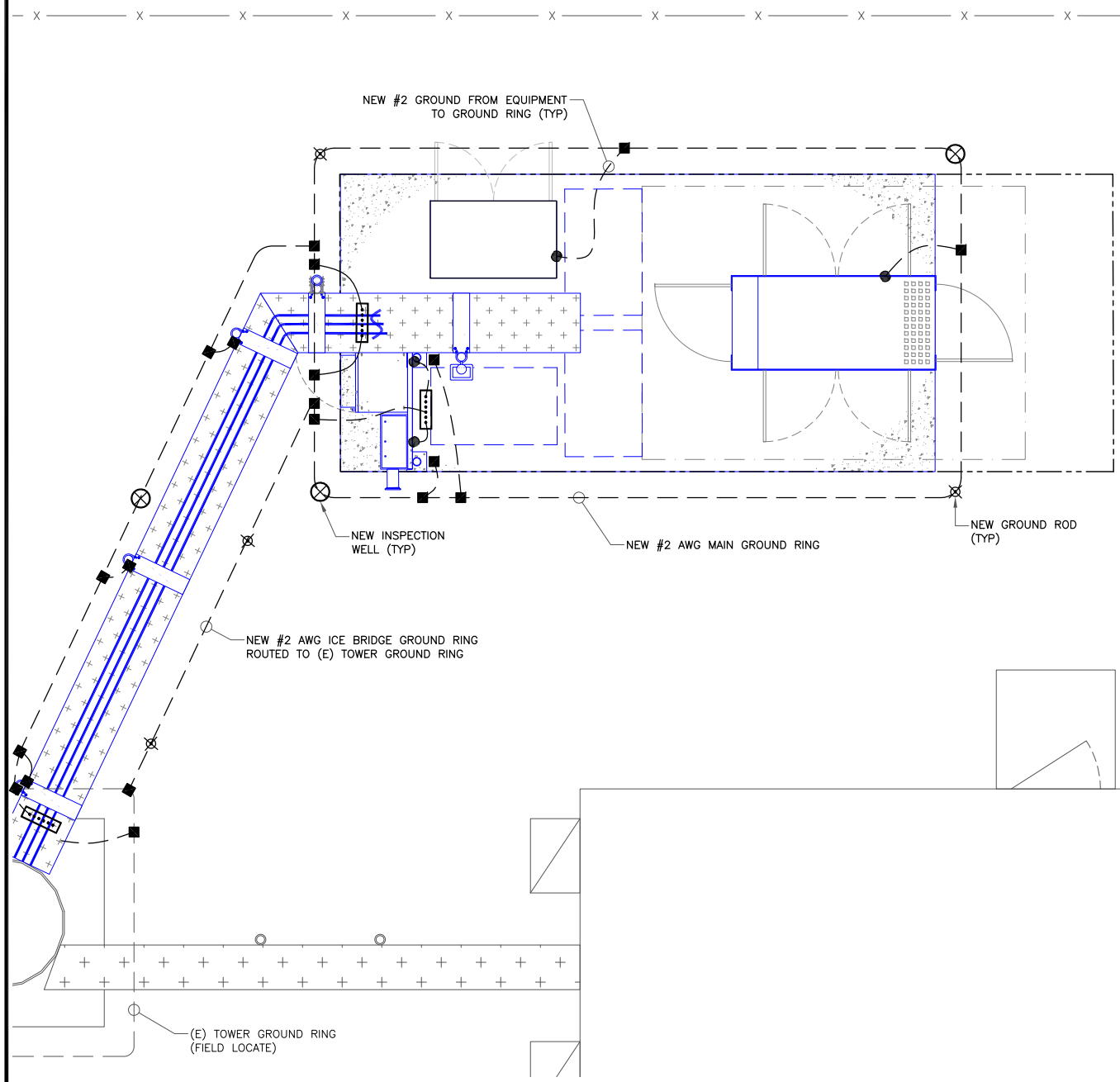


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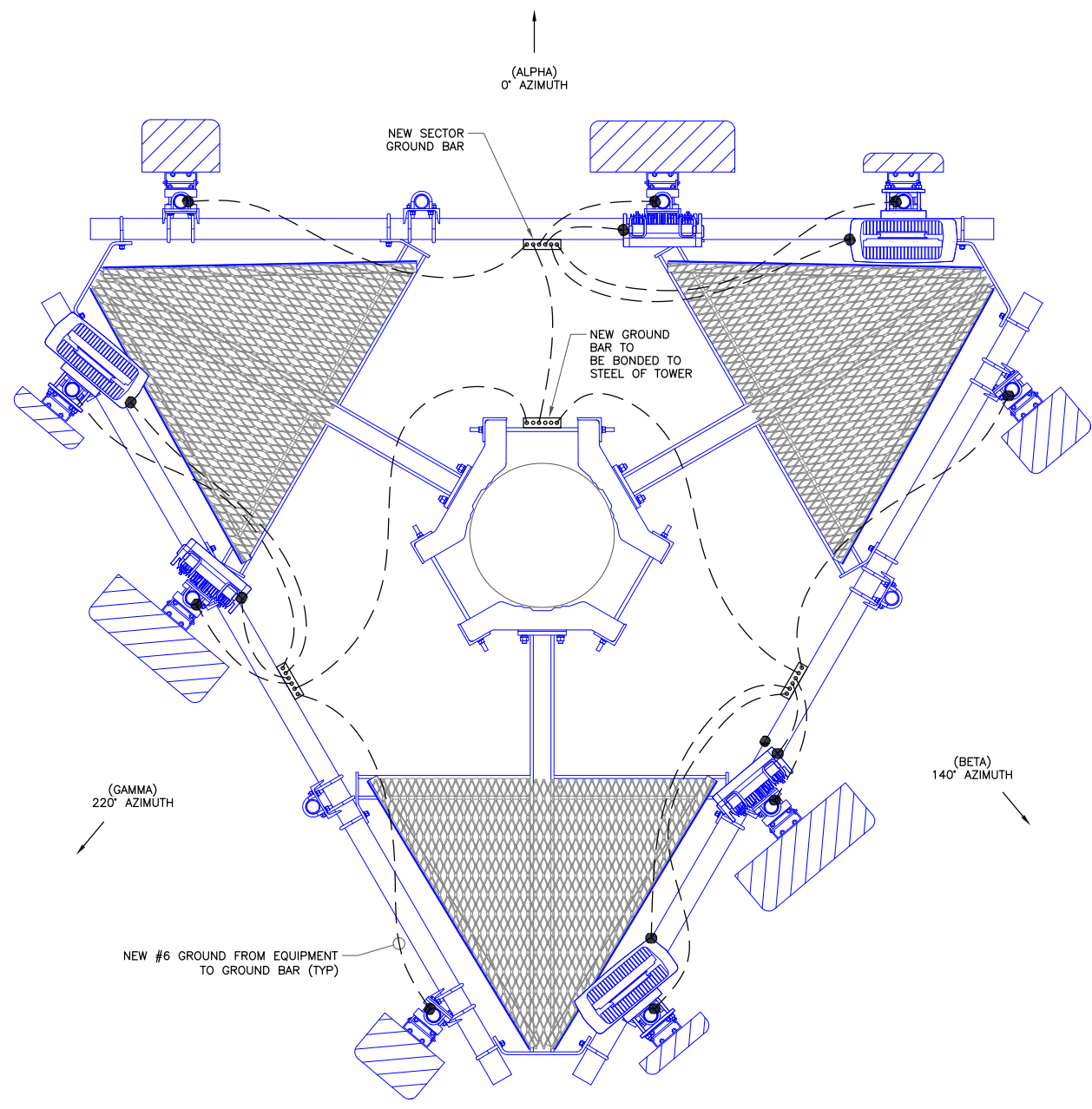
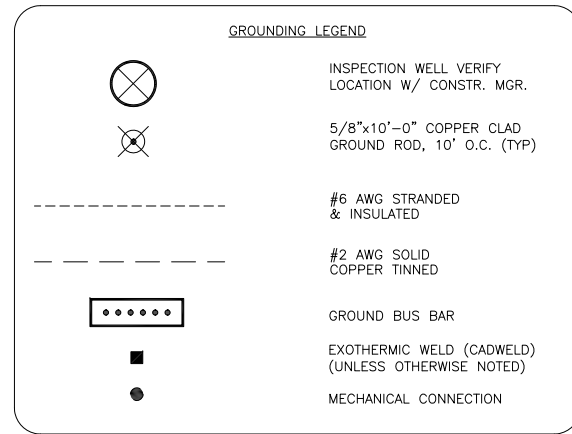
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1 EQUIPMENT GROUNDING PLAN
SCALE: NOT TO SCALE



2 ANTENNA GROUNDING PLAN
SCALE: NOT TO SCALE



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3 CORPORATE PARK DRIVE, SUITE 101
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EAST HAMPTON - YOUNG STREET

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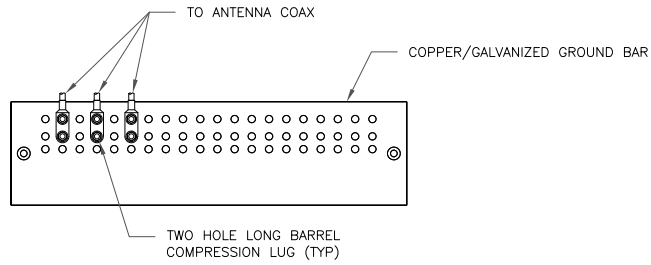
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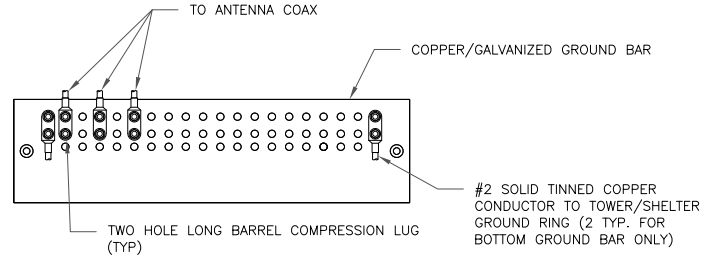
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SHEET NUMBER: **G-1** REVISION: **6**



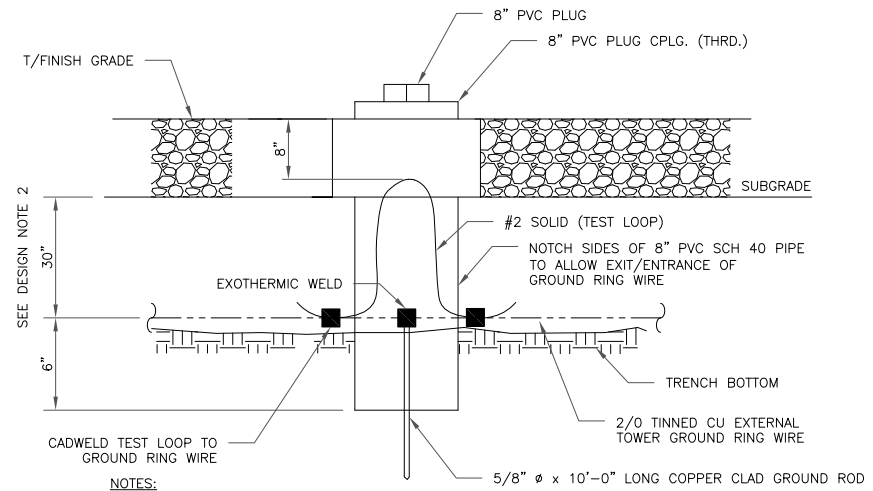
- NOTES:
1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



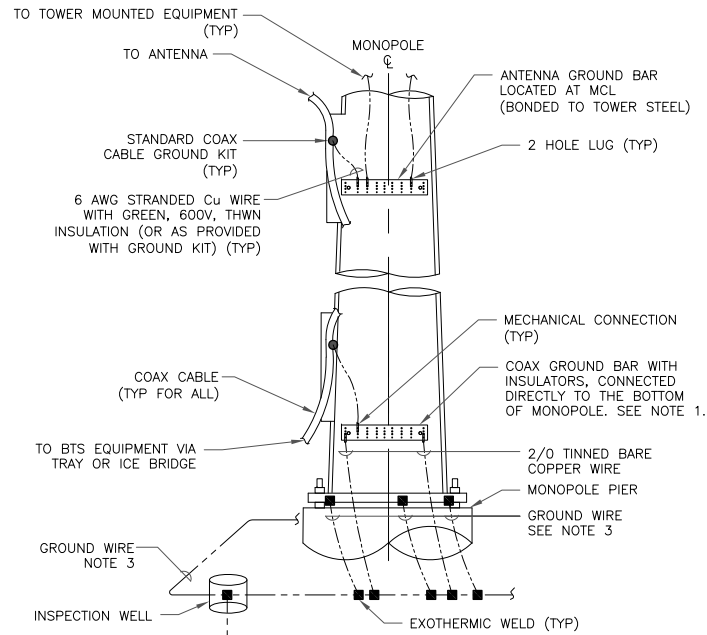
- NOTES:
1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



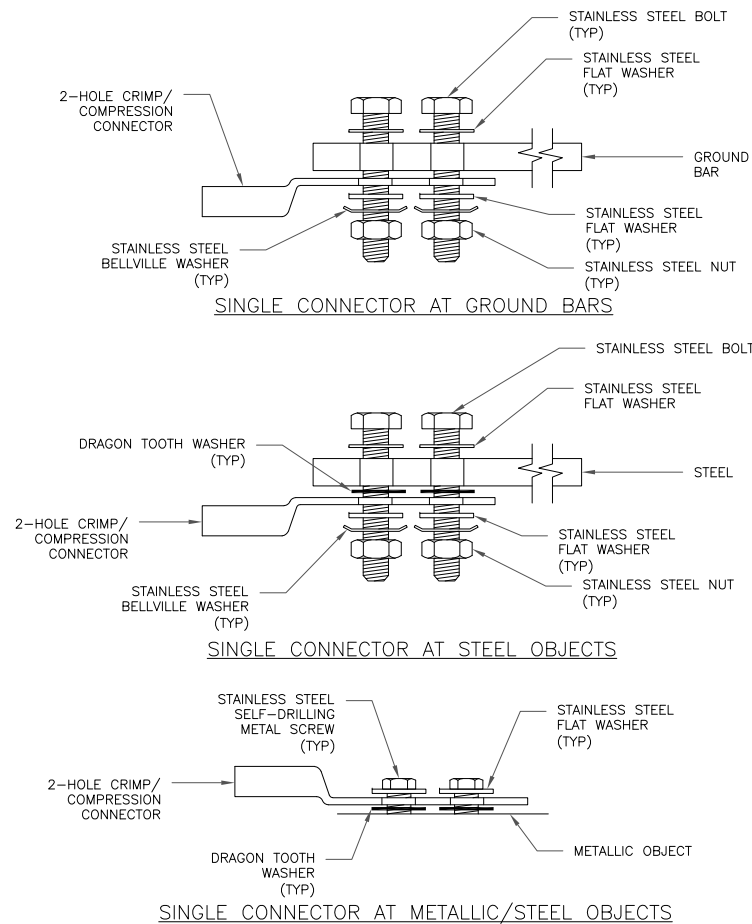
- NOTES:
1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE

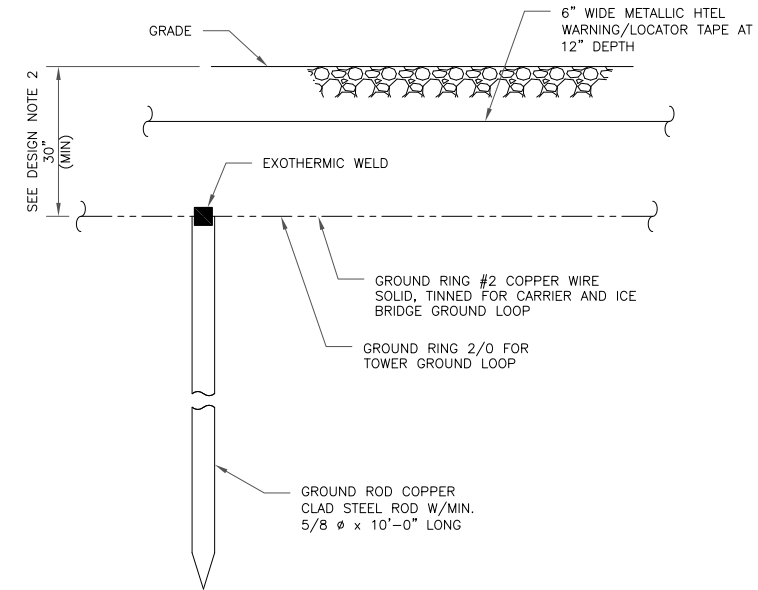


- NOTES:
1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
 2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
 3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



- NOTES:
1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

T-MOBILE SITE NUMBER:
CTHA602A

BU #: **845994**
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
EAST HAMPTON, CT 06424

EXISTING 140'-0" MONOPOLE

ISSUED FOR:

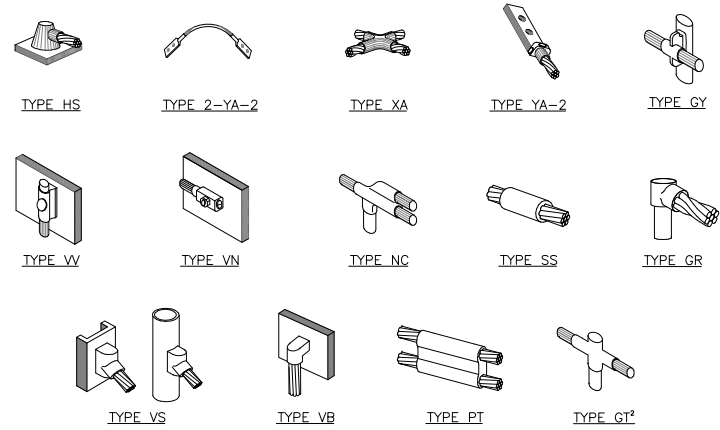
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/02/18	BWT	PRELIMINARY	ZTK
0	02/22/18	BWT	CONSTRUCTION	AJF
1	06/19/18	JAS	CONSTRUCTION	AJF
2	07/17/18	JMM	CONSTRUCTION	AJF
3	08/01/18	JMM	CONSTRUCTION	DJA
4	09/21/18	ZTK	CONSTRUCTION	JPL
5	10/05/2018	AMC	CONSTRUCTION	JPL
6	10/17/2018	DAB	CONSTRUCTION	JPL

DocuSigned by:
Justin Dineen
JUSTIN DINEEN
No. 31965
PROFESSIONAL ENGINEER
10/17/2018 4:06:22 PM EDT

Crown Castle USA Inc. Certificate of Registration #PEC.0001101

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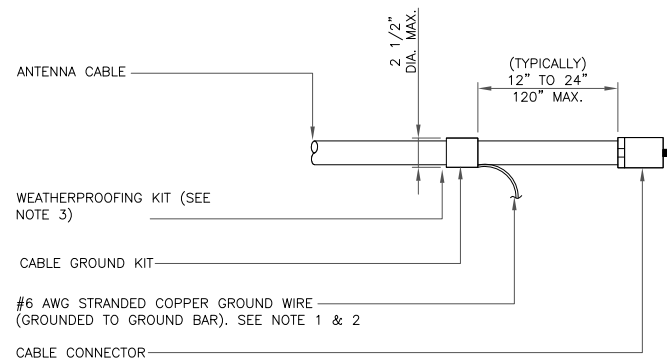
SHEET NUMBER: **G-2** REVISION: **6**



NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

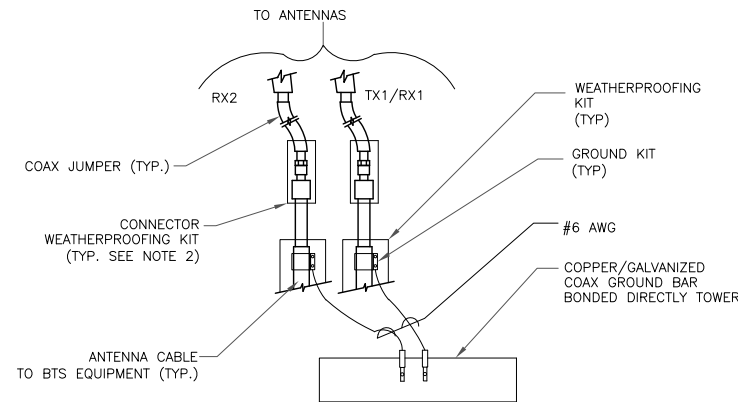
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

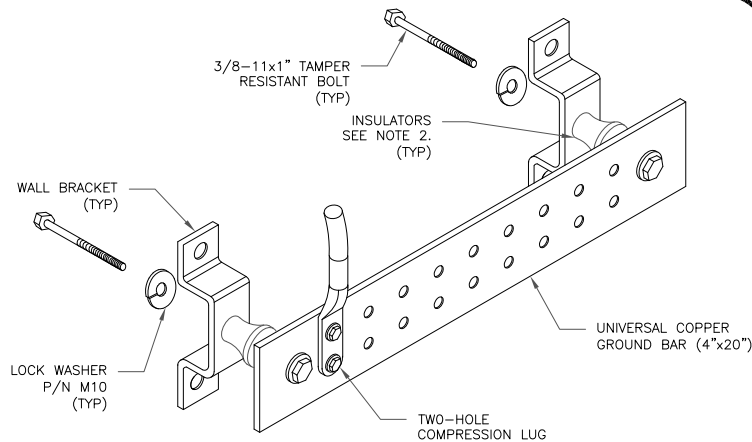
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

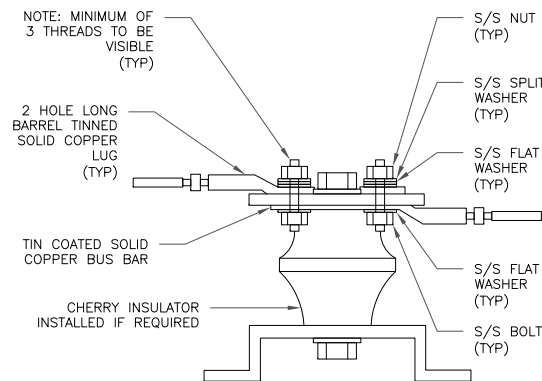
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

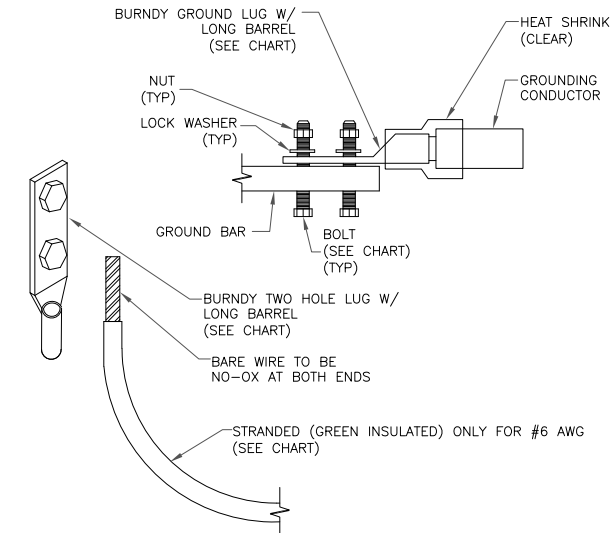
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STG-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

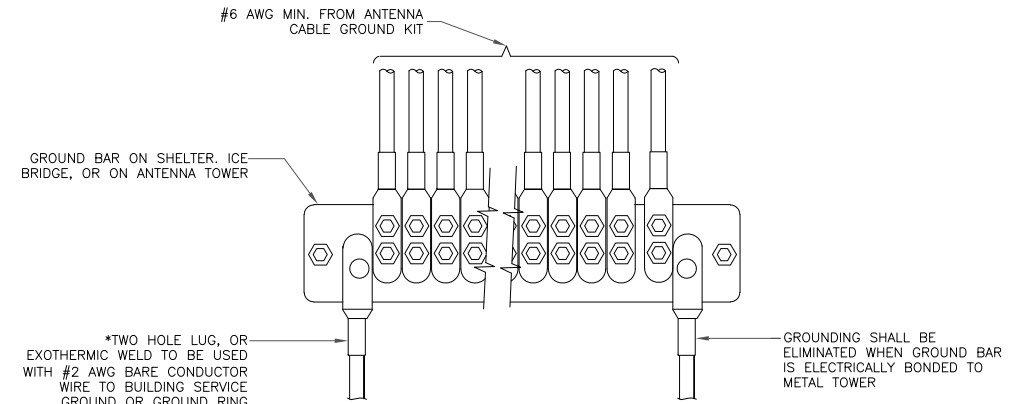
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



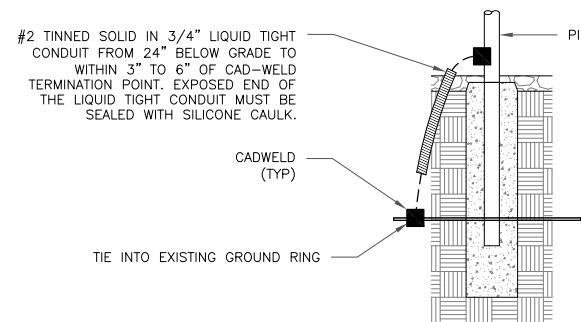
NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE



T-MOBILE SITE NUMBER:
CTHA602A

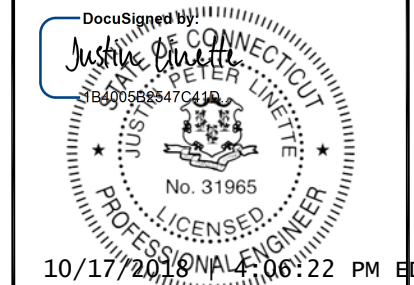
BU #: 845994
EAST HAMPTON - YOUNG STREET

151 YOUNG STREET
EAST HAMPTON, CT 06424

EXISTING 140'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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0	02/22/18	BWT	CONSTRUCTION	AJF
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3	08/01/18	JMM	CONSTRUCTION	DJA
4	09/21/18	ZTK	CONSTRUCTION	JPL
5	10/05/2018	AMC	CONSTRUCTION	JPL
6	10/17/2018	DAB	CONSTRUCTION	JPL



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SHEET NUMBER: **G-3** REVISION: **6**

Date: **September 25, 2018**

Holly Haas
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277



Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
724-416-2000

Subject: **Structural Analysis Report**

Carrier Designation: **T-Mobile Co-Locate**
Carrier Site Number: CTHA602A

Crown Castle Designation: **Crown Castle BU Number:** 845994
Crown Castle Site Name: EAST HAMPTON - YOUNG STREET
Crown Castle JDE Job Number: 517041
Crown Castle Work Order Number: 1636249
Crown Castle Application Number: 448692 Rev. 2

Engineering Firm Designation: **Crown Castle Project Number:** 1636249

Site Data: **151 YOUNG STREET, EAST HAMPTON, Middlesex County, CT**
Latitude 41° 32' 38.12", Longitude -72° 30' 22.44"
140 Foot - Monopole Tower

Dear Holly Haas,

Crown Castle is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above mentioned tower.

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

LC7: Proposed Equipment Configuration

Sufficient Capacity

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 130 mph from the 2016 Connecticut State Building Code. Exposure Category B and Risk Category II were used in this analysis.

Structural analysis prepared by: Jose Hernandez / Shan

Respectfully submitted by

A handwritten signature in blue ink that reads 'Maribel Dentinger'.

Maribel Dentinger, P. E.
Sr. Project Engineer

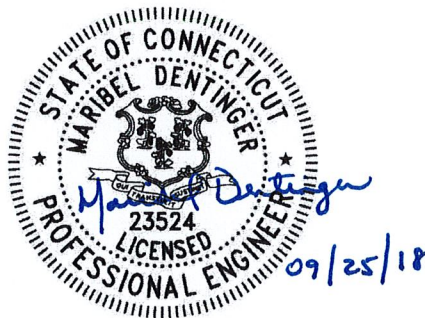


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6) APPENDIX B

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7) APPENDIX C

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1) INTRODUCTION

This tower is a 140 ft. Monopole tower designed by PENNSUMMIT TUBULAR, LLC.

2) ANALYSIS CRITERIA

Building Code:	2016 CT Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
128.0	130.0	1	commscope	SHPX3-11W	3 2	1-1/4 1/2
		3	ericsson	AIR 32 B2a/B66Aa		
		3	ericsson	RADIO 4449 B12/B71		
		3	ericsson	RRUS 11 B4		
		1	gps	GPS_A		
		3	rfs celwave	APX16DWV-16DWV-S-E-A20		
	3	rfs celwave	APXVAARR24_43-U-NA20			
128.0	1	tower mounts	Platform Mount [LP 301-1] OR Site Pro1 RMQP-4096-HK			

Table 2 – Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
139.0	140.0	3	alcatel lucent	B13 RRH 4X30	14	1-5/8
		3	alcatel lucent	B66A RRH4X45		
		6	antel	LPA-80063-6CF-EDIN w/ Mount Pipe		
		6	commscope	JAHH-65B-R3B w/ Mount Pipe		
		3	nokia	AIRSCALE RRH 4T4R B5 160W		
	2	raycap	RC3DC-3315-PF-48			
139.0	1	tower mounts	T-Arm Mount [TA 602-3]			
118.0	120.0	2	kmw com	AM-X-CD-16-65-00T-RET w/ Mount Pipe	12 2 1 1	1-5/8 7/8 3/8 Conduit
		6	powerwave tech	7770.00 w/ Mount Pipe		
		6	powerwave tech	LGP21401		
		1	powerwave tech	P65-17-XLH-RR w/ Mount Pipe		
	118.0	3	ericsson	RRUS-11		
118.0	1	raycap	DC6-48-60-18-8F			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	tower mounts	T-Arm Mount [TA 602-3]		
	117.0	1	tower mounts	Side Arm Mount [SO 901-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Velocitel	6109303	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	PennSummit Tubular, LLC	4301090	CCISITES
4-TOWER MANUFACTURER DRAWINGS	PennSummit Tubular, LLC	5236444	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	140 - 120	Pole	TP24x24x0.375	1	-7.66	876.73	35.5	Pass
L2	120 - 80	Pole	TP36.379x24x0.2188	2	-14.28	1506.69	74.0	Pass
L3	80 - 39.5	Pole	TP44.261x34.5488x0.3125	3	-22.82	2821.05	64.4	Pass
L4	39.5 - 0	Pole	TP51.75x42.4489x0.375	4	-36.30	4065.31	62.0	Pass
							Summary	
						Pole (L2)	74.0	Pass
						Rating =	74.0	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	120	51.9	Pass
1	Flange Plates		45.9	Pass
1	Anchor Rods	0	53.1	Pass
1	Base Plate	0	50.7	Pass
1	Base Foundation (Structural)	0	58.2	Pass
1	Base Foundation (Soil Interaction)	0	36.4	Pass

Structure Rating (max from all components) =	74.0%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

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

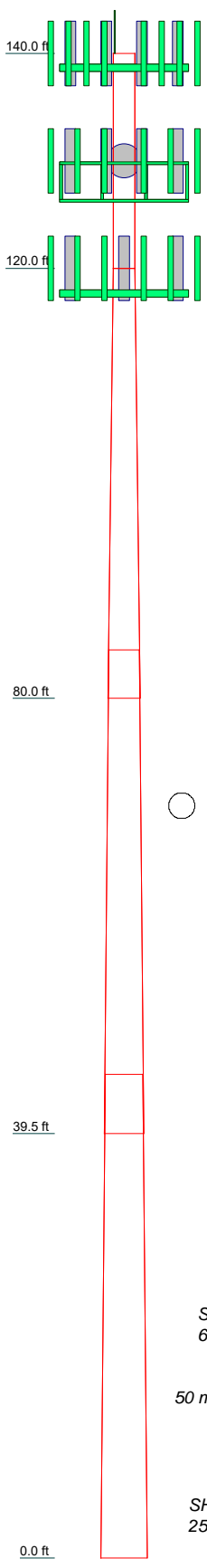
The results of the tilt and twist values for a 60 mph 3-second gust service wind speed per the TIA-222-H Standard are given below:

Critical Deflections and Radius of Curvature - Service Wind

<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection</i>	<i>Tilt</i>	<i>Twist</i>	<i>Radius of Curvature</i>
<i>ft</i>			<i>in</i>	<i>°</i>	<i>°</i>	<i>ft</i>
130.00	SHPX3-11W	39	13.936	1.0692	0.0029	13055

APPENDIX A
TNXTOWER OUTPUT

Section	1	2	3	4	19.2
Length (ft)	20.00	40.00	45.00	45.00	
Number of Sides	1	18	18	18	
Thickness (in)	0.3750	0.2188	0.3125	0.3750	
Socket Length (ft)		4.50	5.50	42.4489	
Top Dia (in)	24.0000	24.0000	34.5488	51.7500	
Bot Dia (in)	24.0000	36.3790	44.2610		
Grade	A53-B-35		A572-65		
Weight (K)	1.9	2.8	5.9	8.5	



DESIGNED APPURTENANCE LOADING

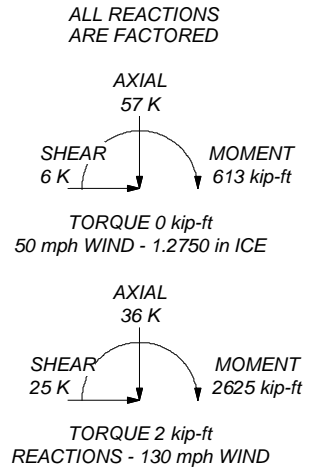
TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	140	APX16DWV-16DWV-S-E-A20	128
(2) LPA-80063-6CF-EDIN w/ Mount Pipe	139	APX16DWV-16DWV-S-E-A20	128
(2) LPA-80063-6CF-EDIN w/ Mount Pipe	139	APX16DWV-16DWV-S-E-A20	128
(2) LPA-80063-6CF-EDIN w/ Mount Pipe	139	GPS_A	128
(2) JAHH-65B-R3B w/ Mount Pipe	139	(2) RRRUS 11 B4	128
(2) JAHH-65B-R3B w/ Mount Pipe	139	RRUS 11 B4	128
(2) JAHH-65B-R3B w/ Mount Pipe	139	RADIO 4449 B12/B71	128
AIRSCALE RRH 4T4R B5 160W	139	RADIO 4449 B12/B71	128
AIRSCALE RRH 4T4R B5 160W	139	RADIO 4449 B12/B71	128
B13 RRH 4X30	139	Platform Mount [LP 301-1]	128
B13 RRH 4X30	139	SHPX3-11W	128
B13 RRH 4X30	139	(2) 7770.00 w/ Mount Pipe	118
B66A RRH4X45	139	(2) 7770.00 w/ Mount Pipe	118
B66A RRH4X45	139	(2) 7770.00 w/ Mount Pipe	118
B66A RRH4X45	139	AM-X-CD-16-65-00T-RET w/ Mount Pipe	118
RC3DC-3315-PF-48	139	AM-X-CD-16-65-00T-RET w/ Mount Pipe	118
RC3DC-3315-PF-48	139	RRUS-11	118
T-Arm Mount [TA 602-3]	139	RRUS-11	118
AIR 32 B2a/B66Aa	128	RRUS-11	118
AIR 32 B2a/B66Aa	128	(2) LGP21401	118
AIR 32 B2a/B66Aa	128	(2) LGP21401	118
APXVAARR24_43-U-NA20	128	(2) LGP21401	118
APXVAARR24_43-U-NA20	128	DC6-48-60-18-8F	118
APXVAARR24_43-U-NA20	128	T-Arm Mount [TA 602-3]	118
		P65-17-XLH-RR w/ Mount Pipe	118
		Side Arm Mount [SO 901-3]	117

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	60 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 74%
9. TIA-H Annex S



Crown Castle
 2000 Corporate Drive
 Canonsburg, PA 15317
 Phone: 724-416-2000
 FAX: 724-416-2000

Job: BU 845994	Project: WO 1636249	
Client: Crown Castle	Drawn by: JoHernandez	App'd:
Code: TIA-222-H	Date: 09/25/18	Scale: NTS
Path: \\netapp1\CAD\SA Models - Letters\Work Area\JHernandez\WIP\845994.WO_1636249\845994.dwg		Dwg No. E-1

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- 3) Tower is located in Middlesex County, Connecticut.
- 4) Tower base elevation above sea level: 465.15 ft.
- 5) Basic wind speed of 130 mph.
- 6) Risk Category II.
- 7) Exposure Category B.
- 8) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 9) Topographic Category: 1.
- 10) Crest Height 0.00 ft.
- 11) ice thickness of 1.50 in.
- 12) Ice thickness is considered to increase with height.
- 13) Ice density of 56 pcf.
- 14) A wind speed of 50 mph is used in combination with ice.
- 15) Temperature drop of 50 °F.
- 16) Deflections calculated using a wind speed of 60 mph.
- 17) A non-linear (P-delta) analysis was used.
- 18) Pressures are calculated at each section.
- 19) Stress ratio used in pole design is 1.
- 20) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| Consider Moments - Legs
Consider Moments - Horizontals
Consider Moments - Diagonals
Use Moment Magnification
✓ Use Code Stress Ratios
✓ Use Code Safety Factors - Guys
Escalate Ice
Always Use Max Kz
Use Special Wind Profile

Include Bolts In Member Capacity

Leg Bolts Are At Top Of Section
Secondary Horizontal Braces Leg
Use Diamond Inner Bracing (4 Sided)
SR Members Have Cut Ends
SR Members Are Concentric | Distribute Leg Loads As Uniform
Assume Legs Pinned
✓ Assume Rigid Index Plate
✓ Use Clear Spans For Wind Area
✓ Use Clear Spans For KL/r
Retension Guys To Initial Tension
✓ Bypass Mast Stability Checks
✓ Use Azimuth Dish Coefficients
✓ Project Wind Area of Appurt.

Autocalc Torque Arm Areas

Add IBC .6D+W Combination
Sort Capacity Reports By Component
Triangulate Diamond Inner Bracing
Treat Feed Line Bundles As Cylinder
Ignore KL/ry For 60 Deg. Angle Legs | Use ASCE 10 X-Brace Ly Rules
Calculate Redundant Bracing Forces
Ignore Redundant Members in FEA
SR Leg Bolts Resist Compression
All Leg Panels Have Same Allowable
Offset Girt At Foundation
✓ Consider Feed Line Torque
Include Angle Block Shear Check
Use TIA-222-H Bracing Resist.
Exemption
Use TIA-222-H Tension Splice
Exemption

<div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction
Always Use Sub-Critical Flow
Use Top Mounted Sockets
Pole Without Linear Attachments
Pole With Shroud Or No
Appurtenances
Outside and Inside Corner Radii Are
Known |
|--|---|---|

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	140.00-120.00	20.00	0.00	Round	24.0000	24.0000	0.3750		A53-B-35 (35 ksi)
L2	120.00-80.00	40.00	4.50	18	24.0000	36.3790	0.2188	0.8752	A572-65 (65 ksi)
L3	80.00-39.50	45.00	5.50	18	34.5488	44.2610	0.3125	1.2500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L4	39.50-0.00	45.00		18	42.4489	51.7500	0.3750	1.5000	(65 ksi) A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	24.0000	27.8325	1942.2987	8.3538	12.0000	161.8582	3884.5973	13.9080	0.0000	0
	24.0000	27.8325	1942.2987	8.3538	12.0000	161.8582	3884.5973	13.9080	0.0000	0
L2	24.3365	16.5154	1180.0298	8.4423	12.1920	96.7872	2361.6124	8.2592	3.8389	17.545
	36.9065	25.1122	4148.4338	12.8369	18.4805	224.4759	8302.3262	12.5585	6.0176	27.503
L3	36.0197	33.9581	5028.6737	12.1539	17.5508	286.5215	10063.964	16.9823	5.5306	17.698
	44.8956	43.5914	10637.181	15.6017	22.4846	473.0877	21288.359	21.7999	7.2399	23.168
L4	44.2003	50.0785	11199.934	14.9363	21.5641	519.3795	22414.605	25.0440	6.8110	18.163
	52.4905	61.1491	20390.653	18.2381	26.2890	775.6344	40808.137	30.5804	8.4480	22.528

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 140.00- 120.00				1	1	1			
L2 120.00- 80.00				1	1	1			
L3 80.00- 39.50				1	1	1			
L4 39.50-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Componen t Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diamete r in	Perimete r in	Weight plf

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Componen t Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight plf	
*** 139 R ***									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	139.00 - 0.00	9	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.82 0.82 0.82 0.82
HB158-1-08U8- S8J18(1-5/8)	A	No	No	Inside Pole	139.00 - 0.00	2	No Ice 1/2" Ice	0.00 0.00	1.30 1.30

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
LDF7-50A(1-5/8)	A	No	No	Inside Pole	139.00 - 0.00	3	1" Ice	0.00	1.30
							2" Ice	0.00	1.30
							No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
*** 128 P *** LDF4-50A(1/2)	B	No	No	Inside Pole	128.00 - 0.00	2	2" Ice	0.00	0.82
							No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
HB114-U6S12-XXX-LI(1-1/4)	B	No	No	Inside Pole	128.00 - 0.00	3	No Ice	0.00	1.70
							1/2" Ice	0.00	1.70
							1" Ice	0.00	1.70
							2" Ice	0.00	1.70
							No Ice	0.00	1.70
*** 118 *** 2" Rigid Conduit	C	No	No	Inside Pole	118.00 - 0.00	1	No Ice	0.00	2.80
							1/2" Ice	0.00	2.80
							1" Ice	0.00	2.80
							2" Ice	0.00	2.80
							No Ice	0.00	0.08
LDF2-50A(3/8)	C	No	No	Inside Pole	118.00 - 0.00	1	1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
							2" Ice	0.00	0.08
							No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
LDF5-50A(7/8)	C	No	No	Inside Pole	118.00 - 0.00	2	1" Ice	0.00	0.33
							2" Ice	0.00	0.33
							No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
LDF7-50A(1-5/8)	C	No	No	Inside Pole	118.00 - 0.00	12	2" Ice	0.00	0.82
							No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	140.00-120.00	A	0.000	0.000	0.000	0.000	0.10
		B	0.000	0.000	0.000	0.000	0.18
		C	0.000	0.000	0.000	0.000	0.00
L2	120.00-80.00	A	0.000	0.000	0.000	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.51
		C	0.000	0.000	0.000	0.000	0.51
L3	80.00-39.50	A	0.000	0.000	0.000	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.52
		C	0.000	0.000	0.000	0.000	0.54
L4	39.50-0.00	A	0.000	0.000	0.000	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.50
		C	0.000	0.000	0.000	0.000	0.53

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	140.00-120.00	A	1.462	0.000	0.000	0.000	0.000	0.10

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L2	120.00-80.00	B	1.423	0.000	0.000	0.000	0.000	0.18
		C		0.000	0.000	0.000	0.000	0.00
		A		0.000	0.000	0.000	0.000	0.20
L3	80.00-39.50	B	1.352	0.000	0.000	0.000	0.000	0.51
		C		0.000	0.000	0.000	0.000	0.51
		A		0.000	0.000	0.000	0.000	0.20
L4	39.50-0.00	B	1.208	0.000	0.000	0.000	0.000	0.52
		C		0.000	0.000	0.000	0.000	0.54
		A		0.000	0.000	0.000	0.000	0.20
		B		0.000	0.000	0.000	0.000	0.50
		C		0.000	0.000	0.000	0.000	0.53

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	140.00-120.00	0.0000	0.0000	0.0000	0.0000
L2	120.00-80.00	0.0000	0.0000	0.0000	0.0000
L3	80.00-39.50	0.0000	0.0000	0.0000	0.0000
L4	39.50-0.00	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
4' Lightning Rod	C	From Leg	0.00 0.00 2.00	0.0000	140.00	No Ice	0.25	0.25	0.01
						1/2" Ice	0.66	0.66	0.01
						Ice	0.97	0.97	0.02
						1" Ice	1.49	1.49	0.04
						2" Ice			
*** 139 R *** (2) LPA-80063-6CF-EDIN w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	139.00	No Ice	9.97	10.25	0.05
						1/2" Ice	10.54	11.42	0.15
						Ice	11.08	12.31	0.25
						1" Ice	12.17	14.13	0.48
						2" Ice			
(2) LPA-80063-6CF-EDIN w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	139.00	No Ice	9.97	10.25	0.05
						1/2" Ice	10.54	11.42	0.15
						Ice	11.08	12.31	0.25
						1" Ice	12.17	14.13	0.48
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight
			Horz	Lateral					
							ft ²	ft ²	K
(2) LPA-80063-6CF-EDIN w/ Mount Pipe	C	From Leg	4.00	0.0000	139.00	No Ice	9.97	10.25	0.05
			0.00			1/2"	10.54	11.42	0.15
			1.00			Ice	11.08	12.31	0.25
						1" Ice	12.17	14.13	0.48
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.0000	139.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			1.00			Ice	10.46	9.73	0.25
						1" Ice	11.55	11.56	0.45
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.0000	139.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			1.00			Ice	10.46	9.73	0.25
						1" Ice	11.55	11.56	0.45
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.0000	139.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			1.00			Ice	10.46	9.73	0.25
						1" Ice	11.55	11.56	0.45
AIRSCALE RRH 4T4R B5 160W	A	From Leg	4.00	0.0000	139.00	No Ice	1.29	0.72	0.04
			0.00			1/2"	1.43	0.83	0.05
			1.00			Ice	1.58	0.96	0.06
						1" Ice	1.90	1.22	0.09
AIRSCALE RRH 4T4R B5 160W	B	From Leg	4.00	0.0000	139.00	No Ice	1.29	0.72	0.04
			0.00			1/2"	1.43	0.83	0.05
			1.00			Ice	1.58	0.96	0.06
						1" Ice	1.90	1.22	0.09
AIRSCALE RRH 4T4R B5 160W	C	From Leg	4.00	0.0000	139.00	No Ice	1.29	0.72	0.04
			0.00			1/2"	1.43	0.83	0.05
			1.00			Ice	1.58	0.96	0.06
						1" Ice	1.90	1.22	0.09
B13 RRH 4X30	A	From Leg	4.00	0.0000	139.00	No Ice	2.06	1.32	0.06
			0.00			1/2"	2.24	1.48	0.07
			1.00			Ice	2.43	1.64	0.09
						1" Ice	2.84	2.00	0.14
B13 RRH 4X30	B	From Leg	4.00	0.0000	139.00	No Ice	2.06	1.32	0.06
			0.00			1/2"	2.24	1.48	0.07
			1.00			Ice	2.43	1.64	0.09
						1" Ice	2.84	2.00	0.14
B13 RRH 4X30	C	From Leg	4.00	0.0000	139.00	No Ice	2.06	1.32	0.06
			0.00			1/2"	2.24	1.48	0.07
			1.00			Ice	2.43	1.64	0.09
						1" Ice	2.84	2.00	0.14
B66A RRH4X45	A	From Leg	4.00	0.0000	139.00	No Ice	2.58	1.63	0.07
			0.00			1/2"	2.79	1.81	0.09
			1.00			Ice	3.01	2.00	0.11
						1" Ice	3.48	2.40	0.17
B66A RRH4X45	B	From Leg	4.00	0.0000	139.00	No Ice	2.58	1.63	0.07
			0.00			1/2"	2.79	1.81	0.09
			1.00			Ice	3.01	2.00	0.11
						1" Ice	3.48	2.40	0.17
B66A RRH4X45	C	From Leg	4.00	0.0000	139.00	No Ice	2.58	1.63	0.07
			0.00			1/2"	2.79	1.81	0.09
			1.00			Ice	3.01	2.00	0.11
						1" Ice	3.48	2.40	0.17

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight
			Horz	Lateral					
RC3DC-3315-PF-48	B	From Leg	4.00	0.0000	139.00	No Ice	3.79	2.51	0.03
			0.00			1/2"	4.04	2.72	0.06
			1.00			Ice	4.30	2.94	0.10
						1" Ice	4.84	3.41	0.18
						2" Ice			
RC3DC-3315-PF-48	C	From Leg	4.00	0.0000	139.00	No Ice	3.79	2.51	0.03
			0.00			1/2"	4.04	2.72	0.06
			1.00			Ice	4.30	2.94	0.10
						1" Ice	4.84	3.41	0.18
						2" Ice			
T-Arm Mount [TA 602-3]	C	None		0.0000	139.00	No Ice	11.59	11.59	0.77
						1/2"	15.44	15.44	0.99
						Ice	19.29	19.29	1.21
						1" Ice	26.99	26.99	1.64
						2" Ice			
*** 128 P ***									
AIR 32 B2a/B66Aa	A	From Leg	4.00	0.0000	128.00	No Ice	6.51	4.71	0.13
			0.00			1/2"	6.89	5.07	0.18
			2.00			Ice	7.27	5.43	0.23
						1" Ice	8.06	6.18	0.35
						2" Ice			
AIR 32 B2a/B66Aa	B	From Leg	4.00	0.0000	128.00	No Ice	6.51	4.71	0.13
			0.00			1/2"	6.89	5.07	0.18
			2.00			Ice	7.27	5.43	0.23
						1" Ice	8.06	6.18	0.35
						2" Ice			
AIR 32 B2a/B66Aa	C	From Leg	4.00	0.0000	128.00	No Ice	6.51	4.71	0.13
			0.00			1/2"	6.89	5.07	0.18
			2.00			Ice	7.27	5.43	0.23
						1" Ice	8.06	6.18	0.35
						2" Ice			
APXVAARR24_43-U-NA20	A	From Leg	4.00	0.0000	128.00	No Ice	20.24	8.89	0.13
			0.00			1/2"	20.89	9.49	0.24
			2.00			Ice	21.54	10.09	0.36
						1" Ice	22.87	11.33	0.63
						2" Ice			
APXVAARR24_43-U-NA20	B	From Leg	4.00	0.0000	128.00	No Ice	20.24	8.89	0.13
			0.00			1/2"	20.89	9.49	0.24
			2.00			Ice	21.54	10.09	0.36
						1" Ice	22.87	11.33	0.63
						2" Ice			
APXVAARR24_43-U-NA20	C	From Leg	4.00	0.0000	128.00	No Ice	20.24	8.89	0.13
			0.00			1/2"	20.89	9.49	0.24
			2.00			Ice	21.54	10.09	0.36
						1" Ice	22.87	11.33	0.63
						2" Ice			
APX16DWV-16DWV-S-E-A20	A	From Leg	4.00	0.0000	128.00	No Ice	6.59	2.15	0.04
			0.00			1/2"	6.96	2.49	0.07
			2.00			Ice	7.34	2.84	0.11
						1" Ice	8.13	3.55	0.20
						2" Ice			
APX16DWV-16DWV-S-E-A20	B	From Leg	4.00	0.0000	128.00	No Ice	6.59	2.15	0.04
			0.00			1/2"	6.96	2.49	0.07
			2.00			Ice	7.34	2.84	0.11
						1" Ice	8.13	3.55	0.20
						2" Ice			
APX16DWV-16DWV-S-E-A20	C	From Leg	4.00	0.0000	128.00	No Ice	6.59	2.15	0.04
			0.00			1/2"	6.96	2.49	0.07
			2.00			Ice	7.34	2.84	0.11
						1" Ice	8.13	3.55	0.20
						2" Ice			
GPS_A	A	From Leg	4.00	0.0000	128.00	No Ice	0.26	0.26	0.00
			0.00			1/2"	0.32	0.32	0.00
			2.00			Ice	0.39	0.39	0.01
						1" Ice	0.56	0.56	0.02
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight
			Horz	Lateral	Vert					
			ft	ft	ft	°	ft	ft ²	ft ²	K
(2) RRUS 11 B4	A	From Leg	4.00	0.00	2.00	0.0000	128.00	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	2.83 1.18 3.04 1.33 3.26 1.48 3.71 1.83	0.05 0.07 0.10 0.15
RRUS 11 B4	B	From Leg	4.00	0.00	2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.83 1.18 3.04 1.33 3.26 1.48 3.71 1.83	0.05 0.07 0.10 0.15
RADIO 4449 B12/B71	A	From Leg	4.00	0.00	2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.16 1.81 1.30 1.98 1.45 2.34 1.76	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	B	From Leg	4.00	0.00	2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.16 1.81 1.30 1.98 1.45 2.34 1.76	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Leg	4.00	0.00	2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.16 1.81 1.30 1.98 1.45 2.34 1.76	0.07 0.09 0.11 0.16
Platform Mount [LP 301-1]	C	None				0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	30.10 30.10 40.80 40.80 51.50 51.50 72.90 72.90	1.59 2.03 2.47 3.35
*** 118 *** P65-17-XLH-RR w/ Mount Pipe	A	From Leg	4.00	0.00	2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.70 8.94 12.42 10.45 13.15 11.99 14.52 14.31	0.09 0.18 0.27 0.50
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00	0.00	2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 4.25 6.18 5.01 6.61 5.71 7.49 7.16	0.06 0.10 0.16 0.29
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00	0.00	2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 4.25 6.18 5.01 6.61 5.71 7.49 7.16	0.06 0.10 0.16 0.29
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00	0.00	2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 4.25 6.18 5.01 6.61 5.71 7.49 7.16	0.06 0.10 0.16 0.29
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00	0.00	2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.26 6.30 8.82 7.48 9.35 8.37 10.42 10.18	0.07 0.14 0.21 0.38
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.00	0.00	2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.26 6.30 8.82 7.48 9.35 8.37 10.42 10.18	0.07 0.14 0.21 0.38
RRUS-11	A	From Leg	2.00	0.00	0.00	0.0000	118.00	No Ice 1/2" Ice	2.78 1.19 2.99 1.33 3.21 1.49	0.05 0.07 0.09

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight	
			Horz	Lateral	Vert						ft
RRUS-11	B	From Leg	2.00	0.00	0.00	0.0000	118.00	1" Ice	3.66	1.83	0.15
								2" Ice	2.78	1.19	0.05
								No Ice	2.99	1.33	0.07
								1/2" Ice	3.21	1.49	0.09
RRUS-11	C	From Leg	2.00	0.00	0.00	118.00	1" Ice	3.66	1.83	0.15	
							2" Ice	2.78	1.19	0.05	
							No Ice	2.99	1.33	0.07	
							1/2" Ice	3.21	1.49	0.09	
(2) LGP21401	A	From Leg	4.00	0.00	2.00	118.00	1" Ice	3.66	1.83	0.15	
							2" Ice	2.78	1.19	0.05	
							No Ice	1.10	0.21	0.01	
							1/2" Ice	1.24	0.27	0.02	
(2) LGP21401	B	From Leg	4.00	0.00	2.00	118.00	Ice	1.38	0.35	0.03	
							1" Ice	1.69	0.52	0.05	
							2" Ice	1.10	0.21	0.01	
							No Ice	1.24	0.27	0.02	
(2) LGP21401	C	From Leg	4.00	0.00	2.00	118.00	Ice	1.38	0.35	0.03	
							1" Ice	1.69	0.52	0.05	
							2" Ice	1.10	0.21	0.01	
							No Ice	1.24	0.27	0.02	
DC6-48-60-18-8F	A	From Leg	4.00	0.00	0.00	118.00	Ice	1.45	1.45	0.05	
							1" Ice	1.83	1.83	0.10	
							2" Ice	0.79	0.79	0.02	
							No Ice	1.27	1.27	0.04	
T-Arm Mount [TA 602-3]	C	None			0.0000	118.00	Ice	19.29	19.29	1.21	
							1" Ice	26.99	26.99	1.64	
							2" Ice	11.59	11.59	0.77	
							No Ice	15.44	15.44	0.99	
Side Arm Mount [SO 901-3]	C	None			0.0000	117.00	Ice	2.68	2.68	0.34	
							1" Ice	3.70	3.70	0.37	
							2" Ice	1.66	1.66	0.32	
							No Ice	2.17	2.17	0.33	

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:			Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral	Vert							ft
*** 128 P ***													
SHPX3-11W	A	Paraboloid w/Shroud (HP)	From Leg	4.00	0.00	2.00	0.0000		128.00	3.25	No Ice	7.07	0.13
											1/2" Ice	7.47	0.17
											1" Ice	7.86	0.21
											2" Ice	8.66	0.29

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	140 - 120	Pole	Max Tension	2	0.00	0.00	-0.00
			Max. Compression	26	-18.12	-0.57	1.79
			Max. Mx	8	-7.68	-183.28	1.12
			Max. My	2	-7.66	0.03	185.24
			Max. Vy	8	12.43	-183.28	1.12
			Max. Vx	14	12.67	-0.51	-183.93
			Max. Torque	20			-1.03
			Max Tension	1	0.00	0.00	0.00
L2	120 - 80	Pole	Max. Compression	26	-29.40	-0.61	2.81
			Max. Mx	8	-14.32	-775.68	1.75
			Max. My	14	-14.28	-1.49	-785.96

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	80 - 39.5	Pole	Max. Vy	8	18.09	-775.68	1.75
			Max. Vx	14	18.37	-1.49	-785.96
			Max. Torque	20			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.45	-0.62	2.83
			Max. Mx	8	-22.84	-1555.87	2.18
			Max. My	14	-22.82	-2.57	-1577.11
			Max. Vy	8	21.35	-1555.87	2.18
			Max. Vx	14	21.63	-2.57	-1577.11
			Max. Torque	20			-1.64
L4	39.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.98	-0.62	2.83
			Max. Mx	8	-36.30	-2592.00	2.60
			Max. My	14	-36.30	-3.75	-2625.49
			Max. Vy	8	24.64	-2592.00	2.60
			Max. Vx	14	24.91	-3.75	-2625.49
			Max. Torque	20			-1.64

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	56.98	0.00	5.79
	Max. H _x	20	36.31	24.62	0.06
	Max. H _z	2	36.31	0.03	24.81
	Max. M _x	2	2617.70	0.03	24.81
	Max. M _z	8	2592.00	-24.62	0.01
	Max. Torsion	8	1.63	-24.62	0.01
	Min. Vert	19	27.24	21.25	-12.52
	Min. H _x	8	36.31	-24.62	0.01
	Min. H _z	15	27.24	-0.03	-24.89
	Min. M _x	14	-2625.49	-0.03	-24.89
	Min. M _z	20	-2591.46	24.62	0.06
	Min. Torsion	20	-1.63	24.62	0.06

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	30.26	0.00	0.00	-1.10	-0.21	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	36.31	-0.03	-24.81	-2617.70	3.21	0.19
0.9 Dead+1.0 Wind 0 deg - No Ice	27.24	-0.03	-24.81	-2592.28	3.25	0.19
1.2 Dead+1.0 Wind 30 deg - No Ice	36.31	12.24	-21.50	-2268.81	-1287.22	-0.44
0.9 Dead+1.0 Wind 30 deg - No Ice	27.24	12.24	-21.50	-2246.72	-1274.83	-0.43
1.2 Dead+1.0 Wind 60 deg - No Ice	36.31	21.27	-12.45	-1315.30	-2238.56	-1.17
0.9 Dead+1.0 Wind 60 deg - No Ice	27.24	21.27	-12.45	-1302.34	-2217.06	-1.15
1.2 Dead+1.0 Wind 90 deg - No Ice	36.31	24.62	-0.01	-2.60	-2592.00	-1.63
0.9 Dead+1.0 Wind 90 deg - No Ice	27.24	24.62	-0.01	-2.23	-2567.11	-1.60
1.2 Dead+1.0 Wind 120 deg - No Ice	36.31	21.28	12.57	1328.63	-2238.99	-1.15
0.9 Dead+1.0 Wind 120 deg - No Ice	27.24	21.28	12.57	1316.24	-2217.49	-1.12
1.2 Dead+1.0 Wind 150 deg - No Ice	36.31	12.31	21.60	2280.39	-1295.74	-0.77

Load Combination	Vertical	Shear _x	Shear _z	Overtuning Moment, M _x	Overtuning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
0.9 Dead+1.0 Wind 150 deg - No Ice	27.24	12.31	21.60	2258.89	-1283.27	-0.75
1.2 Dead+1.0 Wind 180 deg - No Ice	36.31	0.03	24.89	2625.49	-3.75	-0.20
0.9 Dead+1.0 Wind 180 deg - No Ice	27.24	0.03	24.89	2600.69	-3.64	-0.19
1.2 Dead+1.0 Wind 210 deg - No Ice	36.31	-12.26	21.58	2276.93	1289.18	0.42
0.9 Dead+1.0 Wind 210 deg - No Ice	27.24	-12.26	21.58	2255.46	1276.91	0.41
1.2 Dead+1.0 Wind 240 deg - No Ice	36.31	-21.25	12.52	1322.61	2234.99	0.96
0.9 Dead+1.0 Wind 240 deg - No Ice	27.24	-21.25	12.52	1310.28	2213.66	0.94
1.2 Dead+1.0 Wind 270 deg - No Ice	36.31	-24.62	-0.06	-9.57	2591.46	1.63
0.9 Dead+1.0 Wind 270 deg - No Ice	27.24	-24.62	-0.06	-9.12	2566.71	1.61
1.2 Dead+1.0 Wind 300 deg - No Ice	36.31	-21.30	-12.49	-1321.32	2241.49	1.37
0.9 Dead+1.0 Wind 300 deg - No Ice	27.24	-21.30	-12.49	-1308.30	2220.09	1.34
1.2 Dead+1.0 Wind 330 deg - No Ice	36.31	-12.29	-21.52	-2272.27	1292.70	0.78
0.9 Dead+1.0 Wind 330 deg - No Ice	27.24	-12.29	-21.52	-2250.15	1280.39	0.76
1.2 Dead+1.0 Ice+1.0 Temp	56.98	0.00	-0.00	-2.83	-0.62	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	56.98	-0.00	-5.79	-613.16	-0.05	0.04
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	56.98	2.87	-5.01	-531.71	-302.26	-0.11
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	56.98	4.98	-2.90	-309.11	-524.68	-0.26
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	56.98	5.76	-0.00	-3.20	-607.01	-0.36
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	56.98	4.98	2.92	306.04	-524.73	-0.27
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	56.98	2.88	5.03	528.35	-303.74	-0.18
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	56.98	0.00	5.80	609.15	-1.23	-0.04
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	56.98	-2.87	5.03	527.76	301.43	0.10
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	56.98	-4.98	2.91	305.01	522.85	0.22
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	56.98	-5.76	-0.01	-4.39	605.73	0.36
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	56.98	-4.98	-2.91	-310.14	523.99	0.30
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	56.98	-2.88	-5.02	-532.30	302.00	0.18
Dead+Wind 0 deg - Service	30.26	-0.00	-4.73	-497.25	0.44	0.04
Dead+Wind 30 deg - Service	30.26	2.33	-4.10	-431.09	-244.25	-0.08
Dead+Wind 60 deg - Service	30.26	4.05	-2.37	-250.28	-424.64	-0.22
Dead+Wind 90 deg - Service	30.26	4.69	-0.00	-1.38	-491.65	-0.31
Dead+Wind 120 deg - Service	30.26	4.06	2.39	251.04	-424.72	-0.22
Dead+Wind 150 deg - Service	30.26	2.35	4.12	431.52	-245.87	-0.14
Dead+Wind 180 deg - Service	30.26	0.00	4.74	496.96	-0.88	-0.04
Dead+Wind 210 deg - Service	30.26	-2.34	4.11	430.86	244.28	0.08
Dead+Wind 240 deg - Service	30.26	-4.05	2.39	249.90	423.62	0.18
Dead+Wind 270 deg - Service	30.26	-4.69	-0.01	-2.70	491.20	0.31
Dead+Wind 300 deg - Service	30.26	-4.06	-2.38	-251.43	424.85	0.26

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 330 deg - Service	30.26	-2.34	-4.10	-431.75	244.95	0.15

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-30.26	0.00	0.00	30.26	0.00	0.000%
2	-0.03	-36.31	-24.81	0.03	36.31	24.81	0.000%
3	-0.03	-27.24	-24.81	0.03	27.24	24.81	0.000%
4	12.24	-36.31	-21.50	-12.24	36.31	21.50	0.000%
5	12.24	-27.24	-21.50	-12.24	27.24	21.50	0.000%
6	21.27	-36.31	-12.45	-21.27	36.31	12.45	0.000%
7	21.27	-27.24	-12.45	-21.27	27.24	12.45	0.000%
8	24.62	-36.31	-0.01	-24.62	36.31	0.01	0.000%
9	24.62	-27.24	-0.01	-24.62	27.24	0.01	0.000%
10	21.28	-36.31	12.57	-21.28	36.31	-12.57	0.000%
11	21.28	-27.24	12.57	-21.28	27.24	-12.57	0.000%
12	12.31	-36.31	21.60	-12.31	36.31	-21.60	0.000%
13	12.31	-27.24	21.60	-12.31	27.24	-21.60	0.000%
14	0.03	-36.31	24.89	-0.03	36.31	-24.89	0.000%
15	0.03	-27.24	24.89	-0.03	27.24	-24.89	0.000%
16	-12.26	-36.31	21.58	12.26	36.31	-21.58	0.000%
17	-12.26	-27.24	21.58	12.26	27.24	-21.58	0.000%
18	-21.25	-36.31	12.52	21.25	36.31	-12.52	0.000%
19	-21.25	-27.24	12.52	21.25	27.24	-12.52	0.000%
20	-24.62	-36.31	-0.06	24.62	36.31	0.06	0.000%
21	-24.62	-27.24	-0.06	24.62	27.24	0.06	0.000%
22	-21.30	-36.31	-12.49	21.30	36.31	12.49	0.000%
23	-21.30	-27.24	-12.49	21.30	27.24	12.49	0.000%
24	-12.29	-36.31	-21.52	12.29	36.31	21.52	0.000%
25	-12.29	-27.24	-21.52	12.29	27.24	21.52	0.000%
26	0.00	-56.98	0.00	-0.00	56.98	0.00	0.000%
27	-0.00	-56.98	-5.79	0.00	56.98	5.79	0.000%
28	2.87	-56.98	-5.01	-2.87	56.98	5.01	0.000%
29	4.98	-56.98	-2.90	-4.98	56.98	2.90	0.000%
30	5.76	-56.98	-0.00	-5.76	56.98	0.00	0.000%
31	4.98	-56.98	2.92	-4.98	56.98	-2.92	0.000%
32	2.88	-56.98	5.03	-2.88	56.98	-5.03	0.000%
33	0.00	-56.98	5.80	-0.00	56.98	-5.80	0.000%
34	-2.87	-56.98	5.03	2.87	56.98	-5.03	0.000%
35	-4.98	-56.98	2.91	4.98	56.98	-2.91	0.000%
36	-5.76	-56.98	-0.01	5.76	56.98	0.01	0.000%
37	-4.98	-56.98	-2.91	4.98	56.98	2.91	0.000%
38	-2.88	-56.98	-5.02	2.88	56.98	5.02	0.000%
39	-0.00	-30.26	-4.73	0.00	30.26	4.73	0.000%
40	2.33	-30.26	-4.10	-2.33	30.26	4.10	0.000%
41	4.05	-30.26	-2.37	-4.05	30.26	2.37	0.000%
42	4.69	-30.26	-0.00	-4.69	30.26	0.00	0.000%
43	4.06	-30.26	2.39	-4.06	30.26	-2.39	0.000%
44	2.35	-30.26	4.12	-2.35	30.26	-4.12	0.000%
45	0.00	-30.26	4.74	-0.00	30.26	-4.74	0.000%
46	-2.34	-30.26	4.11	2.34	30.26	-4.11	0.000%
47	-4.05	-30.26	2.39	4.05	30.26	-2.39	0.000%
48	-4.69	-30.26	-0.01	4.69	30.26	0.01	0.000%
49	-4.06	-30.26	-2.38	4.06	30.26	2.38	0.000%
50	-2.34	-30.26	-4.10	2.34	30.26	4.10	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00060448
3	Yes	4	0.00000001	0.00030195
4	Yes	6	0.00000001	0.00013395
5	Yes	6	0.00000001	0.00004089
6	Yes	6	0.00000001	0.00014078
7	Yes	6	0.00000001	0.00004322
8	Yes	5	0.00000001	0.00025572
9	Yes	5	0.00000001	0.00011370
10	Yes	6	0.00000001	0.00013248
11	Yes	6	0.00000001	0.00004026
12	Yes	6	0.00000001	0.00013954
13	Yes	6	0.00000001	0.00004273
14	Yes	5	0.00000001	0.00004631
15	Yes	4	0.00000001	0.00062598
16	Yes	6	0.00000001	0.00013714
17	Yes	6	0.00000001	0.00004201
18	Yes	6	0.00000001	0.00013236
19	Yes	6	0.00000001	0.00004032
20	Yes	5	0.00000001	0.00028038
21	Yes	5	0.00000001	0.00012470
22	Yes	6	0.00000001	0.00014219
23	Yes	6	0.00000001	0.00004364
24	Yes	6	0.00000001	0.00013308
25	Yes	6	0.00000001	0.00004052
26	Yes	4	0.00000001	0.00006106
27	Yes	5	0.00000001	0.00051875
28	Yes	5	0.00000001	0.00078694
29	Yes	5	0.00000001	0.00080834
30	Yes	5	0.00000001	0.00051893
31	Yes	5	0.00000001	0.00076161
32	Yes	5	0.00000001	0.00078260
33	Yes	5	0.00000001	0.00050865
34	Yes	5	0.00000001	0.00076879
35	Yes	5	0.00000001	0.00075463
36	Yes	5	0.00000001	0.00051662
37	Yes	5	0.00000001	0.00080830
38	Yes	5	0.00000001	0.00078011
39	Yes	4	0.00000001	0.00004567
40	Yes	4	0.00000001	0.00065214
41	Yes	4	0.00000001	0.00077612
42	Yes	4	0.00000001	0.00024871
43	Yes	4	0.00000001	0.00061308
44	Yes	4	0.00000001	0.00073331
45	Yes	4	0.00000001	0.00004852
46	Yes	4	0.00000001	0.00069266
47	Yes	4	0.00000001	0.00061172
48	Yes	4	0.00000001	0.00025265
49	Yes	4	0.00000001	0.00079658
50	Yes	4	0.00000001	0.00063250

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 120	16.210	39	1.0768	0.0029
L2	120 - 80	11.753	39	1.0333	0.0028
L3	84.5 - 39.5	5.491	39	0.6370	0.0009
L4	45 - 0	1.513	39	0.3090	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	4' Lightning Rod	39	16.210	1.0768	0.0029	26110
139.00	(2) LPA-80063-6CF-EDIN w/ Mount Pipe	39	15.981	1.0766	0.0029	26110
130.00	SHPX3-11W	39	13.936	1.0692	0.0029	13055
128.00	AIR 32 B2a/B66Aa	39	13.489	1.0652	0.0029	10879
118.00	P65-17-XLH-RR w/ Mount Pipe	39	11.336	1.0203	0.0027	6530
117.00	Side Arm Mount [SO 901-3]	39	11.130	1.0130	0.0027	6467

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 120	85.298	14	5.6533	0.0154
L2	120 - 80	61.937	14	5.4294	0.0146
L3	84.5 - 39.5	28.986	14	3.3613	0.0048
L4	45 - 0	7.992	14	1.6319	0.0017

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	4' Lightning Rod	14	85.298	5.6533	0.0154	5126
139.00	(2) LPA-80063-6CF-EDIN w/ Mount Pipe	14	84.099	5.6519	0.0154	5126
130.00	SHPX3-11W	14	73.381	5.6153	0.0154	2562
128.00	AIR 32 B2a/B66Aa	14	71.040	5.5947	0.0153	2134
118.00	P65-17-XLH-RR w/ Mount Pipe	14	59.746	5.3619	0.0142	1278
117.00	Side Arm Mount [SO 901-3]	14	58.664	5.3240	0.0140	1264

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	140 - 120 (1)	TP24x24x0.375	20.00	0.00	0.0	27.832 5	-7.66	876.73	0.009
L2	120 - 80 (2)	TP36.379x24x0.2188	40.00	0.00	0.0	24.145 1	-14.28	1506.69	0.009
L3	80 - 39.5 (3)	TP44.261x34.5488x0.312 5	45.00	0.00	0.0	42.414 0	-22.82	2821.05	0.008
L4	39.5 - 0 (4)	TP51.75x42.4489x0.375	45.00	0.00	0.0	61.149 1	-36.30	4065.31	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	140 - 120 (1)	TP24x24x0.375	185.24	538.74	0.344	0.00	538.74	0.000
L2	120 - 80 (2)	TP36.379x24x0.2188	785.96	1078.87	0.729	0.00	1078.87	0.000
L3	80 - 39.5 (3)	TP44.261x34.5488x0.312 5	1577.12	2481.96	0.635	0.00	2481.96	0.000
L4	39.5 - 0 (4)	TP51.75x42.4489x0.375	2625.50	4297.13	0.611	0.00	4297.13	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140 - 120 (1)	TP24x24x0.375	12.59	263.02	0.048	0.19	546.31	0.000
L2	120 - 80 (2)	TP36.379x24x0.2188	18.37	423.75	0.043	0.20	1274.02	0.000
L3	80 - 39.5 (3)	TP44.261x34.5488x0.3125	21.63	744.37	0.029	0.20	2746.93	0.000
L4	39.5 - 0 (4)	TP51.75x42.4489x0.375	24.91	1073.17	0.023	0.20	4758.13	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140 - 120 (1)	0.009	0.344	0.000	0.048	0.000	0.355	1.000	4.8.2
L2	120 - 80 (2)	0.009	0.729	0.000	0.043	0.000	0.740	1.000	4.8.2
L3	80 - 39.5 (3)	0.008	0.635	0.000	0.029	0.000	0.644	1.000	4.8.2
L4	39.5 - 0 (4)	0.009	0.611	0.000	0.023	0.000	0.620	1.000	4.8.2

Section Capacity Table

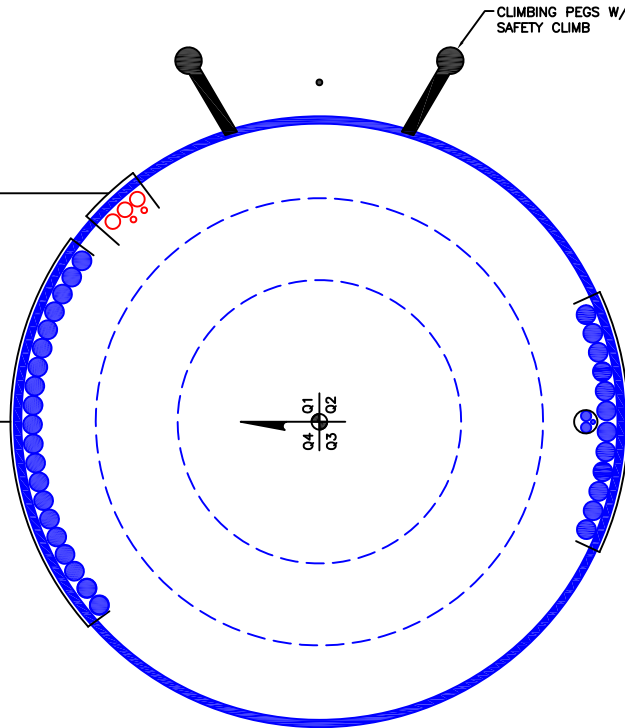
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	140 - 120	Pole	TP24x24x0.375	1	-7.66	876.73	35.5	Pass
L2	120 - 80	Pole	TP36.379x24x0.2188	2	-14.28	1506.69	74.0	Pass
L3	80 - 39.5	Pole	TP44.261x34.5488x0.3125	3	-22.82	2821.05	64.4	Pass
L4	39.5 - 0	Pole	TP51.75x42.4489x0.375	4	-36.30	4065.31	62.0	Pass
Summary								
Pole (L2)							74.0	Pass
RATING =							74.0	Pass

APPENDIX B
BASE LEVEL DRAWING



(PROPOSED EQUIPMENT CONFIGURATION)
(2) 1/2" TO 128 FT LEVEL
(3) 1-1/4" TO 128 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(14) 1-5/8" TO 139 FT LEVEL



(OTHER CONSIDERED EQUIPMENT—IN CONDUIT)
(1) 3/8" TO 118 FT LEVEL
(2) 7/8" TO 118 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 1-5/8" TO 118 FT LEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

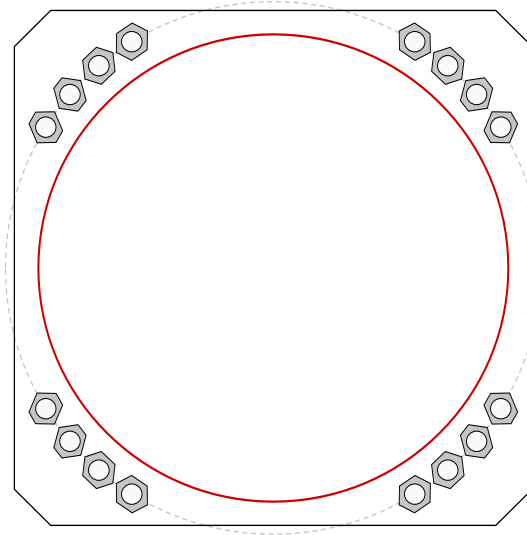


Site Info	
BU #	845994
Site Name	HAMPTON - YOUNG ST
Order #	1636249

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0.5

Applied Loads	
Moment (kip-ft)	2625.50
Axial Force (kips)	36.30
Shear Force (kips)	24.91

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(16) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 59" BC
Base Plate Data
57" OD x 3" Plate (A572-55; $F_y=55$ ksi, $F_u=70$ ksi)
Stiffener Data
N/A
Pole Data
51.75" x 0.375" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
$Pu_c = 135.69$	$\phi Pn_c = 243.75$	Stress Rating
$Vu = 1.56$	$\phi Vn = 73.13$	53.1%
$Mu = n/a$	$\phi Mn = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	26.37	(Flexural)
Allowable Stress (ksi):	49.5	
Stress Rating:	50.7%	Pass

Monopole Flange Plate Connection

Elevation = 120 ft.

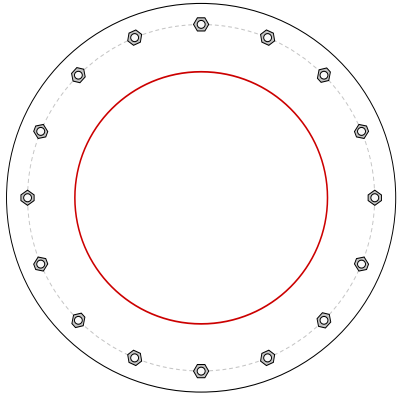


BU #	845994
Site Name	HAMPTON - YOUNG ST
Order #	1636249
TIA-222 Revision	H

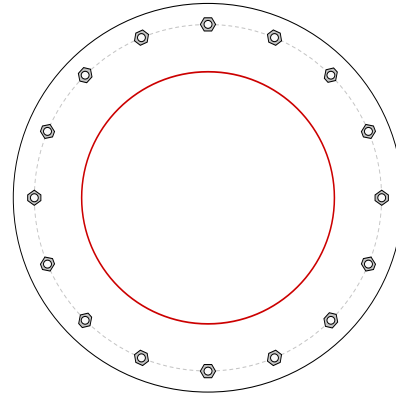
Applied Loads	
Moment (kip-ft)	185.24
Axial Force (kips)	7.66
Shear Force (kips)	12.59

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 3/4" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 33" BC

Top Plate Data

37" OD x 1.25" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

24" x 0.375" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

37" OD x 1.75" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

24" x 0.2188" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	16.36
Allowable (kips)	30.04
Stress Rating:	51.9% Pass

Top Plate Capacity

Max Stress (ksi):	21.69	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	45.9%	Pass
Tension Side Stress Rating:	32.6%	Pass

Bottom Plate Capacity

Max Stress (ksi):	11.07	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	23.4%	Pass
Tension Side Stress Rating:	16.6%	Pass

Pier and Pad Foundation



BU # : 845994
Site Name: EAST HAMPTON -
App. Number: 448692 Rev. 2

TIA-222 Revision: H
Tower Type: Monopole

Block Foundation?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	36	kips
Base Shear, V_{u_comp} :	25	kips
Moment, M_u :	2625	ft-kips
Tower Height, H :	140	ft
BP Dist. Above Fdn, bp_{dist} :	6	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	349.51	25.00	6.8%	Pass
<i>Bearing Pressure (ksf)</i>	22.50	1.99	8.4%	Pass
<i>Overturing (kip*ft)</i>	7760.53	2825.00	36.4%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	6294.91	2737.50	41.4%	Pass
<i>Pier Compression (kip)</i>	18370.97	67.17	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	4264.80	904.67	20.2%	Pass
<i>Pad Shear - 1-way (kips)</i>	766.41	140.31	17.4%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.029	16.6%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	2687.18	1642.50	58.2%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, dpier :	7	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, Sc :	10	
Pier Rebar Quantity, mc :	32	
Pier Tie/Spiral Size, St :	5	
Pier Tie/Spiral Quantity, mt :	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	36.4%
Structural Rating*:	58.2%

Pad Properties		
Depth, D :	7	ft
Pad Width, W :	25	ft
Pad Thickness, T :	3	ft
Pad Rebar Size, Sp :	10	
Pad Rebar Quantity, mp :	25	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, Fy :	60000	psi
Concrete Compressive Strength, F'c :	3000	psi
Dry Concrete Density, δc :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	130	pcf
Ultimate Gross Bearing, Qult :	30.000	ksf
Cohesion, Cu :	0.000	ksf
Friction Angle, φ :	38	degrees
SPT Blow Count, N_{blows} :	65	
Base Friction, μ :	0.4	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	15	ft

--Toggle between Gross and Net



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

T-Mobile Existing Facility

Site ID: CTHA602A

UCTHA602A
151 Young Street
East Hampton, CT 06424

March 26, 2018

EBI Project Number: 6218001187

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	11.06%



March 26, 2018

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

Emissions Analysis for Site: **CTHA602A – UCTHA602A**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **151 Young Street, East Hampton, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz Bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz bands is $1000 \mu\text{W}/\text{cm}^2$. 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 **151 Young Street, East Hampton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panels and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 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.
- 2) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel
- 4) 1 LTE channel (600 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts
- 5) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.



- 6) 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.
- 7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panels and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **Ericsson AIR32 B2A/B66AA & RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels, the **RFS APXVAA24-43-U-A20** for 600 MHz and 700 MHz channels and the **Commscope SHPX3-11W** for the 11 GHz microwave backhaul. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B2A/B66AA** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. 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 **RFS APXVAA24-43-U-A20** has a maximum gain of **13.15 dBd** at its main lobe at 600 MHz and a maximum gain of **13.55 dBd** at its main lobe at 700 MHz. The **Commscope SHPX3-11W** has a maximum gain of **36.25 dBd** at its main lobe at 11 GHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panels and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antenna mounting height centerline of the proposed panel and microwave antennas is **130 feet** above ground level (AGL).
- 10) 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.
- 11) All calculations were done with respect to uncontrolled / general population threshold limits.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	1	Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR32 B2A/B66AA	Make / Model:	Ericsson AIR32 B2A/B66AA	Make / Model:	Ericsson AIR32 B2A/B66AA	Make / Model:	Ericsson AIR32 B2A/B66AA
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	130	Height (AGL):	130	Height (AGL):	130	Height (AGL):	130
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	2.18	Antenna B1 MPE%	2.18	Antenna C1 MPE%	2.18	Antenna D1 MPE%	2.18
Antenna #:	2	Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APX16DWV-16DWVS-E-A20	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	Gain:	16.3 dBd
Height (AGL):	130	Height (AGL):	130	Height (AGL):	130	Height (AGL):	130
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60
ERP (W):	2,559.58	ERP (W):	2,559.58	ERP (W):	2,559.58	ERP (W):	2,559.58
Antenna A2 MPE%	0.60	Antenna B2 MPE%	0.60	Antenna C2 MPE%	0.60	Antenna D2 MPE%	0.60
Antenna #:	3	Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20
Gain:	13.15 / 13.55 dBd	Gain:	13.15 / 13.55 dBd	Gain:	13.15 / 13.55 dBd	Gain:	13.15 / 13.55 dBd
Height (AGL):	130	Height (AGL):	130	Height (AGL):	130	Height (AGL):	130
Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz
Channel Count	2	Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60
ERP (W):	1,299.01	ERP (W):	1,299.01	ERP (W):	1,299.01	ERP (W):	1,299.01
Antenna A3 MPE%	0.70	Antenna B3 MPE%	0.70	Antenna C3 MPE%	0.70	Antenna D3 MPE%	0.70

Microwave Backhaul Data								
Make / Model:	Gain	Height (AGL):	Frequency Bands	Channel Count	Total TX Power(W)	ERP (W)	MPE %	Sector
Commscope SHPX3-11W	36.85 dBd	130	11 GHz	1	1	4,216.97	0.99	B



Site Summary Tables

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Sector B)	3.58%
AT&T	2.65 %
Verizon Wireless	4.83 %
Site Total MPE %:	11.06%

T-Mobile Sector A Total:	3.48 %
T-Mobile Sector B Total:	3.58 %
T-Mobile Sector C Total:	3.48 %
T-Mobile Sector C Total:	3.48 %
Site Total:	11.06%

T-Mobile Max Power Table per Sector

T-Mobile _Max Power Values (Sector B)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	130	10.92	AWS - 2100 MHz	1000	1.09%
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	130	10.92	PCS - 1900 MHz	1000	1.09%
T-Mobile AWS - 2100 MHz UMTS	2	1,279.74	130	5.98	AWS - 2100 MHz	1000	0.60%
T-Mobile 600 MHz LTE	1	619.61	130	1.45	600 MHz	400	0.36%
T-Mobile 700 MHz LTE	1	679.39	130	1.59	700 MHz	467	0.34%
T-Mobile 11 GHz Microwave	1	4,216.97	130	0.99	11 GHz	1000	0.10%
						Total:	3.58%

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	3.48 %
Sector B:	3.58 %
Sector C:	3.48 %
Sector D:	3.48 %
T-Mobile Per Sector Maximum (Sector B):	3.58 %
Site Total:	11.06%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **11.06%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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