T-Mobile Northeast LLC
("T-Mobile")

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February 27, 2018

Honorable Robert Stein, Chairman
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: **Request for Tower Share**
T-Mobile Northeast LLC ("T-Mobile") Request for Approval of the Shared Use of an Existing Tower at 1375 North Road, Killingly (Dayville), CT 06241.
T-Mobile site number: CTNL194 (ATC: 88011)

Dear Chairman Stein and Members of the Council:

T-Mobile proposes to share an existing telecommunications tower located at 1375 North Road, Killingly, CT (the facility). The subject parcel is identified by the Town of Killingly as Map 30 and Lot 3. The property and tower are both owned by American Tower Corporation. The property is roughly 2.07± acres and accommodates an existing one-story utility building and the self-supporting lattice tower that was originally an AT&T Long Lines asset. The facility is and will continue to be owned and operated by American Tower.

Pursuant to Connecticut General Statues Section 16-50aa (the Statute), T-Mobile requests a finding from the Connecticut Siting Council that the shared use of this facility is technically, legally, environmentally and economically feasible, will meet safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. T-Mobile further requests an order approving the shared use of this facility.

The purpose of this request is to use an existing tower to develop T-Mobile's wireless network to provide high speed wireless data and to develop wireless service within the State of Connecticut and in this part of Killingly, CT: thus avoiding the need for an additional tower in Killingly.

T-Mobile is licensed by the Federal Communications Commission ("FCC") to provide multiple technologies, including Universal Mobile Telecommunications System ("UMTS"), as well as long-term evolution ("LTE") services in Windham County. T-Mobile is building and enhancing

its network to take advantage of its licensed spectrum, and improve its broadband high speed wireless voice and data services.

Existing Facility & Proposed Modification

The existing facility is and will continue to be a 287.5' lattice tower located at 1375 North Road. Site coordinates (NAD83) are N41° 52' 17.49" and W71° 49' 17.56". Currently there are three other commercial wireless carriers located on this tower, whereby T-Mobile now intends to use the vacant space near the tower top, between Sprint/Nextel and Verizon Wireless. The site plan of the facility is included in the proposed Construction Drawings, prepared by A.T. Engineering Service, PLLC dated February 26, 2018 and enclosed herewith.

T-Mobile intends to install four (4) AIR3 32 B66Aa/B2a Ericsson panel antennas, four (4) APXVAA24_42-U-A20 RFS panel antennas, four (4) APX16DWV-16DWVS-E-A20 RFS panel antennas, one (1) MW dish antenna, twelve (12) Ericsson RRUs and eight (8) diplexers mounted on a custom antenna frame to be attached to the existing lattice tower at this 277' mount level. T-Mobile will install four (4) 1-5/8" fiber cables and one (1) 1/2" coax line on the tower.

T-Mobile intends to enter into a new agreement, at this tower height, in order to license the portion of space within the existing fenced compound for new 10'-0" x 15'-0" concrete pad, and to install two (2) new cabinets, one (1) Powergen 7500W backup generator, one (1) 120-gallon propane tank, along with one (1) telco and one (1) power cabinet on an H-frame thereon. Equipment will thus remain within the existing fenced compound. A new ice bridge will also be installed in order to connect the equipment with the tower. A GPS antenna will be located on the ice bridge.

Consistent with the requirements of the Statute, it is feasible for T-Mobile to collocate at this facility. T-Mobile is proposing to collocate on the existing lattice tower that will continue to remain the ownership of American Tower. Included with this application is a Structural Analysis Report from A.T. Engineering Service, PLLC dated January 22, 2018 that shows that the existing tower can support T-Mobile's proposed equipment.

The Proposal is Legally Feasible.

The Council has authority, pursuant to statute, to issue an order approving of the shared use of this tower. By issuing an order approving T-Mobile's shared use of this tower, T-Mobile will be able to proceed with obtaining a building permit for the proposed installation. American Tower has executed a Letter of Authorization that approved T-Mobile's Request for Tower Share filing on February 27, 2018, which approval is included with this application. T-Mobile's proposal is legally feasible.

T-Mobile is a telecommunication provider licensed by the FCC to provide service in the State of Connecticut, including but not limited to Windham County. T-Mobile will enter into an agreement with the owner of this facility, American Tower, for the location of this proposed equipment on the existing tower so that it may provide telecommunications services to the surrounding community. Consequently, the proposal is legally feasible.

The Proposal is Environmentally Feasible.

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the Town of Killingly will be decreased with the sharing of a single tower versus the proliferation of multiple towers.
- There will be no material increase in the visibility of the tower with the addition of the antennas and associated equipment on the tower.
- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.
- There will only be a brief, slight increase in noise pollution while the site is under construction.
- During construction, the proposed project will generate a small amount of traffic as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.
- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of T-Mobile's new antennas to the tower. T-Mobile has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis dated February 23, 2018 indicates that T-Mobile and other antennas on the tower will cumulatively emit 2.51% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is enclosed herewith and the calculations are below.

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	1	Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	277	Height (AGL):	277	Height (AGL):	277	Height (AGL):	277
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%	0.46	Antenna B1 MPE%	0.46	Antenna C1 MPE%	0.46	Antenna D1 MPE%	0.46
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):	277	Height (AGL):	277	Height (AGL):	277	Height (AGL):	277
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):	2,559.48	ERP (W):	2,559.48	ERP (W):	2,559.48	ERP (W):	2,559.48
Antenna A2 MPE%	0.13	Antenna B2 MPE%	0.13	Antenna C2 MPE%	0.13	Antenna D2 MPE%	0.13
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 dBm / 13.55 dBm	Gain:	13.15 dBm / 13.55 dBm	Gain:	13.15 dBm / 13.55 dBm	Gain:	13.15 dBm / 13.55 dBm
Height (AGL):	277	Height (AGL):	277	Height (AGL):	277	Height (AGL):	277
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):	1299.01	ERP (W):	1299.01	ERP (W):	1299.01	ERP (W):	1299.01
Antenna A3 MPE%	0.15	Antenna B3 MPE%	0.15	Antenna C3 MPE%	0.15	Antenna D3 MPE%	0.15

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	0.73 %
Verizon Wireless	0.74 %
Sprint	0.28 %
AT&T	0.76 %
Site Total MPE %:	2.51%

T-Mobile Sector A Total:	0.73 %
T-Mobile Sector B Total:	0.73 %
T-Mobile Sector C Total:	0.73 %
T-Mobile Sector D Total:	0.73 %
Site Total:	2.51%

- T-Mobile expects to enhance safety in this portion of Killingly by improving wireless telecommunications for local residents and travelers. T-Mobile is currently developing its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of T-Mobile's network development.

- Specifically, this proposal is designed to provide reliable wireless coverage for this section of Killingly, CT.

Conclusions:

For the reasons stated above, the attachment of T-Mobile's antennas and associated equipment to the tower would meet all the requirements set forth in the Statute. The proposal is legally,

technically, economically and environmentally feasible and meets all public safety concerns. Therefore, T-Mobile respectfully requests that the Council approve this request for the shared use of this tower located at 1375 North Road, Killingly, CT.

Respectfully yours,

Alex Murshteyn
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Centerline Communications, LLC
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AMurshteyn@centerlinecommunications.com

Enclosures (5)

cc: Chairman David Griffiths, Killingly Town Council - as elected official - 1Z9Y45030327505025
Sean Hendricks, Killingly Town Manager - c/o elected official - 1Z9Y45030324050638
Ann-Marie L. Aubrey, Town of Killingly, Director of Planning & Development - 1Z9Y45030329889242
American Tower Corp - property & tower owner - 1Z9Y45030325920857
T-Mobile Northeast LLC (e-mail)

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LETTER OF AUTHORIZATION

ATC SITE # / NAME: 88011/EAST KILLINGLY NORTH
SITE ADDRESS: North Road, Dayville, CT 06241-1404
LICENSEE: T-Mobile Northeast LLC d/b/a T-Mobile

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

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

Signature:

Print Name: Margaret Robinson
Senior Counsel
American Tower*

NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

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

WITNESS my hand and official seal, this 27th day of February, 2018.

NOTARY SEAL

GERARD T. HEFFRON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
August 9, 2024

Notary Public Gerard T. Heffron
My Commission Expires: 8/9/24

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

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Structural Analysis Report

Structure	:	**287.5 ft Self Supported AT&T TAG Tower**
ATC Site Name	:	**East Killingly North, CT**
ATC Site Number	:	**88011**
Engineering Number	:	**OAA720744_C3_02**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTNL194**
Carrier Site Number	:	**CTNL194**
Site Location	:	**North Road** **Dayville, CT 06241-1404** **41.871500,-71.821500**
County	:	**Windham**
Date	:	**January 22, 2018**
Max Usage	:	**99%**
Result	:	**Pass**

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer II

Robert D. Barrett

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32598
LICENSED
PROFESSIONAL ENGINEER

Jan 23 2018 6:18 PM cosign

COA: PEC.0001553

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Calculations ..... Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 287.5 ft self supported AT&T tag tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #26726321, dated September 13, 2006
Foundation Drawing	CSEI Analysis, ATC Eng. #26726321, dated September 13, 2006
Geotechnical Report	FDH Velocitel Project #17PXNW1600, dated February 27, 2017
Modifications	ATC Project #45432633, dated July 9, 2010 ATC Project #OAA686695_C6_04, dated November 28, 2016

Analysis

The tower was analyzed using Power Line Systems, Inc. tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	101 mph (3-Second Gust, V_{asd}) / 130 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	5*
Crest Height:	0 ft

***Wind speed and topographic effects have been adjusted per site specific wind study in accordance with ASCE 7-10 Section 26.5.3, IBC Section 1609.3, and TIA-222-G Section 2.6.6.2.5**

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
306.0	306.0	6	Alcatel-Lucent RRH2x50-08	Sector Frames	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz 4X45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	KMW ETCR-654L12H6			
266.0	266.0	6	RFS FD9R6004/2C-3L	Sector Frames	(10) 1 5/8" Coax (2) 1 1/4" Hybriflex	Verizon
		3	Alcatel-Lucent B13 RRH4x30-4R 700U			
		3	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			
		2	Raycap RC3DC-3315-PF-48			
		6	Antel LPA-80063-4CF-EDIN-X			
		6	Commscope SBNHH-1D65B			
246.0	246.0	6	Powerwave TT19-08BP111-001	Sector Frames	(12) 2 1/4" Coax (2) 0.78" 8 AWG 6 (1) 3" Conduit (1) 0.39" Fiber Trunk	AT&T Mobility
		3	Raycap DC2-48-60-0-9E			
		1	Raycap FC12-PC6-10E			
		3	Ericsson RRUS-11			
		6	Powerwave P65-15-XLH-RR			
		1	Kathrein 800 10766			
		2	KMW AM-X-CD-17-65-00T-RET			
210.0	210.0	1	Andrew DB264	Side Arm	(1) 7/8" Coax	US Department of Justice
50.0	50.0	1	MicroPulse GPS-QBW-26N	Stand-Off	(1) 1/2" Coax	Verizon

Equipment to be Removed

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

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
277.0	277.0	8	Commscope CBC6AE7LQ-DS-43	Sector Frames	(4) 1 5/8" Fiber (1) 1/2" Coax	T-Mobile
		4	Ericsson Radio 4478 B71			
		4	Ericsson RRUS 11 B12			
		4	Ericsson RRUS 11 B4			
		1	Commscope SHP2-13			
		4	Ericsson AIR32 B66Aa/B2a			
		4	RFS APX16DWV-16DWVS-E-A20			
		4	RFS APXVAA24_43-U-A20			

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

Triple stack proposed coax on the tower face with the least amount of existing coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	80%	Pass
Diagonals	98%	Pass
Truss Diagonals	98%	Pass
Horizontals	89%	Pass
Truss Horizontals	99%	Pass
Anchor Bolts	52%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	350.0	75%
Axial (Kips)	472.0	10%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
277.0	Commscope CBC6AE7LQ-DS-43	T-Mobile	0.230	0.010	0.080
	Ericsson Radio 4478 B71				
	Ericsson RRUS 11 B12				
	Ericsson RRUS 11 B4				
	Commscope SHP2-13				
	Ericsson AIR32 B66Aa/B2a				
	RFS APX16DWV-16DWVS-E-A20				
	RFS APXVAA24_43-U-A20				

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

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

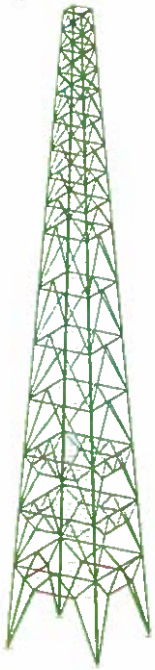
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

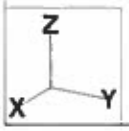
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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

American Tower Corp., Project: "18_01-t-mobile-01-22-2018"
Tower Version 15.00, 8:43:50 PM Monday, January 22, 2018
Undeformed geometry displayed





Project Name : 88011 - East Killingly North, CT
Project Notes: CAA720744_C3_02 - T-Mobile
Project File : n:\12 - atc\88011\18_01-t-mobile-01-22-2018\18_01-t-mobile-01-22-2018.tow
Date run : 8:32:44 PM Monday, January 22, 2018
by : Tower Version 15.00
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

The model has 0 warnings.

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n:\12 - atc\88011\18_01-t-mobile-01-22-2018\18_01-t-mobile-01-22-2018.eia

*** Analysis Results:

Maximum element usage is 90.53% for Angle "LN 3X" in load case "W -45"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long Force (kips)	Tran Force (kips)	Vert Force (kips)	Shear Force (kips)	Tran Moment (ft-k)	Long Moment (ft-k)	Bending Moment (ft-k)	Vert Moment (ft-k)	Found Usage %
W 0	OP	-43.25	-22.10	-330.67	48.57	-1.43	-3.88	4.13	-2.16	0.00
W 0	OX	-42.20	22.45	-333.93	47.08	1.19	-3.71	3.96	2.17	0.00
W 0	OXY	-33.21	-17.04	216.07	37.33	-0.29	-4.34	4.35	1.95	0.00
W 0	OY	-33.94	16.41	215.22	37.79	-0.22	-4.53	4.54	-1.92	0.00
W 180	OP	33.95	16.41	213.07	37.71	-0.22	4.41	4.41	1.93	0.00
W 180	OX	33.20	-16.80	213.24	37.28	0.29	4.41	4.42	-1.98	0.00
W 180	OXY	42.23	22.34	-331.91	47.78	1.18	3.78	3.96	-2.17	0.00
W 180	OY	43.21	-21.90	-335.72	48.44	-1.39	3.94	4.18	2.17	0.00
W 45	OP	-45.73	-45.77	-472.00	64.78	2.06	-2.85	2.91	-0.00	0.00
W 45	OX	-17.38	-10.43	-59.69	20.27	4.02	-2.81	4.90	2.99	0.00
W 45	OXY	-39.72	-39.70	349.97	56.16	3.24	-3.24	4.58	-0.00	0.00
W 45	OY	-10.41	-17.35	-59.69	20.23	2.80	-4.01	4.89	-2.99	0.00
W -45	OP	-18.20	10.71	-63.36	21.12	-4.20	-2.93	5.12	-2.99	0.00
W -45	OX	-44.94	46.00	-467.92	64.31	-2.22	-1.93	2.96	0.00	0.00
W -45	OXY	-9.90	17.08	-58.72	19.75	-4.77	-3.87	4.76	3.01	0.00
W -45	OY	-40.16	39.40	348.68	56.24	-3.21	-3.37	4.65	0.03	0.00
W 90	OP	-22.08	-43.28	-338.71	48.59	3.89	1.41	4.14	2.16	0.00
W 90	OX	16.59	-33.96	215.17	37.68	4.54	0.22	4.54	1.92	0.00
W 90	OXY	-17.05	-39.19	216.03	37.32	4.34	-0.29	4.35	-1.95	0.00
W 90	OY	22.47	-42.18	-333.01	47.79	3.71	-1.18	3.89	-2.17	0.00
W -90	OP	16.39	33.97	213.10	37.72	-4.61	0.21	4.61	-1.93	0.00
W -90	OX	-21.88	43.23	-335.84	48.46	-3.95	1.42	4.19	-2.17	0.00
W -90	OXY	22.37	42.21	-331.87	47.77	-3.78	-1.17	3.95	2.17	0.00
W -90	OY	-16.82	33.18	213.29	37.28	-4.41	-0.30	4.42	1.96	0.00
W 0 Ice	OP	-16.69	-11.83	-164.89	20.45	-1.33	0.16	1.34	-0.48	0.00
W 0 Ice	OX	-16.28	11.88	-161.31	20.16	1.21	0.18	1.23	0.47	0.00
W 0 Ice	OXY	-0.85	3.33	-34.33	3.44	0.92	-1.95	2.16	0.47	0.00
W 0 Ice	OY	-0.85	-3.41	-36.97	3.51	-0.90	-2.00	2.23	-0.45	0.00
W 180 Ice	OP	0.84	-3.70	-40.08	3.79	-2.08	2.09	2.31	0.46	0.00
W 180 Ice	OX	0.86	3.60	-37.45	3.78	0.92	2.04	2.24	-0.48	0.00
W 180 Ice	OXY	16.31	11.71	-158.36	20.00	1.20	-0.69	1.20	-0.48	0.00
W 180 Ice	OY	16.65	-11.60	-161.61	20.38	-1.32	-0.07	1.32	0.49	0.00
W 45 Ice	OP	-17.47	-17.47	-196.89	24.71	-0.55	0.55	0.78	0.00	0.00
W 45 Ice	OX	-11.13	4.31	-99.14	11.94	1.89	0.29	1.91	0.70	0.00
W 45 Ice	OXY	-1.94	-1.93	-2.43	2.74	1.62	-1.62	2.29	-0.00	0.00
W 45 Ice	OY	4.31	-11.12	-99.05	11.93	-0.29	-1.89	1.91	-0.70	0.00
W -45 Ice	OP	-11.55	-4.27	-102.49	12.31	-2.00	0.26	2.02	-0.71	0.00
W -45 Ice	OX	-17.12	17.51	-193.44	24.49	0.45	0.57	0.73	-0.01	0.00
W -45 Ice	OXY	4.27	11.08	-96.41	11.88	0.23	-1.85	1.86	0.71	0.00
W -45 Ice	OY	-1.81	1.89	-5.15	2.62	-1.68	-1.64	2.35	0.01	0.00
W 90 Ice	OP	-11.82	-16.69	-164.89	20.45	-0.15	1.33	1.34	0.48	0.00
W 90 Ice	OX	-3.41	-0.84	-37.05	3.52	2.08	0.98	2.23	0.45	0.00
W 90 Ice	OXY	3.33	-0.85	-34.34	3.44	1.95	-0.92	2.16	-0.47	0.00
W 90 Ice	OY	11.88	-16.28	-161.22	20.15	-0.10	-1.21	1.23	-0.47	0.00
W -90 Ice	OP	-3.70	0.84	-40.07	3.79	-2.09	0.98	2.31	0.46	0.00
W -90 Ice	OX	11.60	16.66	-161.71	20.30	0.07	1.32	1.32	0.48	0.00
W -90 Ice	OXY	11.72	16.32	-158.36	20.00	0.10	1.20	1.20	0.48	0.00
W -90 Ice	OY	3.59	0.86	-37.37	3.78	-2.04	-0.92	2.24	0.48	0.00
S -45	OP	-7.48	-0.61	-52.15	7.51	-1.21	-0.44	1.29	-0.68	0.00
S -45	OX	-13.00	13.32	-140.48	18.61	-0.26	-0.17	0.31	-0.00	0.00
S -45	OXY	0.69	7.10	-48.23	7.14	-0.43	-1.09	1.10	0.89	0.00
S -45	OY	-5.33	5.39	-40.32	7.52	-0.92	-0.91	1.33	0.01	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Origin Joint	Joint	Leg Force In Member	Leg Dir	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg = Max (kips)	Residual Shear Horizontal To Leg = Long (kips)	Residual Shear Horizontal To Leg = Tran (kips)	Total Long Force (kips)	Total Tran Force (kips)	Total Vert Force (kips)
W 0	OP	1P	L 1P	341.425	28.067	22.113	22.093	0.945	-43.25	-22.10	-330.67
W 0	OX	1X	L 1X	334.658	25.350	21.396	21.339	-1.590	-42.20	22.45	-333.93
W 0	OXY	1XY	L 1XY	-218.356	19.974	19.027	19.712	3.537	-33.21	-17.04	216.07
W 0	OY	1Y	L 1Y	-217.528	20.489	20.741	20.498	-3.168	-33.94	16.41	215.22
W 180	OP	1P	L 1P	-215.373	28.017	29.870	-29.639	-3.098	33.95	16.41	213.07
W 180	OX	1X	L 1X	-213.527	20.122	20.175	-19.874	3.472	33.20	-16.80	213.24
W 180	OXY	1XY	L 1XY	338.437	21.509	21.157	21.497	-1.467	42.23	22.34	-331.91
W 180	OY	1Y	L 1Y	338.470	22.204	22.291	-22.231	0.927	43.21	-21.90	-335.72
W 45	OP	1P	L 1P	475.858	22.904	22.993	16.242	16.275	-45.73	-45.77	-472.00
W 45	OX	1X	L 1X	59.887	19.672	19.672	13.651	14.164	-17.38	-10.43	-59.69
W 45	OXY	1XY	L 1XY	-353.550	25.137	25.235	17.858	17.833	-39.72	-39.70	349.97
W 45	OY	1Y	L 1Y	59.802	19.627	19.628	14.130	13.622	-10.41	-17.35	-59.60
W -45	OP	1P	L 1P	63.583	20.445	20.445	14.243	-14.667	-18.20	10.71	-63.36
W -45	OX	1X	L 1X	471.759	22.882	22.971	15.700	-16.769	-44.94	46.00	-467.92
W -45	OXY	1XY	L 1XY	58.936	19.083	19.083	13.572	-13.416	-9.90	17.08	-58.72
W -45	OY	1Y	L 1Y	-352.274	25.130	25.137	18.351	-17.618	-40.14	39.40	348.68
W 90	OP	1P	L 1P	341.460	22.088	22.135	0.919	22.116	-22.08	-43.28	-338.71
W 90	OX	1X	L 1X	-217.478	20.709	20.761	-3.146	20.521	16.59	-33.96	215.17
W 90	OXY	1XY	L 1XY	-218.321	19.960	20.012	3.556	19.494	-17.05	-33.19	216.03
W 90	OY	1Y	L 1Y	338.539	21.335	21.382	-1.616	21.321	22.47	-42.18	-333.01
W -90	OP	1P	L 1P	-215.800	20.832	20.885	-3.077	-20.457	16.39	33.97	213.10
W -90	OX	1X	L 1X	338.590	22.220	22.267	0.961	22.249	-21.88	43.23	-335.84
W -90	OXY	1XY	L 1XY	338.602	21.489	21.537	-1.633	21.475	22.37	42.21	-331.87
W -90	OY	1Y	L 1Y	-215.577	20.103	20.156	3.494	19.650	-16.82	33.18	213.29
W 0 Ice	OP	1P	L 1P	146.020	6.539	6.557	6.378	1.524	-16.68	-11.83	-164.89
W 0 Ice	OX	1X	L 1X	142.440	6.444	6.463	6.206	-1.404	-16.28	11.88	-161.31
W 0 Ice	OXY	1XY	L 1XY	34.356	3.210	3.220	2.992	-1.189	-0.85	3.33	-34.33
W 0 Ice	OY	1Y	L 1Y	36.986	3.346	3.348	3.144	1.096	-0.85	-3.41	-36.97
W 180 Ice	OP	1P	L 1P	43.102	3.540	3.551	-3.344	1.195	0.84	-3.70	-40.08
W 180 Ice	OX	1X	L 1X	37.476	3.438	3.440	-3.200	-1.267	0.86	3.60	-37.45
W 180 Ice	OXY	1XY	L 1XY	159.491	6.444	6.446	-6.613	-1.018	16.31	11.71	-158.36
W 180 Ice	OY	1Y	L 1Y	142.744	6.709	6.728	-6.557	1.507	16.65	-11.60	-161.61
W 45 Ice	OP	1P	L 1P	198.304	7.280	7.308	5.163	5.172	-17.47	-17.47	-196.89
W 45 Ice	OX	1X	L 1X	99.713	5.264	5.287	4.948	1.883	-11.13	4.32	-99.14
W 45 Ice	OXY	1XY	L 1XY	2.175	2.940	2.951	2.088	2.086	-1.94	-1.93	-2.43
W 45 Ice	OY	1Y	L 1Y	99.625	5.277	5.283	1.875	4.936	4.31	-11.12	-99.05
W -45 Ice	OP	1P	L 1P	103.076	5.560	5.571	5.146	-2.133	-11.55	-4.27	-102.49
W -45 Ice	OX	1X	L 1X	194.862	7.371	7.399	5.037	-5.421	-17.12	17.51	-193.44
W -45 Ice	OXY	1XY	L 1XY	96.987	5.350	5.354	1.749	-5.060	4.27	11.08	-96.41
W -45 Ice	OY	1Y	L 1Y	4.903	3.061	3.073	2.131	-2.216	-1.81	1.89	-5.15
W 90 Ice	OP	1P	L 1P	146.026	6.543	6.561	1.517	6.304	-11.82	-16.69	-164.89
W 90 Ice	OX	1X	L 1X	37.068	3.353	3.355	1.099	3.170	-3.41	-0.84	-37.05
W 90 Ice	OXY	1XY	L 1XY	36.362	3.217	3.219	-3.189	2.991	3.33	-0.85	-34.34
W 90 Ice	OY	1Y	L 1Y	142.346	6.445	6.464	-1.811	6.205	11.88	-16.28	-161.22
W -90 Ice	OP	1P	L 1P	43.096	3.549	3.552	1.195	-3.344	-3.70	0.84	-40.07
W -90 Ice	OX	1X	L 1X	162.838	6.708	6.723	1.500	-6.557	-11.60	16.66	-161.71
W -90 Ice	OXY	1XY	L 1XY	159.485	6.642	6.661	-1.825	-6.406	11.72	16.30	-158.36
W -90 Ice	OY	1Y	L 1Y	37.394	3.431	3.433	-1.260	-3.194	3.59	0.86	-37.37
S -45	OP	1P	L 1P	52.449	4.987	4.988	4.227	-2.650	-7.48	-0.61	-52.15
S -45	OX	1X	L 1X	141.576	6.178	6.202	6.218	-4.547	-13.00	13.32	-140.48
S -45	OXY	1XY	L 1XY	48.531	4.701	4.702	2.319	-4.000	0.69	7.10	-48.23
S -45	OY	1Y	L 1Y	-40.829	3.941	3.956	1.813	-2.782	-5.33	5.39	-40.32

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	125.598	-24796.566	57.395	24796.884	0.073	152.612	241.310
W 180	89.687	24573.058	-57.397	24573.232	-0.055	-152.590	241.310
W 45	18461.805	-18465.623	-2.760	26111.635	113.243	113.243	241.310
W -45	-18238.764	-18467.633	83.730	25941.479	-113.194	113.177	241.310
W 90	24792.772	-129.422	-61.303	24793.110	152.612	0.073	241.310
W -90	-24576.849	-93.513	61.304	24577.041	-152.590	-0.055	241.310
W 0 Ice	139.473	-5725.676	11.917	5727.374	0.015	34.665	397.506
W 180 Ice	132.076	5448.059	-11.915	5467.626	-0.011	-34.661	397.506
W 45 Ice	4366.364	-4370.324	-0.495	6177.772	26.222	26.222	397.506
W -45 Ice	-4093.213	-4366.543	17.309	5985.070	-26.213	26.209	397.506
W 90 Ice	5721.717	-143.435	-12.617	5723.514	34.665	0.015	397.506
W -90 Ice	-5449.987	-136.038	12.615	5451.685	-34.661	-0.011	397.506
S -45	-3973.547	-4149.397	10.561	5745.135	-25.122	25.117	200.540

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Af Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
278.9-287.5	287.500	278.917	8	28	9.00	10.07	81.05	1.1220	1.1220	1.344
270.3-278.9	278.917	270.334	8	16	10.07	11.15	91.06	1.2150	1.2150	1.458
260.2-270.3	270.334	260.167	8	16	11.15	12.42	119.77	1.1970	1.1970	1.434
250.0-260.2	260.167	250.000	12	24	12.42	13.69	132.49	1.2030	1.2030	1.444
237.5-250.0	250.000	237.500	16	24	13.69	15.25	180.84	1.2010	1.2010	1.441
225.0-237.5	237.500	225.000	16	24	15.25	16.81	200.36	1.2070	1.2070	1.449
212.5-225.0	225.000	212.500	16	24	16.81	18.37	219.89	1.2130	1.2130	1.456
200.0-212.5	212.500	200.000	16	24	18.37	19.93	239.41	1.2200	1.2200	1.463
187.5-200.0	200.000	187.500	16	24	19.93	21.50	258.94	1.2250	1.2250	1.471
162.5-187.5	187.500	162.500	16	24	21.50	24.62	576.45	1.2550	1.2550	1.506
137.5-162.5	162.500	137.500	16	24	24.62	27.74	654.55	1.2700	1.2700	1.524
112.5-137.5	137.500	112.500	16	24	27.74	30.87	732.65	1.2790	1.2790	1.535
87.50-112.5	112.500	87.500	20	32	30.87	33.99	810.75	1.2930	1.2930	1.552
62.50-87.50	87.500	62.500	36	76	33.99	37.12	888.85	1.2300	1.2300	1.476
37.50-62.50	62.500	37.500	32	60	37.12	40.24	966.95	1.2330	1.2330	1.480
0.000-37.50	37.500	0.000	20	48	40.24	44.93	1596.86	1.2600	1.2600	1.512

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Comp. %	Comp. Control Member	Comp Force (kips)	Comp. Control Load Case	L/r Capacity (kips)	Comp Connect Shear Capacity (kips)	Comp. Connect Bearing Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r	Length Comp Member (ft)	Curve No	No Of Bolts Comp.
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	78.86	Comp	78.86	L 1P	-385.735	W 45	489.143	0.000	0.000	0.250	0.250	0.250	72.40	72.40	37.646	1	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	72.07	Comp	72.07	L 2P	-336.497	W 45	464.151	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.097	1	0
Leg S3	L 8" x 8" x 1"	SAE	8X8X1	36.0	69.26	Comp	69.26	L 3P	-288.230	W 45	416.154	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.097	1	0
Leg S4	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	80.46	Comp	80.46	L 4P	-278.108	W 45	345.656	0.000	0.000	0.333	0.333	0.333	63.94	63.94	25.097	1	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	68.44	Comp	68.44	L 5P	-236.559	W 45	345.656	0.000	0.000	0.333	0.333	0.333	63.94	63.94	25.097	1	0
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	64.94	Comp	64.94	L 6P	-194.618	W 45	299.702	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.097	1	0
Leg S7	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	61.08	Comp	61.08	L 7P	-153.785	W 45	251.760	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.097	1	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	60.19	Comp	60.19	L 8P	-132.343	W 45	219.890	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.549	1	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	50.38	Comp	50.38	L 9P	-110.784	W 45	219.890	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.549	1	0
Leg S10	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	54.32	Comp	54.32	L 10P	-91.332	W 45	168.143	0.000	0.000	0.500	0.500	0.500	63.81	63.81	12.549	1	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	42.80	Comp	42.80	L 11P	-71.961	W 45	168.143	0.000	0.000	0.500	0.500	0.500	63.81	63.81	12.549	1	0
Leg S12	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	39.25	Comp	39.25	L 12P	-52.118	W 45	132.791	0.000	0.000	0.500	0.500	0.500	63.27	63.27	12.549	1	0
Leg S13	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	37.16	Comp	37.16	L 13P	-41.052	W 45	110.541	0.000	0.000	0.500	0.500	0.500	62.11	62.11	10.207	1	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	24.90	Comp	24.90	L 14P	-27.533	W 45	110.541	0.000	0.000	0.500	0.500	0.500	62.11	62.11	10.207	1	0
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	15.64	Comp	15.64	L 15P	-13.280	W 45	84.918	0.000	0.000	0.500	0.500	0.500	52.01	52.01	8.416	1	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	6.46	Comp	6.46	L 16P	-5.485	W 45	84.918	0.000	0.000	0.500	0.500	0.500	52.01	52.01	8.416	1	0
Diag S1	B/B L5"x5"x0.3125"	DAE	5X5X0.31	36.0	43.36	Comp	43.36	D 2X	-63.394	W -90	146.192	0.000	0.000	0.316	0.316	0.316	74.36	74.36	30.789	1	0
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	96.10	Comp	96.10	D 4X	-48.764	W -90	50.702	0.000	0.000	0.320	0.320	0.320	107.64	107.64	20.603	1	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	93.76	Comp	93.76	D 6X	-48.533	W -90	51.765	0.000	0.000	0.320	0.320	0.320	105.80	105.80	20.250	1	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	97.66	Comp	97.66	D 7X	-31.742	W -90	32.503	0.000	0.000	0.300	0.300	0.300	144.72	135.20	30.271	6	0
Diag S5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	94.32	Comp	94.32	D 9X	-31.802	W -90	33.717	0.000	0.000	0.300	0.300	0.300	140.66	132.71	29.422	6	0
Diag S6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	95.77	Comp	95.77	D 11X	-31.762	W -90	33.122	0.000	0.000	0.320	0.320	0.320	146.02	136.00	28.633	6	0
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	95.05	Comp	95.05	D 13X	-30.038	W -90	31.603	0.000	0.000	0.320	0.440	0.320	147.83	137.11	27.910	6	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	73.09	Comp	73.09	D 15X	-17.808	W -90	24.365	0.000	0.000	0.500	1.000	0.500	164.43	148.55	16.504	6	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	65.04	Comp	65.04	D 17X	-16.524	W -90	25.409	0.000	0.000	0.500	1.000	0.500	161.41	145.47	16.006	6	0
Diag S10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	93.67	Comp	93.67	D 19X	-15.070	W -90	16.089	0.000	0.000	0.500	1.000	0.500	199.34	168.79	15.532	6	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	88.46	Comp	88.46	D 21X	-15.586	W -90	17.621	0.000	0.000	0.500	1.000	0.500	193.58	165.25	15.083	6	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	81.76	Comp	81.76	D 23P	-15.004	W 90	18.351	0.000	0.000	0.500	1.000	0.500	188.10	161.93	14.662	6	0
Diag S13	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	42.76	Comp	42.76	D 25Y	-8.094	W 180	18.926	0.000	0.000	0.520	0.520	0.520	148.84	142.03	16.556	5	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	39.33	Comp	39.33	D 28P	-8.202	W 90	20.855	0.000	0.000	0.520	0.520	0.520	140.03	135.30	15.574	5	0
Diag S15	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	29.53	Comp	29.53	D 29P	-5.024	W 0	17.011	0.000	0.000	0.520	0.520	0.520	143.95	138.29	13.457	5	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	15.52	Comp	15.52	D 31P	-2.904	W 0	18.712	0.000	0.000	0.520	0.520	0.520	135.35	131.74	12.841	5	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	80.08	Comp	80.08	H 2Y	-39.170	W -45	48.921	0.000	0.000	0.500	0.500	0.500	110.75	110.75	20.120	1	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	82.43	Comp	82.43	H 3P	-33.817	W -90	41.024	0.000	0.000	0.940	0.940	0.940	128.03	126.94	12.372	6	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	88.68	Comp	88.68	H 5P	-31.304	W -90	35.302	0.000	0.000	0.940	0.940	0.940	135.25	129.38	11.331	4	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	72.90	Comp	72.90	H 7P	-15.597	W -90	21.373	0.000	0.000	1.000	1.000	1.000	195.99	166.73	15.434	6	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	59.11	Comp	59.11	H 9P	-14.705	W -90	24.880	0.000	0.000	1.000	1.000	1.000	176.15	154.53	13.872	6	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	65.03	Comp	65.03	H 11P	-12.944	W -90	19.909	0.000	0.000	1.000	1.000	1.000	192.09	164.34	12.310	6	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	49.74	Comp	49.74	H 13P	-11.989	W -90	24.106	0.000	0.000	1.000	1.000	1.000	167.72	149.35	10.748	6	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	39.34	Comp	39.34	H 15P	-10.511	W -90	26.721	0.000	0.000	1.000	1.000	1.000	155.53	141.85	9.967	6	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	31.66	Comp	31.66	H 17P	-9.431	W -90	29.785	0.000	0.000	1.000	1.000	1.000	143.34	134.36	9.186	6	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	25.37	Comp	25.37	H 19P	-8.383	W -90	33.049	0.000	0.000	1.000	1.000	1.000	131.16	126.86	8.405	6	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.25	Comp	22.25	H 21P	-8.145	W -90	36.603	0.000	0.000	1.000	1.000	1.000	118.97	118.97	7.624	1	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	16.04	Comp	16.04	H 23P	-6.786	W -90	42.308	0.000	0.000	1.000	1.000	1.000	106.78	106.78	6.843	1	0
Horiz 13	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	8.55	Tens	7.20	H 25Y	-1.150	W 0	15.975	0.000	0.000	0.500	0.500	0.500	141.09	136.11	12.416	5	0
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	2.56	Tens	0.48	H 27Y	-0.444	W 0	45.466	0.000	0.000	0.500	0.500	0.500	70.76	70.76	11.145	1	0
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.98	Tens	0.00	H 30X	0.000		20.588	0.000	0.000	0.500	0.500	0.500	114.46	117.23	10.073	3	0
Horiz 16	C8x11.5	CHN	C8x11.5	36.0	0.94	Comp	0.94	H 32X	-0.279	W 180	29.724	0.000	0.000	1.000	1.000	1.000	172.83	140.27	9.000	5	0
LD 1	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	55.73	Comp	55.73	LD 1X	-24.418	W -90	43.832	0.000	0.000	0.920	0.920	0.920	139.43	131.93	13.744	6	0
LD 2	B/B L4"x4"x0.3125"	DAE	4X4X0.31	36.0	80.72	Comp	80.72	LD 3X	-57.661	W -90	71.437	0.000	0.000	0.920	0.920	0.920	122.54	121.56	13.764	6	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	98.45	Comp	98.45	LD 7X	-23.663	W -45	24.035	0.000	0.000	0.920	0.920	0.920	154.95	141.49	11.004	6	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	90.54	Comp	90.54	LD 9X	-31.712	W -90	35.026	0.000	0.000	0.920	0.920	0.920	113.50	113.50	8.060	1	0
LD 6	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	89.56	Comp	89.56	LD 11P	-33.943	W -90	37.901	0.000	0.000	0.920	0.920	0.920	116.15	116.15	9.374	1	0
LD 7	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	93.10	Comp	93.10	LD 13X	-24.005	W -45	25.785	0.000	0.000	0.920	0.920	0.920	147.01	136.61	10.443	6	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	87.45	Comp	87.45	LD 15X	-31.410	W -90	35.843	0.000	0.000	0.920	0.920	0.920	111.55	111.55	7.922	1	0
LD 9	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	64.85	Comp	64.85	LD 17P	-33.006	W -90	50.895	0.000	0.000	0.920	0.920	0.920	107.31	107.31	9.039	1	0
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.55	Tens	0.00	LH 2X	0.000		0.001	0.000	0.000	100.000	100.000	100.000	31394.62	19355.12	20.120	6	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	98.53	Comp	98.53	LH 3X	-26.349	W -45	26.743	0.000	0.000	1.000	2.000	1.000	167.24	149.05	10.104	6	0
LH 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	85.61	Comp	85.61	LH 5X	-25.668	W -45	29.982	0.000	0.000	1.000	2.000	1.000	153.78	140.77	9.291	6	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 9XY	-1.100	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.35	2.35	19.610	1	0

Group Summary (Tension Portion):

Group Label	Group Desc	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Tens %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect Shear Capacity (kips)	Tension Connect Bearing Capacity (kips)	Tension Connect Rupture Capacity (kips)	Length Tens Member (ft)	No Of Bolts Tens	No Of Holes	Hole Diameter (in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	78.86	Comp	48.88	L 1XY	264.950	W 45	542.051	0.000	0.000	0.000	37.646	0	0.000	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	72.07	Comp	45.97	L 2XY	249.194	W 45	542.051	0.000	0.000	0.000	25.097	0	0.000	0
Leg S3	L 8" x 8" x 1"	SAE	8X8X1	36.0	69.26	Comp	44.30	L 3XY	215.319	W 45	485.999	0.000	0.000	0.000	25.097	0	0.000	0
Leg S4	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	80.46	Comp	49.07	L 4XY	210.339	W 45	428.651	0.000	0.000	0.000	25.097	0	0.000	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	68.44	Comp	41.30	L 5XY	177.046	W 45	428.651	0.000	0.000	0.000	25.097	0	0.000	0
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	64.94	Comp	38.73	L 6XY	143.552	W 45	370.655	0.000	0.000	0.000	25.097	0	0.000	0
Leg S7	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	61.08	Comp	35.18	L 7XY	109.524	W 45	311.364	0.000	0.000	0.000	25.097	0	0.000	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	60.19	Comp	34.04	L 8XY	93.133	W 45	273.456	0.000	0.000	0.000	12.549	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	50.38	Comp	28.05	L 9XY	76.691	W 45	273.456	0.000	0.000	0.000	12.549	0	0.000	0
Leg S10	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	54.32	Comp	28.93	L 10XY	60.276	W 45	208.332	0.000	0.000	0.000	12.549	0	0.000	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	42.80	Comp	21.13	L 11XY	44.028	W 45	208.332	0.000	0.000	0.000	12.549	0	0.000	0
Leg S12	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	39.25	Comp	17.18	L 12XY	28.030	W 45	163.944	0.000	0.000	0.000	12.549	0	0.000	0
Leg S13	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	37.14	Comp	15.95	L 13XY	21.606	W 45	135.432	0.000	0.000	0.000	10.207	0	0.000	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	24.90	Comp	7.68	L 14XY	10.395	W 45	135.432	0.000	0.000	0.000	10.207	0	0.000	0
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	15.64	Comp	3.13	L 15XY	3.072	W 45	98.172	0.000	0.000	0.000	8.416	0	0.000	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	6.46	Comp	0.00	L 16Y	0.000		98.172	0.000	0.000	0.000	8.416	0	0.000	0
Diag S1	B/B L5"x5"x0.3125"	DAE	5X5X0.31	36.0	43.36	Comp	28.52	D 2P	55.905	W -90	196.020	0.000	0.000	0.000	30.789	0	0.000	0
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	96.10	Comp	44.71	D 4P	41.719	W -90	93.312	0.000	0.000	0.000	20.603	0	0.000	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	93.74	Comp	44.03	D 6P	41.088	W -90	93.312	0.000	0.000	0.000	20.250	0	0.000	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	97.66	Comp	34.46	D 7P	29.368	W -90	85.212	0.000	0.000	0.000	30.271	0	0.000	0
Diag S5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	94.32	Comp	34.49	D 9P	29.387	W -90	85.212	0.000	0.000	0.000	29.422	0	0.000	0
Diag S6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	95.77	Comp	33.62	D 11P	28.647	W -90	85.212	0.000	0.000	0.000	28.633	0	0.000	0
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	95.05	Comp	33.52	D 13P	28.566	W -90	85.212	0.000	0.000	0.000	27.910	0	0.000	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	73.09	Comp	21.57	D 15P	16.636	W -90	77.112	0.000	0.000	0.000	16.504	0	0.000	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	65.04	Comp	20.08	D 17P	15.484	W -90	77.112	0.000	0.000	0.000	14.006	0	0.000	0
Diag S10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	93.67	Comp	21.58	D 19P	14.893	W -90	69.012	0.000	0.000	0.000	15.532	0	0.000	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	88.46	Comp	21.39	D 21P	14.761	W -90	69.012	0.000	0.000	0.000	15.083	0	0.000	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	81.76	Comp	20.68	D 23X	14.272	W 90	69.012	0.000	0.000	0.000	14.462	0	0.000	0
Diag S13	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	42.76	Comp	11.75	D 25Y	6.432	W 0	54.756	0.000	0.000	0.000	16.556	0	0.000	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	39.33	Comp	11.69	D 28X	6.403	W 90	54.756	0.000	0.000	0.000	15.574	0	0.000	0
Diag S15	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	29.53	Comp	8.26	D 29Y	3.853	W 0	46.656	0.000	0.000	0.000	13.457	0	0.000	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	15.52	Comp	4.21	D 31Y	1.963	W 0	46.656	0.000	0.000	0.000	12.841	0	0.000	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	80.08	Comp	43.60	H 1P	40.688	W 90	93.312	0.000	0.000	0.000	20.120	0	0.000	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	82.43	Comp	41.86	H 3X	38.126	W -90	93.312	0.000	0.000	0.000	12.372	0	0.000	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	88.68	Comp	40.31	H 5X	34.345	W -90	85.212	0.000	0.000	0.000	11.331	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	72.90	Comp	19.12	H 7X	16.292	W -90	85.212	0.000	0.000	0.000	15.434	0	0.000	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	59.11	Comp	17.66	H 9P	15.047	W 90	85.212	0.000	0.000	0.000	13.872	0	0.000	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	65.03	Comp	17.03	H 11X	13.134	W -90	77.112	0.000	0.000	0.000	12.310	0	0.000	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	49.74	Comp	16.03	H 13P	12.359	W 90	77.112	0.000	0.000	0.000	10.748	0	0.000	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	39.34	Comp	13.87	H 15X	10.695	W -90	77.112	0.000	0.000	0.000	9.967	0	0.000	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	31.66	Comp	12.60	H 17P	9.715	W 90	77.112	0.000	0.000	0.000	9.186	0	0.000	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	25.37	Comp	11.23	H 19X	8.659	W -90	77.112	0.000	0.000	0.000	8.405	0	0.000	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.25	Comp	10.76	H 21P	8.295	W 90	77.112	0.000	0.000	0.000	7.624	0	0.000	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	16.04	Comp	10.15	H 23P	7.825	W 90	77.112	0.000	0.000	0.000	6.843	0	0.000	0
Horiz 13	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	8.55	Tens	8.55	H 25P	3.627	W 0	42.444	0.000	0.000	0.000	12.416	0	0.000	0
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	2.56	Tens	2.56	H 27P	2.184	W 0	85.212	0.000	0.000	0.000	11.145	0	0.000	0
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.98	Tens	2.98	H 29P	1.265	W 0	42.444	0.000	0.000	0.000	10.073	0	0.000	0
Horiz 16	C8x11.5	CHN	C8x11.5	36.0	0.94	Comp	0.46	H 31X	0.506	W 0	109.512	0.000	0.000	0.000	9.000	0	0.000	0
LD 1	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	55.73	Comp	27.08	LD 2Y	29.565	W -45	109.512	0.000	0.000	0.000	13.764	0	0.000	0
LD 2	B/B L4"x4"x0.3125"	DAE	4X4X0.31	36.0	80.72	Comp	34.42	LD 3P	53.536	W -90	155.520	0.000	0.000	0.000	13.764	0	0.000	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	98.45	Comp	29.67	LD 8Y	20.479	W -45	69.012	0.000	0.000	0.000	11.004	0	0.000	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	90.54	Comp	40.15	LD 9P	27.709	W -90	69.012	0.000	0.000	0.000	8.060	0	0.000	0
LD 6	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	89.56	Comp	45.30	LD 11X	34.933	W -90	77.112	0.000	0.000	0.000	9.374	0	0.000	0
LD 7	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	93.10	Comp	30.71	LD 14Y	21.192	W -45	69.012	0.000	0.000	0.000	10.443	0	0.000	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	87.45	Comp	39.52	LD 15P	27.271	W -90	69.012	0.000	0.000	0.000	7.922	0	0.000	0

LD 9	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	64.85	Comp	36.23	LD 17X	33.839	W -90	93.313	0.000	0.000	0.000	9.039	D 0.000	0
LM 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.55	Tens	22.55	LM 1Y	17.391	W 0	77.112	0.000	0.000	0.000	20.120	D 0.000	0
LM 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	98.53	Comp	25.90	LM 4Y	22.069	W -45	85.212	0.000	0.000	0.000	10.104	D 0.000	0
LM 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	85.61	Comp	25.93	LM 6Y	22.092	W -45	85.212	0.000	0.000	0.000	9.291	D 0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 9X	0.951	W -45	0.324	0.000	0.000	0.000	19.619	D 0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	96.90	D 8P	Angle
W 180	97.53	D 6Y	Angle
W 45	96.12	LM 3P	Angle
W -45	98.53	LM 3X	Angle
W 90	97.08	D 7P	Angle
W -90	97.66	D 7X	Angle
W 0 Ice	31.74	D 5P	Angle
W 180 Ice	32.41	D 5Y	Angle
W 45 Ice	34.11	L 1P	Angle
W -45 Ice	33.34	L 1X	Angle
W 90 Ice	31.78	D 6P	Angle
W -90 Ice	32.42	D 6X	Angle
D -45	25.53	LM 3X	Angle

*** Weight of structure (lbs):

Weight of Angles'Section CLF:	131305.8
Weight of Equipment:	140.0
Total:	131445.8

*** End of Report

Site #:	88011
Name:	East Killingly North, CT

Engineer:	RDB
Date:	01/22/18

Windspeed:	No Ice:	101 mph	Ice:	50 mph
Carrier:	T-Mobile			

Taper:	-0.12496	
FW @ Base:	44.93	ft

Taper Change:	287.5	ft
FW @ Top:	9	ft

Spreadsheet Version Last Updated: 11/12/2014

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)	# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	22.463	22.463	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed		3	9.375	37.5	1	1	0	44.926	3
1	XY-Symmetry	20.12	20.12	37.5	Free	Free	Free	Free	Free	Free			7.030	25	2	2	37.5	40.24	3
2	XY-Symmetry	18.558	18.558	62.5	Free	Free	Free	Free	Free	Free			7.030	25	2	3	62.5	37.116	3
3	XY-Symmetry	16.996	16.996	87.5	Free	Free	Free	Free	Free	Free				25	A	4	87.5	33.992	2
4	XY-Symmetry	15.434	15.434	112.5	Free	Free	Free	Free	Free	Free				25	A	5	112.5	30.868	2
5	XY-Symmetry	13.872	13.872	137.5	Free	Free	Free	Free	Free	Free				25	A	6	137.5	27.744	2
6	XY-Symmetry	12.31	12.31	162.5	Free	Free	Free	Free	Free	Free				25	A	7	162.5	24.62	2
7	XY-Symmetry	10.748	10.748	187.5	Free	Free	Free	Free	Free	Free				12.5	A	8	187.5	21.496	1
8	XY-Symmetry	9.967	9.967	200	Free	Free	Free	Free	Free	Free				12.5	A	9	200	19.934	1
9	XY-Symmetry	9.186	9.186	212.5	Free	Free	Free	Free	Free	Free				12.5	A	10	212.5	18.372	1
10	XY-Symmetry	8.405	8.405	225	Free	Free	Free	Free	Free	Free				12.5	A	11	225	16.81	1
11	XY-Symmetry	7.624	7.624	237.5	Free	Free	Free	Free	Free	Free				12.5	A	12	237.5	15.248	1
12	XY-Symmetry	6.843	6.843	250	Free	Free	Free	Free	Free	Free		1		10.167	X	13	250	13.686	1
13	XY-Symmetry	6.20776584	6.20776584	260.167	Free	Free	Free	Free	Free	Free		1		10.167	X	14	260.167	12.41553168	1
14	XY-Symmetry	5.57253168	5.57253168	270.334	Free	Free	Free	Free	Free	Free		1		8.583	X	15	270.334	11.14506336	1
15	XY-Symmetry	5.03626584	5.03626584	278.917	Free	Free	Free	Free	Free	Free				8.583	X	16	278.917	10.07253168	1
16	XY-Symmetry	4.5	4.5	287.5	Free	Free	Free	Free	Free	Free						17	287.5	9	
A1	Y-Symmetry	20.12	0	37.5	Free	Free	Free	Free	Free	Free									
A2	X-Symmetry	0	20.12	37.5	Free	Free	Free	Free	Free	Free									
A3	XY-Symmetry	18.558	6.186	62.5	Free	Free	Free	Free	Free	Free									
A4	XY-Symmetry	6.186	18.558	62.5	Free	Free	Free	Free	Free	Free									
A5	XY-Symmetry	16.996	5.665333333	87.5	Free	Free	Free	Free	Free	Free									
A6	XY-Symmetry	5.665333333	16.996	87.5	Free	Free	Free	Free	Free	Free									
A7	Y-Symmetry	15.434	0	112.5	Free	Free	Free	Free	Free	Free									
A8	X-Symmetry	0	15.434	112.5	Free	Free	Free	Free	Free	Free									
A9	Y-Symmetry	13.872	0	137.5	Free	Free	Free	Free	Free	Free									
A10	X-Symmetry	0	13.872	137.5	Free	Free	Free	Free	Free	Free									
A11	Y-Symmetry	12.31	0	162.5	Free	Free	Free	Free	Free	Free									
A12	X-Symmetry	0	12.31	162.5	Free	Free	Free	Free	Free	Free									
A13	Y-Symmetry	10.748	0	187.5	Free	Free	Free	Free	Free	Free									
A14	X-Symmetry	0	10.748	187.5	Free	Free	Free	Free	Free	Free									
A15	Y-Symmetry	9.967	0	200	Free	Free	Free	Free	Free	Free									
A16	X-Symmetry	0	9.967	200	Free	Free	Free	Free	Free	Free									
A17	Y-Symmetry	9.186	0	212.5	Free	Free	Free	Free	Free	Free									
A18	X-Symmetry	0	9.186	212.5	Free	Free	Free	Free	Free	Free									
A19	Y-Symmetry	8.405	0	225	Free	Free	Free	Free	Free	Free									
A20	X-Symmetry	0	8.405	225	Free	Free	Free	Free	Free	Free									
A21	Y-Symmetry	7.624	0	237.5	Free	Free	Free	Free	Free	Free									
A22	X-Symmetry	0	7.624	237.5	Free	Free	Free	Free	Free	Free									
A23	Y-Symmetry	6.843	0	250	Free	Free	Free	Free	Free	Free									
A24	X-Symmetry	0	6.843	250	Free	Free	Free	Free	Free	Free									
H1	XY-Symmetry	20.70575	10.06	28.125	Free	Free	Free	Free	Free	Free									
H2	XY-Symmetry	10.06	20.70575	28.125	Free	Free	Free	Free	Free	Free									
H5	XY-Symmetry	18.9972344	10.1042408	55.47	Free	Free	Free	Free	Free	Free									
H6	XY-Symmetry	10.1042408	18.9972344	55.47	Free	Free	Free	Free	Free	Free									
H7	Y-Symmetry	18.9972344	0	55.47	Free	Free	Free	Free	Free	Free									
H8	X-Symmetry	0	18.9972344	55.47	Free	Free	Free	Free	Free	Free									
H9	XY-Symmetry	17.4352344	9.2907512	80.47	Free	Free	Free	Free	Free	Free									
H10	XY-Symmetry	9.2907512	17.4352344	80.47	Free	Free	Free	Free	Free	Free									
H11	Y-Symmetry	17.4352344	0	80.47	Free	Free	Free	Free	Free	Free									
H12	X-Symmetry	0	17.4352344	80.47	Free	Free	Free	Free	Free	Free									

NOTES	
Types:	
1:	Built up Horizs. w/ A
2:	Built up Horizs. w/ M
A:	Typical A brace
X:	Typical X brace
Drop:	Use only for types 1 & 2

# Sections:	16

Legs

Site No.:	88011
Engineer:	RDB
Date:	01/22/2018
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter or Length (in)	Thickness [2] (in)	F_y (ksi)
1	0.000-37.50	L	8	1.125	36
2	37.50-62.50	L	8	1.125	36
3	62.50-87.50	L	8	1	36
4	87.50-112.5	L	8	0.875	36
5	112.5-137.5	L	8	0.875	36
6	137.5-162.5	L	8	0.75	36
7	162.5-187.5	L	8	0.625	36
8	187.5-200.0	L	6	0.75	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.5625	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.4375	36
13	250.0-260.2	L	5	0.4375	36
14	260.2-270.3	L	5	0.4375	36
15	270.3-278.9	L	5	0.3125	36
16	278.9-287.5	L	5	0.3125	36

Notes:

[1] Type of Leg Shape: R = Round or P = Bent Plate or S = Schifflerized Angle. L = Even Leg

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88011
Engineer:	RDB
Date:	01/22/2018
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-37.50	2L		5	5	0.3125	36	
2	37.50-62.50	2L		2.5	3.5	0.25	36	
3	62.50-87.50	2L		2.5	3.5	0.25	36	
4	87.50-112.5	2L		2.5	3	0.25	36	
5	112.5-137.5	2L		2.5	3	0.25	36	
6	137.5-162.5	2L		2.5	3	0.25	36	
7	162.5-187.5	2L		2.5	3	0.25	36	
8	187.5-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-260.2	L		3.5	3.5	0.25	36	
14	260.2-270.3	L		3.5	3.5	0.25	36	
15	270.3-278.9	L		3	3	0.25	36	
16	278.9-287.5	L		3	3	0.25	36	

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88011
Engineer:	RDB
Date:	01/22/2018
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	
1	0.000-37.50	2L		3.5	2.5	0.25	36	
2	37.50-62.50	2L		3.5	2.5	0.25	36	
3	62.50-87.50	2L		3	2.5	0.25	36	
4	87.50-112.5	2L		3	2.5	0.25	36	
5	112.5-137.5	2L		3	2.5	0.25	36	
6	137.5-162.5	2L		2.5	2.5	0.25	36	
7	162.5-187.5	2L		2.5	2.5	0.25	36	
8	187.5-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-260.2	L		3	2.5	0.25	36	
14	260.2-270.3	2L		3	2.5	0.25	36	
15	270.3-278.9	L		3	2.5	0.25	36	
16	278.9-287.5	C		8	11.5		36	

Notes:

[1] Type of Horizontal Shape: R = Round, L = Single-Angle, 2L = Double-Angle, C = Channel, W = W Shape

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88011
Engineer:	RDB
Date:	01/22/2018
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)
1	0.000-37.50	2L		3.5	3.5	0.25	36
2	0.000-37.50	2L		4	4	0.3125	36
3	37.50-62.50	2L		2.5	2	0.25	36
4	37.50-62.50	2L		2.5	2	0.25	36
5	37.50-62.50	2L		3	2	0.25	36
6	62.50-87.50	2L		2.5	2	0.25	36
7	62.50-87.50	2L		2.5	2	0.25	36
8	62.50-87.50	2L		3	3	0.25	36

Notes:

[1] Type of Diagonal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88011
Engineer:	RDB
Date:	01/22/2018
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-37.50	2L		2.5	2.5	0.25	36	Y
2	37.50-62.50	2L		2.5	3	0.25	36	
3	62.50-87.50	2L		2.5	3	0.25	36	

Notes:

[1] Type of Horizontal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Coax (p. 1 of 2)

Orig by MED, Improved by ABL. Last update 6/25/13 MED

Site No.:	88011
Engineer:	RDB
Date:	01/22/18
Carrier:	T-Mobile

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	287.5	1	Flat	1.5	6.0	6	Yes	Yes
2 COAX CAGE	8.3333	33.3333	2	Round	12	72.0	50	Yes	Yes
3 COAX CAGE	8.3333	33.3333	1	Round	12	72.0	50	Yes	Yes
5 WG	5	266	1	Flat	1.5	6.0	6	Yes	Yes
6 WG	5	246	1	Flat	1.5	6.0	6	Yes	Yes
7 WG	5	277	1	Flat	1.5	6.0	6	Yes	Yes
8 SN	5	287.5	1	Flat	3.06	16.3	4	Yes	Yes
9 T-Mobile	5	277	1	Flat	3.195	17.0	6.44	Yes	Yes
10 T-Mobile	5	277	1	Round	0.63	2.5	0.15	No	No
11 VZW	5	266	2	Round	1.54	4.8	1	Yes	Yes
12 VZW	5	266	10	Round	1.98	6.2	0.82	Yes	Yes
13 AT&T	5	246	1	Round	0.39	1.2	0.17	Yes	Yes
14 AT&T	5	246	2	Round	0.78	2.5	0.59	Yes	Yes
15 AT&T	5	246	1	Round	3.5	11.0	7.58	Yes	Yes
16 AT&T	5	246	1	Flat	14.46	50.1	43.8	Yes	Yes
17 USDOI	5	210	1	Round	1.09	3.4	0.33	Yes	Yes
18 VZW	5	50	1	Round	0.63	2.0	0.15	Yes	Yes

Site No.:	88011
Engineer:	RDB
Date:	01/22/18
Carrier:	T-Mobile

Tia Code: TIA-222-G

Exposure	B	α	7	$k_{z\,max}$ 2.01
Topo Cat:	1	z_g	1200	$k_{z\,min}$ 0.7
f		K_e	0.9	K_t

Description	From (ft)	To (ft)	Quantity	Face # [1-4, A-D]	Coax Width (in)	Coax Shape [Block / Flat / Ind]	% Exposed	Spacing (in)	Shape [Round/Flat]	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
Ladder	0	287.5	1	B	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
COAX CAGE	8.3333	33.3333	2	1	12.00	Ind	100		Round	2	1	37.7	25	Yes	Yes
COAX CAGE	8.3333	33.3333	2	3	12.00	Ind	100		Round	2	1	37.7	25	Yes	Yes
														No	No
WG	5	266	1	4	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
WG	5	246	1	2	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
WG	5	277	1	1	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
SN	5	287.5	4	3	1.54	Block	50	1	Flat	2	2	16.3	4	Yes	Yes
T-Mobile	5	277	4	1	1.63	Block	50	1	Flat	2	2	17.0	6.44	Yes	Yes
T-Mobile	5	277	1	1	0.63	Ind	100		Round	1	1	2.0	0.15	No	No
VZW	5	266	2	4	1.54	Ind	100		Round	2	1	4.8	1	Yes	Yes
VZW	5	266	10	4	1.98	Ind	100		Round	10	1	6.2	0.82	Yes	Yes
AT&T	5	246	1	2	0.39	Ind	100		Round	1	1	1.2	0.17	Yes	Yes
AT&T	5	246	2	2	0.78	Ind	100		Round	2	1	2.5	0.59	Yes	Yes
AT&T	5	246	1	2	3.50	Ind	100		Round	1	1	11.0	7.58	Yes	Yes
AT&T	5	246	12	2	2.38	Block	50	1	Flat	6	2	50.1	43.8	Yes	Yes
USDOJ	5	210	1	4	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
VZW	5	50	1	4	0.63	Ind	100		Round	1	1	2.0	0.15	Yes	Yes
														No	No
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Dishes

Site No.:	88011
Engineer:	RDB
Date:	01/22/18
Carrier:	T-Mobile

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Staus
1	277	2	45	H	XY	Proposed
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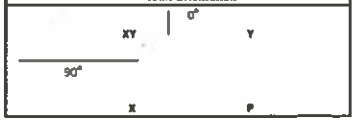
Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
2' HP 1 @ 277'	15XY	2 ft HP Dish	45

Joint Orientation



Site #:	88011
Name:	T-Mobile

Engineer:	RDB
Date:	01/22/18

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	0P	1P	1	4	0.25	0.25	0.25
L 2	Leg S2		XY-Symmetry	1P	2P	1	4	0.2812	0.2812	0.2812
L 3	Leg S3		XY-Symmetry	2P	3P	1	4	0.2812	0.2812	0.2812
L 4	Leg S4		XY-Symmetry	3P	4P	1	4	0.333333333	0.333333333	0.333333333
L 5	Leg S5		XY-Symmetry	4P	5P	1	4	0.333333333	0.333333333	0.333333333
L 6	Leg S6		XY-Symmetry	5P	6P	1	4	0.333333333	0.333333333	0.333333333
L 7	Leg S7		XY-Symmetry	6P	7P	1	4	0.333333333	0.333333333	0.333333333
L 8	Leg S8		XY-Symmetry	7P	8P	1	4	0.5	0.5	0.5
L 9	Leg S9		XY-Symmetry	8P	9P	1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P	1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P	1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P	1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P	1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P	1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P	1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P	1	6	0.316	0.316	0.316
D 2	Diag S1		XY-Symmetry	0P	H1P	1	6	0.316	0.316	0.316
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.32	0.32	0.32
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.32	0.32	0.32
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.32	0.32	0.32
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.32	0.32	0.32
D 7	Diag S4		XY-Symmetry	3P	A7P	1	6	0.3	0.3	0.3
D 8	Diag S4		XY-Symmetry	3P	A8P	1	6	0.3	0.3	0.3
D 9	Diag S5		XY-Symmetry	4P	A9P	1	6	0.3	0.3	0.3
D 10	Diag S5		XY-Symmetry	4P	A10P	1	6	0.3	0.3	0.3
D 11	Diag S6		XY-Symmetry	5P	A11P	1	6	0.32	0.32	0.32
D 12	Diag S6		XY-Symmetry	5P	A12P	1	6	0.32	0.32	0.32
D 13	Diag S7		XY-Symmetry	6P	A13P	1	6	0.32	0.64	0.32
D 14	Diag S7		XY-Symmetry	6P	A14P	1	6	0.32	0.64	0.32
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.5	1	0.5
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.5	1	0.5
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.5	1	0.5
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.5	1	0.5
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.5	1	0.5
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.5	1	0.5
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	13Y	2	5	0.52	0.52	0.52
D 26	Diag S13		XY-Symmetry	12P	13X	2	5	0.52	0.52	0.52
D 27	Diag S14		XY-Symmetry	13P	14Y	2	5	0.52	0.52	0.52
D 28	Diag S14		XY-Symmetry	13P	14X	2	5	0.52	0.52	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	0.52	0.52	0.52
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	0.52	0.52	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	0.52	0.52	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.52	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.5	0.5	0.5
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.5	0.5	0.5
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.94	0.94	0.94
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.94	0.94	0.94
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.94	0.94	0.94
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.94	0.94	0.94
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	1	1	1
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	1	1	1
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	6	1	1	1
H 25	Horiz 13		Y-Symmetry	13P	13X	3	5	0.5	0.5	0.5
H 26	Horiz 13		X-Symmetry	13P	13Y	3	5	0.5	0.5	0.5
H 27	Horiz 14		Y-Symmetry	14P	14X	1	6	0.5	0.5	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y	1	6	0.5	0.5	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X	3	5	0.5	0.5	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y	3	5	0.5	0.5	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X	3	5	1	1	1
H 32	Horiz 16		X-Symmetry	16P	16Y	3	5	1	1	1
H 35	Horiz 2		Y-Symmetry	A3P	A3X	1	6	1	1	1
H 36	Horiz 2		X-Symmetry	A4P	A4Y	1	6	1	1	1
H 37	Horiz 3		Y-Symmetry	A5P	A5X	1	6	1	1	1
H 38	Horiz 3		X-Symmetry	A6P	A6Y	1	6	1	1	1
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	100	100	100
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	100	100	100
LH 3	LH 2		XY-Symmetry	H5P	H7P	1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P	1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P	1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P	1	6	1	2	1
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	0.92	0.92	0.92
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	0.92	0.92	0.92
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.92	0.92	0.92
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.92	0.92	0.92
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	0.92	0.92	0.92
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	0.92	0.92	0.92
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	0.92	0.92	0.92
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	0.92	0.92	0.92
LD 11	LD 6		XY-Symmetry	A3P	H7P	1	6	0.92	0.92	0.92
LD 12	LD 6		XY-Symmetry	A4P	H8P	1	6	0.92	0.92	0.92
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	0.92	0.92	0.92
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	0.92	0.92	0.92
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.92	0.92	0.92
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.92	0.92	0.92
LD 17	LD 9		XY-Symmetry	A5P	H11P	1	6	0.92	0.92	0.92
LD 18	LD 9		XY-Symmetry	A6P	H12P	1	6	0.92	0.92	0.92
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1

Task:	Determine Point Loads
Tower Height:	287.5 ft
Gh:	0.85
Wind Speed:	100.697567 mph, Vasd
Ice Wind Speed:	50
Ice Density:	56
Tower Type:	S

Ice Thick:	0.75 in
Topographic Category (1-4):	1
Exposure Category (B-D):	B
Structure Class (1-3):	2
Height of Crest (H) if Topo Cat. >1:	0 ft
Load Factor; Wind:	1.6
Load Factor; Dead:	1.2

Site No.:	88011
Engineer:	RDB
Date:	01/22/2018
Carrier:	T-Mobile

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths		Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C_AA_A (ft^2)	Weight (lb)	Ka
1		287.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		287.5	1	4			Platform w/ HR						1.000	80.00	9.00	1
2		270	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		270	1	4			Catwalk						1.000	70.00	8.00	1
3		237.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		237.5	1	1			Rest Platform						1.000	15.00	0.50	1
4		200	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		200	1	3			Access Platform						1.000	45.00	5.00	1
5		187.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		187.5	1	1			Rest Platform						1.000	15.00	0.50	1
6		137.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		137.5	1	1			Rest Platform						1.000	15.00	0.50	1
7		87.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		87.5	1	3			Access Platform						1.000	45.00	5.00	1
8		37.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		37.5	1	1			Rest Platform						1.000	15.00	0.50	1
9																1
																1
10	Sprint Nextel	306	6	3		Alcatel-Lucent	RRH2x50-08	15.7	13	9.8	52.9	F	0.500			0.8
	Sprint Nextel	306	3	3		Alcatel-Lucent	1900 MHz 4X45 RRH						0.500	2.32	0.08	0.8
11	Sprint Nextel	306	3	3		Alcatel-Lucent	TD-RRH8x20-25 w/ Solar Shield	26.1	18.8	6.7	70	F	0.500			0.8
	Sprint Nextel	306	3	3		KMW	ETCR-654L12H6						0.615	15.71	0.08	0.8
12	Sprint Nextel	306	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Sprint Nextel	306	3	3			Round Sector Frame						0.750	14.40	0.30	0.75
13	T-Mobile	277	8	4	Proposed	Commscope	CBC84E7LQ-DS-43	10.5	7.1	7	23.6	F	0.500			0.8
	T-Mobile	277	4	4	Proposed	Ericsson	Radio 4478 B71						0.500	1.65	0.06	0.8
14	T-Mobile	277	4	4	Proposed	Ericsson	RRUS 11 B12	19.7	17	7.2	50.7	F	0.500			0.8
	T-Mobile	277	4	4	Proposed	Ericsson	RRUS 11 B4						0.500	2.79	0.05	0.8
15	T-Mobile	277	4	4	Proposed	Ericsson	AIR32 B66A/B2a	56.6	12.9	8.7	132.2	F	0.780			0.8
	T-Mobile	277	4	4	Proposed	RFS	APX16DWV-16DWVS-E-A20						0.700	6.59	0.04	0.8
16	T-Mobile	277	4	4	Proposed	RFS	APXVAA24_43-U-A20	96	24	8.5	101.4	F	0.720			0.8
	T-Mobile	277	4	4	Proposed		Flat Sector Frame						0.670	17.90	0.40	0.75
17	Verizon Wireless	266	6	3		RFS	FD9R6004/2[illegible]3L	5.8	6.5	1.5	2.6	F	0.500			0.8
	Verizon Wireless	266	3	3		Alcatel-Lucent	B13 RRH4x30-4R 700U						0.500	2.17	0.06	0.8
18	Verizon Wireless	266	3	3		Alcatel-Lucent	B66A RRH4x45-4R w/ Solar Shield	25.6	11.8	7.2	56.8	F	0.500			0.8
	Verizon Wireless	266	2	2		Raycap	RC3DC-3315-PF-48						0.500	3.78	0.03	0.8
19	Verizon Wireless	266	6	3		Amphenol Antel	LPA-80063-4CF-EDIN-X	47.4	15.2	11.1	20	F	0.750			0.8
	Verizon Wireless	266	3	3		Commscope	SBNHH-1D65B						0.690	8.17	0.05	0.8
20	Verizon Wireless	266	3	3		Commscope	SBNHH-1D65B	72.7	11.9	7.1	50.7	F	0.890			0.8
	Verizon Wireless	266	3	3			Flat Sector Frame						0.670	17.90	0.40	0.75
21	AT&T Mobility	246	6	3		Powerwave Allgon	TT19-08BP111-001	9.9	6.7	5.4	16	F	0.500			0.8
	AT&T Mobility	246	3	3		Raycap	DC2-48-60-0-9E						0.500	0.68	0.02	0.8
22	AT&T Mobility	246	1	1		Raycap	RC12-PCB-10E	15.5	16.3	6.6	20.4	F	0.500			0.8
	AT&T Mobility	246	3	3		Ericsson	RRUS-11						0.500	3.79	0.06	0.8
23	AT&T Mobility	246	6	3		Powerwave Allgon	PBS-15-XLH-RR	51	12	6	41	F	0.860			0.8
	AT&T Mobility	246	1	1		Kathrein Scala	800 10766						0.680	11.31	0.06	0.8
24	AT&T Mobility	246	2	2		KMW	AM-X-CD-17-65-00T-RET	96	11.8	6	58.5	F	0.680			0.8
	AT&T Mobility	246	3	3			Flat Sector Frame						0.670	17.90	0.40	0.75
25	US DOI	210	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US DOI	210	1	1		Andrew	DB264						1.000	5.63	0.04	1
26	US DOI	210	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US DOI	210	1	1			Flat Side Arm						1.000	6.30	0.15	1
27	Verizon Wireless	50	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Verizon Wireless	50	1	1		MicroPulse	GPS-CBW-26N						1.000	0.09	0.00	1
28	Verizon Wireless	50	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Verizon Wireless	50	1	1			Stand-Off						1.000	2.50	0.08	1
29																1
30																1
31																1
32																1
33																1
34																1
35																1
36																1
37																1
38																1
39																1
40																1
41																1
42																1
43																1
44																1
45																1
46																1
47																1
48																1
49																1
50																1

No.	Elevation	C_pA_t	C_pA_t (Ice)	Force	Force (Ice)	Weight	Weight (Ice)	60 Azi	Force	F (Ice)	Height	Sum of Forces (No I	
	(ft)	(ft^2)	(ft^2)	(lb)	(lb)	(lb)	(lb)	Mult.	mean	mean	Flag	60 Azi.	180 Azi.
1	287.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00			
	287.5	80.00	108.00	3207.921	667.328	10800	14040	1.00	1764.36	367.03	1.5034783	3207.921154	
2	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5034793		
	270	70.00	94.50	2757.015	573.528	9600	12480	1.00	1516.36	315.44	1.5037037	2757.015087	
3	237.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037047		
	237.5	15.00	20.25	569.532	118.477	600	780	1.00	313.24	65.16	1.5042105	569.5318722	
4	200	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5042115		
	200	45.00	60.75	1626.730	338.401	6000	7800	1.00	894.70	186.12	1.5050000	1626.729704	
5	187.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5050010		
	187.5	15.00	20.25	532.336	110.739	600	780	1.00	292.78	60.91	1.5053333	532.3361207	
6	137.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5053343		
	137.5	15.00	20.25	487.193	101.348	600	780	1.00	267.96	55.74	1.5072727	487.1925388	
7	87.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5072737		
	87.5	45.00	60.75	1284.511	267.211	6000	7800	1.00	706.48	146.97	1.5114286	1284.510619	
8	37.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5114296		
	37.5	15.00	20.25	336.109	69.919	600	780	1.00	184.86	38.46	1.5266667	336.1090605	
9								1.00			1.5266677		
								1.00					
10	306	4.08	5.82	166.627	36.604	381	522	1.00	91.64	20.13			
	306	3.48	4.70	113.643	23.641	216	281	1.00	62.56	13.00		280.2693862	
11	306	4.85	6.47	198.164	40.710	252	432	1.00	108.99	22.39			
	306	28.75	38.81	938.835	195.301	288	374	1.00	516.36	107.42		1417.268322	
12	306					0	0	1.00	0.00	0.00			
	306	32.40	43.74	991.923	206.545	1080	1404	1.00	545.56	113.49	1.5032680	2409.191725	
13	277	2.29	3.21	90.724	19.629	227	300	1.00	49.90	10.80	1.5032690		
	277	3.30	4.46	104.742	21.789	288	174	1.00	57.61	11.98	1.5032690	195.4655759	
14	277	4.47	6.10	177.162	37.299	243	181	1.00	97.44	20.51	1.5032700		
	277	5.58	7.53	177.109	36.843	243	316	1.00	97.41	20.26	1.5036101	549.7370135	
15	277	16.25	20.30	644.665	124.122	635	985	1.00	354.57	68.27	1.5036111		
	277	18.45	24.91	585.667	121.833	195	254	1.00	322.12	67.01	1.5036101	1780.068928	
16	277	46.69	55.69	1852.601	340.480	487	1179	1.00	1018.95	187.26	1.5036111		
	277	47.97	64.76	1427.467	296.949	1920	2496	1.00	785.11	163.32	1.5036101	5060.137547	
17	266	0.75	1.16	29.571	8.235	19	34	1.00	16.26	4.53	1.5036111		
	266	3.26	4.39	102.125	21.244	216	281	1.00	56.17	11.68	1.5037594	131.695143	
18	266	3.04	4.24	119.396	25.600	204	337	1.00	65.67	14.06	1.5037604		
	266	3.78	5.10	118.596	24.671	72	94	1.00	65.23	13.57	1.5037594	369.6876401	
19	266	22.11	28.58	867.096	172.729	144	407	1.00	476.98	95.00	1.5037604		
	266	16.91	22.83	530.605	110.379	180	234	1.00	291.83	60.71	1.5037594	1767.389083	
20	266	13.53	18.01	530.809	96.740	181	477	1.00	291.95	53.21	1.5037604		
	266	35.98	48.57	1058.277	220.148	1440	1872	1.00	582.05	121.06	1.5037594	3356.47533	
21	246	1.33	2.18	50.878	12.890	115	161	1.00	27.98	7.09	1.5037604		
	246	1.32	1.78	40.500	8.425	72	94	1.00	22.27	4.63	1.5040650	91.37790467	
22	246	0.84	1.18	32.299	6.955	24	97	1.00	17.76	3.82	1.5040660		
	246	5.69	7.67	174.426	36.285	216	281	1.00	95.93	19.96	1.5040650	298.1025482	
23	246	17.20	21.83	659.811	129.008	295	529	1.00	362.90	70.95	1.5040660		
	246	7.69	10.38	235.967	49.087	72	94	1.00	129.78	27.00	1.5040650	1193.880616	
24	246	12.31	13.82	471.981	81.702	143	496	1.00	259.59	44.94	1.5040660		
	246	35.98	48.57	1034.905	215.286	1440	1872	1.00	569.20	118.41	1.5040650	2700.766116	
25	210	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040660		
	210	5.63	7.60	206.379	42.932	48	62	1.00	113.51	23.61	1.5047619	206.3789333	
26	210	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5047629		
	210	6.30	8.51	230.938	48.041	180	234	1.00	127.02	26.43	1.5047619	437.3180594	
27	50	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5047629		
	50	0.09	0.12	2.189	0.455			1.00	1.20	0.25	1.5200000	2.189415822	
28	50	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5200010		
	50	2.50	3.38	60.817	12.651	96	125	1.00	33.45	6.96	1.5200000	63.00652198	
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								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	

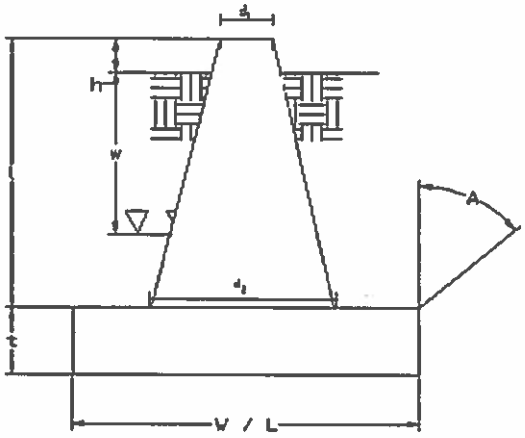
Foundation

Site No.:	88011
Engineer:	RDB
Date:	01/22/18
Carrier:	T-Mobile

Design Loads (Factored)

Compression/Leg:	472.00	k
Uplift/Leg:	349.97	k
Shear/Leg	64.70	k

Face Width @ Top of Pier (d_1):	3.50	ft
Face Width @ Bottom of Pier (d_2):	7.50	ft
Total Length of Pier (l):	8.50	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	14.75	ft
Length of Pad (L):	14.75	ft
Thickness of Pad (t):	3.25	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	120.0	pcf
Unit Weight of Soil (Below Water Table):	57.6	pcf
Friction Angle of Uplift (A):	30	°
Ultimate Compressive Bearing Pressure:	30000	psf
Ultimate Skin Friction:	1007	psf



Volume Pier (Total):	268.46	ft³
Volume Pad (Total):	707.08	ft³
Volume Soil (Total):	2747.35	ft³
Volume Pier (Buoyant):	0.00	ft³
Volume Pad (Buoyant):	0.00	ft³
Volume Soil (Buoyant):	0.00	ft³
Weight Pier:	40.27	k
Weight Pad:	106.06	k
Weight Soil:	329.68	k
Uplift Skin Friction:	144.82	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
465.62	0.75	OK

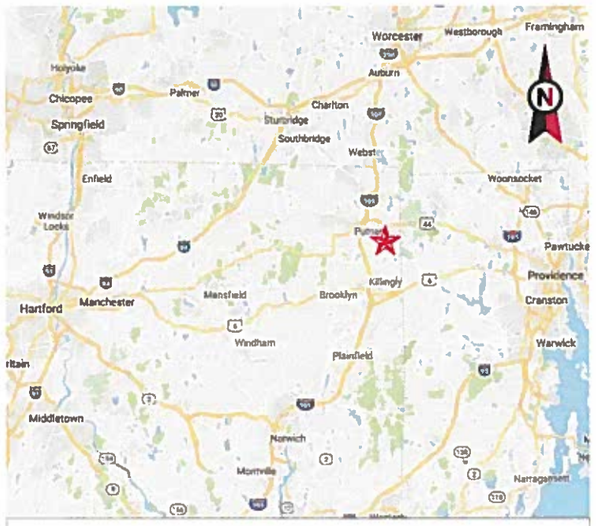
Axial Check

ϕs Axial Resistance (k)	Ratio	Result
4895.16	0.10	OK

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

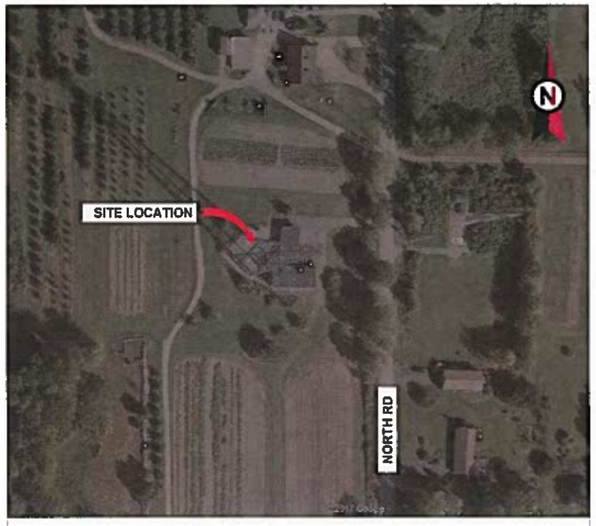
Usage Ratio	Result
0.52	OK



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: EAST KILLINGLY NORTH
ATC SITE NUMBER: 88011
T-MOBILE SITE ID: CTNL194
SITE ADDRESS: 1375 NORTH ROAD
DAYVILLE, CT 06241



LOCATION MAP

T-MOBILE L700 NSD COLLOCATION PLAN
4 SEC-6797DB2 CONFIGURATION

COMPLIANCE CODE

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

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

PROJECT SUMMARY

SITE ADDRESS:

1375 NORTH ROAD
DAYVILLE, CT 06241
COUNTY: WINDHAM

GEOGRAPHIC COORDINATES:

LATITUDE: 41.87152
LONGITUDE: -71.82154
GROUND ELEVATION: 745' AMSL

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES PLACING A EQUIPMENT CABINET, PROPANE TANK AND GENERATOR ON A PROPOSED CONCRETE PAD INSIDE A 10' X 15' GROUND SPACE WITHIN THE EXISTING COMPOUND, AND PLACING NEW ANTENNAS AND A DISH ON A PROPOSED CUSTOM FRAME MOUNTED TO THE EXISTING TOWER CATWALK.

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

FROM WORCESTER, MA:

TAKE ROUTE 395 TO EXIT 97. AT END OF THE RAMP, TAKE A LEFT ONTO 44 EAST. AFTER YOU CROSS FIVE MILE RIVER, GO ABOUT ANOTHER .5 MILES AND TAKE A RIGHT ONTO EAST PUTNUM ROAD. AT THE 3RD STOP SIGN, TAKE A LEFT. LOOK FOR NORTH ROAD ON YOUR RIGHT. TAKE NORTH ROAD. TOWER IS ON THE RIGHT.

UTILITY COMPANIES

POWER COMPANY: CT LIGHT & POWER
PHONE: (800) 286-2000

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 921-8102

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

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

CARRIER CONTACT:

PATRICK RIORDAN
(717) 645-8523

PROPERTY OWNER:

SARGENT AND GREENLEAF INC
1 SECURITY DRIVE
NICHOLASVILLE, KY 40356

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	02/26/18	AMM
G-002	GENERAL NOTES	0	02/26/18	AMM
C-101	DETAILED SITE PLAN & TOWER ELEVATION	0	02/26/18	AMM
C-501	ANTENNA INFORMATION & SCHEDULE	0	02/26/18	AMM
C-502	ANTENNA MOUNTING DETAILS	0	02/26/18	AMM
C-503	ANTENNA MOUNTING DETAILS	0	02/26/18	AMM
C-504	CONSTRUCTION DETAILS	0	02/26/18	AMM
C-505	CONSTRUCTION DETAILS	0	02/26/18	AMM
E-101	GROUNDING PLAN AND SCHEMATIC	0	02/26/18	AMM
E-501	GROUNDING DETAILS	0	02/26/18	AMM
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	02/26/18

ATC SITE NUMBER:
88011

ATC SITE NAME:
EAST KILLINGLY NORTH

SITE ADDRESS:
1375 NORTH ROAD
DAYVILLE, CT 06241

SEAL:

Authorized by "EOR"
Feb 26 2018 5:53 PM cosign

T-Mobile

DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH T-MOBILE WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY T-MOBILE WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE WIRELESS REP. ANY WORK FOUND BY THE T-MOBILE WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

CONCRETE AND REINFORCING STEEL NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
2. MIX DESIGN SHALL BE APPROVED BY T-MOBILE WIRELESS REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C150, TYPE 2
REINFORCEMENT:	ASTM A185, PLAIN STEEL WELDED WIRE FABRIC
REINFORCEMENT BARS:	ASTM A615, GRADE 60, DEFORMED
NORMAL WEIGHT AGGREGATE:	ASTM C33
WATER:	ASTM C 94/C 94M
ADMIXTURES:	
-WATER-REDUCING AGENT:	ASTM C 494/C 494M, TYPE A
-AIR-ENTERING AGENT:	ASTM C 260/C 260M
-SUPERPLASTICIZER:	ASTM C494, TYPE F OR TYPE G
-RETARDING:	ASTM C 494/C 494M, TYPE B

5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
6. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR T-MOBILE WIRELESS REP APPROVAL WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
11. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
12. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
13. DO NOT ALLOW REINFORCEMENT, CONCRETE OR SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 3 DAYS AFTER PLACEMENT.
14. FOR COLD-WEATHER(ACI 306) AND HOT-WEATHER(ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
15. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
16. UNLESS OTHERWISE NOTED:
    A. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615/A 615M/A-996, GRADE 60.
    B. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
17. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
18. REINFORCING BAR DEVELOPMENT LENGTHS, AS COMPUTED IN ACCORDANCE WITH ACI 318, FORM THE BASIS FOR BAR EMBEDMENT LENGTHS AND BAR SPLICED LENGTHS SHOWN IN THE DRAWINGS. APPLY APPROPRIATE MODIFICATION FACTORS FOR TOP STEEL, BAR SPACING, COVER AND THE LIKE.
19. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
20. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
21. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
22. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
23. BAR SUPPORTS SHALL BE ALL-GALVINIZED METAL WITH PLASTIC TIPS.
24. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.
25. SLAB ON GROUND:
    A. COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.
    B. PROVIDE VAPOR BARRIER BENEATH SLAB ON GROUND.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
    A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
    B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
    C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
    D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
    E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
    A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
    B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
    C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
    D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
    E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
    F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
    G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
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SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	02/26/18
△			
△			
△			
△			

ATC SITE NUMBER:
88011

ATC SITE NAME:
EAST KILLINGLY NORTH

SITE ADDRESS:
1375 NORTH ROAD
DAYVILLE, CT 06241

SEAL:

Authorized by "EOR"
Feb 26 2018 5:53 PM cosign

T-Mobile

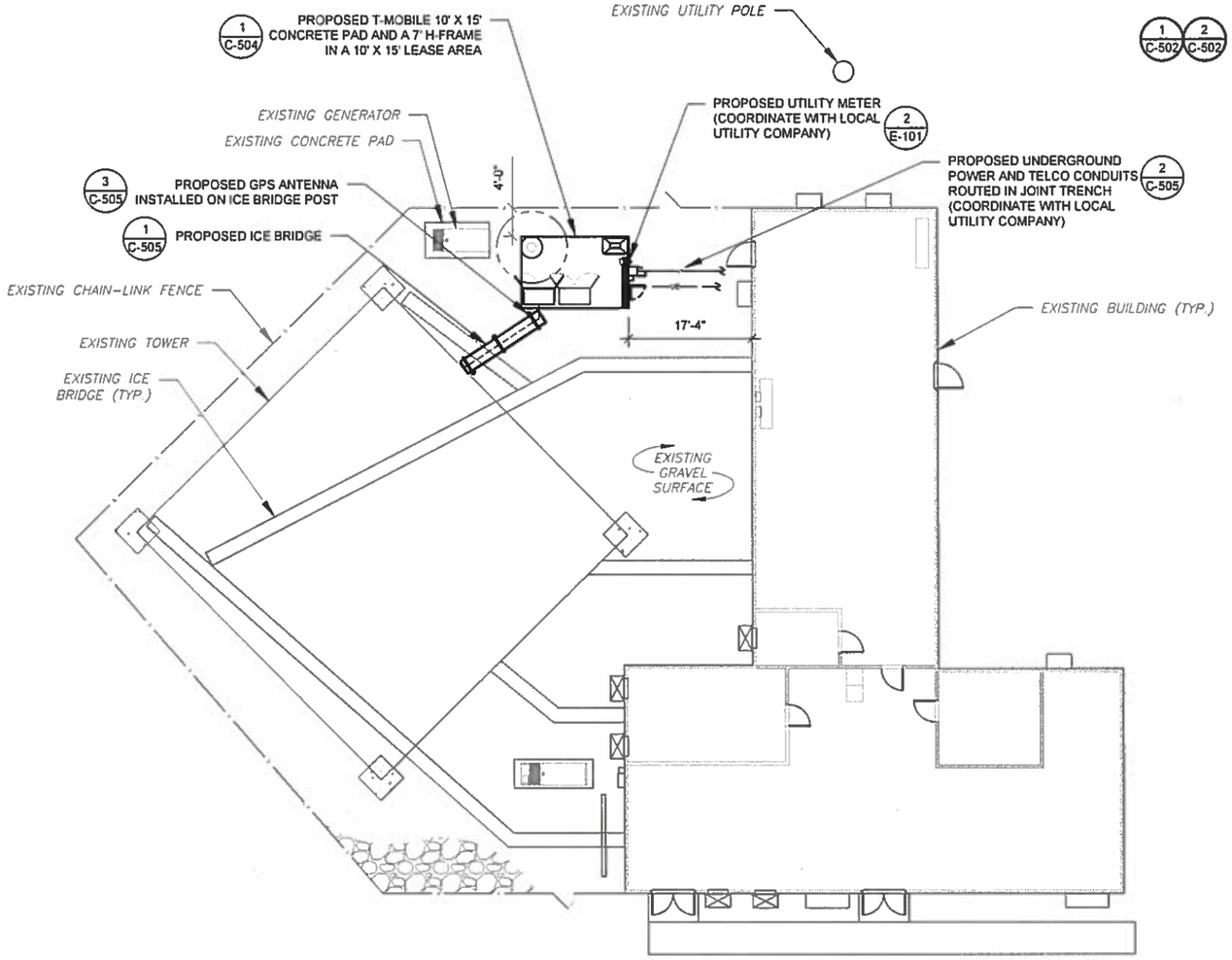
DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

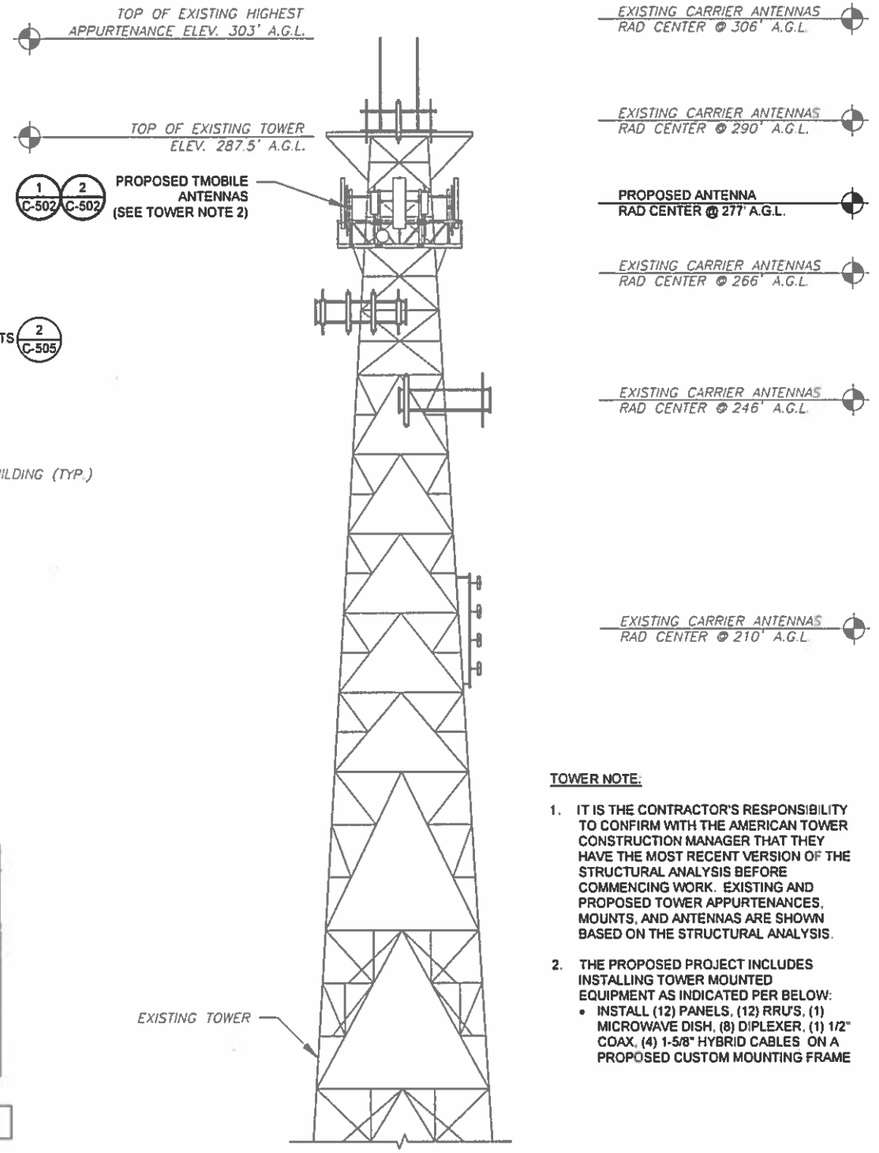
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.



1 DETAILED SITE PLAN

0 20' 40'

SCALE: 1"=20' (11X17)
1"=10' (22X34)



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. THE PROPOSED PROJECT INCLUDES INSTALLING TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:
   - INSTALL (12) PANELS, (12) RRU'S, (1) MICROWAVE DISH, (8) DIPLEXER, (1) 1/2" COAX, (4) 1-5/8" HYBRID CABLES ON A PROPOSED CUSTOM MOUNTING FRAME

2 TOWER ELEVATION

SCALE: NOT TO SCALE

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	02/26/18

ATC SITE NUMBER:
88011

ATC SITE NAME:
EAST KILLINGLY NORTH

SITE ADDRESS:
1375 NORTH ROAD
DAYVILLE, CT 06241

SEAL:

STATE OF CONNECTICUT
PATRICK P. BARRY
28958
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
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DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

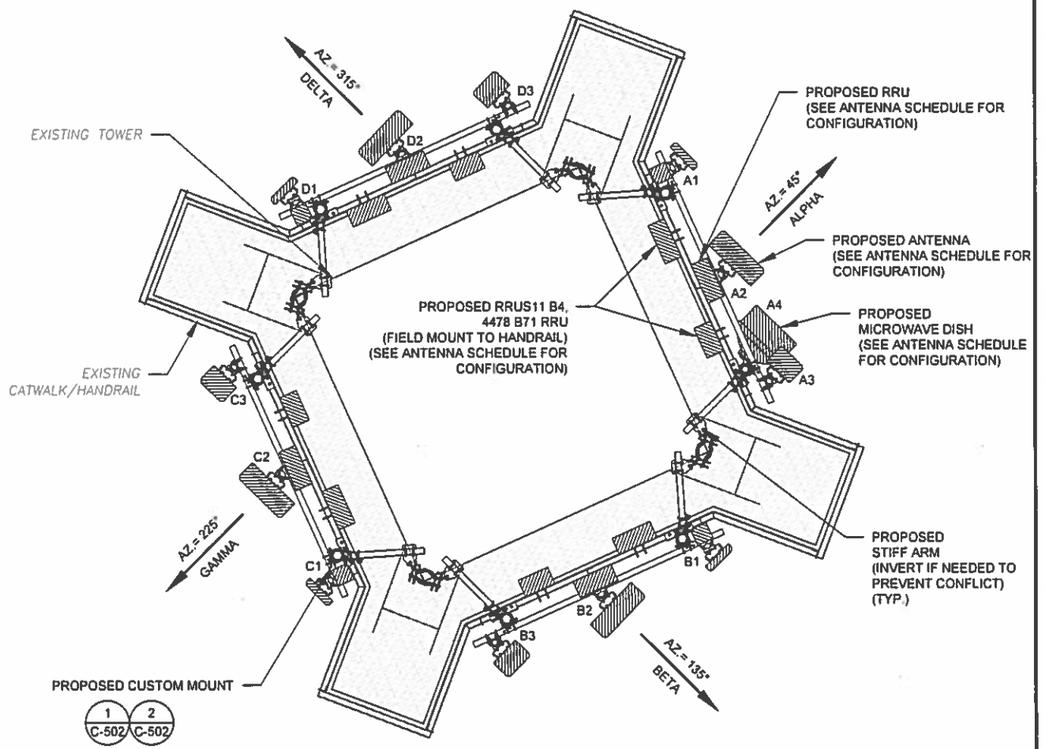
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	0

FINAL ANTENNA/ COAX SCHEDULE								
SECTOR	ANT.	PANEL MODEL #	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	ANTENNA COAX DESCRIPTION
ALPHA	A1	AIR 32 B66Aa/B2a	277'-0"	45°	0°	2°	(2) CBC6AE7LQ-DS-43	1-5/8" HYB
ALPHA	A2	APXVAA24_43-U-A20	277'-0"	45°	0°	2°	RRUS11 B12	-
ALPHA	A3	APX16DWV-16DWVS-E-A20	277'-0"	45°	0°	2°	RRUS11 B4, 4478 B71	-
ALPHA	A4	SHP2-13	277'-0"	45°	0°	2°	-	1/2"
BETA	B1	AIR 32 B66Aa/B2a	277'-0"	135°	0°	2°	(2) CBC6AE7LQ-DS-43	1-5/8" HYB
BETA	B2	APXVAA24_43-U-A20	277'-0"	135°	0°	2°	RRUS11 B12	-
BETA	B3	APX16DWV-16DWVS-E-A20	277'-0"	135°	0°	2°	RRUS11 B4, 4478 B71	-
GAMMA	C1	AIR 32 B66Aa/B2a	277'-0"	225°	0°	2°	(2) CBC6AE7LQ-DS-43	1-5/8" HYB
GAMMA	C2	APXVAA24_43-U-A20	277'-0"	225°	0°	2°	RRUS11 B12	-
GAMMA	C3	APX16DWV-16DWVS-E-A20	277'-0"	225°	0°	2°	RRUS11 B4, 4478 B71	-
DELTA	D1	AIR 32 B66Aa/B2a	277'-0"	315°	0°	2°	(2) CBC6AE7LQ-DS-43	1-5/8" HYB
DELTA	D2	APXVAA24_43-U-A20	277'-0"	315°	0°	2°	RRUS11 B12	-
DELTA	D3	APX16DWV-16DWVS-E-A20	277'-0"	315°	0°	2°	RRUS11 B4, 4478 B71	-

1. BASED ON APPROVED ATC APPLICATION OAA720744, DATED 01/22/18. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
2. PROPOSED (4) 4478 B71 RADIOS AT PROPOSED RAD CENTER.
3. PER STRUCTURAL ANALYSIS COAX TO BE TRIPLE STACKED ON TOWER FACE WITH LEAST AMOUNT OF EXISTING COAX.

1 ANTENNA SCHEDULE



NOTES:

1. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX. ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.
2. SPACING OF PROPOSED EQUIPMENT SHALL BE CONFIRMED FOR TOWER CONFLICTS AND PROPOSED MOUNTS SHALL NOT IMPEDE TOWER CLIMBING PEGS.

2 PROPOSED ANTENNA PLAN

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	02/26/18

ATC SITE NUMBER:
88011

ATC SITE NAME:
EAST KILLINGLY NORTH

SITE ADDRESS:
1375 NORTH ROAD
DAYVILLE, CT 06241

SEAL:

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Feb 26 2018 5:54 PM cosign

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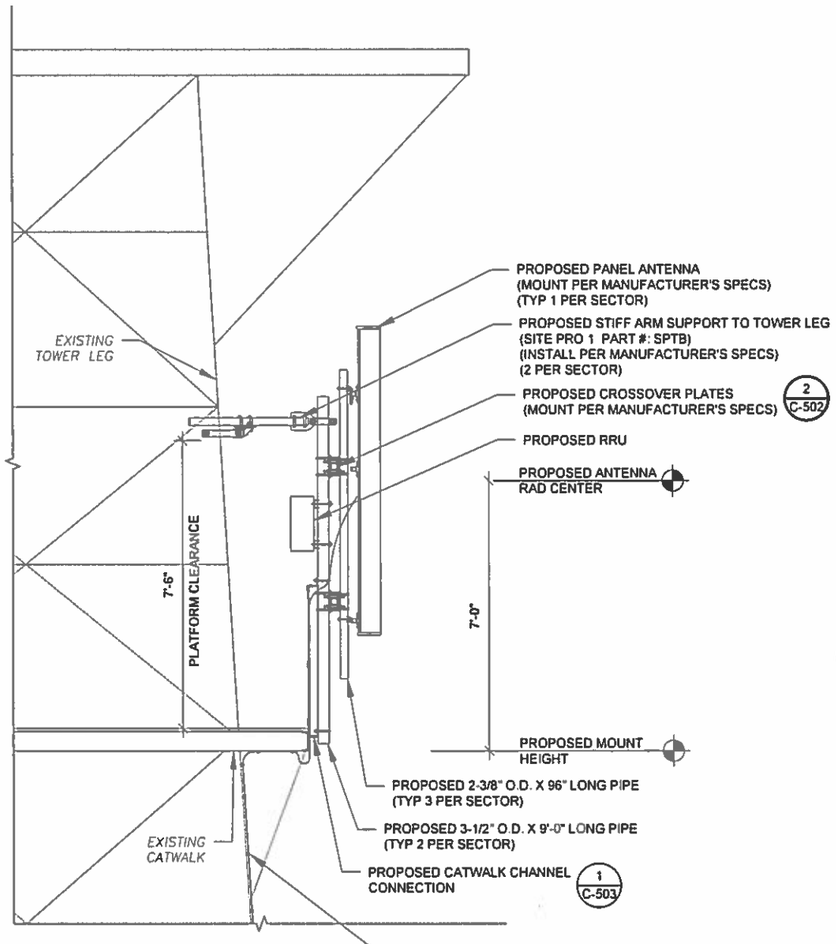
DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	0

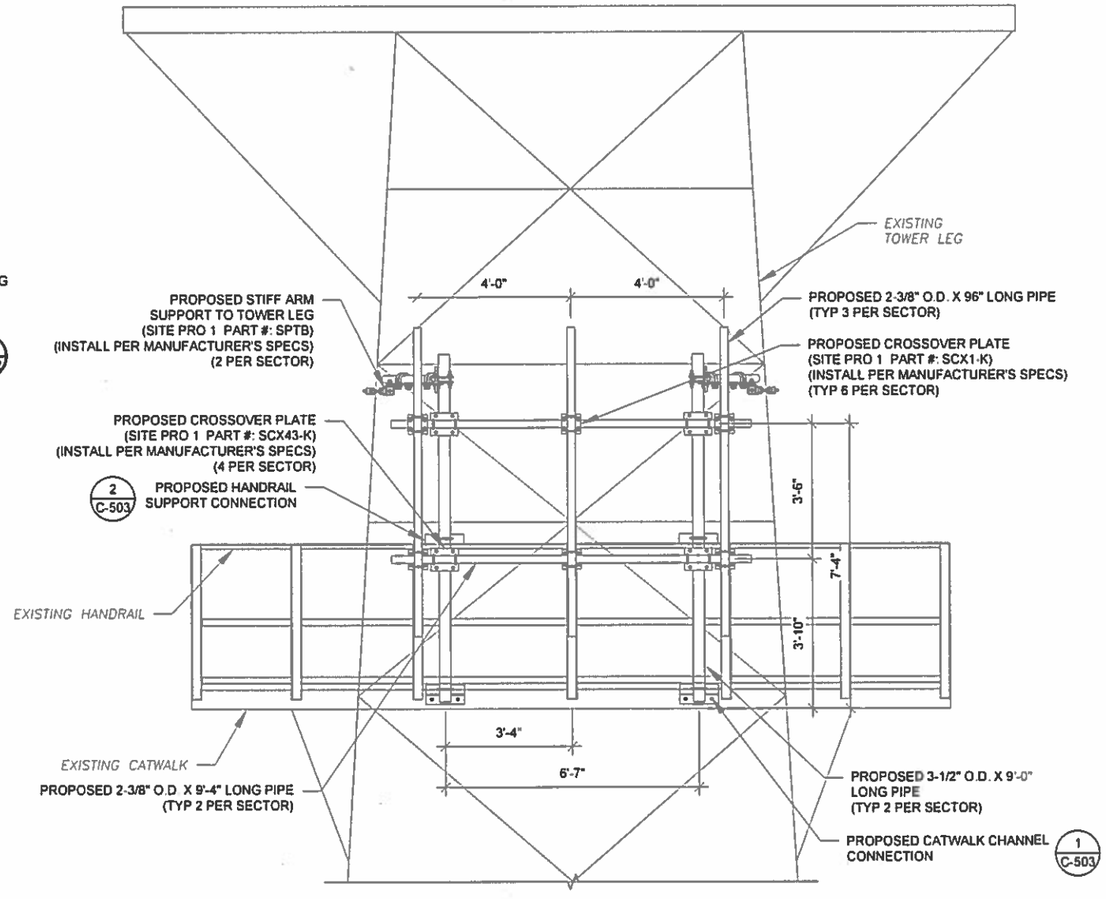


NOTE:

1. PORTION OF HANDRAIL REMOVED FOR CLARITY
2. PER STRUCTURAL ANALYSIS COAX TO BE TRIPLE STACKED ON TOWER FACE WITH LEAST AMOUNT OF EXISTING COAX.

1 PROPOSED ANTENNA MOUNTING DETAIL (SIDE ELEVATION)

SCALE: NOT TO SCALE



NOTE:

1. MICROWAVE DISH AND ANTENNAS NOT SHOWN FOR CLARITY

2 PROPOSED ANTENNA MOUNTING DETAIL (FRONT ELEVATION)

SCALE: NOT TO SCALE

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SEAL:

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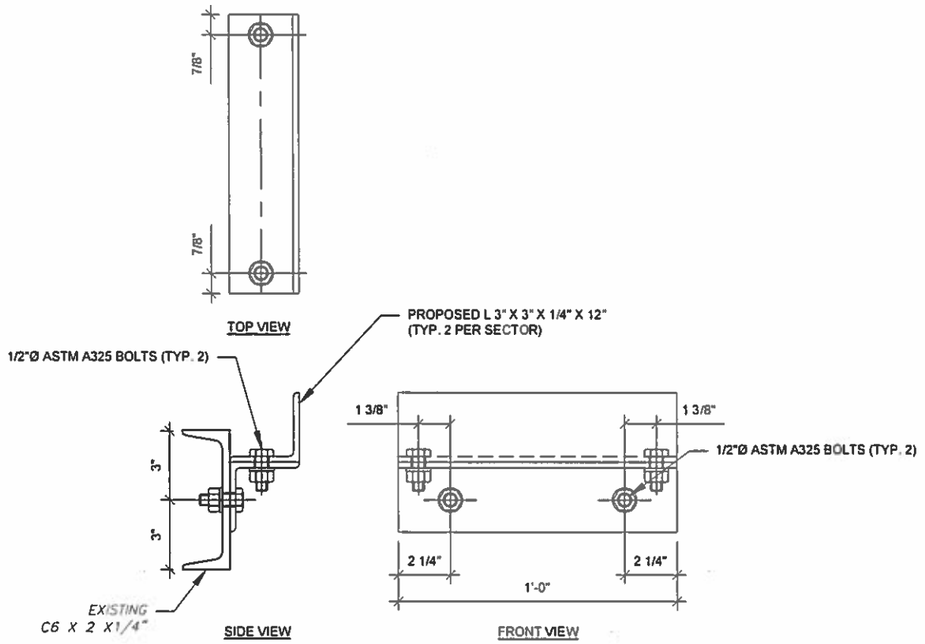
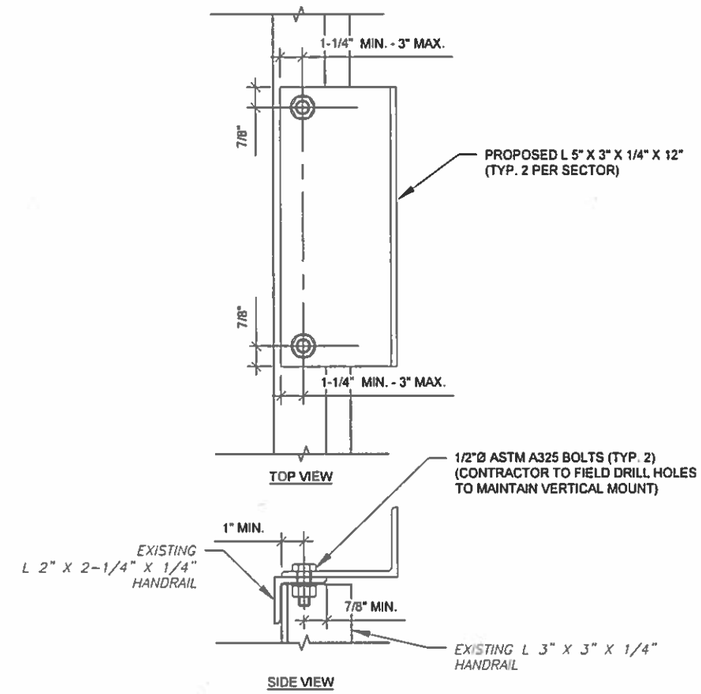
DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

ANTENNA MOUNTING DETAILS

SHEET NUMBER:	REVISION:
C-502	0



1 CHANNEL CONNECTION DETAIL
SCALE: NOT TO SCALE



2 HANDRAIL CONNECTION DETAIL
SCALE: NOT TO SCALE

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DATE DRAWN:	02/26/18
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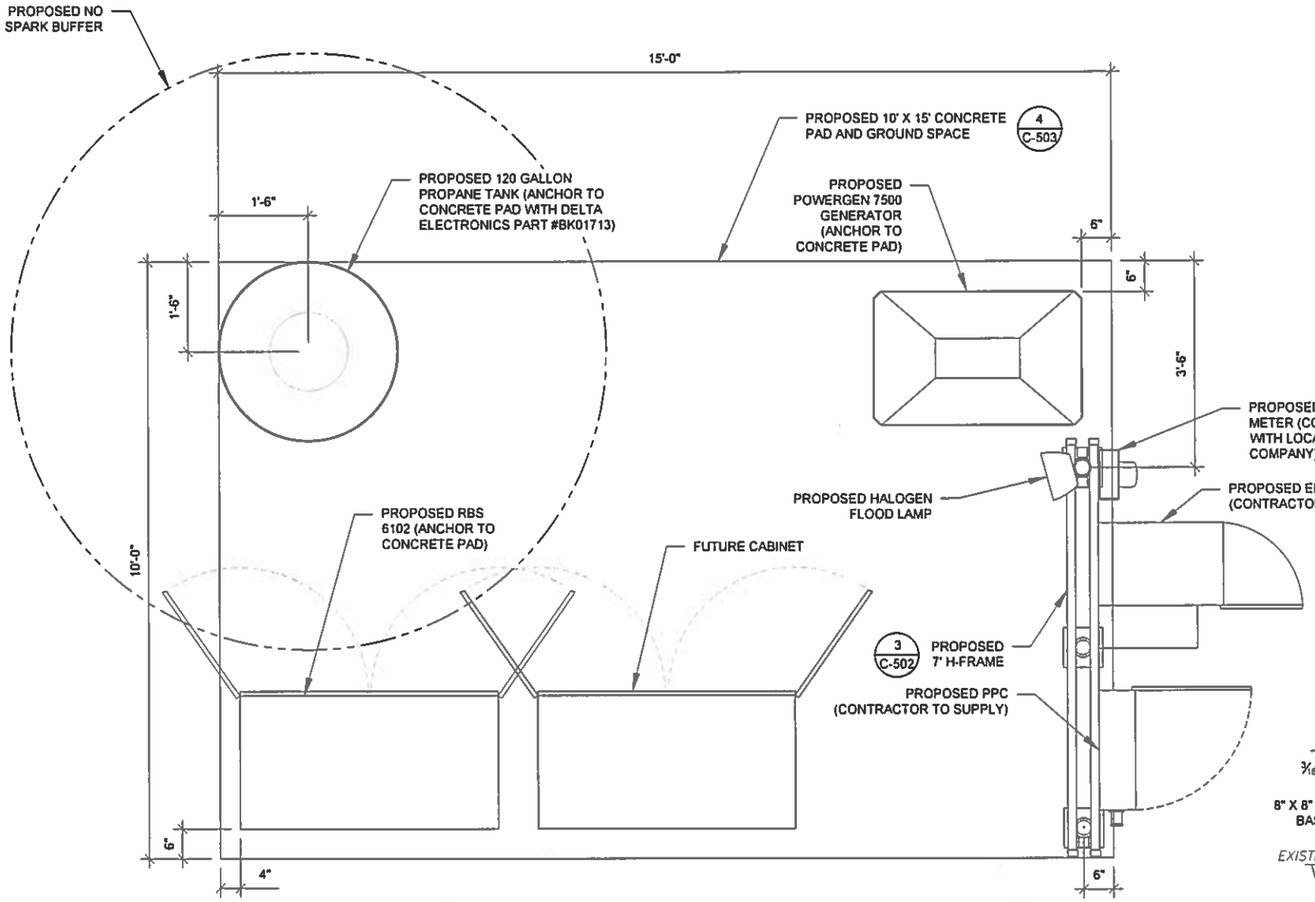
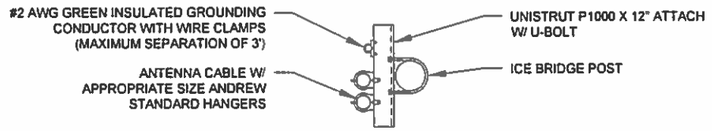
ANTENNA MOUNTING DETAILS

SHEET NUMBER:	REVISION:
C-503	0

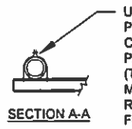


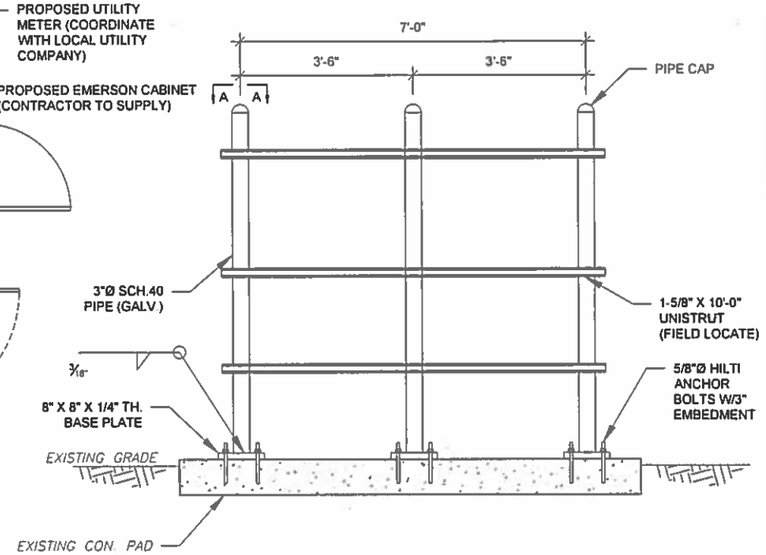
NOTE:
1. CABINETS SHALL BE ORIENTED AND INSTALLED EXACTLY AS SHOWN
2. WEIGHT OF BTS UNIT IS 859 LBS (390 KG) (WEIGHT IS WITHOUT BATTERIES)

1 DETAILED EQUIPMENT LAYOUT
SCALE: NOT TO SCALE



2 WAVEGUIDE UNISTRUT
SCALE: NOT TO SCALE





3 TYPICAL H-FRAME DETAIL
SCALE: NOT TO SCALE

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SEAL:

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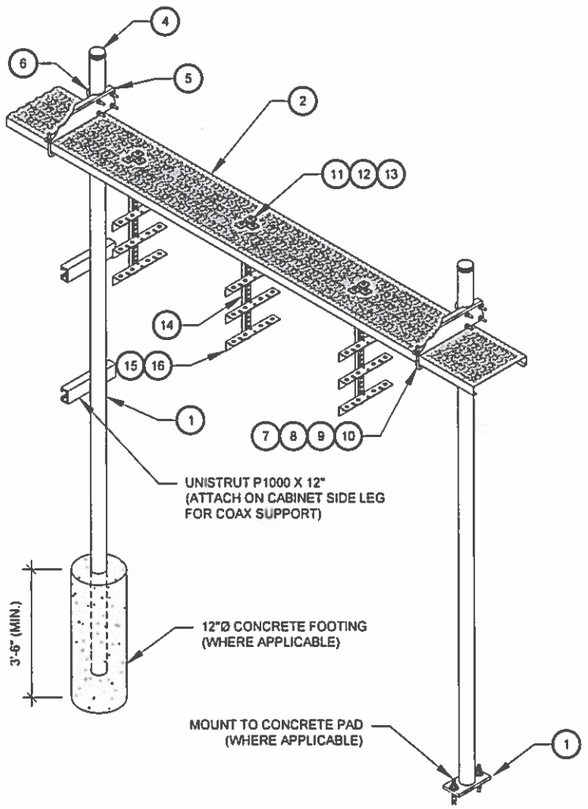
DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-504	0

CONSTRUCTION NOTE:

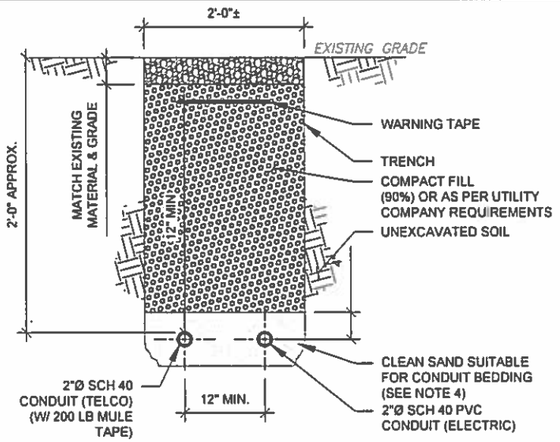
1. INSTALL ICE BRIDGE TO ALLOW 7 FEET CLEARANCE ABOVE GRADE TO LOWEST APPURTENANCE.



WB-K210-B WAVEGUIDE BRIDGE KIT - BILL OF MATERIALS (INCLUDED WITH KIT UNLESS NOTED OTHERWISE)					
ITEM	PART NUMBER	DESCRIPTION	ITEM	PART NUMBER	DESCRIPTION
1	MF126.01 MF-130	10'-4" COLUMN & BASE SHOE* 13'-4" PIPE COLUMN	9	GWL-04	1/2" GALV LOCK WASHER
2	WB-CY210	SAFETY GRATING 24" X 10'	10	GN-04	1/2" GALV HEX NUT
3	WBK110BHK	HARDWARE KIT (ITEMS 4-16)	11	GB-03205	3/8" X 2" GALV BOLT KIT
4	PC-034	PIPE CAP 3-1/2"	12	MT-387	SQUARE WASHER, 1-1/2" X 1-1/2" W/ 7/16" HOLE
5	WBLB243.08	24" WAVEGUIDE BRIDGE SUPPORT BRACKET	13	GWF-03	3/8" GALV FLAT WASHER
6	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT	14	WBT243.01	VERTICAL TRAPEZE SECTION
7	WB-JB-6	1/2" J-BOLT	15	GB-03105	3/8" X 1" GALV BOLT KIT
8	GWF-04	1/2" GALV FLAT WASHER	16	WBT243.02	HORIZONTAL TRAPEZE SECTION

CONTRACTOR SHALL USE PARTS MANUFACTURED BY COMMSCOPE OR APPROVED EQUIVALENT.
*BASE SHOE NOT INCLUDED IN WB-K210-B KIT, ORDER COLUMN SEPARATELY OR KIT WB-K210-S.

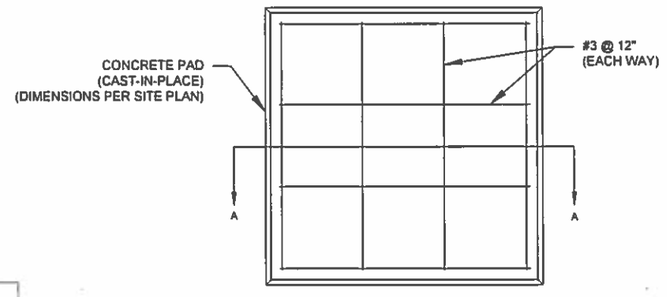
1 WAVEGUIDE BRIDGE KIT
SCALE: NOT TO SCALE



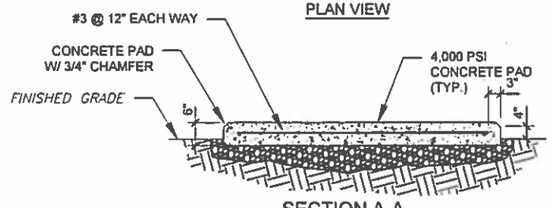
TRENCH NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
4. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

2 TELCO AND POWER CONDUIT JOINT TRENCH
SCALE: N.T.S.



PLAN VIEW

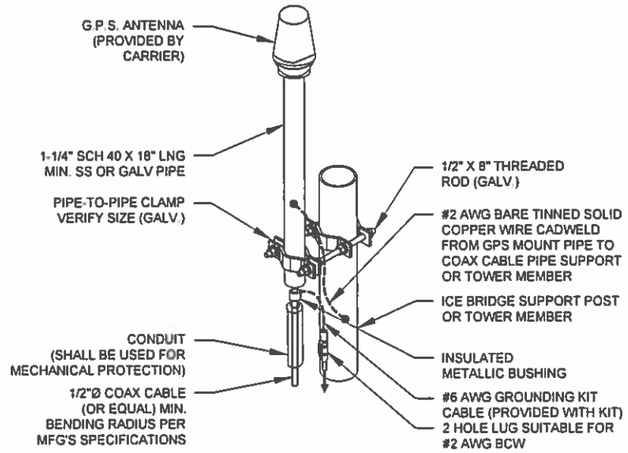


SECTION A-A

PAD NOTES:

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETRIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. COMPACT SUBGRADE TO 95% IN ACCORDANCE WITH ATC SOEC 312000, 3.20C.
3. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.
5. DETAIL FOR ILLUSTRATIVE PURPOSES ONLY, MAINTAIN REBAR SPACING 12" O.C. FOR PROPOSED APPLICATION.

4 CONCRETE PAD FOR MINOR EQUIPMENT
SCALE: NOT TO SCALE



NOTE:
1. GPS SHALL BE PLACED WITH CLEAR SIGHT LINE TO THE SOUTHERN SKY.
2. CONTRACTOR TO SUPPLY COAX FOR GPS UNIT.

3 GPS ANTENNA ATTACHMENT DETAIL
SCALE: NOT TO SCALE

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A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	02/26/18
△			
△			
△			
△			

ATC SITE NUMBER:
88011

ATC SITE NAME:
EAST KILLINGLY NORTH

SITE ADDRESS:
1375 NORTH ROAD
DAYVILLE, CT 06241

SEAL:

Authorized by "EOR"
Feb 26 2018 5:54 PM cosign

T··Mobile·

DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

CONSTRUCTION DETAILS

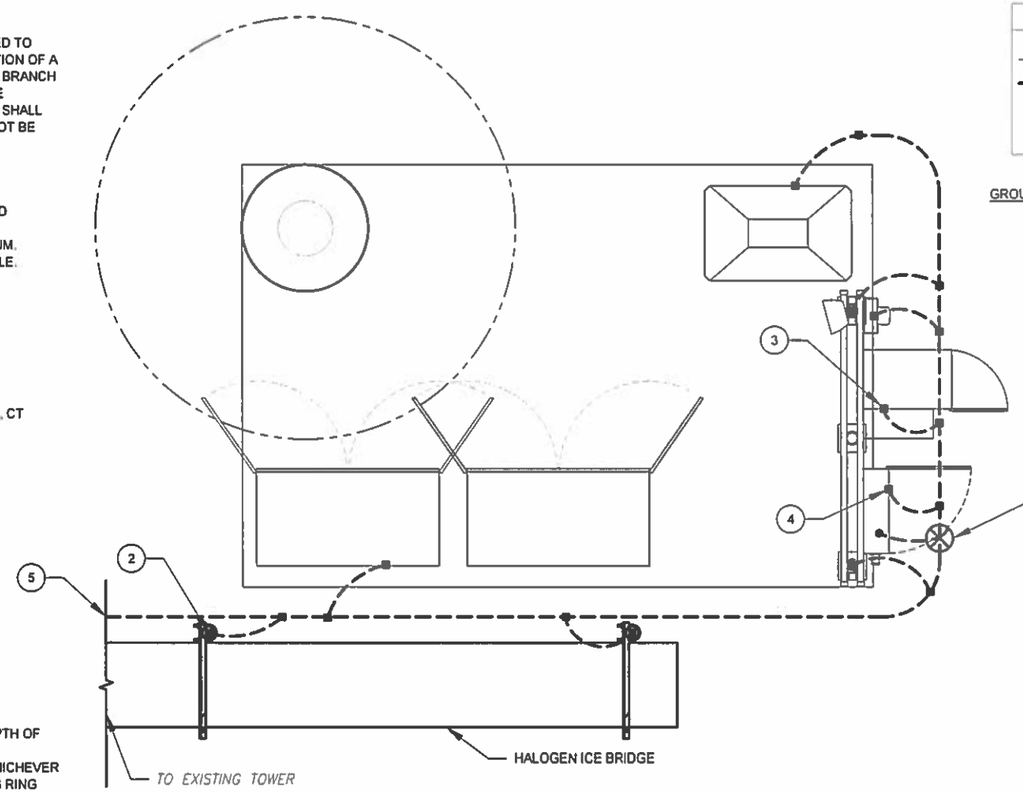
SHEET NUMBER:	REVISION:
C-505	0

GROUNDING NOTES:

1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS SHALL BE CONTINUOUS IN LENGTH AND SHALL BE BONDED TO EACH ENCLOSURE THEY PASS THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING CIRCUIT.

LIGHTNING AND SURGE PROTECTION:

1. GROUNDING CONDUCTORS SHALL:
   - A. BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
   - B. BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
   - C. AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.
   - D. NOT HAVE ANY U-SHAPED RUNS.
   - E. BE IN NON-METALLIC CONDUIT ONLY, IF IN CONDUIT.
   - F. BE PLACED THROUGH NON-METALLIC SLEEVES IN FLOORS, WALLS, CEILINGS, ETC.
   - G. PROTECTED IN NON-METALLIC CONDUIT WHERE EXPOSED ABOVE GRADE.
2. INSTALL ALL GROUNDING RINGS AND RADIALS WITH CONDUCTIVE CEMENT, SANKOSHA AS DISTRIBUTED BY ELECTRIC MOTION COMPANY, INC., WINSTED, CT 06098, OR AS SPECIFICALLY INDICATED. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
3. GROUND RINGS SHALL BE:
   - A. MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
   - B. MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
   - C. WITH MINIMUM 12" BEND RADII.
   - D. WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC WELDING.
   - E. BONDED TO A SINGLE POINT GROUND (SPG) WITH A SINGLE WIRE AS INDICATED ON DRAWINGS.
4. GROUND RODS SHALL BE:
   - A. MINIMUM 5/8" DIAMETER.
   - B. MINIMUM 10' LONG.
   - C. COPPER-CLAD GALVANIZED STEEL OR STAINLESS STEEL.
   - D. PLACED IN UNDISTURBED SOIL AND BELOW THE FROST LINE.
   - E. INSTALLED WITH MINIMUM SEPARATION DISTANCE OF TWICE THE DEPTH OF THE ROD(S), OR AS INDICATED ON DRAWINGS.
   - F. MINIMUM TWO (2) RODS ON THE TOWER RING OR ONE (1) PER LEG WHICHEVER IS LARGER, MINIMUM FOUR (4) RODS ON EVERY EQUIPMENT BUILDING RING WITH ONE AT EACH CORNER OR AS INDICATED, MINIMUM ONE (1) ROD FOR POWER SERVICE GROUNDING ELECTRODE, AND MINIMUM ONE (1) ROD AT END OF EACH RADIAL.
5. CONDUCTIVE OBJECTS, SUCH AS FENCES, SHALL BE BONDED TO THE GROUNDING SYSTEM IF WITHIN 20' OF THE TOWER GROUNDING SYSTEM, OR 5' OF ANY OTHER GROUNDED COMPONENT.
6. INSTALL ADDITIONAL TOWER GROUND BAR SO AS NOT TO EXCEED 300' BETWEEN GROUND BARS.



1 DETAILED GROUNDING PLAN
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

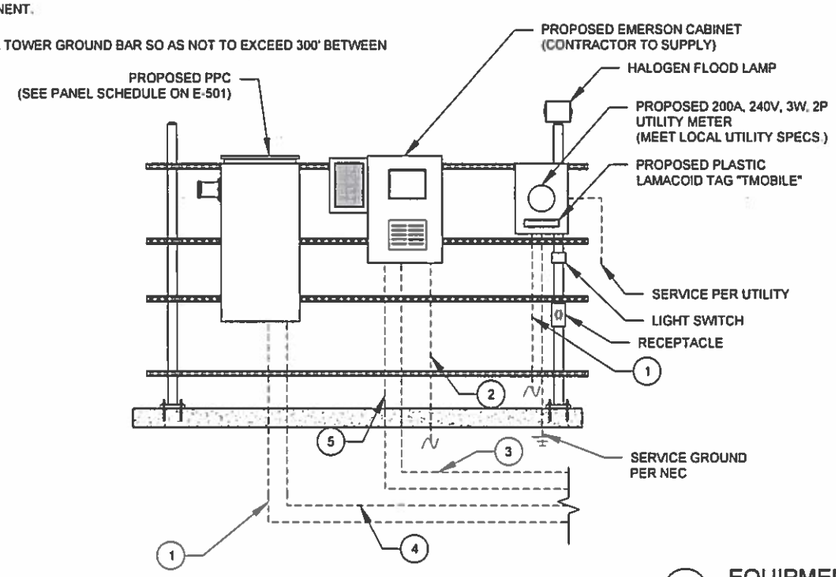
- EXISTING GROUND WIRE
- GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL WELD
- COPPER GROUND ROD
- TEST WELL

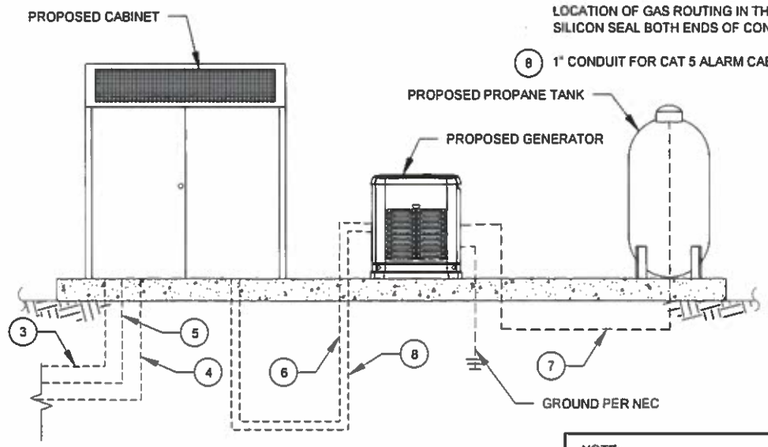
GROUNDING KEYED NOTES:

1. 5/8Ø" X 10 FT GROUND ROD.
2. #2 AWG BOND FROM VERTICAL ICEBRIDGE POST TO EXTERNAL GROUND RING (TYP. EVERY POST).
3. #2 AWG SBTC BOND FROM TOWER GROUND RING TO EQUIPMENT.
4. GROUNDING ELECTRODE CONDUCTOR (GEC) AND GROUNDING ELECTRODE SIZED PER NEC OR AS OTHERWISE INDICATED.
5. BOND TO TOWER GROUND RING.
6. #2 AWG BOND FROM MJB TO GROUND RING.

EQUIPMENT POWER NOTES:

1. 2" CONDUIT W/ 3-#3/0 CU, (1) #6 AWG G, PPC POWER
2. 2" CONDUIT FOR TELCO FEEDER SERVICE TO TELCO SOURCE PER UTILITY
3. 2-#12, 1 #12G IN 3/4" CONDUIT FROM WESTELL TO 6102
4. 3-#1, 1-#8 IN 2" CONDUIT
5. 2" CONDUIT, FOR CAT5
6. 2-#2/0 IN 2IN C
7. 1/2" (MIN) HIGH PRESSURE "POLYPIPE" RAN ALONG GRADE TO GENERATOR LOCATION HOUSED IN RIGID GALV. W/ SHUTOFF VALVE. NOTE: THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF GAS ROUTING IN THE FIELD. CONTRACTOR TO SILICON SEAL BOTH ENDS OF CONDUIT.
8. 1" CONDUIT FOR CAT 5 ALARM CABLE





2 EQUIPMENT POWER AND TELCO SCHEMATIC
SCALE: N.T.S.

NOTE:
ALL EQUIPMENTS' SHORT-CIRCUIT CURRENT RATING SHALL EXCEED AVAILABLE FAULT CURRENT PER UTILITY

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AMM	02/26/18

ATC SITE NUMBER:
88011

ATC SITE NAME:
EAST KILLINGLY NORTH

SITE ADDRESS:
1375 NORTH ROAD
DAYVILLE, CT 06241

SEAL:

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Feb 26 2018 5:54 PM cosign

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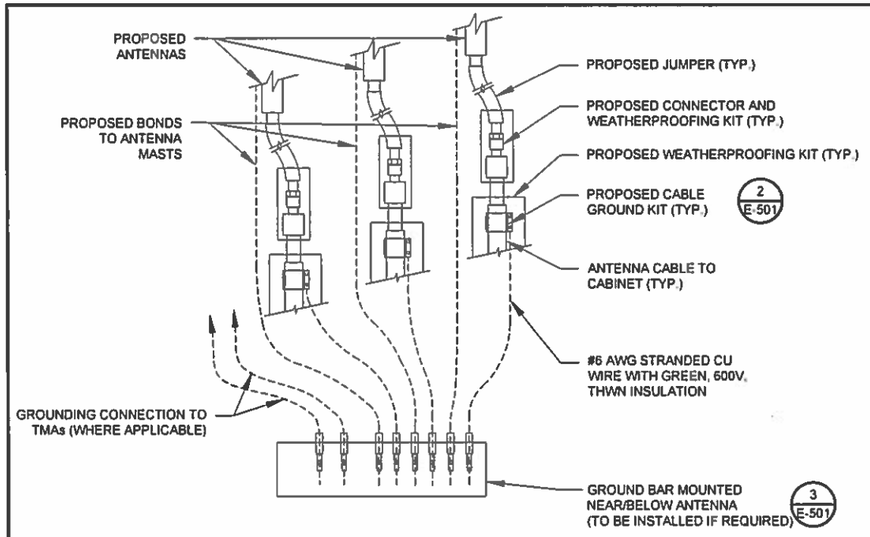
DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

GROUNDING PLAN AND SCHEMATIC

SHEET NUMBER:	REVISION:
E-101	0

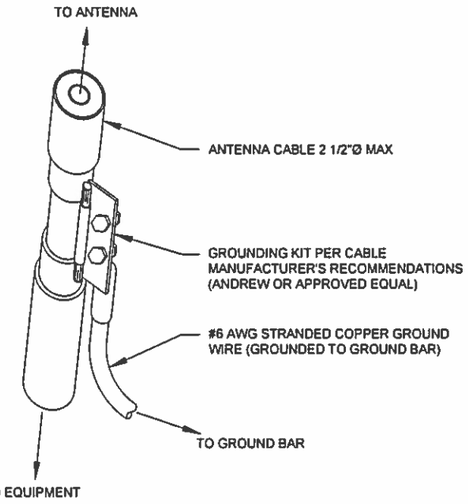


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

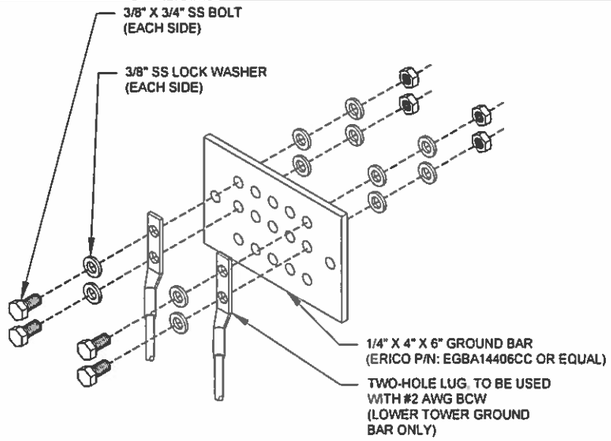


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

TO GROUND BAR

PANEL DESIGNATION: PPC
TYPE: LIGHTING & APPLIANCE
MOUNTING: SURFACE
ENCLOSURE: NEMA 3R
SYSTEM: 120/240V, 1Ø, 3W, 20 CKT
MAIN BREAKER (MB): 200A MCB
MAIN BUS RATING: 200A
MIN. A.I.C. RATING: 22KAIC
LOCATION: T-MOBILE LEASE AREA
PANEL NOTES: INTERGRATED COMMUNICATION POWER PANEL (PPC)

CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT								FEEDER OR BRANCH CIRCUIT						BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
			BREAKER		CIRCUIT			POLE			POLE	CIRCUIT			BREAKER				
A	B		AMPS	POLES	WIRE	GND	COND.	NO.			NO.	COND.	GND	WIRE	POLES	AMPS		A	B
9.60		6102 Cabinet	100	2	3-#1	1-#8	2"	1			2	3/4"	1-#12	2-#12	1	15	RECEPTACLE	0.18	
	9.60							3			4	3/4"	1-#12	2-#12	1	15	LIGHT		0.50
0.00								5			6							0.00	
	0.00							7			8								0.00
0.00								9			10							0.00	
	0.00							11			12								0.00
0.00								13			14							0.00	
	0.00							15			16								0.00
0.00								17			18							0.00	
	0.00							19			20								0.00
9.6	9.6								A	B	TOTAL							0.2	0.5
									9.8	10.1	19.9	CONNECTED LOAD (kVA)							
									9.8	10.1	19.9	DEMAND LOAD (kVA)							

DERATING FACTOR (80%)
DEMANDLOAD SIZING: 105 AMPS

4 PANEL SCHEDULE

SCALE: NOT TO SCALE

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88011

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DAYVILLE, CT 06241

SEAL:

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T-Mobile

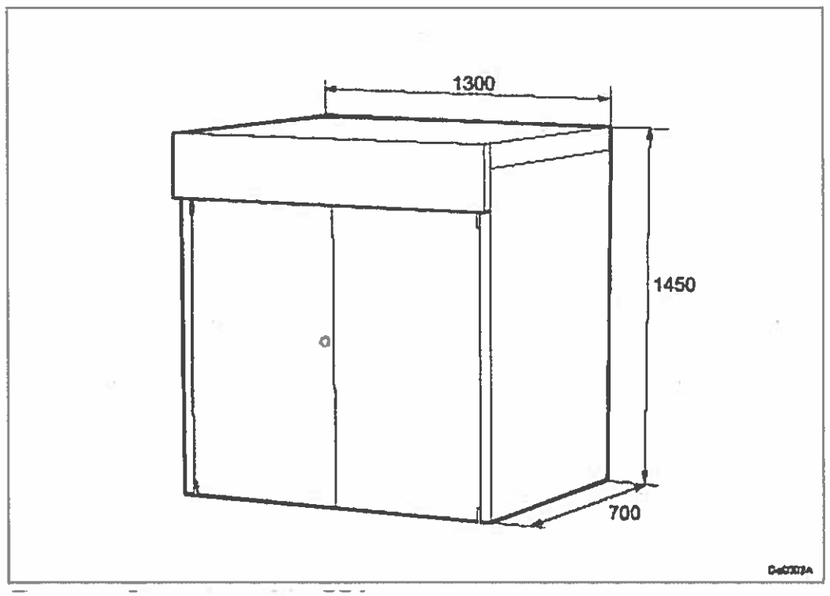
DRAWN BY:	AMM
APPROVED BY:	PPB
DATE DRAWN:	02/26/18
ATC JOB NO:	12203191

GROUNDING DETAILS

SHEET NUMBER: E-501
REVISION: 0

Table 1 Dimensions, Weight, and Color

Dimensions	
Height	1450 mm
Width	1300 mm
Depth	700 mm
Weight	
RBS (standard equipped) without backup batteries	390 kg
Color	
Gray	Reference number: RAL 7035, glossy



1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

Indoor and Outdoor Cell Site Solutions for T-Mobile

T-Mobile · EMERSON Network Power

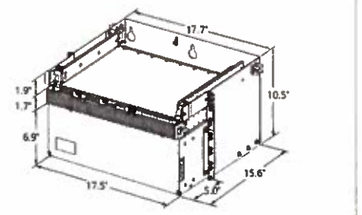
Technical Specifications

Electrical	Indoor Solution	Outdoor Solution
System Voltage, Nominal	120 VAC single phase	
Output Voltage	-42 VDC to -58 VDC	
System Capacity	19" 1 RU up to 10 A	19" 1 RU up to 8 A
Rectifier Capacity	0.5 kW @ 120 VAC	0.4 kW @ 120 VAC
DC Distribution	(1) wallmount 10 position GMT type fuse panel with (10) GMT fuses, up to 15 A	
Controller	SCU+ controller	
Physical Characteristics		
Framework Type	Relay rack	NetXtend™ Compact Enclosure
Available Space	8 RU 19" W	Up to 14 RU, 19" W
Dimensions (H x W x D)	DC power system: 1.7" x 19" x 12" Solution: 10.5" x 19" x 15.6"	Enclosure: 24" x 24" x 16" Battery tray: 22" W x 13" D
Mounting	Rack or wall mount	Wall or H-frame, pole mount (wall-mount kit included)
Weight, Equipped	System: 35.5 lb., w/out batteries Four (4) batteries: 36 lb. total	Enclosure: 64 lb., w/out batteries Four (4) batteries: 36 lb. total
Access	Front for batteries, control and distribution, rear for AC	Front
Environmental		
Climate System	Fan-cooled front to rear	Heat Exchanger
Operating Temp.	-40 °C to +75 °C*	-40 °C to +52 °C
Storage Temp.	-40 °C to +75 °C	-40 °C to +75 °C
Relative Humidity	0% to 95% non-condensing	100%
EMI/RFI	Conforms to FCC rules Part 15, Subpart B, Class B and EN55022 Class B, radiated and conducted	
Safety Compliance	cULus 60950 recognized NEBS Level 3 Compliance	cULus 60950 Recognized NEBS Level 3 Compliance Enclosure: cULus Listed GR-487

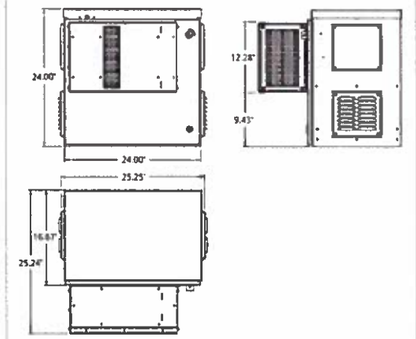
* See rectifier specification for any derating. Operating and storage temperatures for batteries installed in the battery cabinet are provided by the battery manufacturer.

Diagrams

Indoor Solution



Outdoor Solution



Ordering Information

Indoor Solution		Outdoor Solution	
S82136600SK010		F2013074	
Equipped with the following:		*Equipped with the following:*	
1 EA	NetSure™ 211 power system	1 EA	NetXtend™ Compact, NXC2416AAV1H05B83
2 EA	500 W rectifiers	1 EA	NetSure™ 211 power system
1 EA	Wall mount bracket	2 EA	500 W rectifiers
1 EA	Battery cabinet	1 EA	19" rack-mount, slide-out tray
1 EA	19" rack-mount, slide-out tray	1 EA	AC outlet mounting bracket
		2 EA	20 A, 120 VAC outlets
		1 EA	Wall-mounting kit
Accessories			
547681	4 EA, Battery, EnerSys NP12-12, 12 AH bat mod	547681	4 EA, Battery, EnerSys NP12-12,12 AH bat mod

EmersonNetworkPower.com/EnergySystems (North America)
EmersonNetworkPower.eu/EnergySystems (EMEA)

EMERSON. CONSIDER IT SOLVED.

09SORA-TMCSS / 1013

2 CABINET CONFIGURATION
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

RAN Template:	A&L Template:	Power System Template:
4Sec-6797DB2	4Sec-6797DB2_1xAIR+2QP	Custom

CTNL194A_Coverage Strategy_0.1_draft

Section 5 - RAN Equipment

Existing RAN Equipment
—— This section is intentionally blank. ——

Proposed RAN Equipment

Template: 4Sec-6797DB2

Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Ancillary Equipment
Baseband	DUW30 U2100; BB 5216 L2100 L1900 L700 L600	
Hybrid Cable System		Ericsson 6x12 HCS 'Select Length & AWG' (x4)
Multiplexer	XMU L2100 L1900 L700 L600	

RAN Scope of Work:

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

NOTE. THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	0

PowerGen 7500

DC Generator

Product Feature

- Reliable 52V DC backup solution
- Extremely simple installation
- Extended run times
- Automated exercising routines
- Intelligent control panel monitoring
- Minimal maintenance

www.deltaww.com

DELTA

Smarter. Greener. Together.

Specifications

1. General	
Construction	Aluminum enclosure with Pre-galvanized steel base
Dimensions (W x H x D)	27 x 40 x 42 in (686 x 1016 x 1067 mm)
Weight	350 lbs (159 kg) (without optional start batteries)
Mounting options	Pad-mount
Finish	Polyester Powder Paint (Gray)
Fuel options	Propane (LPG) or Natural Gas
Safety	UL2200 Listed
2. Environment	
Operating temperature	-20°C to +46°C (-4F to +115F)
Protection class	IP55 electronics enclosure
Altitude	< 4000m above mean sea level
Acoustics	76 dB(A) at 23 feet (7m)
3. Generator Specifications	
Output Power (W)	7500W
Output Voltage (V)	52V DC
Output Voltage Regulation	≤ ± 250mV
Engine	570cc Air Cooled Engine
DC Motor	Permanent Magnet Brushed DC Motor
RPM	3450 to 3750
Fuel consumption	1.2 lbs/hr @ 5kW, LPG
Gas inlet pressure	11 in-H2O (0.40 psi)
Output connections	¼"-20, 5/8" C-C threaded stud interface for 1/0 2-hole lugs
Output protection	200A Circuit Breaker
4. Batteries	
Site	Start-up from site batteries (50A@49V for <2min)
Start-up (optional)	Start-up with no energy from site batteries
5. Control and Interface	
Controls	Auto, Run, Stop
Alarms	Critical, Major, Minor alarm relays (Form-C)
Craft Interface	RJ45 Ethernet
Automated Exercise	Automated periodic exercising with weekend and holiday blackout
6. Ordering Information	
ESOG150-PCA01	PowerGen 7500 with Large Oil Reservoir
5100266100	2.5 gallon jug of Special Oil for PowerGen 7500 – Required for EPA emissions
3799485900-S	Battery Heater Kit
0999142400	Battery String, 48V, 100Ah

*All specifications are subject to change without prior notice.

Delta Group Website:
www.deltaww.com

Product Website:
www.deltapowersolutions.com

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Richardson (Texas) 75082
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DLDGASales@delta-corp.com

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105-0012, Japan

Russia
Delta Energy Systems LLC
Vereyskaya Plaza II, office 401
121357 Moscow, Russia

Europe
Delta Energy Systems (Switzerland) AG
Freiburgstrasse 251
3010 Bern-Bümpliz, Switzerland

EN_V4 /JT

1 GENERATOR SPEC.
SCALE: NOT TO SCALE

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SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	0

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

T-Mobile Existing Facility

Site ID: CTNL194A

ATC Dayville North
1375 North Road
Dayville, CT 06241

February 23, 2018

EBI Project Number: 6218000640

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	2.51%

EBI Consulting
environmental | engineering | due diligence

February 23, 2018

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

Emissions Analysis for Site: **CTNL194A – ATC Dayville North**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1375 North Road, Dayville, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 600 MHz & 700 MHz Bands are approximately 400 $\mu W/cm^2$ and 476 $\mu W/cm^2$ respectively, and the general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1375 North Road, Dayville, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 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 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 B66A/B2A** & **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **RFS APXVAA24-43-U-A20** for 600 MHz & 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B66A/B2A** 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 maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerline of the proposed antennas is **277 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.

EBI Consulting

environmental | engineering | due diligence

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 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	277	Height (AGL):	277	Height (AGL):	277	Height (AGL):	277
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%	0.46	Antenna B1 MPE%	0.46	Antenna C1 MPE%	0.46	Antenna D1 MPE%	0.46
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):	277	Height (AGL):	277	Height (AGL):	277	Height (AGL):	277
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):	2,559.48	ERP (W):	2,559.48	ERP (W):	2,559.48	ERP (W):	2,559.48
Antenna A2 MPE%	0.13	Antenna B2 MPE%	0.13	Antenna C2 MPE%	0.13	Antenna D2 MPE%	0.13
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 dBm / 13.55 dBm	Gain:	13.15 dBm / 13.55 dBm	Gain:	13.15 dBm / 13.55 dBm	Gain:	13.15 dBm / 13.55 dBm
Height (AGL):	277	Height (AGL):	277	Height (AGL):	277	Height (AGL):	277
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):	1299.01	ERP (W):	1299.01	ERP (W):	1299.01	ERP (W):	1299.01
Antenna A3 MPE%	0.15	Antenna B3 MPE%	0.15	Antenna C3 MPE%	0.15	Antenna D3 MPE%	0.15

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**0.73 %**
Verizon Wireless	0.74 %
Sprint	0.28 %
AT&T	0.76 %
Site Total MPE %:	**2.51%**

T-Mobile Sector A Total:	0.73 %
T-Mobile Sector B Total:	0.73 %
T-Mobile Sector C Total:	0.73 %
T-Mobile Sector D Total:	0.73 %
Site Total:	2.51%

T-Mobile Power Values per Sector

T-Mobile _Max Power Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	277	2.29	AWS - 2100 MHz	1000	0.23%
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	277	2.29	PCS - 1900 MHz	1000	0.23%
T-Mobile AWS - 2100 MHz UMTS	2	1,279.74	277	1.25	AWS - 2100 MHz	1000	0.13%
T-Mobile 600 MHz LTE	1	619.61	277	0.30	600 MHz	400	0.08%
T-Mobile 700 MHz LTE	1	679.39	277	0.33	700 MHz	467	0.07%
						Total:	**0.73%**

Summary

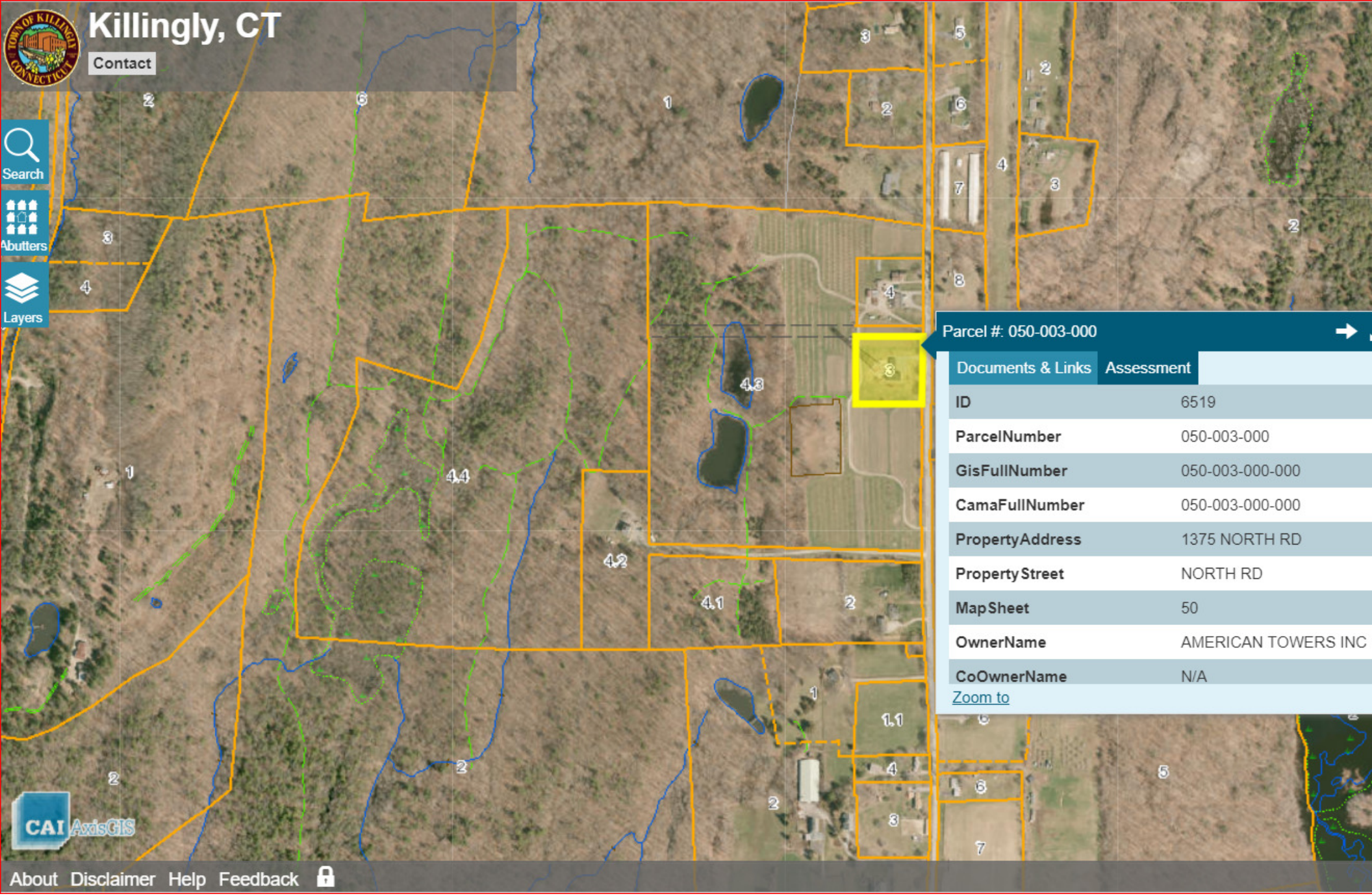
All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

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:	0.73%
Sector B:	0.73%
Sector C:	0.73%
Sector D:	0.73%
T-Mobile Per Sector Maximum:	0.73%
Site Total:	2.51%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **2.51%** 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.


Killingly, CT
Contact
Search
Abutters
Layers
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Documents & Links
Assessment
ID 6519
ParcelNumber 050-003-000
GisFullNumber 050-003-000-000
CamaFullNumber 050-003-000-000
PropertyAddress 1375 NORTH RD
PropertyStreet NORTH RD
MapSheet 50
OwnerName AMERICAN TOWERS INC
CoOwnerName N/A
Zoom to
CAI AxisGIS
About Disclaimer Help Feedback

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COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD | **Map ID: 000072** | **Class: Communication Towers** | Card: 1 of 1 | Printed: April 27, 2017

CURRENT OWNER

AMERICAN TOWERS INC
PO BOX 723597
ATLANTA GA 31139

GENERAL INFORMATION

Living Units	
Neighborhood	117
Alternate Id	50-3
Vol / Pg	772/5
District	4
Zoning	RURAL DEVELOPMENT
Class	COMMERCIAL

Property Notes

AT&T TRANSFER STATION

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	2.0700			49,870

Total Acres: 2.07
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	34,930	49,900	49,900	0	0
Building	188,160	268,800	268,800	0	0
Total	223,090	318,700	318,700	0	0

Value Flag COST APPROACH
Gross Building:
Manual Override Reason
Base Date of Value 10/01/2013
Effective Date of Value 10/01/2017

Entrance Information

Date	ID	Entry Code	Source
05/17/12	DB	Viewed	Other
05/16/12	DB	Viewed	Other
12/11/06	DH	Exterior	Other

Permit Information

Date Issued	Number	Price	Purpose		% Complete
11/30/12	22122	25,000	BLDG	Add 13 New Antennas & 6 Rrh'S (	996
11/12/10	20889	12,000	52 CADD	Build Out Of Rm For Cellular Equip	100
08/31/10	20753	50,000	52 CADD	Addn 6 Antennas & Assoc Equip I	100
06/07/07	18646	25,000	52 CADD	Install Antennas	100
08/27/98	13234	4,000	BLDG	Nvc Tank Out	100

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
02/16/00	186,528	Land & Bldg	Love And Affection Sale	772/5		AMERICAN TOWERS INC

Inspection Witnessed By _____

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COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD	Parcel Id: 000072	Class: Communication Towers	Card: 1 of 1	Printed: April 27, 2017

Building Information

Year Built/Eff Year	1960 /
Building #	1
Structure Type	Radio/Tv Transmitte
Identical Units	1
Total Units	
Grade	B-
# Covered Parking	
# Uncovered Parking	
DBA	AMERICAN TOWER

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident	Units	Line	Type	+/-	Meas1	Meas2	# Stops	Ident	Units

Interior/Exterior Information

Line	Level	From	- To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01		100	2,048	158	Light Manufacturin	16	Concrete Bl	Wood Frame/Joist/B	Normal	None	None	Normal	4	4
2	01	01		100	1,575	151	Light Manufacturin	12	Concrete Bl	Wood Frame/Joist/B	Normal	None	None	Normal	4	4

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	2,048	Light Manufacturing	60		73,210
2	1,575	Light Manufacturing	60		54,770

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy	Fun	Value
1	Fence Chai	1960	6	240	1	1,440	C	3	3	1,780
2	Asph Pav	1960	1	3,700	1	3,700	C	3	3	4,000
3	Tow er Cell	1960	1	300	1	300	C	3	3	135,000

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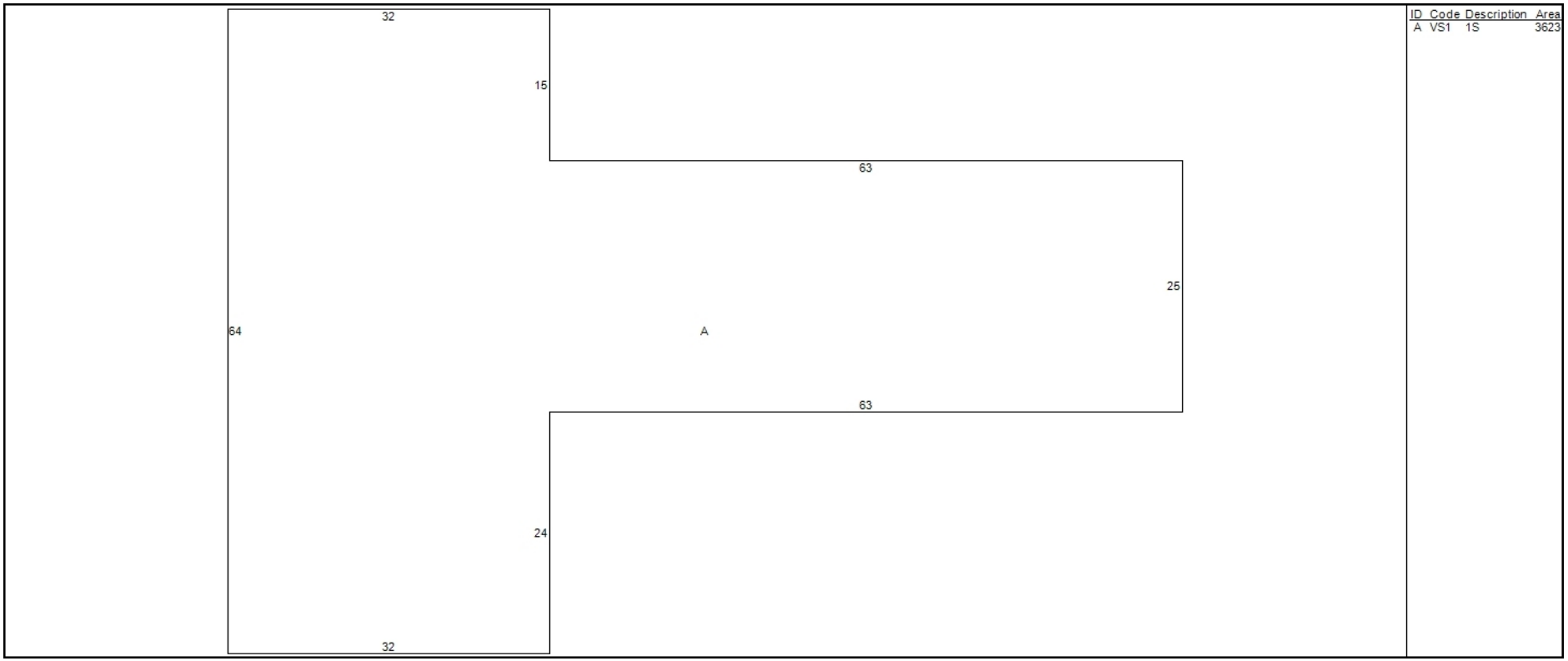
COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD	Parcel Id: 000072	Class: Communication Towers	Card: 1 of 1	Printed: April 27, 2017



Addtional Property Photos

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COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD	Parcel Id: 000072	Class: Communication Towers	Card: 1 of 1	Printed: April 27, 2017

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
07	S		Light Manuf/Warehouse	0	3,623						0							

Apartment Detail - Building 1 of 1

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 1 of 1

Total Gross Building Area	3,623
Replace, Cost New Less Depr	127,980
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	127,980
Value per SF	35.32

Notes - Building 1 of 1

Income Summary (Includes all Building on Parcel)

Total Net Income	
Capitalization Rate	0.000000
Sub total	
Residual Land Value	
Final Income Value	
Total Gross Rent Area	3,623
Total Gross Building Area	3,623