COHEN and WOLF P.C.
ATTORNEYS AT LAW

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport
WRITER'S DIRECT DIAL: (203) 337-4157
E-Mail Address: jkohler@cohenandwolf.com

August 22, 2014

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification
T-Mobile location
Site ID CT11126F
231 Kettletown Rd., Southbury, Connecticut

Dear Attorney Bachman:

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, T-Mobile owns the existing monopole tower and related facility located at 231 Kettletown Rd., Southbury, Connecticut (Latitude: 41.47127232 Longitude: -73.2050978). T-Mobile intends to add three antennas and related equipment at this existing telecommunications facility in Southbury ("Southbury Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the First Selectman, Ed Edelson. The Town of Southbury is also the property owner.

The existing Southbury Facility consists of a 196 foot tall monopole tower.[1] T-Mobile plans to add three antennas at a centerline of 193 feet. (See the plans revised to July 30, 2014 attached hereto as Exhibit A). T-Mobile will also will also replace its equipment cabinet on the existing concrete pad, install 3 RRU's on a H frame, and install coax cable. The existing Southbury Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated August 12, 2014 and attached hereto as Exhibit B.

The planned modifications to the Southbury Facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

[1] While the online docket for the Connecticut Siting Council does not provide a docket or petition number for the approval of this structure, it does reference this structure in connection with requests for orders captioned TS-SPRINT-130-991103 and TS-SCLP-130-991105.

1. The proposed modification will not increase the height of the tower. T-Mobile's replacement antennas will be installed at a centerline of 193 feet, below T-Mobile antennas already in place at a 195 foot elevation. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The proposed modifications will not require an extension of the site boundaries. T-Mobile's equipment will be located entirely within the existing compound and equipment pad as shown on Sheet 2 of Exhibit A.

3. The proposed modification to the Southbury Facility will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated August 21, 2014, T-Mobile's operations would add 2.70% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 31.07% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the Southbury Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement by the Council of this proposed exempt modification, T-Mobile shall commence construction approximately sixty days from the date of the Council's notice of acknowledgement.

Sincerely,

Julie D. Kohler, Esq.

cc: Town of Southbury, First Selectman Ed Edelson
Northeast Site Solutions, Sheldon J. Freincle

T-MOBILE USA, INC.
12920 SE 38TH STREET
BELLEVUE, WA 98006
(425) 378-4000

2919724
8/19/2014
2000011160

Invoice Number	Inv. Date	Description	Deductions	Voucher	Amount Paid
CT11126F-1	8/14/2014	Exempt Mod Filing Fees	0.00	1101616595	625.00

DO NOT ACCEPT THIS CHECK UNLESS THE FACE FADES FROM BLACK TO RED WITH LOGO IN BACKGROUND. THE BACK OF THIS DOCUMENT HAS HEAT-SENSITIVE INK THAT CHANGES FROM ORANGE TO YELLOW.
COPYBAN CAPTURE ANTI-FRAUD PROTECTION

T-MOBILE USA, INC.
12920 SE 38th Street
Bellevue, WA 98006
(425) 378-4000

The Bank of New York Mellon
Pittsburgh, PA
60-160/433

2919724
8/19/2014
VID 2000011160

PAY $625 00
SIX TWO FIVE CTS CTS

*$625.00

Six Hundred Twenty Five Dollars Only*******

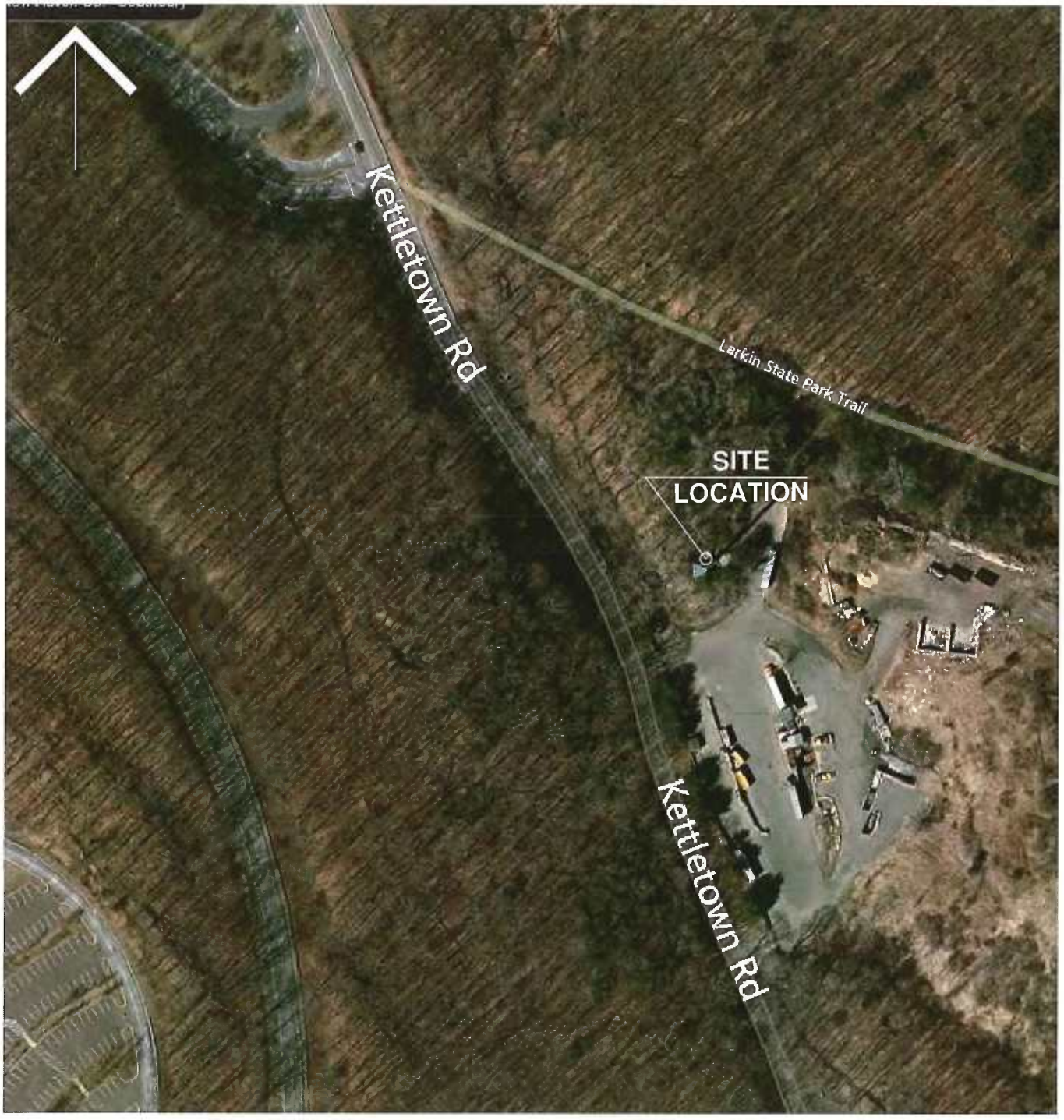
To The Order Of
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN, CT 06051

VOID AFTER 180 DAYS
THIS CHECK CLEARS THROUGH POSITIVE PAY

⑈000291972⑈ ⑆043301601⑆ 013⑈8430⑈

THE ORIGINAL DOCUMENT HAS A REFLECTIVE WATERMARK ON THE BACK. HOLD AT AN ANGLE TO VIEW, DO NOT CASH IF MISSING.

EXHIBIT A



KEY MAP
N.T.S.

1
LE-1

ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE'S STRUCTURAL & RF ENGINEERS. LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

CONFIGURATION

704G

SUBMITTALS	
LE REV A	07.30.14

ATLANTIS GROUP
1340 Centre Street
Suite 212
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CT11126F

SITE NAME:
SOUTHBURY RECYCLING FACILITY

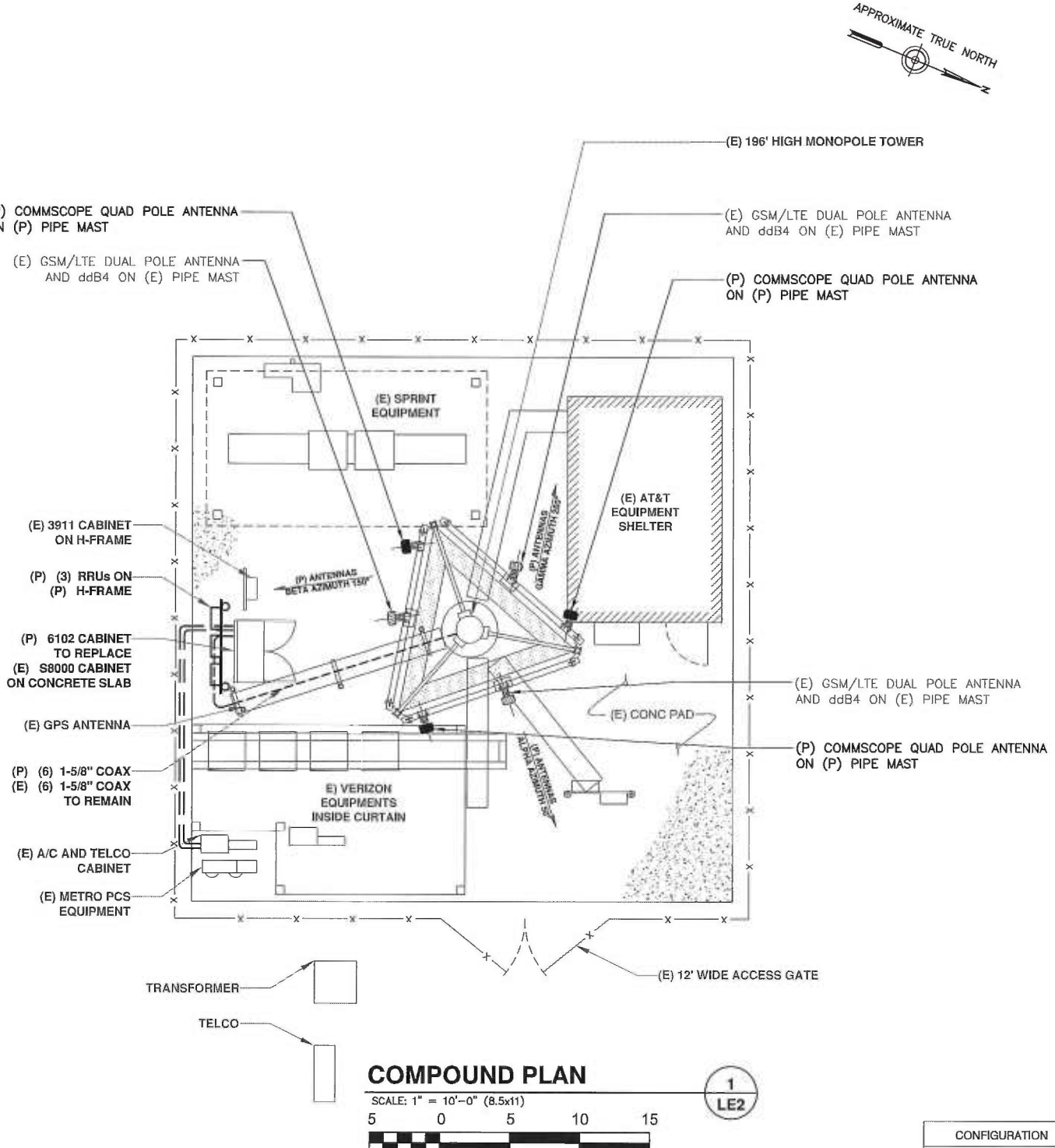
SITE ADDRESS:
231 KETTLE TOWN ROAD
SOUTHBURY , CT 06488

NORTHEAST SITE SOLUTIONS
54 MAIN STREET, UNIT 3
STURBRIDGE, MA 01566
(508) 434-5237

FOR

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

DRAWN BY: FG | CHECKED BY:SM



COMPOUND PLAN

1 LE2

SCALE: 1" = 10'-0" (8.5x11)

5 0 5 10 15

CONFIGURATION

704G

SUBMITTALS	
LE REV A	07.30.14

ATLANTIS GROUP
1340 Centre Street
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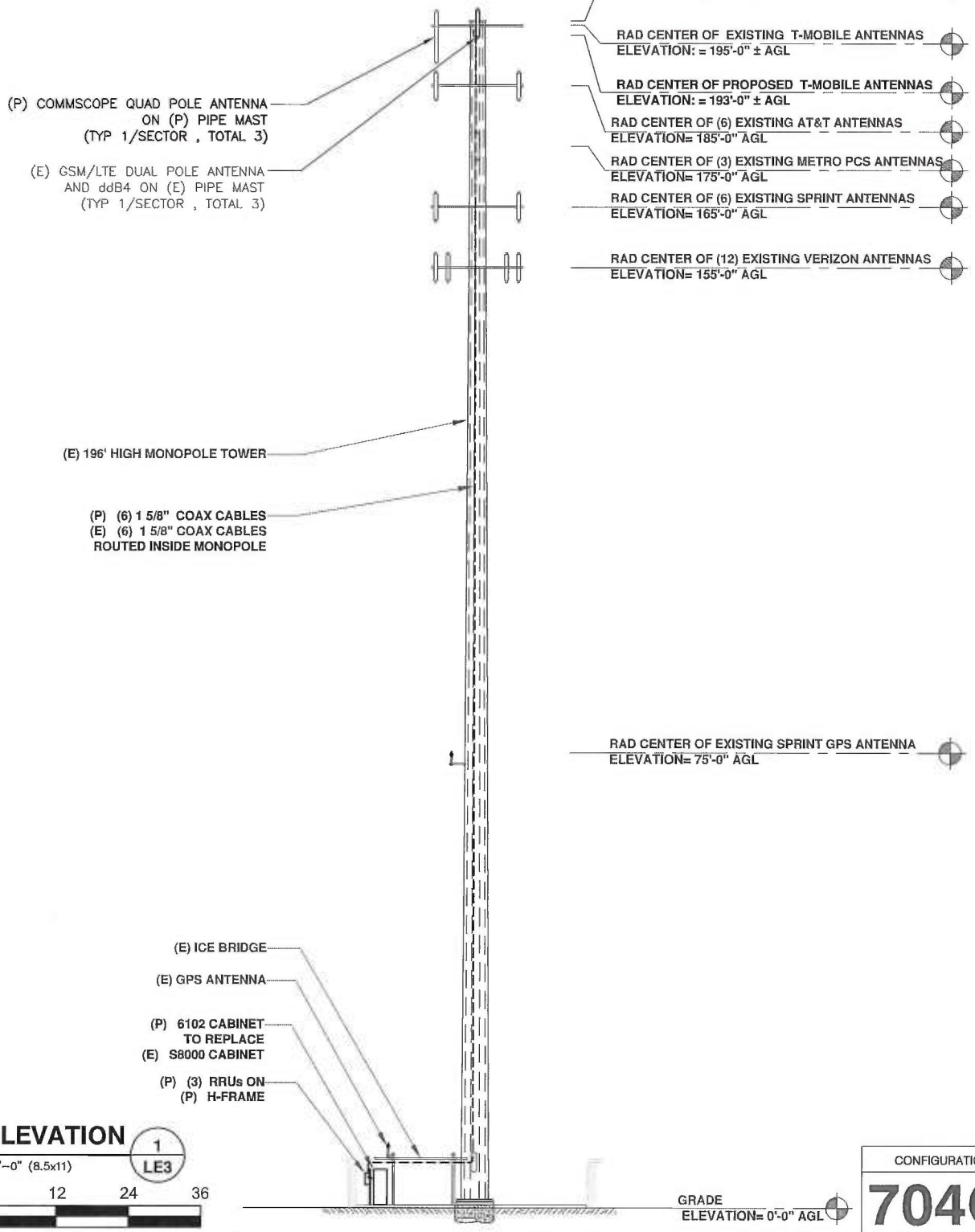


EAST ELEVATION

1 / LE3

SCALE: 1" = 24'-0" (8.5x11)

12 0 12 24 36

CONFIGURATION

704G

SUBMITTALS	
LE REV A	07.30.14

ATLANTIS GROUP
1340 Centre Street
Suite 212
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CT11126F

SITE NAME:
SOUTHBURY RECYCLING FACILITY

SITE ADDRESS:
231 KETTLE TOWN ROAD
SOUTHBURY , CT 06488

NORTHEAST SITE SOLUTIONS
54 MAIN STREET, UNIT 3
STURBRIDGE, MA 01566
(508) 434-5237

FOR

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

DRAWN BY: FG | CHECKED BY:SM

EXHIBIT B

T-Mobile Towers
12920 SE 38th Street
Bellevue, WA 98006
(425) 383-3978

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
Chris Scheks
520 South Main Street, Suite 2531
Akron, OH 44311
(206) 204-7399
cscheks@gpdgroup.com

GPD# 2014790.88
August 12, 2014

STRUCTURAL ANALYSIS REPORT

T-MOBILE DESIGNATION:	**Site Number:**	**CT11126F**
	Site Name:	**SOUTHBURY/I-84 X15/BAGL**
	T-Mobile Project:	**Network Modification**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F & 2013 CTBC** **85-mph fastest-mile with 0" ice** **74-mph fastest-mile with 1/2" ice**
SITE DATA:		**231 Kettleton Rd, Southbury, CT 06488, New Haven County** **Latitude 41° 28' 16.320" N, Longitude 73° 12' 20.020" W** **196' Modified Pirod Monopole**

Mr. Kenny Fann,

GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	92.0%	Pass
Foundation Ratio with Proposed Equipment:	73.6%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and T-Mobile Towers. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,

John N. Kabak, P.E.
Connecticut #: PEN.0028336

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by T-Mobile to T-Mobile Towers. This report was commissioned by Mr. Kenny Fann of T-Mobile Towers.

Modifications designed by GPD (Project #: 2010293.91, dated 9/14/10) have been considered in this analysis. Modifications included the installation of stiffener plates across flange connections at 20' and 40'.

Modifications designed by GPD (Project #: 2013792.15 Rev 1, dated 10/1/13) have been considered in this analysis. Modifications consisted of reinforcing the pole from 0'-139', adding stiffener plates across the flanges from 20'-120', adding additional anchor rods, and installing a foundation collar with piles to the existing foundation.

The proposed coax shall be installed internal to the monopole in order for the results of this analysis to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	92.0%	Pass
Flanges	86.8%	Pass
Anchor Rods	91.1%	Pass
Base Plate	88.3%	Pass
Foundation	73.6%	Pass

ANALYSIS METHOD

tnxTower (Version 6.1.4.1), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Structural Analysis Worksheet	CT11126F TMO NET MOD SAW, dated 7/22/2014	T-Mobile
Tower Design	PiROD, File #: A-115080, dated 3/26/1999	T-Mobile
Foundation Design	PiROD, File #: A-115080, dated 3/26/1999	T-Mobile
Geotechnical Report	Dr. Clarence Welti, dated 10/7/1998	T-Mobile
Modification Drawings	GPD Project #: 2010293.91, dated 9/14/2010	GPD
Modification Drawings	GPD Project #: 2013792.15 Rev. 1, dated 10/1/2013	GPD
Previous Structural Analysis	GPD Project #: 2014790.50, dated 4/25/2014	GPD

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. The locations of the coax are assumed. If the coax layout differs in the field, contact the engineer immediately. See Appendix C for the coax layout
12. The proposed coax shall be installed internal to the monopole in order for the results of this analysis to be valid.
13. All existing loading was obtained from the most recent structural analysis by GPD (Project #: 2014790.50, dated 4/25/2014) and is assumed to be accurate.
14. The proposed loading is taken from the provided Structural Analysis Worksheet titled: CT11126F TMO NET MOD SAW, dated 7/22/2014, and is assumed to be accurate.
15. Appurtenance azimuths have not been provided and have been assumed.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Rigorous Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	SOUTHBURY/ I-84 X15/ BAGL
Site Number	CT11126F
Proposed Carrier	T-Mobile
Date of Analysis	August 12, 2014
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	196'	
Tower Manufacturer	PIROD	
Tower Model	n/a	
Tower Design	PIROD, File #: A-115080	3/26/1999
Foundation Design	PIROD, File #: A-115080	3/26/1999
Geotech Report	Dr. Clarence Welti	10/7/1998
Modification Drawings	GPD Project #: 2010293.91	9/14/2010
Modification Drawings	GPD Project #: 2013792.15 Rev. 1	10/1/2013
Previous Structural Analysis	GPD Project #: 2014790.50	4/25/2014
Foundation Mapping	n/a	

Design Parameters

Design Code Used	TIA/EIA-222-F 2006 IBC & 2013 CTBC
Location of Tower (County, State)	New Haven, CT
Basic Wind Speed (mph)	85 (fastest-mile)
Ice Thickness (in)	0.5
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Modifications designed by GPD (Project #: 2010293.91, dated 9/14/10) have been considered in this analysis.

Modifications designed by GPD (Project #: 2013792.15, dated 7/29/13) have been considered in this analysis.

Analysis Results (% Maximum Usage)

Existing/Reserved + Proposed Condition	
Tower (%)	92.0%
Tower Base (%)	91.1%
Foundation (%)	73.6%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Pole	42
Flange Plate	36
Flange Bolts	A325
Base Plate	36
Anchor Rods	A354-BD

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
T-Mobile	195	195	9	Panel	Ericsson	AIR 21		1	Unknown	LP Platform	12	Unknown	1-5/8"	Internal
T-Mobile	195	195	3	Panel	Ericsson	AIR 33				on the same mount	1	Hybrid	1-5/8"	Internal
T-Mobile	195	195	3	TMA	RFS	ATMAA1412D				on the same mount				
T-Mobile	195	195	1	DC Box	Raycap	DC6-48-60-18-8F				on the same mount				
AT&T Mobility	185	185	3	Panel	Powerwave	7770		1	Unknown	LP Platform	12	Unknown	1-1/4"	Internal
AT&T Mobility	185	185	2	Panel	KMW	AM-X-CD-16-65-00T RET				on the same mount	2	DC Cable	3/8"	Internal
AT&T Mobility	185	185	1	Panel	KMW	AM-X-CD-17-65-00T-RET				on the same mount	1	Fiber Cable	7/16"	Internal
AT&T Mobility	185	185	6	TMA	Powerwave	TT19-08B9111-001				on the same mount				
AT&T Mobility	185	185	6	Diplexer	Powerwave	LGP21901				on the same mount				
AT&T Mobility	185	185	6	RRU	Ericsson	RRUS 11				Flush mounted				
AT&T Mobility	185	185	1	Raycap	DC Box	DC6-48-60-18-8F				on the same mount				
Pocket	175	175	3	Panel	RFS	APXV18-206517S-C				Flush Mounted	6	Unknown	1-5/8"	External
Sprint	165	165	9	Panel	Decibel	DB980E (90E-M)		1	Unknown	LP Platform	12	Unknown	1-5/8"	Internal
Verizon Wireless	155	155	6	Panel	Commscope	HBXX 6516DS		1	Unknown	LP Platform	12	Unknown	1-5/8"	External
Verizon Wireless	155	155	2	Panel	Swedcom	SLCP2X6014				on the existing mount				
Verizon Wireless	155	155	4	Panel	Amphenol	BXA 70063/4CF				on the existing mount				
Verizon Wireless	155	155	6	Diplexers	Amphenol	DPX 021				on the existing mount				
Verizon Wireless	155	155	6	Diplexers	RFS	FD9R6004/2C-3L				on the existing mount				
T-Mobile	91	91	1	Dish	Unknown	2' MW Dish		1	Unknown	MW Collar Mount	1	Unknown	1-5/8"	Internal
Sprint	75	75	1	Panel	Potel	TMG-HR-26N GPS		1	Unknown	Pipe Mount	1	Unknown	7/8"	External

Note: T-Mobile's existing/reserved loading configuration shall be replaced by the proposed loading configuration. All other existing/reserved equipment loading shall remain as shown.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
T-Mobile	195	195	3	Panel	Andrew	RR90-17-02DP		1	Unknown	LP Platform	12	Unknown	1-5/8"	Internal
T-Mobile	195	195	3	Panel	Commscope	LNX-6515DS-VTM				on the same mount	1	Hybrid	1-5/8"	Internal
T-Mobile	195	195	3	Panel	Ericsson	AIR 33				on the same mount				
T-Mobile	195	195	3	TMA	Ericsson	KRY112 71				on the same mount				
T-Mobile	195	195	1	DC Box	Raycap	DC4-48-60-8-20F				on the same mount				
T-Mobile	91	91	1	Dish	Unknown	2' MW Dish		1	Unknown	MW Collar Mount	1	Unknown	1-5/8"	Internal

Note: The proposed coax shall be installed internal to the monopole in order for the results of this analysis to be valid.

APPENDIX B

tnxTower Output File

Tower Input Data

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

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* *ft*	*Total Number*		C_AA_A *ft²/ft*	*Weight* *plf*
PiROD Climbing Rungs	C	No	CaAa (Out Of Face)	196.00 - 8.00	1	No Ice	0.05	3.80
						1/2" Ice	0.13	5.44
						1" Ice	0.20	7.08
						2" Ice	0.36	10.36
						4" Ice	0.67	16.92
Safety Line 3/8	C	No	CaAa (Out Of Face)	196.00 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	195.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
1-5/8" Hybrid Cable	C	No	Inside Pole	195.00 - 8.00	1	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF6-50A (1-1/4 FOAM)	A	No	Inside Pole	185.00 - 8.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
100266(7/16")	A	No	Inside Pole	185.00 - 8.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
						2" Ice	0.00	0.08
						4" Ice	0.00	0.08
3/8" DC Cable	A	No	Inside Pole	185.00 - 8.00	2	No Ice	0.00	0.10
						1/2" Ice	0.00	0.10
						1" Ice	0.00	0.10
						2" Ice	0.00	0.10

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						4" Ice	0.00	0.10
LDF7-50A (1-5/8 FOAM)	A	No	CaAa (Out Of Face)	175.00 - 8.00	1	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A (1-5/8 FOAM)	A	No	CaAa (Out Of Face)	175.00 - 8.00	5	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF7-50A (1-5/8 FOAM)	A	No	Inside Pole	165.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	B	No	CaAa (Out Of Face)	155.00 - 8.00	2	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A (1-5/8 FOAM)	B	No	CaAa (Out Of Face)	155.00 - 8.00	10	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	91.00 - 8.00	1	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF5-50A (7/8 FOAM)	C	No	CaAa (Out Of Face)	75.00 - 8.00	1	No Ice	0.00	0.33
						1/2" Ice	0.00	1.30
						1" Ice	0.00	2.88
						2" Ice	0.00	7.88
						4" Ice	0.00	25.20
4" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	22.00 - 18.00	2	No Ice	0.00	17.01
						1/2" Ice	0.00	18.19
						1" Ice	0.00	19.71
						2" Ice	0.00	23.80
						4" Ice	0.00	36.11
4" x 1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	22.00 - 18.00	2	No Ice	0.00	17.01
						1/2" Ice	0.00	18.19
						1" Ice	0.00	19.71
						2" Ice	0.00	23.80
						4" Ice	0.00	36.11
4" x 1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	22.00 - 18.00	2	No Ice	0.00	17.01
						1/2" Ice	0.00	18.19
						1" Ice	0.00	19.71
						2" Ice	0.00	23.80
						4" Ice	0.00	36.11
4" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	42.00 - 38.00	2	No Ice	0.00	17.01
						1/2" Ice	0.00	18.19
						1" Ice	0.00	19.71
						2" Ice	0.00	23.80
						4" Ice	0.00	36.11
4" x 1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	42.00 - 38.00	2	No Ice	0.00	17.01
						1/2" Ice	0.00	18.19
						1" Ice	0.00	19.71
						2" Ice	0.00	23.80
						4" Ice	0.00	36.11

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
4" x 1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	42.00 - 38.00	2	No Ice	0.00	17.01
						1/2" Ice	0.00	18.19
						1" Ice	0.00	19.71
						2" Ice	0.00	23.80
						4" Ice	0.00	36.11
6" x 1-1/2" Mod Plate	A	No	CaAa (Out Of Face)	24.00 - 16.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	B	No	CaAa (Out Of Face)	24.00 - 16.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	C	No	CaAa (Out Of Face)	24.00 - 16.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	A	No	CaAa (Out Of Face)	44.00 - 36.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	B	No	CaAa (Out Of Face)	44.00 - 36.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	C	No	CaAa (Out Of Face)	44.00 - 36.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	A	No	CaAa (Out Of Face)	64.00 - 56.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	B	No	CaAa (Out Of Face)	64.00 - 56.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18
6" x 1-1/2" Mod Plate	C	No	CaAa (Out Of Face)	64.00 - 56.00	2	No Ice	0.00	30.63
						1/2" Ice	0.00	32.57
						1" Ice	0.00	34.51
						2" Ice	0.00	38.40
						4" Ice	0.00	46.18

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pirod 16.5' LP Platform	C	None		0.0000	195.00	No Ice	20.80	20.80	1.80
						1/2" Ice	28.10	28.10	2.07
						1" Ice	35.40	35.40	2.33
						2" Ice	50.00	50.00	2.86
						4" Ice	79.20	79.20	3.93
AIR 33 w/ Mount Pipe	A	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	7.13	6.42	0.14
						1/2" Ice	7.93	7.65	0.20
						1" Ice	8.66	8.74	0.27
						2" Ice	10.00	10.60	0.44
						4" Ice	12.84	14.54	0.91
AIR 33 w/ Mount Pipe	B	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	7.13	6.42	0.14
						1/2" Ice	7.93	7.65	0.20
						1" Ice	8.66	8.74	0.27
						2" Ice	10.00	10.60	0.44
						4" Ice	12.84	14.54	0.91
AIR 33 w/ Mount Pipe	C	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	7.13	6.42	0.14
						1/2" Ice	7.93	7.65	0.20
						1" Ice	8.66	8.74	0.27
						2" Ice	10.00	10.60	0.44
						4" Ice	12.84	14.54	0.91
RR90-17-02DP w/ Mount Pipe	A	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	4.59	3.34	0.03
						1/2" Ice	5.09	4.11	0.07
						1" Ice	5.58	4.81	0.12
						2" Ice	6.59	6.25	0.22
						4" Ice	8.73	9.33	0.56
RR90-17-02DP w/ Mount Pipe	B	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	4.59	3.34	0.03
						1/2" Ice	5.09	4.11	0.07
						1" Ice	5.58	4.81	0.12
						2" Ice	6.59	6.25	0.22
						4" Ice	8.73	9.33	0.56
RR90-17-02DP w/ Mount Pipe	C	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	4.59	3.34	0.03
						1/2" Ice	5.09	4.11	0.07
						1" Ice	5.58	4.81	0.12
						2" Ice	6.59	6.25	0.22
						4" Ice	8.73	9.33	0.56
LNX-6515DS-VTM w/ mount pipe	A	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	11.43	9.35	0.08
						1/2" Ice	12.05	10.67	0.16
						1" Ice	12.67	11.70	0.25
						2" Ice	14.02	13.80	0.47
						4" Ice	17.03	18.21	1.08
LNX-6515DS-VTM w/ mount pipe	B	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	11.43	9.35	0.08
						1/2" Ice	12.05	10.67	0.16
						1" Ice	12.67	11.70	0.25
						2" Ice	14.02	13.80	0.47
						4" Ice	17.03	18.21	1.08
LNX-6515DS-VTM w/ mount pipe	C	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	11.43	9.35	0.08
						1/2" Ice	12.05	10.67	0.16
						1" Ice	12.67	11.70	0.25
						2" Ice	14.02	13.80	0.47
						4" Ice	17.03	18.21	1.08
KRY 112 71	A	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice	0.68	0.45	0.01
						1/2" Ice	0.80	0.56	0.02
						1" Ice	0.93	0.68	0.03
						2" Ice	1.22	0.94	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	1.90	1.57	0.11
KRY 112 71	B	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.68 0.80 0.93 1.22 1.90	0.45 0.56 0.68 0.94 1.57	0.01 0.02 0.03 0.04 0.11
KRY 112 71	C	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.68 0.80 0.93 1.22 1.90	0.45 0.56 0.68 0.94 1.57	0.01 0.02 0.03 0.04 0.11
DC4-48-60-8-20F	A	From Centroid-Leg	3.94 -0.69 0.00	-10.0000	195.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.67 1.85 2.03 2.42 3.31	0.69 0.81 0.95 1.24 1.94	0.01 0.02 0.03 0.07 0.17
PiROD 13' Low Profile Platform (Monopole)	C	None		0.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	15.70 20.10 24.50 33.30 50.90	15.70 20.10 24.50 33.30 50.90	1.30 1.76 2.23 3.16 5.02
7770.00 w/ 6' Mount Pipe	A	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.22 6.77 7.30 8.38 10.69	4.35 5.20 5.92 7.41 10.76	0.06 0.11 0.16 0.30 0.68
7770.00 w/ 6' Mount Pipe	B	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.22 6.77 7.30 8.38 10.69	4.35 5.20 5.92 7.41 10.76	0.06 0.11 0.16 0.30 0.68
7770.00 w/ 6' Mount Pipe	C	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.22 6.77 7.30 8.38 10.69	4.35 5.20 5.92 7.41 10.76	0.06 0.11 0.16 0.30 0.68
AM-X-CD-16-65-00T-RET w/ 2" x 54" mount pipe	A	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	5.67 6.39 7.12 8.65 12.02	0.06 0.12 0.19 0.35 0.78
AM-X-CD-16-65-00T-RET w/ 2" x 54" mount pipe	B	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	5.67 6.39 7.12 8.65 12.02	0.06 0.12 0.19 0.35 0.78
AM-X-CD-17-65-00T-RET w/ Mount Pipe	C	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.31 11.93 12.55 13.88 16.88	9.10 10.52 11.60 13.80 18.41	0.11 0.19 0.29 0.51 1.13
(2) TT19-08BP111-001	A	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.64 0.76 0.88 1.14 1.78	0.52 0.62 0.74 0.99 1.59	0.02 0.02 0.03 0.05 0.12
(2) TT19-08BP111-001	B	From	3.76	-20.0000	185.00	No Ice	0.64	0.52	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		Centroid-Leg	-1.37 0.00			1/2" Ice	0.76	0.62	0.02
						1" Ice	0.88	0.74	0.03
						2" Ice	1.14	0.99	0.05
						4" Ice	1.78	1.59	0.12
(2) TT19-08BP111-001	C	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	0.64	0.52	0.02
						1/2" Ice	0.76	0.62	0.02
						1" Ice	0.88	0.74	0.03
						2" Ice	1.14	0.99	0.05
						4" Ice	1.78	1.59	0.12
(2) LGP21901	A	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	0.27	0.18	0.01
						1/2" Ice	0.34	0.25	0.01
						1" Ice	0.43	0.32	0.01
						2" Ice	0.62	0.49	0.02
						4" Ice	1.10	0.94	0.07
(2) LGP21901	B	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	0.27	0.18	0.01
						1/2" Ice	0.34	0.25	0.01
						1" Ice	0.43	0.32	0.01
						2" Ice	0.62	0.49	0.02
						4" Ice	1.10	0.94	0.07
(2) LGP21901	C	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	0.27	0.18	0.01
						1/2" Ice	0.34	0.25	0.01
						1" Ice	0.43	0.32	0.01
						2" Ice	0.62	0.49	0.02
						4" Ice	1.10	0.94	0.07
(2) RRUS-11	A	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	3.25	1.37	0.05
						1/2" Ice	3.49	1.55	0.07
						1" Ice	3.74	1.74	0.09
						2" Ice	4.27	2.14	0.15
						4" Ice	5.43	3.04	0.31
(2) RRUS-11	B	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	3.25	1.37	0.05
						1/2" Ice	3.49	1.55	0.07
						1" Ice	3.74	1.74	0.09
						2" Ice	4.27	2.14	0.15
						4" Ice	5.43	3.04	0.31
(2) RRUS-11	C	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	3.25	1.37	0.05
						1/2" Ice	3.49	1.55	0.07
						1" Ice	3.74	1.74	0.09
						2" Ice	4.27	2.14	0.15
						4" Ice	5.43	3.04	0.31
DC6-48-60-18-8F Surge Suppression Unit	C	From Centroid-Leg	3.76 -1.37 0.00	-20.0000	185.00	No Ice	1.47	1.47	0.02
						1/2" Ice	1.67	1.67	0.04
						1" Ice	1.88	1.88	0.06
						2" Ice	2.33	2.33	0.11
						4" Ice	3.38	3.38	0.24
Valmont Light Duty Tri-Bracket (1)	C	None		0.0000	175.00	No Ice	1.76	1.76	0.05
						1/2" Ice	2.08	2.08	0.07
						1" Ice	2.40	2.40	0.09
						2" Ice	3.04	3.04	0.12
						4" Ice	4.32	4.32	0.18
APXV18-206517S-C w/ Mount Pipe	A	From Leg	0.50 0.00 0.00	-10.0000	175.00	No Ice	5.17	4.46	0.05
						1/2" Ice	5.62	5.39	0.09
						1" Ice	6.08	6.20	0.14
						2" Ice	7.02	7.87	0.26
						4" Ice	9.12	11.40	0.64
APXV18-206517S-C w/ Mount Pipe	B	From Leg	0.50 0.00 0.00	-10.0000	175.00	No Ice	5.17	4.46	0.05
						1/2" Ice	5.62	5.39	0.09
						1" Ice	6.08	6.20	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	7.02	7.87	0.26
						4" Ice	9.12	11.40	0.64
APXV18-206517S-C w/ Mount Pipe	C	From Leg	0.50 0.00 0.00	-10.0000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.17 5.62 6.08 7.02 9.12	4.46 5.39 6.20 7.87 11.40	0.05 0.09 0.14 0.26 0.64
MTS 12.5' LP Platform	C	None		0.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.66 18.87 23.08 31.50 48.34	14.66 18.87 23.08 31.50 48.34	1.25 1.48 1.71 2.18 3.10
(3) DB980E (90E-M) w/ Mount Pipe	A	From Centroid-Face	3.94 -0.69 0.00	-10.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.04 4.50 4.95 5.87 8.05	3.62 4.48 5.22 6.74 10.00	0.03 0.07 0.11 0.22 0.55
(3) DB980E (90E-M) w/ Mount Pipe	B	From Centroid-Face	3.94 -0.69 0.00	-10.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.04 4.50 4.95 5.87 8.05	3.62 4.48 5.22 6.74 10.00	0.03 0.07 0.11 0.22 0.55
(3) DB980E (90E-M) w/ Mount Pipe	C	From Centroid-Face	3.94 -0.69 0.00	-10.0000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.04 4.50 4.95 5.87 8.05	3.62 4.48 5.22 6.74 10.00	0.03 0.07 0.11 0.22 0.55
PiROD 15' Low Profile Platform (Monopole)	C	None		0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	17.30 22.10 26.90 36.50 55.70	17.30 22.10 26.90 36.50 55.70	1.50 2.03 2.56 3.62 5.74
(2) HBXX-6516DS w/Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.24 6.74 7.24 8.27 10.46	4.59 5.31 6.02 7.53 10.75	0.05 0.10 0.16 0.29 0.68
(2) HBXX-6516DS w/Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.24 6.74 7.24 8.27 10.46	4.59 5.31 6.02 7.53 10.75	0.05 0.10 0.16 0.29 0.68
(2) HBXX-6516DS w/Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.24 6.74 7.24 8.27 10.46	4.59 5.31 6.02 7.53 10.75	0.05 0.10 0.16 0.29 0.68
(2) BXA-70063-4CF-EDIN-6 w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.40 5.84 6.30 7.24 9.26	3.69 4.29 4.91 6.26 9.29	0.03 0.07 0.12 0.23 0.58
(2) BXA-70063-4CF-EDIN-6 w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.40 5.84 6.30 7.24 9.26	3.69 4.29 4.91 6.26 9.29	0.03 0.07 0.12 0.23 0.58

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) SLCP2x6014 w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.21 7.65 8.10 9.02 10.96	6.66 7.35 8.06 9.52 12.78	0.04 0.10 0.17 0.33 0.76
(2) FD9R6004/2C-3L	A	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	B	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	C	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	0.00 0.01 0.01 0.02 0.06
(2) DPX 021 Diplexer	A	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.17 0.24 0.31 0.48 0.92	0.01 0.01 0.02 0.03 0.08
(2) DPX 021 Diplexer	B	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.17 0.24 0.31 0.48 0.92	0.01 0.01 0.02 0.03 0.08
(2) DPX 021 Diplexer	C	From Centroid-Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.17 0.24 0.31 0.48 0.92	0.01 0.01 0.02 0.03 0.08
Pipe Mount 3'x4.5"	C	From Leg	0.50 0.00 0.00	0.0000	91.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.93 1.13 1.37 1.89 3.06	0.93 1.13 1.37 1.89 3.06	0.03 0.04 0.05 0.09 0.19
GPS-TMG-HR-26N	C	From Leg	0.50 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.16 0.21 0.28 0.44 0.86	0.16 0.21 0.28 0.44 0.86	0.00 0.00 0.01 0.01 0.05
Pipe Mount 3'x4.5"	C	From Leg	0.50 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.93 1.13 1.37 1.89 3.06	0.93 1.13 1.37 1.89 3.06	0.03 0.04 0.05 0.09 0.19
Bridge Stiffener (3.25 sq ft)	A	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.60 3.94 4.72 6.47	0.74 1.25 1.73 2.39 3.81	0.13 0.15 0.17 0.22 0.37
Bridge Stiffener (3.25 sq ft)	B	From Leg	0.50 0.00	0.0000	120.00	No Ice 1/2" Ice	3.25 3.60	0.74 1.25	0.13 0.15

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	C	From Leg	0.50	0.0000	120.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	A	From Leg	0.50	0.0000	100.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	B	From Leg	0.50	0.0000	100.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	C	From Leg	0.50	0.0000	100.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	A	From Leg	0.50	0.0000	80.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	B	From Leg	0.50	0.0000	80.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37
Bridge Stiffener (3.25 sq ft)	C	From Leg	0.50	0.0000	80.00	No Ice	3.25	0.74	0.13
			0.00			1/2" Ice	3.60	1.25	0.15
			0.00			1" Ice	3.94	1.73	0.17
						2" Ice	4.72	2.39	0.22
						4" Ice	6.47	3.81	0.37

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
2' MW	C	Paraboloid w/o Radome	From Leg	1.00	0.0000		91.00	2.00	No Ice	3.14	0.04
				0.00					1/2" Ice	3.41	0.07
				0.00					1" Ice	3.68	0.10
									2" Ice	4.21	0.17
									4" Ice	5.28	0.35

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	Pirod 16.5' LP Platform	33	24.634	1.1353	0.0035	53709
185.00	PiROD 13' Low Profile Platform (Monopole)	33	22.266	1.1200	0.0034	22664
175.00	Valmont Light Duty Tri-Bracket (1)	33	19.950	1.0827	0.0033	12866
165.00	MTS 12.5' LP Platform	33	17.727	1.0286	0.0031	9779
155.00	PiROD 15' Low Profile Platform (Monopole)	33	15.627	0.9585	0.0027	7871
120.00	Bridge Stiffener (3.25 sq ft)	33	9.497	0.7233	0.0013	10202
100.00	Bridge Stiffener (3.25 sq ft)	33	6.692	0.6094	0.0010	9887
91.00	2' MW	33	5.587	0.5571	0.0008	9958
80.00	Bridge Stiffener (3.25 sq ft)	28	4.369	0.4942	0.0007	10048
75.00	GPS-TMG-HR-26N	28	3.863	0.4658	0.0006	9974

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	196 - 195 (1)	P18x3/8	1.00	0.00	0.0	25.200	20.7640	-0.09	523.25	0.000
L2	195 - 180 (2)	P24x3/8	15.00	0.00	0.0	25.200	27.8325	-5.99	701.38	0.009
L3	180 - 160 (3)	P30x3/8	20.00	0.00	0.0	25.075	34.9011	-10.47	875.15	0.012
L4	160 - 140 (4)	P36x3/8	20.00	0.00	0.0	23.696	41.9697	-16.14	994.51	0.016
L5	140 - 136 (5)	P42x3/8	4.00	0.00	0.0	22.711	49.0383	-17.01	1113.69	0.015
L6	136 - 120 (6)	P42x3/8 [0.63241]	16.00	0.00	0.0	20.646	82.1881	-22.06	1696.86	0.013
L7	120 - 100 (7)	P48x3/8 [0.595266]	20.00	0.00	0.0	22.139	88.6508	-29.25	1962.64	0.015
L8	100 - 80 (8)	P54x3/8 [0.567552]	20.00	0.00	0.0	22.089	95.2710	-37.04	2104.40	0.018
L9	80 - 60 (9)	P60x3/8 [0.546065]	20.00	0.00	0.0	21.436	101.9940	-46.05	2186.31	0.021
L10	60 - 40 (10)	P60x1/2 [0.673218]	20.00	0.00	0.0	22.903	125.4750	-57.22	2873.70	0.020
L11	40 - 20 (11)	P60x5/8 [0.800428]	20.00	0.00	0.0	21.542	148.8640	-70.20	3206.79	0.022
L12	20 - 0 (12)	P60x5/8 [0.800428]	20.00	0.00	0.0	21.542	148.8640	-81.92	3206.79	0.026

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	196 - 195 (1)	P18x3/8	0.03	0.004	27.720	0.000	0.00	0.000	27.720	0.000
L2	195 - 180 (2)	P24x3/8	99.32	7.363	27.720	0.266	0.00	0.000	27.720	0.000
L3	180 - 160 (3)	P30x3/8	338.48	15.910	25.075	0.635	0.00	0.000	25.075	0.000
L4	160 - 140 (4)	P36x3/8	725.70	23.540	23.696	0.993	0.00	0.000	23.696	0.000
L5	140 - 136 (5)	P42x3/8	813.08	19.291	22.711	0.849	0.00	0.000	22.711	0.000
L6	136 - 120 (6)	P42x3/8 [0.63241]	1183.93	16.966	22.711	0.747	0.00	0.000	22.711	0.000
L7	120 - 100 (7)	P48x3/8 [0.595266]	1702.13	19.683	24.353	0.808	0.00	0.000	24.353	0.000
L8	100 - 80 (8)	P54x3/8 [0.567552]	2282.62	21.749	22.089	0.985	0.00	0.000	22.089	0.000
L9	80 - 60 (9)	P60x3/8 [0.546065]	2925.56	23.368	21.436	1.090	0.00	0.000	21.436	0.000
L10	60 - 40 (10)	P60x1/2 [0.673218]	3622.11	23.618	22.903	1.031	0.00	0.000	22.903	0.000
L11	40 - 20 (11)	P60x5/8 [0.800428]	4363.15	24.082	23.696	1.016	0.00	0.000	23.696	0.000
L12	20 - 0 (12)	P60x5/8 [0.800428]	5140.27	28.371	23.696	1.197	0.00	0.000	23.696	0.000

tnxTower	Job	Page
	CT11126F SOUTHBURY/ I-84 X15/ BAGL	11 of 12
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3709	**Project** 2014790.88	**Date** 15:19:59 08/12/14
	Client T-Mobile Towers	**Designed by** tbeltz

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	196 - 195 (1)	P18x3/8	0.05	0.005	16.800	0.000	0.00	0.000	16.800	0.000
L2	195 - 180 (2)	P24x3/8	9.80	0.704	16.800	0.042	0.69	0.025	16.800	0.002
L3	180 - 160 (3)	P30x3/8	14.95	0.857	16.800	0.051	0.70	0.016	15.644	0.001
L4	160 - 140 (4)	P36x3/8	21.58	1.028	16.800	0.061	0.90	0.015	11.901	0.001
L5	140 - 136 (5)	P42x3/8	22.11	0.902	16.800	0.054	0.92	0.011	9.619	0.001
L6	136 - 120 (6)	P42x3/8 [0.63241]	24.24	0.590	13.764	0.043	0.97	0.007	13.764	0.001
L7	120 - 100 (7)	P48x3/8 [0.595266]	27.28	0.615	14.759	0.042	1.05	0.006	14.759	0.000
L8	100 - 80 (8)	P54x3/8 [0.567552]	30.46	0.639	15.131	0.042	0.80	0.004	12.136	0.000
L9	80 - 60 (9)	P60x3/8 [0.546065]	33.60	0.659	15.411	0.043	2.68	0.011	10.686	0.001
L10	60 - 40 (10)	P60x1/2 [0.673218]	36.03	0.574	15.475	0.037	2.75	0.009	13.882	0.001
L11	40 - 20 (11)	P60x5/8 [0.800428]	38.05	0.511	14.361	0.036	2.82	0.008	14.361	0.001
L12	20 - 0 (12)	P60x5/8 [0.800428]	39.65	0.533	14.361	0.037	2.85	0.008	14.361	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	196 - 195 (1)	0.000	0.000	0.000	0.000	0.000	0.000 ✔	1.333	H1-3+VT ✔
L2	195 - 180 (2)	0.009	0.266	0.000	0.042	0.002	0.276 ✔	1.333	H1-3+VT ✔
L3	180 - 160 (3)	0.012	0.635	0.000	0.051	0.001	0.649 ✔	1.333	H1-3+VT ✔
L4	160 - 140 (4)	0.016	0.993	0.000	0.061	0.001	1.014 ✔	1.333	H1-3+VT ✔
L5	140 - 136 (5)	0.015	0.849	0.000	0.054	0.001	0.868 ✔	1.333	H1-3+VT ✔
L6	136 - 120 (6)	0.013	0.747	0.000	0.043	0.001	0.762 ✔	1.333	H1-3+VT ✔
L7	120 - 100 (7)	0.015	0.808	0.000	0.042	0.000	0.825 ✔	1.333	H1-3+VT ✔
L8	100 - 80 (8)	0.018	0.985	0.000	0.042	0.000	1.004 ✔	1.333	H1-3+VT ✔
L9	80 - 60 (9)	0.021	1.090	0.000	0.043	0.001	1.113 ✔	1.333	H1-3+VT ✔
L10	60 - 40 (10)	0.020	1.031	0.000	0.037	0.001	1.053 ✔	1.333	H1-3+VT ✔
L11	40 - 20 (11)	0.022	1.016	0.000	0.036	0.001	1.039 ✔	1.333	H1-3+VT ✔
L12	20 - 0 (12)	0.026	1.197	0.000	0.037	0.001	1.224 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	196 - 195	Pole	P18x3/8	1	-0.09	697.49	0.0	Pass
L2	195 - 180	Pole	P24x3/8	2	-5.99	934.94	20.7	Pass
L3	180 - 160	Pole	P30x3/8	3	-10.47	1166.57	48.7	Pass
L4	160 - 140	Pole	P36x3/8	4	-16.14	1325.68	76.0	Pass
L5	140 - 136	Pole	P42x3/8	5	-17.01	*	64.9*	Pass
L6	136 - 120	Pole	P42x3/8 [0.63241]	6	-22.06	*	57.5*	Pass
L7	120 - 100	Pole	P48x3/8 [0.595266]	7	-29.25	*	68.9*	Pass
L8	100 - 80	Pole	P54x3/8 [0.567552]	8	-37.04	*	78.1*	Pass
L9	80 - 60	Pole	P60x3/8 [0.546065]	9	-46.05	*	85.8*	Pass
L10	60 - 40	Pole	P60x1/2 [0.673218]	10	-57.22	*	81.3*	Pass
L11	40 - 20	Pole	P60x5/8 [0.800428]	11	-70.20	*	78.1*	Pass
L12	20 - 0	Pole	P60x5/8 [0.800428]	12	-81.92	*	92.0*	Pass

Summary	ELC:	Proposed
Pole (L12)	92.0*	Pass
Rating =	92.0*	Pass

*See next page for reinforcement calculations.

Reinforcement 1						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	136	3	PL1.5x6.5-18	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 2						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

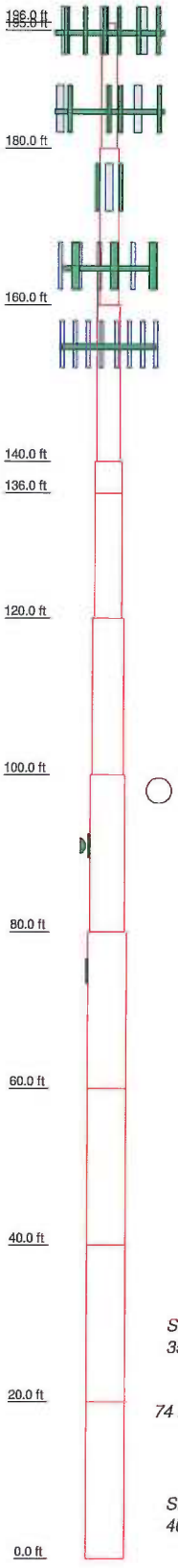
Reinforcement 3						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

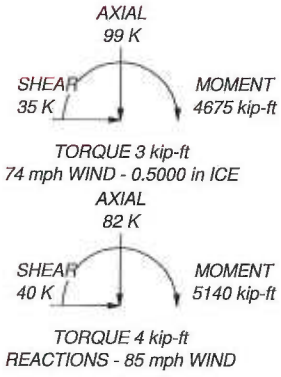
Bottom Elevation	Top Elevation	Original Thickness	Original Yield Stress	Original Ultimate Stress	Reinforced Shaft Capacity	Reinf. 1 QTY	Reinf. 1 Type	Rein. 1 Capacity	Reinf. 2 QTY	Reinf. 2 Type	Rein. 2 Capacity	Reinf. 3 QTY	Reinf. 3 Type	Rein. 3 Capacity	Control Stress Ratio	Top Height	Section Length	Lap Splice	# of Sides	Top Diameter	Bottom Diameter	Equivalent Shaft Thickness	Equivalent Shaft Fy	Equivalent Weight Mult.		Top Elevation Failure	Bottom Elevation Failure	Section Failure %
195.0000	196.0000	0.3750	42	57	0.0%										0.0%	196.0000	1.0000	0.0000	Round	18.0000	18.0000	0.3750	42.0	1.00	1			
180.0000	195.0000	0.3750	42	57	20.7%										20.7%	195.0000	15.0000	0.0000	Round	24.0000	24.0000	0.3750	42.0	1.00	2			
160.0000	180.0000	0.3750	42	57	48.6%										48.6%	180.0000	20.0000	0.0000	Round	30.0000	30.0000	0.3750	42.0	1.00	3			
140.0000	160.0000	0.3750	42	57	75.9%										75.9%	160.0000	20.0000	0.0000	Round	36.0000	36.0000	0.3750	42.0	1.00	4			
136.0000	140.0000	0.3750	42	57	64.9%										64.9%	140.0000	4.0000	0.0000	Round	42.0000	42.0000	0.3750	42.0	1.00	5			
120.0000	136.0000	0.3750	42	57	57.5%	3	PL1.5x6.5-18	50.5%							57.5%	136.0000	16.0000	0.0000	Round	42.0000	42.0000	0.6324	34.4	0.95	6			
100.0000	120.0000	0.3750	42	57	68.9%	3	PL1.5x6.5-18	58.3%							68.9%	120.0000	20.0000	0.0000	Round	48.0000	48.0000	0.5953	36.9	0.96	7			
80.0000	100.0000	0.3750	42	57	78.1%	3	PL1.5x6.5-18	64.2%							78.1%	100.0000	20.0000	0.0000	Round	54.0000	54.0000	0.5676	37.8	0.97	8			
60.0000	80.0000	0.3750	42	57	85.8%	3	PL1.5x6.5-18	68.8%							85.8%	80.0000	20.0000	0.0000	Round	60.0000	60.0000	0.5461	38.5	0.98	9			
40.0000	60.0000	0.5000	42	57	81.3%	3	PL1.5x6.5-18	69.6%							81.3%	60.0000	20.0000	0.0000	Round	60.0000	60.0000	0.6732	38.7	0.98	10			
20.0000	40.0000	0.6250	42	57	78.1%	3	PL1.5x6.5-18	70.9%							78.1%	40.0000	20.0000	0.0000	Round	60.0000	60.0000	0.8004	35.9	0.98	11			
0.0000	20.0000	0.6250	42	57	92.0%	3	PL1.5x6.5-18	83.6%							92.0%	20.0000	20.0000	0.0000	Round	60.0000	60.0000	0.8004	35.9	0.98	12			

APPENDIX C

Tower Elevation Drawing

Section	Size	Length (ft)	Grade	Weight (K)
1	P18x3/8	1.00	A53-B-42	0.7
2	P24x3/8	15.00		1.4
3	P30x3/8	20.00		2.4
4	P36x3/8	20.00		2.9
5	P42x3/8	4.00		0.7
6	P42x3/8 [0.632411]	16.00	34.410173ksi	4.3
7	P48x3/8 [0.595266]	20.00	36.898421ksi	5.8
8	P54x3/8 [0.567552]	20.00	37.826923ksi	6.3
9	P60x3/8 [0.546065]	20.00	38.526976ksi	6.8
10	P60x1/2 [0.673218]	20.00	38.686907ksi	8.4
11	P60x5/8 [0.800428]	20.00	35.902778ksi	9.9
12	P60x5/8 [0.800428]	20.00		9.9
				58.7





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Pirod 16.5' LP Platform	195	APXV18-206517S-C w/ Mount Pipe	175
AIR 33 w/ Mount Pipe	195	APXV18-206517S-C w/ Mount Pipe	175
AIR 33 w/ Mount Pipe	195	APXV18-206517S-C w/ Mount Pipe	175
AIR 33 w/ Mount Pipe	195	MTS 12.5' LP Platform	165
RR90-17-02DP w/ Mount Pipe	195	(3) DB980E (90E-M) w/ Mount Pipe	165
RR90-17-02DP w/ Mount Pipe	195	(3) DB980E (90E-M) w/ Mount Pipe	165
RR90-17-02DP w/ Mount Pipe	195	(3) DB980E (90E-M) w/ Mount Pipe	165
LNX-6515DS-VTM w/ mount pipe	195	PiROD 15' Low Profile Platform (Monopole)	155
LNX-6515DS-VTM w/ mount pipe	195		
LNX-6515DS-VTM w/ mount pipe	195	(2) HBXX-6516DS w/Mount Pipe	155
KRY 112 71	195	(2) HBXX-6516DS w/Mount Pipe	155
KRY 112 71	195	(2) HBXX-6516DS w/Mount Pipe	155
KRY 112 71	195	(2) BXA-70063-4CF-EDIN-6 w/ Mount Pipe	155
DC4-48-60-8-20F	195		
PiROD 13' Low Profile Platform (Monopole)	185	(2) BXA-70063-4CF-EDIN-6 w/ Mount Pipe	155
7770.00 w/ 6' Mount Pipe	185	(2) SLCP2x6014 w/ Mount Pipe	155
7770.00 w/ 6' Mount Pipe	185	(2) FD9R6004/2C-3L	155
7770.00 w/ 6' Mount Pipe	185	(2) FD9R6004/2C-3L	155
AM-X-CD-16-65-00T-RET w/ 2" x 54" mount pipe	185	(2) FD9R6004/2C-3L	155
		(2) DPX 021 Diplexer	155
AM-X-CD-16-65-00T-RET w/ 2" x 54" mount pipe	185	(2) DPX 021 Diplexer	155
		(2) DPX 021 Diplexer	155
AM-X-CD-17-65-00T-RET w/ Mount Pipe	185	Bridge Stiffener (3.25 sq ft)	120
		Bridge Stiffener (3.25 sq ft)	120
(2) TT19-08BP111-001	185	Bridge Stiffener (3.25 sq ft)	120
(2) TT19-08BP111-001	185	Bridge Stiffener (3.25 sq ft)	100
(2) TT19-08BP111-001	185	Bridge Stiffener (3.25 sq ft)	100
(2) LGP21901	185	Bridge Stiffener (3.25 sq ft)	100
(2) LGP21901	185	Pipe Mount 3'x4.5"	91
(2) LGP21901	185	2' MW	91
(2) RRUS-11	185	Bridge Stiffener (3.25 sq ft)	80
(2) RRUS-11	185	Bridge Stiffener (3.25 sq ft)	80
(2) RRUS-11	185	Bridge Stiffener (3.25 sq ft)	80
DC6-48-60-18-8F Surge Suppression Unit	185	Pipe Mount 3'x4.5"	75
		GPS-TMG-HR-26N	75
Valmont Light Duty Tri-Bracket (1)	175		

MATERIAL STRENGTH

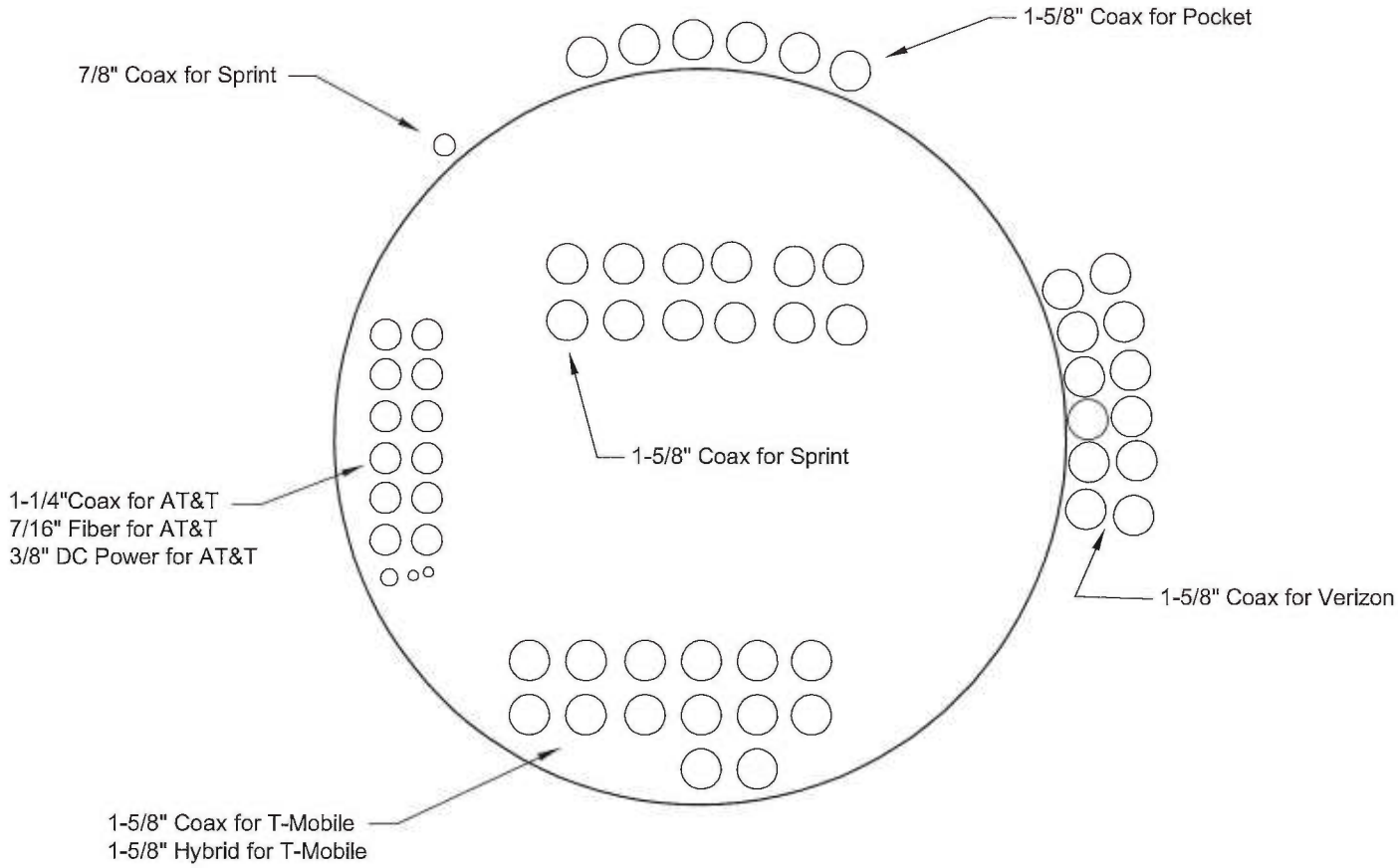
GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi	38.526976ksi	39 ksi	54 ksi
34.410173ksi	34 ksi	49 ksi	38.686907ksi	39 ksi	54 ksi
36.898421ksi	37 ksi	52 ksi	35.902778ksi	36 ksi	51 ksi
37.826923ksi	38 ksi	53 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

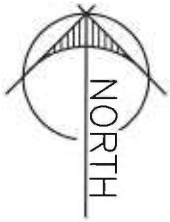
GPD Group
520 South Main Street, Suite 2531
Akron, OH 44311
Phone: (330) 572-2100
FAX: (330) 572-3709
Consulting Engineers

Job: CT11126F SOUTHBURY/ I-84 X15/ BAGL			
Project: 2014790.88			
Client: T-Mobile Towers	Drawn by: tbeltz	App'd:	
Code: TIA/EIA-222-F	Date: 08/12/14	Scale: NTS	
Path:		Dwg No. E-1	



FEEDLINE PLAN

NOT TO SCALE



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CT11126F SOUTHBURY/ I-84 X15/ BAGL

JOB NO.
2014790.88
DATE
8/12/2014
DRAWN BY
TTB

APPENDIX D

Flange Plate Analysis

Existing Flange Connection @ 180'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88

O.T. Moment =	99.32	k*ft
Axial =	0.09	kips
Shear =	9.80	kips

Acceptable Stress Ratio =	100.0%	

Flange Bolts		
# Bolts =	20	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	27	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.62	ksi
Applied Shear =	0.49	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.98	ksi
Allowable Bolt Stress =	58.64077	ksi
B =	46.06	kips
Prying Action Check		
Tall =	42.70	kips
$t_{req'd}$ =	0.48	in
Max Comp. on Bolt =	8.83	kips
Max Tension on Bolt =	8.82	kips
Shear Capacity =	2.2%	
Tensile Capacity =	20.7%	
Bolt Capacity =	**20.7% OK**	

Pole Information		
Shaft Diam. (Upper) =	24	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	30	in
Thickness (Lower)=	0.375	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Outer Diameter =	30.375	in
wcalc =	12.37	in
wmax =	20.84	in
w =	12.37	in
S =	3.22	in^3
f_b =	8.49	ksi
F_b =	36	ksi
UP Capacity =	**23.6% OK**	

UpperStiffeners		
Configuration =	Every Other	
Thickness =	0.625	in
Width =	3	in
Notch =	0.5	in
Height =	5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Lower Flange Plate		
Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	24.25	in
Pole Inner Diameter =	29.25	in
e =	1.13	in
w =	4.59	in
S =	1.20	in^3
f_b =	8.30	ksi
F_b =	36	ksi
LP Capacity =	**23.1% OK**	

Lower Stiffeners		
Configuration =	Every Other	
Thickness =	0.625	in
Width =	2	in
Notch =	0.5	in
Height =	3.5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Existing Flange Connection @ 160'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88

O.T. Moment =	338.48	k*ft
Axial =	5.99	kips
Shear =	14.95	kips

Acceptable Stress Ratio =	100.0%

Flange Bolts		
# Bolts =	24	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	33	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.79	ksi
Applied Shear =	0.62	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.97	ksi
Allowable Bolt Stress =	58.62481	ksi
B =	46.04	kips
Prying Action Check		
Tall =	43.15	kips
$t_{req'd}$ =	0.71	in
Max Comp. on Bolt =	20.75	kips
Max Tension on Bolt =	20.25	kips
Shear Capacity =	2.8%	
Tensile Capacity =	46.9%	
Bolt Capacity =	**46.9% OK**	

Pole Information		
Shaft Diam. (Upper) =	30	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	36	in
Thickness (Lower)=	0.375	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Outer Diameter =	36.375	in
wcalc =	13.75	in
wmax =	21.04	in
w =	13.75	in
S =	3.58	in^3
f_b =	19.20	ksi
F_b =	36	ksi
UP Capacity =	**53.3% OK**	

Lower Flange Plate		
Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	27.375	in
Pole Inner Diameter =	35.25	in
e =	1.13	in
w =	4.61	in
S =	1.20	in^3
f_b =	19.43	ksi
F_b =	36	ksi
LP Capacity =	**54.0% OK**	

UpperStiffeners		
Configuration =	Every Other	
Thickness =	0.625	in
Width =	3	in
Notch =	0.5	in
Height =	5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Lower Stiffeners		
Configuration =	Every Other	
Thickness =	0.625	in
Width =	2	in
Notch =	0.5	in
Height =	3.5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Existing Flange Connection @ 140'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88

O.T. Moment =	725.70	k*ft
Axial =	10.47	kips
Shear =	21.58	kips

Acceptable Stress Ratio =	100.0%

Flange Bolts		
# Bolts =	28	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	39	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.98	ksi
Applied Shear =	0.77	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.95	ksi
Allowable Bolt Stress =	58.60258	ksi
B =	46.03	kips
Prying Action Check		
Tall =	43.47	kips
$t_{req'd}$ =	0.87	in
Max Comp. on Bolt =	32.26	kips
Max Tension on Bolt =	31.51	kips
Shear Capacity =	3.5%	
Tensile Capacity =	72.5%	
Bolt Capacity =	**72.5% OK**	

Pole Information		
Shaft Diam. (Upper) =	36	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	42	in
Thickness (Lower)=	0.375	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Outer Diameter =	42.375	in
wcalc =	15.00	in
wmax =	25.38	in
w =	15.00	in
S =	3.91	in^3
f_b =	28.94	ksi
F_b =	36	ksi
UP Capacity =	**80.4% OK**	

UpperStiffeners		
Configuration =	Every Other	
Thickness =	0.5	in
Width =	3	in
Notch =	0.5	in
Height =	5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Lower Flange Plate		
Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	33.375	in
Pole Inner Diameter =	41.25	in
e =	1.13	in
w =	4.63	in
S =	1.21	in^3
f_b =	30.11	ksi
F_b =	36	ksi
LP Capacity =	**83.6% OK**	

Lower Stiffeners		
Configuration =	Every Other	
Thickness =	0.5	in
Width =	2	in
Notch =	0.5	in
Height =	3.5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Existing Flange Connection @ 120'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88

*O.T. Moment =	503.27	k*ft
Axial =	17.01	kips
Shear =	24.24	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio	
=	100.0%

Flange Bolts

# Bolts =	32	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	45	in
Bolt Diameter =	1	in

Tension & Shear (ASD, Section J3.5)

F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.96	ksi
Applied Shear =	0.76	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.95	ksi
Allowable Bolt Stress =	58.60476	ksi
B =	46.03	kips

Prying Action Check

Tall =	43.72	kips
$t_{req'd}$ =	0.61	in
Max Comp. on Bolt =	17.30	kips
Max Tension on Bolt =	16.24	kips
Shear Capacity =	3.4%	
Tensile Capacity =	37.1%	
Bolt Capacity =	**37.1% OK**	

Pole Information

Shaft Diam. (Upper) =	42	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	48	in
Thickness (Lower)=	0.375	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate

Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Outer Diameter =	48.375	in
wcalc =	16.16	in
wmax =	25.56	in
w =	16.16	in
S =	4.21	in^3
f_b =	15.58	ksi
F_b =	36	ksi
UP Capacity =	**43.3% OK**	

Lower Flange Plate

Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	39.375	in
Pole Inner Diameter =	47.25	in
e =	1.13	in
w =	4.64	in
S =	1.21	in^3
f_b =	16.11	ksi
F_b =	36	ksi
LP Capacity =	**44.8% OK**	

UpperStiffeners

Configuration =	Every Other	
Thickness =	0.625	in
Width =	3	in
Notch =	0.5	in
Height =	5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Lower Stiffeners

Configuration =	Every Other	
Thickness =	0.625	in
Width =	2	in
Notch =	0.5	in
Height =	3.5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

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GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.

GPD GROUP
Engineers • Architects • Planners

Project #: 2014790.88
Sheet No 1 Of 1

Calculated By: TTB Date: 8/12/2014
Checked By: TR Date: 8/12/2014

BOLT AND BRIDGE STIFFENER CALCULATIONS @ 120'

Moment from TNX (M) =	1183.93	kip-ft	ASIF =	1.33			
Axial from TNX (P) =	17.01	kip					
Inner Bolt Diameter =	1	in					
Inner Bolt Area (A_{inner}) =	0.79	in^2	Inner Bolt Circle (BC_{inner}) =	45	in		
Inner Bolt MOI ($I_{o.inner}$) =	0.05	in^4	Total Area ($A_{tot.in}$) =	25.13	in^2		
Number Inner Bolts (N_{inner}) =	32		Percent Total Area (η_{in}) =	48.2%		Axial, Inner Bolts ($P*\eta_{in}$) =	8.20 kips
Bridge Stiffener Width =	6.00	in					
Bridge Stiffener Thickness =	1.50	in	Connection Bolt Hole Size =	0	in		
Bridge Stiffener Unbraced Length =	12.00	in	Net Bridge Stiffener Area ($A_{e.pl}$)	9	in		
Bridge Stiffener Area (A_{pl}) =	9.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	51	in		
Bridge Stiffener MOI (I_o) =	27.00	in^4	Total Area ($A_{tot.pl}$) =	27.00	in^2		
Number Bridge Stiffeners (N_{pl})	3		Percent Total Area (η_{pl}) =	51.8%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	8.81 kips

I_{inner} =	6363.30	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{pl} =	8859.38	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	15222.67	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$
$P_{u.t.inner}$ =	16.2	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.pl}$ =	211.3	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	217.1	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{nt.bolt} / (\Omega \times ASIF)$ =	43.71	kips	
Bolt Rating =	37.1%	OK	

Bridge Stiffener Check

f_y =	50	ksi
f_u =	65	ksi
E =	29000	ksi
K =	0.85	
KL/r =	23.556	
F_e =	515.82	ksi
F_{cr} =	48.01	ksi
P_{nc} / Ω =	258.75	kips
P_{nt} / Ω =	269.46	kips
Bridge Stiffener Rating =	62.9%	OK

Existing Flange Connection @ 100'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88

*O.T. Moment =	814.61	k*ft
Axial =	22.06	kips
Shear =	27.28	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio	
=	100.0%

Flange Bolts		
# Bolts =	36	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	51	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.96	ksi
Applied Shear =	0.76	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.95	ksi
Allowable Bolt Stress =	58.60471	ksi
B =	46.03	kips
Prying Action Check		
Tall =	43.91	kips
$t_{req'd}$ =	0.69	in
Max Comp. on Bolt =	21.91	kips
Max Tension on Bolt =	20.68	kips
Shear Capacity =	3.4%	
Tensile Capacity =	47.1%	
Bolt Capacity =	**47.1% OK**	

Pole Information		
Shaft Diam. (Upper) =	48	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	54	in
Thickness (Lower)=	0.375	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Outer Diameter =	54.375	in
wcalc =	17.23	in
wmax =	25.70	in
w =	17.23	in
S =	4.49	in^3
f_b =	19.60	ksi
F_b =	36	ksi
UP Capacity =	**54.4% OK**	

UpperStiffeners		
Configuration =	Every Other	
Thickness =	0.625	in
Width =	3	in
Notch =	0.5	in
Height =	5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

Lower Flange Plate		
Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	45.375	in
Pole Inner Diameter =	53.25	in
e =	1.13	in
w =	4.65	in
S =	1.21	in^3
f_b =	20.36	ksi
F_b =	36	ksi
LP Capacity =	**56.6% OK**	

Lower Stiffeners		
Configuration =	Every Other	
Thickness =	0.625	in
Width =	2	in
Notch =	0.5	in
Height =	3.5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi

Stiffeners ineffective - check plate unstiffened

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Project #: 2014790.88
Sheet No 1 Of 1

Calculated By: TTB Date: 8/12/2014
Checked By: TR Date: 8/12/2014

BOLT AND BRIDGE STIFFENER CALCULATIONS @ 100'

Moment from TNX (M) =	1702.13	kip-ft	ASIF =	1.33			
Axial from TNX (P) =	22.06	kip					
Inner Bolt Diameter =	1	in					
Inner Bolt Area (A_{inner}) =	0.79	in^2	Inner Bolt Circle (BC_{inner}) =	51	in		
Inner Bolt MOI ($I_{o.inner}$) =	0.05	in^4	Total Area ($A_{tot.in}$) =	25.92	in^2		
Number Inner Bolts (N_{inner}) =	33		Percent Total Area (η_{in}) =	49.0%		Axial, Inner Bolts ($P*\eta_{in}$) =	10.80 kips
Bridge Stiffener Width =	6.00	in					
Bridge Stiffener Thickness =	1.50	in	Connection Bolt Hole Size =	0	in		
Bridge Stiffener Unbraced Length =	12.00	in	Net Bridge Stiffener Area ($A_{e.pl}$)	9	in		
Bridge Stiffener Area (A_{pl}) =	9.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	57	in		
Bridge Stiffener MOI (I_o) =	27.00	in^4	Total Area ($A_{tot.pl}$) =	27.00	in^2		
Number Bridge Stiffeners (N_{pl})	3		Percent Total Area (η_{pl}) =	51.0%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	11.26 kips

I_{inner} =	8428.25	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{pl} =	11046.38	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	19474.63	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$
$P_{u.t.inner}$ =	20.7	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.pl}$ =	265.3	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	272.8	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{nt.bolt} / (\Omega \times ASIF)$ =	43.91	kips	
Bolt Rating =	47.1%	OK	

Bridge Stiffener Check

f_y =	50	ksi
f_u =	65	ksi
E =	29000	ksi
K =	0.85	
KL/r =	23.556	
F_e =	515.82	ksi
F_{cr} =	48.01	ksi
P_{nc} / Ω =	258.75	kips
P_{nt} / Ω =	269.46	kips
Bridge Stiffener Rating =	79.1%	OK

Existing Flange Connection @ 80'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88

*O.T. Moment =	1228.50	k*ft
Axial =	29.25	kips
Shear =	30.46	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio =	100.0%

Flange Bolts

# Bolts =	48	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	57	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.81	ksi
Applied Shear =	0.63	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.97	ksi
Allowable Bolt Stress =	58.62323	ksi
B =	46.04	kips
Prying Action Check		
N/A for stiffened flange		
Max Comp. on Bolt =	22.16	kips
Max Tension on Bolt =	20.94	kips
Shear Capacity =	2.9%	
Tensile Capacity =	45.5%	
Bolt Capacity =	**45.5% OK**	

Pole Information

Shaft Diam. (Upper) =	54	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	60	in
Thickness (Lower)=	0.375	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate

Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Outer Diameter =	60.375	in
b =	3.11	in
Le =	3.00	in
f_b =	18.02	ksi
F_b =	36	ksi
UP Capacity =	**50.0% OK**	

Lower Flange Plate

Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	51.375	in
b =	3.11	in
Le =	2.00	in
f_b =	21.51	ksi
F_b =	36	ksi
LP Capacity =	**59.8% OK**	

UpperStiffeners

Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	3	in
Notch =	0.5	in
Height =	5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi
Stiffener Vertical Force =	12.66	kips
Vert. Weld Capacity =	31.3%	kips
Horiz. Weld Capacity =	46.1%	kips
Stiffener Capacity =	49.5%	kips
Controlling Capacity =	**49.5%**	**OK**

Lower Stiffeners

Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	2	in
Notch =	0.5	in
Height =	3.5	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.3125	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.3125	in
Weld Strength =	70	ksi
Stiffener Vertical Force =	8.19	kips
Vert. Weld Capacity =	30.0%	kips
Horiz. Weld Capacity =	49.8%	kips
Stiffener Capacity =	45.4%	kips
Controlling Capacity =	**49.8%**	**OK**

- Welds Control

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Project #: 2014790.88
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Calculated By: TTB Date: 8/12/2014
Checked By: TR Date: 8/12/2014

BOLT AND BRIDGE STIFFENER CALCULATIONS @ 80'

Moment from TNX (M) =	2282.62	kip-ft	ASIF =	1.33			
Axial from TNX (P) =	29.25	kip					
Inner Bolt Diameter =	1	in					
Inner Bolt Area (A_{inner}) =	0.79	in^2	Inner Bolt Circle (BC_{inner}) =	57	in		
Inner Bolt MOI ($I_{o.inner}$) =	0.05	in^4	Total Area ($A_{tot.in}$) =	37.70	in^2		
Number Inner Bolts (N_{inner}) =	48		Percent Total Area (η_{in}) =	58.3%		Axial, Inner Bolts ($P*\eta_{in}$) =	17.04 kips
Bridge Stiffener Width =	6.00	in					
Bridge Stiffener Thickness =	1.50	in	Connection Bolt Hole Size =	0	in		
Bridge Stiffener Unbraced Length =	12.00	in	Net Bridge Stiffener Area ($A_{e.pl}$)	9	in		
Bridge Stiffener Area (A_{pl}) =	9.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	63	in		
Bridge Stiffener MOI (I_o) =	27.00	in^4	Total Area ($A_{tot.pl}$) =	27.00	in^2		
Number Bridge Stiffeners (N_{pl})	3		Percent Total Area (η_{pl}) =	41.7%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	12.21 kips

I_{inner} =	15312.91	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{pl} =	13476.38	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	28789.28	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$
$P_{u.t.inner}$ =	20.9	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.pl}$ =	265.7	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	273.8	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{nt.bolt} / (\Omega \times ASIF)$ =	46.04	kips	
Bolt Rating =	45.5%	OK	

Bridge Stiffener Check

f_y =	50	ksi
f_u =	65	ksi
E =	29000	ksi
K =	0.85	
KL/r =	23.556	
F_e =	515.82	ksi
F_{cr} =	48.01	ksi
P_{nc} / Ω =	258.75	kips
P_{nt} / Ω =	269.46	kips
Bridge Stiffener Rating =	79.4%	OK

Existing Flange Connection @ 60'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88 (FLANGE PLATES ANALYSIS ONLY)

*O.T. Moment =	1408.445	k*ft
Axial =	37.04	kips
Shear =	33.60	kips

Acceptable Stress Ratio =	100.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Flange Bolts

# Bolts =	32	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	50	in
Bolt Diameter =	1.75	in

Tension & Shear (ASD, Section J3.5)

F_v =	21	ksi
Nominal Area =	2.41	in^2
f_v =	0.44	ksi
Applied Shear =	1.05	kips
Allowable Shear =	67.35	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.99	ksi
Allowable Bolt Stress =	58.65399	ksi
B =	141.08	kips

Prying Action Check

N/A for stiffened flange

Max Comp. on Bolt =	43.39	kips
Max Tension on Bolt =	41.07	kips
Shear Capacity =	1.6%	
Tensile Capacity =	29.1%	
Bolt Capacity =	**29.1%**	**OK**

Pole Information

Shaft Diam. (Upper) =	60	in
Thickness (Upper)=	0.375	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	60	in
Thickness (Lower)=	0.5	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate

Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	43	in
b =	4.28	in
Le =	7.00	in
f_b =	17.67	ksi
F_b =	36	ksi
UP Capacity =	**49.1%**	**OK**

Lower Flange Plate

Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	43	in
b =	4.28	in
Le =	7.00	in
f_b =	17.67	ksi
F_b =	36	ksi
LP Capacity =	**49.1%**	**OK**

UpperStiffeners

Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	7	in
Notch =	0.5	in
Height =	10	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	24.45	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	50.2%	kips
Controlling Capacity =	**50.2%**	**OK**

Lower Stiffeners

Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	7	in
Notch =	0.5	in
Height =	10	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	21.55	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	44.3%	kips
Controlling Capacity =	**44.3%**	**OK**

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Project #: 2014790.88
Sheet No 1 Of 1

Calculated By: TTB Date: 8/12/2014
Checked By: TR Date: 8/12/2014

BOLT AND BRIDGE STIFFENER CALCULATIONS @ 60'

Moment from TNX (M) =	2925.56	kip-ft	ASIF =	1.33			
Axial from TNX (P) =	37.04	kip					
Inner Bolt Diameter =	1.25	in					
Inner Bolt Area (A_{inner}) =	1.23	in^2	Inner Bolt Circle (BC_{inner}) =	47	in		
Inner Bolt MOI ($I_{o.inner}$) =	0.12	in^4	Total Area ($A_{tot.in}$) =	39.27	in^2		
Number Inner Bolts (N_{inner}) =	32		Percent Total Area (η_{in}) =	29.6%		Axial, Inner Bolts ($P*\eta_{in}$) =	10.97 kips
Outer Bolt Diameter =	1.25	in					
Outer Bolt Area (A_{outer}) =	1.23	in^2	Outer Bolt Circle (BC_{outer}) =	53	in		
Outer Bolt MOI ($I_{o.outer}$) =	0.12	in^4	Total Area ($A_{tot.out}$) =	39.27	in^2		
Number Outer Bolts (N_{outer}) =	32		Percent Total Area (η_{out}) =	29.6%		Axial, Outer Bolts ($P*\eta_{out}$) =	10.97 kips
Bridge Stiffener Width =	6.00	in					
Bridge Stiffener Thickness =	1.50	in	Connection Bolt Hole Size =	1.21875	in		
Bridge Stiffener Unbraced Length =	30.00	in	Net Bridge Stiffener Area ($A_{e.pl}$)	7.17188	in		
Bridge Stiffener Area (A_{pl}) =	9.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	63	in		
Bridge Stiffener MOI (I_o) =	27.00	in^4	Total Area ($A_{tot.pl}$) =	54.00	in^2		
Number Bridge Stiffeners (N_{pl})	6		Percent Total Area (η_{pl}) =	40.7%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	15.09 kips

I_{inner} =	10847.24	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{outer} =	13792.48	$in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8 + N_{outer}*I_{o.outer})$
I_{pl} =	26952.75	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	51592.47	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$
$P_{u.t.inner}$ =	19.3	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.outer}$ =	21.8	kips	$(M*(BC_{outer}/2)*A_{outer})/I_{total} - P*\eta_{out}/N_{outer})$
$P_{u.t.pl}$ =	190.4	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	195.4	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{nt.bolt} / (\Omega \times ASIF)$ =	141.08	kips	
Bolt Rating =	15.4%	OK	

Bridge Stiffener Check

f_y =	50	ksi
f_u =	65	ksi
E =	29000	ksi
K =	0.85	
KL/r =	58.890	
F_e =	82.53	ksi
F_{cr} =	38.80	ksi
P_{nc} / Ω =	209.11	kips
P_{nt} / Ω =	233.09	kips
Bridge Stiffener Rating =	70.1%	OK

Existing Flange Connection @ 40'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88 (FLANGE PLATES ANALYSIS ONLY)

*O.T. Moment =	1743.703	k*ft
Axial =	46.05	kips
Shear =	36.03	kips

Acceptable Stress Ratio =	100.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Flange Bolts

# Bolts =	32	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	50	in
Bolt Diameter =	1.75	in

Tension & Shear (ASD, Section J3.5)

F_v =	21	ksi
Nominal Area =	2.41	in^2
f_v =	0.47	ksi
Applied Shear =	1.13	kips
Allowable Shear =	67.35	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.99	ksi
Allowable Bolt Stress =	58.65209	ksi
B =	141.07	kips

Prying Action Check
N/A for stiffened flange

Max Comp. on Bolt =	53.72	kips
Max Tension on Bolt =	50.84	kips
Shear Capacity =	1.7%	
Tensile Capacity =	36.0%	
Bolt Capacity =	**36.0%**	**OK**

Pole Information

Shaft Diam. (Upper) =	60	in
Thickness (Upper)=	0.5	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	60	in
Thickness (Lower)=	0.625	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate

Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	43	in
b =	4.28	in
Le =	7.00	in
f_b =	21.88	ksi
F_b =	36	ksi
UP Capacity =	**60.8%**	**OK**

Lower Flange Plate

Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	43	in
b =	4.28	in
Le =	7.00	in
f_b =	21.88	ksi
F_b =	36	ksi
LP Capacity =	**60.8%**	**OK**

UpperStiffeners

Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	7	in
Notch =	0.5	in
Height =	10	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	26.69	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	54.8%	kips
Controlling Capacity =	**54.8%**	**OK**

Lower Stiffeners

Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	7	in
Notch =	0.5	in
Height =	10	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	23.86	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	49.0%	kips
Controlling Capacity =	**49.0%**	**OK**

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Project #: 2014790.88
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Calculated By: TTB Date: 8/12/2014
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BOLT AND BRIDGE STIFFENER CALCULATIONS @ 40'

Moment from TNX (M) =	3622.11	kip-ft	ASIF =	1.33			
Axial from TNX (P) =	46.05	kip					
Inner Bolt Diameter =	1.25	in					
Inner Bolt Area (A_{inner}) =	1.23	in^2	Inner Bolt Circle (BC_{inner}) =	47	in		
Inner Bolt MOI ($I_{o.inner}$) =	0.12	in^4	Total Area ($A_{tot.in}$) =	39.27	in^2		
Number Inner Bolts (N_{inner}) =	32		Percent Total Area (η_{in}) =	29.6%		Axial, Inner Bolts ($P*\eta_{in}$) =	13.64 kips
Outer Bolt Diameter =	1.25	in					
Outer Bolt Area (A_{outer}) =	1.23	in^2	Outer Bolt Circle (BC_{outer}) =	53	in		
Outer Bolt MOI ($I_{o.outer}$) =	0.12	in^4	Total Area ($A_{tot.out}$) =	39.27	in^2		
Number Outer Bolts (N_{outer}) =	32		Percent Total Area (η_{out}) =	29.6%		Axial, Outer Bolts ($P*\eta_{out}$) =	13.64 kips
Bridge Stiffener Width =	6.00	in					
Bridge Stiffener Thickness =	1.50	in	Connection Bolt Hole Size =	1.18	in		
Bridge Stiffener Unbraced Length =	30.00	in	Net Bridge Stiffener Area ($A_{e.pl}$)	7.23	in		
Bridge Stiffener Area (A_{pl}) =	9.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	63	in		
Bridge Stiffener MOI (I_o) =	27.00	in^4	Total Area ($A_{tot.pl}$) =	54.00	in^2		
Number Bridge Stiffeners (N_{pl})	6		Percent Total Area (η_{pl}) =	40.7%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	18.76 kips

I_{inner} =	10847.24	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8+N_{inner}*I_{o.inner})$
I_{outer} =	13792.48	$in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8+N_{outer}*I_{o.outer})$
I_{pl} =	26952.75	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8+N_{pl}*I_{o.pl})$
I_{tot} =	51592.47	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$

$P_{u.t.inner}$ =	23.9	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.outer}$ =	27.0	kips	$(M*(BC_{outer}/2)*A_{outer})/I_{total} - P*\eta_{out}/N_{outer})$
$P_{u.t.pl}$ =	235.7	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	242.0	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{nt.bolt} / (\Omega \times ASIF)$ =	72.15	kips	
Bolt Rating =	37.4%	OK	

Bridge Stiffener Check

f_y =	50	ksi
f_u =	65	ksi
E =	29000	ksi
K =	0.85	
KL/r =	58.890	
F_e =	82.53	ksi
F_{cr} =	38.80	ksi
P_{nc} / Ω =	209.11	kips
P_{nt} / Ω =	234.98	kips
Bridge Stiffener Rating =	86.8%	OK

Existing Flange Connection @ 20'
CT11126F SOUTHBURY/I-84 X15/ BAGL
2014790.88 (FLANGE PLATES ANALYSIS ONLY)

*O.T. Moment =	1717.322	k*ft
Axial =	57.22	kips
Shear =	38.05	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio =	100.0%

Flange Bolts		
# Bolts =	32	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	50	in
Bolt Diameter =	1.75	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	2.41	in^2
f_v =	0.49	ksi
Applied Shear =	1.19	kips
Allowable Shear =	67.35	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.99	ksi
Allowable Bolt Stress =	58.65041	ksi
B =	141.07	kips
Prying Action Check		
N/A for stiffened flange		
Max Comp. on Bolt =	53.28	kips
Max Tension on Bolt =	49.70	kips
Shear Capacity =	1.8%	
Tensile Capacity =	35.2%	
Bolt Capacity =	**35.2% OK**	

Pole Information		
Shaft Diam. (Upper) =	60	in
Thickness (Upper)=	0.625	in
# of Sides (Upper) =	Round	
F_y (Upper) =	42	ksi
Shaft Diam. (Lower) =	60	in
Thickness (Lower)=	0.625	in
# of Sides (Lower) =	Round	
F_y (Lower) =	42	ksi

Upper Flange Plate		
Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	43	in
b =	4.28	in
Le =	7.00	in
f_b =	21.70	ksi
F_b =	36	ksi
UP Capacity =	**60.3% OK**	

Lower Flange Plate		
Location =	Internal	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1.25	in
Hole Diameter =	43	in
b =	4.28	in
Le =	7.00	in
f_b =	21.70	ksi
F_b =	36	ksi
LP Capacity =	**60.3% OK**	

UpperStiffeners		
Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	7	in
Notch =	0.5	in
Height =	10	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	23.70	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	48.7%	kips
Controlling Capacity =	**48.7%**	**OK**

Lower Stiffeners		
Configuration =	Every Bolt	
Thickness =	0.625	in
Width =	7	in
Notch =	0.5	in
Height =	10	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	23.70	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	48.7%	kips
Controlling Capacity =	**48.7%**	**OK**

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Project #: 2014790.88
Sheet No 1 Of 1

Calculated By: TTB Date: 8/12/2014
Checked By: TR Date: 8/12/2014

BOLT AND BRIDGE STIFFENER CALCULATIONS @ 20'

Moment from TNX (M) =	4363.15	kip-ft	ASIF =	1.33			
Axial from TNX (P) =	57.22	kip					
Inner Bolt Diameter =	1.25	in					
Inner Bolt Area (A_{inner}) =	1.23	in^2	Inner Bolt Circle (BC_{inner}) =	47	in		
Inner Bolt MOI ($I_{o.inner}$) =	0.12	in^4	Total Area ($A_{tot.in}$) =	39.27	in^2		
Number Inner Bolts (N_{inner}) =	32		Percent Total Area (η_{in}) =	24.2%		Axial, Inner Bolts ($P*\eta_{in}$) =	13.82 kips
Outer Bolt Diameter =	1.25	in					
Outer Bolt Area (A_{outer}) =	1.23	in^2	Outer Bolt Circle (BC_{outer}) =	53	in		
Outer Bolt MOI ($I_{o.outer}$) =	0.12	in^4	Total Area ($A_{tot.out}$) =	39.27	in^2		
Number Outer Bolts (N_{outer}) =	32		Percent Total Area (η_{out}) =	24.2%		Axial, Outer Bolts ($P*\eta_{out}$) =	13.82 kips
Bridge Stiffener Width =	6.00	in					
Bridge Stiffener Thickness =	1.50	in	Connection Bolt Hole Size =	1.21875	in		
Bridge Stiffener Unbraced Length =	30.00	in	Net Bridge Stiffener Area ($A_{e.pl}$) =	7.17188	in		
Bridge Stiffener Area (A_{pl}) =	9.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	60.75	in		
Bridge Stiffener MOI (I_o) =	27.00	in^4	Total Area ($A_{tot.pl}$) =	54.00	in^2		
Number Bridge Stiffeners (N_{pl})	6		Percent Total Area (η_{pl}) =	33.2%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	19.01 kips
Bridge Stiffener Width =	4.00	in					
Bridge Stiffener Thickness =	1.25	in	Connection Bolt Hole Size =	1.21875	in		
Bridge Stiffener Unbraced Length =	12.00	in	Net Bridge Stiffener Area ($A_{e.pl}$) =	3.47656	in		
Bridge Stiffener Area (A_{pl}) =	5.00	in^2	Bridge Stiffener Circle (BC_{pl}) =	60.625	in		
Bridge Stiffener MOI (I_o) =	6.67	in^4	Total Area ($A_{tot.pl}$) =	30.00	in^2		
Number Bridge Stiffeners (N_{pl})	6		Percent Total Area (η_{pl}) =	18.5%		Axial, Bridge Stiffener ($P*\eta_{pl}$) =	10.56 kips

I_{inner} =	10847.24	$in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$
I_{outer} =	13792.48	$in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8 + N_{outer}*I_{o.outer})$
I_{pl} =	25073.30	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{pl} =	13822.71	$in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$
I_{tot} =	63535.73	$in.^4$	$(I_{inner} + I_{outer} + I_{pl})$
$P_{u.t.inner}$ =	23.3	kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} - P*\eta_{in}/N_{inner})$
$P_{u.t.outer}$ =	26.4	kips	$(M*(BC_{outer}/2)*A_{outer})/I_{total} - P*\eta_{out}/N_{outer})$
$P_{u.t.pl}$ =	222.1	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	228.4	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{u.t.pl}$ =	123.1	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} - P*\eta_{pl}/N_{pl})$
$P_{u.c.pl}$ =	126.7	kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*\eta_{pl}/N_{pl})$
$P_{nt.bolt}$ / (Ω x ASIF) =	72.15	kips	
Bolt Rating =	36.5%	OK	

Bridge Stiffener Check

f_y =	50	ksi
f_u =	65	ksi
E =	29000	ksi
K =	0.85	
KL/r =	58.890	
F_e =	82.53	ksi
F_{cr} =	38.80	ksi
P_{nc} / Ω =	209.11	kips
P_{nt} / Ω =	233.09	kips
Bridge Stiffener Rating =	81.9%	OK

APPENDIX E

Anchor Rod & Base Plate Analysis

Anchor Rod and Base Plate Stresses
CT11126F SOUTHBURY/ I-84 X15/ BAGL
2014790.88

*Overturning Moment =	4011.14	k*ft
Axial Force =	57.04	k
Shear Force =	39.65	k

Acceptable Stress Ratio =	100.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of anchor rod forces used in the analysis below.

Anchor Rods		
Number of Rods =	52	
Type =	Bolt	
Rod Ultimate Strength (Fu) =	150	ksi
ASIF =	1.333	
Rod Circle =	67	in
Rod Diameter =	1.25	in
Area =	1.23	in^2
Max Tension on Rod =	54.16	kips
Max Compression on Rod =	56.35	kips
Allow. Rod Force =	80.99	kips
Anchor Rod Capacity =	**66.9%**	**OK**

Base Plate		
Location =	External	
Plate Strength (F_y) =	36	ksi
Outside Diameter =	69.75	in
Plate Thickness =	1.25	in
b =	3.42	in
Le =	4.50	in
fb =	31.79	ksi
Fb =	36	ksi
BP Capacity =	**88.3%**	**OK**

Stiffeners		
Configuration =	Every Rod	
Thickness =	0.625	in
Width =	4.5	in
Notch =	0.5	in
Height =	8	in
Stiffener Strength (F_y) =	36	ksi
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.375	in
Horiz. Weld Type =	Fillet	
Fillet Size =	0.375	in
Weld Strength =	70	ksi
Stiffener Vertical Force =	33.15	kips
Vert. Weld Capacity =	39.6%	kips
Horiz. Weld Capacity =	61.6%	kips
Stiffener Capacity =	80.3%	kips
Controlling Capacity =	**80.3%**	**OK**

Pole		
Pole Diameter =	60	in
Number of Sides =	Round	
Thickness =	0.625	in
Pole Yield Strength =	42	ksi

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Sheet No 1 Of 1

Calculated By: TTB Date: 8/12/2014
Checked By: TR Date: 8/12/2014

MODIFIED ANCHOR ROD CALCULATIONS

Moment from RISA (M) =	5140.27 kip-ft	Code	TIA/EIA-222-F		
Axial from RISA (P) =	70.20 kip	ASIF =	1.33		
Shear from RISA (V) =	39.65 kip	Allowable Stress Ratio =	100%		
Inner Bolt Diameter =	1.25 in				
Number Inner Bolts (N_{inner}) =	52	Inner Bolt Circle (BC_{inner}) =	67 in		
Inner Bolt Area (A_{inner}) =	0.97 in^2	Total Area ($A_{tot.in}$) =	50.39 in^2	Axial, Inner Bolts ($P*\eta_{in}$) =	57.04 kips
Inner Bolt MOI ($I_{o.inner}$) =	0.12 in^4	Percent Total Area (η_{in}) =	81.3%		
Outer Bolt Diameter =	1.25 in				
Number Outer Bolts (N_{outer}) =	12	Outer Bolt Circle (BC_{outer}) =	74 in		
Outer Bolt Area (A_{outer}) =	0.97 in^2	Total Area ($A_{tot.out}$) =	11.63 in^2	Axial, Outer Bolts ($P*\eta_{out}$) =	13.16 kips
Outer Bolt MOI ($I_{o.outer}$) =	0.12 in^4	Percent Total Area (η_{out}) =	18.8%		

I_{inner} =	28280.20 $in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8+N_{inner}*I_{o.inner})$
I_{outer} =	7960.80 $in.^4$	$(N_{outer}*A_{outer}*BC_{outer}^2/8+N_{outer}*I_{o.outer})$
I_{tot} =	36241.00 $in.^4$	$(I_{inner} + I_{outer})$
F_{inner} =	56.35 kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} + P*\eta_{in}/N_{inner})$
F_{outer} =	62.12 kips	$(M*(BC_{outer}/2)*A_{outer})/I_{total} + P*\eta_{out}/N_{outer})$
Rnt.outer / Ω=	68.2 kips	(1/3 * ASIF * Fu * Agross)

Modified Anchor Rod Rating
% = 91.1% OK

APPENDIX F

Foundation Analysis

Pile Analysis

CT11126F SOUTHBURY/I-84 X15/BAGL

2014790.88

M	5140.27	k-ft
P	145.20	k
V	39.65	k
M tot	5358.345	k-ft
M tot 45	3788.922	k-ft
d	5.5	ft
h	46	ft
Vconc	11638	ft^3
wconc	1745.7	k

Pile Ultimate Capacities

Existing

Compression	150	k
Tension	100	k

Modification

Compression	100	k
Tension	100	k

Wequip	75	k

(weight of the equipment above the pad)

n existing	24
n mod	48

Total force on piles

	n	x (ft)	y (ft)	X Pc (k)	X Pt (k)	X Mu (k-ft)	45 Pc (k)	45 Pt (k)
Existing	4	0	0	26.26	26.26	0.00	26.26	26.26
	10	6	6	28.28	24.25	848.30	29.11	23.41
	10	12	12	30.29	22.23	1817.46	31.96	20.57
	24							
Mod	2	0	0	26.26	26.26	0.00	26.26	26.26
	4	3.5	3.5	27.44	25.09	192.06	27.92	24.60
	4	7	7	28.61	23.91	400.58	29.59	22.94
	4	10.5	10.5	29.79	22.74	625.54	31.25	21.28
	4	14	14	30.96	21.56	866.95	32.91	19.62
	4	17.5	17.5	32.14	20.39	1124.81	34.57	17.95
	26	21	21	33.31	19.21	9094.32	36.23	16.29
	48							

Pile Capacities

Existing

Compression	40.4%
Tension	52.5%

Modification

Compression	66.6%
Tension	52.5%

Reinforcement Capacity

Mu	19461.03	k-ft
a	4.262575	in
d	60.885	in
Phi Mn	26439.17	k-ft

Capacity 73.6%

Network Modernization RFDS v3.0

T-Mobile

Site ID	CT11126F	Latitude Longitude	
Site Name		Site Type	Structured- Non Building
Address	231 Kettleton Rd, Southbury	Site Class	Monopole
Market	Connecticut	Landlord	T-mobile

Configuration
704G

Approvals	
Market RF	
Market Development	

RFDS Revision	
RFDS Final	

Date: 07/14/2014

Site Information

Existing Configuration					Proposed Configuration			
1	2	3	4	Cabinet #	1	2	3	4
GSM				Technology	GSM/UMTS/LTE			
S8000				Cabinet type	6102			
				CBU				
				DUW30				
				DUL20				
				DUG20	1			
				DUS31	1			
				RBS6601				
3				dTRU/TRX				
				RU22 B4				
				RUS01 B2	6			
				RUS01 B4				

	Relocate cabinet
	Add cabinet
x	Swap cabinet
	Remove cabinet
	Make cabinet dark

Comments: Swap cabinet for Ericsson 6102

ALPHA - Scope of Work

x	Add new mount	x	Add RRU	Add LTE 700 passive antenna. Add coax. Add RRUS on ground. Add smart Bias-T
	Relocate antenna		Swap existing RRU	
x	Add antenna		Remove RRU	
	Swap antenna		Consolidate coax cables	
	Remove antenna	x	Add coax cables	
	Add TMA		Add fiber cables	
	Swap TMA		Add hybrid combiner	
	Remove TMA		Add filter combiner	

BETA - Scope of Work

x	Add new mount	x	Add RRU	Add LTE 700 passive antenna. Add coax. Add RRUS on ground. Add smart Bias-T
	Relocate antenna		Swap existing RRU	
x	Add antenna		Remove RRU	
	Swap antenna		Consolidate coax cables	
	Remove antenna	x	Add coax cables	
	Add TMA		Add fiber cables	
	Swap TMA		Add hybrid combiner	
	Remove TMA		Add filter combiner	

GAMMA - Scope of Work

x	Add new mount	x	Add RRU	Add LTE 700 passive antenna. Add coax. Add RRUS on ground. Add smart Bias-T
	Relocate antenna		Swap existing RRU	
x	Add antenna		Remove RRU	
	Swap antenna		Consolidate coax cables	
	Remove antenna	x	Add coax cables	
	Add TMA		Add fiber cables	
	Swap TMA		Add hybrid combiner	
	Remove TMA		Add filter combiner	

DELTA - Scope of Work

	Add new mount		Add RRU	
	Relocate antenna		Swap existing RRU	
	Add antenna		Remove RRU	
	Swap antenna		Consolidate coax cables	
	Remove antenna		Add coax cables	
	Add TMA		Add fiber cables	
	Swap TMA		Add hybrid combiner	
	Remove TMA		Add filter combiner	

Network Modernization RFDS v3.0

T-Mobile

Site ID	CT11126F	Latitude Longitude	
Site Name		Site Type	Structured- Non Building
Address	231 Kettleton Rd, Southbury	Site Class	Monopole
Market	Connecticut	Landlord	T-mobile

Configuration
704G

Approvals	
Market RF	
Market Development	

RFDS Revision	
RFDS Final	

Date: 07/14/2014

GAMMA (view from behind)

	Existing Configuration					Proposed Configuration			
	X	X	X		X	X	X	
Technology		GSM				GSM/LTE	LTE	
Band		B2				B2	B12	
Active/Passive		P				P	P	
Ant. Type		Dual pole				Dual pole	Dual pole	
Ant. Model		RR90_17_02DP				RR90_17_02DP	LNX-6515DS-VTM	
Ant. Vendor		EMS				EMS	Commscope	
Ant. Height		195				195	193	
Azimuth						260	260	
RET deployed						NO	Yes	
E-Tilt		2				2	2	
M-Tilt		0				0	0	
TMA #		1				1		
TMA Type		dd B2				dd B2		
RRU #							1	
RRU Type							RRUS11_B12	
Used Coax #		2				2	2	
Coax Type		1-5/8"				1-5/8"	1-5/8"	
Coax Length (ft)		210				210	210	
Fiber (CPRI) #								
Splitter #								
Combiner #								
Combiner Type								

x	Add new mount	x	Add RRU
	Relocate antenna		Swap existing RRU
x	Add antenna		Remove RRU
	Swap antenna		Consolidate coax cables
	Remove antenna	x	Add coax cables
	Add TMA		Add fiber cables
	Swap TMA		Add hybrid combiner
	Remove TMA		Add filter combiner

Scope of work

Add LTE 700 passive antenna. Add coax. Add RRUS on ground. Add smart Bias-T

DELTA (view from behind)

	Existing Configuration				Proposed Configuration			
Technology								
Band								
Active/Passive								
Ant. Type								
Ant. Model								
Ant. Vendor								
Ant. Height								
Azimuth								
RET deployed								
E-Tilt								
M-Tilt								
TMA #								
TMA Type								
RRU #								
RRU Type								
Used Coax #								
Coax Type								
Coax Length (ft)								
Splitter #								
Fiber (CPRI) #								
Combiner #								
Combiner Type								

	Add new mount		Add RRU
	Relocate antenna		Swap existing RRU
	Add antenna		Remove RRU
	Swap antenna		Consolidate coax cables
	Remove antenna		Add coax cables
	Add TMA		Add fiber cables
	Swap TMA		Add hybrid combiner
	Remove TMA		Add filter combiner

Scope of work

EXHIBIT C

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: CT11126F

Southbury Recycling Facility
231 Kettletown Road
Southbury, CT 06488

August 21, 2014

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	31.07 %

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

EBI Consulting
environmental | engineering | due diligence

August 21, 2014

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

Emissions Analysis for Site: **CT11126F – Southbury Recycling Facility**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **231 Kettletown Road, Southbury, 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 μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μW/cm2). The general population exposure limit for the 700 MHz Band is 567 μW/cm2, and the general population exposure limit for the PCS and AWS bands is 1000 μW/cm2. 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 **231 Kettletown Road, Southbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

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

2) **2** UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 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 (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

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

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

7) The antennas used in this modeling are the **Ericsson RR90_17_02DP** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson RR90_17_02DP** has a maximum gain of **14.4 dBd** at its main lobe. The **Commscope LNX-6515DS-A1M** has a maximum gain of **15.5 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerlines of the proposed antennas are **195 feet** above ground level (AGL) for the Andrew **RR90_17_02DP** and **193 feet** above ground level (AGL) for the **Commscope LNX-6515DS-A1M.**

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

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Andrew RR90_17_02DP	Make / Model:	Andrew RR90_17_02DP	Make / Model:	Andrew RR90_17_02DP
Gain:	14.4 dBd	Gain:	14.4 dBd	Gain:	14.4 dBd
Height (AGL):	195	Height (AGL):	195	Height (AGL):	195
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	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	90	Total TX Power:	90	# AWS Channels:	90
ERP (W):	3,505.81	ERP (W):	3,505.81	ERP (W):	3,505.81
Antenna A1 MPE%	0.67	Antenna B1 MPE%	0.67	Antenna C1 MPE%	0.67
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	15.5 dBd	Gain:	15.5 dBd	Gain:	15.5 dBd
Height (AGL):	195	Height (AGL):	195	Height (AGL):	195
Frequency Bands	700 Mhz	Frequency Bands	700 Mhz	Frequency Bands	700 Mhz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	470.23	ERP (W):	470.23	ERP (W):	470.23
Antenna A2 MPE%	0.23	Antenna B2 MPE%	0.23	Antenna C2 MPE%	0.23

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile	**2.70**
AT&T	10.04 %
Verizon Wireless	13.49 %
Sprint	4.84 %
Site Total MPE %:	**31.07 %**

T-Mobile Sector 1 Total:	0.90 %
T-Mobile Sector 2 Total:	0.90 %
T-Mobile Sector 3 Total:	0.90 %
Site Total:	31.07 %

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Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	0.90 %
Sector 2:	0.90 %
Sector 3 :	0.90 %
T-Mobile Total:	2.70 %
Site Total:	31.07 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **31.07%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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