CENTERLINE COMMUNICATIONS

dish WIRELESS

Gamma Purchasing L.L.C. ("DISH")

Alex Murshteyn
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April 3, 2019

Honorable James J. Murphy, Jr., Acting Chairman
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: **Request for Tower Share**
Gamma Purchasing L.L.C. ("DISH" a/k/a "Dish" f/k/a "Dish Network") Request for Approval of the Shared Use of an Existing Tower at 712 Bread and Milk Street (a/k/a Bread & Milk St a/k/a Route 31), Coventry, CT
DISH site number: CT0100005A (SBA: CT02573-S)

Dear Chairman Murphy and Members of the Council:

Dish proposes to share an existing telecommunications tower located at 712 Bread and Milk Street in Coventry, CT (the facility). The subject parcel is identified by the Town of Coventry as Map 4, Block 12 and Lot 8. The property is owned by Ronald R. & Jeannine G. Nadeau. The tower is owned by SBA Communications. The property is roughly 25± acres and accommodates several existing industrial/manufacturing buildings, one residential structure, as well the monopole tower within the fenced compound in the rear, along with three utility platforms on piers or concrete pads plus backup generator equipment inside it. The facility is and will continue to be owned and operated by SBA Communications.

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

The purpose of this request is to use an existing tower to develop Dish's wireless network to provide high speed wireless data and wireless service within the State of Connecticut and in this part of Coventry: avoiding the need for an additional tower in Coventry or Tolland, CT.

Dish is licensed by the Federal Communications Commission ("FCC") to provide multiple

technologies, including NB-IoT, PCS and AWS (1900 MHz and 2000-2020 MHz) in Tolland County. Dish is building and enhancing its network to take advantage of its licensed spectrum, and improve its Personal Carrier Services (PCS) and other FCC-licensed wireless data services.

Existing Facility & Proposed Modification

The existing facility is and will continue to be a 175' monopole tower located at 712 Bread and Milk Street in Coventry. Site coordinates (NAD83) are N41° 49' 5.04" and W72° 23' 35.44" (or 41.81809, -72.39317). Currently there are three other commercial wireless carriers licensed on this tower, whereby Dish now intends to use the vacant space midway on the pole. The site plan of the facility is included in the proposed Construction Drawings, prepared by Hudson Design Group LLC dated March 19, 2019 and enclosed herewith.

Dish intends to install three (3) ODI2-065R18K-GQ Comba panel antennas and five (5) Ericsson RRUs on an antenna standoff with ring mount, as shown in the Construction Drawing, to be attached to the monopole tower at the 153' mount level. Dish will also install one (1) 7/8" hybrid fiber cable on the tower. Down below, inside the existing fenced compound, it will install one (1) platform with a platform-level 3' dish antenna.

Dish intends to enter into a new agreement, at this tower height, in order to license the portion of space within the existing fenced compound for new 5'-0" x 7'-0" steel platform with canopy on concrete piers. It will install one (1) new 5'-3" stacked cabinet beneath the ice canopy, along with one (1) telco and one (1) power cabinet on an H-frame thereon. Equipment will thus remain within the existing fenced compound. A new ground conduit will also be installed on sleepers beneath the ice canopy in order to connect the equipment with the tower. The new ground conduits will also be installed beneath an ice bridge and canopy in order to connect the equipment with the tower. A GPS antenna with a 3' satellite dish will be located on the platform canopy near the ice bridge.

Consistent with the requirements of the Statute, it is feasible for Dish to collocate at this facility. Dish is proposing to collocate on the existing monopole tower that will continue to remain in the ownership of SBA Communications. Included with this application is a Structural Analysis Report from Tower Engineering Solutions dated February 25, 2019 that shows that the existing tower can support Dish's proposed equipment. Please disregard the larger and heavier three (3) sector frames mounting system initially noted herein and refer instead to the Construction Drawings, which depict the final, smaller and lighter collar with short standoffs that is being proposed hereby.

The Proposal is Legally Feasible.

The Council has authority, pursuant to statute, to issue an order approving of the shared use of this tower. By issuing an order approving Dish's shared use of this tower, Dish will be able to proceed with obtaining a building permit for the proposed installation. SBA Communications has executed a Letter of Authorization that approved Dish's Request for Tower Share filing on April 3, 2019, which approval is included with this application. Dish's proposal is legally feasible.

Dish is a telecommunication provider licensed by the FCC to provide service in the State of

Connecticut, including but not limited to Tolland County. Dish will enter into an agreement with the owner of this facility, SBA Communications, for the location of this proposed equipment on the existing tower so that it may provide telecommunications services to the surrounding community. Consequently, the proposal is legally feasible.

The Proposal is Environmentally Feasible.

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

- The overall impact on the Town of Coventry will be decreased with the sharing of a single tower versus the proliferation of multiple towers.
- There will be no material increase in the visibility of the tower with the addition of the antennas and associated equipment on the tower.
- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.
- There will only be a brief, slight increase in noise pollution while the site is under construction.
- During construction, the proposed project will generate a small amount of traffic as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.
- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of Dish's new antennas to the tower. Dish has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis dated April 1, 2019 indicates that Dish and other antennas on the tower will cumulatively emit 7.69% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is enclosed herewith and the calculations are below.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Combo ODU-065R18E-GQ	1900 MHz (PCS) - H Block / Band 70 (2000 to 2020 MHz)	15.65	4	160	5,876.52	0.98
						Sector A Composite MPE%	0.98
Antenna B1	Combo ODU-065R18E-GQ	1900 MHz (PCS) - H Block / Band 70 (2000 to 2020 MHz)	15.65	4	160	5,876.52	0.98
						Sector B Composite MPE%	0.98
Antenna C1	Combo ODU-065R18E-GQ	1900 MHz (PCS) - H Block / Band 70 (2000 to 2020 MHz)	15.65	4	160	5,876.52	0.98
						Sector C Composite MPE%	0.98

Site Composite MPE%	
Carrier	MPE %
Dish Wireless – Max Per Sector Value	0.98 %
Verizon Wireless	4.24 %
AT&T	1.31 %
T-Mobile	1.16 %
Site Total MPE %:	7.69 %

Dish Wireless Sector A Total:	0.98 %
Dish Wireless Sector B Total:	0.98 %
Dish Wireless Sector C Total:	0.98 %
Site Total:	7.69 %

- Dish expects to enhance safety in this portion of Coventry by improving wireless telecommunications for local residents and travelers. Dish is currently developing its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of Dish's network development.

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

Conclusions:

For the reasons stated above, the attachment of Dish's antennas and associated equipment to the tower would meet all the requirements set forth in the Statute. The proposal is legally, technically, economically and environmentally feasible and meets all public safety concerns. Therefore, Dish respectfully requests that the Council approve this request for the shared use of this tower located at 712 Bread and Milk Street, Coventry, CT.

Respectfully yours,

Alex Murshteyn
Real Estate Consultant – Site Acquisition
c/o Gamma Purchasing L.L.C. (Dish)
Centerline Communications, LLC
750 West Center Street, Floor 3 / Suite 301
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

Enclosures (8)

cc: Joan A. Lewis, Chairman, Coventry Town Council - chief elected official
Eric Trott, Town of Coventry, Director of Planning and Development - P&Z official
Ronald R. & Jeannine G. Nadeau - property owners
SBA Communications - tower owner
DISH (e-mail)

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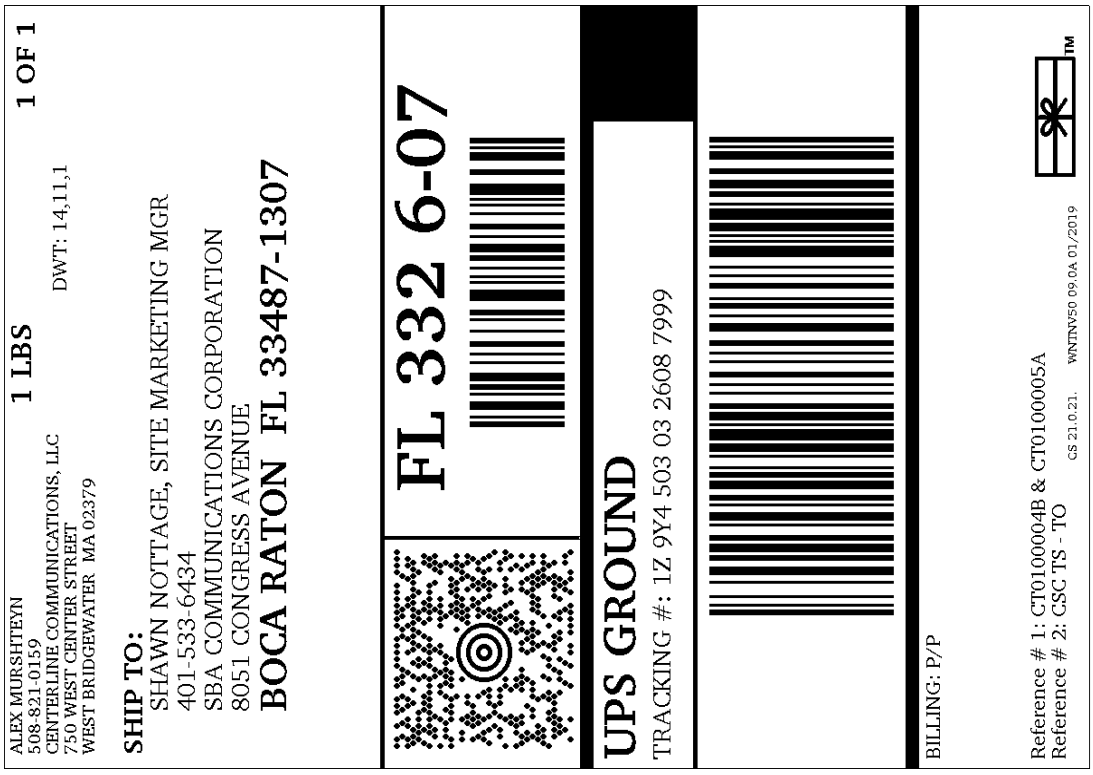

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SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561.995.7670
F + 561.995.7626

sbasite.com

LETTER OF AUTHORIZATION

SBA Site ID: CT02573-S, Coventry 2 CT

Property Located at: 712 Bread & Milk Street, Coventry, CT, 06238-1093

THE CITY/COUNTY OF: Coventry / Tolland

APPLICATION FOR ZONING/USE/BUILDING PERMIT

This letter authorizes Gamma Purchasing LLC and its authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility on the existing tower on the property referenced above on behalf of Ronald Nadeau.

All approval conditions that may be granted to Gamma Purchasing LLC in connection with above referenced facility relating to this specific application are the sole responsibility of Gamma Purchasing LLC.

SBA Towers, LLC

Jason Silberstein

Executive VP, Site Leasing

Date: 4/03/2019

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 180 ft. (Top of Antenna) Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02573-S

Customer Site Name: Coventry 2 CT

Carrier Name: Dish Network (App#: 109017, V2)

Carrier Site ID / Name: CT0100005A / TBD

Site Location: 712 Bread & Milk Street

Coventry, Connecticut

Tolland County

Latitude: 41.818091

Longitude: -72.393175

2/25/19

Analysis Result:

Max Structural Usage: 97.9% [Pass]

Max Foundation Usage: 43.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Ishwor Dhakal

Tower Engineering Solutions
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Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Ishwor Dhakal

Introduction

The purpose of this report is to summarize the analysis results on the 178 ft Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Fred A. Nudd Corporation, Project # 7491R Rev A Dated 10/03/2002
Foundation Drawing	Fred A. Nudd Corporation, Project # 7491R Rev A Dated 10/03/2002
Geotechnical Report	Jaworski Geotech Inc., Project # 00214G Dated 06/14/2000
Modification Drawings	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA-222-G**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 130 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 101.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.063

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	172.0	3	EMS - RR90-17-02DP - Panel	(3) T-Frames w/ (12) Pipe Mount	(12) 1 5/8"	T-Mobile
2		3	Kathrein 782 11056 - Bias-T			
3		6	Allen FE15501P77-75 - TMA			
4	170.0	3	Andrew - LNX-6515DS-A1M - Panel			
5	163.0	6	Powerwave - 7770 - Panel	Low Profile Platform	(12) 1 5/8" (6) 1/2" (2) 1/2" DC & (1) 3/8" Fiber Inside (1) 3" Innerduct	AT&T
6		2	KMW - AM-X-CD-16-65-00T - Panel			
7		1	Andrew - SBNH-1D6565C - Panel			
8		6	Powerwave LGP21401 - TMA			
9		6	Ericsson RRUS-11 - RRU			
10		1	Raycap DC6-48-60-18-8F - SP			
14	130.0	6	Andrew - SBNHH-1D65B - Panel	14'-6" Platform w/ Hand Rail [PV-LPP14M-HR-B]	(2) 1 5/8" Hybrid	Verizon
15		3	Amphenol - QUAD656C0000x - Panel			
16		3	Alcatel B13 RRH4X30-4R - RRU			
17		3	Alcatel B25 RRH4x30-4R - RRU			
18		3	Alcatel B66A RRH 4X45 - RRU			
19		2	RFS DB-T1-6Z-8AB-0Z			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
11	153.0	3	Comba ODI2-065R18K-GQ - Panel	(3) Commscope SF-SU7-2-96 Sector Frames	(1) 1 1/4" Hybrid	Dish Network
12		2	Ericsson 4415			
13		3	Ericsson 0208			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**68.4%**	**67.8%**	**97.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5928.0	43.1
Analysis Reactions	4722.1	39.8

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA-222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.9648 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA-222-G Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 68.45% at 48.0ft

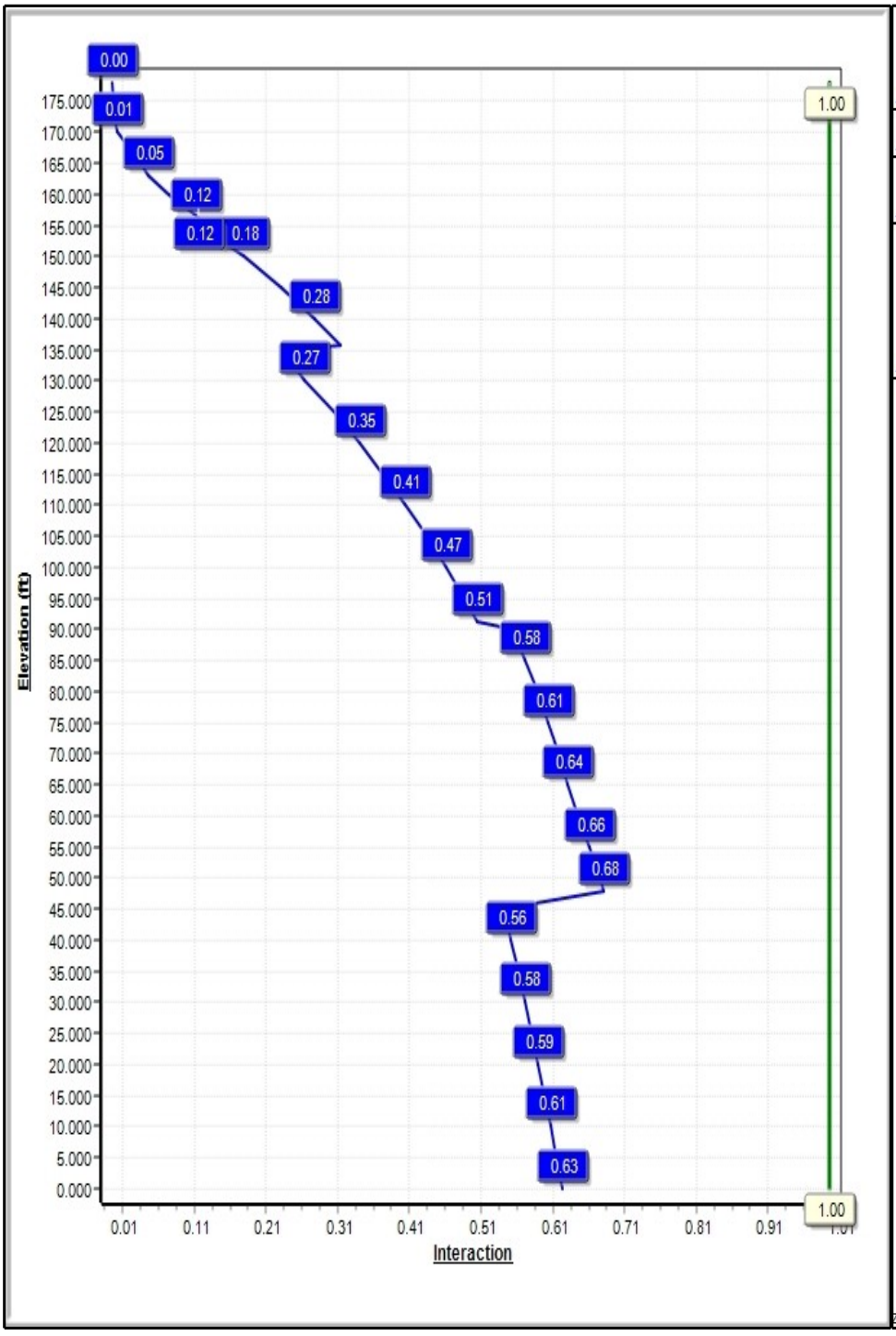
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT	**Exposure:**	C	
Height:	177.95 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

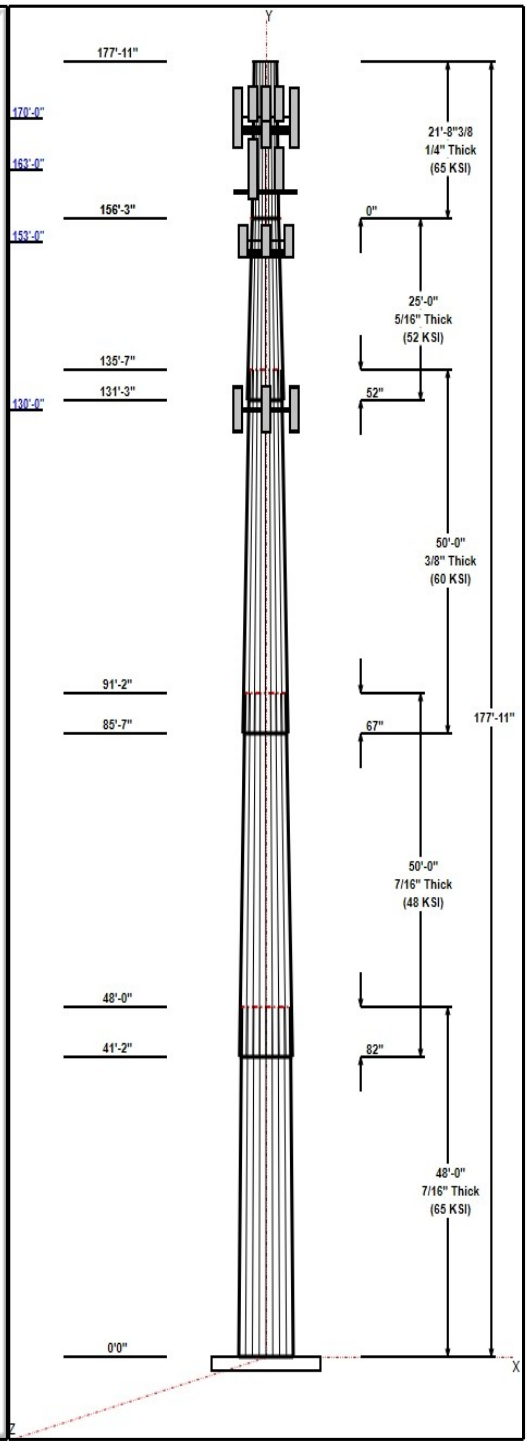
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 101 mph Wind

Iterations: 24





Structure: CT02573-S-SBA

Type: Tapered
Site Name: Coventry 2 CT
Height: 177.95 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.24321

2/25/2019

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	52.83	64.50	0.438		0.24321	65
2	50.00	43.20	55.36	0.438	Slip	0.24321	47.67
3	50.00	33.15	45.31	0.375	Slip	0.24321	60.17
4	25.00	28.75	34.83	0.313	Slip	0.24321	51.51
5	21.70	23.47	28.75	0.250	Butt	0.24321	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
177.95	177.95	1	6' Lightning rod	
172.00	172.00	3	RR90-17-02DP	T-Mobile
172.00	172.00	3	782 11056 - Bias-T	T-Mobile
172.00	172.00	6	FE15501P77-75	T-Mobile
170.00	170.00	3	LNX-6515DS-A1M	T-Mobile
170.00	170.00	3	T-Frames w/ Pipe Mount	T-Mobile
163.00	163.00	6	7770	AT&T
163.00	163.00	2	AM-X-CD-16-65-00T	AT&T
163.00	163.00	1	SBNH-1D6565C	AT&T
163.00	163.00	6	LGP21401	AT&T
163.00	163.00	1	DC6-48-60-18-8F	AT&T
163.00	163.00	6	RRUS-11	AT&T
160.00	160.00	1	HP Platform w/ Pipe Mount	AT&T
153.00	153.00	2	Collar Mount (3-Sided)	Dish Network
153.00	153.00	3	3.0" Std Pipe	Dish Network
153.00	153.00	3	ODI2-065R18K-GQ	Dish Network
153.00	153.00	3	SF-SU7-2-96	Dish Network
153.00	153.00	2	4415	Dish Network
153.00	153.00	3	0208	Dish Network
130.00	130.00	6	SBNHH-1D65B	Verizon
130.00	130.00	3	QUAD656C0000x	Verizon
130.00	130.00	3	B13 RRH4X30-4R	Verizon
130.00	130.00	3	B25 RRH4x30-4R	Verizon
130.00	130.00	3	B66A RRH 4X45	Verizon
130.00	130.00	2	DB-T1-6Z-8AB-0Z	Verizon
130.00	130.00	1	PV-LPP14L-HR-B Platform	Verizon

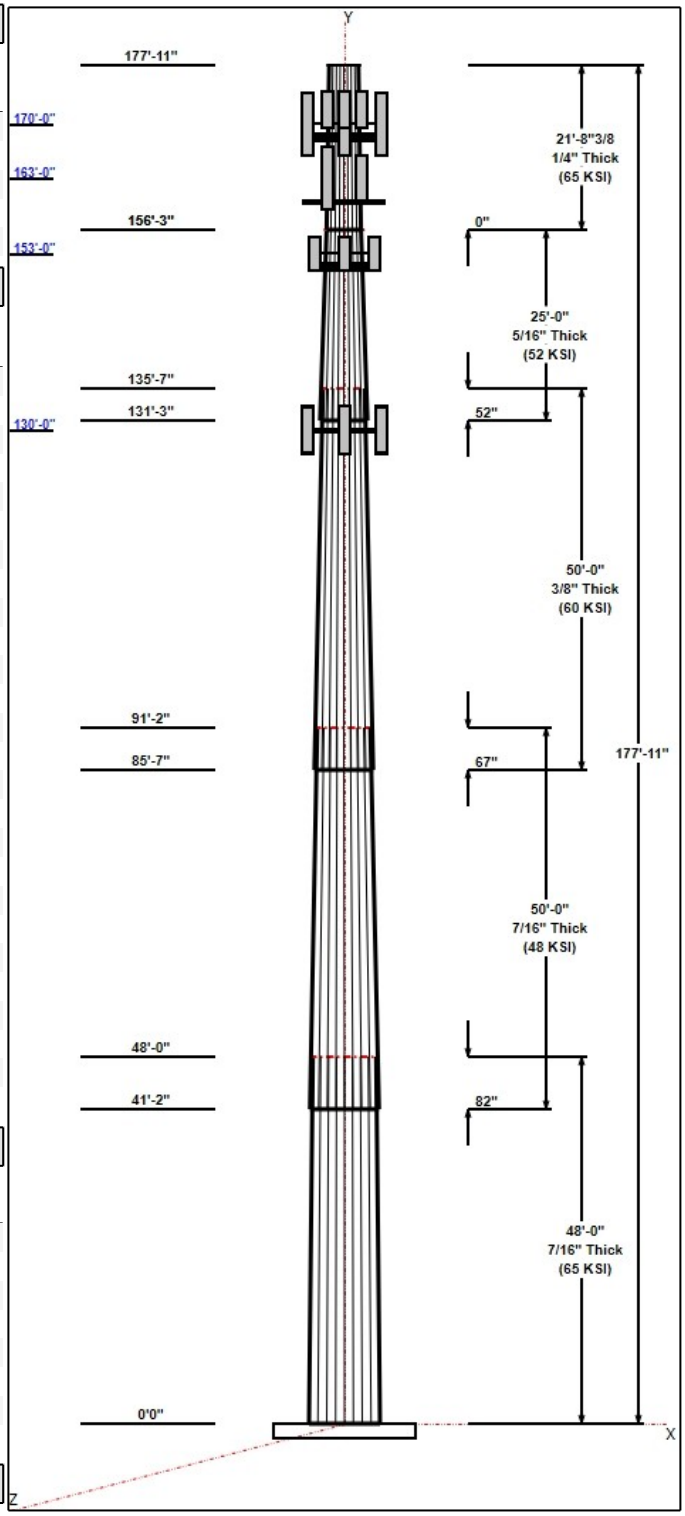
Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	173.00	Inside	1 5/8" Coax	T-Mobile
0.00	162.00	Inside	1 5/8" Coax	AT&T
0.00	162.00	Inside	1/2" Coax	AT&T
0.00	162.00	Inside	1/2" DC	AT&T
0.00	162.00	Inside	3" Innerduct	AT&T
0.00	162.00	Inside	3/8" Fiber	AT&T
0.00	153.00	Inside	1 1/4" Hybrid	Dish Network
0.00	130.00	Inside	1 5/8" Hybrid	Verizon

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.00" F1554 105	105.0	Radial

Base Plate



Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	68.0	50.0	Round

Reactions

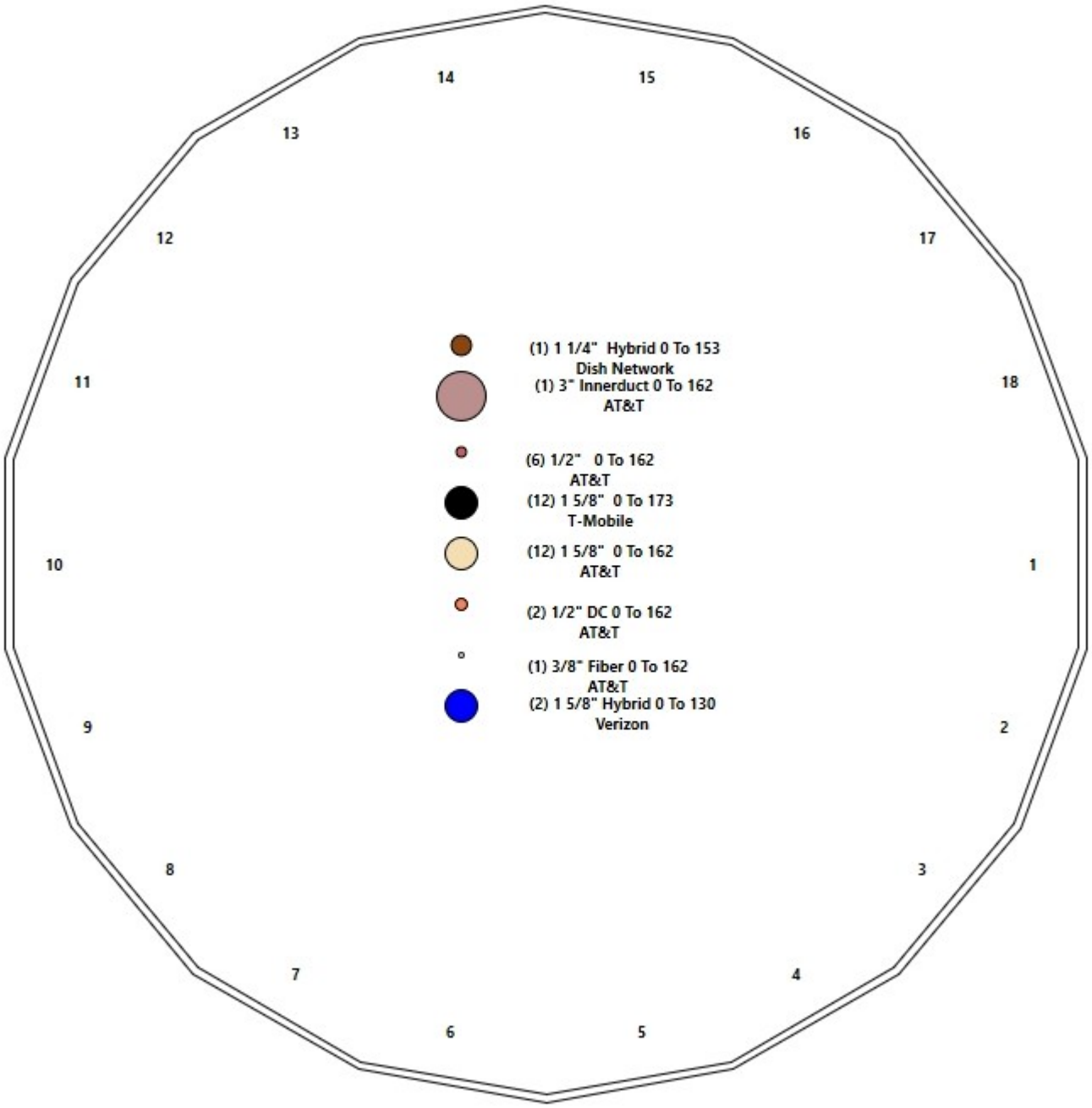
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	4722.1	39.8	60.3
0.9D + 1.6W 101 mph Wind	4680.4	39.8	45.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1371.4	11.4	96.8
1.2D + 1.0E	200.7	1.7	60.4
0.9D + 1.0E	198.9	1.7	45.3
1.0D + 1.0W 60 mph Wind	1036.2	8.8	50.3

Structure: CT02573-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Coventry 2 CT
Height: 177.95 (ft)

2/25/2019

Tower Engineering Solutions



Shaft Properties

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.4375	65		0.00	13,206
2	18	50.000	0.4375	48	Slip	82.00	11,540
3	18	50.000	0.3750	60	Slip	67.00	7,868
4	18	25.000	0.3125	52	Slip	52.00	2,656
5	18	21.700	0.2500	65	Flange	0.00	1,515
					Total Shaft Weight:		**36,784**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	64.50	0.00	88.96	46124.76	24.59	147.43	52.83	48.00	72.75	25224.6	19.88	120.7	0.243212
2	55.36	41.17	76.27	29069.59	20.90	126.54	43.20	91.17	59.38	13720.7	16.00	98.75	0.243212
3	45.31	85.58	53.48	13643.70	19.89	120.83	33.15	135.58	39.01	5293.98	14.18	88.40	0.243212
4	34.83	131.2	34.23	5152.90	18.24	111.45	28.75	156.25	28.20	2881.25	14.81	91.99	0.243212
5	28.75	156.2	22.61	2320.23	18.87	114.99	23.47	177.95	18.42	1255.14	15.14	93.88	0.243212

Load Summary

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	177.95	6' Lightning rod	1	6.50	0.38	1.00	55.73	1.855	1.00	0.00	0.00
2	172.00	RR90-17-02DP	3	13.50	4.36	0.69	160.99	5.738	0.71	0.00	0.00
3	172.00	782 11056 - Bias-T	3	2.60	0.28	0.75	11.43	0.822	0.77	0.00	0.00
4	172.00	FE15501P77-75	6	23.10	0.96	0.67	74.66	1.567	0.69	0.00	0.00
5	170.00	LNX-6515DS-A1M	3	51.30	11.46	0.80	361.42	15.856	0.82	0.00	0.00
6	170.00	T-Frames w/ Pipe Mount	3	450.00	16.00	0.75	925.02	26.858	0.75	0.00	0.00
7	163.00	7770	6	35.00	5.50	0.73	231.21	6.965	0.75	0.00	0.00
8	163.00	AM-X-CD-16-65-00T	2	48.50	8.02	0.76	266.68	11.776	0.78	0.00	0.00
9	163.00	SBNH-1D6565C	1	66.10	11.47	1.00	375.17	15.841	1.00	0.00	0.00
10	163.00	LGP21401	6	14.10	1.29	0.67	47.71	2.414	0.69	0.00	0.00
11	163.00	DC6-48-60-18-8F	1	31.80	0.92	1.00	114.92	1.509	1.00	0.00	0.00
12	163.00	RRUS-11	6	51.00	2.52	0.67	148.17	3.372	0.69	0.00	0.00
13	160.00	HP Platform w/ Pipe Mount	1	1600.00	25.00	1.00	3473.62	51.933	1.00	0.00	0.00
14	153.00	Collar Mount (3-Sided)	2	220.00	2.50	1.00	630.36	5.997	0.75	0.00	0.00
15	153.00	3.0" Std Pipe	3	30.00	1.75	1.00	85.96	4.198	0.75	0.00	0.00
16	153.00	ODI2-065R18K-GQ	3	25.10	4.85	0.70	167.43	6.162	0.70	0.00	0.00
17	153.00	SF-SU7-2-96	3	395.00	15.10	0.75	910.74	40.449	0.75	0.00	0.00
18	153.00	4415	2	44.10	1.86	0.67	107.48	2.625	0.67	0.00	0.00
19	153.00	0208	3	19.80	1.37	0.67	66.48	2.036	0.67	0.00	0.00
20	130.00	SBNHH-1D65B	6	40.00	8.16	0.83	323.26	9.906	0.85	0.00	0.00
21	130.00	QUAD656C0000x	3	54.00	13.24	0.71	455.12	15.280	0.73	0.00	0.00
22	130.00	B13 RRH4X30-4R	3	57.20	2.16	0.75	139.08	2.963	0.77	0.00	0.00
23	130.00	B25 RRH4x30-4R	3	51.00	2.14	0.75	126.90	2.939	0.77	0.00	0.00
24	130.00	B66A RRH 4X45	3	64.00	2.60	0.75	182.49	3.550	0.77	0.00	0.00
25	130.00	DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.78	218.60	5.973	0.79	0.00	0.00
26	130.00	PV-LPP14L-HR-B Platform w/	1	1641.00	36.80	1.00	4471.74	79.008	1.00	0.00	0.00
		Totals:	**79**	**8,628.10**			**26,666.65**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	173.00	(12) 1 5/8" Coax	0.00	Inside
0.00	162.00	(12) 1 5/8" Coax	0.00	Inside
0.00	162.00	(6) 1/2" Coax	0.00	Inside
0.00	162.00	(2) 1/2" DC	0.00	Inside
0.00	162.00	(1) 3" Innerduct	0.00	Inside
0.00	162.00	(1) 3/8" Fiber	0.00	Inside
0.00	153.00	(1) 1 1/4" Hybrid	0.00	Inside
0.00	130.00	(2) 1 5/8" Hybrid	0.00	Inside

Shaft Section Properties

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	64.500	88.956	46124.8	24.59	147.43	72.5	1408.	0.0
5.00		0.4375	63.284	87.267	43547.6	24.09	144.65	73.1	1355.	1499.1
10.00		0.4375	62.068	85.578	41068.3	23.60	141.87	73.6	1303.	1470.4
15.00		0.4375	60.852	83.890	38684.9	23.11	139.09	74.2	1252.	1441.7
20.00		0.4375	59.636	82.201	36395.6	22.62	136.31	74.8	1202.	1412.9
25.00		0.4375	58.420	80.513	34198.4	22.13	133.53	75.4	1153.	1384.2
30.00		0.4375	57.204	78.824	32091.5	21.64	130.75	75.9	1105.	1355.5
35.00		0.4375	55.988	77.135	30073.0	21.15	127.97	76.5	1058.	1326.7
40.00		0.4375	54.772	75.447	28140.9	20.66	125.19	77.1	1012.	1298.0
41.17	Bot - Section 2	0.4375	54.488	75.053	27702.3	20.55	124.54	77.2	1001.	298.7
45.00		0.4375	53.555	73.758	26293.4	20.17	122.41	77.7	967.0	1956.9
48.00	Top - Section 1	0.4375	53.701	73.960	26509.8	20.23	122.74	0.0	0.0	1508.0
50.00		0.4375	53.214	73.285	25790.1	20.04	121.63	59.6	954.6	501.0
55.00		0.4375	51.998	71.596	24048.2	19.55	118.85	59.9	910.9	1232.5
60.00		0.4375	50.782	69.907	22386.5	19.06	116.07	60.3	868.3	1203.8
65.00		0.4375	49.566	68.219	20803.1	18.57	113.29	60.5	826.7	1175.0
70.00		0.4375	48.350	66.530	19296.2	18.08	110.51	60.5	786.1	1146.3
75.00		0.4375	47.134	64.842	17864.0	17.59	107.74	60.5	746.5	1117.6
80.00		0.4375	45.918	63.153	16504.4	17.10	104.96	60.5	707.9	1088.8
85.00		0.4375	44.702	61.465	15215.6	16.61	102.18	60.5	670.4	1060.1
85.58	Bot - Section 3	0.4375	44.560	61.268	15069.7	16.55	101.85	60.5	666.1	121.8
90.00		0.4375	43.486	59.776	13995.7	16.12	99.40	60.5	633.9	1703.7
91.17	Top - Section 2	0.3750	43.952	51.866	12443.8	19.26	117.21	0.0	0.0	443.1
95.00		0.3750	43.020	50.756	11662.1	18.82	114.72	74.2	533.9	669.3
100.00		0.3750	41.804	49.309	10692.6	18.25	111.48	74.8	503.8	851.2
105.00		0.3750	40.588	47.861	9778.4	17.67	108.23	75.4	474.5	826.6
110.00		0.3750	39.372	46.414	8917.8	17.10	104.99	76.0	446.1	802.0
115.00		0.3750	38.156	44.967	8109.3	16.53	101.75	76.4	418.6	777.4
120.00		0.3750	36.940	43.519	7351.2	15.96	98.51	76.4	392.0	752.7
125.00		0.3750	35.723	42.072	6641.8	15.39	95.26	76.4	366.2	728.1
130.00		0.3750	34.507	40.625	5979.7	14.81	92.02	76.4	341.3	703.5
131.25	Bot - Section 4	0.3750	34.203	40.263	5821.3	14.67	91.21	76.4	335.2	172.0
135.00		0.3750	33.291	39.177	5363.0	14.24	88.78	76.4	317.3	937.9
135.58	Top - Section 3	0.3125	33.774	33.189	4695.1	17.65	108.08	0.0	0.0	143.6
140.00		0.3125	32.700	32.123	4257.3	17.04	104.64	65.4	256.4	490.8
145.00		0.3125	31.484	30.917	3795.6	16.35	100.75	65.4	237.4	536.3
150.00		0.3125	30.268	29.711	3368.5	15.67	96.86	65.4	219.2	515.8
153.00		0.3125	29.539	28.988	3128.3	15.26	94.52	65.4	208.6	299.6
155.00		0.3125	29.052	28.505	2974.7	14.98	92.97	65.4	201.7	195.6
156.25	Top - Section 4	0.3125	28.748	28.204	2881.2	14.81	91.99	65.4	197.4	120.6
156.25	Bot - Section 5	0.2500	28.748	22.612	2320.2	18.51	114.99	79.2	159.0	
160.00		0.2500	27.836	21.889	2104.5	18.22	111.34	80.0	148.9	283.9
163.00		0.2500	27.106	21.310	1941.9	17.71	108.43	80.6	141.1	220.5
165.00		0.2500	26.620	20.924	1838.3	17.36	106.48	81.0	136.0	143.7
170.00		0.2500	25.404	19.959	1595.5	16.51	101.62	82.0	123.7	347.8
172.00		0.2500	24.917	19.573	1504.7	16.16	99.67	82.4	118.9	134.5
175.00		0.2500	24.188	18.994	1375.1	15.65	96.75	82.5	112.0	196.9
177.95		0.2500	23.470	18.425	1255.1	15.14	93.88	82.5	105.3	187.8
										36784.2

Wind Loading - Shaft

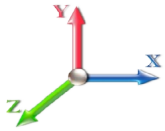
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	21.088	23.20	508.23	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	498.65	0.650	0.000	5.00	27.032	17.57	652.1	0.0	1798.9
10.00		1.00	0.85	21.088	23.20	489.06	0.650	0.000	5.00	26.518	17.24	639.7	0.0	1764.5
15.00		1.00	0.85	21.088	23.20	479.48	0.650	0.000	5.00	26.003	16.90	627.3	0.0	1730.0
20.00		1.00	0.90	22.375	24.61	484.03	0.650	0.000	5.00	25.489	16.57	652.4	0.0	1695.5
25.00		1.00	0.95	23.451	25.80	485.43	0.650	0.000	5.00	24.974	16.23	670.0	0.0	1661.0
30.00		1.00	0.98	24.369	26.81	484.53	0.650	0.000	5.00	24.460	15.90	681.9	0.0	1626.6
35.00		1.00	1.01	25.172	27.69	481.99	0.650	0.000	5.00	23.945	15.56	689.6	0.0	1592.1
40.00		1.00	1.04	25.890	28.48	478.20	0.650	0.000	5.00	23.431	15.23	694.0	0.0	1557.6
41.17	Bot - Section 2	1.00	1.05	26.047	28.65	477.16	0.650	0.000	1.17	5.393	3.51	160.7	0.0	358.5
45.00		1.00	1.07	26.540	29.19	473.41	0.650	0.000	3.83	17.807	11.57	540.7	0.0	2348.3
48.00	Top - Section 1	1.00	1.08	26.903	29.59	470.15	0.650	0.000	3.00	13.725	8.92	422.4	0.0	1809.5
50.00		1.00	1.09	27.135	29.85	475.64	0.650	0.000	2.00	9.047	5.88	280.8	0.0	601.2
55.00		1.00	1.12	27.685	30.45	469.46	0.650	0.000	5.00	22.257	14.47	704.9	0.0	1479.0
60.00		1.00	1.14	28.197	31.02	462.70	0.650	0.000	5.00	21.743	14.13	701.4	0.0	1444.5
65.00		1.00	1.16	28.676	31.54	455.44	0.650	0.000	5.00	21.228	13.80	696.4	0.0	1410.0
70.00		1.00	1.17	29.127	32.04	447.75	0.650	0.000	5.00	20.714	13.46	690.2	0.0	1375.6
75.00		1.00	1.19	29.553	32.51	439.67	0.650	0.000	5.00	20.199	13.13	682.9	0.0	1341.1
80.00		1.00	1.21	29.958	32.95	431.24	0.650	0.000	5.00	19.685	12.80	674.6	0.0	1306.6
85.00		1.00	1.22	30.342	33.38	422.51	0.650	0.000	5.00	19.170	12.46	665.4	0.0	1272.1
85.58	Bot - Section 3	1.00	1.22	30.386	33.42	421.47	0.650	0.000	0.58	2.203	1.43	76.6	0.0	146.2
90.00		1.00	1.24	30.710	33.78	413.50	0.650	0.000	4.42	16.733	10.88	587.9	0.0	2044.5
91.17	Top - Section 2	1.00	1.24	30.793	33.87	411.36	0.650	0.000	1.17	4.353	2.83	153.3	0.0	531.7
95.00		1.00	1.25	31.061	34.17	411.40	0.650	0.000	3.83	14.106	9.17	501.2	0.0	803.2
100.00		1.00	1.27	31.399	34.54	401.93	0.650	0.000	5.00	17.944	11.66	644.6	0.0	1021.5
105.00		1.00	1.28	31.723	34.89	392.25	0.650	0.000	5.00	17.430	11.33	632.5	0.0	991.9
110.00		1.00	1.29	32.035	35.24	382.37	0.650	0.000	5.00	16.915	10.99	619.9	0.0	962.4
115.00		1.00	1.30	32.336	35.57	372.30	0.650	0.000	5.00	16.401	10.66	606.7	0.0	932.8
120.00		1.00	1.32	32.627	35.89	362.05	0.650	0.000	5.00	15.886	10.33	593.0	0.0	903.3
125.00		1.00	1.33	32.909	36.20	351.64	0.650	0.000	5.00	15.372	9.99	578.7	0.0	873.7
130.00	Appurtenance(s)	1.00	1.34	33.182	36.50	341.07	0.650	0.000	5.00	14.857	9.66	564.0	0.0	844.2
131.25	Bot - Section 4	1.00	1.34	33.249	36.57	338.41	0.650	0.000	1.25	3.634	2.36	138.2	0.0	206.4
135.00		1.00	1.35	33.446	36.79	330.36	0.650	0.000	3.75	10.907	7.09	417.3	0.0	1125.5
135.58	Top - Section 3	1.00	1.35	33.477	36.82	329.10	0.650	0.000	0.58	1.671	1.09	64.0	0.0	172.3
140.00		1.00	1.36	33.703	37.07	325.74	0.650	0.000	4.42	12.422	8.07	478.9	0.0	588.9
145.00		1.00	1.37	33.953	37.35	314.79	0.650	0.000	5.00	13.578	8.83	527.4	0.0	643.5
150.00		1.00	1.38	34.196	37.62	303.71	0.650	0.000	5.00	13.064	8.49	511.1	0.0	618.9
153.00	Appurtenance(s)	1.00	1.38	34.339	37.77	297.01	0.650	0.000	3.00	7.591	4.93	298.2	0.0	359.5
155.00		1.00	1.39	34.433	37.88	292.52	0.650	0.000	2.00	4.958	3.22	195.3	0.0	234.8
156.25	Top - Section 4	1.00	1.39	34.492	37.94	289.70	0.650	0.000	1.25	3.057	1.99	120.6	0.0	144.7
160.00	Appurtenance(s)	1.00	1.40	34.664	38.13	281.21	0.650	0.000	3.75	8.978	5.84	356.0	0.0	340.7
163.00	Appurtenance(s)	1.00	1.40	34.800	38.28	274.38	0.650	0.000	3.00	6.974	4.53	277.6	0.0	264.6
165.00		1.00	1.41	34.890	38.38	269.80	0.650	0.000	2.00	4.546	2.96	181.5	0.0	172.5
170.00	Appurtenance(s)	1.00	1.42	35.110	38.62	258.28	0.650	0.000	5.00	11.006	7.15	442.0	0.0	417.3
172.00	Appurtenance(s)	1.00	1.42	35.196	38.72	253.65	0.650	0.000	2.00	4.258	2.77	171.5	0.0	161.4
175.00		1.00	1.42	35.324	38.86	246.67	0.650	0.000	3.00	6.233	4.05	251.9	0.0	236.2
177.95	Appurtenance(s)	1.00	1.43	35.449	38.99	239.78	0.650	0.000	2.95	5.948	3.87	241.2	0.0	225.4

Wind Loading - Shaft

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Totals:	**177.95**	**21,758.7**	**44,141.0**

Discrete Appurtenance Forces

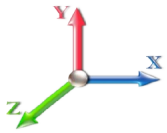
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.95	6' Lightning rod	1	35.449	38.994	1.00	1.00	0.38	7.80	0.000	0.000	23.71	0.00	0.00
2	172.00	FE15501P77-75	6	35.196	38.716	0.54	0.80	3.09	166.32	0.000	0.000	191.25	0.00	0.00
3	172.00	782 11056 - Bias-T	3	35.196	38.716	0.60	0.80	0.50	9.36	0.000	0.000	31.22	0.00	0.00
4	172.00	RR90-17-02DP	3	35.196	38.716	0.55	0.80	7.22	48.60	0.000	0.000	447.25	0.00	0.00
5	170.00	T-Frames w/ Pipe Mount	3	35.110	38.620	0.56	0.75	27.00	1620.00	0.000	0.000	1668.40	0.00	0.00
6	170.00	LNX-6515DS-A1M	3	35.110	38.620	0.64	0.80	22.00	184.68	0.000	0.000	1359.64	0.00	0.00
7	163.00	SBNH-1D6565C	1	34.800	38.280	1.00	1.00	11.47	79.32	0.000	0.000	702.52	0.00	0.00
8	163.00	7770	6	34.800	38.280	0.58	0.80	19.27	252.00	0.000	0.000	1180.37	0.00	0.00
9	163.00	AM-X-CD-16-65-00T	2	34.800	38.280	0.68	0.90	10.97	116.40	0.000	0.000	671.98	0.00	0.00
10	163.00	RRUS-11	6	34.800	38.280	0.54	0.80	8.10	367.20	0.000	0.000	496.37	0.00	0.00
11	163.00	LGP21401	6	34.800	38.280	0.54	0.80	4.15	101.52	0.000	0.000	254.10	0.00	0.00
12	163.00	DC6-48-60-18-8F	1	34.800	38.280	1.00	1.00	0.92	38.16	0.000	0.000	56.35	0.00	0.00
13	160.00	HP Platform w/ Pipe	1	34.664	38.131	1.00	1.00	25.00	1920.00	0.000	0.000	1525.23	0.00	0.00
14	153.00	0208	3	34.339	37.773	0.54	0.80	2.20	71.28	0.000	0.000	133.14	0.00	0.00
15	153.00	SF-SU7-2-96	3	34.339	37.773	0.56	0.75	25.48	1422.00	0.000	0.000	1540.02	0.00	0.00
16	153.00	ODI2-065R18K-GQ	3	34.339	37.773	0.56	0.80	8.15	90.36	0.000	0.000	492.44	0.00	0.00
17	153.00	3.0" Std Pipe	3	34.339	37.773	1.00	1.00	5.25	108.00	0.000	0.000	317.30	0.00	0.00
18	153.00	Collar Mount (3-Sided)	2	34.339	37.773	1.00	1.00	5.00	528.00	0.000	0.000	302.19	0.00	0.00
19	153.00	4415	2	34.339	37.773	0.54	0.80	1.99	105.84	0.000	0.000	120.51	0.00	0.00
20	130.00	B13 RRH4X30-4R	3	33.182	36.500	0.60	0.80	3.89	205.92	0.000	0.000	227.06	0.00	0.00
21	130.00	SBNHH-1D65B	6	33.182	36.500	0.66	0.80	32.51	288.00	0.000	0.000	1898.54	0.00	0.00
22	130.00	QUAD656C0000x	3	33.182	36.500	0.57	0.80	22.56	194.40	0.000	0.000	1317.55	0.00	0.00
23	130.00	PV-LPP14L-HR-B	1	33.182	36.500	1.00	1.00	36.80	1969.20	0.000	0.000	2149.11	0.00	0.00
24	130.00	B25 RRH4x30-4R	3	33.182	36.500	0.60	0.80	3.85	183.60	0.000	0.000	224.96	0.00	0.00
25	130.00	B66A RRH 4X45	3	33.182	36.500	0.60	0.80	4.68	230.40	0.000	0.000	273.31	0.00	0.00
26	130.00	DB-T1-6Z-8AB-0Z	2	33.182	36.500	0.70	0.90	6.74	45.36	0.000	0.000	393.57	0.00	0.00
							Totals:		**10,353.72**			**17,998.06**		

Total Applied Force Summary

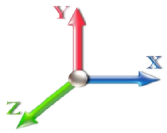
Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		652.13	1978.28	0.00	0.00
10.00		639.72	1943.80	0.00	0.00
15.00		627.31	1909.33	0.00	0.00
20.00		652.43	1874.85	0.00	0.00
25.00		670.01	1840.38	0.00	0.00
30.00		681.88	1805.90	0.00	0.00
35.00		689.56	1771.43	0.00	0.00
40.00		693.98	1736.95	0.00	0.00
41.17		160.70	400.33	0.00	0.00
45.00		540.65	2485.82	0.00	0.00
48.00		422.41	1917.15	0.00	0.00
50.00		280.85	672.99	0.00	0.00
55.00		704.94	1658.33	0.00	0.00
60.00		701.37	1623.86	0.00	0.00
65.00		696.41	1589.38	0.00	0.00
70.00		690.22	1554.90	0.00	0.00
75.00		682.92	1520.43	0.00	0.00
80.00		674.63	1485.95	0.00	0.00
85.00		665.44	1451.48	0.00	0.00
85.58		76.58	167.09	0.00	0.00
90.00		587.87	2202.91	0.00	0.00
91.17		153.35	573.56	0.00	0.00
95.00		501.23	940.65	0.00	0.00
100.00		644.55	1200.84	0.00	0.00
105.00		632.54	1171.29	0.00	0.00
110.00		619.91	1141.74	0.00	0.00
115.00		606.70	1112.19	0.00	0.00
120.00		592.96	1082.64	0.00	0.00
125.00		578.71	1053.09	0.00	0.00
130.00	(21) attachments	7048.06	4140.41	0.00	0.00
131.25		138.22	247.97	0.00	0.00
135.00		417.33	1250.10	0.00	0.00
135.58		63.98	191.72	0.00	0.00
140.00		478.95	735.70	0.00	0.00
145.00		527.41	809.68	0.00	0.00
150.00		511.06	785.06	0.00	0.00
153.00	(16) attachments	3203.80	2784.69	0.00	0.00
155.00		195.30	299.63	0.00	0.00
156.25		120.62	185.27	0.00	0.00
160.00	(1) attachments	1881.24	2382.35	0.00	0.00
163.00	(22) attachments	3639.32	1299.04	0.00	0.00
165.00		181.46	202.41	0.00	0.00
170.00	(6) attachments	3470.08	2296.90	0.00	0.00
172.00	(12) attachments	841.17	415.65	0.00	0.00
175.00		251.88	251.20	0.00	0.00
177.95	(1) attachments	264.94	233.17	0.00	0.00

Total Applied Force Summary

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

Totals:	**39,756.75**	**60,378.49**	**0.00**	**0.00**

Calculated Forces

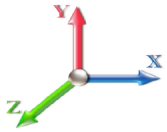
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-60.33	-39.83	0.00	-4722.0	0.00	4722.09	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.627
5.00	-58.25	-39.32	0.00	-4522.9	0.00	4522.93	5738.22	2869.11	14831.4	7426.74	0.08	-0.143	0.000	0.619
10.00	-56.21	-38.82	0.00	-4326.3	0.00	4326.32	5671.58	2835.79	14373.6	7197.48	0.30	-0.287	0.000	0.611
15.00	-54.21	-38.32	0.00	-4132.2	0.00	4132.22	5603.20	2801.60	13918.1	6969.40	0.68	-0.434	0.000	0.603
20.00	-52.24	-37.79	0.00	-3940.6	0.00	3940.62	5533.06	2766.53	13465.2	6742.64	1.22	-0.582	0.000	0.594
25.00	-50.31	-37.23	0.00	-3751.6	0.00	3751.69	5461.17	2730.58	13015.2	6517.32	1.91	-0.732	0.000	0.585
30.00	-48.42	-36.65	0.00	-3565.5	0.00	3565.55	5387.52	2693.76	12568.4	6293.58	2.76	-0.885	0.000	0.576
35.00	-46.56	-36.06	0.00	-3382.3	0.00	3382.30	5312.13	2656.06	12125.0	6071.55	3.77	-1.039	0.000	0.566
40.00	-44.78	-35.41	0.00	-3202.0	0.00	3202.01	5234.98	2617.49	11685.3	5851.37	4.94	-1.194	0.000	0.556
41.17	-44.33	-35.30	0.00	-3160.7	0.00	3160.70	5216.73	2608.36	11583.3	5800.27	5.24	-1.232	0.000	0.554
45.00	-41.79	-34.78	0.00	-3025.4	0.00	3025.40	5156.08	2578.04	11249.6	5633.16	6.28	-1.354	0.000	0.545
48.00	-39.84	-34.37	0.00	-2921.0	0.00	2921.06	3955.22	1977.61	8653.35	4333.10	7.16	-1.450	0.000	0.684
50.00	-39.11	-34.14	0.00	-2852.3	0.00	2852.32	3928.65	1964.32	8516.08	4264.37	7.78	-1.515	0.000	0.679
55.00	-37.38	-33.49	0.00	-2681.6	0.00	2681.60	3861.45	1930.73	8175.97	4094.06	9.45	-1.668	0.000	0.665
60.00	-35.69	-32.84	0.00	-2514.1	0.00	2514.13	3793.16	1896.58	7840.36	3926.01	11.28	-1.821	0.000	0.650
65.00	-34.04	-32.18	0.00	-2349.9	0.00	2349.94	3717.03	1858.51	7495.82	3753.48	13.27	-1.976	0.000	0.636
70.00	-32.42	-31.53	0.00	-2189.0	0.00	2189.03	3625.02	1812.51	7127.73	3569.16	15.42	-2.131	0.000	0.623
75.00	-30.85	-30.87	0.00	-2031.4	0.00	2031.40	3533.02	1766.51	6768.92	3389.49	17.74	-2.287	0.000	0.608
80.00	-29.31	-30.21	0.00	-1877.0	0.00	1877.07	3441.01	1720.51	6419.36	3214.45	20.22	-2.442	0.000	0.593
85.00	-27.84	-29.53	0.00	-1726.0	0.00	1726.01	3349.01	1674.50	6079.08	3044.06	22.86	-2.598	0.000	0.576
85.58	-27.64	-29.48	0.00	-1708.7	0.00	1708.78	3338.27	1669.14	6039.98	3024.48	23.18	-2.616	0.000	0.574
90.00	-25.42	-28.83	0.00	-1578.5	0.00	1578.58	3257.00	1628.50	5748.06	2878.30	25.66	-2.753	0.000	0.557
91.17	-24.82	-28.68	0.00	-1544.9	0.00	1544.95	3439.99	1720.00	6155.07	3082.11	26.34	-2.790	0.000	0.509
95.00	-23.83	-28.19	0.00	-1435.0	0.00	1435.01	3387.37	1693.69	5930.15	2969.48	28.63	-2.909	0.000	0.491
100.00	-22.59	-27.55	0.00	-1294.0	0.00	1294.05	3317.36	1658.68	5640.52	2824.45	31.76	-3.075	0.000	0.465
105.00	-21.38	-26.92	0.00	-1156.3	0.00	1156.30	3245.79	1622.89	5355.38	2681.67	35.07	-3.238	0.000	0.438
110.00	-20.20	-26.29	0.00	-1021.7	0.00	1021.72	3172.65	1586.33	5074.95	2541.25	38.55	-3.397	0.000	0.409
115.00	-19.06	-25.66	0.00	-890.30	0.00	890.30	3092.56	1546.28	4791.10	2399.11	42.19	-3.549	0.000	0.378
120.00	-17.96	-25.05	0.00	-761.99	0.00	761.99	2993.01	1496.51	4486.17	2246.42	45.98	-3.694	0.000	0.345
125.00	-16.89	-24.44	0.00	-636.76	0.00	636.76	2893.47	1446.74	4191.27	2098.75	49.92	-3.830	0.000	0.310
130.00	-13.22	-17.14	0.00	-514.57	0.00	514.57	2793.93	1396.97	3906.39	1956.10	54.00	-3.953	0.000	0.268
131.25	-12.96	-17.00	0.00	-493.15	0.00	493.15	2769.05	1384.52	3836.74	1921.22	55.04	-3.983	0.000	0.262
135.00	-11.73	-16.51	0.00	-429.40	0.00	429.40	2694.39	1347.19	3631.54	1818.47	58.20	-4.067	0.000	0.241
135.58	-11.53	-16.44	0.00	-419.77	0.00	419.77	1954.03	977.01	2682.77	1343.38	58.69	-4.080	0.000	0.319
140.00	-10.80	-15.93	0.00	-347.17	0.00	347.17	1891.30	945.65	2512.52	1258.13	62.51	-4.171	0.000	0.282
145.00	-10.01	-15.36	0.00	-267.53	0.00	267.53	1820.29	910.14	2326.52	1164.99	66.93	-4.274	0.000	0.235
150.00	-9.25	-14.80	0.00	-190.75	0.00	190.75	1749.27	874.64	2147.67	1075.43	71.45	-4.360	0.000	0.183
153.00	-6.71	-11.40	0.00	-146.35	0.00	146.35	1706.67	853.33	2043.80	1023.42	74.21	-4.403	0.000	0.147
155.00	-6.42	-11.18	0.00	-123.56	0.00	123.56	1678.26	839.13	1975.98	989.46	76.05	-4.427	0.000	0.129
156.25	-6.24	-11.05	0.00	-109.58	0.00	109.58	1660.51	830.25	1934.17	968.52	77.21	-4.441	0.000	0.117
156.25	-6.24	-11.05	0.00	-109.58	0.00	109.58	1612.04	806.02	1885.98	944.39	77.21	-4.441	0.000	0.120
160.00	-4.01	-8.99	0.00	-68.15	0.00	68.15	1575.35	787.68	1783.56	893.11	80.71	-4.474	0.000	0.079
163.00	-3.00	-5.26	0.00	-41.18	0.00	41.18	1545.30	772.65	1702.84	852.69	83.53	-4.496	0.000	0.050
165.00	-2.81	-5.06	0.00	-30.66	0.00	30.66	1524.91	762.45	1649.65	826.05	85.42	-4.507	0.000	0.039
170.00	-0.79	-1.42	0.00	-5.34	0.00	5.34	1472.71	736.35	1519.02	760.64	90.14	-4.521	0.000	0.008
172.00	-0.44	-0.55	0.00	-2.49	0.00	2.49	1451.33	725.67	1467.75	734.96	92.03	-4.522	0.000	0.004
175.00	-0.21	-0.28	0.00	-0.83	0.00	0.83	1411.16	705.58	1384.48	693.27	94.87	-4.523	0.000	0.001
177.95	0.00	-0.26	0.00	0.00	0.00	0.00	1368.86	684.43	1302.32	652.13	97.66	-4.523	0.000	0.000

Calculated Forces

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

Wind Loading - Shaft

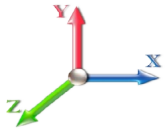
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	21.088	23.20	508.23	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	498.65	0.650	0.000	5.00	27.032	17.57	652.1	0.0	1349.2
10.00		1.00	0.85	21.088	23.20	489.06	0.650	0.000	5.00	26.518	17.24	639.7	0.0	1323.3
15.00		1.00	0.85	21.088	23.20	479.48	0.650	0.000	5.00	26.003	16.90	627.3	0.0	1297.5
20.00		1.00	0.90	22.375	24.61	484.03	0.650	0.000	5.00	25.489	16.57	652.4	0.0	1271.6
25.00		1.00	0.95	23.451	25.80	485.43	0.650	0.000	5.00	24.974	16.23	670.0	0.0	1245.8
30.00		1.00	0.98	24.369	26.81	484.53	0.650	0.000	5.00	24.460	15.90	681.9	0.0	1219.9
35.00		1.00	1.01	25.172	27.69	481.99	0.650	0.000	5.00	23.945	15.56	689.6	0.0	1194.1
40.00		1.00	1.04	25.890	28.48	478.20	0.650	0.000	5.00	23.431	15.23	694.0	0.0	1168.2
41.17	Bot - Section 2	1.00	1.05	26.047	28.65	477.16	0.650	0.000	1.17	5.393	3.51	160.7	0.0	268.9
45.00		1.00	1.07	26.540	29.19	473.41	0.650	0.000	3.83	17.807	11.57	540.7	0.0	1761.2
48.00	Top - Section 1	1.00	1.08	26.903	29.59	470.15	0.650	0.000	3.00	13.725	8.92	422.4	0.0	1357.2
50.00		1.00	1.09	27.135	29.85	475.64	0.650	0.000	2.00	9.047	5.88	280.8	0.0	450.9
55.00		1.00	1.12	27.685	30.45	469.46	0.650	0.000	5.00	22.257	14.47	704.9	0.0	1109.2
60.00		1.00	1.14	28.197	31.02	462.70	0.650	0.000	5.00	21.743	14.13	701.4	0.0	1083.4
65.00		1.00	1.16	28.676	31.54	455.44	0.650	0.000	5.00	21.228	13.80	696.4	0.0	1057.5
70.00		1.00	1.17	29.127	32.04	447.75	0.650	0.000	5.00	20.714	13.46	690.2	0.0	1031.7
75.00		1.00	1.19	29.553	32.51	439.67	0.650	0.000	5.00	20.199	13.13	682.9	0.0	1005.8
80.00		1.00	1.21	29.958	32.95	431.24	0.650	0.000	5.00	19.685	12.80	674.6	0.0	980.0
85.00		1.00	1.22	30.342	33.38	422.51	0.650	0.000	5.00	19.170	12.46	665.4	0.0	954.1
85.58	Bot - Section 3	1.00	1.22	30.386	33.42	421.47	0.650	0.000	0.58	2.203	1.43	76.6	0.0	109.6
90.00		1.00	1.24	30.710	33.78	413.50	0.650	0.000	4.42	16.733	10.88	587.9	0.0	1533.4
91.17	Top - Section 2	1.00	1.24	30.793	33.87	411.36	0.650	0.000	1.17	4.353	2.83	153.3	0.0	398.8
95.00		1.00	1.25	31.061	34.17	411.40	0.650	0.000	3.83	14.106	9.17	501.2	0.0	602.4
100.00		1.00	1.27	31.399	34.54	401.93	0.650	0.000	5.00	17.944	11.66	644.6	0.0	766.1
105.00		1.00	1.28	31.723	34.89	392.25	0.650	0.000	5.00	17.430	11.33	632.5	0.0	744.0
110.00		1.00	1.29	32.035	35.24	382.37	0.650	0.000	5.00	16.915	10.99	619.9	0.0	721.8
115.00		1.00	1.30	32.336	35.57	372.30	0.650	0.000	5.00	16.401	10.66	606.7	0.0	699.6
120.00		1.00	1.32	32.627	35.89	362.05	0.650	0.000	5.00	15.886	10.33	593.0	0.0	677.5
125.00		1.00	1.33	32.909	36.20	351.64	0.650	0.000	5.00	15.372	9.99	578.7	0.0	655.3
130.00	Appurtenance(s)	1.00	1.34	33.182	36.50	341.07	0.650	0.000	5.00	14.857	9.66	564.0	0.0	633.1
131.25	Bot - Section 4	1.00	1.34	33.249	36.57	338.41	0.650	0.000	1.25	3.634	2.36	138.2	0.0	154.8
135.00		1.00	1.35	33.446	36.79	330.36	0.650	0.000	3.75	10.907	7.09	417.3	0.0	844.1
135.58	Top - Section 3	1.00	1.35	33.477	36.82	329.10	0.650	0.000	0.58	1.671	1.09	64.0	0.0	129.3
140.00		1.00	1.36	33.703	37.07	325.74	0.650	0.000	4.42	12.422	8.07	478.9	0.0	441.7
145.00		1.00	1.37	33.953	37.35	314.79	0.650	0.000	5.00	13.578	8.83	527.4	0.0	482.7
150.00		1.00	1.38	34.196	37.62	303.71	0.650	0.000	5.00	13.064	8.49	511.1	0.0	464.2
153.00	Appurtenance(s)	1.00	1.38	34.339	37.77	297.01	0.650	0.000	3.00	7.591	4.93	298.2	0.0	269.6
155.00		1.00	1.39	34.433	37.88	292.52	0.650	0.000	2.00	4.958	3.22	195.3	0.0	176.1
156.25	Top - Section 4	1.00	1.39	34.492	37.94	289.70	0.650	0.000	1.25	3.057	1.99	120.6	0.0	108.5
160.00	Appurtenance(s)	1.00	1.40	34.664	38.13	281.21	0.650	0.000	3.75	8.978	5.84	356.0	0.0	255.5
163.00	Appurtenance(s)	1.00	1.40	34.800	38.28	274.38	0.650	0.000	3.00	6.974	4.53	277.6	0.0	198.4
165.00		1.00	1.41	34.890	38.38	269.80	0.650	0.000	2.00	4.546	2.96	181.5	0.0	129.3
170.00	Appurtenance(s)	1.00	1.42	35.110	38.62	258.28	0.650	0.000	5.00	11.006	7.15	442.0	0.0	313.0
172.00	Appurtenance(s)	1.00	1.42	35.196	38.72	253.65	0.650	0.000	2.00	4.258	2.77	171.5	0.0	121.1
175.00		1.00	1.42	35.324	38.86	246.67	0.650	0.000	3.00	6.233	4.05	251.9	0.0	177.2
177.95	Appurtenance(s)	1.00	1.43	35.449	38.99	239.78	0.650	0.000	2.95	5.948	3.87	241.2	0.0	169.0

Wind Loading - Shaft

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Totals:	**177.95**	**21,758.7**	**33,105.8**

Discrete Appurtenance Forces

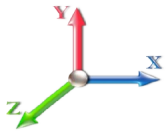
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.95	6' Lightning rod	1	35.449	38.994	1.00	1.00	0.38	5.85	0.000	0.000	23.71	0.00	0.00
2	172.00	FE15501P77-75	6	35.196	38.716	0.54	0.80	3.09	124.74	0.000	0.000	191.25	0.00	0.00
3	172.00	782 11056 - Bias-T	3	35.196	38.716	0.60	0.80	0.50	7.02	0.000	0.000	31.22	0.00	0.00
4	172.00	RR90-17-02DP	3	35.196	38.716	0.55	0.80	7.22	36.45	0.000	0.000	447.25	0.00	0.00
5	170.00	T-Frames w/ Pipe Mount	3	35.110	38.620	0.56	0.75	27.00	1215.00	0.000	0.000	1668.40	0.00	0.00
6	170.00	LNX-6515DS-A1M	3	35.110	38.620	0.64	0.80	22.00	138.51	0.000	0.000	1359.64	0.00	0.00
7	163.00	SBNH-1D6565C	1	34.800	38.280	1.00	1.00	11.47	59.49	0.000	0.000	702.52	0.00	0.00
8	163.00	7770	6	34.800	38.280	0.58	0.80	19.27	189.00	0.000	0.000	1180.37	0.00	0.00
9	163.00	AM-X-CD-16-65-00T	2	34.800	38.280	0.68	0.90	10.97	87.30	0.000	0.000	671.98	0.00	0.00
10	163.00	RRUS-11	6	34.800	38.280	0.54	0.80	8.10	275.40	0.000	0.000	496.37	0.00	0.00
11	163.00	LGP21401	6	34.800	38.280	0.54	0.80	4.15	76.14	0.000	0.000	254.10	0.00	0.00
12	163.00	DC6-48-60-18-8F	1	34.800	38.280	1.00	1.00	0.92	28.62	0.000	0.000	56.35	0.00	0.00
13	160.00	HP Platform w/ Pipe	1	34.664	38.131	1.00	1.00	25.00	1440.00	0.000	0.000	1525.23	0.00	0.00
14	153.00	0208	3	34.339	37.773	0.54	0.80	2.20	53.46	0.000	0.000	133.14	0.00	0.00
15	153.00	SF-SU7-2-96	3	34.339	37.773	0.56	0.75	25.48	1066.50	0.000	0.000	1540.02	0.00	0.00
16	153.00	ODI2-065R18K-GQ	3	34.339	37.773	0.56	0.80	8.15	67.77	0.000	0.000	492.44	0.00	0.00
17	153.00	3.0" Std Pipe	3	34.339	37.773	1.00	1.00	5.25	81.00	0.000	0.000	317.30	0.00	0.00
18	153.00	Collar Mount (3-Sided)	2	34.339	37.773	1.00	1.00	5.00	396.00	0.000	0.000	302.19	0.00	0.00
19	153.00	4415	2	34.339	37.773	0.54	0.80	1.99	79.38	0.000	0.000	120.51	0.00	0.00
20	130.00	B13 RRH4X30-4R	3	33.182	36.500	0.60	0.80	3.89	154.44	0.000	0.000	227.06	0.00	0.00
21	130.00	SBNHH-1D65B	6	33.182	36.500	0.66	0.80	32.51	216.00	0.000	0.000	1898.54	0.00	0.00
22	130.00	QUAD656C0000x	3	33.182	36.500	0.57	0.80	22.56	145.80	0.000	0.000	1317.55	0.00	0.00
23	130.00	PV-LPP14L-HR-B	1	33.182	36.500	1.00	1.00	36.80	1476.90	0.000	0.000	2149.11	0.00	0.00
24	130.00	B25 RRH4x30-4R	3	33.182	36.500	0.60	0.80	3.85	137.70	0.000	0.000	224.96	0.00	0.00
25	130.00	B66A RRH 4X45	3	33.182	36.500	0.60	0.80	4.68	172.80	0.000	0.000	273.31	0.00	0.00
26	130.00	DB-T1-6Z-8AB-0Z	2	33.182	36.500	0.70	0.90	6.74	34.02	0.000	0.000	393.57	0.00	0.00
							Totals:		**7,765.29**			**17,998.06**		

Total Applied Force Summary

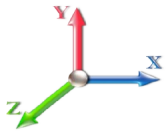
Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		652.13	1483.71	0.00	0.00
10.00		639.72	1457.85	0.00	0.00
15.00		627.31	1432.00	0.00	0.00
20.00		652.43	1406.14	0.00	0.00
25.00		670.01	1380.28	0.00	0.00
30.00		681.88	1354.43	0.00	0.00
35.00		689.56	1328.57	0.00	0.00
40.00		693.98	1302.71	0.00	0.00
41.17		160.70	300.25	0.00	0.00
45.00		540.65	1864.36	0.00	0.00
48.00		422.41	1437.87	0.00	0.00
50.00		280.85	504.74	0.00	0.00
55.00		704.94	1243.75	0.00	0.00
60.00		701.37	1217.89	0.00	0.00
65.00		696.41	1192.03	0.00	0.00
70.00		690.22	1166.18	0.00	0.00
75.00		682.92	1140.32	0.00	0.00
80.00		674.63	1114.47	0.00	0.00
85.00		665.44	1088.61	0.00	0.00
85.58		76.58	125.32	0.00	0.00
90.00		587.87	1652.19	0.00	0.00
91.17		153.35	430.17	0.00	0.00
95.00		501.23	705.49	0.00	0.00
100.00		644.55	900.63	0.00	0.00
105.00		632.54	878.46	0.00	0.00
110.00		619.91	856.30	0.00	0.00
115.00		606.70	834.14	0.00	0.00
120.00		592.96	811.98	0.00	0.00
125.00		578.71	789.81	0.00	0.00
130.00	(21) attachments	7048.06	3105.31	0.00	0.00
131.25		138.22	185.97	0.00	0.00
135.00		417.33	937.58	0.00	0.00
135.58		63.98	143.79	0.00	0.00
140.00		478.95	551.78	0.00	0.00
145.00		527.41	607.26	0.00	0.00
150.00		511.06	588.79	0.00	0.00
153.00	(16) attachments	3203.80	2088.52	0.00	0.00
155.00		195.30	224.73	0.00	0.00
156.25		120.62	138.95	0.00	0.00
160.00	(1) attachments	1881.24	1786.76	0.00	0.00
163.00	(22) attachments	3639.32	974.28	0.00	0.00
165.00		181.46	151.80	0.00	0.00
170.00	(6) attachments	3470.08	1722.68	0.00	0.00
172.00	(12) attachments	841.17	311.74	0.00	0.00
175.00		251.88	188.40	0.00	0.00
177.95	(1) attachments	264.94	174.88	0.00	0.00

Total Applied Force Summary

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Tower Engineering Solutions

Totals:	**39,756.75**	**45,283.87**	**0.00**	**0.00**

Calculated Forces

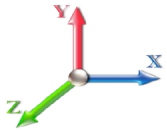
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.23	-39.81	0.00	-4680.4	0.00	4680.45	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.619
5.00	-43.65	-39.27	0.00	-4481.3	0.00	4481.39	5738.22	2869.11	14831.4	7426.74	0.08	-0.141	0.000	0.611
10.00	-42.10	-38.73	0.00	-4285.0	0.00	4285.06	5671.58	2835.79	14373.6	7197.48	0.30	-0.284	0.000	0.603
15.00	-40.57	-38.20	0.00	-4091.4	0.00	4091.42	5603.20	2801.60	13918.1	6969.40	0.68	-0.430	0.000	0.594
20.00	-39.08	-37.63	0.00	-3900.4	0.00	3900.44	5533.06	2766.53	13465.2	6742.64	1.21	-0.576	0.000	0.586
25.00	-37.61	-37.04	0.00	-3712.2	0.00	3712.29	5461.17	2730.58	13015.2	6517.32	1.89	-0.725	0.000	0.577
30.00	-36.17	-36.44	0.00	-3527.0	0.00	3527.07	5387.52	2693.76	12568.4	6293.58	2.73	-0.876	0.000	0.567
35.00	-34.75	-35.82	0.00	-3344.8	0.00	3344.88	5312.13	2656.06	12125.0	6071.55	3.73	-1.028	0.000	0.558
40.00	-33.41	-35.16	0.00	-3165.7	0.00	3165.78	5234.98	2617.49	11685.3	5851.37	4.89	-1.182	0.000	0.548
41.17	-33.06	-35.04	0.00	-3124.7	0.00	3124.76	5216.73	2608.36	11583.3	5800.27	5.19	-1.219	0.000	0.545
45.00	-31.15	-34.51	0.00	-2990.4	0.00	2990.46	5156.08	2578.04	11249.6	5633.16	6.21	-1.340	0.000	0.537
48.00	-29.67	-34.10	0.00	-2886.9	0.00	2886.92	3955.22	1977.61	8653.35	4333.10	7.09	-1.435	0.000	0.674
50.00	-29.11	-33.86	0.00	-2818.7	0.00	2818.73	3928.65	1964.32	8516.08	4264.37	7.70	-1.499	0.000	0.669
55.00	-27.80	-33.19	0.00	-2649.4	0.00	2649.45	3861.45	1930.73	8175.97	4094.06	9.35	-1.650	0.000	0.655
60.00	-26.52	-32.53	0.00	-2483.4	0.00	2483.49	3793.16	1896.58	7840.36	3926.01	11.16	-1.802	0.000	0.640
65.00	-25.26	-31.86	0.00	-2320.8	0.00	2320.86	3717.03	1858.51	7495.82	3753.48	13.13	-1.955	0.000	0.625
70.00	-24.04	-31.19	0.00	-2161.5	0.00	2161.58	3625.02	1812.51	7127.73	3569.16	15.26	-2.108	0.000	0.613
75.00	-22.84	-30.53	0.00	-2005.6	0.00	2005.62	3533.02	1766.51	6768.92	3389.49	17.55	-2.261	0.000	0.598
80.00	-21.68	-29.87	0.00	-1852.9	0.00	1852.99	3441.01	1720.51	6419.36	3214.45	20.00	-2.415	0.000	0.583
85.00	-20.58	-29.18	0.00	-1703.6	0.00	1703.67	3349.01	1674.50	6079.08	3044.06	22.62	-2.568	0.000	0.566
85.58	-20.41	-29.13	0.00	-1686.6	0.00	1686.65	3338.27	1669.14	6039.98	3024.48	22.93	-2.587	0.000	0.564
90.00	-18.75	-28.49	0.00	-1557.9	0.00	1557.99	3257.00	1628.50	5748.06	2878.30	25.39	-2.722	0.000	0.547
91.17	-18.29	-28.34	0.00	-1524.7	0.00	1524.75	3439.99	1720.00	6155.07	3082.11	26.06	-2.759	0.000	0.500
95.00	-17.54	-27.85	0.00	-1416.1	0.00	1416.10	3387.37	1693.69	5930.15	2969.48	28.32	-2.876	0.000	0.482
100.00	-16.60	-27.21	0.00	-1276.8	0.00	1276.84	3317.36	1658.68	5640.52	2824.45	31.42	-3.040	0.000	0.457
105.00	-15.68	-26.57	0.00	-1140.8	0.00	1140.80	3245.79	1622.89	5355.38	2681.67	34.69	-3.201	0.000	0.431
110.00	-14.79	-25.95	0.00	-1007.9	0.00	1007.93	3172.65	1586.33	5074.95	2541.25	38.12	-3.357	0.000	0.402
115.00	-13.93	-25.33	0.00	-878.21	0.00	878.21	3092.56	1546.28	4791.10	2399.11	41.72	-3.507	0.000	0.371
120.00	-13.10	-24.71	0.00	-751.59	0.00	751.59	2993.01	1496.51	4486.17	2246.42	45.47	-3.650	0.000	0.339
125.00	-12.29	-24.11	0.00	-628.02	0.00	628.02	2893.47	1446.74	4191.27	2098.75	49.36	-3.784	0.000	0.304
130.00	-9.65	-16.88	0.00	-507.45	0.00	507.45	2793.93	1396.97	3906.39	1956.10	53.39	-3.905	0.000	0.263
131.25	-9.45	-16.74	0.00	-486.34	0.00	486.34	2769.05	1384.52	3836.74	1921.22	54.42	-3.935	0.000	0.257
135.00	-8.53	-16.27	0.00	-423.56	0.00	423.56	2694.39	1347.19	3631.54	1818.47	57.54	-4.018	0.000	0.236
135.58	-8.38	-16.20	0.00	-414.06	0.00	414.06	1954.03	977.01	2682.77	1343.38	58.03	-4.031	0.000	0.313
140.00	-7.84	-15.70	0.00	-342.50	0.00	342.50	1891.30	945.65	2512.52	1258.13	61.80	-4.121	0.000	0.277
145.00	-7.24	-15.14	0.00	-264.00	0.00	264.00	1820.29	910.14	2326.52	1164.99	66.17	-4.222	0.000	0.231
150.00	-6.68	-14.60	0.00	-188.30	0.00	188.30	1749.27	874.64	2147.67	1075.43	70.64	-4.307	0.000	0.179
153.00	-4.83	-11.25	0.00	-144.51	0.00	144.51	1706.67	853.33	2043.80	1023.42	73.36	-4.349	0.000	0.144
155.00	-4.62	-11.04	0.00	-122.02	0.00	122.02	1678.26	839.13	1975.98	989.46	75.18	-4.374	0.000	0.126
156.25	-4.49	-10.91	0.00	-108.23	0.00	108.23	1660.51	830.25	1934.17	968.52	76.33	-4.387	0.000	0.115
156.25	-4.49	-10.91	0.00	-108.23	0.00	108.23	1612.04	806.02	1885.98	944.39	76.33	-4.387	0.000	0.118
160.00	-2.84	-8.89	0.00	-67.33	0.00	67.33	1575.35	787.68	1783.56	893.11	79.79	-4.420	0.000	0.077
163.00	-2.15	-5.19	0.00	-40.64	0.00	40.64	1545.30	772.65	1702.84	852.69	82.57	-4.442	0.000	0.049
165.00	-2.01	-5.00	0.00	-30.26	0.00	30.26	1524.91	762.45	1649.65	826.05	84.43	-4.452	0.000	0.038
170.00	-0.57	-1.41	0.00	-5.26	0.00	5.26	1472.71	736.35	1519.02	760.64	89.10	-4.466	0.000	0.007
172.00	-0.32	-0.54	0.00	-2.45	0.00	2.45	1451.33	725.67	1467.75	734.96	90.97	-4.467	0.000	0.004
175.00	-0.15	-0.28	0.00	-0.82	0.00	0.82	1411.16	705.58	1384.48	693.27	93.77	-4.468	0.000	0.001
177.95	0.00	-0.26	0.00	0.00	0.00	0.00	1368.86	684.43	1302.32	652.13	96.53	-4.468	0.000	0.000

Calculated Forces

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Tower Engineering Solutions

Wind Loading - Shaft

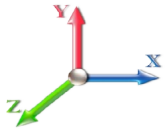
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.656	5.00	28.412	34.09	193.8	673.7	2472.6
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	27.997	33.60	191.0	709.8	2474.3
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	27.544	33.05	187.9	725.9	2455.9
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	27.074	32.49	196.0	733.3	2428.8
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	26.595	31.91	201.8	735.5	2396.5
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	26.111	31.33	205.8	734.4	2360.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	25.622	30.75	208.6	730.8	2322.9
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	5.00	25.130	30.16	210.5	725.5	2283.1
41.17	Bot - Section 2	1.00	1.05	6.383	7.02	0.00	1.200	2.045	1.17	5.791	6.95	48.8	168.9	527.4
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	3.83	19.125	22.95	164.2	559.6	2908.0
48.00	Top - Section 1	1.00	1.08	6.593	7.25	0.00	1.200	2.076	3.00	14.763	17.72	128.5	435.2	2244.8
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	2.00	9.742	11.69	85.5	288.8	890.1
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	24.011	28.81	215.0	713.2	2192.2
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	23.512	28.21	214.5	703.5	2148.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	23.012	27.61	213.5	693.1	2103.1
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	22.511	27.01	212.1	682.0	2057.6
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	22.009	26.41	210.4	670.4	2011.5
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	21.506	25.81	208.4	658.3	1964.9
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	5.00	21.002	25.20	206.2	645.7	1917.8
85.58	Bot - Section 3	1.00	1.22	7.447	8.19	0.00	1.200	2.200	0.58	2.417	2.90	23.8	75.2	221.3
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	4.42	18.361	22.03	182.4	568.1	2612.6
91.17	Top - Section 2	1.00	1.24	7.547	8.30	0.00	1.200	2.214	1.17	4.784	5.74	47.7	149.3	681.1
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	3.83	15.526	18.63	156.0	482.9	1286.0
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	5.00	19.806	23.77	201.2	616.2	1637.7
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	19.301	23.16	198.1	602.2	1594.2
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	18.795	22.55	194.8	588.0	1550.4
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	18.289	21.95	191.3	573.5	1506.3
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	17.782	21.34	187.7	558.7	1462.0
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	5.00	17.276	20.73	183.9	543.7	1417.5
130.00	Appurtenance(s)	1.00	1.34	8.132	8.95	0.00	1.200	2.294	5.00	16.769	20.12	180.0	528.5	1372.7
131.25	Bot - Section 4	1.00	1.34	8.148	8.96	0.00	1.200	2.296	1.25	4.112	4.93	44.2	131.2	337.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	3.75	12.346	14.82	133.6	391.6	1517.1
135.58	Top - Section 3	1.00	1.35	8.204	9.02	0.00	1.200	2.304	0.58	1.895	2.27	20.5	60.7	233.0
140.00		1.00	1.36	8.260	9.09	0.00	1.200	2.311	4.42	14.123	16.95	154.0	447.4	1036.4
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	5.00	15.511	18.61	170.4	490.7	1134.3
150.00		1.00	1.38	8.381	9.22	0.00	1.200	2.327	5.00	15.003	18.00	166.0	474.8	1093.7
153.00	Appurtenance(s)	1.00	1.38	8.416	9.26	0.00	1.200	2.332	3.00	8.757	10.51	97.3	279.1	638.6
155.00		1.00	1.39	8.439	9.28	0.00	1.200	2.335	2.00	5.736	6.88	63.9	183.5	418.2
156.25	Top - Section 4	1.00	1.39	8.453	9.30	0.00	1.200	2.336	1.25	3.544	4.25	39.5	113.7	258.4
160.00	Appurtenance(s)	1.00	1.40	8.495	9.34	0.00	1.200	2.342	3.75	10.441	12.53	117.1	331.8	672.5
163.00	Appurtenance(s)	1.00	1.40	8.529	9.38	0.00	1.200	2.346	3.00	8.147	9.78	91.7	259.5	524.1
165.00		1.00	1.41	8.551	9.41	0.00	1.200	2.349	2.00	5.329	6.40	60.2	170.4	342.8
170.00	Appurtenance(s)	1.00	1.42	8.604	9.46	0.00	1.200	2.356	5.00	12.969	15.56	147.3	409.4	826.7
172.00	Appurtenance(s)	1.00	1.42	8.626	9.49	0.00	1.200	2.359	2.00	5.044	6.05	57.4	161.1	322.5
175.00		1.00	1.42	8.657	9.52	0.00	1.200	2.363	3.00	7.414	8.90	84.7	235.6	471.8
177.95	Appurtenance(s)	1.00	1.43	8.688	9.56	0.00	1.200	2.367	2.95	7.112	8.53	81.6	225.8	451.2

Wind Loading - Shaft

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Totals:	**177.95**	**6,778.6**	**65,781.1**

Discrete Appurtenance Forces

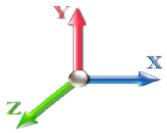
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.95	6' Lightning rod	1	8.688	9.556	1.00	1.00	1.86	51.73	0.000	0.000	17.73	0.00	0.00
2	172.00	FE15501P77-75	6	8.626	9.488	0.55	0.80	5.19	475.65	0.000	0.000	49.25	0.00	0.00
3	172.00	782 11056 - Bias-T	3	8.626	9.488	0.62	0.80	1.52	30.15	0.000	0.000	14.42	0.00	0.00
4	172.00	RR90-17-02DP	3	8.626	9.488	0.57	0.80	9.78	491.07	0.000	0.000	92.77	0.00	0.00
5	170.00	T-Frames w/ Pipe Mount	3	8.604	9.465	0.56	0.75	45.32	2745.07	0.000	0.000	428.97	0.00	0.00
6	170.00	LNX-6515DS-A1M	3	8.604	9.465	0.66	0.80	31.20	917.64	0.000	0.000	295.35	0.00	0.00
7	163.00	SBNH-1D6565C	1	8.529	9.381	1.00	1.00	15.84	322.49	0.000	0.000	148.61	0.00	0.00
8	163.00	7770	6	8.529	9.381	0.60	0.80	25.07	1429.29	0.000	0.000	235.21	0.00	0.00
9	163.00	AM-X-CD-16-65-00T	2	8.529	9.381	0.70	0.90	16.53	459.75	0.000	0.000	155.11	0.00	0.00
10	163.00	RRUS-11	6	8.529	9.381	0.55	0.80	11.17	854.21	0.000	0.000	104.76	0.00	0.00
11	163.00	LGP21401	6	8.529	9.381	0.55	0.80	7.99	260.60	0.000	0.000	74.99	0.00	0.00
12	163.00	DC6-48-60-18-8F	1	8.529	9.381	1.00	1.00	1.51	103.58	0.000	0.000	14.16	0.00	0.00
13	160.00	HP Platform w/ Pipe	1	8.495	9.345	1.00	1.00	51.93	3593.62	0.000	0.000	485.31	0.00	0.00
14	153.00	0208	3	8.416	9.257	0.54	0.80	3.27	189.43	0.000	0.000	30.30	0.00	0.00
15	153.00	SF-SU7-2-96	3	8.416	9.257	0.56	0.75	68.26	2504.23	0.000	0.000	631.87	0.00	0.00
16	153.00	ODI2-065R18K-GQ	3	8.416	9.257	0.56	0.80	10.35	451.34	0.000	0.000	95.83	0.00	0.00
17	153.00	3.0" Std Pipe	3	8.416	9.257	0.75	1.00	9.45	-585.13	0.000	0.000	87.44	0.00	0.00
18	153.00	Collar Mount (3-Sided)	2	8.416	9.257	0.75	1.00	9.00	1154.71	0.000	0.000	83.28	0.00	0.00
19	153.00	4415	2	8.416	9.257	0.54	0.80	2.81	212.20	0.000	0.000	26.05	0.00	0.00
20	130.00	B13 RRH4X30-4R	3	8.132	8.945	0.62	0.80	5.48	405.65	0.000	0.000	48.97	0.00	0.00
21	130.00	SBNHH-1D65B	6	8.132	8.945	0.68	0.80	40.41	1987.55	0.000	0.000	361.52	0.00	0.00
22	130.00	QUAD656C0000x	3	8.132	8.945	0.58	0.80	26.77	1397.77	0.000	0.000	239.46	0.00	0.00
23	130.00	PV-LPP14L-HR-B	1	8.132	8.945	1.00	1.00	79.01	4240.94	0.000	0.000	706.73	0.00	0.00
24	130.00	B25 RRH4x30-4R	3	8.132	8.945	0.62	0.80	5.43	369.61	0.000	0.000	48.59	0.00	0.00
25	130.00	B66A RRH 4X45	3	8.132	8.945	0.62	0.80	6.56	585.88	0.000	0.000	58.68	0.00	0.00
26	130.00	DB-T1-6Z-8AB-0Z	2	8.132	8.945	0.71	0.90	8.49	444.75	0.000	0.000	75.97	0.00	0.00
							Totals:		**25,093.77**			**4,611.33**		

Total Applied Force Summary

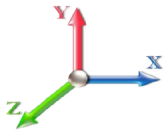
Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		193.82	2651.96	0.00	0.00
10.00		190.99	2653.61	0.00	0.00
15.00		187.90	2635.26	0.00	0.00
20.00		195.97	2608.11	0.00	0.00
25.00		201.76	2575.87	0.00	0.00
30.00		205.83	2540.27	0.00	0.00
35.00		208.64	2502.25	0.00	0.00
40.00		210.47	2462.41	0.00	0.00
41.17		48.79	569.26	0.00	0.00
45.00		164.20	3045.45	0.00	0.00
48.00		128.48	2352.37	0.00	0.00
50.00		85.52	961.81	0.00	0.00
55.00		215.05	2371.54	0.00	0.00
60.00		214.47	2327.36	0.00	0.00
65.00		213.48	2282.45	0.00	0.00
70.00		212.11	2236.91	0.00	0.00
75.00		210.41	2190.81	0.00	0.00
80.00		208.42	2144.21	0.00	0.00
85.00		206.15	2097.17	0.00	0.00
85.58		23.76	242.25	0.00	0.00
90.00		182.41	2770.99	0.00	0.00
91.17		47.65	722.90	0.00	0.00
95.00		156.01	1423.51	0.00	0.00
100.00		201.18	1817.02	0.00	0.00
105.00		198.07	1773.52	0.00	0.00
110.00		194.78	1729.73	0.00	0.00
115.00		191.31	1685.68	0.00	0.00
120.00		187.69	1641.37	0.00	0.00
125.00		183.92	1596.82	0.00	0.00
130.00	(21) attachments	1719.93	10984.20	0.00	0.00
131.25		44.23	379.14	0.00	0.00
135.00		133.58	1641.69	0.00	0.00
135.58		20.52	252.42	0.00	0.00
140.00		153.98	1183.13	0.00	0.00
145.00		170.37	1300.43	0.00	0.00
150.00		165.97	1259.85	0.00	0.00
153.00	(16) attachments	1052.05	4665.07	0.00	0.00
155.00		63.89	483.10	0.00	0.00
156.25		39.54	298.92	0.00	0.00
160.00	(1) attachments	602.40	4387.76	0.00	0.00
163.00	(22) attachments	824.55	4033.89	0.00	0.00
165.00		60.15	372.79	0.00	0.00
170.00	(6) attachments	871.62	4564.31	0.00	0.00
172.00	(12) attachments	213.87	1349.33	0.00	0.00
175.00		84.73	486.79	0.00	0.00
177.95	(1) attachments	99.29	502.91	0.00	0.00

Total Applied Force Summary

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Totals:	**11,389.91**	**96,758.60**	**0.00**	**0.00**

Calculated Forces

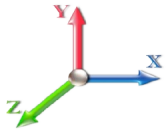
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-96.75	-11.43	0.00	-1371.3	0.00	1371.39	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.196
5.00	-94.09	-11.30	0.00	-1314.2	0.00	1314.27	5738.22	2869.11	14831.4	7426.74	0.02	-0.041	0.000	0.193
10.00	-91.43	-11.17	0.00	-1257.7	0.00	1257.77	5671.58	2835.79	14373.6	7197.48	0.09	-0.083	0.000	0.191
15.00	-88.79	-11.05	0.00	-1201.9	0.00	1201.91	5603.20	2801.60	13918.1	6969.40	0.20	-0.126	0.000	0.188
20.00	-86.17	-10.91	0.00	-1146.6	0.00	1146.68	5533.06	2766.53	13465.2	6742.64	0.35	-0.169	0.000	0.186
25.00	-83.59	-10.76	0.00	-1092.1	0.00	1092.14	5461.17	2730.58	13015.2	6517.32	0.55	-0.213	0.000	0.183
30.00	-81.04	-10.61	0.00	-1038.3	0.00	1038.33	5387.52	2693.76	12568.4	6293.58	0.80	-0.257	0.000	0.180
35.00	-78.53	-10.45	0.00	-985.28	0.00	985.28	5312.13	2656.06	12125.0	6071.55	1.10	-0.302	0.000	0.177
40.00	-76.07	-10.26	0.00	-933.03	0.00	933.03	5234.98	2617.49	11685.3	5851.37	1.44	-0.347	0.000	0.174
41.17	-75.49	-10.24	0.00	-921.05	0.00	921.05	5216.73	2608.36	11583.3	5800.27	1.52	-0.358	0.000	0.173
45.00	-72.44	-10.10	0.00	-881.79	0.00	881.79	5156.08	2578.04	11249.6	5633.16	1.83	-0.394	0.000	0.171
48.00	-70.09	-9.98	0.00	-851.50	0.00	851.50	3955.22	1977.61	8653.35	4333.10	2.08	-0.422	0.000	0.214
50.00	-69.12	-9.93	0.00	-831.54	0.00	831.54	3928.65	1964.32	8516.08	4264.37	2.26	-0.441	0.000	0.213
55.00	-66.74	-9.74	0.00	-781.91	0.00	781.91	3861.45	1930.73	8175.97	4094.06	2.75	-0.486	0.000	0.208
60.00	-64.41	-9.56	0.00	-733.18	0.00	733.18	3793.16	1896.58	7840.36	3926.01	3.28	-0.530	0.000	0.204
65.00	-62.12	-9.37	0.00	-685.38	0.00	685.38	3717.03	1858.51	7495.82	3753.48	3.86	-0.575	0.000	0.199
70.00	-59.88	-9.19	0.00	-638.52	0.00	638.52	3625.02	1812.51	7127.73	3569.16	4.49	-0.621	0.000	0.195
75.00	-57.69	-9.00	0.00	-592.59	0.00	592.59	3533.02	1766.51	6768.92	3389.49	5.16	-0.666	0.000	0.191
80.00	-55.54	-8.81	0.00	-547.61	0.00	547.61	3441.01	1720.51	6419.36	3214.45	5.89	-0.711	0.000	0.187
85.00	-53.44	-8.60	0.00	-503.58	0.00	503.58	3349.01	1674.50	6079.08	3044.06	6.65	-0.757	0.000	0.181
85.58	-53.19	-8.59	0.00	-498.56	0.00	498.56	3338.27	1669.14	6039.98	3024.48	6.75	-0.762	0.000	0.181
90.00	-50.42	-8.39	0.00	-460.62	0.00	460.62	3257.00	1628.50	5748.06	2878.30	7.47	-0.802	0.000	0.176
91.17	-49.70	-8.35	0.00	-450.83	0.00	450.83	3439.99	1720.00	6155.07	3082.11	7.67	-0.813	0.000	0.161
95.00	-48.27	-8.21	0.00	-418.80	0.00	418.80	3387.37	1693.69	5930.15	2969.48	8.34	-0.848	0.000	0.155
100.00	-46.45	-8.02	0.00	-377.74	0.00	377.74	3317.36	1658.68	5640.52	2824.45	9.25	-0.896	0.000	0.148
105.00	-44.67	-7.83	0.00	-337.62	0.00	337.62	3245.79	1622.89	5355.38	2681.67	10.21	-0.944	0.000	0.140
110.00	-42.94	-7.64	0.00	-298.46	0.00	298.46	3172.65	1586.33	5074.95	2541.25	11.23	-0.990	0.000	0.131
115.00	-41.25	-7.45	0.00	-260.24	0.00	260.24	3092.56	1546.28	4791.10	2399.11	12.29	-1.035	0.000	0.122
120.00	-39.61	-7.26	0.00	-222.97	0.00	222.97	2993.01	1496.51	4486.17	2246.42	13.40	-1.077	0.000	0.113
125.00	-38.01	-7.08	0.00	-186.65	0.00	186.65	2893.47	1446.74	4191.27	2098.75	14.55	-1.117	0.000	0.102
130.00	-27.06	-5.15	0.00	-151.27	0.00	151.27	2793.93	1396.97	3906.39	1956.10	15.74	-1.153	0.000	0.087
131.25	-26.68	-5.10	0.00	-144.84	0.00	144.84	2769.05	1384.52	3836.74	1921.22	16.04	-1.162	0.000	0.085
135.00	-25.04	-4.94	0.00	-125.70	0.00	125.70	2694.39	1347.19	3631.54	1818.47	16.96	-1.186	0.000	0.078
135.58	-24.79	-4.92	0.00	-122.81	0.00	122.81	1954.03	977.01	2682.77	1343.38	17.11	-1.190	0.000	0.104
140.00	-23.61	-4.76	0.00	-101.06	0.00	101.06	1891.30	945.65	2512.52	1258.13	18.22	-1.217	0.000	0.093
145.00	-22.31	-4.57	0.00	-77.28	0.00	77.28	1820.29	910.14	2326.52	1164.99	19.51	-1.247	0.000	0.079
150.00	-21.05	-4.38	0.00	-54.43	0.00	54.43	1749.27	874.64	2147.67	1075.43	20.83	-1.271	0.000	0.063
153.00	-16.41	-3.23	0.00	-41.29	0.00	41.29	1706.67	853.33	2043.80	1023.42	21.63	-1.283	0.000	0.050
155.00	-15.93	-3.16	0.00	-34.83	0.00	34.83	1678.26	839.13	1975.98	989.46	22.17	-1.290	0.000	0.045
156.25	-15.63	-3.11	0.00	-30.88	0.00	30.88	1660.51	830.25	1934.17	968.52	22.51	-1.294	0.000	0.041
156.25	-15.63	-3.11	0.00	-30.88	0.00	30.88	1612.04	806.02	1885.98	944.39	22.51	-1.294	0.000	0.042
160.00	-11.26	-2.41	0.00	-19.21	0.00	19.21	1575.35	787.68	1783.56	893.11	23.53	-1.303	0.000	0.029
163.00	-7.24	-1.50	0.00	-11.98	0.00	11.98	1545.30	772.65	1702.84	852.69	24.35	-1.310	0.000	0.019
165.00	-6.87	-1.43	0.00	-8.99	0.00	8.99	1524.91	762.45	1649.65	826.05	24.90	-1.313	0.000	0.015
170.00	-2.33	-0.45	0.00	-1.85	0.00	1.85	1472.71	736.35	1519.02	760.64	26.28	-1.317	0.000	0.004
172.00	-0.99	-0.21	0.00	-0.95	0.00	0.95	1451.33	725.67	1467.75	734.96	26.83	-1.318	0.000	0.002
175.00	-0.50	-0.11	0.00	-0.33	0.00	0.33	1411.16	705.58	1384.48	693.27	27.66	-1.318	0.000	0.001
177.95	0.00	-0.10	0.00	0.00	0.00	0.00	1368.86	684.43	1302.32	652.13	28.47	-1.318	0.000	0.000

Calculated Forces

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 28

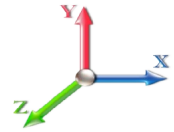
Tower Engineering Solutions

Seismic Segment Forces (Factored)

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E					**Iterations**	22
Gust Response Factor	1.10			**Sds**	0.19	**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.03	**Seismic Importance Factor**	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1499.1	0.00	0.03	0.02	23.93	
10.00		1470.3	0.01	0.05	0.03	35.30	
15.00		1441.6	0.01	0.06	0.03	40.93	
20.00		1412.9	0.02	0.07	0.04	43.60	
25.00		1384.2	0.04	0.07	0.04	44.71	
30.00		1355.4	0.05	0.07	0.04	45.06	
35.00		1326.7	0.07	0.07	0.04	45.10	
40.00		1298.0	0.10	0.07	0.04	45.04	
41.17	Bot - Section 2	298.73	0.10	0.07	0.04	10.41	
45.00		1956.9	0.12	0.07	0.03	69.26	
48.00	Top - Section 1	1507.9	0.14	0.07	0.03	53.95	
50.00		501.04	0.15	0.07	0.03	18.04	
55.00		1232.4	0.18	0.07	0.03	44.82	
60.00		1203.7	0.21	0.06	0.02	43.58	
65.00		1175.0	0.25	0.05	0.02	41.32	
70.00		1146.3	0.29	0.05	0.01	37.64	
75.00		1117.5	0.34	0.04	0.01	32.14	
80.00		1088.8	0.38	0.02	0.01	24.59	
85.00		1060.1	0.43	0.01	0.01	15.05	
85.58	Bot - Section 3	121.81	0.44	0.01	0.01	1.59	
90.00		1703.7	0.48	-0.01	0.01	6.78	
91.17	Top - Section 2	443.10	0.50	-0.01	0.01	0.63	
95.00		669.30	0.54	-0.03	0.01	-4.78	
100.00		851.25	0.60	-0.05	0.01	-15.16	
105.00		826.62	0.66	-0.07	0.02	-22.07	
110.00		802.00	0.72	-0.09	0.03	-26.30	
115.00		777.37	0.79	-0.11	0.05	-27.61	
120.00		752.75	0.86	-0.12	0.07	-26.10	
125.00		728.12	0.93	-0.12	0.10	-21.99	
130.00	Appurtenance(s)	3300.9	1.01	-0.11	0.14	-73.21	
131.25	Bot - Section 4	172.03	1.03	-0.10	0.15	-3.37	
135.00		937.92	1.09	-0.08	0.18	-9.97	
135.58	Top - Section 3	143.62	1.10	-0.07	0.19	-1.30	
140.00		490.79	1.17	-0.02	0.23	2.17	
145.00		536.28	1.25	0.06	0.30	12.32	
150.00		515.76	1.34	0.18	0.38	23.24	
153.00	Appurtenance(s)	2237.5	1.40	0.28	0.43	134.32	
155.00		195.63	1.43	0.35	0.47	13.84	
156.25	Top - Section 4	120.60	1.46	0.40	0.49	9.37	
160.00	Appurtenance(s)	1883.9	1.53	0.57	0.58	188.43	
163.00	Appurtenance(s)	1015.9	1.59	0.74	0.65	121.28	
165.00		143.71	1.62	0.86	0.70	19.12	
170.00	Appurtenance(s)	1851.6	1.72	1.22	0.85	314.37	
172.00	Appurtenance(s)	321.42	1.77	1.39	0.92	59.64	
175.00		196.85	1.83	1.67	1.03	41.41	

Seismic Segment Forces (Factored)

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Tower Engineering Solutions

177.95	Appurtenance(s)		194.31	1.89	1.98	1.14	45.89		
		Totals:	**45,412.3**				**1,477.0**	**Total Wind:**	**39,756.7**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	22
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-60.38	-1.71	0.00	-200.75	0.00	200.75	5803.10	2901.55	15291.3	7657.05		0.00	0.00	0.037
5.00	-58.40	-1.69	0.00	-192.19	0.00	192.19	5738.22	2869.11	14831.4	7426.74		0.00	-0.01	0.036
10.00	-56.46	-1.66	0.00	-183.72	0.00	183.72	5671.58	2835.79	14373.6	7197.48		0.01	-0.01	0.035
15.00	-54.55	-1.63	0.00	-175.40	0.00	175.40	5603.20	2801.60	13918.1	6969.40		0.03	-0.02	0.035
20.00	-52.67	-1.59	0.00	-167.26	0.00	167.26	5533.06	2766.53	13465.2	6742.64		0.05	-0.02	0.034
25.00	-50.83	-1.55	0.00	-159.31	0.00	159.31	5461.17	2730.58	13015.2	6517.32		0.08	-0.03	0.034
30.00	-49.02	-1.51	0.00	-151.56	0.00	151.56	5387.52	2693.76	12568.4	6293.58		0.12	-0.04	0.033
35.00	-47.25	-1.47	0.00	-144.01	0.00	144.01	5312.13	2656.06	12125.0	6071.55		0.16	-0.04	0.033
40.00	-45.52	-1.43	0.00	-136.67	0.00	136.67	5234.98	2617.49	11685.3	5851.37		0.21	-0.05	0.032
41.17	-45.12	-1.42	0.00	-135.01	0.00	135.01	5216.73	2608.36	11583.3	5800.27		0.22	-0.05	0.032
45.00	-42.63	-1.35	0.00	-129.57	0.00	129.57	5156.08	2578.04	11249.6	5633.16		0.27	-0.06	0.031
48.00	-40.71	-1.30	0.00	-125.53	0.00	125.53	3955.22	1977.61	8653.35	4333.10		0.30	-0.06	0.039
50.00	-40.04	-1.28	0.00	-122.94	0.00	122.94	3928.65	1964.32	8516.08	4264.37		0.33	-0.06	0.039
55.00	-38.38	-1.24	0.00	-116.53	0.00	116.53	3861.45	1930.73	8175.97	4094.06		0.40	-0.07	0.038
60.00	-36.76	-1.20	0.00	-110.34	0.00	110.34	3793.16	1896.58	7840.36	3926.01		0.48	-0.08	0.038
65.00	-35.17	-1.16	0.00	-104.36	0.00	104.36	3717.03	1858.51	7495.82	3753.48		0.56	-0.08	0.037
70.00	-33.61	-1.12	0.00	-98.58	0.00	98.58	3625.02	1812.51	7127.73	3569.16		0.66	-0.09	0.037
75.00	-32.09	-1.09	0.00	-92.97	0.00	92.97	3533.02	1766.51	6768.92	3389.49		0.76	-0.10	0.037
80.00	-30.61	-1.07	0.00	-87.52	0.00	87.52	3441.01	1720.51	6419.36	3214.45		0.86	-0.11	0.036
85.00	-29.15	-1.05	0.00	-82.18	0.00	82.18	3349.01	1674.50	6079.08	3044.06		0.98	-0.11	0.036
85.58	-28.99	-1.05	0.00	-81.57	0.00	81.57	3338.27	1669.14	6039.98	3024.48		0.99	-0.11	0.036
90.00	-26.78	-1.04	0.00	-76.92	0.00	76.92	3257.00	1628.50	5748.06	2878.30		1.10	-0.12	0.035
91.17	-26.21	-1.04	0.00	-75.71	0.00	75.71	3439.99	1720.00	6155.07	3082.11		1.13	-0.12	0.032
95.00	-25.27	-1.04	0.00	-71.71	0.00	71.71	3387.37	1693.69	5930.15	2969.48		1.23	-0.13	0.032
100.00	-24.07	-1.04	0.00	-66.50	0.00	66.50	3317.36	1658.68	5640.52	2824.45		1.37	-0.14	0.031
105.00	-22.90	-1.04	0.00	-61.28	0.00	61.28	3245.79	1622.89	5355.38	2681.67		1.52	-0.15	0.030
110.00	-21.76	-1.04	0.00	-56.05	0.00	56.05	3172.65	1586.33	5074.95	2541.25		1.68	-0.15	0.029
115.00	-20.64	-1.04	0.00	-50.83	0.00	50.83	3092.56	1546.28	4791.10	2399.11		1.84	-0.16	0.028
120.00	-19.56	-1.04	0.00	-45.61	0.00	45.61	2993.01	1496.51	4486.17	2246.42		2.02	-0.17	0.027
125.00	-18.51	-1.04	0.00	-40.38	0.00	40.38	2893.47	1446.74	4191.27	2098.75		2.20	-0.18	0.026
130.00	-14.37	-1.03	0.00	-35.16	0.00	35.16	2793.93	1396.97	3906.39	1956.10		2.39	-0.19	0.023
131.25	-14.12	-1.03	0.00	-33.87	0.00	33.87	2769.05	1384.52	3836.74	1921.22		2.44	-0.19	0.023
135.00	-12.87	-1.03	0.00	-30.00	0.00	30.00	2694.39	1347.19	3631.54	1818.47		2.59	-0.20	0.021
135.58	-12.68	-1.03	0.00	-29.40	0.00	29.40	1954.03	977.01	2682.77	1343.38		2.62	-0.20	0.028
140.00	-11.94	-1.03	0.00	-24.86	0.00	24.86	1891.30	945.65	2512.52	1258.13		2.80	-0.20	0.026
145.00	-11.13	-1.01	0.00	-19.73	0.00	19.73	1820.29	910.14	2326.52	1164.99		3.02	-0.21	0.023
150.00	-10.35	-0.99	0.00	-14.67	0.00	14.67	1749.27	874.64	2147.67	1075.43		3.24	-0.22	0.020
153.00	-7.56	-0.84	0.00	-11.71	0.00	11.71	1706.67	853.33	2043.80	1023.42		3.38	-0.22	0.016
155.00	-7.26	-0.83	0.00	-10.02	0.00	10.02	1678.26	839.13	1975.98	989.46		3.47	-0.22	0.014
156.25	-7.08	-0.82	0.00	-8.99	0.00	8.99	1660.51	830.25	1934.17	968.52		3.53	-0.22	0.014
156.25	-7.08	-0.82	0.00	-8.99	0.00	8.99	1612.04	806.02	1885.98	944.39		3.53	-0.22	0.014
160.00	-4.70	-0.62	0.00	-5.92	0.00	5.92	1575.35	787.68	1783.56	893.11		3.70	-0.23	0.010
163.00	-3.40	-0.49	0.00	-4.06	0.00	4.06	1545.30	772.65	1702.84	852.69		3.85	-0.23	0.007
165.00	-3.20	-0.47	0.00	-3.08	0.00	3.08	1524.91	762.45	1649.65	826.05		3.94	-0.23	0.006
170.00	-0.90	-0.15	0.00	-0.71	0.00	0.71	1472.71	736.35	1519.02	760.64		4.18	-0.23	0.002
172.00	-0.48	-0.09	0.00	-0.41	0.00	0.41	1451.33	725.67	1467.75	734.96		4.28	-0.23	0.001
175.00	-0.23	-0.05	0.00	-0.14	0.00	0.14	1411.16	705.58	1384.48	693.27		4.42	-0.23	0.000

Calculated Forces

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

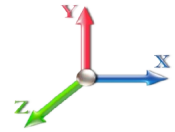
177.95	0.00	-0.05	0.00	0.00	0.00	0.00	1368.86	684.43	1302.32	652.13	4.57	-0.23	0.000

Seismic Segment Forces (Factored)

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	22
Gust Response Factor	1.10			**Sds**	0.19	**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.03	**Seismic Importance Factor**	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1499.1	0.00	0.03	0.02	23.93	
10.00		1470.3	0.01	0.05	0.03	35.30	
15.00		1441.6	0.01	0.06	0.03	40.93	
20.00		1412.9	0.02	0.07	0.04	43.60	
25.00		1384.2	0.04	0.07	0.04	44.71	
30.00		1355.4	0.05	0.07	0.04	45.06	
35.00		1326.7	0.07	0.07	0.04	45.10	
40.00		1298.0	0.10	0.07	0.04	45.04	
41.17	Bot - Section 2	298.73	0.10	0.07	0.04	10.41	
45.00		1956.9	0.12	0.07	0.03	69.26	
48.00	Top - Section 1	1507.9	0.14	0.07	0.03	53.95	
50.00		501.04	0.15	0.07	0.03	18.04	
55.00		1232.4	0.18	0.07	0.03	44.82	
60.00		1203.7	0.21	0.06	0.02	43.58	
65.00		1175.0	0.25	0.05	0.02	41.32	
70.00		1146.3	0.29	0.05	0.01	37.64	
75.00		1117.5	0.34	0.04	0.01	32.14	
80.00		1088.8	0.38	0.02	0.01	24.59	
85.00		1060.1	0.43	0.01	0.01	15.05	
85.58	Bot - Section 3	121.81	0.44	0.01	0.01	1.59	
90.00		1703.7	0.48	-0.01	0.01	6.78	
91.17	Top - Section 2	443.10	0.50	-0.01	0.01	0.63	
95.00		669.30	0.54	-0.03	0.01	-4.78	
100.00		851.25	0.60	-0.05	0.01	-15.16	
105.00		826.62	0.66	-0.07	0.02	-22.07	
110.00		802.00	0.72	-0.09	0.03	-26.30	
115.00		777.37	0.79	-0.11	0.05	-27.61	
120.00		752.75	0.86	-0.12	0.07	-26.10	
125.00		728.12	0.93	-0.12	0.10	-21.99	
130.00	Appurtenance(s)	3300.9	1.01	-0.11	0.14	-73.21	
131.25	Bot - Section 4	172.03	1.03	-0.10	0.15	-3.37	
135.00		937.92	1.09	-0.08	0.18	-9.97	
135.58	Top - Section 3	143.62	1.10	-0.07	0.19	-1.30	
140.00		490.79	1.17	-0.02	0.23	2.17	
145.00		536.28	1.25	0.06	0.30	12.32	
150.00		515.76	1.34	0.18	0.38	23.24	
153.00	Appurtenance(s)	2237.5	1.40	0.28	0.43	134.32	
155.00		195.63	1.43	0.35	0.47	13.84	
156.25	Top - Section 4	120.60	1.46	0.40	0.49	9.37	
160.00	Appurtenance(s)	1883.9	1.53	0.57	0.58	188.43	
163.00	Appurtenance(s)	1015.9	1.59	0.74	0.65	121.28	
165.00		143.71	1.62	0.86	0.70	19.12	
170.00	Appurtenance(s)	1851.6	1.72	1.22	0.85	314.37	
172.00	Appurtenance(s)	321.42	1.77	1.39	0.92	59.64	
175.00		196.85	1.83	1.67	1.03	41.41	

Seismic Segment Forces (Factored)

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 34

Tower Engineering Solutions

177.95	Appurtenance(s)		194.31	1.89	1.98	1.14	45.89		
		Totals:	**45,412.3**				**1,477.0**	**Total Wind:**	**39,756.7**

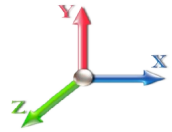
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	22
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.03	**Seismic Importance Factor**			1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.28	-1.71	0.00	-198.89	0.00	198.89	5803.10	2901.55	15291.3	7657.05		0.00	0.00	0.034
5.00	-43.80	-1.69	0.00	-190.33	0.00	190.33	5738.22	2869.11	14831.4	7426.74		0.00	-0.01	0.033
10.00	-42.34	-1.66	0.00	-181.88	0.00	181.88	5671.58	2835.79	14373.6	7197.48		0.01	-0.01	0.033
15.00	-40.91	-1.62	0.00	-173.58	0.00	173.58	5603.20	2801.60	13918.1	6969.40		0.03	-0.02	0.032
20.00	-39.50	-1.58	0.00	-165.46	0.00	165.46	5533.06	2766.53	13465.2	6742.64		0.05	-0.02	0.032
25.00	-38.12	-1.54	0.00	-157.54	0.00	157.54	5461.17	2730.58	13015.2	6517.32		0.08	-0.03	0.031
30.00	-36.77	-1.50	0.00	-149.83	0.00	149.83	5387.52	2693.76	12568.4	6293.58		0.12	-0.04	0.031
35.00	-35.44	-1.46	0.00	-142.33	0.00	142.33	5312.13	2656.06	12125.0	6071.55		0.16	-0.04	0.030
40.00	-34.14	-1.41	0.00	-135.04	0.00	135.04	5234.98	2617.49	11685.3	5851.37		0.21	-0.05	0.030
41.17	-33.84	-1.41	0.00	-133.38	0.00	133.38	5216.73	2608.36	11583.3	5800.27		0.22	-0.05	0.029
45.00	-31.97	-1.34	0.00	-127.99	0.00	127.99	5156.08	2578.04	11249.6	5633.16		0.26	-0.06	0.029
48.00	-30.53	-1.28	0.00	-123.98	0.00	123.98	3955.22	1977.61	8653.35	4333.10		0.30	-0.06	0.036
50.00	-30.03	-1.27	0.00	-121.41	0.00	121.41	3928.65	1964.32	8516.08	4264.37		0.33	-0.06	0.036
55.00	-28.79	-1.23	0.00	-115.07	0.00	115.07	3861.45	1930.73	8175.97	4094.06		0.40	-0.07	0.036
60.00	-27.57	-1.18	0.00	-108.95	0.00	108.95	3793.16	1896.58	7840.36	3926.01		0.47	-0.08	0.035
65.00	-26.38	-1.14	0.00	-103.03	0.00	103.03	3717.03	1858.51	7495.82	3753.48		0.56	-0.08	0.035
70.00	-25.21	-1.11	0.00	-97.32	0.00	97.32	3625.02	1812.51	7127.73	3569.16		0.65	-0.09	0.034
75.00	-24.07	-1.08	0.00	-91.78	0.00	91.78	3533.02	1766.51	6768.92	3389.49		0.75	-0.10	0.034
80.00	-22.95	-1.05	0.00	-86.40	0.00	86.40	3441.01	1720.51	6419.36	3214.45		0.85	-0.10	0.034
85.00	-21.87	-1.04	0.00	-81.14	0.00	81.14	3349.01	1674.50	6079.08	3044.06		0.97	-0.11	0.033
85.58	-21.74	-1.04	0.00	-80.54	0.00	80.54	3338.27	1669.14	6039.98	3024.48		0.98	-0.11	0.033
90.00	-20.09	-1.03	0.00	-75.96	0.00	75.96	3257.00	1628.50	5748.06	2878.30		1.09	-0.12	0.033
91.17	-19.66	-1.03	0.00	-74.76	0.00	74.76	3439.99	1720.00	6155.07	3082.11		1.12	-0.12	0.030
95.00	-18.95	-1.03	0.00	-70.82	0.00	70.82	3387.37	1693.69	5930.15	2969.48		1.22	-0.13	0.029
100.00	-18.05	-1.03	0.00	-65.68	0.00	65.68	3317.36	1658.68	5640.52	2824.45		1.36	-0.14	0.029
105.00	-17.17	-1.03	0.00	-60.54	0.00	60.54	3245.79	1622.89	5355.38	2681.67		1.50	-0.14	0.028
110.00	-16.32	-1.03	0.00	-55.40	0.00	55.40	3172.65	1586.33	5074.95	2541.25		1.66	-0.15	0.027
115.00	-15.48	-1.03	0.00	-50.25	0.00	50.25	3092.56	1546.28	4791.10	2399.11		1.82	-0.16	0.026
120.00	-14.67	-1.03	0.00	-45.10	0.00	45.10	2993.01	1496.51	4486.17	2246.42		1.99	-0.17	0.025
125.00	-13.88	-1.03	0.00	-39.96	0.00	39.96	2893.47	1446.74	4191.27	2098.75		2.17	-0.18	0.024
130.00	-10.77	-1.02	0.00	-34.81	0.00	34.81	2793.93	1396.97	3906.39	1956.10		2.36	-0.18	0.022
131.25	-10.59	-1.02	0.00	-33.54	0.00	33.54	2769.05	1384.52	3836.74	1921.22		2.41	-0.19	0.021
135.00	-9.65	-1.02	0.00	-29.71	0.00	29.71	2694.39	1347.19	3631.54	1818.47		2.56	-0.19	0.020
135.58	-9.51	-1.02	0.00	-29.12	0.00	29.12	1954.03	977.01	2682.77	1343.38		2.58	-0.19	0.027
140.00	-8.96	-1.01	0.00	-24.62	0.00	24.62	1891.30	945.65	2512.52	1258.13		2.77	-0.20	0.024
145.00	-8.35	-1.00	0.00	-19.55	0.00	19.55	1820.29	910.14	2326.52	1164.99		2.98	-0.21	0.021
150.00	-7.76	-0.98	0.00	-14.54	0.00	14.54	1749.27	874.64	2147.67	1075.43		3.20	-0.21	0.018
153.00	-5.67	-0.83	0.00	-11.62	0.00	11.62	1706.67	853.33	2043.80	1023.42		3.34	-0.22	0.015
155.00	-5.45	-0.82	0.00	-9.95	0.00	9.95	1678.26	839.13	1975.98	989.46		3.43	-0.22	0.013
156.25	-5.31	-0.81	0.00	-8.92	0.00	8.92	1660.51	830.25	1934.17	968.52		3.49	-0.22	0.012
156.25	-5.31	-0.81	0.00	-8.92	0.00	8.92	1612.04	806.02	1885.98	944.39		3.49	-0.22	0.013
160.00	-3.52	-0.62	0.00	-5.88	0.00	5.88	1575.35	787.68	1783.56	893.11		3.66	-0.22	0.009
163.00	-2.55	-0.49	0.00	-4.04	0.00	4.04	1545.30	772.65	1702.84	852.69		3.80	-0.23	0.006
165.00	-2.40	-0.47	0.00	-3.06	0.00	3.06	1524.91	762.45	1649.65	826.05		3.90	-0.23	0.005
170.00	-0.67	-0.15	0.00	-0.70	0.00	0.70	1472.71	736.35	1519.02	760.64		4.13	-0.23	0.001
172.00	-0.36	-0.09	0.00	-0.40	0.00	0.40	1451.33	725.67	1467.75	734.96		4.23	-0.23	0.001
175.00	-0.17	-0.05	0.00	-0.14	0.00	0.14	1411.16	705.58	1384.48	693.27		4.37	-0.23	0.000

Calculated Forces

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

177.95	0.00	-0.05	0.00	0.00	0.00	0.00	1368.86	684.43	1302.32	652.13	4.51	-0.23	0.000

Wind Loading - Shaft

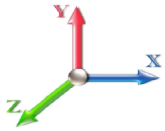
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	301.92	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	296.22	0.650	0.000	5.00	27.032	17.57	143.8	0.0	1499.1
10.00		1.00	0.85	7.442	8.19	290.53	0.650	0.000	5.00	26.518	17.24	141.1	0.0	1470.4
15.00		1.00	0.85	7.442	8.19	284.84	0.650	0.000	5.00	26.003	16.90	138.4	0.0	1441.7
20.00		1.00	0.90	7.896	8.69	287.54	0.650	0.000	5.00	25.489	16.57	143.9	0.0	1412.9
25.00		1.00	0.95	8.276	9.10	288.37	0.650	0.000	5.00	24.974	16.23	147.8	0.0	1384.2
30.00		1.00	0.98	8.600	9.46	287.84	0.650	0.000	5.00	24.460	15.90	150.4	0.0	1355.5
35.00		1.00	1.01	8.883	9.77	286.33	0.650	0.000	5.00	23.945	15.56	152.1	0.0	1326.7
40.00		1.00	1.04	9.137	10.05	284.08	0.650	0.000	5.00	23.431	15.23	153.1	0.0	1298.0
41.17	Bot - Section 2	1.00	1.05	9.192	10.11	283.46	0.650	0.000	1.17	5.393	3.51	35.4	0.0	298.7
45.00		1.00	1.07	9.366	10.30	281.24	0.650	0.000	3.83	17.807	11.57	119.2	0.0	1956.9
48.00	Top - Section 1	1.00	1.08	9.494	10.44	279.29	0.650	0.000	3.00	13.725	8.92	93.2	0.0	1508.0
50.00		1.00	1.09	9.576	10.53	282.56	0.650	0.000	2.00	9.047	5.88	61.9	0.0	501.0
55.00		1.00	1.12	9.770	10.75	278.89	0.650	0.000	5.00	22.257	14.47	155.5	0.0	1232.5
60.00		1.00	1.14	9.951	10.95	274.87	0.650	0.000	5.00	21.743	14.13	154.7	0.0	1203.8
65.00		1.00	1.16	10.120	11.13	270.56	0.650	0.000	5.00	21.228	13.80	153.6	0.0	1175.0
70.00		1.00	1.17	10.279	11.31	265.99	0.650	0.000	5.00	20.714	13.46	152.2	0.0	1146.3
75.00		1.00	1.19	10.430	11.47	261.19	0.650	0.000	5.00	20.199	13.13	150.6	0.0	1117.6
80.00		1.00	1.21	10.572	11.63	256.18	0.650	0.000	5.00	19.685	12.80	148.8	0.0	1088.8
85.00		1.00	1.22	10.708	11.78	251.00	0.650	0.000	5.00	19.170	12.46	146.8	0.0	1060.1
85.58	Bot - Section 3	1.00	1.22	10.723	11.80	250.38	0.650	0.000	0.58	2.203	1.43	16.9	0.0	121.8
90.00		1.00	1.24	10.838	11.92	245.64	0.650	0.000	4.42	16.733	10.88	129.7	0.0	1703.7
91.17	Top - Section 2	1.00	1.24	10.867	11.95	244.37	0.650	0.000	1.17	4.353	2.83	33.8	0.0	443.1
95.00		1.00	1.25	10.962	12.06	244.40	0.650	0.000	3.83	14.106	9.17	110.6	0.0	669.3
100.00		1.00	1.27	11.081	12.19	238.77	0.650	0.000	5.00	17.944	11.66	142.2	0.0	851.2
105.00		1.00	1.28	11.195	12.31	233.02	0.650	0.000	5.00	17.430	11.33	139.5	0.0	826.6
110.00		1.00	1.29	11.305	12.44	227.15	0.650	0.000	5.00	16.915	10.99	136.7	0.0	802.0
115.00		1.00	1.30	11.412	12.55	221.17	0.650	0.000	5.00	16.401	10.66	133.8	0.0	777.4
120.00		1.00	1.32	11.514	12.67	215.08	0.650	0.000	5.00	15.886	10.33	130.8	0.0	752.7
125.00		1.00	1.33	11.614	12.78	208.89	0.650	0.000	5.00	15.372	9.99	127.6	0.0	728.1
130.00	Appurtenance(s)	1.00	1.34	11.710	12.88	202.62	0.650	0.000	5.00	14.857	9.66	124.4	0.0	703.5
131.25	Bot - Section 4	1.00	1.34	11.734	12.91	201.03	0.650	0.000	1.25	3.634	2.36	30.5	0.0	172.0
135.00		1.00	1.35	11.803	12.98	196.25	0.650	0.000	3.75	10.907	7.09	92.0	0.0	937.9
135.58	Top - Section 3	1.00	1.35	11.814	13.00	195.51	0.650	0.000	0.58	1.671	1.09	14.1	0.0	143.6
140.00		1.00	1.36	11.894	13.08	193.51	0.650	0.000	4.42	12.422	8.07	105.6	0.0	490.8
145.00		1.00	1.37	11.982	13.18	187.00	0.650	0.000	5.00	13.578	8.83	116.3	0.0	536.3
150.00		1.00	1.38	12.068	13.27	180.42	0.650	0.000	5.00	13.064	8.49	112.7	0.0	515.8
153.00	Appurtenance(s)	1.00	1.38	12.119	13.33	176.44	0.650	0.000	3.00	7.591	4.93	65.8	0.0	299.6
155.00		1.00	1.39	12.152	13.37	173.77	0.650	0.000	2.00	4.958	3.22	43.1	0.0	195.6
156.25	Top - Section 4	1.00	1.39	12.172	13.39	172.10	0.650	0.000	1.25	3.057	1.99	26.6	0.0	120.6
160.00	Appurtenance(s)	1.00	1.40	12.233	13.46	167.06	0.650	0.000	3.75	8.978	5.84	78.5	0.0	283.9
163.00	Appurtenance(s)	1.00	1.40	12.281	13.51	163.00	0.650	0.000	3.00	6.974	4.53	61.2	0.0	220.5
165.00		1.00	1.41	12.313	13.54	160.28	0.650	0.000	2.00	4.546	2.96	40.0	0.0	143.7
170.00	Appurtenance(s)	1.00	1.42	12.390	13.63	153.44	0.650	0.000	5.00	11.006	7.15	97.5	0.0	347.8
172.00	Appurtenance(s)	1.00	1.42	12.421	13.66	150.68	0.650	0.000	2.00	4.258	2.77	37.8	0.0	134.5
175.00		1.00	1.42	12.466	13.71	146.54	0.650	0.000	3.00	6.233	4.05	55.6	0.0	196.9
177.95	Appurtenance(s)	1.00	1.43	12.510	13.76	142.44	0.650	0.000	2.95	5.948	3.87	53.2	0.0	187.8

Wind Loading - Shaft

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Totals:	**177.95**	**4,799.2**	**36,784.2**

Discrete Appurtenance Forces

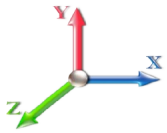
Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	177.95	6' Lightning rod	1	12.510	13.761	1.00	1.00	0.38	6.50	0.000	0.000	5.23	0.00	0.00
2	172.00	FE15501P77-75	6	12.421	13.663	0.54	0.80	3.09	138.60	0.000	0.000	42.18	0.00	0.00
3	172.00	782 11056 - Bias-T	3	12.421	13.663	0.60	0.80	0.50	7.80	0.000	0.000	6.89	0.00	0.00
4	172.00	RR90-17-02DP	3	12.421	13.663	0.55	0.80	7.22	40.50	0.000	0.000	98.65	0.00	0.00
5	170.00	T-Frames w/ Pipe Mount	3	12.390	13.629	0.56	0.75	27.00	1350.00	0.000	0.000	367.99	0.00	0.00
6	170.00	LNX-6515DS-A1M	3	12.390	13.629	0.64	0.80	22.00	153.90	0.000	0.000	299.89	0.00	0.00
7	163.00	SBNH-1D6565C	1	12.281	13.509	1.00	1.00	11.47	66.10	0.000	0.000	154.95	0.00	0.00
8	163.00	7770	6	12.281	13.509	0.58	0.80	19.27	210.00	0.000	0.000	260.35	0.00	0.00
9	163.00	AM-X-CD-16-65-00T	2	12.281	13.509	0.68	0.90	10.97	97.00	0.000	0.000	148.22	0.00	0.00
10	163.00	RRUS-11	6	12.281	13.509	0.54	0.80	8.10	306.00	0.000	0.000	109.48	0.00	0.00
11	163.00	LGP21401	6	12.281	13.509	0.54	0.80	4.15	84.60	0.000	0.000	56.05	0.00	0.00
12	163.00	DC6-48-60-18-8F	1	12.281	13.509	1.00	1.00	0.92	31.80	0.000	0.000	12.43	0.00	0.00
13	160.00	HP Platform w/ Pipe	1	12.233	13.457	1.00	1.00	25.00	1600.00	0.000	0.000	336.41	0.00	0.00
14	153.00	0208	3	12.119	13.330	0.54	0.80	2.20	59.40	0.000	0.000	29.37	0.00	0.00
15	153.00	SF-SU7-2-96	3	12.119	13.330	0.56	0.75	25.48	1185.00	0.000	0.000	339.68	0.00	0.00
16	153.00	ODI2-065R18K-GQ	3	12.119	13.330	0.56	0.80	8.15	75.30	0.000	0.000	108.62	0.00	0.00
17	153.00	3.0" Std Pipe	3	12.119	13.330	1.00	1.00	5.25	90.00	0.000	0.000	69.98	0.00	0.00
18	153.00	Collar Mount (3-Sided)	2	12.119	13.330	1.00	1.00	5.00	440.00	0.000	0.000	66.65	0.00	0.00
19	153.00	4415	2	12.119	13.330	0.54	0.80	1.99	88.20	0.000	0.000	26.58	0.00	0.00
20	130.00	B13 RRH4X30-4R	3	11.710	12.881	0.60	0.80	3.89	171.60	0.000	0.000	50.08	0.00	0.00
21	130.00	SBNHH-1D65B	6	11.710	12.881	0.66	0.80	32.51	240.00	0.000	0.000	418.75	0.00	0.00
22	130.00	QUAD656C0000x	3	11.710	12.881	0.57	0.80	22.56	162.00	0.000	0.000	290.61	0.00	0.00
23	130.00	PV-LPP14L-HR-B	1	11.710	12.881	1.00	1.00	36.80	1641.00	0.000	0.000	474.02	0.00	0.00
24	130.00	B25 RRH4x30-4R	3	11.710	12.881	0.60	0.80	3.85	153.00	0.000	0.000	49.62	0.00	0.00
25	130.00	B66A RRH 4X45	3	11.710	12.881	0.60	0.80	4.68	192.00	0.000	0.000	60.28	0.00	0.00
26	130.00	DB-T1-6Z-8AB-0Z	2	11.710	12.881	0.70	0.90	6.74	37.80	0.000	0.000	86.81	0.00	0.00
							Totals:		**8,628.10**			**3,969.77**		

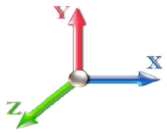
Total Applied Force Summary

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 40

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		143.84	1648.57	0.00	0.00
10.00		141.10	1619.84	0.00	0.00
15.00		138.36	1591.11	0.00	0.00
20.00		143.90	1562.38	0.00	0.00
25.00		147.78	1533.65	0.00	0.00
30.00		150.40	1504.92	0.00	0.00
35.00		152.09	1476.19	0.00	0.00
40.00		153.07	1447.46	0.00	0.00
41.17		35.45	333.61	0.00	0.00
45.00		119.25	2071.52	0.00	0.00
48.00		93.17	1597.63	0.00	0.00
50.00		61.95	560.82	0.00	0.00
55.00		155.49	1381.94	0.00	0.00
60.00		154.70	1353.21	0.00	0.00
65.00		153.61	1324.48	0.00	0.00
70.00		152.24	1295.75	0.00	0.00
75.00		150.63	1267.02	0.00	0.00
80.00		148.80	1238.29	0.00	0.00
85.00		146.77	1209.57	0.00	0.00
85.58		16.89	139.24	0.00	0.00
90.00		129.66	1835.76	0.00	0.00
91.17		33.82	477.97	0.00	0.00
95.00		110.56	783.88	0.00	0.00
100.00		142.17	1000.70	0.00	0.00
105.00		139.52	976.07	0.00	0.00
110.00		136.73	951.45	0.00	0.00
115.00		133.82	926.82	0.00	0.00
120.00		130.79	902.20	0.00	0.00
125.00		127.64	877.57	0.00	0.00
130.00	(21) attachments	1554.57	3450.35	0.00	0.00
131.25		30.49	206.64	0.00	0.00
135.00		92.05	1041.75	0.00	0.00
135.58		14.11	159.77	0.00	0.00
140.00		105.64	613.09	0.00	0.00
145.00		116.33	674.73	0.00	0.00
150.00		112.72	654.21	0.00	0.00
153.00	(16) attachments	706.65	2320.58	0.00	0.00
155.00		43.08	249.69	0.00	0.00
156.25		26.60	154.39	0.00	0.00
160.00	(1) attachments	414.94	1985.29	0.00	0.00
163.00	(22) attachments	802.71	1082.53	0.00	0.00
165.00		40.02	168.67	0.00	0.00
170.00	(6) attachments	765.38	1914.09	0.00	0.00
172.00	(12) attachments	185.53	346.38	0.00	0.00
175.00		55.56	209.33	0.00	0.00
177.95	(1) attachments	58.44	194.31	0.00	0.00

Total Applied Force Summary

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

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Totals:	**8,769.01**	**50,315.41**	**0.00**	**0.00**

Calculated Forces

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

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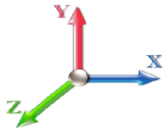
Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-50.31	-8.78	0.00	-1036.1	0.00	1036.19	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.144
5.00	-48.66	-8.66	0.00	-992.28	0.00	992.28	5738.22	2869.11	14831.4	7426.74	0.02	-0.031	0.000	0.142
10.00	-47.04	-8.55	0.00	-948.96	0.00	948.96	5671.58	2835.79	14373.6	7197.48	0.07	-0.063	0.000	0.140
15.00	-45.44	-8.43	0.00	-906.22	0.00	906.22	5603.20	2801.60	13918.1	6969.40	0.15	-0.095	0.000	0.138
20.00	-43.87	-8.31	0.00	-864.05	0.00	864.05	5533.06	2766.53	13465.2	6742.64	0.27	-0.128	0.000	0.136
25.00	-42.33	-8.18	0.00	-822.49	0.00	822.49	5461.17	2730.58	13015.2	6517.32	0.42	-0.161	0.000	0.134
30.00	-40.83	-8.05	0.00	-781.57	0.00	781.57	5387.52	2693.76	12568.4	6293.58	0.61	-0.194	0.000	0.132
35.00	-39.35	-7.92	0.00	-741.31	0.00	741.31	5312.13	2656.06	12125.0	6071.55	0.83	-0.228	0.000	0.130
40.00	-37.90	-7.77	0.00	-701.71	0.00	701.71	5234.98	2617.49	11685.3	5851.37	1.08	-0.262	0.000	0.127
41.17	-37.56	-7.75	0.00	-692.64	0.00	692.64	5216.73	2608.36	11583.3	5800.27	1.15	-0.270	0.000	0.127
45.00	-35.49	-7.63	0.00	-662.94	0.00	662.94	5156.08	2578.04	11249.6	5633.16	1.38	-0.297	0.000	0.125
48.00	-33.89	-7.54	0.00	-640.04	0.00	640.04	3955.22	1977.61	8653.35	4333.10	1.57	-0.318	0.000	0.156
50.00	-33.32	-7.49	0.00	-624.96	0.00	624.96	3928.65	1964.32	8516.08	4264.37	1.71	-0.332	0.000	0.155
55.00	-31.94	-7.35	0.00	-587.51	0.00	587.51	3861.45	1930.73	8175.97	4094.06	2.07	-0.366	0.000	0.152
60.00	-30.58	-7.20	0.00	-550.78	0.00	550.78	3793.16	1896.58	7840.36	3926.01	2.47	-0.399	0.000	0.148
65.00	-29.25	-7.05	0.00	-514.78	0.00	514.78	3717.03	1858.51	7495.82	3753.48	2.91	-0.433	0.000	0.145
70.00	-27.95	-6.91	0.00	-479.51	0.00	479.51	3625.02	1812.51	7127.73	3569.16	3.38	-0.467	0.000	0.142
75.00	-26.69	-6.76	0.00	-444.97	0.00	444.97	3533.02	1766.51	6768.92	3389.49	3.89	-0.501	0.000	0.139
80.00	-25.44	-6.62	0.00	-411.15	0.00	411.15	3441.01	1720.51	6419.36	3214.45	4.43	-0.535	0.000	0.135
85.00	-24.23	-6.47	0.00	-378.07	0.00	378.07	3349.01	1674.50	6079.08	3044.06	5.01	-0.569	0.000	0.131
85.58	-24.09	-6.46	0.00	-374.29	0.00	374.29	3338.27	1669.14	6039.98	3024.48	5.08	-0.573	0.000	0.131
90.00	-22.26	-6.32	0.00	-345.78	0.00	345.78	3257.00	1628.50	5748.06	2878.30	5.63	-0.603	0.000	0.127
91.17	-21.78	-6.28	0.00	-338.41	0.00	338.41	3439.99	1720.00	6155.07	3082.11	5.78	-0.612	0.000	0.116
95.00	-20.99	-6.18	0.00	-314.32	0.00	314.32	3387.37	1693.69	5930.15	2969.48	6.28	-0.637	0.000	0.112
100.00	-19.99	-6.03	0.00	-283.45	0.00	283.45	3317.36	1658.68	5640.52	2824.45	6.96	-0.674	0.000	0.106
105.00	-19.01	-5.89	0.00	-253.28	0.00	253.28	3245.79	1622.89	5355.38	2681.67	7.69	-0.710	0.000	0.100
110.00	-18.06	-5.76	0.00	-223.80	0.00	223.80	3172.65	1586.33	5074.95	2541.25	8.45	-0.744	0.000	0.094
115.00	-17.13	-5.62	0.00	-195.02	0.00	195.02	3092.56	1546.28	4791.10	2399.11	9.25	-0.778	0.000	0.087
120.00	-16.23	-5.49	0.00	-166.92	0.00	166.92	2993.01	1496.51	4486.17	2246.42	10.08	-0.810	0.000	0.080
125.00	-15.35	-5.35	0.00	-139.49	0.00	139.49	2893.47	1446.74	4191.27	2098.75	10.95	-0.839	0.000	0.072
130.00	-11.92	-3.75	0.00	-112.72	0.00	112.72	2793.93	1396.97	3906.39	1956.10	11.84	-0.866	0.000	0.062
131.25	-11.71	-3.72	0.00	-108.03	0.00	108.03	2769.05	1384.52	3836.74	1921.22	12.07	-0.873	0.000	0.060
135.00	-10.67	-3.61	0.00	-94.09	0.00	94.09	2694.39	1347.19	3631.54	1818.47	12.76	-0.891	0.000	0.056
135.58	-10.51	-3.60	0.00	-91.98	0.00	91.98	1954.03	977.01	2682.77	1343.38	12.87	-0.894	0.000	0.074
140.00	-9.90	-3.49	0.00	-76.08	0.00	76.08	1891.30	945.65	2512.52	1258.13	13.71	-0.914	0.000	0.066
145.00	-9.23	-3.36	0.00	-58.64	0.00	58.64	1820.29	910.14	2326.52	1164.99	14.68	-0.937	0.000	0.055
150.00	-8.57	-3.24	0.00	-41.82	0.00	41.82	1749.27	874.64	2147.67	1075.43	15.67	-0.955	0.000	0.044
153.00	-6.26	-2.50	0.00	-32.09	0.00	32.09	1706.67	853.33	2043.80	1023.42	16.27	-0.965	0.000	0.035
155.00	-6.01	-2.45	0.00	-27.10	0.00	27.10	1678.26	839.13	1975.98	989.46	16.68	-0.970	0.000	0.031
156.25	-5.86	-2.42	0.00	-24.03	0.00	24.03	1660.51	830.25	1934.17	968.52	16.93	-0.973	0.000	0.028
156.25	-5.86	-2.42	0.00	-24.03	0.00	24.03	1612.04	806.02	1885.98	944.39	16.93	-0.973	0.000	0.029
160.00	-3.88	-1.97	0.00	-14.95	0.00	14.95	1575.35	787.68	1783.56	893.11	17.70	-0.980	0.000	0.019
163.00	-2.81	-1.15	0.00	-9.03	0.00	9.03	1545.30	772.65	1702.84	852.69	18.32	-0.985	0.000	0.012
165.00	-2.65	-1.11	0.00	-6.72	0.00	6.72	1524.91	762.45	1649.65	826.05	18.73	-0.988	0.000	0.010
170.00	-0.74	-0.31	0.00	-1.17	0.00	1.17	1472.71	736.35	1519.02	760.64	19.77	-0.991	0.000	0.002
172.00	-0.40	-0.12	0.00	-0.54	0.00	0.54	1451.33	725.67	1467.75	734.96	20.18	-0.991	0.000	0.001
175.00	-0.19	-0.06	0.00	-0.18	0.00	0.18	1411.16	705.58	1384.48	693.27	20.80	-0.991	0.000	0.000
177.95	0.00	-0.06	0.00	0.00	0.00	0.00	1368.86	684.43	1302.32	652.13	21.42	-0.991	0.000	0.000

Calculated Forces

Structure:	CT02573-S-SBA		**Code:**	EIA/TIA-222-G	2/25/2019
Site Name:	Coventry 2 CT		**Exposure:**	C	
Height:	177.95 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

Final Analysis Summary

Structure:	CT02573-S-SBA	**Code:**	EIA/TIA-222-G	2/25/2019	
Site Name:	Coventry 2 CT	**Exposure:**	C		
Height:	177.95 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 101 mph Wind	39.8	0.00	60.33	0.00	0.00	4722.09
0.9D + 1.6W 101 mph Wind	39.8	0.00	45.23	0.00	0.00	4680.45
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.4	0.00	96.75	0.00	0.00	1371.39
1.2D + 1.0E	1.7	0.00	60.38	0.00	0.00	200.75
0.9D + 1.0E	1.7	0.00	45.28	0.00	0.00	198.89
1.0D + 1.0W 60 mph Wind	8.8	0.00	50.31	0.00	0.00	1036.19

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 101 mph Wind	-39.84	-34.37	0.00	-2921.0	0.00	-2921.0	3955.22	1977.6	8653.35	4333.10	48.00	0.684
0.9D + 1.6W 101 mph Wind	-29.67	-34.10	0.00	-2886.9	0.00	-2886.9	3955.22	1977.6	8653.35	4333.10	48.00	0.674
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-70.09	-9.98	0.00	-851.50	0.00	-851.50	3955.22	1977.6	8653.35	4333.10	48.00	0.214
1.2D + 1.0E	-40.71	-1.30	0.00	-125.53	0.00	-125.53	3955.22	1977.6	8653.35	4333.10	48.00	0.039
0.9D + 1.0E	-30.53	-1.28	0.00	-123.98	0.00	-123.98	3955.22	1977.6	8653.35	4333.10	48.00	0.036
1.0D + 1.0W 60 mph Wind	-33.89	-7.54	0.00	-640.04	0.00	-640.04	3955.22	1977.6	8653.35	4333.10	48.00	0.156

Monopole Mat Foundation Design

				Date
				2/25/2019
Customer Name:	Dish Network	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	177.95
Site Number:	CT02573-S-SBA	**Engineer Name:**	K. Wyant
Engr. Number:	70487	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

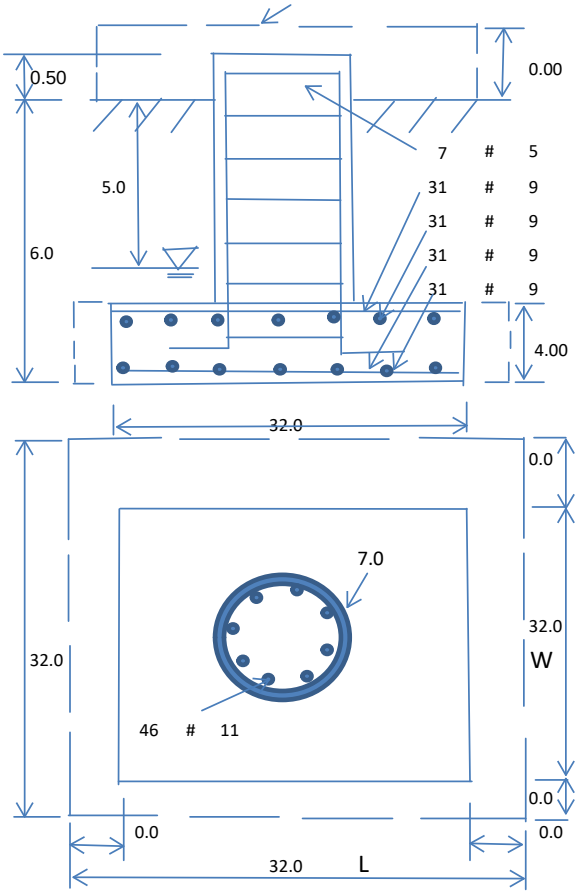
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	60.3	Shear Force (Kips):	39.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4722.1
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	32	Width of Pad (ft.):	32
Final Length of pad (ft)	32.0	Final width of pad (ft):	32.0
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	46	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	31	Qty. of Rebar in Pad (W):	31	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	31	Qty. of Rebar in Pad (W):	31	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	37.6	Pcf		
Water Table B.G.S. (ft):	5.0	Unit Weight of Water:	62.6	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	16000	Ultimate Skin Friction:	175	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	1971.03	Total Dry Soil Weight (Kips):	246.38
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	246.38	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3168.21	Total Dry Concrete Weight (Kips):	475.23
Total Buoyant Concrete Volume (cu. Ft.):	1024.00	Total Buoyant Concrete Weight (Kips):	89.70
Total Effective Concrete Weight (Kips):	564.93	Total Vertical Load on Base (Kips):	871.61

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2084	<	Allowable Factored Soil Bearing (psf): 12000	0.17	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	12644.8	>	Design Factored Momont (kips-ft): 4795	0.38	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.64	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00		
				Load/ Capacity Ratio	
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31	
Calculated Moment Capacity (Mn,Kips-Ft):	11172.4	>	Design Factored Moment (Mu, Kips-F	4821.6	0.43 OK!
Calculated Shear Capacity (Kips):	663.6	>	Design Factored Shear (Kips):	39.8	0.06 OK!
Calculated Tension Capacity (Tn, Kips):	3875.0	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	7253.2	>	Design Factored Axial Load (Pu Kips):	60.3	0.01 OK!
Moment & Axial Strength Combination:	0.43	OK!	Check Tie Spacing (Design/Required):		1 OK!
Pier Reinforcement Ratio:	0.013	Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	1402.0	>	One-Way Factored Shear (L-D. Kips):	385.9	0.28 OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1402.0	>	One-Way Factored Shear (W-D., Kips)	385.9	0.28 OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1351.5	>	One-Way Factored Shear (C-C, Kips):	361.5	0.27 OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0018	
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6066.5	>	Moment at Bottom (L-Dir. K-Ft):	3084.0	0.51 OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6066.5	>	Moment at Bottom (W-Dir. K-Ft):	3084.0	0.51 OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	8545.1	>	Moment at Bottom (C-C Dir. K-Ft):	4361.5	0.51 OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0018	
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	6066.5	>	Moment at the top (L-Dir K-Ft):	839.1	0.14 OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	6066.5	>	Moment at the top (W-Dir K-Ft):	839.1	0.14 OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8545.1	>	Moment at the top (C-C Dir. K-Ft):	782.9	0.09 OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	1888.8	k-ft.	Max. factored shear stress v_{u_CD}:	4.3	Psi
Max. factored shear stress v_{u_AB}:	9.3	Psi	Factored shear Strength ϕv_n:	164.3	Psi
Max. factored shear stress v_u:	9.3	Psi	Check Usage of Punching Shear Capacity:	0.06	OK!

Radio Frequency Emissions Analysis Report

Dish Wireless Proposed Facility

Site ID: CT0100005A

SBA Coventry
712 Bread and Milk Street
Coventry, CT 06238

April 1, 2019

Centerline Communications Project Number: 950033-007

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**7.69 %**

April 1, 2019

Dish Wireless
9601 South Meriden Blvd
Englewood, CO 80112

Emissions Analysis for Site: **CT0100005A – SBA Coventry**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed Dish Wireless facility located at **712 Bread and Milk Street, Coventry, CT**, for the purpose of determining whether the emissions from the Proposed DISH WIRELESS Antenna Installation located on this property are within specified federal limits.

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

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

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

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 1900 MHz (PCS) – H Block and Band 70 (2000 to 2020 MHz) is 1000 $\mu W/cm^2$.

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 performed for the proposed Dish Wireless antenna facility located at **712 Bread and Milk Street, Coventry, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
NB-IoT	1900 MHz (PCS) - H Block	2	40
NB-IoT	Band 70 (2000 to 2020 MHz)	2	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 1900 MHz (PCS) – H Block and Band 70 (2000 to 2020 MHz) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Comba ODI2-065R18K-GQ	153
B	1	Comba ODI2-065R18K-GQ	153
C	1	Comba ODI2-065R18K-GQ	153

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed Dish Wireless configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Comba ODI2-065R18K-GQ	1900 MHz (PCS) - H Block / Band 70 (2000 to 2020 MHz)	15.65	4	160	5,876.52	0.98
						Sector A Composite MPE%	**0.98**
Antenna B1	Comba ODI2-065R18K-GQ	1900 MHz (PCS) - H Block / Band 70 (2000 to 2020 MHz)	15.65	4	160	5,876.52	0.98
						Sector B Composite MPE%	**0.98**
Antenna C1	Comba ODI2-065R18K-GQ	1900 MHz (PCS) - H Block / Band 70 (2000 to 2020 MHz)	15.65	4	160	5,876.52	0.98
						Sector C Composite MPE%	**0.98**

Table 3: Dish Wireless Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum Dish Wireless MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each Dish Wireless Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish Wireless – Max Per Sector Value	**0.98 %**
Verizon Wireless	4.24 %
AT&T	1.31 %
T-Mobile	1.16 %
Site Total MPE %:	**7.69 %**

Table 4: All Carrier MPE Contributions

Dish Wireless Sector A Total:	0.98 %
Dish Wireless Sector B Total:	0.98 %
Dish Wireless Sector C Total:	0.98 %
Site Total:	7.69 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated Dish Wireless sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

DISH WIRELESS _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish Wireless 1900 MHz (PCS) - H Block LTE	2	1,469.13	153	4.89	1900 MHz (PCS) - H Block	1000	0.49%
Dish Wireless Band 70 (2000 to 2020 MHz) LTE	2	1,469.13	153	4.89	Band 70 (2000 to 2020 MHz)	1000	0.49%
						Total:	**0.98%**

Table 6: Dish Wireless Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

DISH WIRELESS Sector	Power Density Value (%)
Sector A:	0.98 %
Sector B:	0.98 %
Sector C:	0.98 %
Dish Wireless Maximum Total (per sector):	0.98 %
Site Total:	7.69 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.69 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

Town of Coventry, Connecticut - Assessment Parcel Map

Parcel: 004-0012-0008

Address: 712 BREAD & MILK ST

Approximate Scale: **1 inch = 280 feet**

0 140 280 420 560 Feet

Map Produced: December 2018/ Grand List: 2018

Town of Coventry

Geographic Information System (GIS)

Date Printed: 4/1/2019

MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Coventry and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 400 feet

0 400 Feet

N W E S

Town of Coventry, CT

Property Listing Report

Map Block Lot	004 0012 0008	Account	R04086

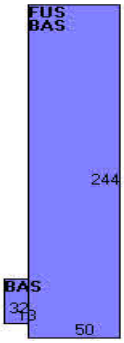
Property Information

Property Location	712 BREAD & MILK ST
Owner	NADEAU RONALD R +
Co-Owner	NADEAU JEANNINE G
Mailing Address	2050 BOSTON TPK COVENTRY CT 06238
Land Use	201 Commercial Improv
Land Class	C
Zoning Code	RD
Census Tract	

Neighborhood	E
Acreage	24.94
Utilities	Septic
Lot Setting/Desc	Level
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1950
Stories	2
Building Style	Office/Warehs
Building Use	Comm/Ind
Building Condition	D
Floors	Cement
Total Rooms	0

Bedrooms	
Full Bathrooms	2
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable
Roof Cover	Metal/Tin

Exterior Walls	Pre-finsh Metl
Interior Walls	Drywall
Heating Type	Forced Air
Heating Fuel	Gas
AC Type	None/partial
Gross Bldg Area	24816
Total Living Area	24816

Report Created On 4/1/2019

Town of Coventry, CT

Property Listing Report | Map Block Lot **004 0012 0008** | Account **R04086**

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	1218800	853200
Extras	11400	8000
Improvements	1253600	877700
Outbuildings	23400	16500
Land	728800	487900
Total	1982400	1365600

Outbuilding and Extra Items

Type	Description
Paving	15250 S.F.
Shed	560 S.F.
Shed	288 S.F.
Fence	280 L.F.
Mezzanine-Unf	2184 S.F.
Lean-to	384 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Upper Story, Finished	12200	12200
First Floor	12616	12616
Total Area	24816	24816

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
NADEAU RONALD R +	968/ 121	11/2/2005	
NADEAU RONALD&RENETTE G TRUSTEE	876/ 158	3/15/2004	
NADEAU RONALD&RENETTE G TRUSTEE	876/ 158	3/15/2004	
NADEAU RONALD&RENETTE G TRUSTEE	876/ 158	3/15/2004	
NADEAU RONALD&RENETTE G TRUSTEE	876/ 158	3/15/2004	
NADEAU RONALD&RENETTE G TRUSTEE	876/ 158	3/15/2004	

Report Created On **4/1/2019**

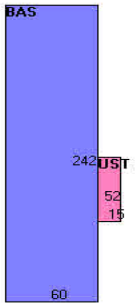
Town of Coventry, CT

Property Listing Report

Map Block Lot **004 0012 0008** | Account **R04086**

Photo

Sketch



Primary Construction Details

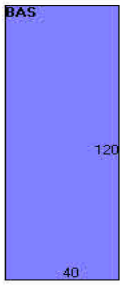
Year Built	1950	Kitchen Style	
Stories	1	Roof Style	Shed
Building Style	Light Indust	Roof Cover	Metal/Tin
Building Use	Comm/Ind	Exterior Walls	Pre-finsh Metl
Building Condition	C	Interior Walls	Drywall
Floors	Cement	Heating Type	Forced Air
Total Rooms	0	Heating Fuel	Gas
Bedrooms		AC Type	None/partial
Bathrooms		Gross Bldg Area	
Bath Style		Total Living Area	
Half Bath			

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	14520	14520
Utility, Storage,	780	0
Total Area		

Photo

Sketch



Primary Construction Details

Year Built	1950	Kitchen Style	
Stories	1	Roof Style	Shed
Building Style	Warehouse	Roof Cover	Metal/Tin
Building Use	Comm/Ind	Exterior Walls	Pre-finsh Metl
Building Condition	C-	Interior Walls	Drywall
Floors	Cement	Heating Type	Forced Air
Total Rooms	0	Heating Fuel	Gas
Bedrooms		AC Type	None/partial
Bathrooms		Gross Bldg Area	
Bath Style		Total Living Area	
Half Bath			

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	4800	4800
Total Area		

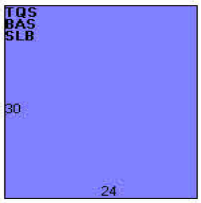
Report Created On **4/1/2019**

Town of Coventry, CT

Property Listing Report | Map Block Lot **004 0012 0008** | Account **R04086**

Photo

Sketch



Primary Construction Details

Year Built	1957
Stories	1.75
Building Style	Conventional
Building Use	Residential
Building Condition	Below Average
Floors	Vnl Linoleum
Total Rooms	4
Bedrooms	2 Bedrooms
Bathrooms	1
Bath Style	
Half Bath	

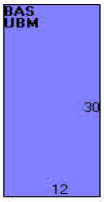
Kitchen Style	Average
Roof Style	Gable
Roof Cover	Metal/Tin
Exterior Walls	Vinyl
Interior Walls	Panel
Heating Type	Electr Basebrd
Heating Fuel	Electric
AC Type	None/partial
Gross Bldg Area	
Total Living Area	

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Slab	720	0
First Floor	720	720
Three Quarter	720	576
Total Area		

Photo

Sketch



Primary Construction Details

Year Built	1950
Stories	1
Building Style	Support Shed
Building Use	Comm/Ind
Building Condition	D
Floors	Sub Floor
Total Rooms	
Bedrooms	
Bathrooms	
Bath Style	
Half Bath	

Kitchen Style	
Roof Style	Gable
Roof Cover	Roll Roofing
Exterior Walls	Vinyl
Interior Walls	Minimum
Heating Type	None
Heating Fuel	None
AC Type	None/partial
Gross Bldg Area	
Total Living Area	

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	360	360
Basement	360	0
Total Area		

Report Created On **4/1/2019**

DISH WIRELESS FIRST TIME INSTALL
CONSTRUCTION DRAWINGS

DISH WIRELESS SITE ID:

CT0100005A

TOWER OWNER SITE ID:

CT02573-S

SITE ADDRESS:

712 BREAD AND MILK STREET
COVENTRY, CT 06238
(TOLLAND COUNTY)

SITE SUMMARY

PROJECT SCOPE:	PROJECT CONSISTS OF INSTALLING PROPOSED DISH WIRELESS TELECOMMUNICATION EQUIPMENT, CABLING, AND ANTENNAS AT AN EXISTING TELECOMMUNICATION SITE
SITE TYPE:	CO-LOCATION
TYPE OF OCCUPANCY:	TELECOMMUNICATIONS
TOWER TYPE:	MONOPOLE
RAD CENTER:	153'-0"
TOWER LATITUDE:	41.818091 N
TOWER LONGITUDE:	72.39317467 W
ZONING JURISDICTION:	TOWN OF COVENTRY
COUNTY:	TOLLAND
POWER COMPANY:	EVERSOURCE 800-592-2000
TELEPHONE COMPANY:	FRONTIER 800-921-8101

PROJECT DIRECTORY

TOWER OWNER:	SBA COMMUNICATIONS 8051 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: (800) 487-7483
APPLICANT:	DISH WIRELESS 9601 S MERIDIAN BLVD ENGLEWOOD, CO 80112 PHONE: (866) 624-6874
SITE DESIGNER:	HUDSON DESIGN GROUP, LLC. 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 PHONE: (978) 557-5553 FAX: (978) 336-5586

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

UNDERGROUND SERVICE ALERT

CALL 811

48 HOURS BEFORE YOU DIG

VICINITY MAP

LOCAL MAP

CODE COMPLIANCE

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

- INTERNATIONAL BUILDING CODE, 2015 WITH 2018 CONNECTICUT STATE BUILDING CODE AMENDMENTS
- ANSI/TIA/EIA-222-G
- NFPA 70-2017 – LIGHTNING PROTECTION CODE
- NATIONAL ELECTRICAL CODE – NEC 2017

DISH WIRELESS PROJECT MANAGER APPROVAL:

SIGNATURE DATE

CONSTRUCTION MANAGER APPROVAL:

SIGNATURE DATE

LEASING/SITE ACQUISITION:

SIGNATURE DATE

RF ENGINEER:

SIGNATURE DATE

LANDLORD/TOWER OWNER APPROVAL:

SIGNATURE DATE

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.	REVISION DATE
T-1	TITLE SHEET	1	03/19/19
GN-1	GENERAL NOTES	1	03/19/19
GN-2	GENERAL NOTES	1	03/19/19
EN-1	ELECTRICAL NOTES	1	03/19/19
EN-2	ELECTRICAL NOTES	1	03/19/19
C-1	COMPOUND PLAN	1	03/19/19
C-2	EQUIPMENT PLAN	1	03/19/19
C-3	TOWER ELEVATION & ANTENNA LAYOUT	1	03/19/19
1 OF 2	ANTENNA SCHEDULE & DIAGRAM (SUPP.)	1	03/19/19
2 OF 2	CABLE COLOR CODE (SUPPLEMENTAL)	1	03/19/19
C-4	EQUIPMENT DETAILS	1	03/19/19
C-4A	EQUIPMENT DETAILS	1	03/19/19
C-5	EQUIPMENT DETAILS	1	03/19/19
C-6	PLATFORM DETAILS	1	03/19/19
C-7	PLATFORM CANOPY DETAILS	1	03/19/19
C-8	ICE BRIDGE DETAILS	1	03/19/19
E-1	UTILITY PLANS	1	03/19/19
E-2	ELECTRICAL DETAILS	1	03/19/19
G-1	GROUNDING NOTES & DETAILS	1	03/19/19
G-2	GROUNDING NOTES & DETAILS	1	03/19/19
G-3	GROUNDING NOTES & DETAILS	1	03/19/19
RF-1	RF DATA SHEET (SUPPLEMENTAL)	1	03/19/19
RF-2	PLUMBING DIAGRAM (SUPPLEMENTAL)	1	03/19/19

PLANS PREPARED FOR:

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25854
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

GENERAL NOTES:

1. EVERY EFFORT HAS BEEN MADE IN THE CONSTRUCTION DOCUMENTS TO PROVIDE A COMPLETE SCOPE OF WORK. MINOR DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL NOT EXCUSE CONTRACTORS FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

2. ALL REFERENCES TO OWNER HEREIN SHALL BE CONSTRUED TO MEAN THE CARRIER OR ITS DESIGNATED REPRESENTATIVE.

3. BIDDING REQUIREMENTS
   a. PRIOR TO THE SUBMISSION OF BIDS, VISIT THE JOB SITE TO BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. VISIT THE SITE WITH THE CONSTRUCTION DOCUMENTS TO VERIFY FIELD DIMENSIONS AND CONDITIONS TO CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN.
   b. PROVIDE NOTIFICATION TO OWNER IN WRITING OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF PRICE PROPOSAL. IN THE EVENT OF DISCREPANCIES, PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
   c. WHEN TOWER IS OWNED BY A THIRD PARTY, CONTACT TOWER OWNER REPRESENTATIVE FOR PARTICIPATION IN BID WALK.
   d. WHERE ANCHORING TO A CONCRETE ROOF SLAB, CONFIRM (PRIOR TO SUBMITTING BID) THE PRESENCE OF POST TENSION TENDONS. INCLUDE PROVISIONS FOR X-RAY PROCEDURES TO LOCATE THE TENDONS PRIOR TO CONSTRUCTION.

4. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. CONSTRUCTION DOCUMENTS ARE INTENDED FOR DIAGRAMMATIC PURPOSES ONLY, UNO.

5. FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. BRING ANY DISCREPANCIES IMMEDIATELY TO THE ATTENTION OF THE OWNER AND RESOLVE BEFORE PROCEEDING WITH THE WORK.

6. FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS NECESSARY TO COMPLETE PROJECT AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS AND CONSTRUCTION SOW.

7. SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONSTRUCTION DOCUMENTS. PROVIDE ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

8. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES APPLICABLE TO THE WORK.

9. CONSTRUCTION COORDINATION REQUIREMENTS
   a. NOTIFY OWNER OF ANY DISCREPANCIES PRIOR TO START OF WORK.
   b. OBTAIN ALL PERMITS. SCHEDULE AND COORDINATE ALL INSPECTIONS.
   c. PROVIDE, AT THE PROJECT SITE, A FULL, CURRENT SET OF CONSTRUCTION DOCUMENTS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
   d. RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DOCUMENTS.
   e. PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
   f. PROVIDE FALL PROTECTION IN ACCORDANCE WITH FEDERAL, STATE, LOCAL, AND OWNER REQUIREMENTS.
   g. IF FAA LIGHTING AND MARKING IS PRESENT ON SITE AND IS POWERED BY ELECTRICAL SERVICE THAT IS TO BE INTERRUPTED, MAINTAIN THE NECESSARY LIGHTS DURING CONSTRUCTION AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A DISRUPTION.
   h. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
   i. STRUCTURAL COMPONENTS OF ADJACENT FACILITIES SHALL NOT BE ALTERED BY THIS CONSTRUCTION PROJECT, UNO. ENSURE THAT EXCAVATION DOES NOT AFFECT ADJACENT STRUCTURES.
   j. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL-APPROVED MATERIALS, IF APPLICABLE.
   k. BURIED UTILITIES MAY EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
   l. COORDINATE ALL POWER INSTALLATION WITH POWER COMPANY AS REQUIRED. REPORT POWER INSTALLATION COORDINATION SOLUTION(S) TO OWNER.
   m. PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
   n. KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
   o. MAINTAIN THE INTEGRITY OF THE BUILDING ENVELOPE AND CONSTRUCT BARRIERS IN THE AREA OF WORK TO PREVENT DAMAGE FROM WEATHER AS WELL AS FROM CONSTRUCTION DUST AND DEBRIS.

10. INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S SPECIFICATIONS, UNO, OR WHERE LOCAL CODES OR ORDINANCES DIRECT OTHERWISE.

11. PROPOSED CELLULAR EQUIPMENT AND FIXTURES WILL BE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR, UNLESS NOTED OTHERWISE.

12. ANY SUBSTITUTIONS OF MATERIALS AND/OR EQUIPMENT, MUST BE APPROVED BY OWNER.

13. DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP THE APPROVED CONSTRUCTION DRAWINGS AND SUBMITTING THE REDLINED SET TO OWNER UPON COMPLETION. DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS TO BE SUBMITTED WITH REDLINED CONSTRUCTION DRAWINGS.

14. PROVIDE SUPPORTS FOR CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.

15. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS, MOUNT ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

16. KNOW AND OBSERVE MANUFACTURER'S MINIMUM BEND RADIUS SPECIFICATIONS BEFORE HANDLING HYBRID CABLES, RF CABLES, AND FIBER OPTIC LINES.

17. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS STIPULATED IN THE CONSTRUCTION SCOPE OF WORK CONTRACT, REGARDLESS OF INCLUSION OR OMISSION FROM THE CONSTRUCTION DRAWING(S).

ABBREVIATIONS

A/C	AIR CONDITIONING
AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GROUND LEVEL, ABOVE GRADE LEVEL
AWS	ADVANCED WIRELESS SERVICE
BBU	BATTERY BACKUP UNIT
BLDG	BUILDING
BLK	BLOCKING
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
ø, DIA	DIAMETER
DIAG	DIAGONAL
DN	DOWN
DET	DETAIL
DWG	DRAWING
E	EXISTING
EA	EACH
ELEV, EL	ELEVATION
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EXT	EXTERIOR
FIF	FIBER INTERFACE FRAME, FACILITY INTERFACE FRAME
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT, FEET
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
GSM	GLOBAL SYSTEM MOBILE
GYP	GYPSUM BOARD
HORZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
ID	INSIDE DIAMETER
IN	INCH, INCHES
INSUL	INSULATION
INT	INTERIOR
L	LENGTH
LBS	POUNDS
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIMO	MULTIPLE IN MULTIPLE OUT
mMIMO	MASSIVE MULTIPLE IN MULTIPLE OUT
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PCS	PERSONAL COMMUNICATION SERVICE
PDU	POWER DISTRIBUTION UNIT
PROJ	PROJECT
PROP	PROPERTY
PT	PRESSURE TREATED
PVC	POLYVINYL CHLORIDE
REQ	REQUIRED
RF	RADIO FREQUENCY
RM	ROOM
RO	ROUGH OPENING
RRH	REMOTE RADIO HEAD
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SF	SQUARE FOOT
SS	STAINLESS STEEL
STL	STEEL
SUSP	SUSPENDED
TMA	TOWER MOUNTED AMPLIFIER
TND	TINNED
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATION SERVICE
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WCS	WIRELESS COMMUNICATION SERVICE
WP	WATER PROOF

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE.
THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (3) PROPOSED ANTENNA MOUNTS (1 PER SECTOR)
- INSTALL PROPOSED JUMPERS
- INSTALL (8) PROPOSED RRUs
- INSTALL (1) PROPOSED HYBRID CABLE
- INSTALL (1) PROPOSED CABLE LADDER (IF APPLICABLE)
- INSTALL (1) PROPOSED METAL PLATFORM WITH CANOPY FOR GROUND EQUIPMENT
- INSTALL (1) PROPOSED ICE BRIDGE (IF APPLICABLE)
- INSTALL (1) PROPOSED BBU IN CABINET
- INSTALL (1) PROPOSED PPC CABINET MOUNTED TO PROPOSED H-FRAME
- INSTALL (1) PROPOSED SURGE SUPPRESSION DEVICE
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED RBS CHASSIS IN PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED BASEBAND UNIT IN PROPOSED RBS CHASSIS
- INSTALL (1) PROPOSED POWER CONDUIT FROM PLATFORM TO MEET-ME-POINT DESIGNATED BY POWER COMPANY
- INSTALL (1) PROPOSED TELCO CONDUIT FROM PLATFORM TO MEET-ME-POINT DESIGNATED BY TELCO PROVIDER
- INSTALL (1) PROPOSED NEMA4 TELCO-FIBER BOX MOUNTED TO PROPOSED H-FRAME
- INSTALL (1) PROPOSED GPS ANTENNA WITH CABLE IN CONDUIT
- INSTALL (1) PROPOSED PIPE MAST
- MAST WITH CABLE IN CONDUIT (IF APPLICABLE)
- INSTALL (1) PROPOSED DISH ANTENNA (IF APPLICABLE)

PROJECT NOTES

1. THE FOLLOWING INFORMATION HAS BEEN PROVIDED BY DISH WIRELESS FOR THIS PROJECT AND HAS NOT BEEN FIELD VERIFIED AS PART OF THIS PROJECT.
   a. EXISTING TOWER, MOUNT AND EQUIPMENT ELEVATIONS
   b. DESIGN PACKAGE BASED ON THE APPLICATION #: 297724

2. A STRUCTURAL ANALYSIS TO DETERMINE THE TOWER CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR DISH WIRELESS OUTSIDE THE SCOPE OF THIS PROJECT.

3. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 25851
LICENSED
PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
GN-1

SITE NOTES:

1. WHEN SITE WORK IS INCLUDED IN SCOPE:
   a. CLEAR AND GRUB SITE OF ALL VEGETATION, PAVING, GRAVEL BASE AND OTHER DEBRIS NOT TO REMAIN. SUBGRADES ARE TO BE SET PRIOR TO LANDSCAPE INSTALLATION.
   b. PROVIDE ELEVATION OF SUBGRADE WITHIN 0.10 FOOT OF ELEVATIONS SHOWN ON PLAN MINUS DEPTH OF TOPSOIL, FILL, AND MULCH.
   c. ROUGH GRADE ALL AREAS WITHIN 1 FOOT OF ELEVATIONS INDICATED BEFORE PLANTING. PROVIDE POSITIVE DRAINAGE AWAY FROM EQUIPMENT SLABS, BUILDINGS AND THROUGH ALL PLANTER AREAS TO AVOID LOW SPOTS AND STANDING WATER.
   d. BLEND NEW GRADES NATURALLY INTO EXISTING GRADES.
   e. MAINTAIN POSITIVE DRAINAGE ON THE SITE AT ALL TIMES.
   f. IF REQUIRED, MAINTAIN CONTINUOUS EROSION CONTROL ON THE DOWNSTREAM SIDE OF THE SITE.
   g. IN LANDSCAPE AREAS, FINISH GRADES ARE TO FOLLOW THE GRADES AND EDGE DETAILS INDICATED AND BE MOUNDED 6 INCHES IN THE CENTER OF THE BED ABOVE THE EDGE OF THE LANDSCAPE AREA.
   h. DO NOT PLACE FILL OR EMBANKMENT MATERIAL ON FROZEN GROUND. DO NOT PLACE FROZEN MATERIALS, SNOW OR ICE IN ANY FILL OR EMBANKMENT.
   i. NOTIFY OWNER IF MODIFICATIONS TO THE PROPOSED GRADING SEEM NECESSARY AND OBTAIN APPROVAL PRIOR TO START OF WORK.
2. FOOTINGS SHALL BEAR ON FIRM, NATURAL, UNDISTURBED SOIL, OR ON ENGINEERED FILL (COMPACTED TO 95% ASTM D1557). ENSURE THAT EXCAVATIONS ARE FREE OF ORGANIC MATERIAL, DEBRIS, OR OTHER FOREIGN MATERIAL. NOTIFY OWNER IF ANY UNUSUAL CONDITIONS ARE ENCOUNTERED.

3. FILL AND SLAB BASE MATERIAL SHALL BE 3/4" MINUS CRUSHED ROCK PLACED IN 8" (MAXIMUM) LOOSE LIFTS AND COMPACTED TO 98% ASTM D1557.

CONCRETE NOTES:

1. CONCRETE AND REINFORCING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

CONCRETE CONSTRUCTION	ACI 318, f'c=4 KSI, UNO
CEMENT	ASTM C150, PORTLAND CEMENT TYPE II, UNO
REINFORCING STEEL	ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy=60 KSI, UNO
WELDED WIRE FABRIC	ASTM A185
SPIRAL REINFORCEMENT	ASTM A615, GRADE 60, fy=60 KSI
ANCHOR BOLTS	ASTM A307
GRADE 60 REBAR WELDING	ASTM A706

NOTES: ANY BARS SO NOTED ON THE DRAWINGS SHALL BE GRADE 60, fy=60 KSI. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D14 ARE SUBMITTED.

2. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE		3"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER	(≥ #6 BARS)	2"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER	(≤ #5 BARS)	1 1/2"
SLABS AND WALLS	(INTERIOR FACE)	3/4"

3. AIR ENTRAIN ALL CONCRETE WITH SURFACES EXPOSED TO WEATHER WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, C618, C989 AND C1017. AIR ENTRAIN CONCRETE EXPOSED TO FREEZING AND THAWING WHILE MOIST IN ACCORDANCE WITH ACI 318, SECTION 4.4.1.

4. DETAIL REINFORCING STEEL (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

5. PERFORM WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) USING LOW HYDROGEN ELECTRODES. PERFORM WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) USING E70 XX ELECTRODES. DO NOT WELD WITHIN 4" OF COLD BENDS IN REINFORCING STEEL.

6. DO NOT FIELD BEND REINFORCING PARTIALLY EMBEDDED IN CONCRETE UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE ENGINEER.

7. SUPPORT BARS ON CHAIRS OR DOBIE BRICKS.

8. FURNISH NON-SHRINK GROUT BY AN APPROVED MANUFACTURER. MIX AND PLACE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (4 KSI, MINIMUM).

9. ALL EXPANSION ANCHORS TO BE HILTI BRAND, UNO. TEST ADHESIVE ANCHORS TO CONFIRM CAPACITY UNLESS WAIVED BY ENGINEER AND LOCAL JURISDICTION.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

WIDE FLANGE SHAPES	ASTM A992, GRADE 50
SHAPES, PLATES, ANGLES, & RODS	ASTM A36, Fy 36 KSI
SPECIAL SHAPES AND PLATES	ASTM A572, Fy 50 KSI
PIPE COLUMNS	ASTM A53, GR B, Fy 35 KSI
STRUCTURAL TUBING	ASTM A500, GR B, Fy 46KSI
ANCHOR BOLTS	ASTM A307
CONNECTION BOLTS	ASTM A325 TWIST-OFF

2. BASE STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION (INCLUDING FIELD WELDING, HIGH STRENGTH FIELD BOLTING, EXPANSION BOLTS, AND THREADED EXPANSION ANCHORS) ON THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" LATEST EDITION.

3. HOT DIP GALVANIZE AFTER FABRICATION PER A123/A123M-00 ALL STEEL EXPOSED TO WEATHER AND WHERE NOTED.

4. CONFORM TO ALL AISC AND AWS STANDARDS FOR WELDING. PERFORM WELDING BY ANSI/AWS D1.1 CERTIFIED WELDERS USING E70 XX ELECTRODES. USE ONLY PRE-QUALIFIED WELDS AS DEFINED BY AWS.

5. PROVIDE COLD-FORMED STEEL FRAMING MEMBERS OF THE SHAPE, SIZE, AND GAUGE SHOWN ON THE PLANS. PROVIDE MINIMUM SECTION PROPERTIES INDICATED. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."

6. FOR BOLTED CONNECTIONS, USE 3/4" DIA., BEARING-TYPE, A325 BOLTS WITH A MINIMUM OF TWO BOLTS, UNO.

7. FOR NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING, USE 5/8" DIA. A307 BOLTS, UNO.

8. PREPARE AND PAINT IN ACCORDANCE WITH THE PAINT MANUFACTURERS WRITTEN INSTRUCTIONS, UNO.

9. TOUCH UP ALL FIELD DRILLING, WELDING AND CUT SURFACES WITH 2 COATS OF GALVACON (ZINC RICH PAINT) OR APPROVED EQUAL.

10. THE STRUCTURAL INTEGRITY OF THE EQUIPMENT PLATFORM HAS NOT BEEN REVIEWED BY FDH INFRASTRUCTURE SERVICES, LLC.

SPECIAL INSPECTIONS:

1. WHEN REQUIRED, PROVIDE SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY OWNER'S REPRESENTATIVE AND THE LOCAL JURISDICTION.

2. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER'S REPRESENTATIVE, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 29[illegible]
LICENSED
PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
GN-2

ELECTRICAL NOTES:

GENERAL

GENERAL CONDITIONS:

A. CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARD TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE ISSUED TO CONSTRUCTION MANAGER IN WRITING FOR CLARIFICATION PRIOR TO SUBMITTAL OF BID AND CONTRACT AWARD.

B. THE CONTRACTOR SHALL OBTAIN PERMITS, LICENSES, MAKE ALL DEPOSITS, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION OF WORK UNDER THIS SECTION.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES:

A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES. CONDUIT BENDS SHALL BE THE RADIUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE LATEST EDITIONS OF NEC.

REFERENCES:

A. THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE. THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS MODIFIED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISION OF THESE PUBLICATIONS.

1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
3. ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)
4. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
7. UL (UNDERWRITERS LABORATORIES. INC.)
8. DISH WIRELESS GROUNDING AND BONDING STANDARDS, LATEST EDITION, AND COMPLY WITH DISH WIRELESS GROUNDING CHECKLIST, LATEST VERSION
9. R56 MOTOROLA STANDARDS

SCOPE OF WORK:

A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND BE OPERATIONAL.

B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING OF TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.

D. THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WIRING EQUIPMENT CONDITIONS, AND CHANGES WHILE COMPLETING THIS CONTRACT, THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT.

PRODUCTS

GENERAL:

A. ALL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW, AND FREE FROM DEFECTS.

B. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.

C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT AVAILABLE, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.

MATERIALS AND EQUIPMENT:

A. CONDUIT:

1. RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.
3. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE TIGHT TYPE.
4. NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC UNLESS SCHEDULE 80 PVC IS SPECIFIED. INSTALL USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

B. CONDUCTORS AND CABLE:

1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR USED.
2. #10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3. SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
4. STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.
5. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).

C. DISCONNECT SWITCHES:

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D OR ENGINEER APPROVED EQUAL.

D. CHEMICAL ELECTROLYTIC GROUNDING SYSTEM:

1. INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AWG CU EXOTHERMICALLY WELDED PIGTAIL, PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE XIT GROUNDING ROD TYPES K2-(*)CS OR K2L-(*)CS (*) LENGTH AS REQUIRED.
2. GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "BREATHER" HOLES, XIT MODEL #XB-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS ID NUMBERING, AND THE ELECTRICAL POWER SOURCE.
3. BACKFILL MATERIAL SHALL BE LYNCONITE AND LYNCOLE GROUNDING GRAVEL.

E. SYSTEM GROUNDING

1. ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE #2 AWG BARE, SOLID, TINNED, COPPER. ABOVE GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
2. GROUNDING BUSES SHALL BE BARE, TINNED ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY WAY OF STENCILING OR DESIGNATION PLATE.
3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS. INTERIOR CONNECTIONS USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHRINK.
4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 5/8"X10'-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES.
6. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE DISH WIRELESS SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED TO ALL METALLIC JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT.

F. OTHER MATERIALS:

1. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
2. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.

G. PANELS AND LOAD CENTERS:

1. ALL PANEL LABELS SHALL BE TYPEWRITTEN.

EXECUTION:

GENERAL:

A. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.

LABOR AND WORKMANSHIP:

A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN, IN A NEAT AND WORKMAN-LIKE MANNER.

B. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.

C. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 29854
LICENSED
PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
ELECTRICAL NOTES

SHEET NUMBER:
EN-1

ELECTRICAL NOTES (CONTINUED)

COORDINATION:

A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER–FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

INSTALLATION:

A. CONDUIT:

1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH TRADE SIZE.
2. PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS, OR WHERE RMC OTHERWISE NOTED.
3. INSTALL SCHEDULE 40 PVC CONDUIT WITH A MINIMUM COVER OF 24" UNDER ROADWAYS, PARKING LOTS, STREETS, AND ALLEYS. CONDUIT SHALL HAVE A MINIMUM COVER OF 18" IN ALL OTHER NON–TRAFFIC APPLICATIONS (REFER TO 2017 NEC, TABLE 300.5).
4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION TO EQUIPMENT WITH MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORT TO ALLOW FOR EXPANSION AND CONTRACTION.
5. A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS MAX. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.
6. FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.
7. PROVIDE INSULATED GROUNDING BUSHING FOR ALL CONDUITS.
8. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
9. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
10. INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
11. INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.
12. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
13. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS AND/OR SLEEVES. PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THE PURPOSE.

B. CONDUCTORS AND CABLE:

1. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDUITS APPROVED FOR THIS PURPOSE.
2. PULLING LUBRICANTS SHALL BE UL APPROVED. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.
3. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES AND EQUIPMENT TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS IS PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

C. DISCONNECT SWITCHES:

1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.

D. GROUNDING:

1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, DISH WIRELESS GROUNDING AND BONDING STANDARDS, LATEST EDITION, AND COMPLY WITH DISH WIRELESS GROUNDING CHECKLIST, LATEST VERSION, AND THE NATIONAL ELECTRICAL CODE.
2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
4. BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWER, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE STANDARD 6.3.2.2.
5. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
6. CONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE–IN–POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION BEFORE BEING PERMANENTLY CONCEALED.
8. APPLY CORROSION–RESISTANT FINISH TO FIELD CONNECTIONS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE KOPR–SHIELD ANTI–OXIDATION COMPOUND ON ALL COMPRESSION GROUNDING CONNECTIONS.
9. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
10. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
11. DIRECT BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 30" MINIMUM BELOW GRADE, OR 6" BELOW THE FROST LINE, USE THE GREATER OF THE TWO DISTANCES.
12. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
13. THE INSTALLATION OF CHEMICAL ELECTROLYTIC GROUNDING SYSTEM SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
14. DRIVE GROUND RODS UNTIL TOPS ARE A MINIMUM DISTANCE OF 30" DEPTH OR 6" BELOW FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
15. CONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.

ACCEPTANCE TESTING:

A. CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.

B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NON–COMPLYING ITEMS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE FOR NON–COMPLIANCE.

C. TEST PROCEDURES:

1. ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. PROVIDE WRITTEN DOCUMENTATION FOR ALL TEST RESULTS.
2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS, SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
4. PERFORM GROUNDING TEST TO MEASURE GROUNDING RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3–POINT "FALL–OF–POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

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PLANS PREPARED BY:

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 29854
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

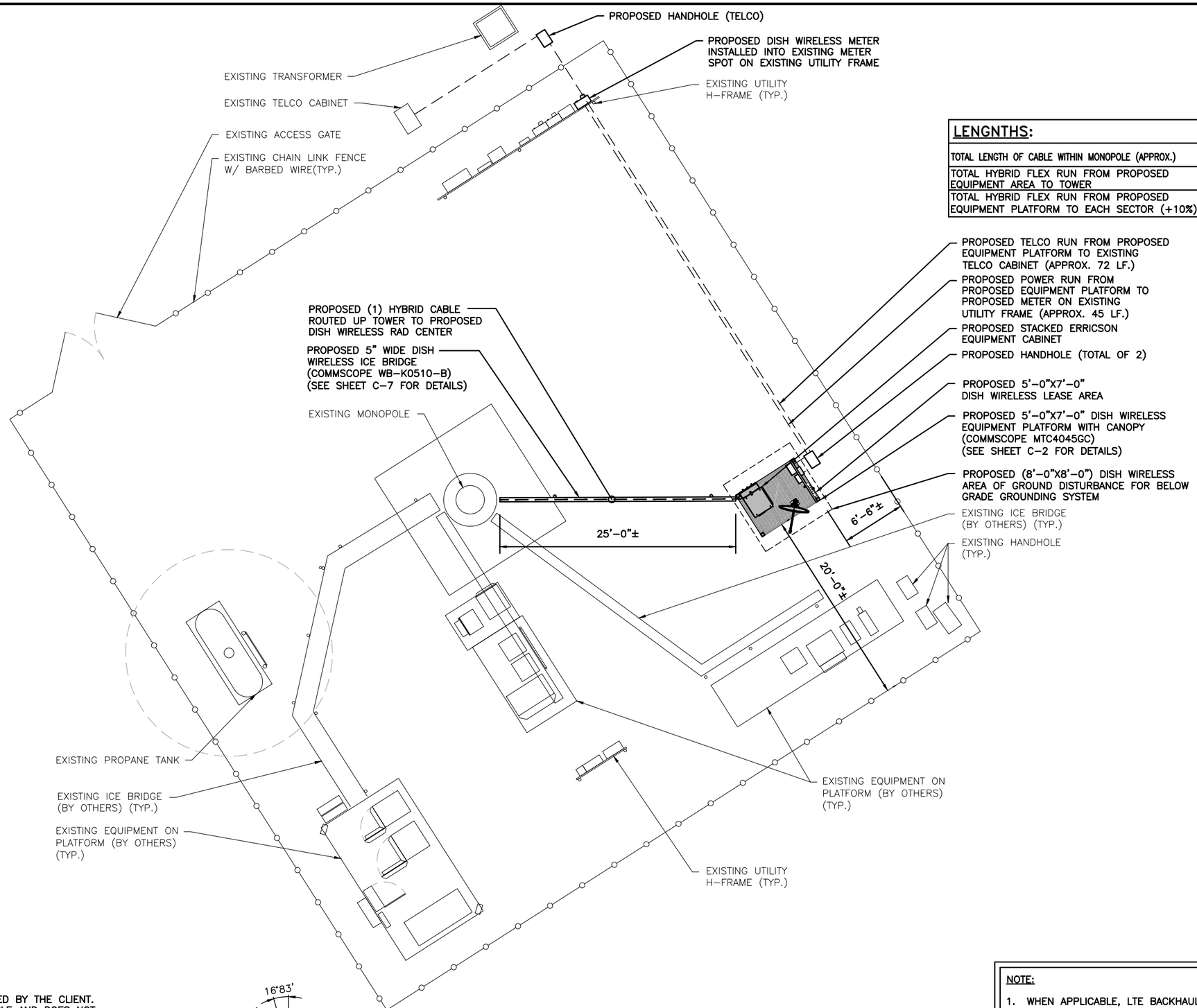
DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
ELECTRICAL NOTES

SHEET NUMBER:
EN-2



LENGNTHS:	
TOTAL LENGTH OF CABLE WITHIN MONOPOLE (APPROX.)	153'
TOTAL HYBRID FLEX RUN FROM PROPOSED EQUIPMENT AREA TO TOWER	30'
TOTAL HYBRID FLEX RUN FROM PROPOSED EQUIPMENT PLATFORM TO EACH SECTOR (+10%)	200'

NOTES:

ALL SITE INFORMATION HAS BEEN PROVIDED BY THE CLIENT. HUDSON DESIGN GROUP, LLC IS NOT LIABLE AND DOES NOT ASSUME RESPONSIBILITY FOR THIS CONTENT.

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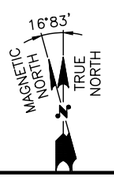

COMPOUND PLAN

SCALE: 3/32"=1'-0"

0 5'-4" 10'-8" 21'-4" 32'-0"

NOTE:

1. WHEN APPLICABLE, LTE BACKHAUL ANTENNA LOCATION TO BE VERIFIED IN THE FIELD AT TIME OF CONSTRUCTION.

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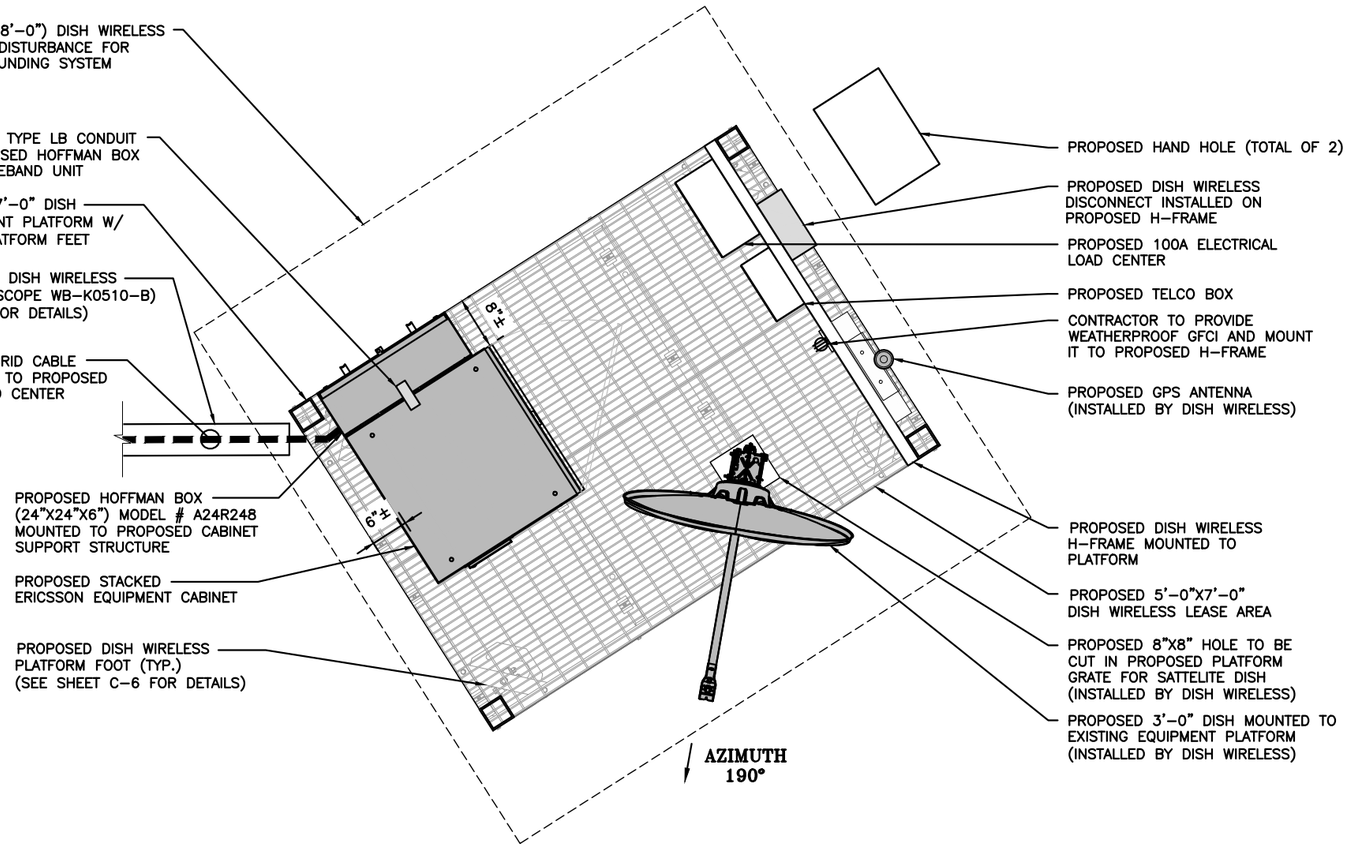
712 BREAD AND MILK STREET
COVENTRY, CT 06238

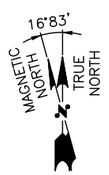
SHEET TITLE:
COMPOUND PLAN

SHEET NUMBER:
C-1

SAFETY NOTE:

WHEN APPLICABLE, CONTRACTOR SHALL COVER PROPOSED (8"x8") HOLE IN PLATFORM GRATE TO PREVENT TRIPPING HAZARD. SEE OSHA STANDARDS, SECTION 29 CFR 1926.501(b)(4)(ii).





EQUIPMENT PLAN
SCALE: 1/2"=1'-0"

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

PROPOSED MTC4045GC PLATFORM CANOPY NOT SHOWN FOR CLARITY. SEE SHEET C-8 FOR DETAILS

NOTES:

1. WHEN APPLICABLE, LTE BACKHAUL ANTENNA LOCATION TO BE VERIFIED IN THE FIELD AT TIME OF CONSTRUCTION.
2. WHEN APPLICABLE, DISH WIRELESS SUPPORT PIPE SHALL BE POSITIONED AS TO AFFORD FUTURE DISH A CLEAR, UNOBSTRUCTED VIEW OF THE SOUTHERN SKY.
3. CONTRACTOR TO PROVIDE 4MIL FABRIC BENEATH PROPOSED DISH WIRELESS EQUIPMENT PLATFORM AND LEGS IF NONE PRESENT.

SBA SITE #: CT02573-S

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COVENTRY, CT 06238

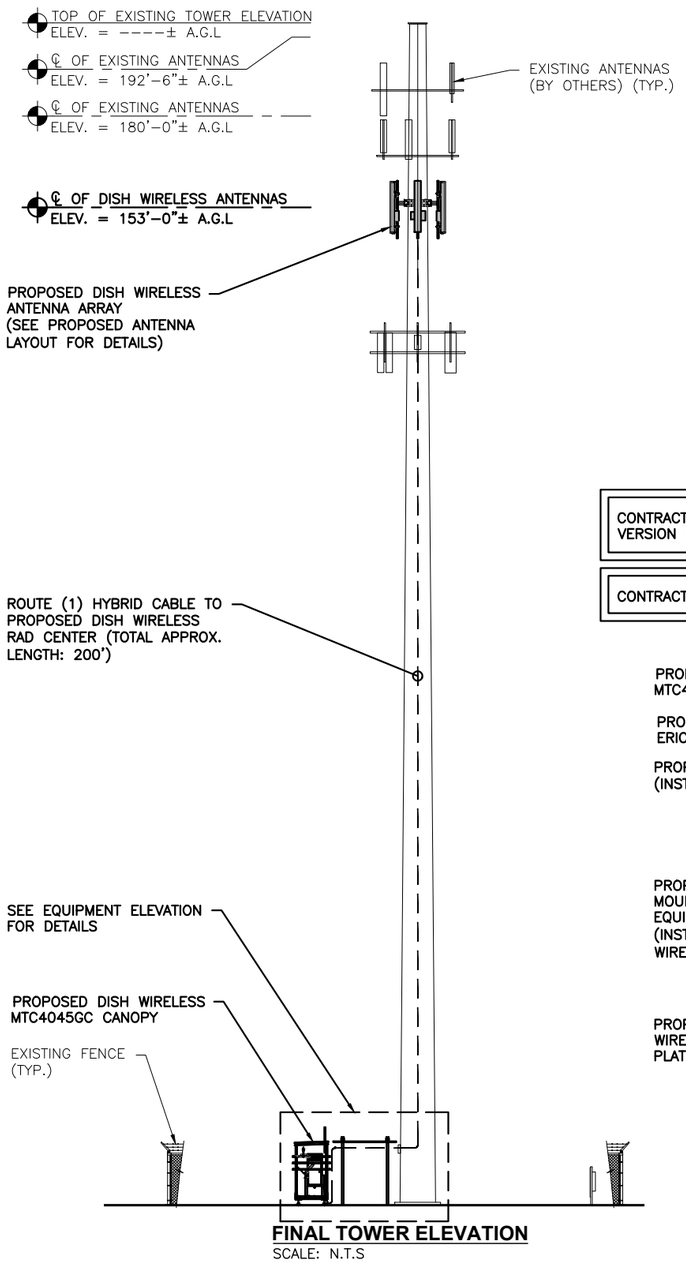
SHEET TITLE:
EQUIPMENT PLAN

SHEET NUMBER:
C-2

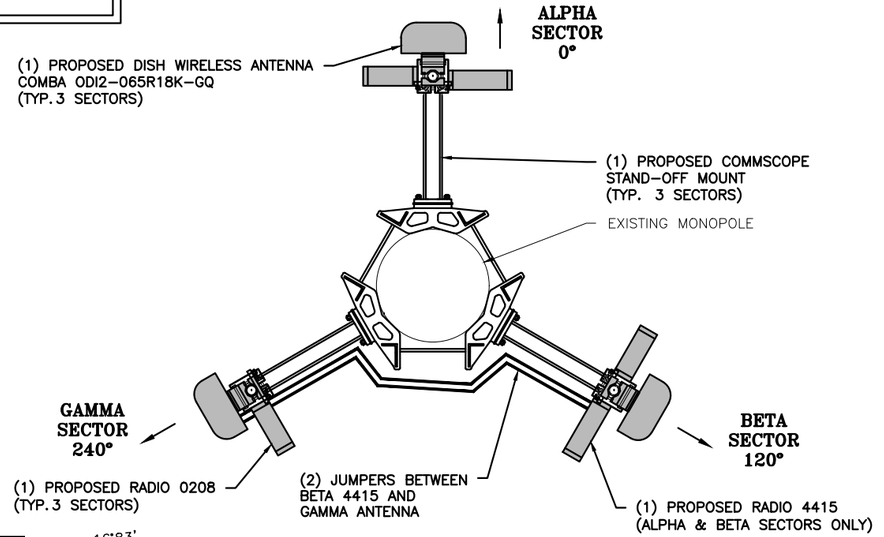
NOTE:
GENERAL CONTRACTOR SHALL ORIENT PROPOSED MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH PROPOSED MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

NOTES:

1. DISH WIRELESS TO CONFIRM WITH TOWER OWNER THE VERTICAL LEASE AREA RIGHTS AVAILABLE PRIOR TO CONSTRUCTION. EXISTING EQUIPMENT MAY OBSTRUCT DESIRED DISH WIRELESS RAD-CENTER.
2. TOWER FACE WIDTH/DIAMETER IS AN ESTIMATE FROM STRUCTURAL ANALYSIS.

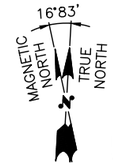


FINAL TOWER ELEVATION
SCALE: N.T.S



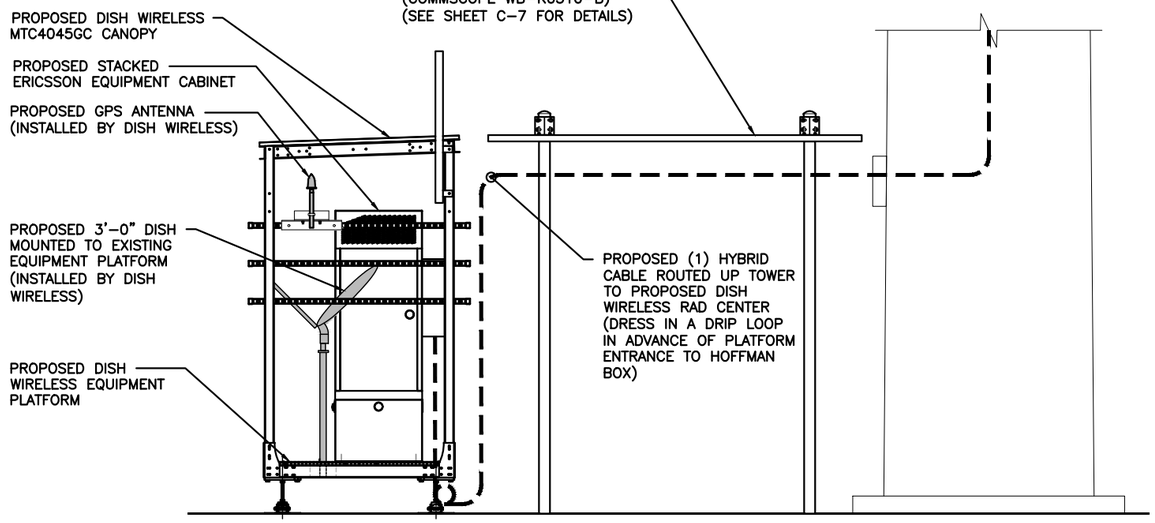
CONTRACTOR TO VERIFY LATEST VERSION OF RFDS WITH DISH CM

CONTRACTOR TO SUPPLY DRIP LOOP



PROPOSED ANTENNA LAYOUT
SCALE: N.T.S

NOTE:
PROPOSED RET CABLE 44155 RRU TO ANTENNA (1) PER SECTOR. BETA SECTOR TO BE DAISY CHAINED TO GAMMA.



PROPOSED EQUIPMENT ELEVATION
SCALE: N.T.S

SBA SITE #: CT02573-S

ANTENNA LAYOUT NOTES:

1. THIS ANTENNA ORIENTATION PLAN IS A SCHEMATIC. THE CONTRACTOR SHALL VERIFY TOWER ORIENTATION AND FIELD COORDINATE REQUIRED ADJUSTMENTS TO ACHIEVE THE DESIRED ANTENNA AZIMUTHS.
2. ANTENNA CENTERLINE HEIGHT REFERENCED FROM GROUND AT BASE OF TOWER, ASSUMING HEIGHT OF 0'-0" AT SAID REFERENCE POINT.
3. ALL ANTENNAS, CABLES AND MOUNTS SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWER ENGINEER'S RECOMMENDATIONS IN A MANNER CONSISTENT WITH THE STRUCTURAL ANALYSIS REPORT.
4. ALL ANTENNA BRACKETS PER ANTENNA MANUFACTURER, OR EQUAL. CONTRACTOR TO COORDINATE REQUIRED MECHANICAL DOWN TILT WITH DISH WIRELESS.
5. ALL ANTENNA INFORMATION TO BE CONFIRMED WITH DISH WIRELESS RF DESIGN PRIOR TO INSTALLATION.
6. VERIFY POSITIONS AND AZIMUTH OF ANTENNAS WITH DISH WIRELESS PRIOR TO INSTALLATION.
7. SECTOR FRAMES AND ANTENNAS SHOULD HAVE IDENTIFYING TORQUE MARKS SHOWN AFTER INSTALLATION.
8. ALL CLOSE-OUT PHOTOS ADHERE TO CLOSE-OUT DOCUMENTATION.
9. THE SIZE, HEIGHT, AND DIRECTION OF ALL ANTENNAS SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS DEPICTED BY THE LATEST APPROVED RFDS.

EQUIPMENT TESTING:

CONTRACTOR SHALL COMPLETE THE FOLLOWING REQUIREMENTS:

1. ANTENNAS & RF JUMPERS:
- ALL RF JUMPERS & ANTENNA PORTS MUST HAVE DOCUMENTED PASSING SYSTEM SWEEP TEST.
- PIM TESTING IS REQUIRED FOR ALL INSTALLED ANTENNAS & FEEDLINES.
- SYSTEM SWEEPS SHALL BE AT A RETURN LOSS OF ≤ -16db.
- ALL SWEEPS MUST BE PROVIDED IN A PDF AS WELL AS ANRITSU (OR EQUAL) DATA FILE FORMAT.
- FINAL ACCEPTANCE: PERFORM ALL TECHNICAL TESTS SPECIFIED IN THE CONSTRUCTION SOW, SECTION XIV

2. HYBRID CABLES:
- ALL FIBER PAIRS MUST HAVE A DOCUMENTED PASSING POWER & A FIBER INSPECTION SCOPE TEST.
- PASSING POWER TEST SHALL BE ≤ 3db.
- REQUIRED FIBER TEST GEAR SHALL BE VIAVI JDSU FIT-SD103; P5000i FIBER SCOPE DIGITAL INSPECTION KIT; VIAVI 2303/11, OLS-35 OPTICAL LASER LIGHT SOURCE 1310/1550 NM, SM, INTERCHANGEABLE ADAPTER OR EQUAL.
- ALL FIBER TEST RESULTS MUST BE PROVIDED IN PDF FORMAT.
- FINAL ACCEPTANCE: PERFORM ALL TECHNICAL TESTS SPECIFIED IN THE CONSTRUCTION SOW, SECTION XIV

INSTALLER NOTES:

1. SCHEMATIC LAYOUT ONLY. REFER TO SHEETS C-1 AND C-2 FOR EXACT EQUIPMENT LAYOUT, SIZES AND LOCATIONS OF ICE BRIDGE.
2. ALL CABLE SUPPORTS SHOULD BE BLOCKS WITH GROMMETS, NO SNAP-INS ARE ALLOWED.
3. CONFIRM HOFFMAN BOX INSTALLATION WITH DISH CM PRIOR TO DRILLING OEM CABINET.

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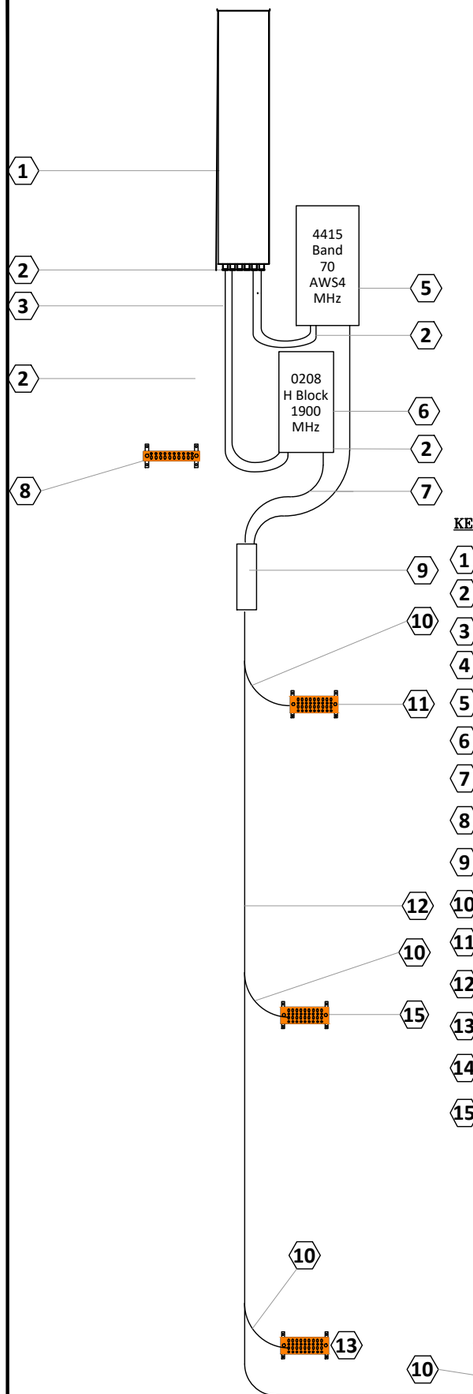
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
TOWER ELEVATION & ANTENNA LAYOUT

SHEET NUMBER:
C-3

TYPICAL SECTOR



ANTENNA SCHEDULE

SECTOR	ANTENNA MANUFACTURER	HYBRID CABLES	AZIMUTH	RAD CENTER	MECH D-TILT	ELECT D-TILT	RRU MANUFACTURER	RRU TECHNOLOGY	RRU LOCATION	JUMPER SIZE	JUMPER QTY	JUMPER LENGTH	RET JUMPER LENGTH
ALPHA	COMBA ODI2-065R18K-GQ 53.5" X 9.8" X 2.4"	DSHYBKIT-18612-70M - 7/8"ø	0°	153'-0"	0	2°	(1) ERICSSON (0208) (1) ERICSSON (4415)	H BLOCK BAND 70	SECTOR SECTOR	1/2" 1/2"	2 2	6'-0" 6'-0"	10'-0" 10'-0"
BETA	COMBA ODI2-065R18K-GQ 53.5" X 9.8" X 2.4"	SHARE WITH ALPHA	120°	153'-0"	0	2°	(1) ERICSSON (0208) (1) ERICSSON (4415) (SHARED)	H BLOCK BAND 70	SECTOR SECTOR	1/2" 1/2"	2 2	6'-0" 6'-0"	10'-0" 10'-0"
GAMMA	COMBA ODI2-065R18K-GQ 53.5" X 9.8" X 2.4"	SHARE WITH ALPHA	240°	153'-0"	0	2°	(1) ERICSSON (0208) (4415 SHARED)	H BLOCK	SECTOR	1/2" 1/2"	2* 2	6'-0"	*30'-0" 30'-0"

* (2) JUMPERS BETWEEN BETA 4415 AND GAMMA ANTENNA

INSTALLER NOTES:

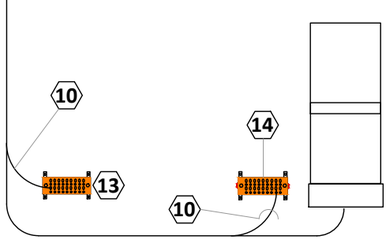
-SCHEMATIC LAYOUT ONLY. REFER TO SHEETS C-1 AND C-2 FOR EXACT EQUIPMENT LAYOUT, SIZES AND LOCATIONS OF ICE BRIDGE OR RMC.
-ALL CABLE SUPPORTS SHOULD BE BLOCKS AND GROMMETS. BUTTERFLIES AND SNAP-INS ARE NOT ALLOWED
-STRAIN-RELIEVE SUPPORT FOR ALL TOWER CABLES AND/OR FIBERS, SHALL OCCUR EVERY48" VERTICALLY, AND 24" HORIZONTALLY.
-CONTRACTOR TO REFERENCE DISH NETWORK LATEST ISSUE RFDS AND GIVE PRECEDENCE TO INFORMATION PROVIDED IN LATEST RFDS OVER INFORMATION PROVIDED IN ANTENNA SCHEDULE TABLE
-CONTRACTOR TO VERIFY PROPOSED LOADING, TOWER / FOUNDATION MODIFICATIONS AND REMOVED EQUIPMENT AS STATED IN PASSING STRUCTURAL ANALYSIS AND MOD DESIGNS AND CONTACT DISH NETWORK IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES.
-CONTRACTOR IS TO NOTE ANY APPURTENANCES ON TOWER THAT EXTENDS WITHIN 2' OF THE TOP OF AND 5' BELOW THE DISH ANTENNAS. IF ANY APPURTENANCES IS ENCROACHING THIS THRESHOLD, THE CONTRACTOR IS TO COMMUNICATE THE FINDING WITH DISH NETWORK IMMEDIATELY AND BEFORE CONSTRUCTION STARTS.

NOTE:

1. CONTRACTOR TO REFER TO, AND VALIDATE, THE LATEST RFDS PRIOR TO CONSTRUCTION.

KEY NOTES

1. ANTENNA - COMBA ODI2-065R18K-GQ- (DISH PROVIDED)
2. CLAMSHELL WEATHER PROOFING (CONTRACTOR PROVIDED)
3. PROPOSED (6 EA.) 1/2" COAX JUMPERS FROM RRUS TO ANTENNA - (DISH PROVIDED) - VARIABLE LENGTHS
4. RRU - E2 BAND 29 700 MHZ - NOT USED
5. RRU - 4415 BAND 70 AWS4 MHZ- (DISH PROVIDED)
6. RRU - 0208 H BLOCK 1900 MHZ - (DISH PROVIDED)
7. DC/FIBER JUMPER CABLES (BREAKOUT CYLINDER TO RRU)
8. SECTOR GROUND BUS BAR – 12"X2"X¼" (DISH PROVIDED)
9. FIBER/POWER BREAKOUT CYLINDER
10. GROUND KIT ON HYBRID CABLE AND EACH RF CABLE
11. UPPER TOWER GROUND BUS BAR – 12"X4"X¼" (DISH PROVIDED)
12. HYBRID CABLE
13. LOWER TOWER GROUND BUS BAR – 12"X4"X¼" (DISH PROVIDED)
14. EQUIPMENT GROUND BUS BAR – 12"X4"X¼" (DISH PROVIDED)
15. ADD ADDITIONAL BUS BARS AND GROUND KITS ON TOWER IN 50, 100, OR 200-FOOT INCREMENTS BASED ON TOWER HEIGHT AND LIGHTNING ZONE



Comba ODI2-065R18K-GQ
Antenna - 25.1 lbs. (11.4 kg)
Mount – 2.8 lbs. (6.2 kg)

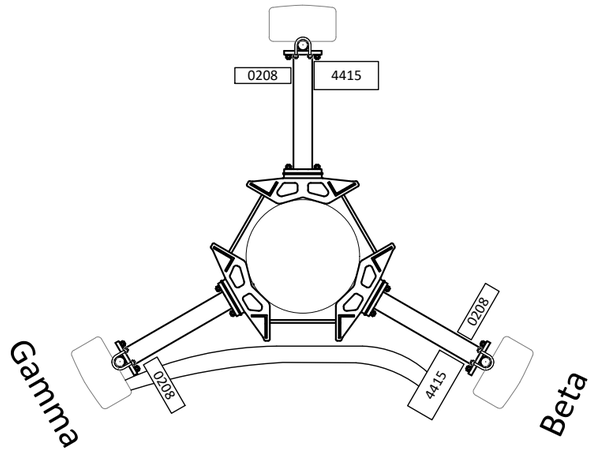
0208 H Block 1900 MHz

4415 Band 70 AWS4 MHz

19.84 lbs. (9 kg)	46 lbs. (21 kg)

Weight, excl. mounting hardware

Alpha



2 Jumpers between Beta 4415 and Gamma Antenna

NOTE:

PROPOSED RET CABLE 4415 RRU TO ANTENNA (1) PER SECTOR. BETA SECTOR TO BE DAISY CHAINED TO GAMMA.

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25[illegible]
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

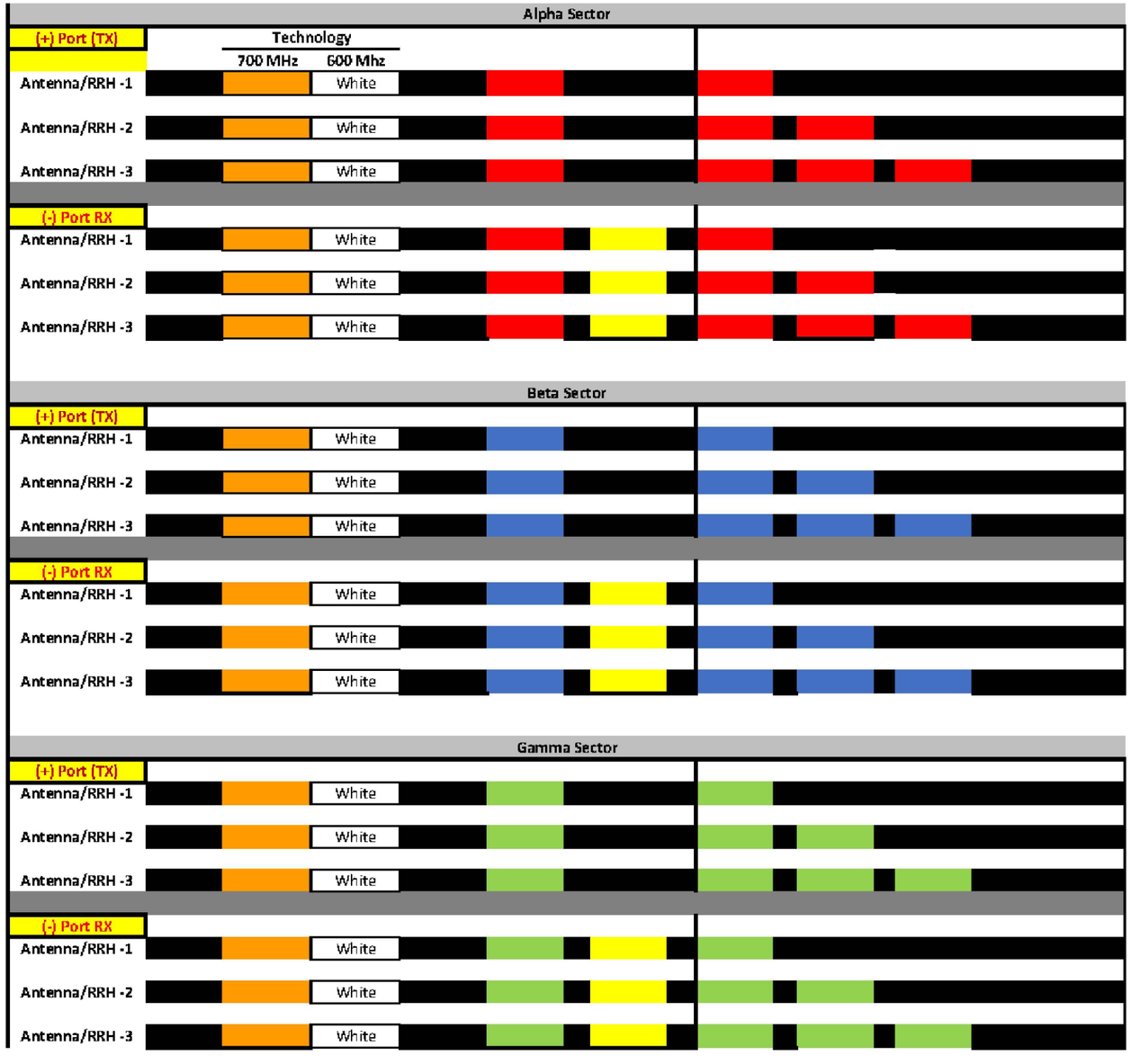
DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
ANTENNA SCHEDULE & DIAGRAM

SHEET NUMBER:
1 OF 2



NOTE:

1. CONTRACTOR TO REFER TO, AND VALIDATE, THE LATEST RFDS PRIOR TO CONSTRUCTION.

CABLE COLOR CODE

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28[illegible]
LICENSED
PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

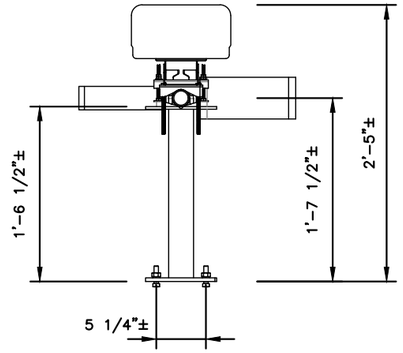
DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

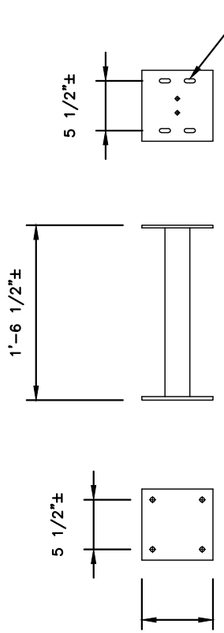
SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

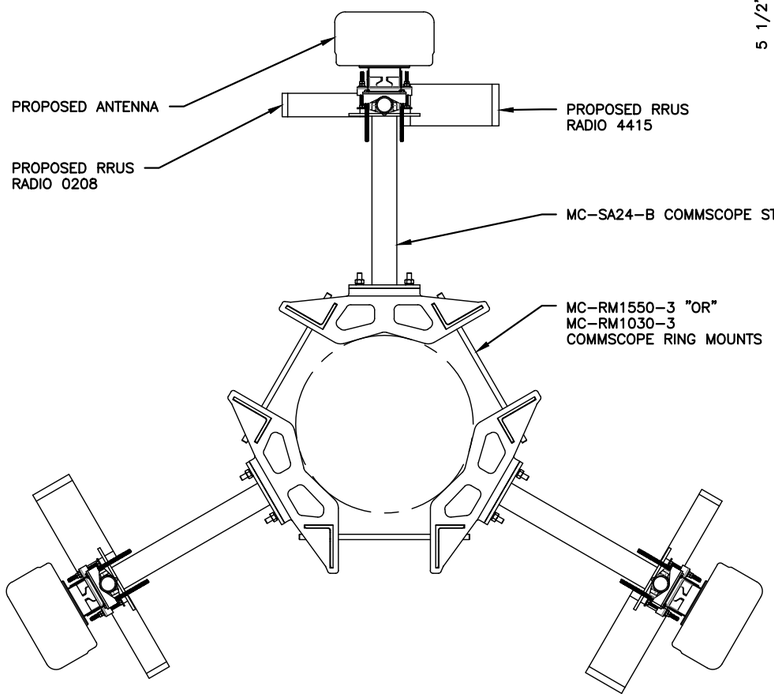
SHEET TITLE:
CABLE COLOR CODE

SHEET NUMBER:
2 OF 2

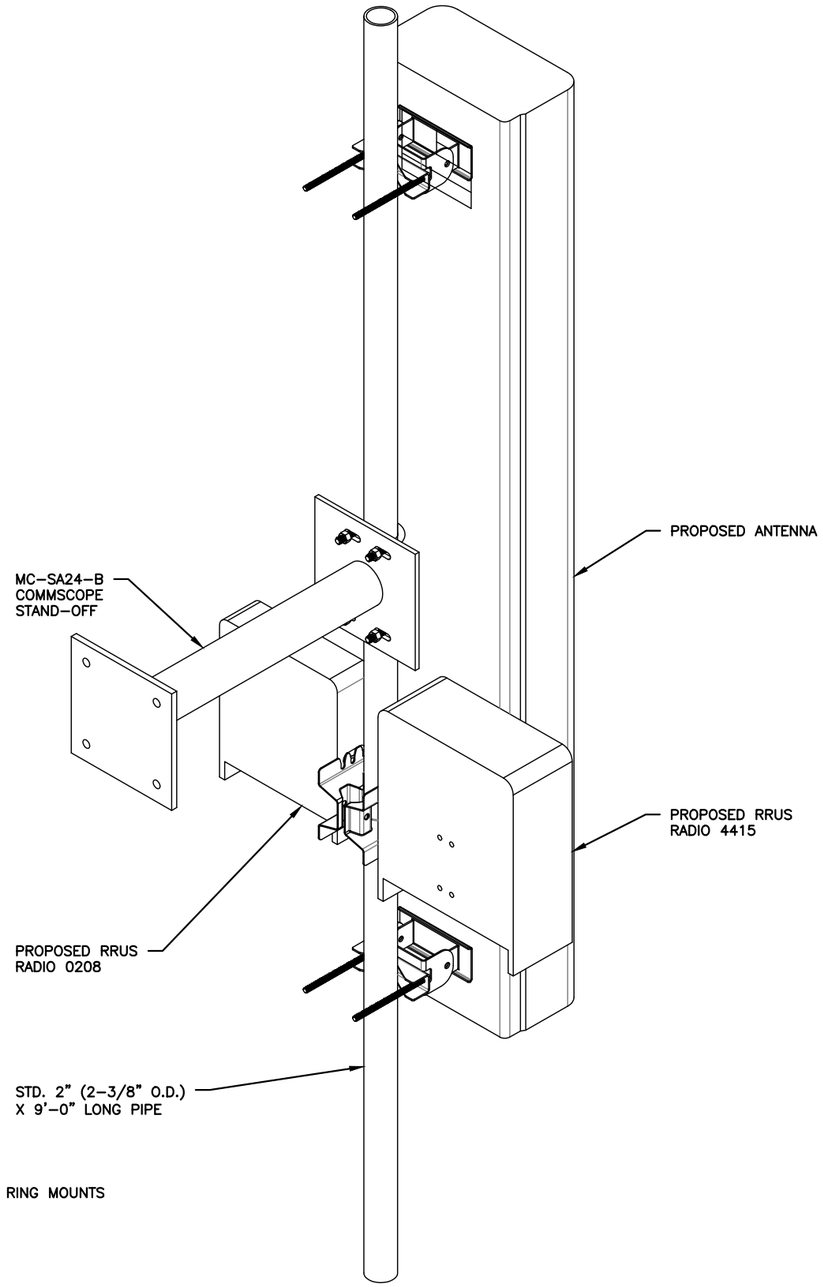


MC-SA24-B STAND-OFF SUPPORT
10" X 24-5/8" LONG
ONE 2-3/8" X 108" PIPE CONFIG.





MC-RM1550-3 "OR" MC-RM1030-3 COMMSCOPE RING MOUNTS
AND MC-SA24-B COMMSCOPE STAND-OFF
W ERICSSON GEAR



SECTOR MOUNT DETAIL FOR MONOPOLE

SCALE: N.T.S

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28561
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

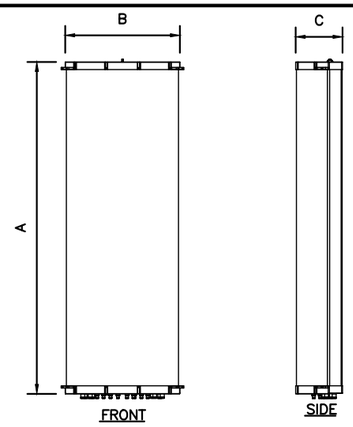
DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

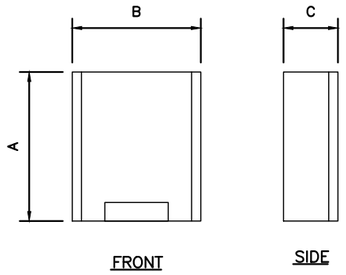
SHEET TITLE:
EQUIPMENT DETAILS

SHEET NUMBER:
C-4



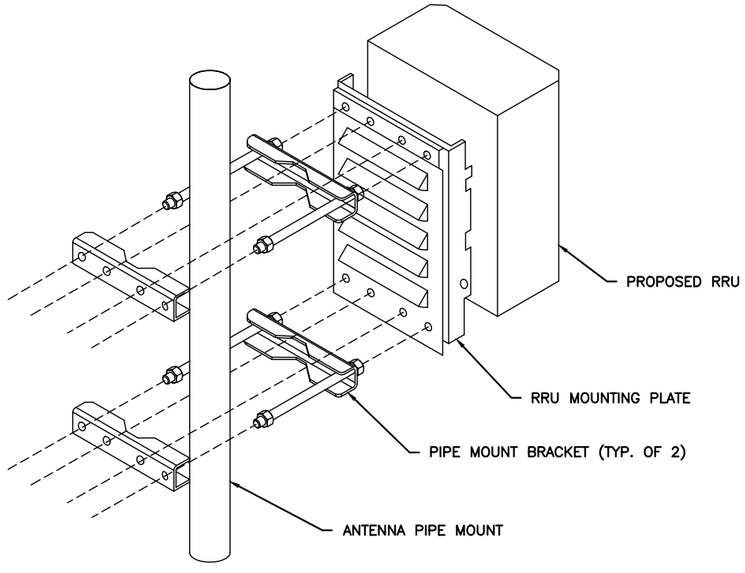
ANTENNA SPECIFICATIONS				
MODEL	LENGTH (A)	WIDTH (B)	DEPTH (C)	WEIGHT (lb)
COMBA – ODI2–065R18K–GQ	53.5"	9.8"	2.4"	25.1

ANTENNA SPECIFICATIONS
SCALE: N.T.S



RADIO SPECIFICATIONS				
MODEL	LENGTH (A)	WIDTH (B)	DEPTH (C)	WEIGHT (lb)
ERICSSON – RADIO 4415	16.54"	13.64"	4.84"	44.09
ERICSSON – RADIO 0208	13.82"	11.73"	3.31"	18.52

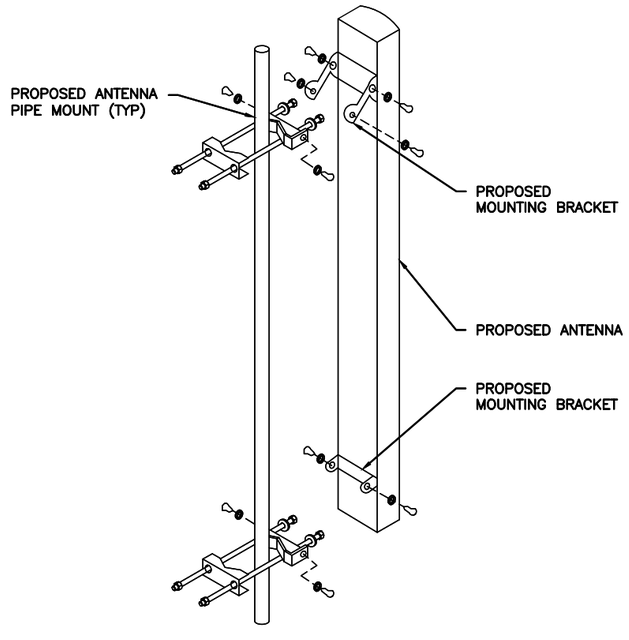
RADIO SPECIFICATIONS
SCALE: N.T.S



NOTES:

1. ERICSSON VIA DISH WIRELESS SUPPLIES RRU, RRU PIPE–MOUNTING BRACKET. SUBCONTRACTOR SHALL INSTALL ALL MOUNTING HARDWARE INCLUDING RRU PIPE–MOUNTING BRACKET.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED

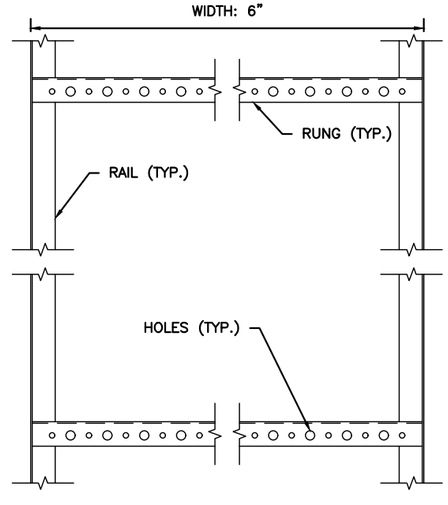
REMOTE RADIO UNIT (RRU) PIPE MOUNT
SCALE: N.T.S



ANTENNA MOUNTING
SCALE: N.T.S

LADDER NOTE:

1. LADDER TO BE PLACED ON TOWER IN 20'–0" SECTIONS UP TO PROPOSED DISH WIRELESS RAD CENTER.
2. GC TO VERIFY NEED WITH DISH WIRELESS CM. DISH WIRELESS PREFERS TO USE EXISTING CABLE SUPPORT SYSTEMS IF AVAILABLE.



CABLE LADDER DETAIL (OPTIONAL) (DETAIL NOT USED)
SCALE: N.T.S

PLANS PREPARED FOR:
dish WIRELESS

PLANS PREPARED BY:
HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS			
DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

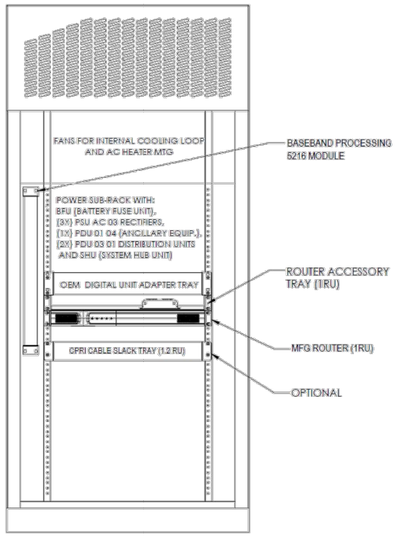
DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
EQUIPMENT DETAILS

SHEET NUMBER:
C-4a



NOTES: UNLESS OTHERWISE SPECIFIED

1. POWER CABINET WEIGHT IS **180kg** (397 LBS) MAX. INCLUDES STANDARD EQUIPMENT. DISH HAS ALSO ADDED: A MFG ROUTER @ **3.72 kg** (8.2 LBS) AND/OR LTE ROUTER @ **0.58kg** (1.3 LBS) AND 1 ACCESSORY TRAY@ **0.69kg** (3.73lbs).
2. BATTERY ENCLOSURE WEIGHT IS ≤ **93kg** (205 LBS) EXCLUDING THE STORAGE BATTERIES. THE **NSB 40FT HT RED** BATTERY WEIGHT IS **14kg** (30.86 LBS) EACH X 4 (**56kg** / 123.5 LBS TOTAL), EXCLUDING CABLES.
3. POWER EQUIPMENT IN THE CABINET CONVERTS AC POWER INTO **-48V DC** POWER FOR THE BASE STATION.
4. THE POWER SYSTEM CAPACITY RATING IS 10kW MAXIMUM. THE SYSTEM IS OUTFITTED WITH 3X 2500W RECTIFIERS (7.5kW), WHICH 1 RECTIFIER (2.5kW) IS FOR SYSTEM REDUNDANCY.
5. AC INPUT POWER OPTION: PLEASE SEE SEPARATE RBS6101 CABINET DOCUMENT WITH OTHER AC POWER OPTIONS.

AC INPUT	VOLTAGE RANGE V AC	NOMINAL VOLTAGE	RECOMMENDED EQUIP. AC BREAKER	RATED PWR	TYP PWR
2W + PE + N 120/240V AC, 60 Hz	200/100 240/120	115V	60A	10kW	2.5kW

REVISIONS

ECO NO.	ITEM MASTER	REV	DESCRIPTION	DATE	BY
IC45181	219097	01	INITIAL RELEASE. CREATED FROM 219745. UPDATED WITH RBS6101 CABINET WITH BATTERY ENCLOSURE/PLINTH BBU6101.	10-19-18	JL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE: X.XXX ± .100, X.XX ± .25, X.X ± .40, X. ± .75; HOLE DIA. ±.075; ANGLES ±.5°

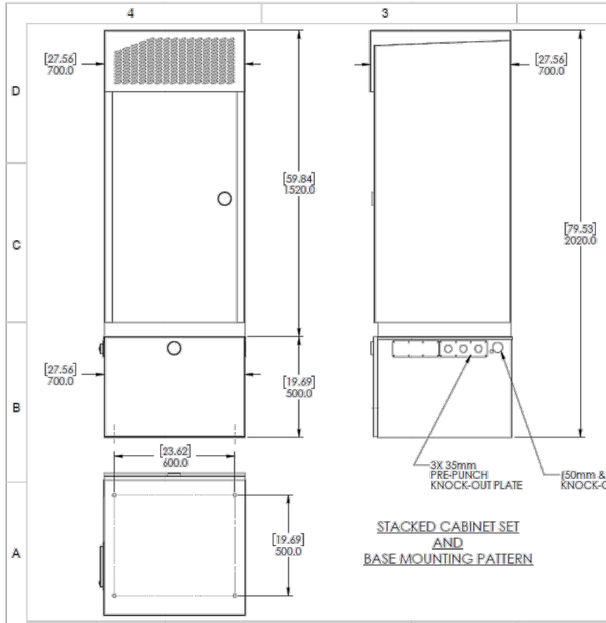
dish TECHNOLOGIES

APPROVALS	DATE
DESIGNED	
DRAWN J. LAPALME	05-04-18
CHECKED	

TITLE: ASSY DWG, ERICSSON RBS6101 CABINET AND BATTERY PLINTH WITH SELECTED DISH MODULES

SIZE B | DWG. NO. 219097 | REV. 01

SCALE NONE | SHEET 1 OF 3



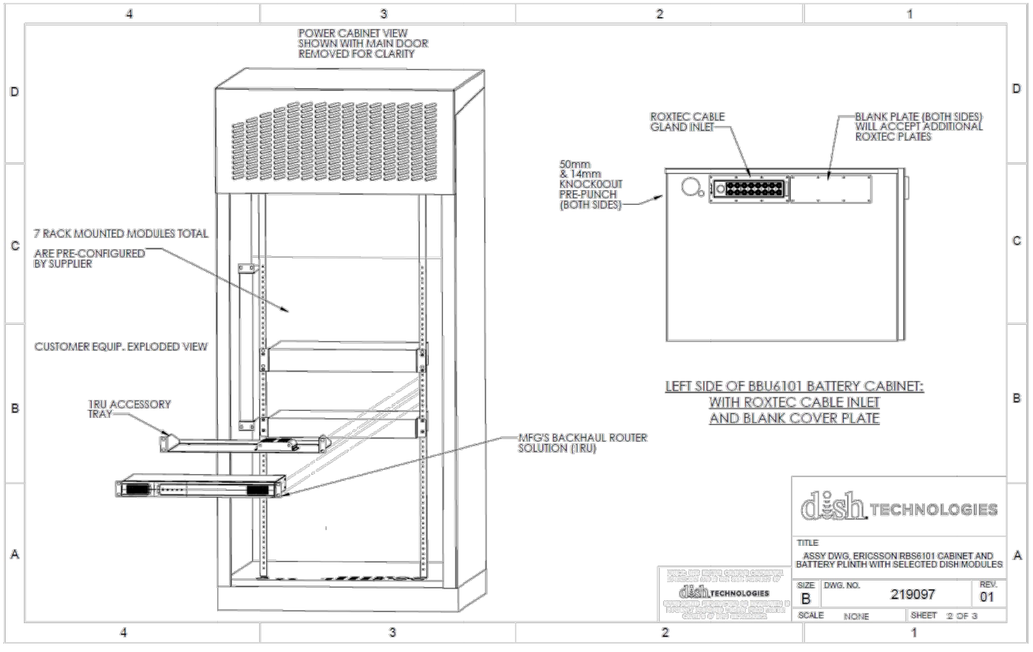
STACKED CABINET SET AND BASE MOUNTING PATTERN

dish TECHNOLOGIES

TITLE: ASSY DWG, ERICSSON RBS6101 CABINET AND BATTERY PLINTH WITH SELECTED DISH MODULES

SIZE B | DWG. NO. 219097 | REV. 01

SCALE NONE | SHEET 3 OF 3



LEFT SIDE OF BBU6101 BATTERY CABINET: WITH ROXTEC CABLE INLET AND BLANK COVER PLATE

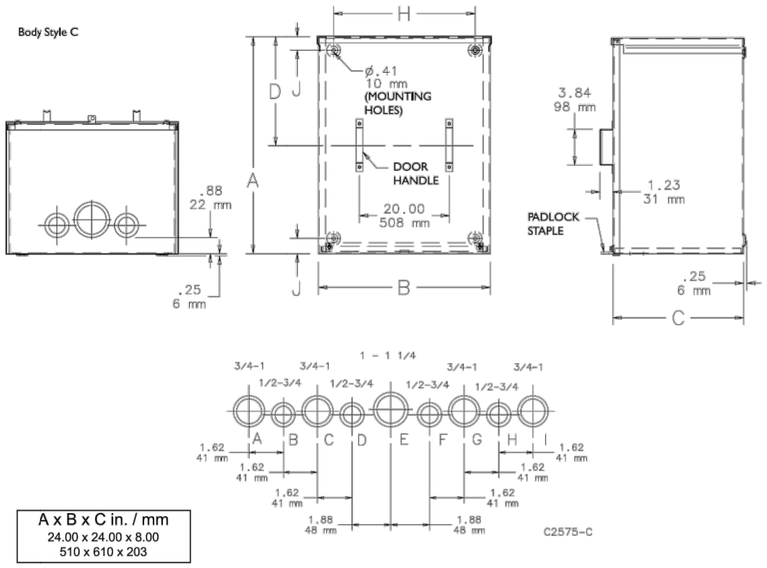
dish TECHNOLOGIES

TITLE: ASSY DWG, ERICSSON RBS6101 CABINET AND BATTERY PLINTH WITH SELECTED DISH MODULES

SIZE B | DWG. NO. 219097 | REV. 01

SCALE NONE | SHEET 2 OF 3

ERICSSON CABINET DETAIL



A x B x C in. / mm
24.00 x 24.00 x 8.00
510 x 610 x 203

P/N: A24R248

HOFFMAN BOX DETAIL

NOTE:

CONFIRM HOFFMAN BOX INSTALLATION WITH DISH CM PRIOR TO DRILLING OEM CABINET

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

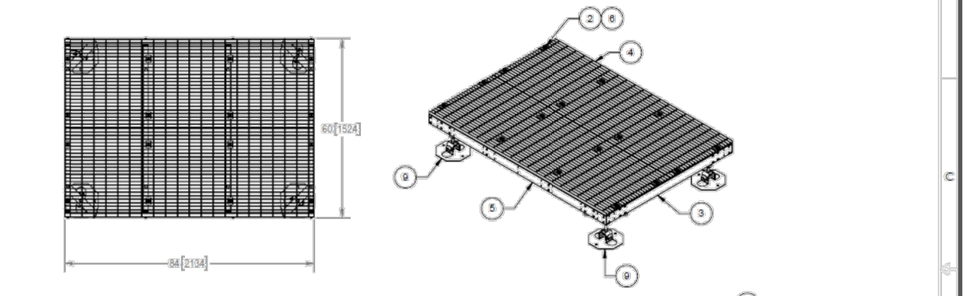
SHEET TITLE:
EQUIPMENT DETAILS

SHEET NUMBER:
C-5

NOTES:
1.0 GENERAL
1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
2.0 DESIGN NOTES
2.1 RECOMMENDED 3/8 BOLTS TORQUE TO 25 FT-LBS.
2.2 RECOMMENDED 1/2 BOLTS TORQUE TO 60 FT-LBS.
2.3 RECOMMENDED 3/4 BOLTS TORQUE TO 200 FT-LBS.
3.0 MANUFACTURING/SPECIAL REQUIRMENTS
4.0 TEST
5.0 PACKAGING

REVISIONS

REV.	ECN#	DESCRIPTION	BY	DATE
A	8000003049	INITIAL RELEASE	KJC	10/15/18



ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	GB-03105	3/8"X1" GALV BOLT KIT	16	0.05 LBS	
2	MTC3903024	BAR GRATING CUB	16	0.17 LBS	
3	MTC392004	CHANNEL,11 GA, 4"X 2.5"X75"	4	174.15 LBS	
4	MTC403003	30" X 84" BAR GRATING	2	122.66 LBS	
5	MTC4048801	CHANNEL,11 GA, 4" X 1.5" X 84.000"	2	20.26 LBS	
6	311250	1/2-24 X 2" SELF DRILLING SCREW	16	0.03 LBS	
7	MTC8412	3/4" X 12" GALV THREADED ROD	4	1.51 LBS	
8	MTCP3306CWP14	FOOTPAD CONNECTION BRACKET	4	2.11 LBS	
9	MTCP3306CWP13	12" X 12" FOOTPAD	4	5.63 LBS	
10	GWL06	3/4" GALV LOCK WASHER	8	0.04 LBS	
11	GN-06	3/4" GALV HEX NUT	16	0.15 LBS	
12	GB-04440	1/2"X 4 1/2" GALV BOLT KIT	8	0.30 LBS	
13	MTC8F2211	BRACKET, FOOT MOUNTING	4	7.36 LBS	
14	GB-04205	3/4" X 2" GALV BOLT KIT	8	0.41 LBS	

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES: 1 PLACE .X ± .25; 2 PLACE .XX ± 0.12; 3 PLACE .XXX ± 0.06; ANGLES ± 2°

SAP MATERIAL MASTER: MTC4045LP

FINISH: GALV A123 | MATERIAL: A1011/A1018

	NAME	DATE
DR	KJC	10/15/2018
CH	SCOTT WESTCOTT	10/15/2018
PA		
AO	MOYES	10/15/2018
EQ	SCOTT WESTCOTT	10/15/2018
ECN	8000003049	

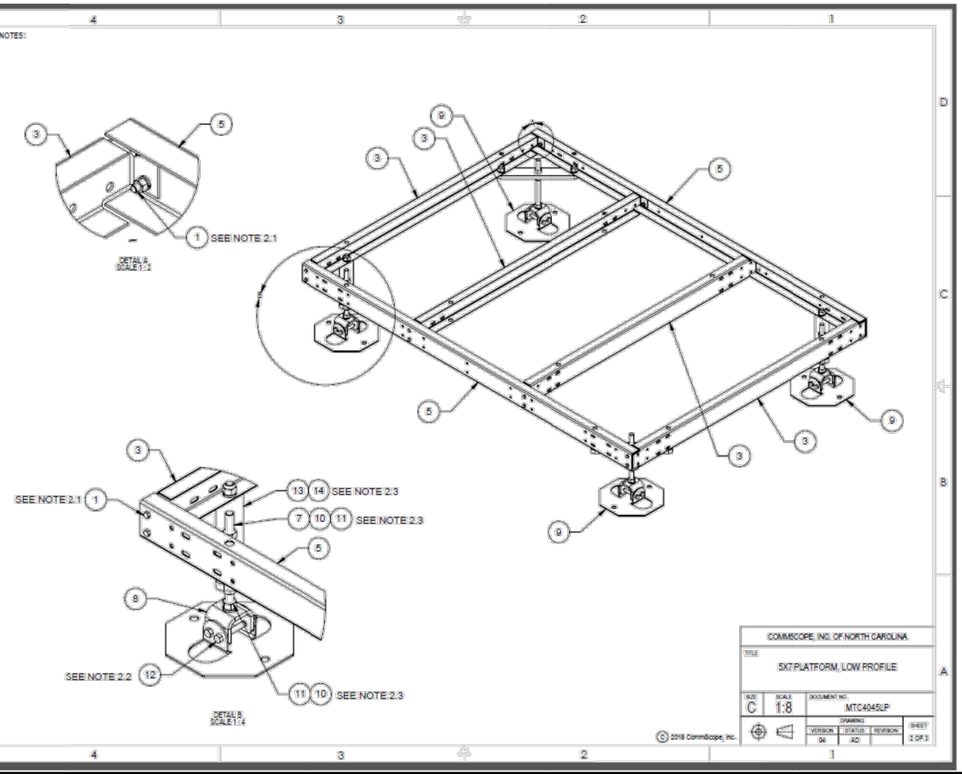
TITLE: 5X7 PLATFORM, LOW PROFILE

DENSITY: 0 lb/in³ | MASS: 423 lbs | VOLUME: 0 in³ | SURFACE AREA: 0 in² | HEIGHT: 13.6 | LENGTH: 84.0 | WIDTH: 60.0

SIZE: C | SCALE: 1:15 | DOCUMENT NO.: MTC4045LP | WORK AREA: 24

MODEL			DRAWING			SHEET
VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
00	AD		04	AD		1 OF 3

NOTES:



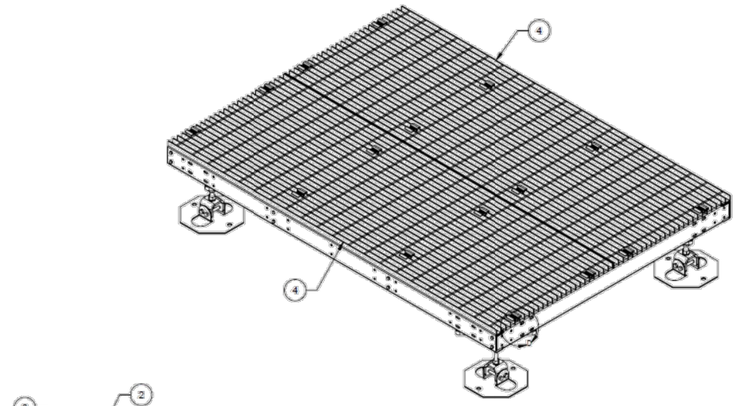
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE: 5X7 PLATFORM, LOW PROFILE

SIZE: C | SCALE: 1:8 | DOCUMENT NO.: MTC4045LP | DRAWING | SHEET: 2 OF 3

VERSION	STATUS	REVISION
04	AD	

NOTES:
1.0 ALL METRIC DIMENSIONS ARE IN BRACKETS.

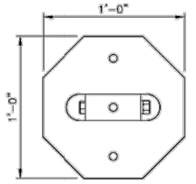


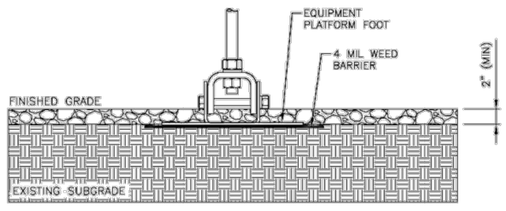
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE: 5X7 PLATFORM, LOW PROFILE

SIZE: C | SCALE: 1:8 | DOCUMENT NO.: MTC4045LP | DRAWING | SHEET: 3 OF 3

VERSION	STATUS	REVISION
04	AD	





NOTE:

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH WIRELESS CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. TO BE INSTALLED AS ONE SHEET 8'-0" X 8'-0" UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)

EQUIPMENT PLATFORM FOOT DETAIL
NOT TO SCALE

EQUIPMENT	DIMENSIONS	WEIGHT FULLY LOADED
CABINET	79.53" X 27.56" X 27.56"	738.7± lbs
DISH	3'-0"Ø	28.0 ± lbs

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

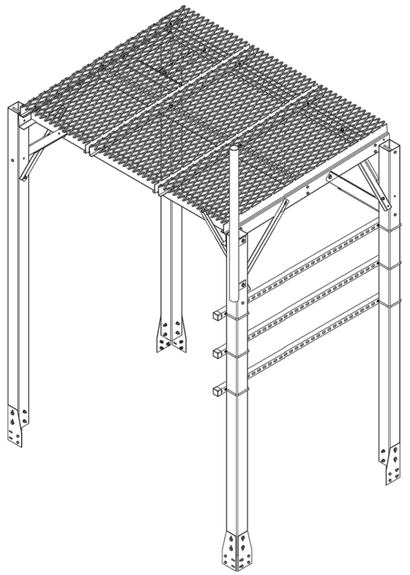
SHEET TITLE:
PLATFORM DETAILS

SHEET NUMBER:
C-6

NOTES:

1.0 GENERAL NOTES
1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS.
2.0 DESIGN NOTES
2.1 TORQUE ALL BOLTS TO 25 FT-LBS.
3.0 MANUFACTURING/SPECIAL REQUIREMENTS
4.0 TEST
5.0 PACKAGING

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
PRE1	INITIAL RELEASE 8000002270	10/26/18	RJC



ITEM	PART NO.	DESCRIPTION	QTY	WEIGHT	NOTE NO.
1	MTC4045ICHK	HARDWARE KIT FOR MTC4045IC	1		
2	MTC4045ICSB	STEEL BUNDLE FOR MTC4045IC	1		

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
0 PLACE X ± .25 | 2 PLACE XX ± 0.06
1 PLACE X ± 0.12 | ANGLES ± 2°

SAP MATERIAL MASTER: MTC4045GC

FINISH: GALV A123

MATERIAL: A1011/A1018, A500

DENSITY	0.30	lbs/in³	
MASS	562.34	lbs	
VOLUME	1887.29	in³	
SURFACE AREA		in²	
HEIGHT			
LENGTH			
WIDTH			

	NAME	DATE
CE	RJC	10/26/18
RW		
RV		
AD		
RE		

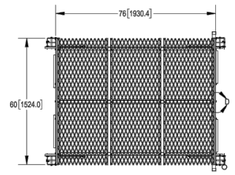
ECN 008000032270

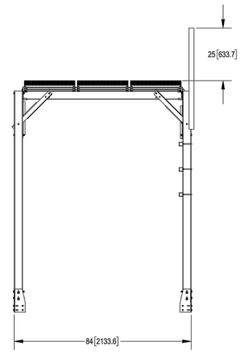
TITLE: ICE CANOPY 5X7 PLATFORM

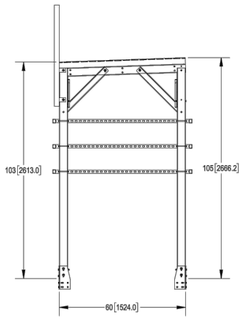
SCALE: 1:12 | DOCUMENT NO.: MTC4045GC

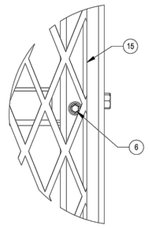
SIZE	WORK AREA	MODEL VERSION	MODEL STATUS	MODEL REVISION	DRAWING VERSION	DRAWING STATUS	DRAWING REVISION	SHEET
C	24	00	IW		00	IW		1 OF 4

NOTES:









DETAIL D
SCALE 1 : 2

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	GB-03105	3/8" X 1" GALV BOLT KIT	44	0.05 LBS	
2	GB-03505	3/8" X .5" GALV BOLT KIT	29	0.17 LBS	
3	GWF-03	3/8" GALV FLAT WASHER	30	0.01 LBS	
4	MTC997301	UNISTRUT 66"	3	10.30 LBS	
5	MTC371084	3/8" X 4" X .5" SQUARE U-BOLT	6	0.50 LBS	
6	MTC371531	1/4-14X7/8 SELF DRILLING HEX HEAD SCREW	18	0.02 LBS	
7	MTC3813C14	CANOPY BRACE, 11 GA, 30"	4	4.18 LBS	
8	MTC392212	CANOPY BRACE, 11 GA, 30"	4	2.75 LBS	
9	MTC4045C01	POST, 4 X 4 VERTICAL	4	51.35 LBS	
10	MTC4045C02	END CHANNEL CANOPY	2	14.89 LBS	
11	MTC4045C03	CHANNEL, LONG CANOPY	3	16.71 LBS	
12	MTC4045C04	PLATE, 4" CANOPY LEG SUPPORT	8	1.64 LBS	
13	MTC4045PM	MAST, PIPE	1	15.34 LBS	
14	PTCR01	END CAP	6	0.05 LBS	
15	MTC9232.05	SAFETY GRATING 24" X 5'	3	55.50 LBS	

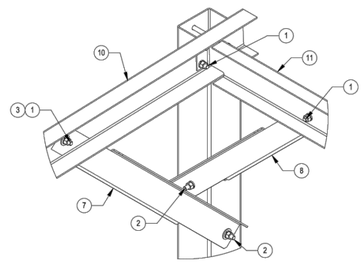
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE: ICE CANOPY 5X7 PLATFORM

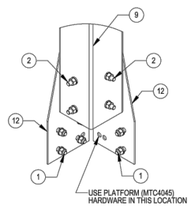
SIZE: C | SCALE: 1:22 | DOCUMENT NO.: MTC4045GC

DRAWING VERSION	DRAWING STATUS	DRAWING REVISION	SHEET
00	IW		2 OF 4

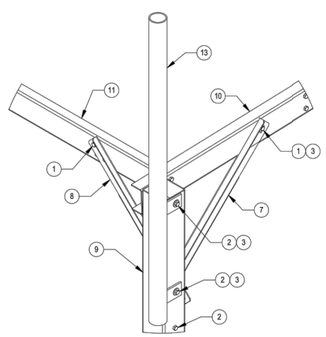
NOTES:



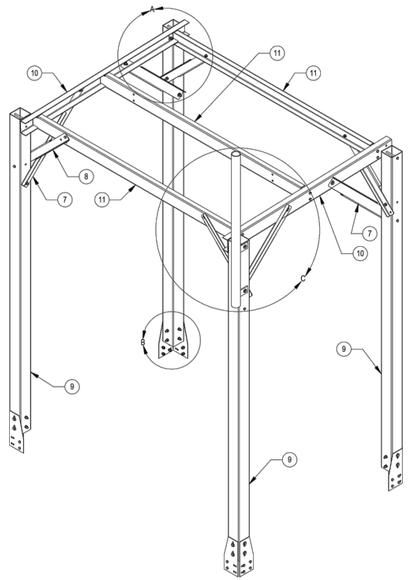
DETAIL A
SCALE 1 : 4



DETAIL B
SCALE 1 : 4



DETAIL C
SCALE 1 : 6



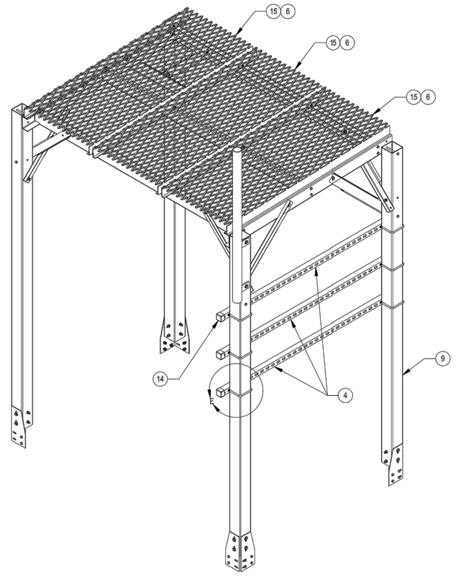
COMMSCOPE, INC. OF NORTH CAROLINA

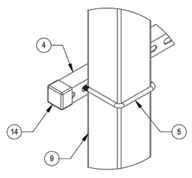
TITLE: ICE CANOPY 5X7 PLATFORM

SIZE: C | SCALE: 1:12 | DOCUMENT NO.: MTC4045GC

DRAWING VERSION	DRAWING STATUS	DRAWING REVISION	SHEET
00	IW		3 OF 4

NOTES:





DETAIL E
SCALE 1 : 4

COMMSCOPE, INC. OF NORTH CAROLINA

TITLE: ICE CANOPY 5X7 PLATFORM

SIZE: C | SCALE: 1:12 | DOCUMENT NO.: MTC4045GC

DRAWING VERSION	DRAWING STATUS	DRAWING REVISION	SHEET
00	IW		4 OF 4

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

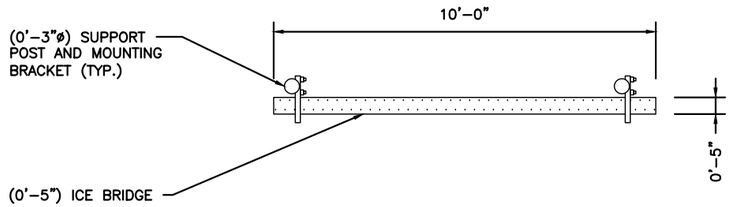
DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
PLATFORM CANOPY DETAILS

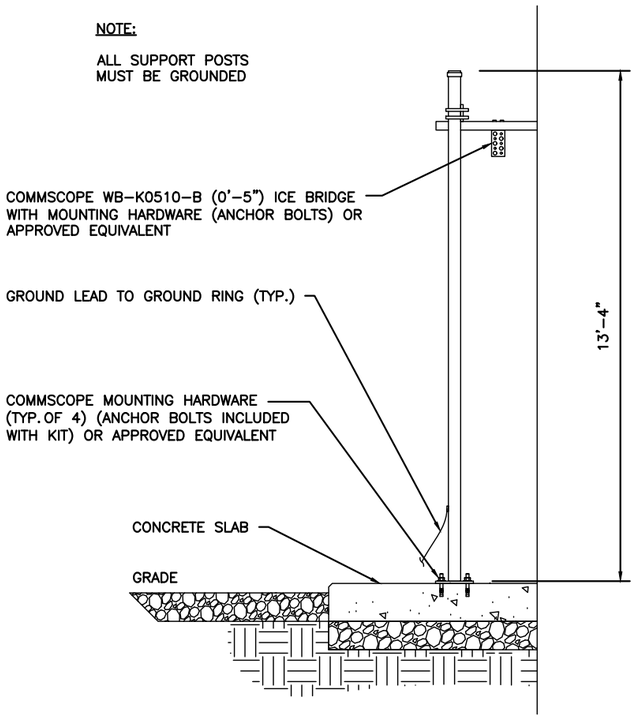
SHEET NUMBER:
C-7

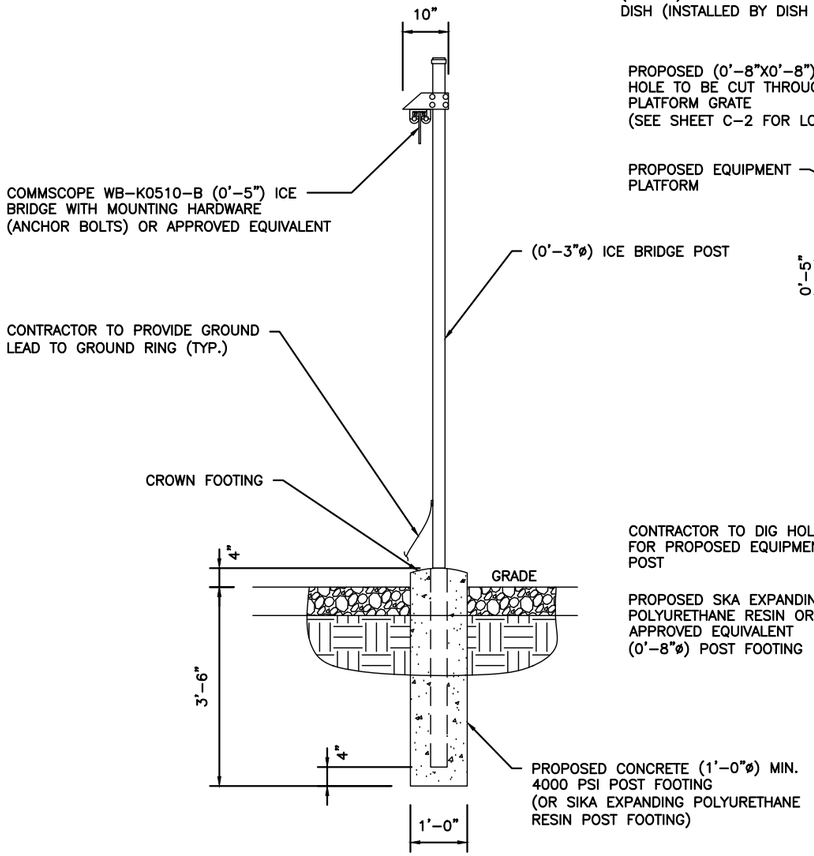


ICE BRIDGE PLAN VIEW
SCALE: N.T.S

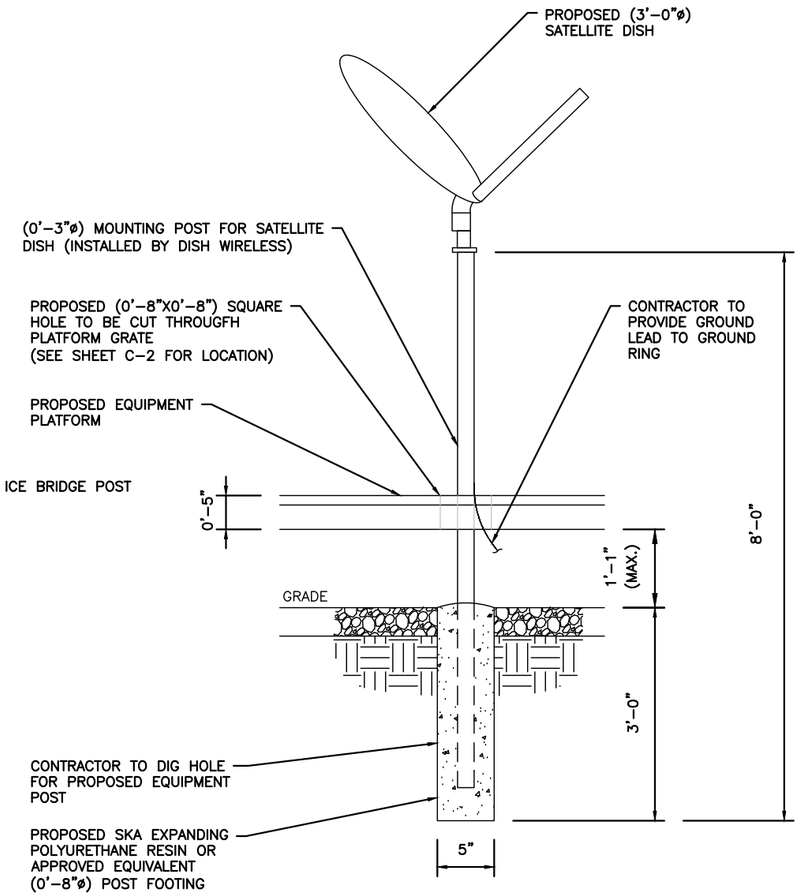
NOTE:

ALL SUPPORT POSTS MUST BE GROUNDED





ICE BRIDGE POST ELEVATIONS
SCALE: N.T.S



DISH ANTENNA POST ELEVATION
SCALE: N.T.S

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25[illegible]
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

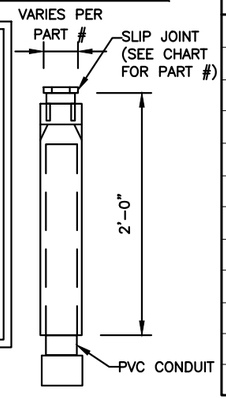
TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
ICE BRIDGE DETAILS

SHEET NUMBER:
C-8

NOTE: CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

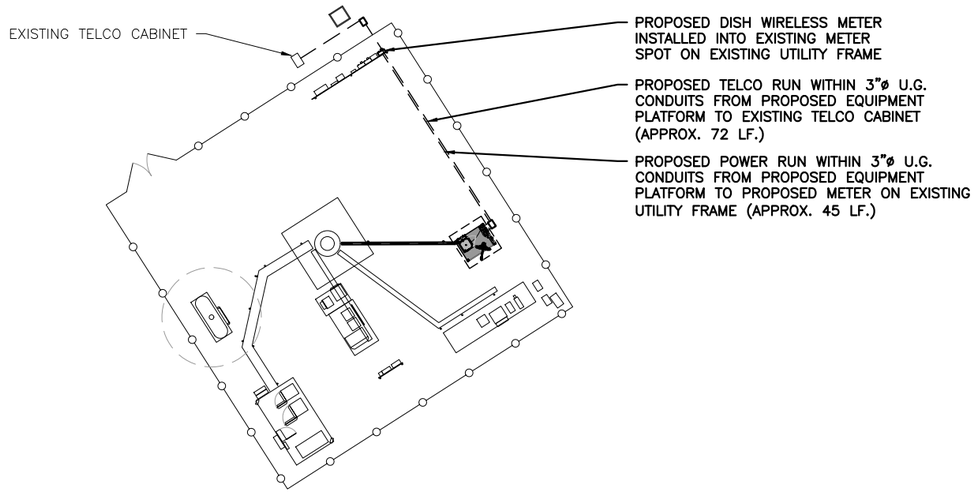


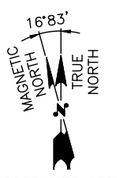
NOTES:

1. CONTRACTOR SHALL ARRANGE CONDUITS, WIRING, EQUIPMENT AND OTHER WORK AS SHOWN ON THIS PLAN AND SHEET E-2, PROVIDING REQUIRED CLEARANCES AND ACCESS PER NEC. WHERE FIELD ADJUSTMENTS ARE NECESSARY, COORDINATE WITH SITE CM AND DISH WIRELESS.
2. PULL BOX(ES) ARE REQUIRED WHEN THE EQUIVALENT OF THREE 90 DEGREE BENDS MAX, INCLUDING THE BENDS LOCATED AT AN OUTLET OR FITTING, ARE USED BETWEEN PULL POINTS; 150 FEET OF CONDUIT LENGTH IS EQUIVALENT TO AN ADDITIONAL 90 DEGREES.

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD. CTN. QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"





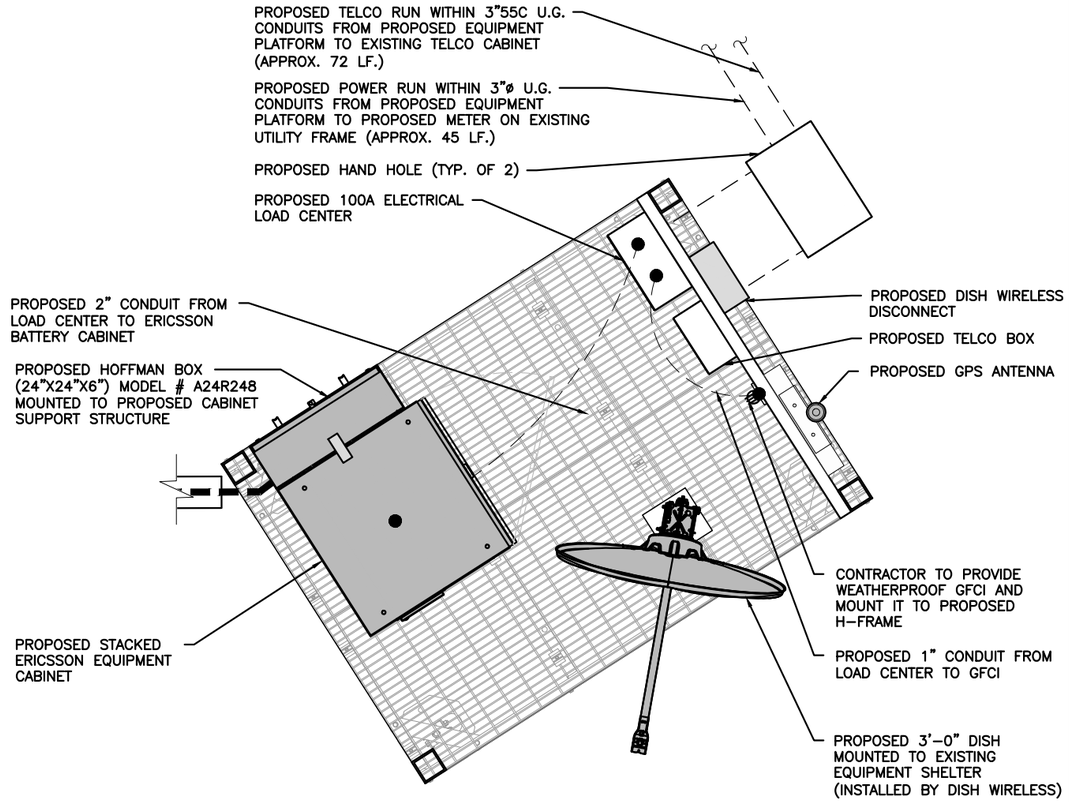
COMPOUND UTILITY PLAN

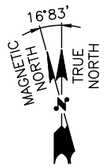
SCALE: 1/32"=1'-0"

0 16'-0" 32'-0" 64'-0" 96'-0"

UTILITY NOTES:

1. CONTRACTOR TO COORDINATE SERVICE ROUTING & CONNECTION WITH LOCAL TELEPHONE AND POWER COMPANIES.
2. CONTRACTOR SHALL FOLLOW LOCAL UTILITY COMPANY STANDARDS WHEN CONNECTING TO UTILITIES, PROVIDING REQUIRED CLEARANCES AND ACCESS PER NEC. LOCAL AND STATE BUILDING CODES SHALL GOVERN IN CASES WHERE UTILITY CO. STANDARDS DIFFER.
3. CONTRACTOR TO PROVIDE SPARE 3" TELCO CONDUIT W/ PULL-STRING FOR POTENTIAL FUTURE FIBER APPLICATIONS.





EQUIPMENT PLATFORM UTILITY PLAN

SCALE: N.T.S

NOTES:

1. ELECTRICAL ROUTING IS A SCHEMATIC. THE CONTRACTOR SHALL VERIFY EQUIPMENT LOCATION AND ELECTRICAL ROUTING PRIOR TO INSTALLATION.

INSTALLER NOTE:

SCHEMATIC LAYOUT ONLY. REFER TO SHEET C-2 FOR EXACT EQUIPMENT LAYOUT.

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25854
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

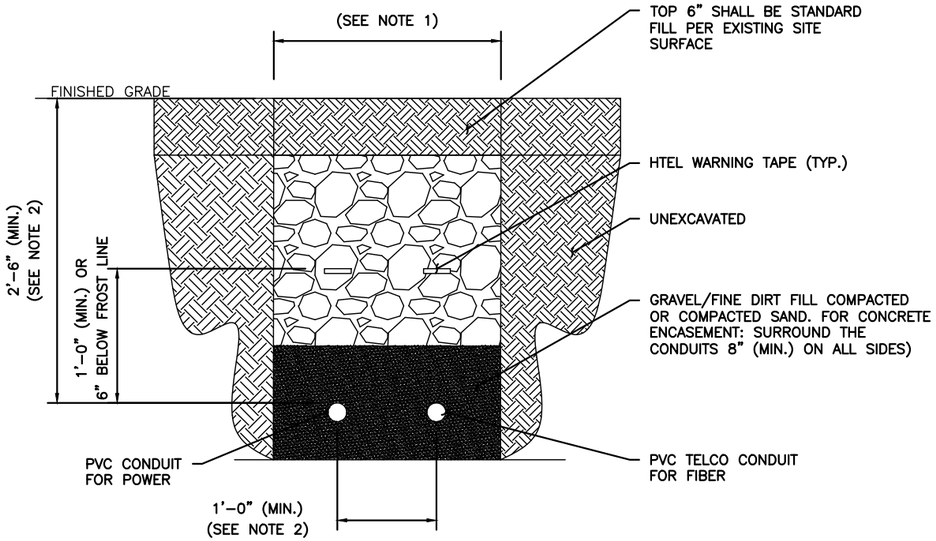
SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
UTILITY PLANS

SHEET NUMBER:
E-1

CONDUIT TRENCH NOTE:

1. WIDTH OF TRENCH AS REQUIRED BY UTILITY COMPANY OR PER QUANTITY OF CONDUITS AND LOCAL CODE REQUIREMENTS.
2. VERIFY DISTANCE PER LOCAL CODE, UTILITY COMPANY, AND CLIENT REQUIREMENTS.



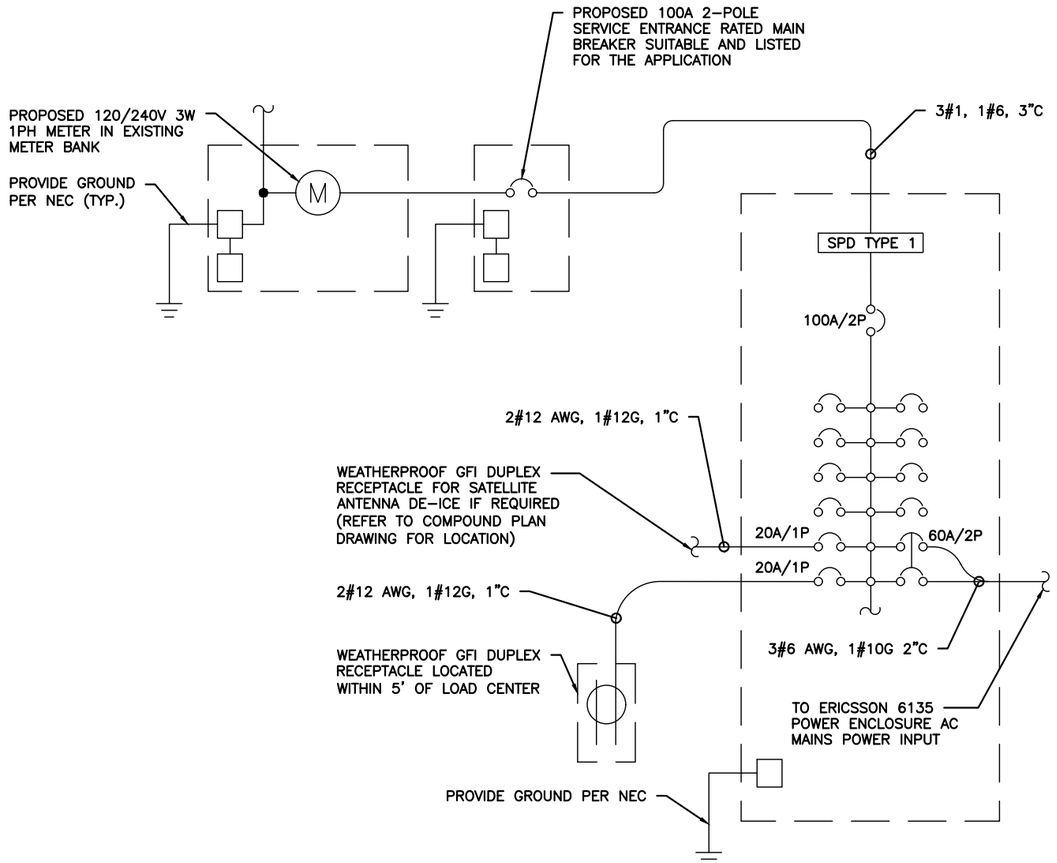
CONDUIT TRENCH DETAIL

SCALE: N.T.S

PROPOSED 100A, 120/240V POWER PANEL										
LOAD SERVED	VOLT AMPERES (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPERES (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
RECTIFIER	2000		60	1	A	2	20	180		GFCI
		2000		3	B	4	20		180	GFCI
SPARE	–		–	5	A	6	–	–		SPARE
SPARE		–	–	7	B	8	–		–	SPARE
SPARE	–		–	9	A	10	–	–		SPARE
SPARE		–	–	11	B	12	–		–	SPARE
VOLT AMPS	2000	2000						180	180	VOLT AMPS
L1 VOLT AMPERES				2180		2180		L2 VOLT AMPERES		
L1 AMPS				18.2		18.2		L2 AMPS		
				18.2				MAX AMPS		
				22.8				MAX AMPS x125%		

ELECTRICAL POWER PANEL SCHEDULE

SCALE: N.T.S



ELECTRICAL ONE-LINE DIAGRAM

SCALE: N.T.S

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25857
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS			
DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

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CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
ELECTRICAL DETAILS

SHEET NUMBER:
E-2

TOWER GROUNDING NOTE:

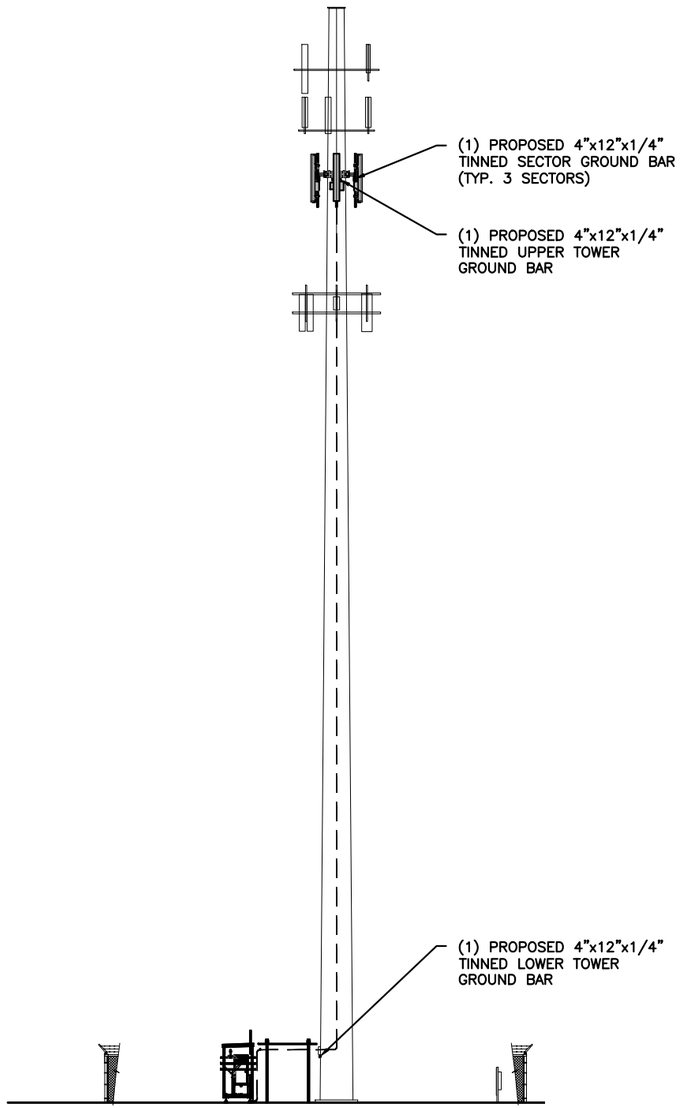
ALL CONNECTIONS TO BE MECHANICAL ON TOWER. EXOTHERMIC WELDS ARE NOT ALLOWED.

INSTALLER NOTE:

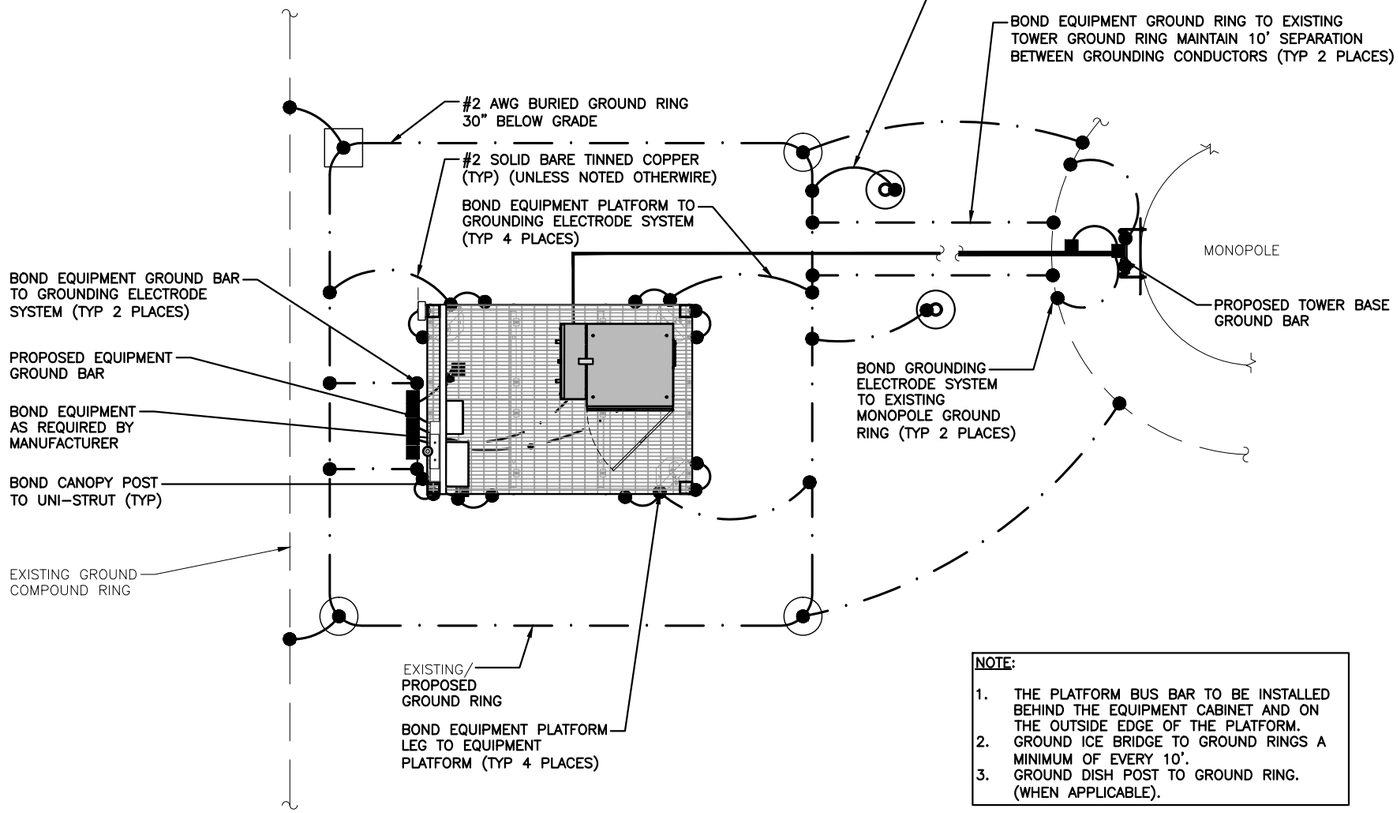
SCHEMATIC LAYOUT ONLY. REFER TO SHEETS C-1 AND C-2 FOR EXACT EQUIPMENT LAYOUT, SIZES AND LOCATIONS OF ICE BRIDGE AND ANTENNA SUPPORT STRUCTURE.

GROUNDING SYMBOL LEGEND

- GROUNDING CONDUCTOR - ABOVE GRADE
- GROUNDING CONDUCTOR - BELOW GRADE
- GROUNDING ELECTRODE SYSTEM
- 1'-6" PIGTAIL
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND ROD
- GROUND INSPECTION/TEST WELL



TOWER ELEVATION GROUNDING
SCALE: N.T.S



TYPICAL GROUNDING PLAN (SCHEMATIC)
SCALE: N.T.S

NOTE:

1. THE PLATFORM BUS BAR TO BE INSTALLED BEHIND THE EQUIPMENT CABINET AND ON THE OUTSIDE EDGE OF THE PLATFORM.
2. GROUND ICE BRIDGE TO GROUND RINGS A MINIMUM OF EVERY 10'.
3. GROUND DISH POST TO GROUND RING. (WHEN APPLICABLE).

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25854
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
GROUNDING NOTES & DETAILS

SHEET NUMBER:
G-1

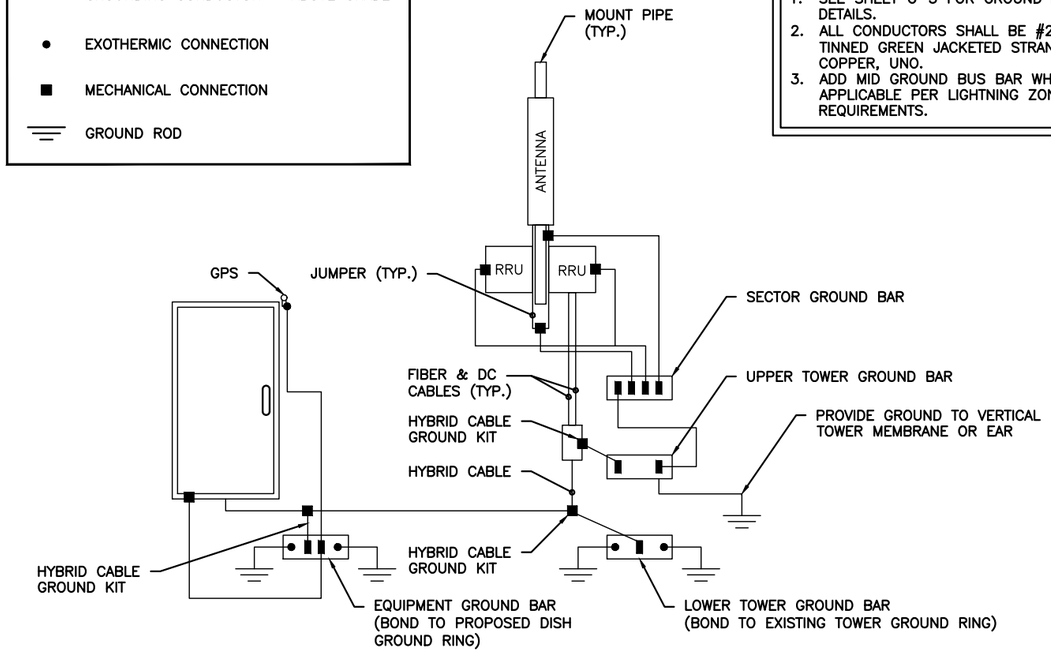
LEGEND	
———	GROUNDING CONDUCTOR – ABOVE GRADE
●	EXOTHERMIC CONNECTION
■	MECHANICAL CONNECTION
⏚	GROUND ROD

NOTE:

1. SEE SHEET G-3 FOR GROUND BAR DETAILS.
2. ALL CONDUCTORS SHALL BE #2 AWG TINNED GREEN JACKETED STRANDED COPPER, UNO.
3. ADD MID GROUND BUS BAR WHERE APPLICABLE PER LIGHTNING ZONE REQUIREMENTS.

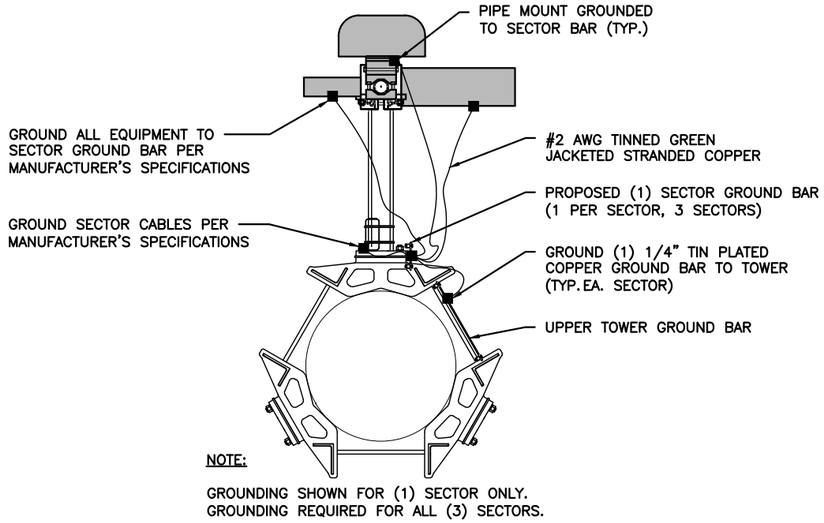
GROUNDING NOTE:

1. ALL CONNECTIONS TO BE MECHANICAL ON TOWER. EXOTHERMIC WELDS ARE ONLY ALLOWED AT GRADE.



GROUNDING RISER DIAGRAM (TYP. PER SECTOR)

SCALE: N.T.S

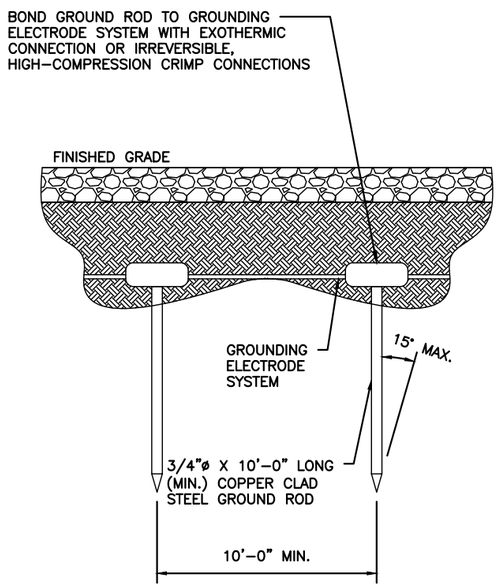


NOTE:

GROUNDING SHOWN FOR (1) SECTOR ONLY. GROUNDING REQUIRED FOR ALL (3) SECTORS.

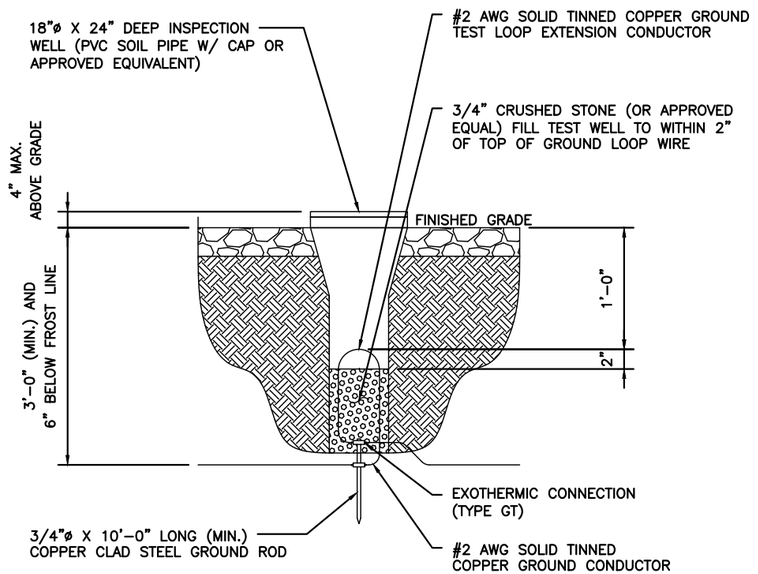
GROUND BAR AT MOUNT

SCALE: N.T.S



GROUND ROD DETAIL

SCALE: N.T.S



TEST WELL DETAIL

SCALE: N.T.S

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25854
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/01/19	FOR REVIEW	A	RP
03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

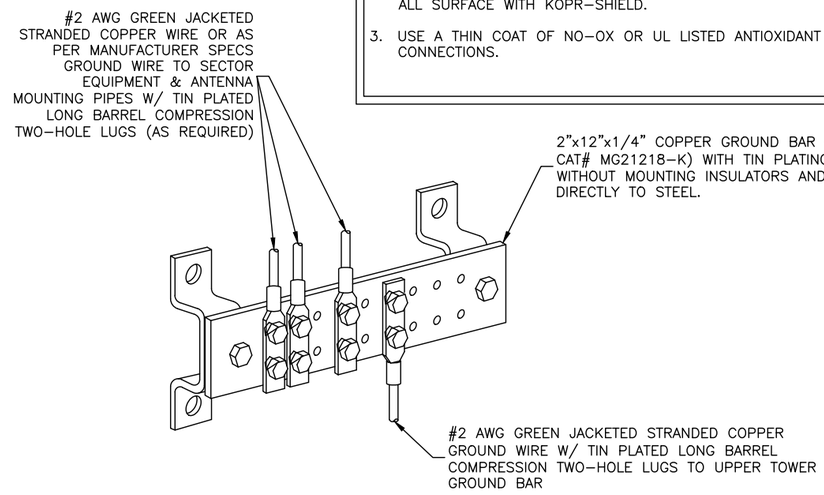
SHEET TITLE:
GROUNDING NOTES & DETAILS

SHEET NUMBER:
G-2

ERICSSON CONFIGURATION

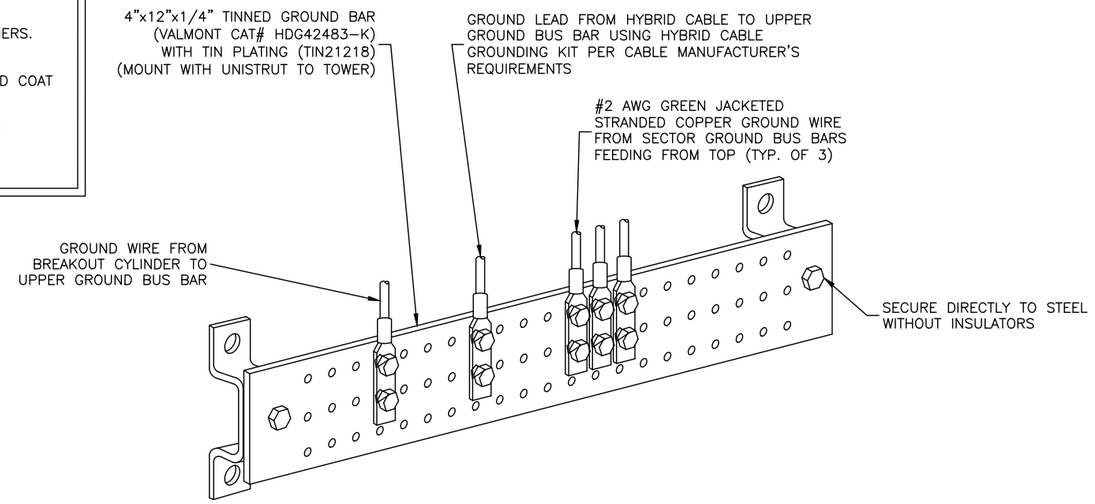
NOTES:

1. ALL HARDWARE SHALL BE 18-8 STAINLESS STEEL INCLUDING BELLEVILLE WASHERS. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. IF BONDING TO STEEL, INSERT A TOOTH WASHER BETWEEN LUG AND STEEL AND COAT ALL SURFACE WITH KOPR-SHIELD.
3. USE A THIN COAT OF NO-OX OR UL LISTED ANTIOXIDANT COMPOUND BETWEEN CONNECTIONS.



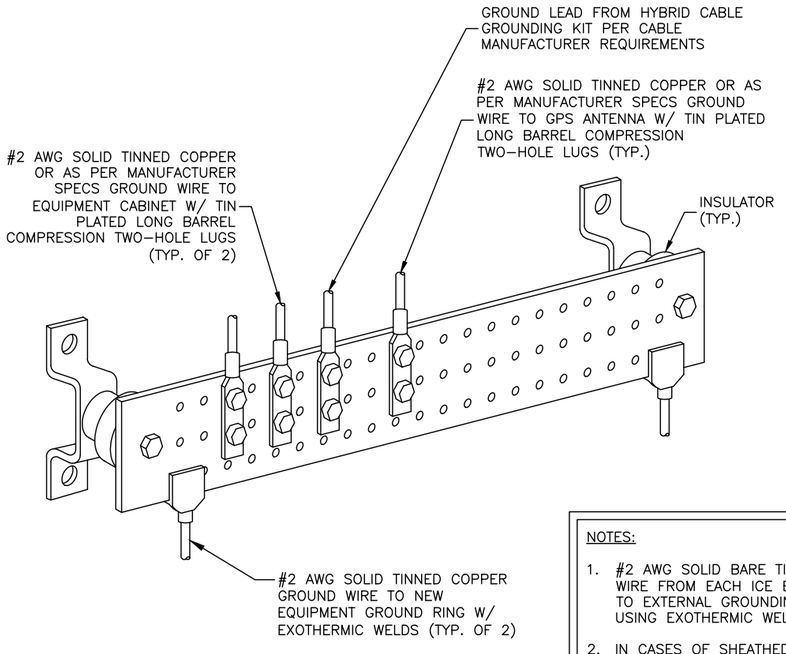
SECTOR GROUND BAR DETAIL

NOT TO SCALE



UPPER TOWER GROUND BAR DETAIL

NOT TO SCALE



EQUIPMENT GROUND BAR DETAIL

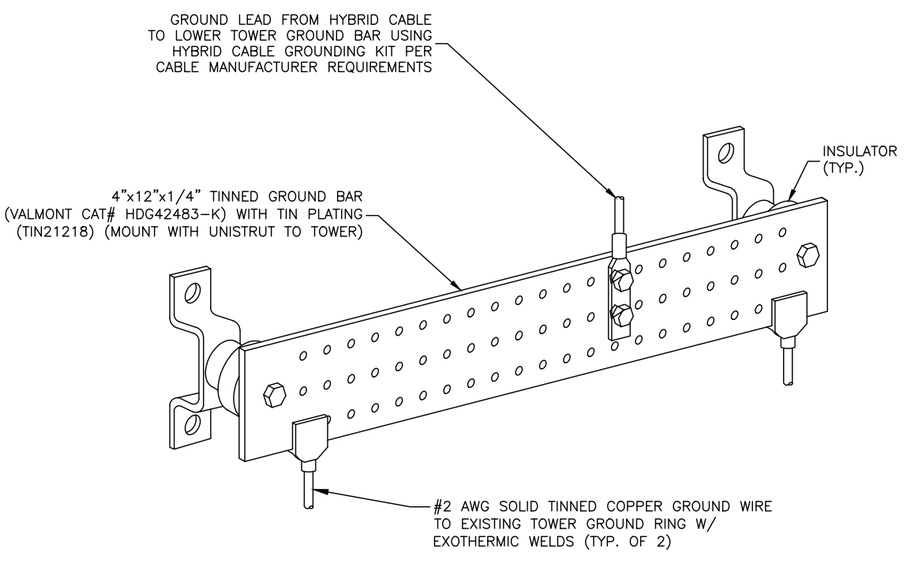
NOT TO SCALE

NOTES:

1. #2 AWG SOLID BARE TINNED COPPER WIRE FROM EACH ICE BRIDGE POST TO EXTERNAL GROUNDING SYSTEM USING EXOTHERMIC WELDS.
2. IN CASES OF SHEATHED STRANDED WIRES, CONNECTOR SHALL HAVE INSPECTION WINDOW AND NO MORE THAN 1/8" GAP BETWEEN CONNECTOR BODY AND SHEATH.

NOTE:

GROUND FROM SATELLITE DISH TO EQUIPMENT GROUND RING WHEN APPLICABLE



LOWER TOWER GROUND BAR DETAIL

NOT TO SCALE

NOTE:

#2 AWG SOLID TINNED COPPER GROUND CONDUCTOR FROM ICE BRIDGE POSTS TO BURIED GROUND RING USING EXOTHERMIC WELDS.

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STATE OF CONNECTICUT
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03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:

CT0100005A

TOWER OWNER SITE ID:

CT02573-S

SITE ADDRESS:

712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:

GROUNDING NOTES & DETAILS

SHEET NUMBER:

G-3

RF Design Data Sheet

Site Information			
State	CT	Site ID	CT0100005A
Site Name	CT02573-S	Tower Type	Monopole
Address	712 Bread and Milk St	City	Coventry
Latitude (degrees)	41.818091	Zip	6238
Longitude (degrees)	-72.39317467	Tower Owner	SBA
RFDS Revision	0.0	Issue Date	1/21/2019
RF Engineer	Ajit Prashar		ajit.p.prashar@ericsson.com
Design Information			
Technology	**NB-IoT**		
Vendor	**Ericsson**		
Site Configuration	**4415-2 No Band 29**		
Site Type - Equipment - Band	**AWS-4**		
Sector Information (Expected Configuration)	**Sector-1 (Alpha)**	**Sector-2 (Beta)**	**Sector-3 (Gamma)**
LTE Sector Number	CT0100005A_1	CT0100005A_2	CT0100005A_3
Antenna Center Line (ft)	153	153	153
Antenna Model Number	ODI2-065R18K-GQ	ODI2-065R18K-GQ	ODI2-065R18K-GQ
Number of Antennas / Sector	1	1	1
Antenna Dimensions (LxWxD) (In)	53.5 x 9.8 x 2.4	53.5 x 9.8 x 2.4	53.5 x 9.8 x 2.4
Antenna Weight (lbs.)	25	25	25
Antenna Manufacturer	Comba	Comba	Comba
Horizontal Beamwidth	64	64	64
Gain (dBd)	17.8	17.8	17.8
Azimuth (deg) (Relative to True North)	0	120	240
Antenna Downtilt (Mechanical)	0	0	0
Antenna Downtilt 2100 (Electrical)	2	2	2
Antenna Downtilt 700 (Electrical)	2	2	2
Radio Model (Band 70)	Radio 4415	Radio 4415	-
Radio Quantity (Band 70)	1	1	-
Radio Model (H-Block)	Radio 0208	Radio 0208	Radio 0208
Radio Quantity (H-Block)	1	1	1
Radio Model (700 band)	-	-	-
Radio Quantity (700 band)	-	-	-
Number of Feeders / Sector	4	4	4
Feeder Diameter (Nominal) (in)	1/2	1/2	1/2
Feeder Length (m)	3	3	3
700 MHz Radio location	-	-	-
700 MHz Coax Cable Type (in)	-	-	-
TX/RX Diplexer Model			
TX/RX Diplexer Qty			
TX/RX Diplexer Dim (inch) / Wt (lbs)			
Description of Cabling Configuration Changes / Additions			
Mandatory : Append Sketches indicating Locations of all new Antennas, Cabling, Duplexor, Diplexors (if applicable), TMA's etc....			

NOTE:

1. CONTRACTOR TO REFER TO, AND VALIDATE, THE LATEST RFDS PRIOR TO CONSTRUCTION.

PLANS PREPARED FOR:

dish WIRELESS

PLANS PREPARED BY:

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 25[illegible]
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: RP
CHECKED BY: HC
APPV'D: AT

SUBMITTALS

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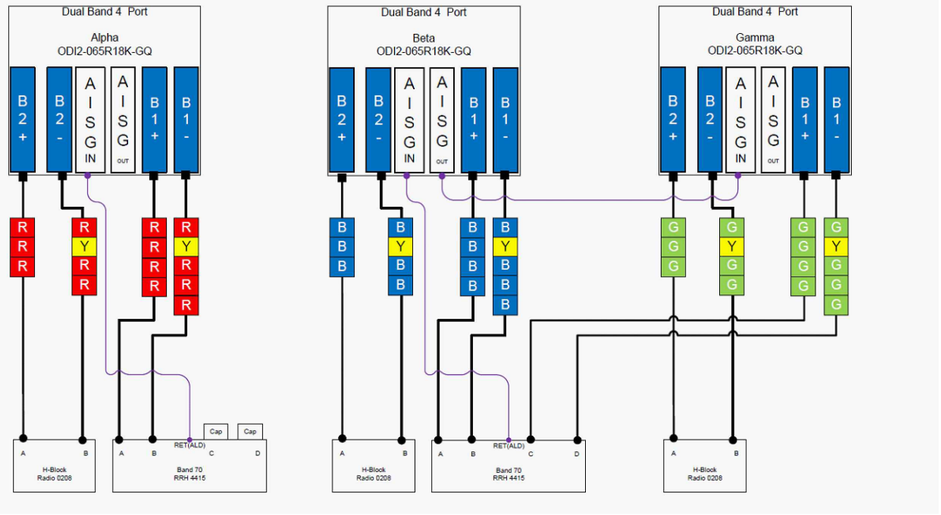
SHEET TITLE:
RF DATA SHEET

SHEET NUMBER:
RF-1

Ericsson 2-2-1 Configuration Plumbing diagram 11/27/2018

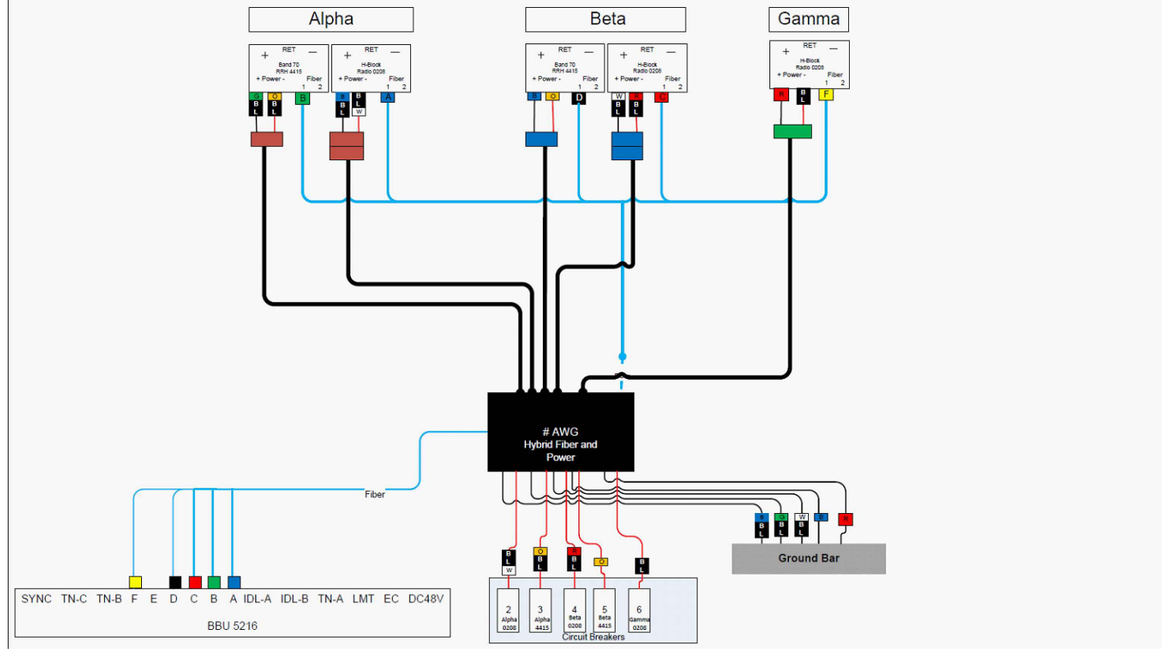
Ericsson Antenna to RRU Diagram



Ericsson 2-2-1 Configuration Plumbing diagram 11/27/2018

Note: This Plumbing Diagram does not represent the position of the RRU or Antenna on the mount. That is stipulated in the Construction Drawings. If there is any question please address your Construction Manager before proceeding.

Ericsson LTE BBU TO RRU Fiber and Power Diagram (Rosenberger Hybrid cable is used when length ≤ 90m)



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dish WIRELESS

PLANS PREPARED BY:

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28587
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	RP
CHECKED BY:	HC
APPV'D:	AT

SUBMITTALS

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03/19/19	FOR REVIEW	1	RP

DISH WIRELESS SITE ID:
CT0100005A

TOWER OWNER SITE ID:
CT02573-S

SITE ADDRESS:
712 BREAD AND MILK STREET
COVENTRY, CT 06238

SHEET TITLE:
PLUMBING DIAGRAM

SHEET NUMBER:
RF-2